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DOE STANDARD

PLANNING AND CONDUCT OF OPERATIONAL READINESS REVIEWS (ORR)

U.S. Department of Energy
Washington, D.C. 20585

AREA MISC

PLANNING AND CONDUCT OF OPERATIONAL READINESS REVIEWS (ORR)

FOREWORD

1. DOE 0 425.1 establishes the requirement to conduct Operational Readiness Reviews (ORRs) or Readiness Assessments (RAs) prior to restart of an existing nuclear facility or startup of a new nuclear facility. It also establishes the responsibilities and authorities of the responsible contractor and DOE elements in the process leading to a new start or restart.

2. DOE 0 425.1 states, "DOE-STD-3006-95 provides guidance on approaches and methods approved as acceptable for implementing the requirements of this Order." This Standard describes a consistent approach to the conduct of Operational Readiness Reviews and Readiness Assessments (RAs) for new starts and restarts of DOE nuclear facilities, and provides guidance to implement the ORRs and develop Operations Office procedures to manage RAs.

3. Following the Forward, there is a start/restart summary matrix chart outlining the requirements of DOE 0 425.1 to conduct ORRs and RAs and who the startup authority should be.

TABLE 1. START/RESTART REQUIREMENTS SUMMARY

DOE-STD-3006-95

Hazard Category of facility being started	Basis for Shutdown	New Facility	DOE MGT Directed, Unplanned Shutdown	Extended* Shutdown	Facility Modifications Requiring Modification in Safety Basis	Shut down caused by operations outside Safety Basis	Other Routine Shut-downs
HAZARD CATEGORY 1	Approval Authority	S-1 (A)	Shutdown Official (C)	*6 Months SO	SO	Approval Authority (B)	OPS Office MGR (A)
	Review Type	ORR	ORR	ORR	ORR	ORR	RA (D)
HAZARD CATEGORY 2	Approval Authority	S-1 (A)	Shutdown Official (C)	*12 Months SO (A)	SO (A)	Approval Authority (B)	OPS Office MGR (A)
	Review Type	ORR	ORR	ORR	ORR	ORR	RA (D)
HAZARD CATEGORY 3	Approval Authority	SO (A)	Shutdown Official (C)	*(E) OPS Office MGR (A)	OPS Office MGR (A)	Approval Authority (B)	OPS Office MGR (A)
	Review Type	ORR	ORR	RA (D)	RA (D)	ORR	RA (D)

(A) or Designee by indicated DOE Official.
(B) Official Designated to approve safety basis which was violated.
(C) Secretarial Officer (SO) may designate other Approval Authority based on specific circumstances.
(D) RA as required by Operations Office procedures.
(E) Time as specified by Operations Office procedures.

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1.0 SCOPE

1.1 Scope. DOE 0 425.1 specifies the conditions and circumstances when an Operational Readiness Review (ORR) or a Readiness Assessment (RA) is required as part of a new start or restart process. This standard provides guidance on the planning and conduct of the Operational Readiness Reviews. This standard also provides guidance for requesting exemptions. The requirements for ORRs and RAs apply both to responsible contractors and to DOE. This standard addresses the requirements and suggests methods and approaches for both.

1.2 Purpose. The purpose of this standard is to describe acceptable methods and approaches to meet the readiness review requirements of DOE 0 425.1. Specifically, this standard describes methods and approaches to:

a. Determine the type of readiness review which is appropriate to the specific facility startup.

b. Develop the breadth and depth (scope) of the ORR or RA so as to be consistent with the history, hazards, and complexity of the facility being started up.

c. Develop the procedures and conduct an ORR or RA for a startup of a specific activity.

d. Verify that the facility is physically ready to startup.

e. Verify that the managers and operators are prepared to manage and operate the facility in the phase in which it is about to startup.

f. Verify that the necessary infrastructure (procedures, staffing, compliance with DOE Orders, rules, and other requirements, etc.) is in place.

g. Prepare requests for exemptions from the requirements of the DOE 0 425.1

The requirements in DOE 0 425.1 are only applicable to startup or restart of nuclear facilities with hazard categories 1, 2, or 3. This standard provides acceptable methods and approaches for meeting the specific requirements of that order. These may may also be useful guidance to line managers when

specifying methods and approaches for startup or restart of radiological facilities or non-nuclear facilities. DOE line managers are encouraged to consider the procedures in this standard when developing requirements and procedures for startup or restart of radiological or non-nuclear facilities.

1.3 Organization of the standard. The standard is organized to be useful to both the managers who need a summary and an overview of the Operational Readiness Review (ORR) and Readiness Assessment (RA) processes, methods, decisions, and products as well as the individuals who are responsible for the planning and conduct of the ORR or RA.

1.3.1 Scope. The section discusses the relationship of the Standard with the DOE 0 425.1 which specifies the requirements for ORRs and RAs.

1.3.2 Applicable documents. The section lists several references which are directly applicable to the methods and processes described in the standard.

1.3.3 Definitions. The section provides the meaning of the terms and statements used in the standard. The description or discussion of the terms may be expanded to be specific to the intended meaning in the standard. The usage in the standard is consistent with the usage in other DOE documents.

1.3.4 General Guidance. The section provides a sequential summary of the actions, responsibilities, decisions, and documents associated with the ORR and RA process. The section is organized in the sequence of the ORR process starting with the decision of the type of readiness review required, development of the readiness review plans, achieving readiness, and conduct and reporting of the readiness reviews. The section also contains general information which will be helpful in gaining an understanding of the principles and the expectations of the ORR or RA processes.

1.3.5 Detailed Guidance. The section provides the detailed processes and methods to plan and conduct an ORR or an RA. The section is arranged by organizational responsibilities followed by a sub-section which provide detailed descriptions of each document required as a part of the ORR or RA process. Finally, sub-section 5.10 provides specific information about the RA requirements and

expectations while sub-section 5.11 describes the requirements and expectations for alternative procedures which require an exemption from the requirements of DOE 0 425.1.

1.3.6 Appendices. The appendices contain detailed information which will be useful to the individual team members or managers to assist in the preparation of individual documents required during the ORR or RA process:

- Appendix 1 contains a discussion of utilization of the graded approach to assist in defining the scope of the readiness review.

- Appendix 2 contains a listing of the Core Requirements and the Core Objectives which form the basis for the breadth of the Plan of Action. Appendix 2 also contains a listing of programs, systems, and services which should be considered when defining the depth of the core requirements or core objectives to define the scope of the ORR or RA.

- Appendix 3 contains examples of Management Oversight and Risk Trees (MORT) which may be useful to the individuals responsible for development of the Plan of Action.

- Appendix 4 is a writers guide containing information and examples of required or recommended forms and document content. It is intended to assist team members in development of required documents and in documenting their activities and findings.

- Appendix 5 is a process flow diagram to show the sequence and responsibilities which are required at each point in the process. The process flow charts also indicate the section of the standard which describes the each step on the diagram.

2.0 APPLICABLE DOCUMENTS

2.1 Government Documents

2.1.1 DOE Orders

a. DOE 425.1

b. DOE 251.1

c. DOE 1324.5B

2.1.2 DOE Manuals and Handbooks

a. DOE M 251.1-1

b. DOE Handbook, DOE-HDBK-3012-94, "Team Leader's Guide."

2.2 Order of precedence. In the event of conflict between the text of the document and a DOE Order or Rule, the DOE Order or Rule takes precedence. This document does not supersede applicable laws and regulations unless a specified exemption has been approved by the appropriate authority.

3.0 DEFINITIONS This section provides the meaning intended for the terms and statements used in DOE 0 425.1 and this standard. The description or discussion concerning the terms may be expanded or more specific than definitions found in other DOE documents. However, use of the terms and statements in this standard will remain consistent with definitions provided in other DOE documents.

3.1 Breadth. The set of core requirements evaluated by the ORR team during conduct of the ORR.

3.2 Conclusion. A discussion of the final judgement of readiness and adequacy for a review area, which considers the positive (strengths) and negative (findings) elements.

3.3 Core Requirement: A fundamental area or topic of review evaluated during an ORR to assess whether a facility can be operated safely. The core requirements are subdivided into core objectives to facilitate definition of the breadth of readiness reviews and to facilitate development of review criteria. Core Requirements (CR) are prescribed in DOE 0 425.1. Core Requirements and Core Objectives (CO) are included in Appendix 2 of this standard.

3.4 Corrective Action Plan. A defined and documented strategy for the correction of findings, which defines the deficiency, describes the actions that will be taken, assigns responsibility for the actions, discusses how the actions will address and correct the finding, and indicates the dates by which the actions will be complete.

3.5 Criteria. Rules and tests against which the quality of performance for a core requirement can be measured. Fundamental criteria are based on DOE Orders, policies, and on other statutory requirements. Additional criteria may be based on Nuclear Regulatory Commission (NRC) regulations, Institute of Nuclear Power Operations (INPO) guides, professional codes and standards, and best industry practices.

3.6 Declaration of Readiness to Operate. See Readiness to Proceed Memorandum.

3.7 Depth. The depth of review relates to the level of analysis, documentation or action by which a particular review objective is assessed. The depth to which different review objectives assessed may vary within an individual readiness review. Depth could vary from a simple records review to a detailed assessment including review of all records, all references, and all involved individuals and physical spaces.

3.8 Directed Shutdown. An unscheduled termination of program operations or activities directed by contractor management, local DOE officials, or by DOE Headquarters.

3.9 Evaluation/Evaluate. The process to determine the significance or worth of something by careful appraisal or study.

3.10 Facility Shutdown. (1) The situation in which a reactor is taken subcritical either manually or automatically to a safe shutdown condition, or (2) the condition in which a nonreactor nuclear facility ceases program work. In a shutdown condition, a facility must still meet all applicable technical safety requirements and environmental, safety, and health requirements.

3.11 Final Report. A document prepared by the ORR team at the completion of the ORR which describes the results of the ORR. The Final Report contains the methodology used to conduct the ORR, the conclusions drawn by the ORR team, the findings identified by the ORR team, and a recommendation as to the readiness of the facility being reviewed to start program work. Section 5.9.3 provides additional details concerning the preparation and content of the ORR Final Report.

3.12 Finding. An identified deficiency. Findings may be classified by the ORR team as either prestart or post-start, as defined below.

Prestart Finding - A finding that must be corrected before an activity can be started.

Post-start Finding - A finding that must be corrected, but may be corrected after the start of the activity. Post-start findings are addressed by a corrective action plan which includes any compensatory measures taken.

3.13 Functional Areas. Discrete groups of related safety and support programs.

3.14 Graded Approach. The process by which the level of analysis, documentation, and actions necessary to comply with a requirement are commensurate with: (1) the relative importance to safety, safeguards, and security; (2) the magnitude of any hazard involved; (3) the life cycle stage of a facility; (4) the programmatic mission of a facility; (5) the particular characteristics of a facility; and, (6) any other relevant factor.

3.15 Hazard. A source of danger (e.g., material, energy source, or operation) with the potential to cause illness, injury, or death to personnel or damage to a facility or to the environment (without regard for the likelihood or credibility of accident scenarios or consequence mitigation).

3.15.1 Hazard Categories. The consequences of unmitigated releases of radioactive and/or hazardous material are evaluated as required by DOE 5480.23 [10 CFR 830.110] and classified by the following hazard categories:

a. Category 1. The hazard analysis shows the potential for significant offsite consequences.

b. Category 2. The hazard analysis shows the potential for significant onsite consequences.

c. Category 3. The hazard analysis shows the potential for only significant localized consequences, DOE 5480.23 [10 CFR 830.110].

DOE-STD-1027-92 and DOE-EM-STD-5502-94 contain additional information on methods and criteria for determination of Hazard Categories.

3.15.2 Hazard Classes. Non-nuclear facilities will be categorized as high, moderate, or low hazards based on the following:

a. High - hazards with a potential for onsite and offsite impacts to large numbers of persons or for major impacts to the environment;

b. Moderate - hazards which present considerable potential onsite impacts to people or the environment, but at most only minor offsite impacts, and;

c. Low - hazards which present minor onsite and negligible offsite impacts to people and the environment. (DOE 5481.1B)

3.16 Nonreactor Nuclear Facility. A facility in which activities or operations involve radioactive and/or fissionable materials in such form and quantity that a nuclear hazard potentially exists to the employees or the general public. Included are activities or operations that: (1) produce, process, or store radioactive liquid or solid waste, fissionable materials, or tritium; (2) conduct separations operations; (3) conduct irradiated materials inspection, fuel fabrication, decontamination, or recovery operations; (4) conduct fuel enrichment operations; or, (5) perform environmental remediation or waste management activities involving radioactive materials. Incidental use and generation of radioactive materials in a facility operation (e.g., check and calibration sources, use of radioactive sources in research and experimental and analytical laboratory activities, electron microscopes, and X-ray machines) would not ordinarily require the facility to be included in this definition. Accelerators and reactors and their operations are not included. The application of any rule to a nonreactor nuclear facility shall be applied using a graded approach.

3.17 Nuclear Facility. Nuclear facility means reactor and nonreactor nuclear facilities.

3.18 Objective Evidence. Any documented statement of fact, other physical condition information, or record (either quantitative or qualitative) pertaining to the quality of an item or activity based on observations, measurements, or tests which can be independently verified.

3.19 Objectives and Sub-objectives. Aims or goals for the readiness of a facility to start and continue to operate safely.

3.20 Operational Readiness Review. A disciplined, systematic, documented, performance-based examination of facilities, equipment, personnel, procedures, and management control systems to ensure that a facility will be operated safely within its approved safety envelope as defined by the facility safety basis. The Operational Readiness Review scope is defined based on the specifics of the facility and/or the reason for the shutdown as related to a minimum set of core requirements. A graded approach will be used in defining the depth of the Operational Readiness Review based on these core requirements.

3.21 ORR Implementation Plan. The procedural document by which the ORR is conducted. This document will implement the policy and actions approved in the ORR plan-of-action or

approved startup plan. Sections 5.4 and 5.9.2 describe the contents, preparation, and use of the ORR Implementation Plan.

3.22 ORR Plan-of-Action. The document prepared by line management which describes the breadth of the ORR and the prerequisites which must be met to start the ORR. It is the document by which line management defines what will be evaluated by the ORR. Both the Contractor and DOE will prepare a Plan-of-action which are submitted to the restart authority for approval. When the specified content, review chain, and approval level are included in another plan, such as a startup plan, it can serve as the ORR Plan-of-action for the particular new start or restart.

3.23 Planned Shutdown. A facility shutdown required to perform scheduled activities (such as programmatic or equipment adjustments, reactor refueling, maintenance, surveillance, tests, inspections, and/or safety upgrades) or for programmatic reasons unrelated to the facility's ability to operate, such as a funding shortfall, is a planned shutdown.

3.24 Process. A series of actions that achieves an end or result.

3.25 Program Manager. The Headquarters individual, or designee, appointed by and under the direction of a Secretarial Officer, who is directly involved in the operation of a facility under his or her cognizance and who holds signature authority to provide technical direction through Operations Offices to DOE contractors for these facilities.

3.26 Program Work. Work in a reactor or nonreactor nuclear facility that is accomplished to further the goals of the facility mission and/or the program for which the facility is operated. Program work is not accomplished when a facility is shutdown. Program work does not include work that would be required to maintain the facility in a safe shutdown condition, minimize radioactive material storage, or accomplish modifications and correct deficiencies required before program work can recommence.

3.27 Reactor. Unless modified by words such as containment, vessel, or core, reactor means the entire nuclear reactor facility, including the housing, equipment, and associated areas devoted to the operation and maintenance of one or more reactor cores. Any apparatus that is designed or used to

sustain nuclear chain reactions in a controlled manner, including critical and pulsed assemblies, and research, test, and power reactors, is defined as a reactor. All assemblies designed to perform subcritical experiments that could potentially reach criticality are also to be considered reactors. Critical assemblies are special nuclear devices designed and used to sustain nuclear reactions. Critical assemblies may be subject to frequent core and lattice configuration change and may be used frequently as mockups of reactor configurations.

3.28 Readiness Assessment. A review that is conducted to determine a facility's readiness to startup or restart when an Operational Readiness Review is not required or when contractor's standard procedures for startup are not judged by contractor or DOE management to provide an adequate verification of readiness.

3.29 Readiness To Proceed Memorandum (Declaration of Readiness to Operate). The formal document submitted by the contractor which certifies the conclusion that the facility is prepared to start or resume operations. The memorandum may include specific items requiring completion or resolution prior to resumption of program work. The memorandum submittal is a prerequisite to starting the DOE ORR. Upon completion of the DOE ORR and correction of identified deficiencies, the memorandum is forwarded to the startup approval authority with recommendation that startup be authorized.

3.30 Restart. The recommencement of program work. Restarts requiring an ORR can occur in operating facilities if the process to be resumed meets the requirements for an Operational Readiness Review. This can be true even if the same program work is on-going in some other portion of the operating facility.

3.31 Review Approach. A description of what the technical experts (team members) will examine and how the examination will be conducted to gather objective evidence that the criteria have been met. The review approach consists of a sampling of documents, hardware, people, and performance. These are alternatively termed Criteria and Review Approaches (CRAs) or Criteria and Review Approach Documents (CRADs).

3.32 Safety Analysis. A documented process to: (1) provide systematic identification of hazards within a given DOE operation; (2) describe and analyze the adequacy of the measures (systems, procedures, and administrative controls) taken to eliminate, control, or mitigate identified hazards; and (3) analyze and evaluate potential accidents and their associated risks.

3.33 Safety Analysis Report (SAR). That report which documents the safety analysis for a nuclear facility to ensure that the facility can be constructed, operated, maintained, shut down, and decommissioned safely and in compliance with applicable laws and regulations.

3.34 Safety Basis. The combination of information relating to the control of hazards at a nuclear facility (including design, engineering analyses, and administrative controls) upon which the Department depends for its conclusion that activities at the facility can be conducted safely.

3.35 Scope. The overall magnitude of the ORR as defined by the breadth of core requirements selected and depth of evaluation of these core requirements during conduct of the ORR.

3.36 Secretarial Officer. The senior manager within a DOE organization such as Defense Programs (DP), Environmental Restoration and Waste Management (EM), or Office of Nuclear Energy (NE) who may be an Assistant Secretary of Energy or an Office Director. The Secretarial Officer will normally have a designation of "-1" (DP-1, EM-1, NE-1).

3.37 Senior Advisor. (Sometimes identified as Senior Safety Advisors or Senior Nuclear Safety Experts). Senior individuals with significant experience in determination of operational readiness and specific technical expertise who serve as technical assistants and advisors to the ORR team leader.

3.38 Senior Operational Readiness Review Team Members. Members of the Operational Readiness Review team which include as a minimum, the Operational Readiness Review Team leader, senior nuclear safety experts, and other supervisory or advisory personnel who draft the Operational Readiness Review Implementation Plan, oversee and review the activities of other team members or materially assist the Operational Readiness Review team leader in developing the final Operational Readiness Review report.

3.39 Startup. The initial operation of a facility or process to perform program work.

3.40 Startup Notification Report. A periodic report by each responsible contractor to identify all known future nuclear facility new starts and restarts. The report will identify the facility and based on the criteria of DOE 0 425.1 specify whether an ORR or a Readiness Assessment is considered to be required. For those startups or restarts where neither an ORR or a Readiness Assessment is considered to be appropriate by the contractor line management, the method of verification of readiness should be specified and justification provided. For facilities requiring an ORR, the startup approval authority will be identified. The report is submitted to the Secretarial Officer via the Operations Office management for approval. The report should receive periodic updates in accordance with Operations Office procedures.

3.41 Startup or Restart Plan. The management plan developed by the responsible contractor and approved by DOE which describes the process and activities necessary to conduct a new start or restart of the facility. The plan is a programmatic management document which may include the provision for an ORR or Readiness Assessment. The contents of the plan will frequently contain all the information specified in the ORR plan-of-action. In those cases, if the appropriate endorsements and approvals have been obtained, the ORR plan-of-action will be unnecessary.

3.42 Unplanned Shutdown. The termination of program work at a facility for any cause, such as equipment malfunction, personal error, or on shift operator response to indications or a situation that would have had unsafe consequences without shutdown.

3.43 Unreviewed Safety Questions. This is a determination made by examining the following circumstances: (1) temporary or permanent changes in the facility as described in existing safety analyses; (2) temporary or permanent changes in the procedures as derived from existing safety analyses; and, (3) tests or experiments not described in existing safety analyses. On identification of any of the above circumstances, an Unreviewed Safety Question exists if one or more of the following conditions result: (1) the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the facility safety analyses could be increased; (2) the possibility for an accident or malfunction of a different type than any evaluated

previously in the facility safety analyses could be created; and, (3) any margin of safety as defined in the bases of the Technical Safety Requirements could be reduced.

3.44 Verification/verify. This is an activity that encompasses: (1) reviewing documented, objective evidence for adequacy as measured against established requirements, industry standards, and best practices; and, (2) interviews of personnel and/or observation of exercises or drills to determine knowledge of established policy or procedure.

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4.0 GENERAL GUIDANCE

4.1 Purpose and Coverage. It is the Department's policy that program work shall not be started or resumed in nuclear facilities until the facility has been brought to a state of readiness to safely conduct that program work and that the state of readiness to operate has been verified (DOE 0 425.1). In some circumstances, the Order requires that an Operational Readiness Review (ORR) be conducted by both DOE and the responsible contractor to provide the verification. Procedures and requirements for the ORR are described in this technical standard. This standard also provides procedures and guidance for conduct of alternative readiness reviews such as Readiness Assessments.

The Operational Readiness Review is an activity to verify that management has brought the facility to a state of readiness to commence or resume program work. The management effort may include management self-assessment activities in preparation for the ORRs. Once management concludes that readiness has been achieved, this state of readiness is independently verified by the contractor ORR and confirmed by the DOE ORR. Only then will the nuclear facility be authorized to resume program work.

There are two types of ORR, a contractor ORR and a DOE ORR. The DOE ORR is different from a properly executed contractor ORR. The DOE ORR should start with an assessment of the adequacy and accuracy of the contractor ORR. Because the contractor ORR provides the substantial basis for acceptance of readiness, the DOE ORR should include an assessment of the scope of the contractor ORR, and it should include actual verification of a sampling of contractor ORR results (e.g., verification of the conduct of operations by walk-down of procedures, observation of normal and off-normal operations or training evaluations, quizzing of personnel on training material, etc.). The DOE ORR should place significant emphasis on the effectiveness of the contractor's preparations through actual demonstrations of normal operations, abnormal events, emergency drills, etc. Additionally, the DOE ORR should assess the readiness of the responsible DOE line organization(s) to safely manage operations, and the effectiveness of coordination among organizations.

A foundation for readiness of the nuclear facility is an approved safety basis as defined in approved facility safety documentation, approved environmental documentation, a satisfactory safe working environment, and compliance with DOE Orders and requirements. The ORR team must verify that

the necessary approved requirements documentation is in place and that procedures, personnel, and equipment and systems support the approved requirements. It is not the responsibility of the ORR team to approve the foundation documentation--only verify that it is approved and that it has been implemented. Critical to a determination of the facility's compliance with DOE Orders and requirements is verification that a review of the facility's conformance to applicable DOE Orders and requirements has been performed and non-conformance issues addressed.

The breadth of the ORR will include the minimum core requirements provided in DOE 0 425.1. The depth of the evaluation of core requirements will be determined according to the situations associated with the shutdown and subsequent outage, magnitude of hazard, and level of complexity associated with the proposed facility operating mode through use of the graded approach.

This standard also contains procedures and guidance for Readiness Assessments as well as conditions and expectations for situations where exemption from Order requirements may be appropriate. Sections 5.10 and 5.11 contain specific discussions on these alternative methods for verifying readiness to commence program work.

4.2 Requirements. The following describes the sequence of events and decisions when an ORR is required as part of the startup of new nuclear facilities or restart of an existing nuclear facility. The criteria in DOE 0 425.1 define when an ORR is required as well as the approval authority for a new start or restart activity.

4.2.1 Determination of ORR Requirements. Periodically (quarterly or as required by Operations Office procedures) each responsible contractor should be required to identify all facility new start and restart activities planned for the future and propose those which will require an ORR, both DOE and responsible contractor. The responsible contractor will also propose the approval authority for each new start and restart action. For those startups or restarts that contractor management considers do not require an ORR, the method of readiness verification should be specified and justification for the proposed course of action provided. The report from the responsible contractor is known as the startup notification report.

The DOE Operations Office will review the responsible contractor's proposal and recommend approval or modification to Headquarters who will approve or, modify and approve, the contractor's proposal. Once approved by Headquarters, the contractor's proposal will be provided to the contractor for action and to appropriate internal and external oversight agencies for their information.

4.2.2 Responsible Contractor's ORR Plan-of-Action. Four to six months before the projected date for the contractor's ORR, the contractor will prepare and submit for approval the ORR plan-of-action. In the event the requirement for an ORR is identified less than four months before the estimated start, the ORR plans-of-action must be expeditiously developed, reviewed, and approved so that the ORR schedule is maintained. The plan-of-action will provide the proposed ORR breadth (Sections 5.1.7 and 5.9.1 discuss methods for breadth definition), the prerequisites for starting the ORR, ORR schedule including estimated start date and duration, the proposed ORR team leader, and any other information required by DOE 0 425.1 and information unique to the proposed ORR. The responsible contractor's submitted ORR plan-of-action will be reviewed by the Operations Office manager or designee and approved or forwarded to the designated approval authority with a recommendation for approval. A copy will be sent to the Office of Environment, Safety and Health (EH) for review and comment as well. The designated approval authority will approve the contractor's plan-of-action and return it for execution with copies to appropriate internal and external oversight organizations.

4.2.3 DOE ORR Plan-of-Action. Following receipt of the responsible contractor's plan-of-action, the Operations Office management organization will prepare the DOE ORR plan-of-action. The DOE ORR plan-of-action will include in the breadth all areas appropriate to the responsible contractor plan-of-action plus a thorough review of the DOE management organization for capability to oversee the facility operations to be started. The DOE ORR plan-of-action will include prerequisites, team leader designation, breadth of the DOE ORR (Section 5.4 and Appendices 1 through 3 provide additional details on determination of the breadth), estimated schedule and duration, and additional information required by DOE 0 425.1. The DOE ORR plan-of-action will be formally transmitted via management to the appropriate approval authority with a copy to EH for review and comment. Once approved, the DOE ORR plan-of-action is provided to appropriate oversight organizations.

4.2.4 ORR Implementation Plan (DOE and responsible contractor). The approved plan-of-action will be provided to the designated ORR team leader. The team leader will identify the necessary team membership to conduct the ORR. The team leader, with the assistance of the team, will develop the Implementation Plan. The Implementation Plan is the plan for conduct of the ORR. It will include the checklists, evaluation criteria, documentation methodology, qualification requirements for team members, etc., as necessary, to efficiently execute and report the results of the ORR. Section 5.9.2 describes the Implementation Plan in more detail.

4.2.5 Achieving Readiness. The responsible contractor line management will take action to bring the facility into a condition of readiness to start or resume operations. As a part of that activity, management self-assessment activities may be appropriate. The responsible contractor effort to achieve readiness may be conducted in accordance with a project management plan, startup plan, or other project management document.

4.2.6 Responsible Contractor ORR. Once management has determined that readiness has been achieved as described in the prerequisites specified in the approved responsible contractor ORR plan-of-action, the contractor ORR is conducted and reported in accordance with the responsible contractor ORR Implementation Plan. When prestart findings have been resolved as described in Section 5.9.4.1, the contractor will prepare and forward to the Operations Office the Readiness to Proceed Memorandum described in Section 5.9.4.

4.2.7 DOE ORR. Following receipt of the responsible contractor's Readiness to Proceed Memorandum, the Operations Office manager or designee will concur in the contractor's readiness, verify DOE management readiness, and recommend to the approval authority that the DOE ORR be conducted. At the direction of the approval authority, the DOE ORR is conducted and reported in accordance with the DOE ORR Implementation Plan. The DOE ORR includes a detailed review of the contractor's ORR plus other performance assessments in accordance with the approved scope. Following completion of the DOE ORR and resolution of prestart findings, DOE management will recommend to the approval authority that startup approval be granted.

4.3 Readiness Assessments. DOE 0 425.1 requires that a Readiness Assessment (RA) may be required whenever an ORR is not required to verify readiness to resume program work. The Order

requires the RA be conducted in accordance with Operations Office and contractor procedures which should also specify when an RA is required. The Order further states that guidance in this standard provides accepted methods and approaches for use in preparation of the Operations Office and responsible contractor's procedures. Section 5.10 discusses Readiness Assessments including provisions which should be included in the local procedures. Many principles of the ORR process apply to the RA. A well defined graded approach is important to ensure the effort is adequate to verify readiness without being excessive in terms of time or resources. It is particularly important that the individual circumstances concerning each restart be carefully considered when defining the number and details of the RA or whether an RA is required at all.

4.4 ORR Oversight. Throughout the ORR process various Headquarters, Operations Office, DOE organizations and external oversight organizations may become involved in the process. To ensure that proper liaison occurs, documentation from each step in the process must be provided to the appropriate internal and external oversight groups for information and comment. In most cases, the documentation is provided after approval by the appropriate management official. It must be stressed, however, that all information must be provided in a timely manner if all organizations are to be able to execute their responsibility without delaying critical steps in the process. Frequent liaison must occur between management at each level and oversight organizations at each level, both internal and external, to ensure that all responsibilities and commitments are fulfilled. Transmittal of DOE documents to agencies outside of DOE must follow established procedures.

4.5 General Comments.

a. The prerequisites for starting a specific ORR must be specified in the DOE and responsible contractor plans-of-action as required by DOE 0 425.1. The specifics will vary with each ORR but the basic principle is that the responsible contractor ORR shall not commence until management has determined the facility is ready to operate. The DOE ORR shall not commence until the responsible contractor has reported in writing its readiness to commence operations and until DOE management is ready to oversee the operations. The specific prerequisites identified in the plans-of-action may refer to phases of the startup process, conditions of the project management plan, specific consent or Compliance Agreements or Implementation Plan status, etc., in order to quantify the method to meet the basic principle of readiness.

b. The responsible contractor and DOE shall conduct their respective ORRs only when the approved prerequisites have been achieved. However, there may be circumstances or events, such as periodic Emergency Preparedness drills or complex system testing, when the review team may monitor the event rather than cause a similar event to occur during the period of the review. This early review is appropriate. The activity must be documented in the report of the ORR. It is also appropriate for the ORR teams to conduct pre-ORR activities necessary to gain a familiarization, understanding, and qualification necessary to prepare the ORR Implementation Plan and conduct the ORR prior to prerequisites being met.

c. ORRs shall be conducted by personnel qualified in the technical matters involved. The number of ORR team members will vary with the scope of the ORR and the size and complexity of the facility. The senior members of an ORR shall not be from offices assigned direct line management responsibility for the work being reviewed by the startup or restart authority: any exceptions require approval of the startup or restart authority. All ORR team members must have demonstrated assessment expertise in addition to technical expertise. No ORR team member shall review his or her own work or that for which they are responsible.

d. As a minimum, the DOE and responsible contractor ORR reports shall be maintained in auditable form. This should include the ORR finding closure records.

e. The contractor and DOE readiness review process must have a provision to record and retain lessons learned for future use. Lessons learned should be documented in the ORR report.

f. The process flow diagram in Appendix 5 depicts the sequence of requirements to achieve startup authorization. The diagram includes a reference to the Section(s) of the ORR standard that describe the requirements of each step or element.

4.6 Exemptions. DOE O 425.1 specifies that the exemption provisions of DOE O 251.1 and DOE M 251.1-1 are applicable. Obtaining an exemption to ORR requirements might be appropriate in those situations when a short duration, one-time activity is to be conducted for which the requirements for an ORR are not warranted. Examples of this situation include one-time, unique operations to clean out systems or components incident to D&D or short duration actions necessary to

support national commitments in unusual circumstances. The justification for exemption should be prepared by the responsible contractor and reviewed or approved by the CSO on an individual case basis in accordance with DOE M 251.1-1. The exemption request should define the process to verify readiness to start the operations and to ensure that the operation will be conducted with the degree of safety warranted by the hazards and risks of the process being conducted. The exemption request should define compensatory measures such as continual supervisory or DOE presence during operations to be taken to assure safety. The exemption request should identify the activities to be taken to assure readiness of personnel, procedures, and structures, systems, and components to safely conduct the operation. The exemption request should also specify the methods of review to verify readiness has been achieved. The justification to conduct operations under these specified conditions will be provided to EH for their independent review. When the exemption is to extend beyond the time requirements of DOE 0 425.1, section 4.a (1), the exemption request to authorize an RA in lieu of an ORR should provide justification for approval and describe the scope of the proposed Readiness Assessment to be conducted.

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5.0 DETAILED GUIDANCE

5.1 Roles and Requirements for Contractor Operational Readiness Review. Most responsible contractors have developed procedures to manage the readiness process. This section is intended to describe the recommended content and attributes of an ORR program and organization. It is anticipated that most contractors will require only minimum modifications to their procedures to achieve the intent of this standard and meet the requirements of DOE 0 425.1, Attachment 1, "Contractor Requirements Document."

5.1.1 Summary of Contractor Operational Readiness Review (ORR) Process.
The contractor ORR shall focus on the readiness of all hardware, personnel, procedures, and compliance with the applicable requirements.

a. The purpose of the contractor's ORR is to verify that nuclear facilities being started up or restarted:

- Are constructed in accordance with the approved design;
- Can be operated safely;
- Will be operated, maintained, and supported by trained and competent personnel;
- Are designed and will be operated in conformance with applicable DOE Orders and regulatory requirements;
- Will be operated so that no undue risk to employees, the public, or the environment results; and
- All of the above items are properly and adequately documented.

b. The foundation for readiness of the nuclear facility is an approved safety basis as defined in approved facility safety documentation, approved environmental documentation, a satisfactory safe working environment, and compliance with DOE Orders and requirements. The ORR must verify that necessary approved requirements documentation is in place and that procedures, personnel, equipment, and systems support the approved requirements. It is not the responsibility of the ORR to approve the foundation documentation -- only to verify that it is complete, approved, and implemented as required by core requirements of DOE 0 425.1. Critical to a determination of compliance with DOE Orders and requirements is the Order Compliance effort which encompasses

the facility being started including consent or Compliance Agreements, approved Implementation Plans, and Standards/Requirements Identification Documents (S/RIDS).

c. The contractor's ORR should provide a structured and independent appraisal of the facility's readiness to startup/restart. The ORR is a verification that line management responsible for the facility has successfully achieved a state of readiness to commence facility operations. The ORR should not be used as a management technique to achieve a state of readiness to commence facility operations.

An effective ORR process will provide assurance that these objectives are accomplished and documented. The verification of these objectives is accomplished by performance-based evaluations, which include (but are not limited to) review of documentation, field observations, interviews, observation of training evolutions, integrated system checkouts or cold run demonstrations, walkdowns of procedures, etc.

5.1.2 Responsible Contractor Startup Notification Report. Periodically as specified by Operations Office procedures (recommended to be quarterly), the responsible contractor should develop a startup notification report or change to an existing report that identifies all known facility new starts and restarts. The report will identify the facility, specify whether an ORR or a readiness assessment is required to verify readiness to commence or resume operations, and for facilities requiring an ORR recommend an approval authority. The remarks should describe the basis for the recommended actions based on the requirements in DOE 0 425.1.

5.1.3 Responsible Contractor Operational Readiness Review Plan-of-Action. For new starts and restarts requiring an ORR, the responsible contractor management should provide an ORR plan-of-action that specifies the intent to conduct an ORR and briefly describe the proposed ORR process to the DOE. The plan-of-action should clearly delineate management responsibilities, authority, and accountability for the ORR (as specified in the DOE 0 425.1) and include the following:

- o Notice of the intent to conduct an ORR;
- o Identification and description of the facility;
- o Team leader;
- o Prerequisite conditions;

- o Define the breadth of the review;
- o Estimated start date(s) of the review; and,
- o Estimated time needed to conduct the review.

Preparation, content, and approval of the ORR plan-of-action is described in Section 5.9.1. In the event that the contractor has developed a new start or restart plan that contains the elements of the plan-of-action including appropriate contractor reviews and approvals, a separate contractor plan-of-action may not be required. The startup or restart approval authority must approve this plan.

5.1.4 Responsible Contractor ORR Implementation Plan. Consistent with the breadth defined in the ORR plan-of-action and the specific facility involved, a structured review plan should be prepared and implemented that identifies all of the necessary criteria and review approaches required for the determination of readiness to safely startup and operate the specified facility. The Implementation Plan will define the ORR depth to be consistent with the breadth and conditions of the restart. If a previous ORR has been completed for the facility being reviewed, the ORR Implementation Plan and subsequent review should stress the operations that have changed since the last review as well as the effectiveness of corrective actions for any findings. The ORR Implementation Plan is described in Section 5.9.2.

5.1.5 Contractor Operational Readiness Review Team. The overall responsibility of the ORR team is to examine the aspects of the activity under review and assure themselves, management, and the DOE that the equipment, procedures, and personnel associated with the activity are ready for startup and safe operation. To ensure independence, the Operational Readiness Review teams shall not include as senior members (including team leader) individuals who are from offices assigned direct line management responsibility for the work being reviewed by the startup or restart authority: any exceptions require approval of the startup or restart authority. Additionally, no ORR team member shall review his or her own work or work for which they are directly responsible.

5.1.5.1 Contractor ORR Team Leader. This is a senior individual with the necessary qualifications for managing and conducting the ORR. The basis of the qualifications should include:

- o Technical familiarity with the activities and functional areas being reviewed;
- o Previous performance-based review experience or training;

- o Demonstrated leadership and managerial skills; and
- o Operational Readiness Review experience, or formal training.

The ORR team leader is responsible for overseeing the ORR process, including:

- o Defining ORR team membership;
- o Preparing and approving the ORR Implementation Plan;
- o Planning, coordinating and conducting the ORR;
- o Estimating the level of effort and schedule requirements;
- o Establishing ORR objectives and milestones;
- o Compiling or acquiring access to all necessary background information (e.g., description of process equipment and control measures); and,
- o Acting as the team interface with management.

A key responsibility of the team leader is selection and qualification of the team members. Each team member should have the following qualifications, as defined and verified by the team leader:

- o Technical knowledge of the area assigned for evaluation. The knowledge should include experience working in the technical area.
- o Knowledge of performance-based assessment processes and methods. This knowledge may be gained through experience as an auditor or inspector or it may be gained through training and evaluated as acceptable by the team leader.
- o Facility specific information which may be gained through a combination of required reading and facility tours and presentations.

The team leader shall ensure that the ORR records contain sufficient information to certify the qualification of team members. This information would normally be obtained through individual resumes, required reading, and training records. Appendix 4 includes an example form for use to consolidate the required information.

The extent of the team leader's responsibilities may require the individual to be formally released from other duties. The ORR team leader should be responsible for keeping management informed of the team's progress and findings.

DOE Handbook, DOE-HDBK-3012-94, "Team Leader's Preparation Guide for Operational Readiness Reviews (ORR)," has been developed to provide information useful to an ORR team leader in preparation and conduct of an ORR or Readiness Assessment. The handbook contains discussion on process for preparation and conduct of the review. It also contains a lessons learned section which is a compilation of the lessons learned from the first several years of conducting ORRs. The handbook will be a useful guide for both experienced team leaders as well as those with less experience.

5.1.5.2 ORR Team Members. The overall responsibility of the ORR team is to examine the aspects of the activity under review and to assure themselves, management, and the DOE that the equipment, procedures, and personnel associated with the activity are ready for startup and safe operation.

The ORR team may consist of plant personnel or external experts (company or contractor) who have been assembled at the request of the ORR team leader. The size and expertise of the ORR team will depend upon a number of factors including the complexity of the activity being reviewed, schedule requirements, and the scope of the review. The ORR review team shall include at least one member with qualifications (as defined in section 5.1.5.1) to assess each core requirement identified in the ORR plan-of-action.

Representatives from operations, environment and regulatory compliance, safety, engineering, technical, and quality assurance organizations associated with the activity but not directly responsible for it may be selected as team members. An individual's knowledge of the particular systems, processes, safety documentation, or facility, as well as knowledge of the ORR process should be considered.

Team members are required to conduct a broad range of tasks including (but not limited to):

- Assisting, as requested, the team leader and senior members in preparation of the Implementation Plan;
- Preparing the Implementation Plan;
- Developing acceptance criteria/performance objectives and related lines of inquiry for each review objective;
- Reviewing "as-built" drawings and other applicable procedures and documents;

- Compiling supporting documentation;
- Providing a determination that the activity complies with applicable environmental requirements and federal and state laws and regulations;
- Executing ORR criteria/performance objectives as assigned in the ORR Implementation plan or by the ORR team leadership;
- Verifying that all documentation of safety, quality, or environment issues are in place;
- Concurring with the determination of operational readiness and the conclusions presented in the ORR report in the team members area of assessment;
- Submitting completed certification documentation for review and approval;
- Preparing supporting or special reports;
- Working with other ORR team personnel to ensure timely resolution of the checklist items; and,
- Assisting, as requested, the team leader and senior members in preparation of the ORR Report.

5.1.6 Responsible Contractor Oversight Organizations. The level of participation of the responsible contractor's Oversight Organizations (e.g., Safety, Quality Assurance, Environment) in the ORR process will depend on the individual contractor's organization and the scope of ORR being performed. It is recommended that members from the contractor's Oversight Organizations participate in the readiness review process as ORR team members. If other internal reviews are essential to achieving readiness of the facility, the reviews should be completed as a prerequisite to the contractor's ORR.

5.1.7 Contractor's Determining the Scope of the ORR. The scope (breadth and depth) of the ORR should include the identification of the processes and systems, documentation, and management controls (including procedures, personnel, and programmatic functions). The functional areas to be assessed during the ORR should be identified. A graded approach can be used as part of the process used to determine the depth to which each core requirement will be reviewed. Appendix 1 of this standard contains a discussion of the graded approach.

A unique, first-of-a-kind, or complex activity should involve a review with a more extensive scope than a routine restart of an existing activity. This scope will be affected by the facility's size,

complexity and degree of independence from site support. Attention should be given to the interface between new activities and existing functions.

The contractor ORR plan-of-action described in Section 5.9.1 will specify the breadth of the ORR. The ORR Implementation Plan should specify the scope including the breadth and depth.

5.1.8 ORR Evaluations. The ORR team should conduct performance-based assessments that include observing and documenting the responses of operating and support services personnel to normal and off-normal events as demonstrated by drills, preoperational tests and exercises. In addition, field assessments should be conducted to verify that field configurations match the applicable supporting documentation. The ORR team should also conduct interviews with personnel, including management, to evaluate their readiness to conduct operations. The ORR Implementation Plan will guide the evaluations.

The ORR evaluations should place particular emphasis on structures, systems, and components that are safety related (relevant to public and worker safety and health) or of particular importance to the safety of the planned operation of the activity. The results of these evaluations shall be included in the ORR report.

DOE Operations Office or Area/Site Office personnel will be required to observe and evaluate the responsible contractor ORR process. It is therefore important that the ORR process be open and defined to permit the DOE Oversight. Team meetings should be informative both for the benefit of the team as well as DOE oversight. Interviews and record reviews as well as evolutions and drills should be scheduled in a manner to support openness. The ORR team leader should coordinate with DOE Oversight personnel to facilitate their responsibility to observe and evaluate the contractor ORR.

Documentation of the methodology, criteria, and results of the responsible contractor ORR assessment is important to the credibility of the review and the foundation for the follow-on DOE ORR. The value of the review will in large part depend on the record of the ORR to be persuasive that it was thorough in execution as well as adequate in scope (breadth and depth). Section 5.5 and Appendix 4 of this standard provide additional information on recording the results of the ORR.

5.1.9 ORR Final Report. An ORR Final Report shall be prepared. The Report should contain a brief summary of the review activities, the conclusions reached, the basis for those conclusions, and the findings identified. The ORR Final Report may also identify observations that would not impact startup, restart or shutdown but, if corrected, could lead to excellence in operations. The ORR Final Report shall make a conclusion as to whether startup or restart of the facility can proceed safely. In addition, there shall be a statement in the ORR Final Report as to whether all identified non-compliances or schedules for gaining compliance with applicable DOE Orders, directives, and Standards/Requirements Identification Documents have been identified in writing; have been formally approved; and, in the opinion of the Operational Readiness Review team maintain adequate protection of the public health and safety, worker safety, or the environment.

The ORR Final Report should include a section describing the lessons learned during the ORR, including a discussion of both the process and the technical issues identified. Section 5.8 of this standard further discusses lessons learned.

The ORR Final Report should include a section that provides the ORR team members the opportunity to discuss differing professional opinions, non-judgmental general comments, and observations. The ORR Final Report is described in more detail in Section 5.9.3.

5.1.10 Contractor Declaration of Readiness to Proceed. Once the contractor ORR process has been completed, the contractor should develop an action plan which provides the methodology and the schedule for resolution of the findings from the ORR. Prior to forwarding the Readiness to Proceed Memorandum to DOE, the prestart findings shall be resolved and the action plan, including schedule of completion for the remaining findings, should be prepared. DOE will not begin the DOE ORR until the contractor's Readiness to Proceed Memorandum has been received and accepted. Once the DOE ORR process has been completed and all DOE findings and comments are satisfactorily resolved, formal approval to start the facility will be granted in accordance with the requirements approved in the ORR plan-of-action. The Readiness to Proceed Memorandum is described in more detail in Section 5.9.4.

5.2 Roles and responsibilities for the DOE Field Activities including Area Offices and Operations Offices. The following items are a compilation of the responsibilities of the Operations and Area

Offices in the execution of the new start and the restart readiness review process. Each action or responsibility is described in more detail elsewhere in this standard or in DOE 0 425.1. The purpose of this section is to collect the applicable requirements in one place. The unique circumstances of the individual situation will determine the specific applicability of any individual requirement.

5.2.1 DOE Prepares Implementing Procedures. Prepare implementing procedures as necessary to carry out the requirements of the readiness review process (both ORR and RA) in accordance with the requirements of DOE 0 425.1 and the guidance of this standard. In those cases where the Operations Office manager intends to delegate the decision authority for specific actions or individual circumstances, that delegation should be specified in the implementing procedures to be provided by formal letter or memorandum.

5.2.2 DOE Response to Contractor's ORR Startup Notification Report. DOE Operations Office management should review and forward the report to the Secretarial Officer via Headquarters management. The forwarding endorsement should recommend approval or changes to be included prior to approval.

5.2.3 DOE Review and Approval of Contractor's ORR Plan-of-Action. Review and approve, or review and forward for approval, the responsible contractor's ORR plan-of-action.

5.2.4 DOE Prepares the ORR Plan-of-Action. Prepare the ORR plan-of-action for each nuclear facility new start and restart for which an ORR is required. The responsible contractor's ORR plan-of-action or the approved restart plan (when utilized) should provide the starting point for the DOE ORR plan-of-action.

5.2.5 DOE ORR Preparation Support. Support preparation of the DOE ORR in accordance with the provisions of the ORR plan-of-action. If the ORR team leader is from the Operations or Area Office, support the preparation and planning for the ORR including preparation of the DOE's ORR Implementation Plan. Provide support for conduct of DOE ORRs.

5.2.6 DOE Oversight of Contractor Activities. Provide day-to-day oversight of the responsible contractor's activities to achieve and verify readiness to conduct operations including review of the

contractor ORR report and prestart finding closure plans and closure documentation. Through this day-to-day oversight, the Operations Office management will be able to provide knowledgeable recommendations concerning responsible contractor's actions and proposals.

5.2.7 DOE ORR Support. Support the DOE ORR evaluation of Operations Office and Area Office programs and personnel as required by the approved DOE ORR plan-of-action and DOE ORR Implementation Plan.

5.2.8 DOE Review of Contractor's Readiness to Proceed Memorandum. Review and take appropriate action on the responsible contractor's Readiness to Proceed Memorandum. If the Operations Office manager is the approval authority, he or she grants authority to conduct the DOE ORR. For other new starts and restart, when satisfied of the readiness of the facility and the readiness of the Operations Office management personnel and procedures to oversee contractor activity, the Readiness to Proceed Memorandum is forwarded to Headquarters recommending the DOE ORR be started.

5.2.9 DOE Concurrence Process. When the DOE ORR is complete and all prestart findings are closed, concur in the status of prestart findings and recommend to the appropriate decision official that start of operations be authorized. In the cases when the Operations Office manager has been designated as the approval authority, he or she will authorize restart and inform the Secretarial Officer.

5.2.10 DOE Prestart Findings Closure Process. Evaluate the responsible contractor's prestart finding closure process and verify closure of DOE ORR prestart findings as designated by the startup or restart authority. To verify closure, support may be requested from the DOE ORR team leader or members but remains a management responsibility.

5.2.11 DOE Informs the Contractor of Authorization to Start Operations. Inform the responsible contractor when authorization to start operations has been granted by the approval authority designated in the ORR plan-of-action.

5.3 Roles and responsibilities for DOE Headquarters. This section is divided into two parts. The first (5.3.1) describes the roles and responsibilities of DOE Headquarters Line Management personnel. The second part (5.3.2) describes the roles and responsibilities of the DOE Headquarters Independent Oversight personnel (Office of Environment, Safety, and Health). The second part also describes the conflict resolution process by which comments developed by the independent oversight organization (EH) are resolved. One key purpose for the structured conflict resolution process is to insure that resumptions are not delayed due to unresolved differences of opinion between line management and EH.

5.3.1 Headquarters DOE Management. The following items are a summary of the responsibilities of the Secretarial Officer. The specific items are further defined in other sections of this standard or in DOE 0 425.1. The summary provides a listing which responsible managers can use to verify that all necessary steps and decisions have been considered.

5.3.1.1 Obtain Secretary of Energy Approval. The Secretarial Officer must gain S-1 approval in the following situations for startup or restarts of nuclear facilities when S-1 is the approval authority.

5.3.1.2 Implementing Procedures. Prepare implementing procedures as necessary to carry out the requirements of the readiness review process in accordance with the requirements of DOE 0 425.1 and the principles of this standard. In those cases where the Secretarial Officer intends to delegate the approval responsibility for specific actions or individual circumstances, the delegation should be specified in the implementing procedures to be provided by formal letter or memorandum.

5.3.1.3 Approve Responsible Contractors Startup Notification Report. This report should be received periodically from each responsible contractor with recommended actions by the Operations Office manager. DOE Headquarters management should receive and approve it, or approve with modifications. Copies of the approved report are returned to the responsible contractor via the Operations Office with additional copies sent to all interested internal and external oversight organizations.

5.3.1.4 Approve the ORR Plan-of-Action. Each new start or restart will require both a contractor and DOE ORR plan-of-action. Since each new start or restart is unique, the plan-of-

action specifies the details of the new start or restart process based on the specific circumstances and in accordance with DOE 0 425.1. The approval authority is designated in the Startup Notification Report.

5.3.1.5 Distribute ORR Plan-of-Action. The approved ORR plans-of-action are the basis for ORR activity in the restart or startup process. It must therefore be distributed to all interested individuals and organizations.

5.3.1.6 DOE ORR Preparation Support. Support preparation of the DOE ORR in accordance with the provisions of the ORR plan-of-action. If the ORR team leader is from Headquarters, support the preparation and planning for the ORR including preparation of the DOE ORR Implementation Plan. Provide support for conduct of the DOE ORR.

5.3.1.7 Authorize Start of DOE ORR. The designated approval authority will review the responsible contractor's Readiness to Proceed Memorandum and contractor ORR report, including the Operations Office endorsements and if acceptable, grant approval to commence the DOE ORR.

5.3.1.8 DOE ORR Support. Support the DOE ORR evaluation of Headquarter's programs and personnel as required by the approved DOE ORR plan-of-action and DOE ORR Implementation Plan.

5.3.1.9 Grant Approval to Start or Restart Operations. The designated approval authority will review the results of the responsible contractor's and DOE ORRs and when satisfied that all prestart findings have been resolved, grant permission to start or resume operations.

5.3.1.10 Keep Responsible Parties and Organizations Informed. Throughout the process, it may be necessary to provide copies of plans and reports or briefings to appropriate organizations. The Secretarial Officer planning for each specific restart or startup must evaluate these needs and requirements and ensure they are properly executed.

5.3.1.11 Management Self-Assessment. Conduct management self-assessment of the ORR process as required by DOE 5700.6C

5.3.2 Independent Oversight Organizations. DOE 0 425.1, Section 5.c specifically indicates that DOE independent oversight of the Operational Readiness Review and Readiness Assessment process is the responsibility of the Office of Environment, Safety and Health. To assure that the startups and restarts of DOE nuclear facilities proceed in a timely fashion it is incumbent upon the contractors, Operations Office Managers, and Secretarial Officers to assure that the Office of Environment, Safety and Health is provided with appropriate documentation to review throughout the process. It is also incumbent upon the Office of Environment, Safety and Health to provide comments to these organizations in a timely fashion to assure that their concerns are addressed with minimal impact on the startup and restart schedule.

The following procedures are provided to permit timely and decisive DOE independent oversight for startups and restarts of DOE nuclear facilities:

(1) A DOE Dispute Resolution Team will be established prior to the preparation of the formal plan-of-action. The Dispute Resolution Team will consist of three (3) DOE senior management members. One member will be selected by the line organization; one member will be selected by the Office of Environment, Safety and Health; and one member will be selected based on agreement between both organizations. This Team will resolve any concerns raised by team members or the Office of Environment, Safety and Health related to the startup or restart of DOE nuclear facilities.

(2) At any point in the startup or restart process (particularly at the decision gates identified below), environmental, safety, or health concerns identified to management or the ORR team but which are not being adequately addressed, may be brought to the DOE Dispute Resolution team.

If resolution is not obtained from the DOE Dispute Resolution team or if the team member of the Office of Environment, Safety and Health determines that the resolution is still unsatisfactory, then the Secretarial Officer and the Assistant Secretary for Environment, Safety and Health will be briefed and attempt to resolve the concern. If resolution at this level is not obtained, then the matter will be referred to the Deputy or Under Secretary for resolution.

(3) The first decision gate in the startup or restart process shall be prior to the approval of the plans-of-actions by the startup or restart approval authority. Having been provided the plans-of-action for

review and comment, the Office of Environment, Safety and Health will review the plans-of-action and provide their comments to management. Management will indicate to the Office of Environment, Safety and Health how these comments are to be resolved and identify any comments which will not be addressed. If the Office of Environment, Safety and Health determines that their comments are not adequately resolved, they may enter the dispute resolution process identified in item (2) above.

(4) The second decision gate in the startup or restart process shall be after the preparation and approval of the ORR Implementation Plan by the team leader. Having been provided the ORR Implementation Plan for review and comment, the Office of Environment, Safety and Health will review the Plan and provide their comments to the team leader. The team leader will indicate to the Office of Environment, Safety and Health how these comments are to be resolved and identify any comments which will not be addressed. If the Office of Environment, Safety and Health determines that their comments are not adequately resolved, they may enter the dispute resolution process identified in item (2) above.

(5) Any environmental, safety, or health concerns discovered by the Office of Environment, Safety and Health during their oversight of the contractor's conduct of their Operational Readiness Review will be brought to the immediate attention of the DOE management for resolution.

(6) The third decision gate shall be prior to the initiation of the DOE ORR but after the contractor and DOE management, up to the approval authority, have documented in writing their readiness to start operations. At this point any remaining environmental, safety, or health concerns that the Office of Environment, Safety and Health has concerning startup or restart activities which have transpired since the approval of the Implementation Plan will be provided to the DOE management for resolution. The team leader will indicate to the Office of Environment, Safety and Health how these concerns are to be resolved and identify any concerns which will not be addressed. If the Office of Environment, Safety and Health determines that their concerns are not adequately resolved, they may enter the dispute resolution process identified in item (2) above.

(7) Any environmental, safety, or health concerns discovered by the Office of Environment, Safety and Health during their oversight of DOE's ORR will be brought to the immediate attention of the DOE ORR team leader for resolution.

(8) The final decision gate is prior to the approval authority giving authorization for the facility to startup or restart following the submittal of the final Operational Readiness Review Report by the team leader containing the DOE ORR team recommendations. Having been provided the ORR final report for review and comment, the Office of Environment, Safety and Health will review the final report and provide their comments/concerns to the approval authority. These may include any remaining environmental, safety, or health concerns that the Office of Environment, Safety and Health has concerning startup or restart activities which have transpired since the previous decision gate. The approval authority will indicate to the Office of Environment, Safety and Health how these comments or concerns are to be resolved and identify any comments or concerns which will not be addressed. If the Office of Environment, Safety and Health determines that their comments or concerns are not adequately resolved, they may enter the dispute resolution process identified in item (2) above.

(9) The Office of Environment, Safety and Health in its role as providing independent oversight to the Department, may, at any time in the process, provide a dissenting opinion to the Secretary if any significant safety concern is deemed to exist that is not being acted upon by management.

5.4 Organizing for and Conducting the Department of Energy ORR.

5.4.1 Purpose. To provide guidance on the actions to be taken to form a DOE ORR team, develop the Implementation Plan, conduct and report the results of the review.

5.4.2 Formation of the Team. Each ORR will be conducted by a multi-disciplined team of experts, including individuals knowledgeable in public and worker safety and health, and environmental protection. Team members will be individually chosen by the ORR team leader to ensure that collectively their backgrounds will include the important facets of operations to be reviewed. The experts will also be chosen to ensure the ORR team covers all functional areas required by the ORR breadth defined in the ORR plan-of-action. The number of members is determined by the scope of the ORR and the size and complexity of the facility.

Each team member must have the following qualifications verified by the team leader:

- o Technical knowledge of the area assigned to evaluate. The knowledge should include experience working in the technical area.
- o Knowledge of evaluation processes and methods. This knowledge may be gained through experience as an auditor or inspector or it may be gained through training evaluated as acceptable to the team leader.
- o Facility specific information which may be gained through a combination of required reading and facility tours and presentations.

The team leader must ensure the ORR records contain the information to certify the qualification of team members. This information would nominally be obtained through individual resumes, required reading records, and training records. Appendix 4 includes an example form for use to consolidate the required information.

5.4.3 Responsibilities.

a. As one element of the DOE ORR plan-of-action, the Secretarial Officer or Operations Office manager (or designee) will nominate a qualified team leader who should be a senior DOE employee with adequate experience and knowledge to effectively lead the evaluation of the facility. The appointment of the team leader will be approved as part of the DOE ORR plan-of-action.

b. The ORR team leader is designated in the approved DOE ORR plan-of-action. The team leader is responsible for the independent management and execution of all aspects of the DOE ORR. Section 5.4.4 discusses specific requirements.

c. Senior Members/Advisors - The ORR senior members/advisors, when required, are responsible for: providing assistance to the team leader in the exercise of his or her responsibilities; providing guidance to the team members; identifying the issues to be addressed during the ORR; approving the criteria and review approaches to be used by the team members; and assisting the ORR team leader in writing the final report. Senior advisors are Senior members of the ORR team and therefore must meet the requisite independence criterion for senior members. Requirements for and the number of senior advisors should be included in the ORR plan-of-action. Not all ORRs require senior advisors.

d. Operational Readiness Review Team Members - The team members are responsible for assessing the adequacy of readiness by conducting reviews in selected areas important to the safe resumption of operations. The team members will assist the team leader and senior members in defining the depth of review in their assigned areas; documenting the criteria and review approach for their assigned area, subject to approval by the senior advisors and the team leader; attending team meetings to coordinate activities with other team members; documenting their own activities, findings, and conclusions in a manner to be specified by the team leader and the senior advisors; and concurring in ORR Final Report (any differing opinions will be attached to the report in writing).

5.4.4 Team Leader Responsibilities. Key team leader actions are summarized as follows:

a. Select ORR team members to conduct the ORR. The information in the ORR plan-of-action will guide the team leader to define the areas requiring inclusion and the number of team members needed. Team member qualifications must be evaluated and verified by the team leader.

b. Prepare the ORR Implementation Plan in accordance with the scope (breadth and depth) defined in the ORR plan-of-action. Section 5.9.2 and Appendices 1 through 3 provide additional information on the development of the Implementation Plan. ORR team members and senior members will assist in development of the Implementation Plan.

c. Prepare for conduct of DOE ORR. DOE Handbook, DOE-HDBK-3012-94, "Team Leader's Preparation Guide for Operational Readiness Reviews (ORR)," has been developed to provide information useful to an ORR team leader in preparation and conduct of an ORR or Readiness Assessment. The handbook contains discussion on process for preparation and conduct of the review. It also contains a lessons learned section which is a compilation of the lessons learned from the first several years of conducting ORRs. The handbook will be a useful guide for both experienced team leaders as well as those with less experience.

d. Manage the ORR in accordance with the Implementation Plan and information in DOE 0 425.1 and this standard.

e. Manage the preparation and promulgation of the ORR Final Report. Section 5.9.3 discusses this report.

f. Remain available to participate, as required, by management in the closure verification of the ORR findings.

5.4.5 Criteria and Review Approaches. The reviews conducted by each ORR team will be guided by Criteria and Review Approaches (CRAs) defined in the ORR Implementation Plan. The CRAs should be grouped into functional areas. The selection of functional areas and the specific groupings will be at the discretion of the ORR team leader. The selections should be based on the scope of the ORR and the expertise of the team members.

Appendix 4 provides examples which can be used in developing the specific CRAs for the specific ORR. The ORR plan-of-action breadth determination will have provided the required core requirements. The ORR Implementation Plan will define the CRAs for the evaluation of the core requirements.

5.4.6 Conduct of the DOE Operational Readiness Review. After receiving and accepting a Readiness to Proceed Memorandum and when authorized by the approval authority, the onsite portion of the ORR will begin. The ORR team will use the inspection criteria and review approaches defined in the ORR Implementation Plan. The ORR team members will assess whether the criteria assigned to them for review have been met. The senior members will actively participate in the reviews performed by the team members and assist the team leader in providing oversight of the ORR.

Each DOE ORR will consist of systematic reviews of readiness activities as defined by the inspection criteria and review approaches to assess whether operations could be conducted safely if allowed to start or resume. In most cases, the systematic review should start with the record of the contractor ORR. In addition, the ORR team will evaluate the operators' performance in conducting ongoing activities, such as equipment operability checks and dry runs, and the simulated operations requested by the team leader. In many cases, it will be appropriate to observe an exercise of the operational personnel in unusual or upset conditions and the related abnormal or emergency responses.

The foundation for readiness of the nuclear facility is an approved safety basis as defined in approved facility safety documentation, approved environmental documentation, satisfactory safe working environment, and compliance with DOE Orders and requirements. The ORR must verify that the necessary approved requirements documentation is in place and that procedures, personnel, and equipment and systems support the approved requirements. It is not a requirement that the ORR process approve the foundation documentation--only that it verify it is complete, approved, and implemented as required by core requirement 4 of DOE 0 425.1. Critical to a determination of the compliance with DOE Orders and requirements is the Order Compliance program or process which encompasses the facility being started, including consent and Compliance Agreements and approved Implementation Plans.

The DOE ORR should include assessment of the technical and managerial qualifications of those in the DOE field organization who have been assigned responsibilities for direction and guidance to the contractor, including the Facility Representative. A similar review should be made of the qualifications of contractor personnel responsible for facility operations.

In most cases, a key element of the DOE ORR will be a detailed review of the methods and results of the contractor's ORR. The results, including corrective actions, should be assessed for adequacy and effectiveness. The DOE ORR should conduct additional selected detailed assessments to verify the findings of the contractor ORR as well as review areas that the record of the contractor ORR indicates had not received adequate review in either breadth or depth.

During the DOE ORR, the documentation of review findings and the assembly of objective evidence of operational readiness will be the responsibility of individual team members in accordance with specific direction given by the team leader and the senior members. Each team member's review activity, as well as findings, should be documented on standard ORR Assessment and ORR Deficiency Forms (see Forms 1 and 2 in Appendix 4).

During the course of the DOE ORR, it is important that a close dialogue between the facility management and the ORR team leadership be maintained. As part of the dialogue, preliminary or draft deficiency identifications may be provided to management to ensure a full understanding of all issues, and to permit presentation of additional information. A daily meeting between facility

management and ORR leadership is suggested during the onsite portion of the ORR. Such identification of deficiencies to facility management is only to be done to ensure full understanding of pertinent issues and information. Deficiencies resulting in findings found at any point in the ORR are to be included in the ORR Final Report and formally addressed for resolution and closure regardless of any interim actions which may be taken by line management to address such deficiencies.

At the end of the onsite portion of the DOE ORR, the team members will complete their evaluation of the operational readiness of the facility and their findings will be submitted to the team leader and senior members. The senior members will review the team members' findings and assist the team leader in developing a recommendation regarding the readiness to safely start or resume program work in the facility. A report will be prepared by the ORR team to document the results of the ORR and provide justification for the team's conclusion as to whether startup or restart of the facility can proceed safely. The report will also identify any open findings including those that must be resolved prior to resumption of operations.

There shall be a statement in each ORR final report as to whether all identified non-conformances or schedules for gaining compliance with applicable DOE Orders, directives, and Standards/Requirements Identification Documents within the scope of the ORR have been justified in writing, have been formally approved, and in the opinion of the ORR team maintain adequate protection of the public health and safety, worker safety, or the environment. The conclusion will be based on:

(a) Review of the program to document conformance with applicable DOE requirements, including a process to address new requirements. This type of program may be a compliance review program, safety basis development program, or any other appropriate program documenting conformance with applicable requirements.

(b) Extensive use of references to DOE requirements in the ORR documentation.

Team members will be asked to concur in the DOE ORR Final Report. Any dissenting opinions will be documented and attached to the report. The ORR Final Report will be transmitted by the team

leader to the approval authority as designated in the ORR plans-of-action. In most instances, the ORR Final Report will be forwarded in support of the Readiness to Proceed Memorandum.

The team will also prepare a lessons learned report concerning the ORR and the ORR process. The lessons learned may be part of the ORR Final Report but must be in a format to stand alone for use by other ORR teams and team leaders. Through these lessons learned continuous improvement of the ORR process will be achieved.

5.5 Documentation of the ORR Results (Both Responsible Contractor and DOE). The validity of, and the ability to defend, the results of an ORR will depend in large part on the thoroughness with which the process and the observations are documented. The record of the ORR must be clear as to what was evaluated and the methodology used during the evaluation. The criteria in the Implementation Plan are the "what." The record must clearly record the "how" that leads to the conclusions reached concerning the particular criteria. The Implementation Plan will specify a standardized method to record the assessment process for each criteria including what was inspected, what records were reviewed, who was interviewed, and what procedures were observed. Form 1 (see Appendix 4) is a sample Assessment Form which can be utilized to describe the steps in the criteria evaluation process.

The Implementation Plan will also provide a standardized method to identify deficiencies to the requirements identified within the criteria. Each deficiency, commonly called a "finding" must be clearly described. The finding must describe what is deficient, the reference to which it is deficient, and be written in a manner permitting correction. Prior to being published, each finding should be identified as to whether or not, in the opinion of the ORR team leadership, it must be resolved as a prerequisite to start of operations. It may also be appropriate to identify the level of management (i.e. contractor, DOE Field, or DOE HQ) at which the finding should be closed. While the ORR team may assist management in reviewing the action taken on a finding, responsibility for closure should reside with line management . The Implementation Plan should describe the closure process and include the form of the closure documentation. Form 2 (see Appendix 4) is a sample Deficiency Form which may be specified to identify findings. Form 3 (see Appendix 4) may be specified as the required documentation to describe corrective action and close the finding.

The Final Report of the ORR should include as appendices or attachments the individual criteria, assessment documentation as to how the criteria were evaluated, and findings documentation. Conclusions, a summary of the findings, and the process used will be described in the body of the ORR report. See Section 5.9.3 for additional detailed information for development of the ORR Report.

The final report of the contractor's ORR should be an enclosure to the Readiness to Proceed Memorandum from the contractor. That report will indicate the status of resolution of prestart findings and a corrective action plan for post-start findings. The DOE ORR Final Report should be part of the endorsement to the Readiness to Proceed Memorandum which indicates that the conclusions reached by the DOE ORR support the recommendation in the endorsement.

5.6 Deleted.

5.7 ORR Follow-Up. The completion of the ORR and the finalizing of the report are not the end of the ORR process, nor the team's involvement in that process. Several actions will require the participation of the team leader, as well as team members. The team leader should notify all team members of future involvement concerning close-out briefings, interpretation (and possible justification) of findings, review of corrective action plans for adequacy, and review of final closure actions.

5.7.1 Post-ORR Presentations. The team leader must coordinate any follow-up meetings, which include closeout meetings with the facility's management, debriefings of the team, and presentation of the report to upper management (responsible contractor, and DOE). The team leader may be required by the Secretarial Officer (or other appointing authority) to present the team report to upper DOE management, and discuss the contractor corrective action plans. Presentations may be required to internal or external interested groups as well. In addition, it may be appropriate for the team leader to indicate a recommended organization to verify proper closure of individual prestart findings.

5.7.2 Corrective Action Plans. The contractor and DOE must prepare corrective action plans for the correction of all findings assigned to each element. Except as noted, these requirements apply to

both the Contractor and DOE ORR findings. The action plan should be discussed in the closeout meeting and should contain the following elements:

a. The finding, as written in the report submitted by the ORR team, and whether the finding is a prestart or post-start finding.

b. A detailed proposed action plan for addressing the deficiencies identified in that finding. The proposed action plan should provide evaluation of any overall programmatic deficiencies or root causes related to a specific finding which may lead to further similar occurrences and include actions addressing such deficiencies or root causes. For prestart findings in the DOE ORR, DOE must approve the contractor's proposed corrective action plan.

c. The proposed dates by which the action elements will be completed. If the corrective actions for a finding are phased, then the dates for each phase should be detailed.

d. If it is a post-start finding, a description of the risks and mitigating actions, if any, to be taken during the interim which will reduce the risks associated with the finding to an acceptable level before final correction. Include justification that the activity can proceed with acceptable risk. DOE line management shall verify that the corrective action plan has been entered into the appropriate quality program issue management system.

5.7.3 Action Tracking/Closure Methodology. Monitoring and verification of satisfactory closure of prestart findings from both the Contractor and DOE ORRs is a management responsibility. The ORR team leader and team members may be required to assist in the verification or adequate resolution of prestart findings. DOE 0 425.1 defines elements of the required process to close ORR prestart findings. This is accomplished by development of a closure package that is reviewed and certified by the facility management and further reviewed by DOE management for findings from the DOE ORR. These procedures should be documented either in a facility wide requirement or within the individual ORR Implementation Plan. Closure packages should contain the following information:

a. The finding, written verbatim from the original report, and identifying the finding as a prestart or post-start finding.

b. The actions proposed in the action plan developed, submitted, and approved with the original completion schedule.

c. A brief description of the actual corrective actions taken and reasons for concluding that closure has been achieved and how referenced documents support closure. The referenced documents or excerpted objective evidence from these documents illustrating the corrective actions, and the dates of the actions should also be included, consistent with the auditability requirements of section d.

d. Signatures of appropriate facility management, as defined by the site procedures or within the ORR Implementation Plan. A draft closure form is provided as Form 3, ORR Finding Resolution Form, in Appendix 4.

e. DOE Verification (DOE ORR prestart findings as a minimum).

5.7.4 Follow-up Reviews/Visits. In some cases, the DOE or responsible contractor management may require that closure packages include a post-review and verification of closure of the finding by the team leader or team members appointed by the team leader. These reviews will be documented, and such documentation maintained with the closure documentation. The evaluation of the adequacy of the corrective actions should not be substituted for management responsibility to verify satisfactory closure for prestart findings.

5.8 Lessons Learned. All ORR reports must contain a section concerning lessons learned and should be used by both contractor and DOE to improve the ORR process. These lessons learned provide information concerning problems encountered by the review team, adequacies or inadequacies concerning the review, design and implementation, expertise, or any other relevant factors or information that may be used by future review teams.

A mechanism to ensure that these lessons are transmitted to future review teams and incorporated into the design and implementation of future reviews must be implemented. The Secretarial Officer readiness review policy should provide direction as to who is responsible to track such lessons and transmit them to those who will design and conduct future reviews. This person or organization should provide lessons learned to both the DOE and contractor organizations, as applicable to those

organizations. Many of the lessons learned have been included in the "Team Leader's Preparation Guide for Operational Readiness Reviews (ORR)," DOE-HDBK-3012-94.

The ORR process may also identify lessons learned which are applicable to similar facilities. Lessons learned in areas such as operations, procedures, design or documentation may be identified. The ORR team should include these lessons learned in the report as well. Facility management or DOE management is then responsible for promulgation of these lessons learned in accordance with established procedures for lessons learned. The ORR Report may be issued prior to completion of the writing of the lessons learned section in order that distributing the report might not be delayed. However, each ORR report must ultimately contain a lessons learned section as required by DOE 0 425.1.

5.9 ORR Process Deliverables. The ORR process deliverables are the ORR plans-of-action, the ORR Implementation Plans, the ORR report, and the Readiness to Proceed Memorandum.

5.9.1 ORR Plan-of-action.

5.9.1.1 General considerations. The responsible contractor and DOE each prepare an ORR plan-of-action. The ORR Plan-of-action is the document, prepared by line management which describes the breadth and the prerequisites of the ORR. The Plan-of-action is the document in which line management describes what will be evaluated by the ORR, based on the extent of the activities involved in the resumption or startup. Through the process of the ORR plan-of-action, the proper authority within the Department of Energy concurs with or approves the planning for the ORR process. The ORR process is then conducted in accordance with the approved elements of the plan-of-action. Once approved, the ORR plans-of-action are distributed to responsible or interested groups within and outside the DOE. Distribution outside of DOE should be in accordance with Department procedures.

The ORR plans-of-action are forwarded via management to the designated approval authority for the particular restart or new start. A copy of the proposed plan-of-action will be provided to EH for review and comment in accordance with Section 5.3.2. The approval authority will approve the plans-of-action for the contractor and DOE ORRs.

The amount of detail in each ORR plan-of-action will vary with the complexity of the facility and the situation. As a rule of thumb, the level of detail must be adequate to justify to a skeptical reviewer the decisions being proposed. The detail must be adequate for preparers, reviewers, and the approver to defend the decisions being made.

The DOE ORR plan-of-action is prepared by the Area Office, Operations Office, or Headquarters facility management. The responsible contractor recommended ORR plan-of-action or approved project startup plan will provide a starting point for the DOE ORR plan-of-action.

5.9.1.2 Elements of the ORR Plan-of-Action. Each ORR plan-of-action will contain the following elements. Except where noted otherwise, the following elements apply to both the contractor and DOE ORR plans-of-action. Where the information is identical, it is expected that the DOE plan-of-action will be identical to the contractor document.

5.9.1.2.1 Name of the Facility Being Started. The name must be specific to what is to be evaluated and started. For example, if a single process within a building is to be restarted, the facility name would be the process name. On the other hand if the process encompasses several buildings and an area, the name would be the encompassing process name.

5.9.1.2.1.1 Description of Facility. This includes buildings, systems, and processes included within the startup authority. The description may be instrumental in defining the ORR scope. For example, if most support functions and procedures are outside the boundary of the facility being started up, the ORR scope would focus on interfaces with existing programs.

5.9.1.2.1.2 Identification of the Responsible Contractor. This is the contractor who will certify readiness of the facility to operate. It is normally the contractor who submits the responsible contractor ORR plan-of-action.

5.9.1.2.2 Designation of Action as a New Start or Restart. This is the identification as to whether the facility is being started for the first time or being restarted. It is reasonable that a new process within an existing building would be a new startup. Resumption of a process after an extended period of no operation would most reasonably be a restart.

5.9.1.2.2.1 New Start Discussion. The following elements or details of the facility should be included to support or create the basis for the recommended decisions:

- o Hazard categorization for new facility and basis for the designation (criticality, explosive, chemical, environmental, etc); and
- o Acquisition costs for new facility or process.

5.9.1.2.2.2 Restart Discussion . If the action is a restart of an existing facility or process, the following information should be provided to support the follow on decisions:

- o Hazard categorization of the facility once restarted and basis for determination (criticality, explosive, chemical, environmental, etc.). In the event that no formal hazard categorization has been made, a discussion of the relative hazard is appropriate;
- o Cause for shutdown;
- o Duration of shutdown;
- o Repairs accomplished during shutdown period;
- o Modifications accomplished during shutdown period and affect of the approved safety basis; and,
- o Any anticipated process changes following restart.

5.9.1.2.3 Proposed Breadth for the ORR. This is a key section in both responsible contractor and DOE plans-of-action. The breadth will be the top tier core requirements. The breadth should be derived starting with the minimum core requirements listed in DOE 0 425.1. The discussion should support the decision to eliminate any core requirements based on recent, independent appraisals in the excluded areas. The DOE ORR plan-of-action breadth will consider the contractor ORR as well as DOE management and oversight programs.

When developing the breadth of the ORR or a Readiness Assessment, it may be useful to consider a breakdown of the core requirements defined in DOE 0 425.1. Such a breakdown has been provided in Appendix 2. Experience with ORRs and RAs has shown that subdividing the core requirements into core objectives facilitated definition of the review breadth as well as the development of Criteria and Review Approaches. The Core Objectives retain all the elements of the core requirements. The core

requirement (CR) from which each core objective is derived is indicated in parens following the statement of the core objective (CO).

5.9.1.2.4 ORR Prerequisites. Defining the prerequisite conditions to be met by the facility management prior to the start of the ORR (appropriate for both the responsible contractor ORR as well as the DOE ORR) is an important element of a successful ORR. The process by which the contractor separates gaining readiness through management actions, and verifying readiness through the ORR process should be reflected in the prerequisite requirements. The contractor ORR plan-of-action prerequisites must address each core requirement of DOE 0 425.1. The DOE ORR plan-of-action prerequisites should include readiness of DOE management and Operations Office programs and assigned personnel to monitor facility operations. Adequate detail should be included to permit an understanding of exactly which programs and personnel are considered essential to adequate oversight of the facility or process for start or restart. The prerequisite section of both the contractor and DOE ORR plans-of-action should refer to specific items such as a project management plan, a readiness self-assessment plan, a compliance assessment program, safety documentation such as SAR, TSR, etc. or environmental assessments or impact studies. The prerequisites should be described in terms of specific measurable items.

5.9.1.2.5 Estimated ORR Start Date and Duration. The date is for planning purposes only and should be the best estimate. Identification of a date is not to infer that the ORR start will be schedule driven rather than readiness driven. The DOE ORR estimated start dates, as well as the contractor ORR schedule, should be provided for information in the Contractor ORR plan-of-action to assist DOE management in planning for the DOE ORR.

5.9.1.2.6 Proposed ORR Team Leader. The individual must have the necessary independence with the required experience and technical background consistent with the complexity of the facility and the specific ORR. The individual must meet the criteria discussed in Section 5.1 for the responsible contractor ORR and Section 5.4 for the DOE ORR.

5.9.1.2.7 Requirement for Senior Advisors. Senior advisors are only required for DOE ORRs. In many instances senior advisors may not be required, particularly if the team leader has significant ORR experience. On other occasions, a single senior advisor to assist the team leader may be

appropriate or for particularly complex or controversial ORRs of high hazard facilities, as many as three senior advisors may be advisable.

5.9.1.2.8 Official to Approve Start of DOE ORR. In most circumstances, this will be the approval authority designated in the approved startup notification plans. Designation of the approval authority will be in accordance with the requirements of DOE 0 425.1.

5.9.1.2.9 Official to Approve Startup or Restart of the Facility. This is the individual specified in DOE 0 425.1 based on a new start or restart circumstances. The specific approval authority is listed in the startup notification plan.

5.9.1.2.10 Reviewers and Approver. List the individuals by name and title who prepared and will review this document. The signature indicates that they have reviewed the document and recommend approval by the approval authority listed above.

5.9.1.2.11 Distribution. This is a listing of the individuals and organizations who will receive copies of the ORR plan-of-action following approval. Individuals and organizations will be listed who have either responsibilities or interests in the new start or restart process.

5.9.2 ORR Implementation Plans. The ORR Implementation Plan is developed by the team responsible for conducting the ORR. The Implementation Plan is approved by the team leader designated in the ORR plan-of-action. This ORR Implementation Plan documents not only the process by which the team conducts the review, but also defines the rationale for that process. The documentation includes the selection of criteria and review approaches and the procedures by which the team will develop findings and conclusions and the criteria to be applied to categorize findings as prestart and post-start. The ORR Implementation Plan is the document that provides for the depth of evaluation of the ORR breadth and execution of other details in the approved ORR plan-of-action.

The ORR Implementation Plan should provide sufficient detail to serve as both information to management and guidance to the ORR team members. The team preparing the ORR Implementation Plan requires a thorough understanding of the facility and its associated issues. Pre-development on-

site facility visits and interviews may be required before the ORR Implementation Plan can be adequately developed.

The ORR Implementation Plan should be provided by the team leader to appropriate oversight and higher-level DOE management prior to commencement of the DOE ORR. EH responsibility and options are described in Section 5.3.2.

The following outline provides a suggested format for the ORR Implementation Plan.

1.0 Introduction/Background: Describes the activity that will be reviewed and the reason for shutdown (if a restart). This section provides background information concerning the basic process, hazards, and issues associated with the activity to be reviewed.

2.0 Purpose: Describes the reasons why the review will be conducted, and provides the basic insights for the defined scope of the review.

3.0 Scope: The scope defines the physical and administrative boundaries of the facility, and justifies those defined boundaries and support function review relative to each of the following:

- o Plant and equipment (hardware) readiness;
- o Management and personnel readiness; and,
- o Management programs (procedures, plans, etc.) readiness.

The scope section of the ORR Implementation Plan will describe the approved breadth from the approved ORR plan-of-action. Each breadth element required by the plan-of-action must be incorporated into the ORR Implementation Plan. The depth to which each scope element is evaluated will be specified and quantified by the Implementation Plan criteria and review approaches.

The scope section should define the major objectives of the review. These objectives define the discipline or areas which are selected for review and define the approach and guidelines which must be implemented for an organization to achieve a state of operational readiness.

4.0 ORR Prerequisites: The ORR Implementation Plan should summarize the prerequisites specified in the approved plan-of-action. It is not the responsibility of the ORR team to develop the prerequisites but they must understand them and be prepared to verify that the prerequisites have been achieved at the start of the ORR.

5.0 Overall Approach: Defines the generic approach by which the review will be conducted, and provides an introduction to the ORR process. The ORR Criteria and Review Approaches (CRAs) will be defined by the processes described in this section. The definition of the criteria by which findings will be classified as prestart and post-start should be defined here, as should the method for report preparation, finding resolution and methods of closure.

6.0 ORR Preparations: Describes any preparations, including team pre-review site visits, document reviews, etc., that will be undertaken prior to the on-site review. A discussion of qualifications and training considerations for ORR team members could appear here.

7.0 ORR Process: Describes the actual Criteria and Review Approaches that will be used to review the defined core requirements of the review. These CRAs should be developed in a format to include the following items:

A. Core Requirement/Core Objective-Identification of the requirement which will be verified as having been achieved by the readiness process;
B. Criteria - The specifics by which the core requirements/core objectives will be measured, which may include regulatory requirements, etc.
C. Review Approach - a definition of what combination of review of documentation, interviews of personnel, walkdown of systems, and observation of exercises and/or drills that will be conducted to derive objective evidence by which the team will measure the defined criteria and assess the readiness of the particular objective or sub-objective;
D. Basis - a discussion of why the particular review is needed;
E. References - those requirements or regulatory standards that apply to this core requirement and safety documentation that contains the requirements associated with a particular core requirement. This section may be unnecessary if the information is contained in Section 5.0 and the appendices.

8.0 Administration: Describes the mechanism for the ORR-related meetings, correspondence, communications, team structure, etc. of the review. The ORR team composition/organization, interface requirements, any oversight groups, and DOE organizations to be involved in the review should be discussed in this section.

9.0 Reporting and Resolutions - The section should detail the methods that the ORR team will use to report review results. Elements described in Sections 5.5, 5.8, and 5.9.3 of this standard should be included.

10.0 Schedule: A discussion of the proposed schedule for any preparation, pre-review site visits, on-site review, conduct of review, report preparation, and closeout.

11.0 Appendices: The appendices should include the check lists or other specific criteria evaluation and review documents which are to be utilized by the team members to conduct the individual assessments. They may also include reporting forms, writing guides, and other sections appropriate to stand alone in an appendix. The appendices of this standard contain information and examples which may be useful during development of the appendices for the ORR Implementation plan.

5.9.3 Operational Readiness Review Final Report. The final product of the Operational Readiness Review process is the ORR Final Report (the Report). This Report documents not only findings and conclusions, but the process by which these were developed. The ORR Final Report is the deliverable from the ORR. It is the basis for senior management decisions including startup or restart approval authority and must therefore accurately reflect the conditions found during the conduct of the ORR.

The ORR Final Report documents the logic of the review and conveys the results of the review. It provides a summary of review activities and confirmation that the criteria and review approaches detailed in the Implementation Plan were followed, with explanations for any deviations from the Plan. It also contains enough detail that the reader can follow the review logic of the ORR, traceable from the ORR Implementation Plan to the ORR findings.

The ORR Final Report forms the basis for conclusions as to the effectiveness of the facility's ORR preparation, the contractor ORR, and the readiness of the facility to proceed with startup or restart. The Final Report must also provide information concerning the readiness of the management system (both the contractor and DOE) to oversee and manage the activity. If deficiencies exist, the ORR Final Report defines those clearly as well as what inadequacies must be addressed before startup and after startup.

5.9.3.1 ORR Final Report Format. DOE Orders and guidance provide no direction concerning the format of the ORR report. The following is a suggested format derived from a composite of past DOE ORR Final Reports. A synopsis of each section is contained in the following paragraphs.

1. Title Page (Cover)
2. Signature Page
3. Table of Contents
4. Executive Summary
5. Introduction
6. ORR Evaluation
7. Lessons Learned
8. Appendices

1. Title Page (Cover) - The cover and title page state the subject, and the date of the review or evaluation. The report cover should be as clean as possible, and should not contain any extraneous information, data, graphics, or pictures.

2. Signature Page - A signature page should be provided. The signatures on the final report should include all team members. Signatures by individual team members signify their agreement as to the report content and conclusion in the areas to which they were assigned. In the event all team member signatures cannot be obtained due to logistical considerations, the team leader should gain their concurrence via fax or telcon and sign for them.

3. Table of Contents - A Table of Contents should be provided to facilitate review of the report. The Table of Contents should identify, with page numbers, all sections and subsections of the report, illustrations, charts, and appendices.

4. Executive Summary - An executive summary is recommended. This summary is a one to three page synopsis of the review, findings, and readiness determination. The executive summary should introduce information, and direct the reader to those portions of the report that provide more detail concerning the information. Some suggested points for the executive summary include:

a. A brief synopsis of the review activity, which provides information concerning the team's evaluation of readiness;
b. The readiness of the activity to proceed;
c. The management system adequacy to oversee the operation;
d. A summary evaluation of the adequacy of the ORR preparation (and possibly the ORR program); and
e. A synopsis of the significant problems, and significant strengths.

5. Introduction - An introduction should provide information and background regarding the facility being reviewed, the reason(s) for shutdown (if a restart), the purpose of the review/evaluation, and the scope of the activity evaluation. Other information that should be provided include a brief discussion of:

a. The overall objectives of the evaluation;
b. The review process and methodologies used in the review;
c. The team composition; and
d. Definitions applicable to the review.

6. ORR Evaluation - For each core requirement, the report should discuss the core requirement and provide conclusions as to the readiness for each major area. Conclusions as to the readiness of hardware, personnel, procedures, and the management system that controls each review area should be addressed, including key issues concerning the review area. The evaluation should discuss the prestart and post-start findings associated with the review and provide a conclusion as to the readiness of the facility to begin operation.

Any deviations from the Implementation Plan should be discussed, along with the reasons for the deviation(s), and what alternative actions were taken to compensate, if required. As the evaluation section provides the bases for the determination of readiness for each core requirement, it should

discuss not only the deficiencies found during the review, but should also discuss those positive aspects that affected the determination. In addition, the ORR Final Report should also identify as "Observations" those items which are not findings, but if addressed, would lead to excellence in operations. The detailed documentation to support the conclusions may be included in an appendix which consists of the individual check lists with the accompanying appraisal and issue forms. See Appendix 4 for additional details.

7. Lessons Learned - The report should identify lessons learned that may be applied to design, construction, operation, and decommissioning of similar facilities and to future ORRs. The ORR Final Report should address the problems and the successes encountered in the review and evaluation process (what worked, what did not work). These activities should be documented to provide guidance on future ORRs.

8. Appendices - Appendices should be provided for data that support the actual report. Data that should be considered for appendices include:

a. Implementation Plan;
b. Criteria and Review Approaches;
c. ORR Activities Plan;
d. Team List and Resumes;
e. Evaluation of criteria;
f. Prestart Findings summary;
g. Post-start Findings summary.

5.9.3.2 Other Report Considerations.

a. Reference the ORR Implementation Plan;
b. Demonstrate how plan was followed;
c. Account for any deviations from the plan;
d. Make certain that all findings and observations are traceable;
e. Relate findings to specific review objectives; and,
f. Decide and state determination of readiness.

5.9.3.3 The Review Logic. The ORR Final Report must document the logic of the review, relating any findings to the core requirements in the Implementation Plan. The report must detail the core requirements of the review, explain how the review addressed those core requirements, what criteria were used, and the methods by which those criteria were assessed. Finally, the report should describe the findings of the review, and explain how these findings relate to the conclusions of the team for each area and the review as a whole.

5.9.3.4 Status of Compliance with Orders. There shall be a statement in each ORR Final Report as to whether all identified non-conformances or schedules for gaining compliance with applicable DOE Orders, Directives, and Standards/Requirements Identification Documents within the scope of the ORR have been justified in writing, have been formally approved, and in the opinion of the ORR team maintain adequate protection of the public health and safety, worker safety, and the environment.

5.9.3.5 Recommendation as to Readiness to Operate. The final report will document the results of the Operational Readiness Review and make a conclusion as to whether startup or restart of the nuclear facility can proceed safely.

5.9.3.6 Differing Opinions. The ORR Final Report should provide opportunity for team members to include:

- o Differing professional opinions;
- o Non-judgmental general comments;
- o Observations;
- o Dissenting opinions, which should be documented, and attached to the report.

While the team should strive to reach a consensus concerning all aspects of the review, DOE recognizes that professional judgement does not always allow complete agreement. In cases of disagreement, the team leader must make the final decision concerning the disposition of the finding or concern. However, discussion of all aspects of the finding should be provided in the report to allow the approval authority all relevant information on which to form an opinion.

If a team member feels that aspects of his/her opinions have not been adequately represented, that member should file a report of differing opinion. This report should be attached to the ORR Final Report, identified as an appendix, for review by the approving authority.

5.9.4 Readiness to Proceed Memorandum. The Readiness to Proceed Memorandum is the formal communication from the responsible contractor to DOE that the facility has been brought to a state of readiness to start operations. The memorandum is a prerequisite to the DOE ORR. The Operations Office will use the contents of the Readiness to Proceed Memorandum, coupled with its own routine management understanding of the status of the facility, as a basis for the recommendation or decision to commence the DOE ORR.

5.9.4.1 Timing of the Readiness to Proceed Memorandum. The Readiness to Proceed Memorandum should not be submitted until all actions required for startup or restart have been completed, with the exception of a manageable list of open prestart items that have a well defined plan and schedule for closure.

The principle that management is responsible for bringing the facility to a condition of readiness to start operations and that the ORR verifies that readiness must not be disregarded. If there are an excessive number of open items at the time the Readiness to Proceed Memorandum is submitted to DOE the initial conclusion is that the responsible contractor's management and ORR processes were not successful.

The following discussion concerning the acceptability of the open prestart items at the time the Readiness to Proceed Memorandum is provided:

a. Each open item prerequisite to commencing facility operations must be identified as a part of the Readiness to Proceed Memorandum.

b. The number of open items must be small. In determining how many open items is acceptable, one principle should be that every area to be evaluated by the DOE ORR must be sufficiently complete to permit evaluation. For example, a single finding or multiple findings that in aggregate mean that some key program has not yet been developed and put in place would not be acceptable

since the DOE ORR would be unable to review the adequacy of the program. Only if that program were to be in place prior to the end of the onsite portion of the ORR would a finding of this sort be acceptable as an open item in the Readiness to Proceed Memorandum.

c. Each open item must be defined with an explicit corrective action plan. Open items such as "the required environmental permits have not been requested or approved" would not be acceptable in that many additional facility procedures and activities are potentially dictated by the corrective actions to the identified open item.

d. Each open prestart item identified must have a reasonable plan of corrective action in place. The plan must be included with the identified open items in the Readiness to Proceed Memorandum. The schedule for completion of the corrective action plan must be consistent with the timing for the completion of the DOE ORR.

In summary, the open items should be few in number, well defined with a well defined corrective action plan, able to be completed on a schedule which is consistent with the DOE ORR schedule, and not of such a nature individually or in aggregate to preclude an adequate review by the DOE ORR of any specific area.

5.9.4.2 Contents of Readiness to Proceed Memorandum. The Readiness to Proceed Memorandum is a communication from an authorized individual of the responsible contractor to the DOE Operations or Area Office Manager. The communication will certify that the facility is in a state of readiness to commence operations following completion of the identified open prestart items and the DOE ORR. For each open prestart item listed, a corrective action plan, including a schedule of completion, must be included. The communication should recommend a date for the DOE ORR to start. The DOE ORR completion schedule should be consistent with the final completion date for the identified open restart items. The Readiness to Proceed Memorandum should certify completion of the contractor's ORR as well as all items in the prestart management plan.

5.9.4.3 DOE Action Following Receipt of Readiness to Proceed Memorandum. The submitted Readiness to Proceed Memorandum, including the discussion of open items and action plans, will be reviewed by DOE Operations Office management. The review will include verification of the

accuracy of the included information, evaluation as to the completeness of the listing of open items, and whether the corrective action and time estimates are realistic. In addition, the Operations Office will verify DOE readiness to oversee facility operations as specified in DOE 0 425.1 which requires that DOE line management up to the approval authority document in writing their readiness to oversee operations. With the review as a basis, DOE Operations Office management will forward the Readiness to Proceed Memorandum to the appropriate Operations Office manager with a recommendation as to whether the memorandum should be accepted and the DOE ORR scheduled or whether additional information or action should be requested of the responsible contractor, or additional actions taken by DOE Operations Office management. Following DOE field review, the Readiness to Proceed Memorandum is either returned to the responsible contractor with identified comments or forwarded recommending approval to start the DOE ORR. Each DOE management endorsement should identify programs and personnel positions which have been verified as ready to support facility operations. The acceptable Readiness to Proceed Memorandum will be ultimately forwarded via the appropriate management chain of authority to the individual designated in the ORR plan-of-action to approve starting the DOE ORR for final approval and action.

The Readiness to Proceed Memorandum, with enclosures and endorsements, will be retained as a part of the facility restart record as well as the ORR report and associated documentation. Experiences and lessons learned in managing the Readiness to Proceed Memorandum and process should be included in the ORR report lessons learned section.

5.10 Readiness Assessments. DOE 0 425.1 requires that when an ORR is not required incident to a restart, an RA should be considered to verify readiness to start or resume program work. DOE 0 425.1 in addition requires that Operations Offices develop procedures to gain approval to start or resume program work when an RA is required and that the procedures specify a graded approach in development of RA requirements.

The Operations Office and responsible contractor procedures should also specify when an RA is not required incident to restart following a short and routine shutdown. The procedures should also indicate what standard procedures will be used when neither an ORR or an RA is required to verify readiness to resume program work.

The responsible contractor must execute the initial, and in some cases the only Readiness Assessment. Therefore, the responsible contractor's procedures should contain provisions and processes for RAs.

The procedures for RAs may be included in the Operations Office and responsible contractors startup or restart procedures. They should, however, be separate from the requirements for ORRs, and should be separate from procedures for Management Self Assessments incident to gaining readiness.

The following considerations are provided for use in development of the Operations Office procedures for Readiness Assessments (RAs).

5.10.1 Principles of ORRs relevant to RAs. Several principles relevant to ORRs are equally applicable to RAs:

(1) The RA is not a method to gain readiness to start or resume program work. It is however, a verification that management has achieved readiness to resume operations prior to the actual restart.

(2) The RA should be conducted utilizing a formal procedure. By using the graded approach, the procedure may be a simple checklist or a broad based assessment. In either case, the procedure should be formal, approved, and executed by a designated individual or team.

(3) The results of the RA should be auditable and retained in the records of the facility with a record that any findings during the RA were resolved.

(4) The scope (breadth and depth) of the RA must be a management decision utilizing the graded approach. For example, a routine resumption of operations following a short outage in which few and minor repairs and modifications were conducted could require little in addition to a preapproved check list. In the other extreme, a Hazard class 3 facility restart following an extended outage may require a contractor and DOE RA with a scope equivalent to an ORR of a Hazard Classification 2 facility following a similar outage. In both cases, a defensible management decision would be required to approve the scope. The decision and basis in each case shall be documented in writing and approved by the designated approval authority prior to commencement of the Readiness Assessment. These decision documents will be included as part of the record of the restart.

(5) The responsible contractor must inform the Operations Office of the startups which require RAs, as well as an ORR. This should be done in the Startup Notification Report. It might also be appropriate to recommend whether the Operations Office should conduct an independent RA or monitor and approve the results of the contractor RA.

(6) Specified prerequisite conditions for the conduct of the RA should be identified either in a contractor standing procedure for routine restarts or as part of the RA procedure for more complex restarts.

(7) Readiness Assessment team members require technical and assessment qualifications to insure the credibility of the results of the RA.

5.10.2 Acceptable Procedural Exceptions to ORRs. In the following areas, the Operations Office may specify procedures that are different from those for the ORR process.

(1) In the case of routine restarts when little maintenance and few minor modifications have occurred, but an RA is required, it may be appropriate for the responsible contractor to use a preapproved checklist and have the results monitored or reviewed by a member of the Operations Office. In these cases, a separate DOE RA might not be required; the responsible contractor could be the restart authority; and the Operations Office review of the RA could be performed after resumption of operations.

(2) The sequence of the contractor and Operations Office RAs could be more flexible when authorized by the restart authority. Similarly, the contractor RA might be sequenced in parallel with final actions to gain readiness to resume operations. The principle that the RA verifies areas in which readiness has been gained remains critical to the process.

(3) The independence of the team members from management could be less rigorous for the RA. The principle that no RA team member will review their own work shall be retained.

(4) The requirement for formal, written notification of readiness to resume operations provided to the Operations Office could be modified. Notifications in accordance with DOE 5000.3B could be used if specified in Operations Office procedures.

(5) The formal RA record must be adequate to identify what was done, the results, and the recommendation concerning resumption of operations by the individual(s) who conducted the RA. Contractor and Operations Office procedures should specify the minimum record for various categories of RAs discussed in the procedure. For example, those RAs which use preapproved checklists would have a less complex report than those RAs following an extended shutdown of a Hazard Category 3 facility with significant modifications.

(6) The RA plan or checklist may not contain all elements of an ORR Implementation plan.

Many of the policies and procedures described in this standard are relevant and appropriate for inclusion in procedures for Readiness Assessments. For example, the discussions concerning breadth and depth decisions are equally appropriate to RAs as well as ORRs. In situations where an ORR would be required except that the Hazard Categorization is 3 vice 2, ORR procedures from the standard would be appropriate with only limited differences as discussed above. In particular, sections 5.1 and 5.4 which describe contractor and DOE ORRs should be reviewed and considered for inclusion when developing procedures for RAs. All appendices of this standard are also appropriate in the planning and execution of the RAs and should be referenced and/or used in the contractor and Operations Office procedures.

The Operations Office and responsible contractor procedures should include provisions appropriate to the unique circumstances and facilities at each site. The procedures require sufficient detail to adequately guide the process. Equally important, the procedures must have adequate flexibility to support unique situations while requiring adequate management review and oversight of the process to ensure a defensible, proper result.

Operations Office managers may require that the responsible contractor procedures, which include the detailed requirements for RAs, be submitted for review or approval. Similarly, Secretarial Officers may require Operations Office procedures be submitted for review or approval. The Operations

Office and Headquarters Implementation Plan and requirements for DOE 0 425.1 should specify whether the procedures are to be submitted for review and/or approval.

5.11 Exemptions. DOE 0 425.1 directs the requirements for exemptions to DOE Order 251.1, "DOE Directives System." Examples of situations that warrant utilization of the exemption process include short duration, one-time activities such as unique activities to clean out or otherwise take a system or component out of service for purposes of D&D. An exemption might also be appropriate in the event of a national priority tasking at a facility which might not be in readiness to conduct the required operation or task as an unrestricted operation. Due to the finite duration and finite definition of the processes to be conducted, compensatory measures and interim or temporary actions might be appropriate. In order to assure that the exemptions do not lead to a reduction in safety or an unacceptable increase in risk, case-by-case review or approval by the CSO is required. An exemption may also be appropriate when the time limits in DOE 0 425.1, section 4.a (1), are exceeded. In those cases, the exemption request would justify approval and specify the scope of the Readiness Assessment. In all cases, the exemption request will address the essential elements required by DOE M 251.1-1, Chapter II, Section 4.C.

5.11.1 Expectations for Exempted Operations. Activities controlled under Order exemptions will be conducted in a manner to assure no reduction or compromise in safety of the public, the environment, or the workers. The exemption request will describe the standards to be achieved to reach a condition of readiness to conduct the activities and the method of verification that the required readiness conditions had been attained. When compensatory measures such as mentors, supervisory oversight, Facility Representative presence, or area evacuations are appropriate, they should be defined and verified prior to approval to commence the operations being given. In all cases, the activities will be conducted within an approved safety basis. The systems, structures, and components which are important to assuring safe operations will be verified to be in a condition to assure an acceptable level of safety. Operational procedures should be identified and should be adequate to control the processes and assure the acceptable level of safety. Personnel should have an adequate level of knowledge, qualification, and experience such that when coupled with the specified compensatory measures, satisfactory formality of operations will be assured. The methods to meet these principles should be defined and the record of meeting and verification of these principles should be retained.

5.11.2 Process for Exemptions. DOE M 251.1-1 establishes the procedures and authorization to request and approve exemptions to DOE Orders. The following steps describe the process to gain approval, plan, and carry out program work when an exemption to the requirements to DOE 0 425.1 is appropriate.

(1) CSO review or approval of the exemption to the requirements of DOE 0 425.1 for the specific activities will be obtained in accordance with DOE O 251.1. In most cases, the request will be initiated, described, and justified by the responsible contractor. The request will include the process to be utilized to develop, review, approve, and monitor the exempted operations. DOE line management will endorse the proposal, including statements of DOE line actions which will be in place to support the activity and assure a satisfactory level of safety is maintained. The exemption request must address the essential elements specified in DOE M 251.1-1, Chapter II, Section 4C.

(2) The responsible contractor will develop the procedures for the operation and achieve readiness to startup or restart the program work in accordance with them. DOE line management will oversee the contractor efforts including review and approval of the procedures and verification of readiness to startup or restart program work. DOE Independent oversight will be provided copies of all procedures.

(3) The responsible contractor will conduct the program work in accordance with the approved procedures.

(4) DOE line management will monitor the satisfactory accomplishment of the program work in accordance with the approved procedures. Particular attention must be take to insuring all compensatory measures remain in place and continue to be effective.

(5) DOE independent oversight, when deemed appropriate by EH, will monitor the preparation and conduct of these procedures as desired.

APPENDIX 1

APPLICATION OF THE GRADED APPROACH

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APPLICATION OF THE GRADED APPROACH IN ORR PLANNING

For the purposes of this appendix, the graded approach is defined as the process by which the readiness determination is adjusted in depth of detail required and magnitude of resources expended to be commensurate with the facility's potential impact on safety, environmental compliance, safeguards and security, and its programmatic importance, including present and future mission. The graded approach will be commensurate with:

(1) The relative importance to safety, safeguards, and security;
(2) The magnitude of any hazard involved;
(3) The life cycle stage of a facility;
(4) The programmatic mission of a facility;
(5) The particular characteristics of a facility;
(6) The cause and circumstances of the facility shutdown; and
(7) Other relevant factors.

All ORRs will address the minimum set of core requirements and any additional requirements as deemed necessary for adequate review (breadth). A recent review, equivalent to an ORR, may be used as justification for eliminating a core requirement from the breadth of the ORR. With respect to ORR planning, a graded approach is utilized to determine the level of detail, that is, the depth. The combination of breadth and depth forms the envelope (scope) within which the ORR is conducted. Proper utilization of the graded approach is essential to conducting a successful ORR. The supporting principle governing the use of the graded approach must be that knowledgeable personnel analyze the factors surrounding the restart, determine the depth of the review needed, and then document this determination. Precise documentation will facilitate communication with knowledgeable outside officials that the proper level of review has been conducted and that readiness to operate has been accurately verified.

The depth of an ORR cannot be determined using a cookbook or formula approach. Depth requirements depend on knowledgeable people identifying relevant topics based on their experience, the facility's characteristics, the facility's operating environment, the operating and support organizations' capabilities, and the risks associated with the proposed startup or restart. An aid that

may be used in the development of the scope of the ORR is a MORT or readiness tree. The benefit of this tool is that it is a graphic representation of the elements which must be included. Appendix 3 contains examples of readiness trees which have been useful in developing the scope of the ORR.

Criteria and review approaches are developed for each core requirement, which specify the level of detail that is appropriate for that issue. The following factors and their implications should be considered in developing the depth of the ORR:

- Physical modifications to the facility: Any modification must be assessed for its potential effect on facility hazards and risks, on the facility safety basis as documented in the SAR and associated TSRs, on facility procedures, on the need for personnel to be trained on the reconfiguration, etc. In addition, the integrity of the facility design baseline may need to be verified.

- Procedural changes: Changed or new procedures must be reviewed to determine if they have been adequately verified and validated, if the operators have been adequately trained on the modified procedures, and if the procedures at the workstations clearly reflect the changes.

- Personnel changes: Continuity of the operations team must be assessed to determine if significant loss of "corporate memory" has occurred and, if so, has been adequately mitigated. Training and qualification of new and reassigned personnel must be verified.

- Length of shutdown: There is a characteristic loss of operator familiarity with normal facility operations that increases with the length of the shutdown. If the shutdown is unusually long, a review and possibly requalification of the operators may be necessary. There are also physical processes (corrosion, radioactive decay, evaporation, etc.) that may become important following an extended outage. The longer the outage and the more complex the activity during the outage, the more rigorous should be the review to identify unanticipated changes.

- Overall hazard characteristics of the facility: The nature of the hazards to safety and the environment associated with a facility/process will be a major component in determining the depth of the ORR. The depth of an ORR for a facility that handles small quantities of tritium gas would not be as complex as one that handles large quantities of plutonium.

- The complexity of the activity: The size and complexity of the facility and/or process being reviewed will drive the size and complexity of the ORR. The depth of the review will require that reviewers be able to comprehend and accomplish the criteria provided them. The number of criteria developed is based on the size and complexity of the facility/process.

- A new process or facility versus the restart of an existing activity: A significantly new process would involve verification of training and qualification of workers and new procedures without any significant reference points available onsite. This would drive the ORR to be more thorough and comprehensive than the review for a process that has a significant experience base onsite.

- The programmatic significance of the subsequent operations: A facility/process that is intended for long-term programmatic operations would necessarily require a more comprehensive and thorough review in some specific area than would a temporary operation.

- Introduction of new hazards: The proposed facility evolution (startup or restart) must be evaluated for potential new hazards. While some new hazards will be obvious, a critical review is needed to identify subtle new hazards introduced by the startup of new facilities or modification of existing facilities. Modifications made to improve operations in one aspect may unexpectedly introduce hazards in a different area.

- Increase in existing hazards or risk: Modifications to the facility, personnel, or procedures must be evaluated for their potential to increase the hazard level (e.g., by increasing the inventories of hazardous materials) or the hazard potential (e.g., by introducing a new mechanism for the release of hazardous materials).

- Operating history of the facility: The record of operational reliability, e.g., reliability during most recent operation, may identify issues to be addressed in the proposed ORR. Additionally, the nature of the facility/process transition to standby or shutdown status needs to be considered. A shutdown resulting from systemic safety concerns may require greater ORR depth than would a shutdown in response to an individual safety concern.

- Confidence in site-wide issues: Even if the proposed startup or restart does not directly involve changes to site issues (e.g., emergency preparedness, site fire response, environmental monitoring), it may be prudent to evaluate these in an ORR unless recent reviews have shown them to be acceptable. Startup or restart of a facility will be problematic within a significantly flawed site infrastructure. Conversely, a strong record of implementing DOE requirements, e.g., Conduct of Operations, would allow for a justifiable reduction in depth in that area in the ORR.

- Issues raised through other internal or external reviews: The ORR may need to verify that previously raised issues have been adequately addressed. These issues may be facility-specific or may relate to the site infrastructure within which the facility operates. Technical Safety Appraisals and Tiger Team reports are important sources of these issues. The facility's experiences in implementing the corrective actions and lessons learned may also provide a valuable perspective for determining the depth of the ORR. Caution must be exercised in utilizing previous inspections as justification for eliminating a topic or limiting the breadth of review. The adequacy of any previous review to be used in this manner should be equivalent in all respects to the review that would have been conducted during the ORR.

- DOE 0 425.1 requires that ORRs document lessons learned. Such lessons may assist in determining the depth of the ORR. Previous reviews may highlight issues to be considered or may provide the justification for doing a less detailed review if recent reviews and restart experience can be cited.

- Extent to which the facility/process has been evaluated or operated using the standards and level of excellence being used in the ORR: In applying the graded approach, the extent to which the facility has utilized or been evaluated against the current nuclear safety standards should be considered. A facility that has operated successfully using the DOE nuclear safety standards may require a less extensive ORR depth.

APPENDIX 2

GENERIC SAMPLES FOR DEVELOPING THE PLAN-OF-ACTION AND IMPLEMENTATION PLAN

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GENERIC SAMPLES FOR DEVELOPING THE PLAN-OF-ACTION AND IMPLEMENTATION PLAN

The following pages include the minimum ORR core requirements and several examples of evaluation objectives that will permit a structured and orderly process in defining the scope of the ORR. The list of minimum core requirements are used to establish the breadth of the review. Any additional core requirements specific to the facility or ORR should also be included. A recent review, equivalent to an ORR may be used as justification for eliminating a core requirement from the breadth of the ORR. The listing of Core Objectives starting on page Appendix 2-7 were developed to facilitate preparation of the plans-of-action and implementation plan criteria and review approaches. The Core objectives were derived from the core requirements. The core requirement from which each is derived is noted after each core objective. Inclusion of all core objectives will assure that all minimum core requirements specified in DOE 0 425.1 have been evaluated. The examples of evaluation objectives are provided to assist in development of the depth of the review, which is specified in the CRA(D)s. The lists are not all inclusive, however, they provide a starting point in the development of specific criteria for each core requirement of an ORR. The number of criteria and the level to which each of these criteria are assessed is specific to the ORR and governed by the graded approach as discussed in Appendix 1. These listings are not a part of the ORR or the ORR plan-of-action. They are included to provide an aid for managers in defining the breadth of the ORR and preparing the plan-of-action, and for team leaders in defining the depth of the ORR and developing implementation plans.

Each of the core requirements listed below, as a minimum, must be addressed when developing the breadth of an Operational Readiness Review (ORR). Justification shall be provided in the plan-of-action if it is determined that a particular core requirement will not be reviewed. The plan-of-action may reference a timely, independent review which addressed the requirements in a technically sound manner to justify not performing further evaluation of a core requirement during conduct of an ORR. A graded approach, defined in Appendix 1, will be used to determine the level of analysis, documentation, and/or actions necessary (depth) to evaluate the core requirements listed below or other core requirements in the defined breadth of the ORR.

Minimum Core Requirements

1. There are adequate and correct procedures and safety limits for operating the process systems and utility systems;

2. Training and qualification programs for operations and operations support personnel have been established, documented, and implemented (the training and qualification program encompasses the range of duties and activities required to be performed);

3. Level of knowledge of operations and operations support personnel is adequate based on reviews of examinations and examination results, and selected interviews of operating and operations support personnel;

4. Facility safety documentation is in place that describes the "safety envelope" of the facility. The safety documentation should characterize the hazards/risks associated with the facility and should identify mitigating measures (systems, procedures, administrative controls, etc.) that protect workers and the public from those hazards/risks. Safety systems and systems essential to worker and public safety are defined and a system to maintain control over the design and modification of facilities and safety-related utility systems is established;

5. A program is in place to confirm and periodically reconfirm the condition and operability of safety systems, including safety related process systems and safety related utility systems. This includes examinations of records of tests and calibration of safety system and other instruments which monitor

limiting conditions of operation or that satisfy Technical Safety Requirements. All systems are currently operable and in a satisfactory condition;

6. A process has been established to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, and the operating contractor;

7. A systematic review of the facility's conformance to applicable DOE Orders has been performed, any non-conformances have been identified, and schedules for gaining compliance have been justified in writing and formally approved;

8. Management programs are established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure operational support services (e.g., training, maintenance, waste management, environmental protection, industrial safety and hygiene, radiological protection and health physics, emergency preparedness, fire protection, quality assurance, criticality safety, and engineering) are adequate for operations;

9. A routine and emergency operations drill program, including program records, has been established and implemented;

10. An adequate startup or restart test program has been developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators;

11. Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with management responsible for control of safety;

12. The implementation status for DOE Order 5480.19, "Conduct of Operations Requirements for DOE Facilities," is adequate for operations;

13. There are sufficient numbers of qualified personnel, to support safe operations;

14. A program is established to promote a site-wide culture in which personnel exhibit an awareness of public and worker safety, health, and environmental protection requirements and, through their actions, demonstrate a high priority commitment to comply with these requirements.

15. The facility systems and procedures, as affected by facility modifications, are consistent with the description of the facility, procedures, and accident analysis included in the safety basis;

16. The technical and managerial qualifications of those personnel at the DOE Field organization and at DOE Headquarters who have been assigned responsibilities for providing direction and guidance to the contractor, including the Facility Representatives, are adequate (DOE Operational Readiness Review only);

17. The breadth, depth and results of the responsible contractor Operational Readiness Review are adequate to verify the readiness of hardware, personnel, and management programs for operations (DOE Operational Readiness Review only);

18. Modifications to the facility have been reviewed for potential impacts on procedures and training and qualification. Procedures have been revised to reflect these modifications and training has been performed to these revised procedures;

19. The technical and management qualifications of contractor personnel, responsible for facility operations, are adequate; and

20. DOE Operations Office Oversight Programs such as Occurrence Reporting, Facility Representative, Corrective Action, and Quality Assurance Programs are adequate (DOE Operational Readiness Review only).

GENERAL CONSIDERATIONS FOR THE DEPTH OF THE REVIEW

DOE-STD-3006-95 Appendix 2

Maintenance	Environment, Safety and Health	Services	Controls & Program Functioning
o Maintenance program structure and management o Maintenance equipment, facilities, and technology o Work identification, planning, and scheduling o Maintenance procedures o Maintenance information o Maintenance quality assurance o Preventive maintenance & evaluation programs o Calibration programs o Maintenance outage program	o General o Reactor/facility safety review and safety analysis o Response to design basis accidents o Industrial Hygiene o Radiation safety o Nuclear safety o Criticality safety o Occupational safety o Fire protection and Life Safety o Transportation safety o Environmental protection o Emergency preparedness o Safety systems and equipment o Environmental qualification o Adverse weather protection o Chemical Process Safety	o Laboratory analysis o Safeguards o Security o Transportation o Engineering o Technical support of operations o Research and development support o Waste management o Utilities	o Safety Analysis o Process Hazards Reviews o Internal & external communications o Permits o Materials Control & Accountability o Organization, responsibilities, and authority o Scheduling o Configuration control o Technical control and data o Facility performance measurement & evaluation o Analysis of startup of facility operation and programmatic aspects o Program definition and goal realization

GENERAL CONSIDERATIONS FOR THE DEPTH OF THE REVIEW (continued)

DOE-STD-3006-95 Appendix 2

Regulatory Compliance	**Structures & Hardware** *	**Personnel**	**Operations**
o DOE ES&H Orders o Codes and standards o Environmental Reviews o Statutory Requirements o Corporate Polices and Procedures	o Design program o Materials control o Construction Program o Structures o Primary process systems and equipment o Supporting systems and equipment o Special equipment o Process, facility, and site interfaces o Materials, spare parts, and spare equipment o Adverse weather protection	o Personnel selection o Training and Certification o Knowledge & competence o Adherence to proper practice o Staffing levels o Recertification o Oral/written boards	o Operations structure and management o Operations procedures o Operations information o Operating practices o Control of systems and equipment o Operations materials and supplies o Experimental operations o Operations quality assurance
Quality Assurance			
o QA program implementation			

* The review should focus on requirements in effect at the time of Title II Design Review

CORE OBJECTIVES

1. Facility safety documentation is in place that describes the safety envelope of the facility. (CR-4)

2. The safety documentation characterizes hazards and risks and identifies mitigating measures to protect worker and public safety from the characterized hazards. (CR-4)

3. Safety systems are defined in the facility safety documentation. (CR-4)

4. There are adequate and correct safety limits for operating systems. (CR-1)

5. Programs to control the design and modification of facilities and safety-related utility systems is in place. (CR-4)

6. Facility systems, as affected by facility modifications, are consistent with the description of the facility, procedures, and accident analysis included in the safety basis. (CR-15)

7. There are adequate and correct procedures for operating systems and utility systems. (CR-1)

8. Modifications to the facility have been reviewed for potential impacts on procedures and procedures have been revised to reflect these modifications. (CR-18)

9. Facility procedures, as affected by facility modifications, are consistent with the description of the facility, procedures, and accident analysis included in the safety basis. (CR-15)

10. A program is in place to confirm and periodically reconfirm the condition and operability of safety systems, safety-related process systems, and safety-related utility systems. (CR-5)

11. Safety systems and other instruments which monitor Technical Safety Requirements are monitored for calibration. (CR-5)

12. All safety and safety-related utility systems are currently operational and in a satisfactory condition. (CR-5)

13. Training and Qualification programs for operations personnel have been established, documented, and implemented that cover the range of duties required to be performed. (CR-2)

14. Technical qualifications of contractor personnel responsible for facility operations are adequate. (CR-19)

15. Modifications to the facility have been reviewed for potential impacts on training and qualification. (CR-18)

16. Training has been performed to the latest revision of procedures. (CR-18)

17. Level of knowledge of operations personnel is adequate based on reviews of examinations, exam results, selected interviews, and observation of work performance. (CR-3)

18. There are sufficient numbers of qualified personnel to support safe operations. (CR-13)

19. The implementation status for DOE 5480.19, "Conduct of Operations Requirements For DOE Facilities, is adequate for operations." (CR-12)

20. Personnel exhibit an awareness of public and worker safety, health, and environmental protection requirements and, through their actions, demonstrate a high-priority commitment to comply with these requirements. (CR-14)

21. An emergency drill program, including program records, has been established and implemented. (CR-9)

22. A routine operations drill program, including program records, has been established and implemented. (CR-9)

23. Managerial qualifications of contractor personnel, responsible for facility operations, are adequate. (CR-19)

24. Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsible for control of safety. (CR-11)

25. A process has been established to identify, evaluate, and resolve deficiencies and recommendation made by oversight groups, official review teams, audit organizations, and the operating contractor. (CR-6)

26. A systematic review of the facility's conformance to applicable DOE Orders has been performed. (CR-7)

27. Non-conformances to applicable DOE Orders have been justified, and schedules for gaining compliance have been justified in writing and formally approved. (CR-7)

28. An adequate startup or restart test program has been developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators. (CR-10)

29. A program is established to promote a site-wide safety culture. (CR-14)

30. The breadth, depth and results of the responsible contractor Operational Readiness Review are adequate to verify the readiness of hardware, personnel, and management programs for operations (DOE Operational Readiness review only). (CR-17)

31. Technical and managerial qualifications of the DOE field organization personnel assigned responsibility for providing direction and guidance to the contractor, including the Facility Representatives, are adequate (DOE only). (CR-16)

32. Technical and managerial qualifications of the DOE Headquarters personnel assigned responsibility for providing direction and guidance to the contractor, including the Facility Representatives, are adequate (DOE only). (CR-16)

33. Area/Operations Office oversight programs such as occurrence reporting, facility representative, corrective action, and quality assurance programs are adequate (DOE Operational Readiness Review only). (CR-20)

Support Programs -

34. Management programs are established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure support services are adequate for operations. (CR-8)

35. Training and Qualification programs for operations support personnel have been established, documented, and implemented that cover the range of duties to be performed. (CR-2)

36. Level of knowledge of operations support personnel is adequate based on reviews of examinations, exam results, selected interviews, and observation of work practices. (CR-3)

The following support programs will be included in the review, as applicable --

a. Fire Protection
b. Industrial Safety and Health
c. Radiation Protection
d. Maintenance
e. Engineering Support
f. Quality Assurance
g. Criticality Safety
h. Training
i. Environment
j. Waste Management
k. Emergency Preparedness

APPENDIX 3

MANAGEMENT OVERSIGHT AND RISK TREE (MORT)

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Management Oversight and Risk Tree (MORT)

The following pages are examples of readiness or Management Oversight and Risk Trees (MORT) that are a product of the ORR scope development process. While not required, they have proven helpful in assisting management in assuring the required scope was attained. They have also been useful as management tools during the preparation of the plan-of-action to identify the relationships of various criteria visually. They have also been useful in tracking progress of preparation or ORR execution. Finally, they have proven useful as visual aids for briefing interested observers and groups as to the coverage and logic of the ORR process.

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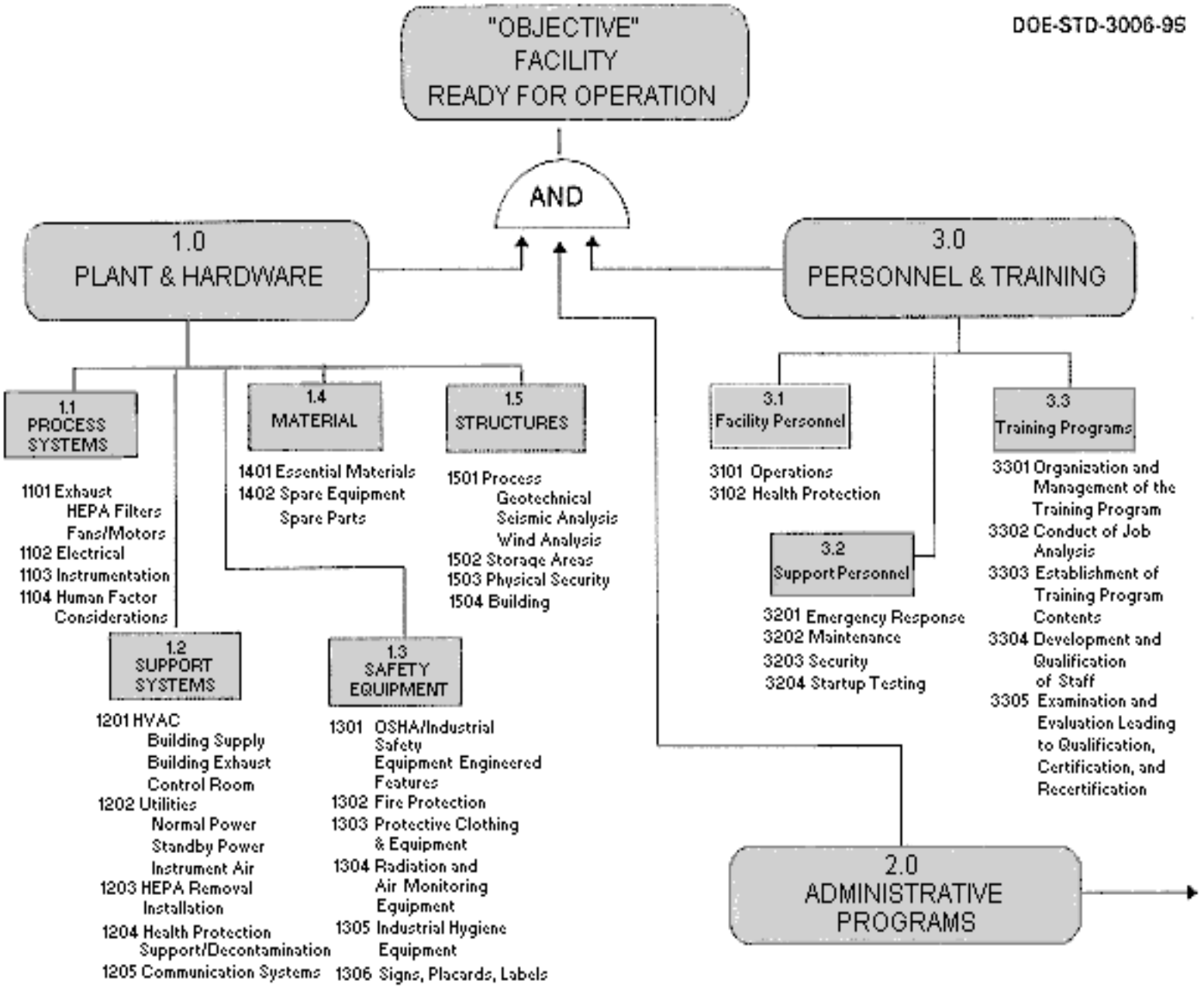
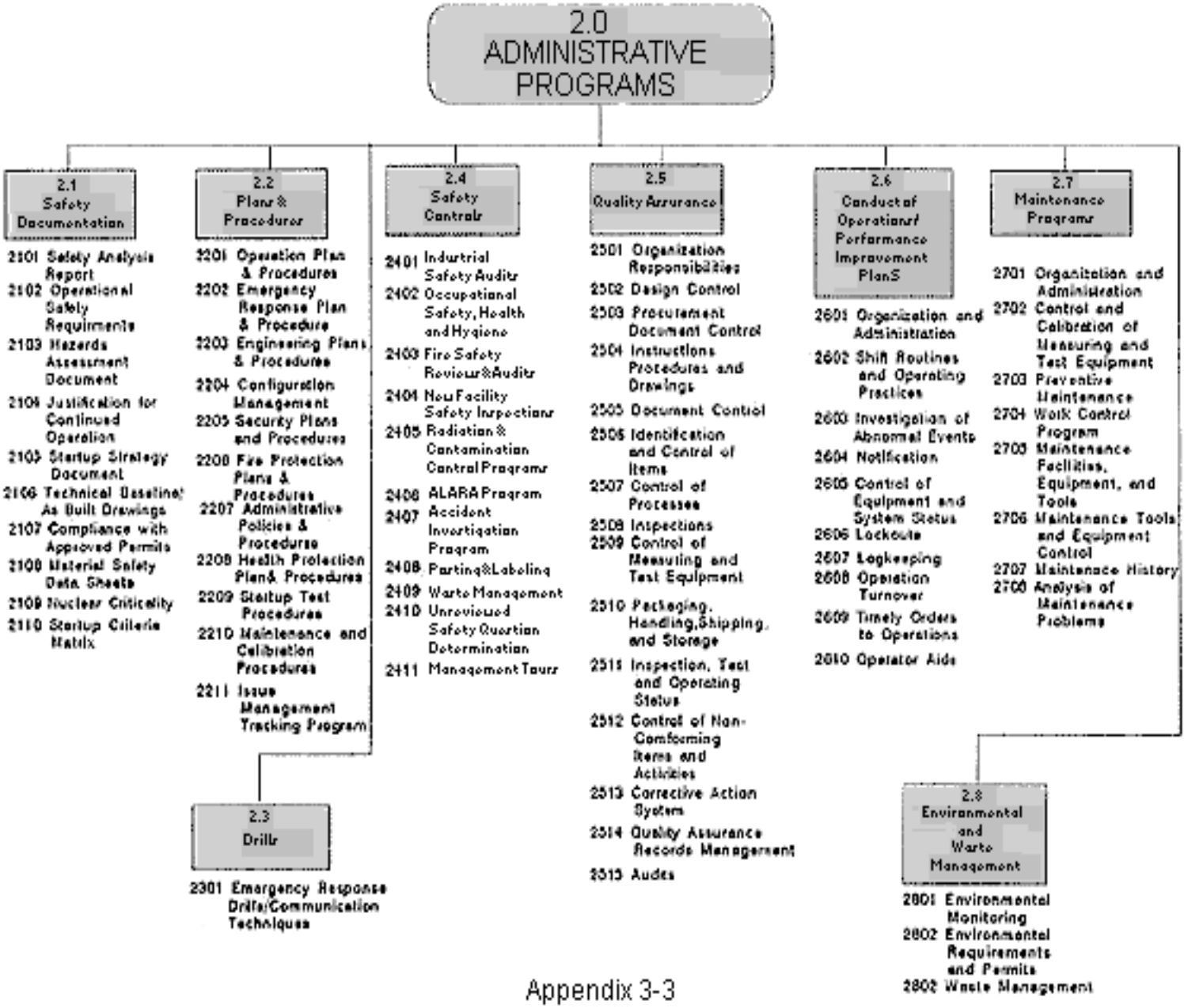
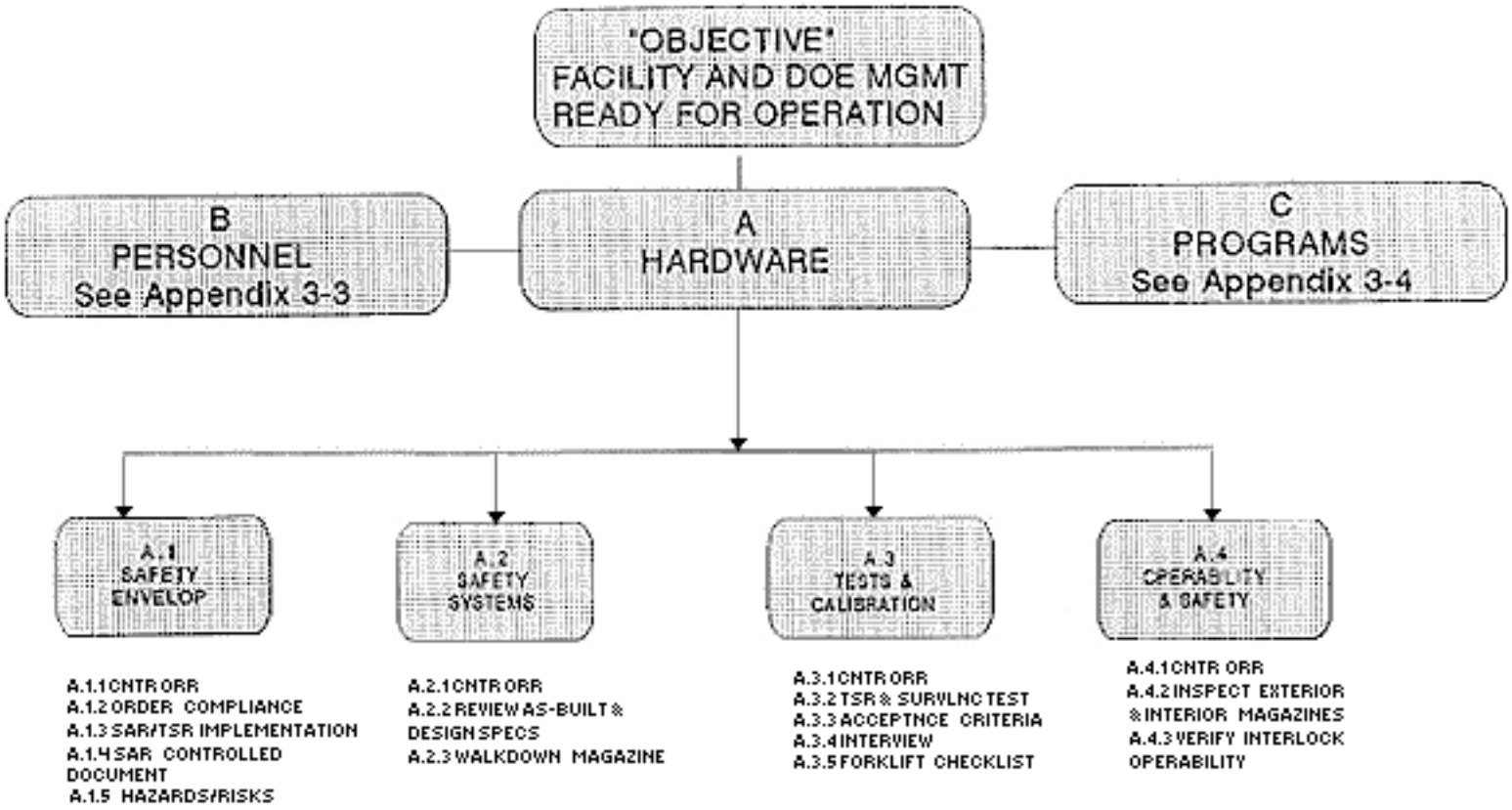
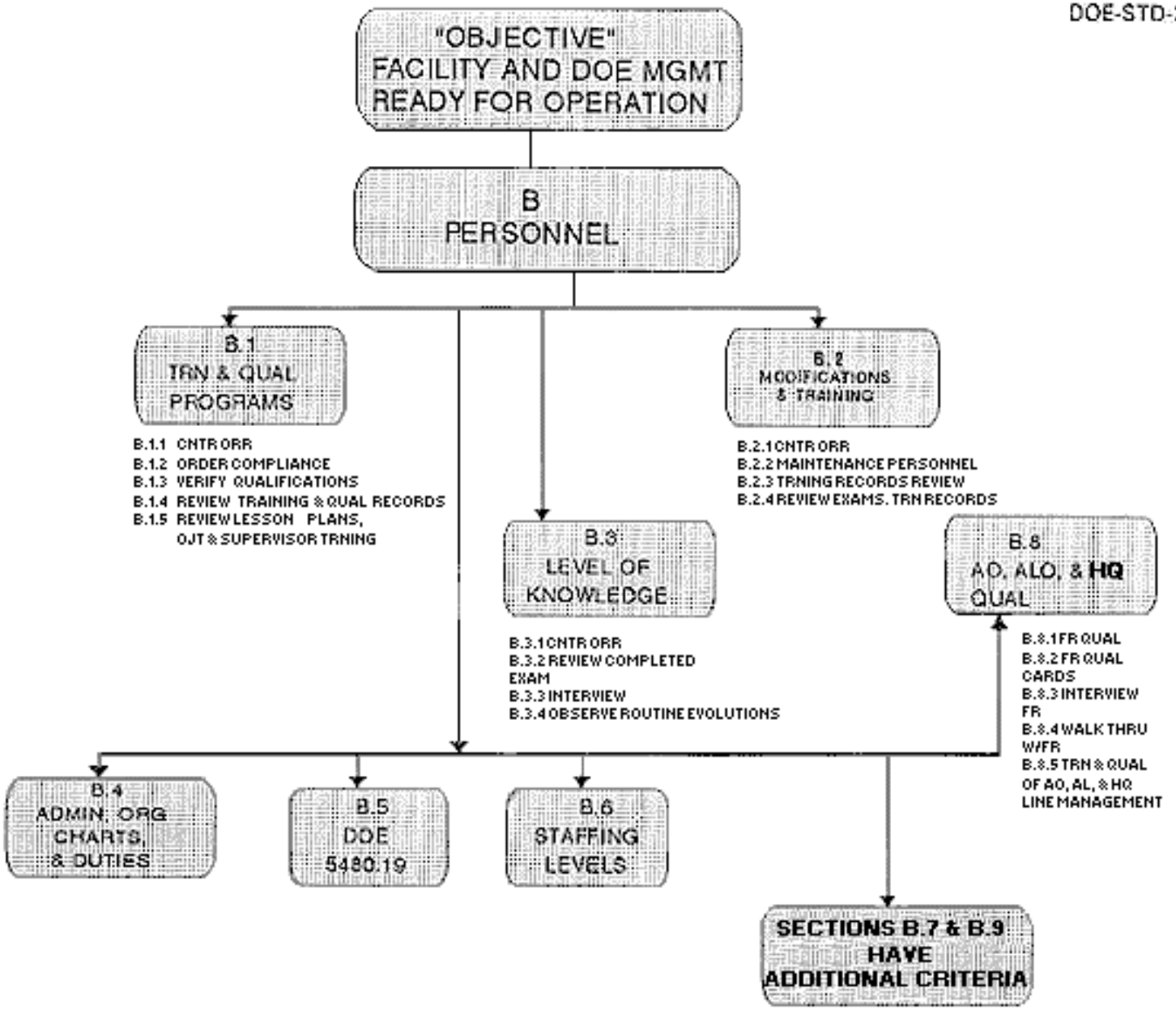

"OBJECTIVE" FACILITY READY FOR OPERATION
AND
1.0 PLANT & HARDWARE
3.0 PERSONNEL & TRAINING
1.1 PROCESS SYSTEMS
1101 Exhaust
HEPA Filters
Fans/Motors
1102 Electrical
1103 Instrumentation
1104 Human Factor Considerations
1.2 SUPPORT SYSTEMS
1201 HVAC
Building Supply
Building Exhaust
Control Room
1202 Utilities
Normal Power
Standby Power
Instrument Air
1203 HEPA Removal Installation
1204 Health Protection Support/Decontamination
1205 Communication Systems
1.3 SAFETY EQUIPMENT
1301 OSHA/Industrial Safety Equipment Engineered Features
1302 Fire Protection
1303 Protective Clothing & Equipment
1304 Radiation and Air Monitoring Equipment
1305 Industrial Hygiene Equipment
1306 Signs, Placards, Labels
1.4 MATERIAL
1401 Essential Materials
1402 Spare Equipment
Spare Parts
1.5 STRUCTURES
1501 Process
Geotechnical
Seismic Analysis
Wind Analysis
1502 Storage Areas
1503 Physical Security
1504 Building
3.1 Facility Personnel
3101 Operations
3102 Health Protection
3.2 Support Personnel
3201 Emergency Response
3202 Maintenance
3203 Security
3204 Startup Testing
3.3 Training Programs
3301 Organization and Management of the Training Program
3302 Conduct of Job Analysis
3303 Establishment of Training Program Contents
3304 Development and Qualification of Staff
3305 Examination and Evaluation Leading to Qualification, Certification, and Recertification
2.0 ADMINISTRATIVE PROGRAMS

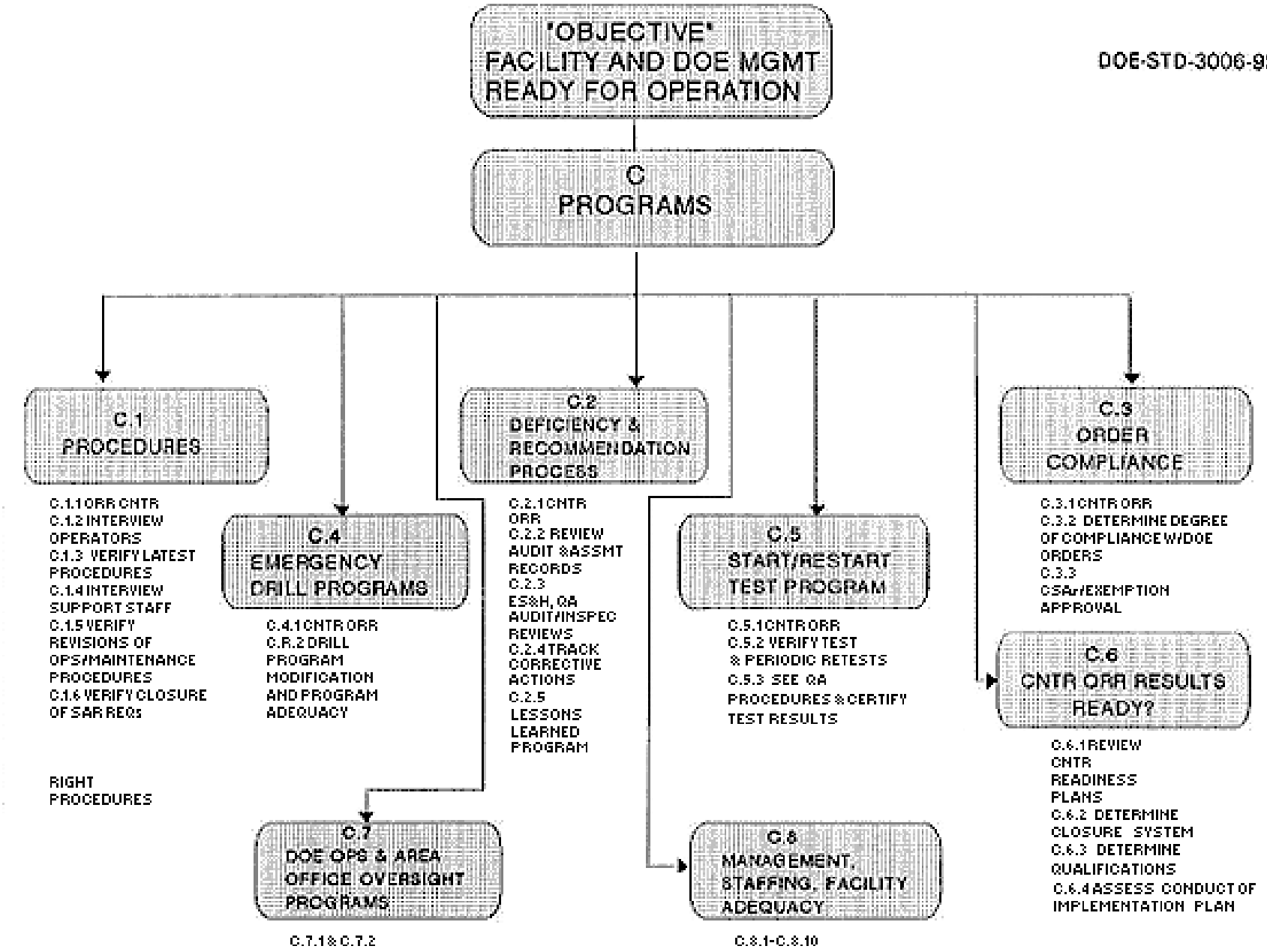
Appendix 3-2


2.0
ADMINISTRATIVE
PROGRAMS
2.1
Safety
Documentation
2101 Safety Analysis
Report
2102 Operational
Safety
Requirements
2103 Hazards
Assessment
Document
2104 Justification for
Continued
Operation
2105 Startup Strategy
Document
2106 Technical Baseline/
As Built Drawings
2107 Compliance with
Approved Permits
2108 Material Safety
Data Sheets
2109 Nuclear Criticality
2110 Startup Criteria
Matrix
2.2
Plans &
Procedures
2201 Operation Plan
& Procedures
2202 Emergency
Response Plan
& Procedure
2203 Engineering Plans
& Procedures
2204 Configuration
Management
2205 Security Plans
and Procedures
2206 Fire Protection
Plans &
Procedures
2207 Administrative
Policies &
Procedures
2208 Health Protection
Plan& Procedures
2209 Startup Test
Procedures
2210 Maintenance and
Calibration
Procedures
2211 Issue
Management
Tracking Program
2.3
Drills
2301 Emergency Response
Drills/Communication
Techniques
2.4
Safety
Controls
2401 Industrial
Safety Audits
2402 Occupational
Safety, Health
and Hygiene
2403 Fire Safety
Review&Audits
2404 New Facility
Safety Inspections
2405 Radiation &
Contamination
Control Programs
2406 ALARA Program
2407 Accident
Investigation
Program
2408 Posting&Labeling
2409 Waste Management
2410 Unreviewed
Safety Question
Determination
2411 Management Tours
2.5
Quality Assurance
2501 Organization
Responsibilities
2502 Design Control
2503 Procurement
Document Control
2504 Instructions
Procedures and
Drawings
2505 Document Control
2506 Identification
and Control of
Items
2507 Control of
Processes
2508 Inspections
2509 Control of
Measuring and
Test Equipment
2510 Packaging,
Handling,Shipping,
and Storage
2511 Inspection, Test
and Operating
Status
2512 Control of Non-
Conforming
Items and
Activities
2513 Corrective Action
System
2514 Quality Assurance
Records Management
2515 Audits
2.6
Conduct of
Operations/
Performance
Improvement
Plans
2601 Organization and
Administration
2602 Shift Routines
and Operating
Practices
2603 Investigation of
Abnormal Events
2604 Notification
2605 Control of
Equipment and
System Status
2606 Lockouts
2607 Logkeeping
2608 Operation
Turnover
2609 Timely Orders
to Operations
2610 Operator Aids
2.7
Maintenance
Programs
2701 Organization and
Administration
2702 Control and
Calibration of
Measuring and
Test Equipment
2703 Preventive
Maintenance
2704 Work Control
Program
2705 Maintenance
Facilities,
Equipment, and
Tools
2706 Maintenance Tools
and Equipment
Control
2707 Maintenance History
2708 Analysis of
Maintenance
Problems
2.8
Environmental
and
Waste
Management
2801 Environmental
Monitoring
2802 Environmental
Requirements
and Permits
2803 Waste Management

Appendix 3-3


"OBJECTIVE"
FACILITY AND DOE MGMT
READY FOR OPERATION
B
PERSONNEL
See Appendix 3-3
A
HARDWARE
C
PROGRAMS
See Appendix 3-4
A.1
SAFETY
ENVELOP
A.2
SAFETY
SYSTEMS
A.3
TESTS &
CALIBRATION
A.4
OPERABILITY
& SAFETY
A.1.1 CNTR ORR
A.1.2 ORDER COMPLIANCE
A.1.3 SAR/TSR IMPLEMENTATION
A.1.4 SAR CONTROLLED
DOCUMENT
A.1.5 HAZARDS/RISKS
A.2.1 CNTR ORR
A.2.2 REVIEW AS-BUILT &
DESIGN SPECS
A.2.3 WALKDOWN MAGAZINE
A.3.1 CNTR ORR
A.3.2 TSR & SURVLNC TEST
A.3.3 ACCEPTNCE CRITERIA
A.3.4 INTERVIEW
A.3.5 FORKLIFT CHECKLIST
A.4.1 CNTR ORR
A.4.2 INSPECT EXTERIOR
& INTERIOR MAGAZINES
A.4.3 VERIFY INTERLOCK
OPERABILITY


"OBJECTIVE"
FACILITY AND DOE MGMT
READY FOR OPERATION
B
PERSONNEL
B.1
TRN & QUAL
PROGRAMS
B.1.1 CNTR ORR
B.1.2 ORDER COMPLIANCE
B.1.3 VERIFY QUALIFICATIONS
B.1.4 REVIEW TRAINING & QUAL RECORDS
B.1.5 REVIEW LESSON PLANS,
OJT & SUPERVISOR TRNING
B.2
MODIFICATIONS
& TRAINING
B.2.1 CNTR ORR
B.2.2 MAINTENANCE PERSONNEL
B.2.3 TRNING RECORDS REVIEW
B.2.4 REVIEW EXAMS, TRN RECORDS
B.3
LEVEL OF
KNOWLEDGE
B.3.1 CNTR ORR
B.3.2 REVIEW COMPLETED
EXAM
B.3.3 INTERVIEW
B.3.4 OBSERVE ROUTINE EVOLUTIONS
B.8
AO, ALO, & HQ
QUAL
B.8.1 FR QUAL
B.8.2 FR QUAL
CARDS
B.8.3 INTERVIEW
FR
B.8.4 WALK THRU
W/FR
B.8.5 TRN & QUAL
OF AO, AL, & HQ
LINE MANAGEMENT
B.4
ADMIN, ORG
CHARTS,
& DUTIES
B.5
DOE
5480.19
B.6
STAFFING
LEVELS
SECTIONS B.7 & B.9
HAVE
ADDITIONAL CRITERIA


'OBJECTIVE'
FACILITY AND DOE MGMT
READY FOR OPERATION
C
PROGRAMS
C.1
PROCEDURES
C.1.1 ORR CNTR
C.1.2 INTERVIEW
OPERATORS
C.1.3 VERIFY LATEST
PROCEDURES
C.1.4 INTERVIEW
SUPPORT STAFF
C.1.5 VERIFY
REVISIONS OF
OPS/MAINTENANCE
PROCEDURES
C.1.6 VERIFY CLOSURE
OF SAR REQs
RIGHT
PROCEDURES
C.4
EMERGENCY
DRILL PROGRAMS
C.4.1 CNTR ORR
C.R.2 DRILL
PROGRAM
MODIFICATION
AND PROGRAM
ADEQUACY
C.2
DEFICIENCY &
RECOMMENDATION
PROCESS
C.2.1 CNTR
ORR
C.2.2 REVIEW
AUDIT &ASSMT
RECORDS
C.2.3
ES&H, QA
AUDIT/INSPEC
REVIEWS
C.2.4 TRACK
CORRECTIVE
ACTIONS
C.2.5
LESSONS
LEARNED
PROGRAM
C.5
START/RESTART
TEST PROGRAM
C.5.1 CNTR ORR
C.5.2 VERIFY TEST
& PERIODIC RETESTS
C.5.3 SEE QA
PROCEDURES & CERTIFY
TEST RESULTS
C.3
ORDER
COMPLIANCE
C.3.1 CNTR ORR
C.3.2 DETERMINE DEGREE
OF COMPLIANCE W/DOE
ORDERS
C.3.3
CSAs/EXEMPTION
APPROVAL
C.6
CNTR ORR RESULTS
READY?
C.6.1 REVIEW
CNTR
READINESS
PLANS
C.6.2 DETERMINE
CLOSURE SYSTEM
C.6.3 DETERMINE
QUALIFICATIONS
C.6.4 ASSESS CONDUCT OF
IMPLEMENTATION PLAN
C.7
DOE OPS & AREA
OFFICE OVERSIGHT
PROGRAMS
C.7.1 & C.7.2
C.8
MANAGEMENT,
STAFFING, FACILITY
ADEQUACY
C.8.1-C.8.10

APPENDIX 4

WRITING GUIDE

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OPERATIONAL READINESS REVIEW
WRITING GUIDE

Introduction

The process of determining the operational readiness of DOE facilities is complex, involving many technical and management issues at each specific facility or site. Operational Readiness Reviews (ORR) must be accomplished by experienced, dedicated people and conducted with sufficient rigor and discipline so Departmental leadership and independent oversight groups have confidence in the findings and recommendations.

ORR's should be assumed to be subject to public scrutiny. In addition, results from these reviews may form the basis for improvements at DOE facilities. For these reasons, it is essential that team members substantiate their observations in writing, factually, accurately, and in such a way as to make clear the details of observed strengths and weaknesses. Written reports from an ORR should be of the highest technical accuracy and quality.

This guide is intended to assist team members in documenting their activities and findings.

Criteria Review and Approach Documents (CRA(D)s):

CRA(D)s are the documents used in the implementation plan to establish the depth of the ORR and provide guidance to the ORR team members. As such, the quality of these documents will have a significant impact on the overall quality of the ORR. CRA(D)s are the basis by which the core requirements of an ORR are evaluated. (The core requirements of an ORR include the 20 minimum core requirements of the DOE 0 425.1 as well as any additional core requirements specific to the particular ORR). Each core requirement is evaluated based on the criteria established. The criteria should be specific and as objective as possible, dependent on the given situation. For ease of evaluation, the core requirements have been broken down further into core objectives. The resulting core objectives are included in Appendix 2. Evaluation of all core objectives will assure evaluation of all requirements specified in DOE 0 425.1. Experience has indicated that a core objective is more appropriate as an objective for an individual CRAD.

The development of the CRA(D)s is the means through which the graded approach is applied to the scope of the ORR. Those areas which are significant to the startup or were significant to the shutdown should be assessed to a greater depth than other areas. For example, if in a maintenance shutdown, a system was modified or a new system was added, the training, procedures, documentation, safety basis, etc., for that new system should be reviewed exhaustively. Another system in that same facility that did not undergo modification would receive a less comprehensive review. This review could be a sampling of the training and procedures associated with the system. For example, 20 percent of the qualified operators of unmodified systems could be interviewed to assess level of knowledge. Whereas the percentage could be between 80 and 100 for the modified or new system. In a shutdown that was caused by a OSR/TSR violation due to a personnel error, the training and qualification program for the facility should be assessed in detail while the implementation of the safety basis itself would need a less comprehensive assessment. For a new, high hazard facility, the depth of the review should be complete in all areas. For a restart of a low hazard facility, the review should be focused on the areas significant to the startup or shutdown with the remaining core areas addressed to a lesser extent, via a less extensive criteria.

Each CRAD should begin with a core requirement or some portion of the core requirement such as a core objective, followed by the criteria. This will ensure that all core requirements are addressed by criteria regardless of the approach used in developing the criteria. The specific criteria, which address the core requirement or portion of a core requirement, should follow and should be related clearly to these requirements, e.g., A.1 - core requirement 1, A.1.1 - First criteria addressing core requirement 1. Each criterion then, is a description of the specific actions, reviews or observations, by which the inspector(s) will make a judgement as to the readiness of the site/facility/process to operate in this specific area. The final

portion of the CRA(D) should include any references, e.g., DOE Orders, mandatory standards, or site specific requirements against which the preceding criteria are to be assessed. The alpha-numeric identification methodology chosen for the ORR implementation plan should represent a logical "work breakdown structure" chosen to describe the entire ORR effort so that all elements can be related back to the core requirements for safe operation of the facility. See Appendix 3, of this standard.

It must be kept in mind that every ORR is different and hence the depth of the evaluation specified by the CRA(D)s will be unique in every case. These examples are by no means inclusive, but serve to provide CRA(D)s, previously deemed appropriate in specific situations. In some cases, the criteria and specific review approaches are combined. In other examples, they have been separated. Either method is acceptable as long as an adequate, documented evaluation of the core requirement results.

OP.1 Operations personnel have an adequate understanding of technical fundamentals, facility systems, and operating procedures (ref. core requirement 3).

Criteria

The level of operator knowledge is adequate to operate safely.

Operations personnel retain a practical and adequate understanding of facility systems and operations.

Approach

Record Review: Review completed examinations to determine if they adequately test the operators understanding of technical fundamentals, facility systems, and operating procedures.

Interviews: Interview operators and supervisors to assess their understanding of facility processes, procedures, and fundamentals of processes as they relate to the restart effort.

Shift Performance: Observe drills, routine evolutions and normal operations to assess technical understanding and ability of the operators and supervisors to conduct of their duties.

References:

1. Final Safety Analysis Report, Section _
2. DOE XXXX.XX
4. Corporate ORR Execution Plan, Section _
5. Corporate ORR Final Report

SE.2 Safety requirements are established and measured to ensure that operations are conducted within the analyzed safety envelope (ref. core requirement 4).

Criteria

- Procedures implement applicable safety requirements and the associated limiting conditions for operation.
- The parameters indicating compliance with the safety requirements can be measured or physically verified.
- Confirmation of continued compliance with safety requirements, including clearly defined surveillance intervals and periodic self-assessments, is required by procedures.
- A basis is established for each safety requirement in the facility authorization basis reports.

Approach

Record Review: Select several safety requirements and determine if associated operating, test and maintenance procedures implement the limiting conditions for operation. Bases are provided for each safety requirement. Review surveillance test tracking system to determine if test intervals are provided. Review the results of QA and operations management assessments of the surveillance test program.

Interviews: Interview operations and QA management to determine if self-assessments of the surveillance test program are implemented and effective.

Shift Performance: Observe the performance of surveillance test and operator rounds to determine if safety system parameters used to verify compliance with safety requirements can be accurately verified.

References:

1. Final Safety Analysis Report, Section _
2. DOE XXXX.XX
3. DOE XXXX.XX
4. Corporate ORR Execution Plan, Section _
5. Corporate ORR Final Report, Section _

A.1 Facility safety documentation is in place that describes the "safety envelope" of the facility. The safety documentation should characterize the hazards/risks associated with the facility and should identify mitigating measures (systems, procedures, administrative controls, etc.) that protect workers and the public from those hazards/risks (ref. core requirement 4).

Criteria:

A.1.1 Verify the adequacy of the contractor's readiness review as performed for Performance Objectives, and applicable review criteria of the Corporate ORR Execution Plan. Ensure the scope of review was sufficient, all prestart deficiency corrective actions have been implemented, and all post-start deficiencies have approved action plans.

A.1.2 Review the order compliance packages for DOE 5480.22 and 5480.23, including all applicable CSAs and exemptions. Verify the implementation of any specified compensatory measures within the facility to determine their completeness and effectiveness.

A.1.3 Review operating, surveillance, and maintenance plans, procedures, and other pertinent documentation to verify that all requirements provided the safety envelope documentation, e.g., FSAR, TSR, NEPA documents, RCRA and CAA permits, etc., have been implemented.

A.1.4 Verify that the SAR is a controlled document and is subject to annual review.

A.1.5 Verify that the SAR and EA/EIS adequately includes appropriate hazards/risks using reviews of previous USQD's, ORPS, Office of Nuclear Safety Lessons Learned, interviews operators and Corporate ORR personnel, inspection of work areas and associated equipment, etc.

References:

1. Final Safety Analysis Report, Section _
2. DOE XXXX.XX
3. DOE XXXX.XX
4. Corporate ORR Execution Plan, Section _
5. Corporate ORR Final Report, Section _

C.2 A process has been established to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, and the operating contractor (ref. core requirement 6).

Criteria:

C.2.1 Verify the adequacy of the contractor's readiness review as performed for Performance Objectives, and applicable review criteria of the Corporate ORR Execution Plan. Ensure the scope of review was sufficient, all prestart deficiency corrective actions have been implemented, and all post-start deficiencies have approved action plans.

C.2.2 Review audit and assessment records of Audit and Assessment Departments. Verify the adequacy of the corporate audit and assessment program. Select several issues and verify that corrective actions for identified deficiencies have been initiated and/or completed. Determine if corrective actions have been effective in resolving the issues.

C.2.3 Review audit and assessment records of Area and Operations Office ES&H and QA audits and inspections. Verify that corrective actions identified in a selected number of audits have been initiated and/or completed. Ensure that a method exists by which DOE can track the implementation of corrective actions they identify.

C.2.4 Review audit and assessment records of external agency inspections, e.g., DNFSB trip reports, ONS inspection, TSAs, EH-5 Progress Assessments, etc., and verify that a method exists to track corrective action. For a selected set of items, verify that corrective actions have initiated and/or completed, that they were effective in mitigating the deficiency, and that the general, vice specific, deficiency was addressed.

C.2.5 Assess the adequacy of the program used to disseminate lessons learned information from inspections, near misses, other operating contractors, etc.

References:

1. Corporate Policy Directives, Plant Assessment Program
2. Corporate Standard STDs, Plant Management Assessment Program
3. Corporate Standard STDs, Operations Audit Program
4. Corporate Standard STDs, Internal Audit Program
5. Corporate Standard STDs, Performance-Based Assessment Program
6. Corporate Standard STDs, Management Walkthrough Program
7. Corporate Standard STDs, Plant Surveillance Program
8. Corporate Standard STDs, Occurrence Investigation
9. Corporate Standard STDs, Plant Corrective Action Program
12. DOE XXXX.XX
13. DOE XXXX.XX
14. DOE XXXX.XX
15. Corporate ORR Execution Plan, Section _
16. Corporate ORR Final Report, Section _

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TEAM MEMBER QUALIFICATIONS DOCUMENTATION

DOE 0 425.1 specifies the areas of qualification which is required for each ORR Team member. The record of the ORR must include evidence of the qualification of each team member. In addition, the team leader is responsible for selection of the team based on the technical and assessment qualification of each prospective member. The specific requirements described in sections 5.1.5.1 and 5.4.2 include:

Technical knowledge of the area assigned to evaluate,
Knowledge of evaluation processes and methods,
Facility specific information, and
Independence.

The attached form has been developed both to assist the team leader in his selection process as well as to provide a consistent, consolidated record of the team qualifications for inclusion in the record of the ORR. While the use of the form is optional, the information which it requires must be available in the ORR record and must be persuasive that the individual team member is qualified to participate in the ORR in each of the four areas noted above.

The qualification summary form is intended to be a summary of the relevant factors which qualify the individual to asses the core requirement(s) specified and not a complete resume of the individual team member. It is appropriate that the team members resume be attached. In addition, it is recommended that a required reading program be utilized to insure team member familiarity with site and facility documentation such as specific procedures and documents which forms the facility safety basis. The completed required reading record sheets would be attached to provide the basis for the facility familiarization qualification requirement. In addition, specifics such as site visits, specialized, site specific training, and presentations would be recorded on the summary form.

DOE 0 425.1 requires that all core requirements be assessed by a qualified team member. It is therefore necessary that the aggregate of the team member qualification summaries include each core requirement listed in DOE 0 425.1.

The entry for "basis for acceptable independence" is to include information which demonstrates that the chosen team member meets the criteria for independence specified in DOE 0 425.1 and this standard. In essence, the requirement is that the individual not have been responsible for the work he is to review either as a worker or

supervisor and that he not be responsible or in the direct line management for the facility.

TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME_____

CORE REQUIREMENT TECHNICAL AREA(s) ASSIGNED _____

_____

EMPLOYER/NORMAL WORK ASSIGNMENT_____

SUMMARY OF TECHNICAL QUALIFICATIONS: (Relevant to assigned area(s))

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS

SUMMARY OF FACILITY FAMILIARIZATION

BASIS FOR ACCEPTABLE INDEPENDENCE:

ACCEPTABLE TO TEAM LEADER (team leader sign)_____

ASSESSMENT FORM (FORM 1)

Form 1's are used to document the methods and actions taken by a team member in the criteria evaluation process. Each Form 1 covers a specific objective and lists the means the team member used to measure the site's performance relative to the objective provided in the Criteria and Review Approach Document (CRAD) or Criteria and Review Approach (CRA) lists[1]. The form should be complete enough to allow a reviewer of the form to follow the inspection logic and means utilized to verify the facility's performance with respect to the criteria and to thereby validate the ORR's completeness and adequacy. Ensure that the approach used is what the CRAD called for. If for some reason the approach used does not exactly match the approach described in the CRAD, the reason should be documented.

Functional Area:

Print the ORR functional area to which the CRAD has been assigned.

CRA Number/Title:

Specifically identify the CRA or portion of the CRA that the Appraisal Form is to support. Provide the name and number of the CRA or portion of CRA.

Date:

Provide the date on which the form is generated. Change the date as updates or revisions to the form are generated.

Method of Appraisal:

Use this section to clearly describe the approach taken to review the criterion against the CRAD guidance. If for some reason the approach used does not exactly match the approach described in the CRAD, the reason should be documented here.

Note: CRA and CRAD are used interchangeably in this document and refer to the criteria document upon which the ORR is based.

Personnel Contacted/Positions:

The individuals contacted while reviewing the criterion should be listed by title.

Records and Other Documents Reviewed:

The documents should be listed in bullet format.

Evolutions/Operations Witnessed:

List evolutions/operations with location (e.g., building) in bullet form.

Spaces Visited:

Indicate the areas of the facility visited.

Discussion:

Provide a discussion of the performance against the criteria

Conclusion:

Provide a conclusion as to whether the criteria have been met, and if not met, reference applicable Form 2s. This section of the Form 1 will provide the basis for the ORR Report and conclusions as to readiness to startup. This section should be a stand alone statement that describes in detail whether or not the criterion was met and why. It is anticipated that the wording in this section can be transcribed directly into the report.

Inspected by:

The inspector who generates the form prints their name in order to identify the generator of the form.

Approved by:

The ORR team leader (TL) signs the form after all revisions/changes have been incorporated. This signature indicates that the form is in final form. The team member should also sign the form to indicate agreement with the content.

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DEFICIENCY FORM (FORM 2)

The Form 2 is used to document the findings identified during the criteria evaluation process. A separate Form 2 should be generated for each finding related to a particular core requirement. For instance, in reviewing a CRA or portion of a CRA an inspector will generate a single Form 1 which describes the methods utilized in the investigation. If three distinct findings are discovered the inspector would then generate three Form 2's to detail the deficiencies. A single Form 2 may be used to identify a generic problem for which a number of individual examples are listed. Clear communication is the objective and the specific number of Form 2's used to detail findings will necessarily be up to the discretion of the team member and TL.

Proper completion of Form 2's takes a significant amount of time. During the ORR, time should be set aside daily to complete the discussion section of the Form 2's. Experience has shown that it is easier to produce a quality write-up the day of the inspection rather than trying to reconstruct events at a later date. There are daily meetings between the Group Leaders and TL to discuss ORR progress and results. Team members should provide the Group Leader who attends that meeting with essentially complete, draft Form 2 write-ups from inspections conducted that day. This allows the TL to present site management a daily briefing of emerging issues. Draft Form 2's will be left with the site daily in order facilitate the validation process. Findings should be documented (i.e., a Form 2 drafted) as soon as there is reasonable evidence to substantiate a finding. Avoid delaying the drafting of a Form 2 until there is overwhelming evidence as this may excessively delay the validation and correction processes. The following is some detailed guidance for writing Form 2's that are based on lessons learned from previous ORRs.

How well the ORR final report reflects actual readiness conditions at the facility, fundamentally depends upon the quality of the Form 2's completed by individual ORR team members.

Revisions to Form 2's should be a stand alone document and contain all the information from the original Form 2 that is still applicable.

Functional Area:

Print the ORR functional area to which the CRAD has been assigned.

CRA Number/Title:

Specifically identify the CRA or portion of the CRA that the Appraisal Form is to support. Provide the name and number of the CRA or portion of CRA.

Date:

Provide the date on which the form is generated. Change the date as updates or revisions to the form are generated.

ID #:

The Review Coordinator will issue a number that uniquely identifies the issue. This number is used to correlate the findings (Form 2's) and disposition documents (Form 3's). Once assigned this number should appear on all revisions and updates.

Requirement:

The applicable portion of the CRA should be quoted to clearly state the standard of performance utilized to generate the deficiency.

Reference(s):

All applicable references, e.g., DOE Orders, CFRs, etc., should be listed. The reference should be specific down to the section to allow for easy referral.

Issue:

Provide a brief description of the issue. This should in the nature of a title for the finding that can be used to identify the finding verbally, much as the ID # is used to identify the finding numerically. The appropriate block should be marked to indicate whether the issue is a finding (deficiency) or an observation (criteria is met; suggestion for improvement).

Discussion:

The key to preparing quality Form 2's is staying focused on the core requirement and criteria. Avoid speculation and stick to specifics when describing observed strengths and weaknesses. Sweeping generalities based on a small sample should be avoided. However, drawing conclusions that assert programmatic deficiencies based upon multiple observed inadequacies or weaknesses are valid. Team members should avoid superlatives of the type: ". . . is the worst . . . or is the best. . . ." Again, the key is to stay focused on whether the core requirement is being met as measured by the criteria. Following are a few sample Form 2 Discussion sections demonstrating some desirable and some undesirable traits.

1. Review of Training and Qualification Issue; Required Reading Program

   (a) Desirable; specific, objective, measured traits...

Implementation of the Required Reading Program was examined. Twenty-five items in the program were tracked to determine if the 16 qualified Stationary Operating Engineers (SOEs) have signed-off as having read the required documents. Over half the required reading checked was found deficient. That is, over half of the 400 (16 x 25) items checked were not documented as complete. In addition, some significant items from the required reading items were provided to ORR interviewers to sample SOE retention of the material covered in the readings. The retention of the key points in these required reading items was poor. Of eight SOEs interviewed on three items, over half produced unsatisfactory responses.

(b) Not Desirable; extreme, speculative, too general, inappropriate...

The Required Reading Program was examined. It was determined to be one of the worst programs this reviewer has encountered. Many of the operators had not done the reading and their attitude was unacceptable. Management said they had a procedure for the program, but I couldn't locate it. The ORR interviewers asked some of the SOEs about items in their required reading. Their responses were unsatisfactory. This area needs work.

2. Review of Operational Experience Review Program; Occurrence Reporting and Processing System (ORPS) Program

(a) Desirable; specific, objective, descriptive...

The Occurrence Reporting and Processing System was examined. Requirements from DOE Order 5000.3 are programmatically implemented at the XXXX facility by the contractor through XXXX 5000.3. The contractor's procedure is judged to be satisfactory in that it requires occurrence reports to be generated and reported to the Department as required by the DOE Order. All specifications in the DOE Order are adequately implemented by the contractor's procedure.

Some observations were noted. A significant one is that the threshold for an unusual occurrence regarding the release of "hazardous materials above limits. . ." is unclear. The descriptive guidance given in the contractor procedure is too general and leads to inconsistency and confusion. Seven managers of organizations within the facility that dealt with hazardous materials were interviewed regarding the threshold for reporting under this Order. All were interpreting the guidance differently and required different responses for similar occurrences involving hazardous material.

A sample of five occurrence reports revealed that all but one were on schedule regarding reporting to DOE Headquarters. Lessons learned training required in three of the five reports was complete. A spot check of operators during interviews (13 interviews) confirmed the effectiveness of the lessons learned training.

(b) Not Desirable; no specifics, personalized, irrelevant...

The contractor's ORPS Program was examined. It's one of the best I've seen - almost as good as XXX in XXXX. A sample of reports were looked at and found to be in excellent condition. Headquarters likes this program too and was very complimentary about it when I was up there last month.

3. Review of SAR/TSR implementation; maintenance of pressure differential in glove boxes for personnel protection.

(a) Desirable; objective, analytical, supported by background detail.

Chapter XXX of the SAR requires ". . . absolute pressure in a glovebox in operation with radioactive material in it shall be maintained below the pressure of the surrounding area such that any air flow shall be from the surrounding area into the glovebox. This is to prevent the escape of airborne or potentially airborne radionuclides from the glovebox to the surrounding area." This requirement has been implemented through Technical Safety Requirement (TSR) xxxx that requires a differential pressure (DP) of xx in. of water to be maintained between a glovebox and its surrounding area.

The gauges installed to monitor this DP are not calibrated on a regular basis and have not been calibrated since installation 5 years ago. These gauges are the principle means of surveillance to ensure that the TSR is complied with. The DP gauges are not considered safety related equipment by the contractor and are, therefore, not part of the calibration program. The contractor's position is that the gauges are informational only and not "safety related equipment." The ORR team disagrees with this interpretation and asserts that the DP gauges are "safety related equipment" in that they provide the means to monitor a TSR and need to be reliable and, therefore, should be part of the M&TE Calibration Program.

(b) Undesirable; confusing, argumentative, lacking in detail and background, requirement not established...

The DP gauges installed on the glove boxes are out of calibration. I looked at 13 of them and all

were out of calibration. The contractor maintains that they do not have to calibrate them per the SAR. We disagree.

Finding Designation:

This section defines whether the finding is a prestart or post-start finding. The ORR Team Leader in consultation with the Inspector and Senior Advisers, if applicable, will make this determination using the criteria specified in the ORR plan-of-action.

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FINDING RESOLUTION FORM (FORM 3's)

The Finding Resolution Form is used by site management to document the plans and actions taken to correct findings identified during the ORR and when completed would form the closure certificate described in section 5.7.3 of the ORR standard. A separate Form 3 should be generated for each finding related to a particular objective. For instance, if three findings are discovered while reviewing a CRA the inspector would then generate three Form 2's to detail the deficiencies thereby requiring three Form 3's to document the resolution of the findings.

Functional Area:

Print the ORR functional area to which the CRAD has been assigned.

CRA Number/Title:

Specifically identify the CRA or portion of the CRA that the Appraisal Form is to support. Provide the name and number of the CRA or portion of CRA.

ID #:

This number correlates the finding (Form 2) and resolution (Form 3) documents and should be the same number listed on the applicable Form 2.

Issue:

The finding issue statement from the corresponding Form 2 is placed here.

Finding Designation:

This section indicates whether the finding is a prestart or post-start finding.

Responsible Individual:

The individual that management has assigned to be responsible for correcting the finding is identified in this block. The name and phone number of the person should be provided.

Action Plan:

A description of the plan to resolve the finding, along with proposed dates of completion, is presented in this section. A compilation of these plans taken from all the Form 3's generated during the ORR would form the basis for the action plan that is submitted to the appointing authority for approval. Modifications to the action plan made by the appointing authority would need to be incorporated in the Form 3.

Resolution:

A description of the actual actions taken, the reasons for concluding that closure has been achieved and how referenced documents support closure, along with dates of completion, is provided. This becomes the formal documentation of the corrective measures used to resolve the finding.

Certified:

This block is used by management to certify that the actions specified in the action plan and detailed in the resolution block have been completed. The designated manager would sign this block when satisfied that all corrective action are completed.

Verified:

This signature block is used by the official designated by the appointing authority to verify management's successful fulfillment of the corrective actions.

ORR APPRAISAL FORM

Functional Area:	CRA No./Title: Date: ___	Criteria Met: Yes ___ No ___

OBJECTIVE:

Criteria(Method of Appraisal)

Records Review:
o
o
o

Personnel Interviewed:
o
o

Evolutions/Operations/Shift Performance:
o

Discussion of Results:
Record Review:
Interviews:
Shift Performance:

CONCLUSION

Issue(s):
o

Inspected by:	Approved by:_____ ORR Team Leader Date:

ORR DEFICIENCY FORM

Functional Area:	CRA Number/Title:	Finding:__ Observ.:__	Prestart: _ Post-start:_	Issue No.: Date:

ISSUE:(The identified finding or observation)

REQUIREMENT: (Requirement statement from reference)

REFERENCE(S) (specific as possible, including section):

DISCUSSION:

Inspector:_____	Approved:_____ ORR Team Leader Date:

ORR FINDING RESOLUTION FORM

Functional Area:	CRA Number/Title:	ID #:
Issue: Finding Designation: Prestart __ Post-start __		
Date Received: Responsible Individual: Phone #:		

Action Plan:

Resolution:

_____
Corrective Action Completion

Certified By: _____ Date: _
Verified By (pre-start only): _____ Date: _

DAILY AGENDA

NAME/GROUP: _____

DATE: _____

CRADS (To be reviewed for the next 2 days.)

CRAD Number	1st Day	2nd Day

Interviews (Requested for the next 2 days.)

Name or Title of Interviewee	Date/Time	Subject

Status of Day's Activities

Issues/Potential Issues

Activities Conducted

CRADS Completed

Form 4 (Daily Agenda)
Requests for Group Leaders

- Agendas are due to the administrative assistant before the 4 p.m. daily meeting.
- Consolidate your group's agenda onto one Form 4.

- If you have a DOE issue, please identify it. DOE issues are not included in the daily agenda but are included on the daily DOE issues list.

- Potential issues should list the CRAD number.

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APPENDIX 5

START/RESTART PROCESS FLOW CHARTS

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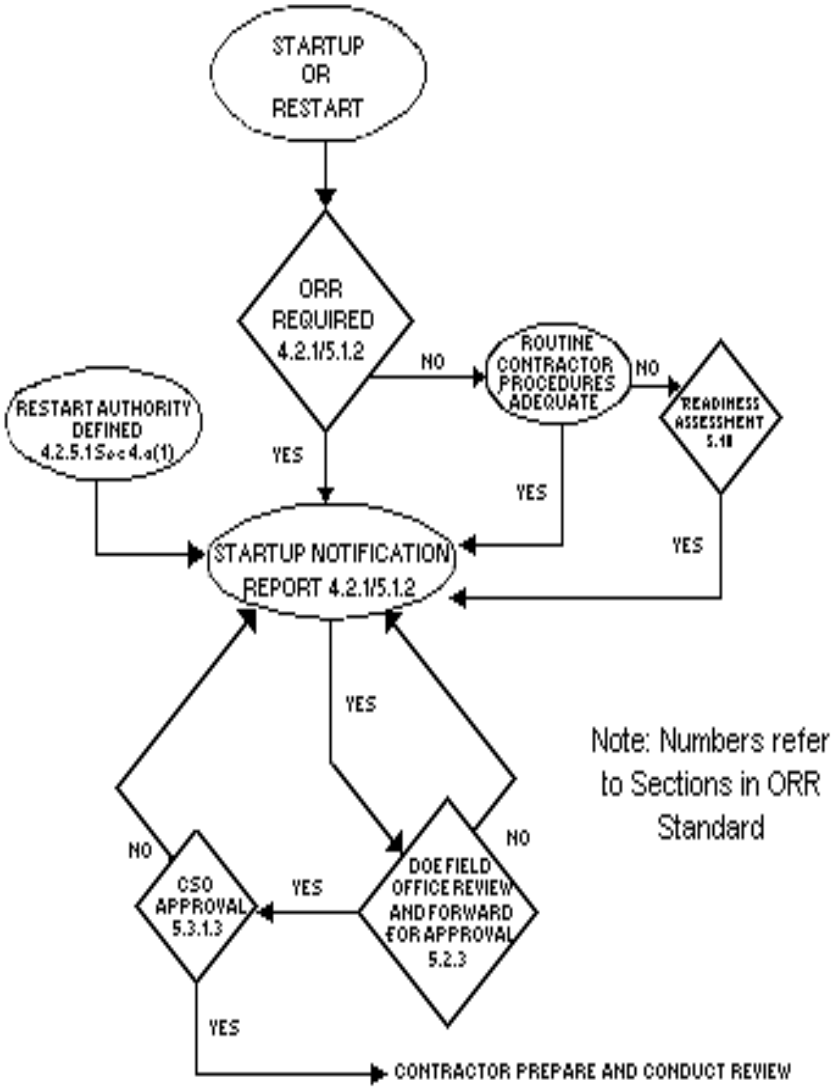
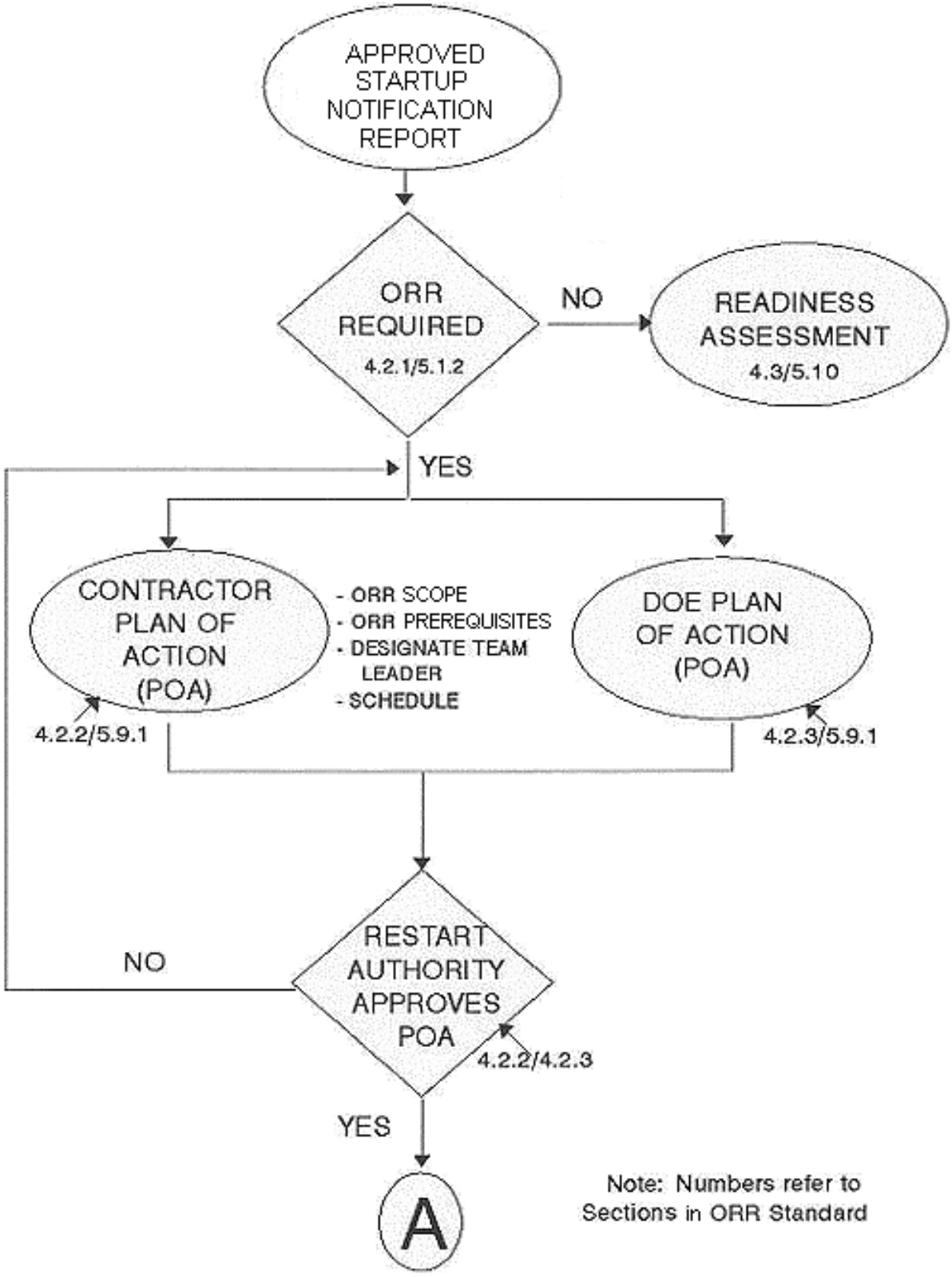
STARTUP OR RESTART PROCESS

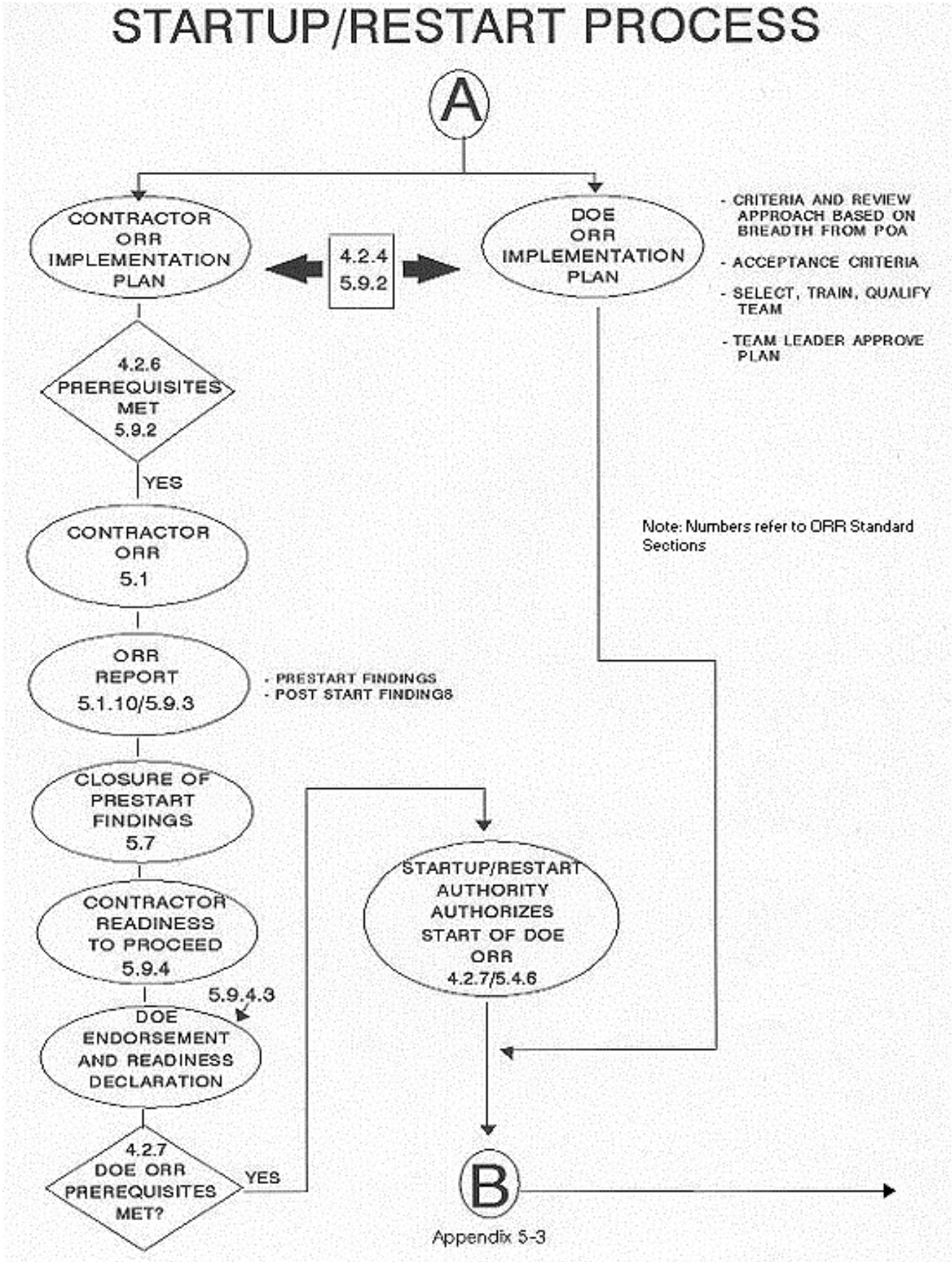


Appendix 5-1

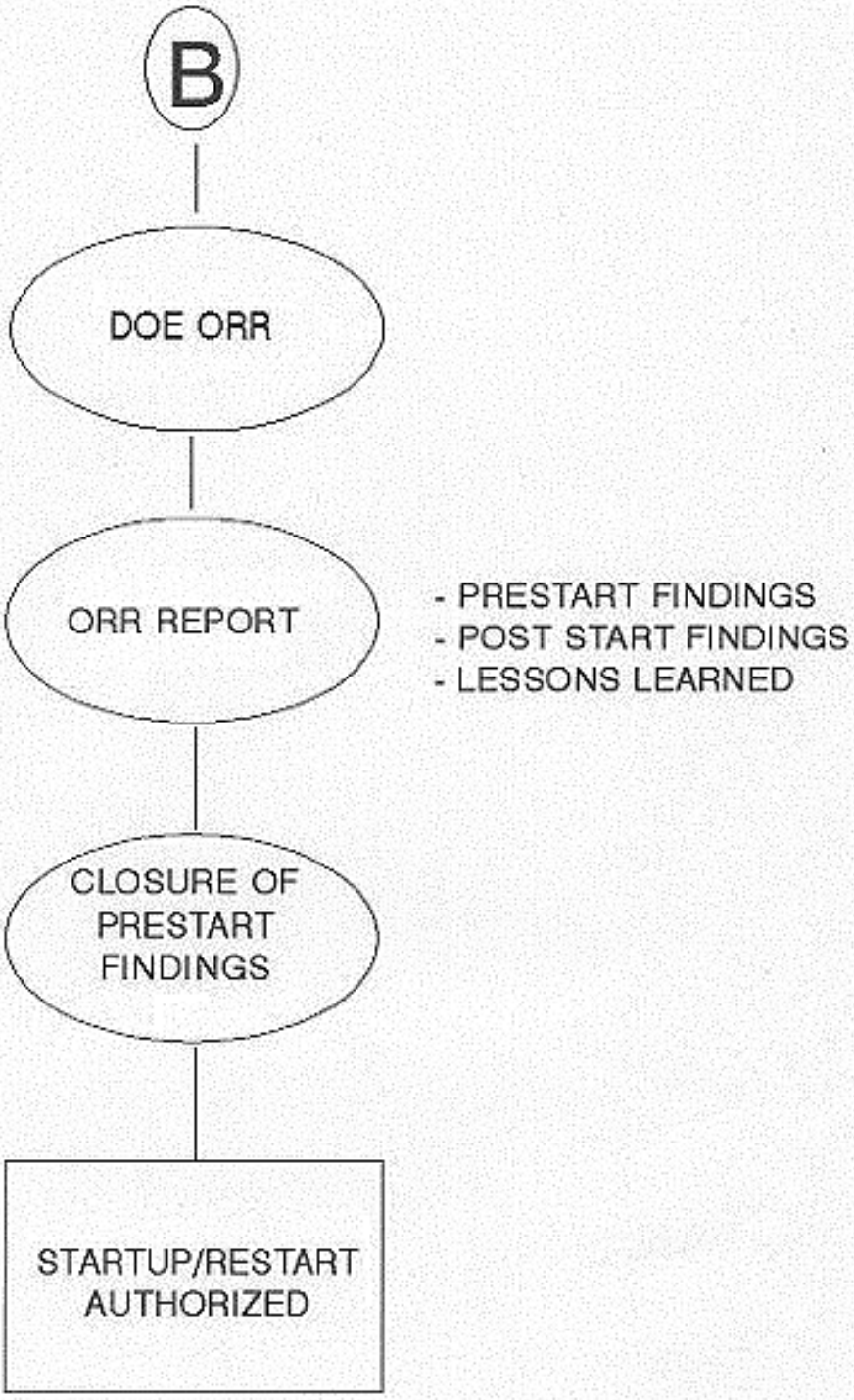
STARTUP/RESTART PROCESS



Appendix 5-2


STARTUP/RESTART PROCESS
A
CONTRACTOR ORR IMPLEMENTATION PLAN
4.2.4
5.9.2
DOE ORR IMPLEMENTATION PLAN
- CRITERIA AND REVIEW APPROACH BASED ON BREADTH FROM POA
- ACCEPTANCE CRITERIA
- SELECT, TRAIN, QUALIFY TEAM
- TEAM LEADER APPROVE PLAN
4.2.6 PREREQUISITES MET 5.9.2
YES
CONTRACTOR ORR 5.1
ORR REPORT 5.1.10/5.9.3
- PRESTART FINDINGS
- POST START FINDINGS
Note: Numbers refer to ORR Standard Sections
CLOSURE OF PRESTART FINDINGS 5.7
CONTRACTOR READINESS TO PROCEED 5.9.4
5.9.4.3
DOE ENDORSEMENT AND READINESS DECLARATION
STARTUP/RESTART AUTHORITY AUTHORIZES START OF DOE ORR 4.2.7/5.4.6
4.2.7 DOE ORR PREREQUISITES MET?
YES
B
Appendix 5-3

STARTUP/RESTART PROCESS



Appendix 5-4

CONCLUDING MATERIAL

Review Activity:

DOE

DP

EH

EM

NE

NN

ER

Field Offices

AL

CH

ID

NV

OR

RL

SF

SR

Fernald

National Laboratories

BNL

LLNL

LANL

PNL

Sandia

Area Offices

Amarillo Area Office

Kirtland Area Office

Princeton Area Office

Rocky Flats Area Office

Preparing Activity:

DOE-DP-31

Project Number:

MISC-0030