OFFICE OF INDEPENDENT OVERSIGHT
OFFICE OF ENVIRONMENT, SAFETY AND HEALTH EVALUATIONS
APPRAISAL PROCESS GUIDE

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Preface

The U.S. Department of Energy (DOE) Office of Independent Oversight, within the Office of Health, Safety and Security (HSS), published its Appraisal Process Protocols to describe the philosophy, scope, and general procedures applicable to all Independent Oversight appraisal activities. The Office of Environment, Safety and Health (ES&H) Evaluations (HS-64) initially prepared this companion guide as part of a continuing effort to enhance the quality and consistency of ES&H oversight appraisals. The guide was further revised to incorporate improvements based on self-assessments and to implement changes consistent with the requirements of DOE Policy 226.1A, *Implementation of Department of Energy Oversight Policy*; DOE Order 226.1A, *Implementation of Department of Energy Oversight Policy*; and DOE Manual 450.4-1, *Integrated Safety Management System Manual.*

This revision to the guide was a major revision and was prepared to accomplish the following:

- Provide increased focus on nuclear safety oversight, including development of a mechanism and guidelines for a limited-scope nuclear safety inspection process to complement existing processes.

- Include oversight of worker safety and health requirements outlined in 10 CFR 851 *Worker Safety and Health Program* into existing processes.

- Better reflect current appraisal processes and activities resulting from lessons learned from previous appraisals.

- Place a higher priority on new or substantially modified nuclear facilities when developing schedules for Independent Oversight inspections and other oversight activities.

- Better coordinate the enforcement and independent oversight functions, currently performed respectively by the HSS Office of Enforcement and Office of Independent Oversight.

- Enhance the processes for gathering and recording information about conduct of oversight activities and for analyzing that information to refine oversight priorities.

- Provide a process for routinely updating the HSS website to include Independent Oversight ES&H appraisal reports as they are developed.

When used in conjunction with the *Independent Oversight Appraisal Process Protocols* and the Criteria, Review and Approach Documents (CRADs) for HS-64 inspections, this ES&H Appraisal Process Guide provides the necessary guidance for conducting ES&H oversight appraisals. The CRADs are separately maintained and available on the HSS website.

This process guide describes the general processes and principal activities that HS-64 use in evaluating the effectiveness of policies, procedures, and programs designated to protect the public, workers, and the environment from the hazards associated with DOE sites and activities as well as the effectiveness of DOE line management in implementing those policies, procedures, and programs throughout the DOE complex.

As part of the continuing effort to improve the ES&H appraisal process, HS-64 anticipates making periodic updates and revisions to this process guide in response to changes in DOE program direction and

guidance, insights gained from Independent Oversight activities, and feedback from customers and constituents. Therefore, users of this process guide, as well as other interested parties, are invited to submit comments and recommendations to the Office of ES&H Evaluations.

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Acronyms

CATS	Corrective Action Tracking System
CRAD	Criteria, Review and Approach Document
CSO	Cognizant Secretarial Office
D&D	Decontamination and Decommissioning
DEAR	Department of Energy Acquisition Regulation
DNFSB	Defense Nuclear Facilities Safety Board
DOE	U.S. Department of Energy
ES&H	Environment, Safety, and Health
HS-64	Office of ES&H Evaluations
HSS	Office of Health, Safety and Security
ISM	Integrated Safety Management
QRB	Quality Review Board
TSR	Technical Safety Requirement
VSF	Vital Systems Functionality

Definitions

Corrective Action Plan (CAP): A document that provides, for each finding or deficiency addressed, a thorough analysis of the underlying causal factors to determine whether systemic program weaknesses exist, steps to address the cause(s) of the finding, detailed descriptions of the corrective action(s) to resolve each finding and prevent recurrence, and a general outline for the conduct of the proposed independent corrective action effectiveness review. For each corrective action, the document shows the responsible person(s) and organizations, the date of action initiation, key milestones, the date of expected completion of the action, how actions will be tracked to closure, deliverable(s) that will signify completion, and the mechanism(s) for verifying closure. A corrective action plan may also provide a detailed discussion of longer-term enhancements and upgrades, as well as descriptions of actions taken and compensatory measures already in place.

Deficiency: A deficiency is an inadequacy that is found during an appraisal and does not meet the intent of a DOE policy, Federal or state law, or other applicable requirement (e.g., contract, standard). Deficiencies may serve as the basis for one or more findings. [470.2B]

Environment, Safety, and Health (ES&H): Activities through which the U.S. Department of Energy (DOE) defines, develops, and implements its responsibilities under Federal laws, regulations, executive orders, and other directives to provide for the safe operation of its facilities and for the protection of workers, the public, and the environment.

Environment, Safety and Health Program Inspection: A scheduled periodic appraisal of integrated safety management systems, as defined by DOE Policy 450.4, *Safety Management System Policy*, including their application to contractor and project management and to specific activities and work with a potential for adverse impacts on workers, public safety, or the environment.

Findings: Findings are used to indicate significant deficiencies or safety issues that warrant a high level of attention on the part of management. If left uncorrected, such findings could adversely affect the DOE mission, the environment, the safety or health of workers or the public, or national security. Findings may identify aspects of a program that do not meet the intent of DOE policy. Findings are clearly identified in the appraisal report, define the specific nature of the deficiency and whether it is localized or indicative of a systemic problem, and identify which organization is responsible for corrective actions. Findings require resolution by management through a formal corrective action process.

Focus Areas: ES&H program areas selected for an evaluation of policy, requirements, Headquarters initiatives, and implementation at a sample of sites. These focus areas are selected by the Office of Environment, Safety and Health Evaluations based on analysis of operational data, significant events, significance of hazards, and ongoing initiatives. The site reviews are typically integrated with planned ES&H program inspections. The results for each site are provided in site inspection reports, and summaries of the results and recommendations and/or opportunities for improvement are provided in summary reports.

Integrated Safety Management (ISM): A formal, organized process whereby DOE employees plan, perform, assess, and improve the safe conduct of work in accordance with DOE Policy 450.4, *Safety Management System Policy*. ISM is institutionalized through DOE directives and contracts to establish the Department-wide safety management objective, guiding principles, and functions. The system encompasses all levels of activities and documentation related to safety management throughout the DOE complex.

National Security Interests: Activities performed at DOE or DOE contractor, subcontractor, consultant, or other facilities or installations that involve classified matter, special nuclear materials, nuclear weapons, nuclear weapons components and devices, critical infrastructure, government property of high value or that would impact DOE program continuity, or that are otherwise are deemed important.

Noteworthy Practices: Innovative approaches or practices related to ES&H systems, programs, processes, or projects observed by the Independent Oversight appraisal team that have proven effective in improving ES&H management systems and performance, and that could be a valuable source of information and lessons learned for other DOE sites. These practices are outlined in Independent Oversight appraisal reports.

Nuclear Safety: Designs, conditions, and abilities of a nuclear facility and its operating staff to prevent uncontrollable development of fission reactions, to prevent or minimize, to the maximum extent practicable, releases of radioactive substances or ionizing radiation into the working or living environment, and to mitigate the consequences of accidents and incidents. This term encompasses nuclear reactors as well as all other non-reactor nuclear facilities, the transportation of nuclear materials, and the use and storage of nuclear materials.

Opportunities for Improvement: Suggestions offered by the Independent Oversight appraisal team that may assist line management in identifying options and potential solutions to various issues identified during the conduct of the Independent Oversight appraisal. Opportunities for improvement are outlined in the technical appendices to the appraisal report for line management consideration. Opportunities for improvement are not mandatory, and they do not require formal resolution by management through the corrective action process.

Safety: As used in this guide, includes all aspects of ES&H programs.

Safety Management: Refers to those systems required to ensure that an acceptable level of protection of the public, workers, and the environment is maintained throughout the life of a facility or operation. The term "safety," when used in the context of safety management or the safety management program, specifically includes all aspects of ES&H.

Special Studies: As used in this guide, refers to appraisals of specific subject areas, policies, or trends. Special studies are conducted by teams with technical and managerial capabilities matched to the topic(s) and organization(s) being studied.

Targeted Nuclear Safety Inspections: Smaller scale inspections designed to address one or more specific nuclear safety review areas such as construction, safety basis development and adequacy, implementation of technical safety requirements, transportation, radioactive waste management, quality assurance, procurement, conduct of operations, design and system facility engineering, safety system maintenance, or other nuclear safety topical areas.

Vital System Functionality Reviews: Vital systems include engineered systems or components that are essential controls relied upon to protect workers, the public, and the environment from the hazards associated with nuclear operations and other hazards present at a site and/or hazardous facility operations by preventing or mitigating accidents that could result in uncontrolled releases of radioactive materials. The purpose of a VSF review is to evaluate the functionality and operability of systems and subsystems essential to protecting workers, the public, and the environment from these hazards.

Walkdown: A technique for observing the condition of site equipment and structures.

Walkthrough: A technique for observing simulated actions or discussing the steps to perform a procedure.

Section 1 – Introduction

Background

The U.S. Department of Energy (DOE) is responsible to Congress and the public for determining whether operations conducted or controlled by DOE are performed in a way that protects the safety and health of operating personnel, the environment, and the public. DOE Policy 450.4, *Safety Management System Policy,* establishes the Department-wide safety management objective, guiding principles, and functions, and provides a formal, organized process to plan, assess, control, and improve the safe conduct of work. Specifically, the policy states, "The Department and Contractors must systematically integrate safety into management and work practices at all levels so that missions are accomplished while protecting the public, the worker, and the environment. This is to be accomplished through effective integration of safety management into all facets of work planning and execution. In other words, the overall management of safety functions and activities becomes an integral part of mission accomplishment."

Applicable integrated safety management (ISM) provisions of the Department of Energy Acquisition Regulation (DEAR) clauses were incorporated into DOE contracts beginning in 1997 to ensure effective implementation of ISM across all DOE organizations. DOE Policy 226.1A, *Implementation of Department of Energy Oversight Policy*, establishes four levels of oversight, which include contractor assurance systems, DOE field and Headquarters line oversight, and independent oversight. Consistent with the policy, the Office of Independent Oversight performs independent oversight processes to determine whether Headquarters, field, and contractor line management implement their responsibilities effectively and to provide an additional basis for credibility throughout the system. A robust independent oversight program is essential to ensuring that ISM implementation and other improvements remain effective and self-sustaining.

Mission

The Secretary of Energy charges the Office of Health, Safety and Security (HSS) with conducting appraisals of safeguards and security; cyber security; emergency management; environment, safety, and health (ES&H) programs (including nuclear safety) and other critical functions as directed by the Secretary at DOE sites. Accordingly, HSS provides DOE and contractor line managers, Congress, and other stakeholders with an independent evaluation of the effectiveness of safeguards and security; cyber security; emergency management; and ES&H policies and programs and their implementation (in accordance with DOE Order 470.2B, *Independent Oversight and Performance Assurance Program*). For each of these areas, the Office of Independent Oversight, within HSS, follows a common set of overall appraisal protocols, which are described in the *Independent Oversight Appraisal Process Protocols*.

This document, the *Office of Environment, Safety and Health Evaluations Appraisal Process Guide*, provides additional insight into Independent Oversight's evaluation approach and processes associated with protection of the workers, the public, and the environment from the hazards associated with DOE sites and activities. The objective of this document is to establish a standard approach and methodology for conducting ES&H appraisals that is well understood by all inspection participants. The Office of ES&H Evaluations (HS-64), within the Office of Independent Oversight, is responsible for implementation of DOE's independent oversight function with regard to the effectiveness of implementation of ISM and ES&H policies, commitments, and programs for protecting workers, the environment, and the public from hazards associated with sites and work activities. The activities of HS-64 encompass:

- Performing periodic appraisals of ES&H systems, programs, and processes at DOE sites that have significant amounts of nuclear materials or other hazards. In addition to traditional ES&H programs, appraisals are performed on systems and processes that provide assurance that hazards are adequately controlled, such as safety system design, facility maintenance, and quality assurance.

- Performing DOE complex-wide special reviews and studies of ES&H issues.

- Performing targeted nuclear safety inspections at DOE sites with nuclear facilities.

- Developing recommendations and identifying opportunities for improving ES&H performance.

- Providing feedback to DOE line management regarding the results of appraisals.

- Performing follow-up reviews to ensure that corrective actions are effective.

- Responding to state and local stakeholder input.

- Evaluating DOE policies related to safety management systems and ES&H program implementation.

- Providing input to an annual report to the Secretary of Energy that discusses the overall status of implementation of ISM at DOE and identifies strengths, best practices, common weaknesses, and opportunities for improvement.

- Apprising the Defense Nuclear Facilities Safety Board (DNFSB) of HS-64 activities and issues, as directed.

About This Guide

This guide is a subordinate document to the *Independent Oversight Appraisal Process Protocols*. While the protocols provide general guidance common to all appraisal activities, this document provides additional detail and guidance regarding procedures and methods specific to ES&H appraisals conducted by Independent Oversight. DOE Order 470.2B is an important reference document that defines program requirements and, in particular, defines processes for sites to respond to identified vulnerabilities and to develop corrective action plans. Because all of these documents should be used together, every effort has been made to avoid unnecessary duplication. For that reason, text in this guide sometimes refers to sections or appendices of these other documents. HS-64 inspectors should be familiar with information in all of these documents.

The processes described in this guide are used for all ES&H appraisals, including periodic inspections, special reviews, targeted nuclear safety inspections, or other appraisal activities, because the reviews differ only in detail. For example, the appraisal phases and the types of activities associated with each phase generally apply. When the specific needs of an activity require significant deviation from the processes in this guide, Independent Oversight develops a specific project plan to guide the activity.

Scope of ES&H Appraisal Activities

The scope of the ES&H oversight program includes a number of activities related to appraising DOE line management and contractor performance. The type and frequency of scheduled appraisals are based on overall Independent Oversight protocols for prioritization. A brief description of these activities and associated products follows.

ES&H inspections of line organization's performance and implementation of regulations, DOE orders, standards, policies, and other pertinent requirements are a cornerstone of the oversight program. These inspections are scheduled events that are carefully tailored to assess ES&H systems, programs, and processes as they apply to contract and project management and to specific activities and work with a potential for adverse impact to workers, public safety, or the environment. Major elements of these evaluations are designed to assess the effectiveness of ES&H systems, programs, and processes, with emphasis on their performance:

Depending on the intended objectives of the activities, various measures within these elements are combined to define an evaluation's scope, which is carefully tailored to the need, safety history, and safety record of a site. The scope of the most comprehensive evaluation includes many elements of line management and contractor implementation of ISM systems (in accordance with DOE Policy 450.4) and ES&H performance, and results in performance ratings that are determined by an established rating system. Less comprehensive inspections may involve a smaller sample of organizations, facilities, and activities, or they may provide greater focus on areas of past performance problems. The objective is to identify weaknesses and the underlying causal factors. For example, as Independent Oversight monitors line management's progress in completing corrective actions through the DOE Corrective Action Tracking System (CATS), the need for a follow-up review may be determined to examine specific findings or actions. Other, more focused safety inspections may be conducted as broad reviews of progress in implementing ISM or improving ES&H management and performance and may include follow-up reviews, special reviews, targeted nuclear safety inspections, and/or special studies as defined in the *Independent Oversight Appraisal Process Protocols.*

Section 2 – Environment, Safety, and Health Appraisals

Introduction

DOE Order 470.2B, *Independent Oversight and Performance Assurance Program,* establishes the overall approach for conducting the ES&H evaluations program. Additionally, the requirements and responsibilities for reporting and the responsibilities of other organizations impacted by and/or involved in responding to the HSS appraisals are included in this order. The Independent Oversight program provides a disciplined process for appraising and reporting to DOE management and outside authorities, such as Congress and the DNFSB, on the implementation of DOE's ISM policy and ES&H policies, procedures, systems, and programs. This section of the Appraisal Process Guide describes the oversight program and appraisal approach.

Approach to ES&H Appraisal Activities

ES&H appraisal activities focus on evaluating performance in a number of major areas – nuclear safety, worker safety and health, and environmental protection, as well as performance of important management systems, such as DOE line management oversight and contractor assurance systems – in ensuring that programs in these areas are effectively implemented, deficiencies are identified and evaluated, and appropriate corrective actions and recurrence controls are applied. Nuclear safety and worker safety and health are overseen and regulated by DOE, and Independent Oversight appraisals are a key element of DOE's self-regulation. Since some aspects of environmental protection are externally regulated, Independent Oversight performs oversight to ensure that DOE management has accurate information in these areas. However, priority is given to review those areas where environmental protection is self-regulated.. Consistent with the DOE oversight system as described in DOE Order 226.1A, Independent Oversight appraisals include evaluation of line management oversight and contractor assurance systems, primarily as applied to the scope of activities reviewed on the appraisal. In addition, ES&H appraisals focus on protection of DOE workers, the public, and the environment from the hazards associated with DOE sites and activities. DOE's activities encompass a broad range of hazards, including standard industrial operations, nuclear facility operations, decontamination and decommissioning (D&D) and demolition of hazardous facilities, nuclear explosives, and evolving technologies.

For efficiency and in consideration of impacts to site operations, comprehensive inspections that evaluate a number of ES&H areas are typically utilized. The overall inspection approach is depicted in Figure 2-1. While the figure encompasses all types of assessments, they can be conducted separately or concurrently, as appropriate to increase the efficiency of the appraisal process and minimize unnecessary impact on DOE and site management, facilities, and activities. Approaches to evaluating the areas of worker safety and health, nuclear safety, and environmental protection are discussed below.

Specific facilities, programs, work activities, focus areas, nuclear safety topical areas, and/or vital systems are typically reviewed during the appraisal process to evaluate the performance of line management and ES&H programs, processes, and procedures. Safety management systems are reviewed to ascertain their effectiveness and relation to identified performance deficiencies. In general, ES&H inspections review the ISM core functions, selected focus areas, and/or, where applicable, targeted nuclear safety inspections. Special or targeted inspections may address any one or a combination of these areas. In all inspections, an overarching emphasis is on line oversight and institutional feedback and improvement processes as they relate to the inspection scope. Observations are consolidated, and the team reaches consensus on the findings and ratings for areas evaluated. This process requires the team members to communicate and coordinate observations/themes with each other.

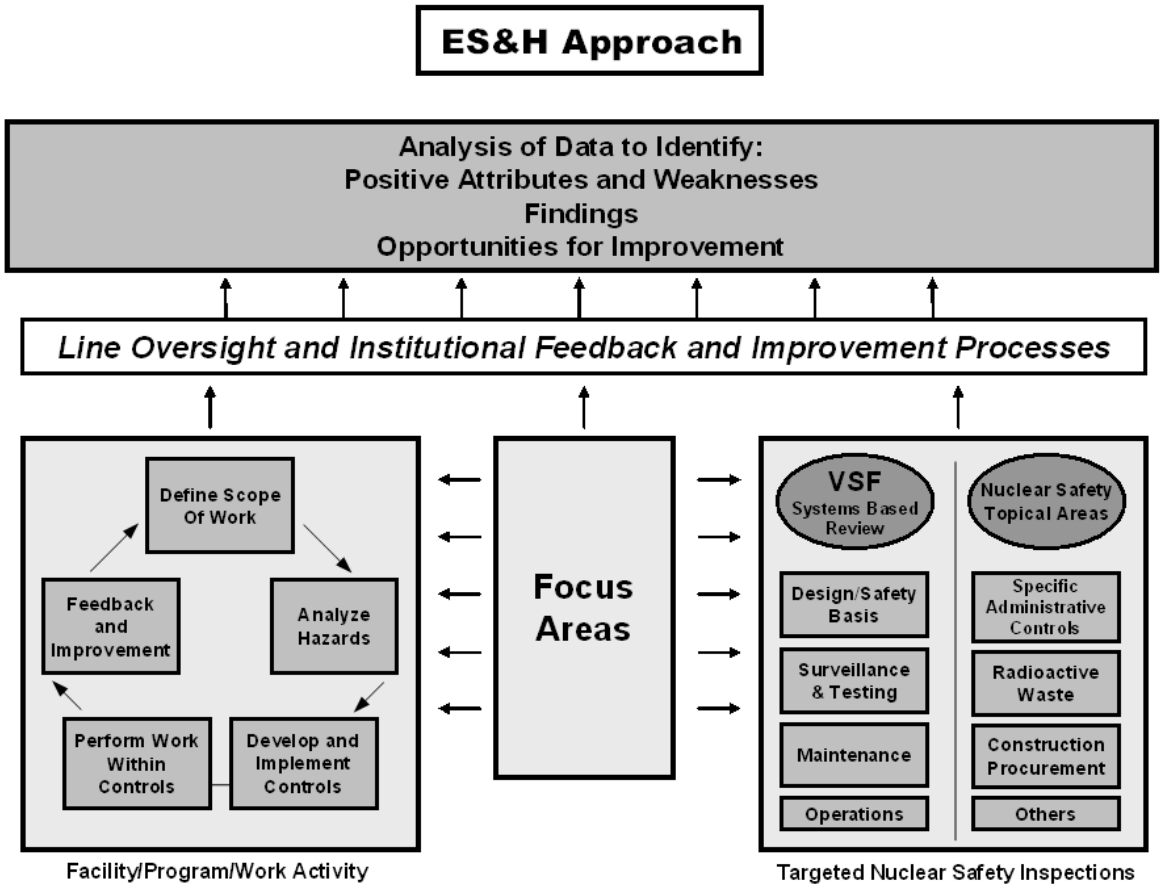

Figure 2-1. Overall Evaluation Approach

Worker Safety and Health Reviews

Consistent with DOE ISM policy, work control systems have been established to integrate safety, health and environment programs into work planning and to assure the safety and health of workers by identifying and analyzing hazards and applying controls for these hazards. Additionally, 10 CFR 851 *Worker Safety and Health Program* require covered DOE contractors to develop worker safety and health program descriptions that establish worker rights and responsibilities as well as management responsibilities to provide a safe workplace for their employees and subcontractors. Independent Oversight appraisals of worker safety and health focus on the performance of these systems and programs by direct observation of work activities to determine whether proper controls have been established to eliminate or mitigate hazards and ensure protection of the health and safety of workers. Observed inadequacies in controls are evaluated to identify weaknesses in work control processes and/or safety and health programs and communicate them to site management for corrective action. Independent Oversight also performs reviews of specific worker safety and health functional areas (e.g., chemical management,

electrical safety, workplace exposure assessment) based on input from the Offices of Corporate Safety Analysis, Worker Safety and Health Enforcement, Worker Safety and Health Policy, and Worker Safety and Health Assistance, which is provided at various times including the annual assessment planning meeting. Further insights from these organizations are also obtained prior to each inspection during a pre-inspection meeting, and the results of each inspection are discussed with these organizations during post-inspection meetings held after the completion of validation activities to further refine oversight priorities. Worker safety inspections typically devote attention to the more hazardous operations within DOE, such as D&D; work with unique hazards such as beryllium, explosives, and evolving technologies; or areas where performance problems have been noted through past appraisals or operating experience.

Nuclear Safety Reviews

Nuclear safety oversight activities are performed at various phases of the life cycle of nuclear facilities, including design, construction, operations, D&D, and demolition. Operating facilities are routinely appraised at regular intervals, but priority is also given to assessments of new or recently modified facilities consistent with the *Independent Oversight Appraisal Process Protocols*. For new design and construction, Independent Oversight appraisals are targeted at evaluating the quality of design, safety basis, procurement, and construction activities to provide an additional level of assurance that these facilities are designed and constructed with appropriate controls to protect workers, the public, and the environment from the unique hazards associated with their operations. Independent Oversight reviews of nuclear safety use a sampling approach to verify that line organization oversight is providing the appropriate level of assurance in protecting workers, the public, and the environment from the hazards associated with nuclear operations.

For operating and D&D facilities, Independent Oversight appraisals focus on maintenance and implementation of the safety basis. Because of past inadequacies in the quality of design and safety basis, some appraisals focus on evaluating the initial design and safety basis analysis. These types of reviews have been beneficial in leading to correction of design flaws in operating facilities. The review of recent modifications to nuclear facilities requiring startup notification reports is considered a higher priority for oversight activities. Nuclear safety reviews include vital system functionality (VSF) reviews and targeted nuclear safety inspections, as discussed below.

Vital System Functionality Reviews

Vital systems include engineered systems or components that are essential controls relied upon to protect workers, the public, and the environment from the hazards associated with nuclear operations and other hazards present at a site and/or hazardous facility operations by preventing or mitigating accidents that could result in uncontrolled releases of radioactive materials. The purpose of a VSF review is to evaluate the functionality and operability of systems and subsystems essential to protecting workers, the public, and the environment from these hazards. This review may be included as part of the scope of ES&H appraisals.

A VSF review determines whether engineering/design, authorization basis, configuration management, maintenance, surveillance, testing, and operations are appropriately applied to ensure vital systems' ability to perform when called upon to protect workers, the public, and the environment from upset conditions. This type of review may include an evaluation of the systems design basis and analysis, and whether maintenance, testing, configuration management, operations, training, and qualifications are sufficient to keep the systems functional and, where applicable, within the facility's safety envelope specified in the authorization basis, including the technical safety requirements (TSRs). System

modifications are typically reviewed to ensure that appropriate evaluations, reviews, and approvals are in place and that the modifications have been appropriately evaluated for unreviewed safety questions. Configuration control is also reviewed to ensure that the installed systems, documents, drawings, and procedures are accurate and match design.

Targeted Nuclear Safety Inspections

In addition to engineered systems, the safety basis for nuclear facilities includes specific administrative controls as part of the TSRs and administrative programs that are established to protect workers, the public, and the environment from the unique hazards associated with nuclear facilities. The purpose of a targeted nuclear safety inspection is to address design, implementation of TSRs and/or one or more administrative program. These administrative programs include radiological protection, criticality safety, fire protection, transportation, radioactive waste management, and other nuclear safety topical areas essential to protecting workers, the public, and the environment from these hazards.

Areas for targeted reviews are selected based on input from the Offices of Corporate Safety Analysis, Price-Anderson Enforcement, and Nuclear Safety Policy and Assistance, which is provided at various times, including the annual assessment planning meeting. Further insights from these organizations are also obtained prior to each inspection during a pre-inspection meeting, and the results of each inspection are discussed with these organizations during post-inspection meetings held after the completion of validation activities for each inspection to further refine oversight priorities.

Environmental Protection Reviews

Implementation of aspects of site environmental protection programs is routinely included in evaluation of select work activities and associated work control processes. Work control processes are evaluated to determine how environmental hazards are identified and analyzed, and how controls are specified. Work is observed to determine whether controls to eliminate or mitigate hazards to the environment have been appropriately established. In addition, in coordination with the Office of Environmental Policy and Assistance and Office of Corporate Safety Analysis, environmental protection program focus areas target management system elements for review as needed. Further insights from these organizations are also obtained prior to each inspection during a pre-inspection meeting, and the results of each inspection are discussed with these organizations during post-inspection meetings held after the completion of validation activities for each inspection to further refine oversight priorities.

Feedback and Improvement Process Reviews

DOE Policy 226.1A, *Implementation of Department of Energy Oversight Policy*, establishes a DOE-wide oversight process to protect the public, workers, the environment, and national security assets and to perform its business operations effectively through continuous improvement. The feedback and improvement review major performance elements include independent and management assessments, issue management, lessons learned, and occurrence investigations.

Special Reviews and Focus Areas

Special reviews are typically conducted at the request of Senior Department management in order to obtain more information regarding complex wide performance in an ES&H area or the status of performance at a specific site. These reviews are advisory and typically include recommendations in lieu of ratings and findings.

Approved Inspection Criteria

ES&H evaluations are designed to assess the effectiveness of site activities in relation to ES&H management systems, processes, and procedures, including feedback and improvement mechanisms, work planning and control systems, focus areas, and nuclear safety. To provide a uniform standard for these areas, separate inspection criteria and activities have been developed for these areas and are presented in CRADs. The criteria and activities have been carefully defined, documented, approved, and linked to the HSS ES&H Evaluations website for easy retrieval as CRADs. Additional CRADs in various topical areas are also shown and are available for reference during the development of various types and/or scopes of inspections. The approved inspection criteria, activities, and lines of inquiry are included in the HSS website (http://www.hss.energy.gov/IndepOversight/ESHE/docs.html). Separate documents are provided for each of the areas inspected, including work planning and control, feedback and improvement, VSF, and focus areas. Several other inspection criteria documents are listed and available as tools to facilitate development of other types or scopes of inspections.

Roles and Responsibilities

To ensure that planning, conduct, closure, and follow-up activities are accomplished effectively and efficiently, key functions and tasks are assigned to various HS-64 positions, based on organizational and assessment assignments.

Director, Office of Environment, Safety and Health Evaluations

The Director of HS-64 has responsibility for and performs the following key functions and tasks:

- Oversees implementation of the ES&H appraisal program
- Provides overall direction and guidance
- Coordinates with the Director, Office of Independent Oversight and the Offices of Enforcement, Corporate Safety Analysis, Safety and Health, and Nuclear Safety, Quality Assurance and Environment during the annual assessment planning meeting to establish annual ES&H appraisal schedules and potential ES&H focus areas.
- Interfaces with Headquarters and field personnel to coordinate activities and address concerns
- Serves as Inspection Team Leader for ES&H inspections
- Makes ES&H appraisal team assignments and establishes review scope
- Participates on the Quality Review Board
- Briefs senior DOE management, HSS Offices and other stakeholders on appraisal results.

Deputy Director, Office of Environment, Safety and Health Evaluations

The Deputy Director of HS-64 has responsibility for and performs the following key functions and tasks:

- Provides direction and guidance consistent with the HS-64 Director

- Recommends appraisal schedules
- Serves as Inspection Team Leader for ES&H inspections
- Supports the HS-64 Director in interfacing with Headquarters and field personnel to coordinate activities and address concerns
- Recommends appraisal team structure and scope
- Participates on the Quality Review Board, as requested
- Briefs senior DOE management, HSS Offices and other stakeholders on appraisal results.

ES&H Team Leader

The ES&H Team Leader has responsibility for and performs the following key functions and tasks:

- Leads appraisals of ES&H or other topics
- Develops and recommends appraisal scope
- Provides direction and guidance to team members on the approach to specific appraisal activities
- Drafts inspection plans
- Proposes team membership
- Makes arrangements with the site for document requests and other logistics, as needed
- Establishes the schedule of events for ES&H appraisals and makes specific assignments
- Ensures that team members perform their assigned duties
- Addresses site concerns associated with appraisal activities
- Provides feedback to site personnel on a daily basis to validate assessment information, and clearly communicates areas of concern
- Prepares and presents appraisal reports
- Briefs site management and counterparts on appraisal results.

Topic Team Leader

Major elements of HS-64 inspections include institutional management systems, work planning and control, and targeted nuclear safety inspections, including VSF. A typical inspection team includes subteams to inspect these elements. In some cases, HS-64 Topic Team Leaders are assigned responsibility to lead these subteams and have responsibility for and perform the following key functions and tasks:

- Supports the ES&H Team Leader in leading appraisals of ES&H management systems, ES&H performance in the conduct of work, or targeted nuclear safety inspections
- Provides input on the recommended appraisal scope
- Provides direction and guidance to team members on the approach used to conduct performance testing
- Provides input to the ES&H Team Leader on document requests and other necessary logistics to support the topic team
- Provides feedback on the proposed ES&H appraisal team structure and makes recommendations for additional resources needed to accomplish the scope
- Assures that assignments and schedules are conducive to implementing the plan
- Ensures that topic team members perform their assigned duties
- Addresses site concerns associated with activities
- Provides feedback to site personnel on a daily basis to validate assessment information, and clearly communicates areas of concern
- Prepares and presents sections of appraisal reports
- Participates in briefing site management and counterparts on appraisal results.

Team Members

Each HS-64 team member has responsibility for and performs the following key functions and tasks:

- Supports the ES&H Team Leader and Topic Team Leader in conducting appraisals
- Provides input to the ES&H Team Leader and Topic Team Leader on appraisal scope and potential approaches
- Conducts appraisal activities following the direction and guidance of the ES&H Team Leader or Topic Team Leader
- Prepares the schedule of interviews to accomplish during the onsite visit
- Reviews key site documents prior to the onsite visit
- Conducts thorough and fair appraisals
- Validates assessment data and conclusions with site personnel on a daily basis to ensure factual accuracy

- Provides daily reports and written input for draft appraisal reports as directed by the ES&H Team Leader and Topic Team Leader

- Participates in site validation meetings with counterparts and site management, as directed.

Administrative Coordinator

An HS-64 administrative coordinator has responsibility for and performs the following key functions and tasks:

- Supports the Inspection Team Leader/ES&H Team Leader, Topic Team Leaders, and team members

- Coordinates administrative needs with the site and other counterparts (hotel, office space, site access requirements, computer equipment, computer network access requirements, supplies, etc.)

- Assists the Director or Inspection Team Leader/ES&H Team Leader in preparing materials for presentations and meetings, including slides and handout materials

- Updates, reviews, and transmits schedules and daily reports as directed by the Team Leader

- Manages the team's library of documents and directs the flow of documents to team members

- Assists the Inspection Team Leader/ES&H Team Leader in producing the draft report.

Major Inspection Phases

ES&H inspection activities may be characterized by functional phases: planning, conduct, closure, and follow-up. The planning phase includes those activities necessary to prepare for all aspects of an inspection. The conduct phase includes the portion of the site visit principally devoted to collecting and validating data. The closure phase involves data integration and analysis, issue identification, rating determination, draft report preparation and quality review, and internal management briefings. The follow-up phase includes comment review and final report preparation, Headquarters briefings, corrective action plan reviews, and corrective action tracking.

Although these phases are identified by the primary activities they encompass, actual inspection activities may overlap significantly. For example, some data is collected during the planning phase, and planning can extend into the conduct phase. Similarly, analysis begins during data collection and continues throughout the process. Subsequent sections of this guide discuss each of these phases in greater detail.

Figure 2-2 illustrates the major inspection activities for comprehensive inspections.

Development of the Inspection Schedule
- Select sites
- Coordinate with both internal and external entities
- Notify site to be inspected
- Schedule inspections

Pre-planning Activities
- Assign pre-planning responsibilities
- Coordinate with site management
- Request documents from site
- Make logistics arrangements
- Conduct Headquarters interviews

Scoping Visit
- Conduct site briefings
- Meet with site representatives
- Tour facilities
- Establish inspection scope
- Identify counterparts
- Gather documents for planning

Team Planning
- ES&H Team Leader briefing
- Conduct presentation on operational data analysis
- Conduct interviews with Headquarters personnel
- Schedule onsite activities
- Address badge and access requirements
- Attend required onsite training
- Perform initial onsite activities to gather documents.
- Attend onsite presentations as necessary to understand site-specific processes

Field Inspection
- Conduct onsite data collection activities
- Validate data

Inspection Closure Activities
- Develop draft inspection report and technical appendices
- Provide draft report and technical appendices to site for factual accuracy
- Outbrief site managers

Inspection Follow-up Activities
- Receive site comments on inspection report and technical appendices at Headquarters
- Prepare final inspection report and technical appendices
- Brief senior managers and Congressional committees as directed
- Review corrective action plans

Figure 2-2. Major Inspection/Review Activities.

Section 3 – Appraisal Process Planning

Introduction

This document deals only with those aspects of planning that are most directly associated with conducting appraisals. Thorough planning is the foundation of all appraisals. Even routine and repetitive appraisals require the gathering and analysis of large amounts of information from many sources, decision-making based on that analysis, and appraisal preparations based on those decisions. The quality of planning significantly affects all other appraisal phases. Because there are limited amounts of time and other resources available for planning, planning efforts must be focused and efficient.

When scheduling an inspection, an initial step involves identifying and assigning resources for the activity. The HS-64 Director designates an ES&H Team Leader and Topic Team Leaders, as appropriate. Working with the Topic Team Leaders, the ES&H Team Leader plans the conduct of the appraisal and closely coordinates with the HS-64 Director to ensure the thoroughness and rigor of the inspection.

The ES&H Team Leader serves as the primary point of contact to DOE and contractor managers at the site on matters related to the inspection. Topic Team Leaders are responsible for the planning and conduct of the inspection of their assigned topic areas. Team members are assigned as needed to support the programmatic and technical review.

For integrated appraisals, the Inspection Team Leader is the primary point of contact for the Independent Oversight team and makes the necessary arrangements with the site for space, logistics, and other common team needs.

Goal

The goal of planning is to identify and prepare for the actions necessary to conduct an effective and efficient appraisal of the site's ES&H processes and performance.

Management Planning

Management planning responsibilities are continuous throughout an appraisal's cycle. Most of the early planning requirements are management responsibilities (as opposed to team planning responsibilities). Once an appraisal has been approved and tentatively scheduled, the ES&H Team Leader, in conjunction with the Director of HS-64, is responsible for planning activities, which may include:

- Contacting the affected sites and organizations to begin coordinating inspection activities
- Conducting a meeting with representatives from the Office of Enforcement and the Office of Corporate Safety Analysis prior to the scoping visit to obtain their key historical information, safety analysis and perspective, and potential areas/facilities for review for the selected site.
- Identifying and collecting documents and other information that will be needed for more detailed planning
- Conducting an initial review of available information to assist initial decisions regarding activity scope and focus

- Determining the tentative scope and focus of the appraisal, including identification of follow-up activities, as appropriate

- Developing and coordinating a site visit schedule and debriefing agenda with the facilities/organizations(s) to be visited for ES&H inspections, or working with the assigned Inspection Team Leader for combined inspections

- Identifying and acquiring the personnel resources to accomplish both the technical and administrative support aspects of the appraisal

- Identifying and satisfying logistics needs, such as onsite workspace, hotel accommodations, computer and other equipment support, and visit requests/badging for ES&H inspections (this is performed by the Inspection Team Leader for combined inspections)

- Developing and coordinating the appraisal plan with appraisal team members

- Directing and overseeing team planning activities and site planning visits

- Overseeing the necessary ongoing planning throughout the course of the appraisal.

Management planning activities, with appropriate input from the results of early team planning activities, are used to create a formal plan for the conduct of the appraisal. Because planning is continuous throughout an appraisal, the formal plan is a "living document," subject to modification as the activity progresses.

Site Notifications

For planned ES&H appraisals, HSS management typically has established and disseminated to Headquarters and field organizations a coordinated annual appraisal schedule that defines the dates and schedules for the onsite visits with the appropriate operations or field office. The Team Leader typically sets up a weekly conference call with the site to establish a single point of contact to coordinate the planned visits for the duration of the appraisal, coordinate appraisal activities, identify technical points of contact, and handle requests for selected documents related to ES&H programs and safety management systems and processes.

Past experience with VSF reviews has demonstrated that identifying and retrieving detailed design basis requirements for selected vital systems can be quite difficult and time consuming for the appraisal team and site contractor. Consequently, an effort should be made to provide the site contractor with sufficient advance notice regarding the system being considered for review, to allow the contractor sufficient time to collect the needed documentation.

Scoping Visit

The site scoping visit helps focus the evaluation early in the planning process. The appraisal team management and representatives for each of the inspection areas (VSF, work control, feedback and improvement) conduct the scoping visit several weeks before the evaluation visit. The purposes of the scoping visit are summarized in Table 3-1.

Table 3-1. Purposes of the Scoping Visit

- To meet with DOE and contractor points of contact or counterparts to understand safety management system processes and related documents, including related management improvement initiatives and status of actions and progress in addressing previous appraisal results, if applicable
- To meet with senior DOE and contractor management to discuss appraisal objectives and solicit feedback and input on the appraisal scope
- To conduct facility tours and discussions with facility management on planned and ongoing work activities expected during the onsite appraisal
- To meet with site counterparts to obtain an overview of key systems (feedback and improvement, requirements management, work control, nuclear safety systems, vital systems, etc.) and to identify and collect system documents, as appropriate
- To finalize the appraisal scope, including identification of VSF systems and nuclear safety topical areas, where work planning and control will be sampled, and what follow-up activities will be included to sample effectiveness of corrective actions to prior appraisal results, if applicable
- To identify additional DOE and contractor points of contact or counterparts (site and Headquarters) and document needs
- To coordinate logistical arrangements, including team space, site access training, and the need for reviews by an authorized classifier

The scoping visit typically lasts two days. Before the visit, the Inspection Team Leader, in coordination with the site, prepares a schedule of activities for the scoping visit, which generally covers a formal debriefing on selected topics, facility tours, and team management interviews of key senior managers. In addition, the team members assigned to the scoping visit also schedule other activities through their assigned site counterparts. The team members' primary objectives are to understand safety management system processes, collect related documents, and identify ongoing site activities for observation during the onsite appraisal period to facilitate detailed planning efforts in Headquarters. During the HS-64 preparation and planning phase of the evaluation, meetings are typically scheduled with the Headquarters line managers.

Team Structure

The team structure greatly depends on the scope and complexity of the appraisal. Elements common to most appraisal teams are discussed below.

The Inspection Team Leader is assigned by the Office of Independent Oversight. For combined inspections where the Inspection Team Leader is not from HS-64, the HS-64 Director assigns an ES&H Team Leader. The team members from HS-64, and any independent consultants, are professionals who possess technical and appraisal expertise in their assigned fields. HS-64 Federal team members maintain qualifications in their assigned technical areas, in accordance with the DOE technical qualification program.

The typical team organization is designed to promote a single, integrated team effort. All team members work together to pass along information and potential issues of mutual interest. This team organization is intended to facilitate the management of the team and the rollup of information, not to limit or impede access to the Inspection Team Leader or other team members by individual evaluators. Team members

are encouraged to keep each other informed of important issues or common lines of inquiry. For example, during a VSF inspection, an evaluator may find a problem that is caused by inadequate training. This information should be passed on to others on the team who are evaluating different key safety management systems' ES&H elements. Doing so may expose a larger, more pervasive problem in ES&H training programs. Team members should not assume that they are to function only within their key element or technical area. Rather, they should work together across disciplines and areas of expertise to share information, request assistance, and follow up on lines of inquiry. The appraisal and the resulting report is a compilation of the team's efforts, not of any single individual.

The ES&H Team Leader manages the planning efforts, assigns evaluation tasks, and coordinates the data collection activities of the appraisal team. The ES&H Team Leader is responsible for the rollup of positive attributes and programmatic weaknesses developed by the team members for use in preparing assigned sections of the evaluation report.

An administrative coordinator supports the appraisal team. The coordinator oversees the administrative and logistical support required by the team and serves as the point of contact for onsite support.

Team Selection

Appropriate team members must be selected to evaluate the key ES&H program and safety management system elements that are scheduled for review. The final team composition is usually set following the scoping visit. The ES&H Team Leader (if applicable), Topic Team Leaders, team members, and an administrative support coordinator are typically identified at the start of planning, when tentative scope determinations have been made. The composition of the team is based on the known mission and major facilities at the site to be evaluated. This initial group works together during planning to identify not only the scope of the appraisal, but also any additional HS-64 team member assignments in the areas within the appraisal scope.

As planning for the appraisal progresses, the ES&H Team Leader refines the scope and focus of the appraisal and may also amend the team roster to reflect these changes. Team members may be asked to accept additional assignments, new team members may be added to address particular aspects of operations or issues, and team members may be dropped as the planning process progresses. The HS-64 Director and ES&H Team Leader structure and compose the team as they see fit to meet the needs of appraisal activities.

Appraisal Plan

A final inspection plan is developed as soon as possible following the scoping visit, although preliminary work on a draft version of the evaluation plan begins before the scoping visit. The goal is to provide the inspection plan to the site at least three weeks in advance of the site planning visit. Appraisal team management develops the plan, which reflects the evaluation objectives and the associated inspection criteria, activities, and lines of inquiry. The inspection plan is approved by the Director of the Office of Independent Oversight and is then transmitted via cover memo to the site, program office, and operations office. Team members use the plan to develop more detailed data collection plans detailing specific lines of inquiry and data collection techniques. A typical outline for an inspection plan is shown in Table 3-2.

Table 3-2. Typical Inspection Plan Contents

- Introduction
- Schedule
- Team Responsibilities and Assignments
- Inspection Process
- Scope of Inspection Activities
- Inspection Criteria, Activities, and Lines of Inquiry
- Rating System Description (if applicable)

Team Planning

Team planning refers to planning efforts that begin after the appraisal team is finalized and assembled. The team planning meeting is the first meeting involving the entire team and typically occurs during the site planning visit. It serves to orient the team on the process and objectives of the appraisal and ensure that individual workers understand the appraisal scope and work as a team to achieve appraisal objectives.

Team planning activities concentrate on understanding the site's safety management system processes and determining appropriate data collection techniques that will provide insight into the effectiveness of implementation of ES&H program elements and safety management system processes reviewed. During this period, team members review available site documents to better focus their data collection plans and interview personnel, tour facilities, and attend briefings on site as necessary to understand the site-specific ES&H program elements and safety management system processes. This should enable them to use the limited time available more efficiently while on site for data collection.

Team members are tasked with measuring the effectiveness of the ES&H activities by evaluating facilities, programs, and technical functional and focus areas (see Section 2). As will be discussed in Section 4, observations—walkthroughs, walkdowns, and performance observations—are extremely valuable methods of gathering data. To maximize use of these methods, team members need to plan their data-gathering activities so that these observations can be dovetailed with more-easily scheduled data collection activities, such as reviews of program documents and procedures, as well as interviews with facility-level DOE and contractor management and workers.

Individual detailed data collection plans and a tentative schedule of onsite activities (interviews, walkthroughs, document reviews, observations, etc.) are the primary products resulting from team planning. The ES&H Team Leader reviews the team members' schedules to identify duplications and areas not fully addressed, and to focus and redirect team member activities to ensure that the scope of the appraisal plan is adequately covered. Typically, the team members' individual schedules of onsite activities are provided to the site's designated point of contact prior to the onsite appraisal period to facilitate coordination and to minimize the impact of planned team activities during the onsite appraisal period.

The data collection process begins at Headquarters during the team planning phase before shifting to the site. Planning is normally performed in two steps. The first week of planning is normally conducted on site. Team members use the time to collect necessary documentation and to meet with site counterparts. The second week of planning normally is conducted off site, with team members reviewing documents

and finalizing their schedule for the conduct phase of the appraisal. During team planning, team members conduct preliminary interviews with responsible management and staff personnel, retrieve documents, and conduct other data collection activities. Although team members concentrate on different activities, it is imperative that they *coordinate their activities with their site counterparts* and other team members to address the scope and objectives identified in the appraisal plan, to maintain focus, and to promote efficient use of team resources. The major activities that occur during team planning are summarized in Table 3-3.

Table 3-3. Major Activities During Team Planning

- Brief on the results of previous management planning activities, including the observations and results from the scoping visit, insights on operating experience history of the site, and any management guidance and expectations.
- Review and analyze available documentation.
- Contact site counterparts to gather additional information and to identify and coordinate the team's onsite activities.
- Conduct interviews with DOE Headquarters program office managers.
- Coordinate appropriate information exchanges with representatives from Headquarters and the field.
- Perform onsite interviews and tours and attend onsite briefings as necessary to understand site-specific processes.
- Recommend any modifications to activity scope and focus that result from planning activities.
- Determine appropriate data collection methods and develop detailed data collection plans, including any necessary performance test plans, safety plans, etc.
- Develop a schedule of data collection and related activities.
- Identify additional information and support requirements, and communicate them to the appropriate individuals or organizations.
- Brief or otherwise inform team management of planned activities.
- Coordinate logistics and travel plans with the administrative coordinator.

While much of the detailed planning for an appraisal should be accomplished during the planning week(s), planning is an ongoing effort and may continue into the conduct phase of the activity. Managers and team members alike are expected to remain flexible and ready to adapt plans to respond to unexpected circumstances that may arise during any phase of an appraisal.

Team Communications

Effective, frequent communication is one of the most important keys to a successful evaluation. This includes communication among team members and between the team, HSS management, line management, and external stakeholders. The team's communications with external stakeholders are extremely important to the evaluation, since the stakeholders are involved during various phases of the review.

Several different types of meetings and briefings are necessary to maintain team communications during the evaluation. These include written daily reports by both the ES&H Team Leader (to HSS management) and team members (to team management), and formal and informal counterpart meetings between the team and the site (see Section 4). Effective communications within the team cannot be

limited to formal meetings or written internal status reports. Team members must exchange information as needed to produce a consistent, integrated evaluation. Typical forums for such communication are informal face-to-face meetings, telephone conversations, and even conversation over lunch or in the car while riding to the site.

Summary

Planning occurs throughout the appraisal process and results in the products shown in Table 3-4. Efficient and thorough planning activities result in the team having the necessary plans and resources to accomplish an accurate evaluation of ES&H performance and line management's implementation of the ISM policy.

Table 3-4. Products of Planning

- Final appraisal scope
- Document request lists
- Team roster and structure
- Inspection plan
- Data collection plans
- Individual schedules for onsite activities

Section 4 – Conducting Appraisals

Introduction

The conduct phase of an appraisal is the period when most of the needed data is collected. This phase may consist of a concentrated effort during a relatively short period of time, or it may occur over an extended period, as in some special studies. The conduct phase is tailored to the unique needs and objectives of each specific appraisal. This stage is crucial to the success of an appraisal because it is during this stage that team members collect most of the information upon which they will base their analyses, conclusions, ratings, and recommendations, when appropriate. The goal of conducting an appraisal is to accomplish all planned data collection activities in a fair, impartial, professional manner and to validate the technical accuracy of the collected data.

Goal

The goal of the appraisal conduct phase is to effectively gather sufficient data to evaluate ES&H performance, to identify areas of weakness as well as effective performance, and to validate the data with responsible managers.

Scope

Data collection activities generally follow the plans and schedules developed during the formal planning process. Team members normally focus on accomplishing planned activities; however, data collection activities can be adjusted to accommodate changing conditions. For example, early data collection results may necessitate reduced or expanded activities in planned areas of emphasis and/or investigation of areas not originally identified for review. Problems or potential problems that become apparent during the course of data collection should not be ignored simply because they were not included in formal planning.

Data Collection Methods

Since data is critical to a successful appraisal, it is essential that appropriate data collection methods be used to collect sufficient amounts of accurate, pertinent data. There are three basic methods of data collection available to team members: document reviews, interviews, and performance evaluation. Since each of these methods has inherent strengths and limitations, the specific methods employed must be carefully selected and used in combination with each other to ensure that all necessary data is collected and cross-checked.

Document Reviews

Line management usually relies on detailed documentation, such as policies, plans, and procedures, as well as self-assessment activities, to ensure that programs are properly implemented and administered. Document reviews can provide the team with information about the consistency of written policies and procedures with DOE requirements (an indication of how the program is intended to operate) and may suggest weaknesses that need further exploration. Requests for required documents, where possible, should be made early enough so that team members can review them during onsite planning activities. Team members should limit the initial document requests to only those documents that are essential to their planning and preparation effort.

The team may request that certain documentation be made available either prior to the site scoping visit or at the site, for use when data collection begins. Document reviews often continue throughout data collection as team members request additional documents to develop a more complete understanding of programs and how they function. Requests for additional documents are directed to the appropriate counterpart or point of contact.

The documents of most interest are usually policy documents on how programs are designed to function; written program plans and procedural documents; self-assessments; and other records that may indicate whether programs are implemented as required or designed.

Interviews

Interviews can provide useful data that is not readily available from other data collection methods. Interviews are most effective in determining perceptions and individual understanding of policies, procedures, duties, and management expectations. Both formal and informal interview techniques may be employed; in either case, deliberate preparation is necessary before any interview. Appendix D of the *Independent Oversight Appraisal Process Protocols* provides information on interview techniques and protocols to assist in the conduct of interviews.

Performance Evaluation

Performance evaluation is the key method to independently evaluate the effectiveness of programs and operations. There are four basic approaches utilized for performance evaluation: observations, procedure walkthroughs, system walkdowns, and facility walkthroughs. Observation of actual performance is the preferred method for evaluating the conduct of work because it provides an opportunity to evaluate performance under actual working conditions. When operations or activities cannot be performed due to facility conditions or other factors, walkthroughs of procedures are used to evaluate performance. System/facility walkdowns are used for firsthand evaluation of the condition of systems/equipment important to safety or the status of facilities. The four methods for evaluating performance are discussed in a general way in the *Independent Oversight Appraisal Process Protocols*, Section 4, Conducting Appraisals. These approaches are further discussed below as they apply to HS-64.

- **Observations.** A team member's physical examination of operations is often the most reliable data collection technique. Observing operations may be not only desirable but also necessary for an accurate evaluation in situations where specific, observable operations are critical to effective performance. Observations allow team members to see how site personnel actually do their jobs and to evaluate how they perform their duties under various conditions. For example, observing personnel monitoring equipment or observing a sampling event provides valid data on whether site personnel follow established procedures and whether they operate the equipment properly. Before observing someone executing a procedure, the team member should thoroughly review and understand the procedure to establish a baseline for the observation. During observations, team members must not interfere with ongoing activities, manipulate equipment or controls, or access components (such as electrical cabinets), and they must comply with all applicable radiological, security, and safety requirements. Team members are to ensure that talking to or asking questions of operators, craft workers, etc., during ongoing activities does not unduly distract the workers or disrupt their activities. In some cases, walkthroughs of procedures may be conducted to gain insights on performance.

- **Procedure Walkthroughs.** Procedure walkthroughs are used when an operation or activity cannot be performed due to facility conditions or other reasons. When appropriate, walkthroughs are conducted at the site where the operation would normally be conducted (control room, operating station, etc.). The individual should simulate the actions as much as possible. However, in no case should the walkthrough interfere with normal operations or allow for unauthorized operation of equipment. The walkthroughs are important in assessing operators' knowledge of procedures and equipment, as well as the adequacy of procedures. The actions to be taken in case of abnormal conditions should also be discussed to determine the operators' knowledge and use of supplemental procedures for these conditions should they arise. Before conducting walkthroughs, the team member should thoroughly review the procedures and be familiar with the affected equipment and systems. Procedure walkthroughs should be planned, coordinated, and scheduled in advance and should involve a sample of procedures and operators.

- **System Walkdowns.** System walkdowns are essential in evaluating the condition of systems and equipment important to safety. They are also helpful in evaluating the knowledge of responsible individuals, such as operators, system engineers, maintenance personnel, supervisors, and/or facility managers. Therefore, inspectors will find it useful to be accompanied by a responsible individual from the site during walkdowns. Walkdowns are important in evaluating the physical condition of equipment and determining whether it has been properly maintained and is in the proper configuration. They must be used in conjunction with review of such documents as maintenance records or modification packages. The condition of vital components can be observed, and abnormal conditions can be identified (leaks, noises, etc.). The proper installation of vital equipment can be verified against drawings and design criteria. Walkdowns also provide an opportunity to determine whether procedures, drawings, and labeling are accurate and up to date. Prior to walking down a system, documents that describe the system should be reviewed to determine proper configuration and vital components. The walkdown should focus on the vital components.

- **Facility Walkthroughs.** Facility walkthroughs provide insights on the condition of facilities involved in hazardous operations or storing hazardous materials and waste. Prior to the walkthrough, the team member should review facility hazards and controls. The adequacy of implementation of hazard controls can then be determined. These controls include such items as labeling, quantities of and proper storage of hazardous materials, life safety requirements, and housekeeping. A questioning attitude toward observed hazards is important, and controls should be verified for observed hazards. Walkthroughs should be conducted with an individual from the site who is knowledgeable of the facility hazards. Facility walkthroughs should be scheduled with facility management, and all access requirements should be completed in advance.

Other Methods

HS-64 personnel are not limited to the four basic data collection methods described above. Different or hybrid methods may be used, and personnel are encouraged to employ the best techniques available for a specific task.

Communications and Integration

Since various team members collect data during virtually all phases of appraisals, it is important that all appropriate information is shared among team members in a timely manner. Information collected by one team member may have a direct impact on a line of investigation being conducted by another. When

teams are large—and particularly when several teams are involved and each is focusing on a different area or discipline—a conscious and deliberate effort at information integration is required. Specific methods for achieving integration may be formal or informal; the method chosen may be dictated somewhat by team size and the type of activity involved, and may include team meetings, shared data collection notes, and daily reports to managers. Specific methods to be employed are left to the discretion of the responsible team members or ES&H Team Leader. A daily report summarizing the progress of the overall appraisal and significant emerging issues is typically provided to the Chief Health, Safety and Security Officer, the Office of Independent Oversight, HS-64, and others, as appropriate. Similarly, individual team member daily reports summarizing the results of the day's activities are provided to team management.

When potentially serious deficiencies are identified during an appraisal, they must be brought to the attention of the ES&H Team Leader, the responsible organization's managers, and HSS senior management as soon as possible. After enough data is collected to be reasonably sure that a significant deficiency exists, it should be identified, formally communicated to the responsible site managers, and discussed in sufficient detail to ensure that it is understood. This is part of the validation process discussed below. Such deficiencies may or may not ultimately result in formal findings or policy issues, depending on the individual circumstances.

The Inspection Team Leader provides routine updates on identified significant deficiencies to the Chief Health, Safety and Security Officer. DOE Order 470.2B, *Independent Oversight and Performance Assurance Program,* contains additional specific requirements for notifications and response to significant vulnerabilities. In summary, the team leader will advise line management promptly (not to exceed 24 hours) when appraisal activities indicate an imminent danger (unmitigated hazard) situation. The site is responsible to take immediate compensatory actions to address the condition.

Validation

Validation is used to verify the accuracy of the information obtained during data collection activities. It is a critical element in the conduct of all appraisals. This section provides an overview of the process used to validate data and the draft report. General information is provided in the *Independent Oversight Appraisal Process Protocols*, Section 4, Conducting Appraisals.

Data Validation Strategy

The validation strategy provides site personnel with multiple opportunities to verify the factual accuracy of data and information collected by team members at various stages of the actual appraisal process. In using any of the validation methods, team members must be very open about issues in order to provide those being evaluated with a chance to respond. These interactions often are of significant value to the site because they provide a means to share perspective gained from other sites in the complex. Key elements of the strategy include:

- **Site counterparts.** Each team member is typically assigned one or more site points of contact or counterparts, both DOE and/or contractor, designated by the site as a result of the scoping visit (Section 3). These counterparts are typically knowledgeable of the program element being evaluated by the team member. Team members and counterparts interact on a regular basis to ensure communication of findings, both positive and negative. Counterparts provide feedback to team members on the factual accuracy of information obtained; they recommend additional

personnel to interview, as well as documentation to review for additional perspective on an issue. Additionally, team members informally discuss and review substantive issues with their counterparts regarding material they will draft into reports. This interaction allows for the quick resolution of areas of disagreement and the identification of potential inaccuracies as soon as possible. In addition, routine validation of results between team members and counterparts provides further confirmation that results are valid and allows less room for misunderstanding.

- **On-the-spot validations.** Site personnel and team members should also summarize key observations and concerns at the conclusion of interviews, walkthroughs, and observations of work performance to ensure a shared understanding of the facts observed by the team member. An on-the-spot validation immediately after an interview or a performance observation, for example, can help resolve any differences of opinion quickly and promote concurrence on important interview or observation points.

- **Continual interaction of the ES&H Team Leader and site managers.** The ES&H Team Leader provides to site managers a daily "debrief" that includes both the positive and negative observations from the previous day's evaluation activities, as well as emerging issues. For example, the ES&H Team Leader usually meets with site senior line managers each morning to brief them on the status of the evaluation, important issues, and critical needs. The ES&H Team Leader may also call upon selected team members to attend. This daily meeting helps site management track the progress of evaluation activities and compare information provided by the site counterparts. The daily debrief allows site management to identify areas of disagreement quickly and to work with the ES&H appraisal team to correct factual accuracy problems. In many cases, site management is informed of issues that need management attention. At the mid- and endpoints of the onsite data collection period, these daily meetings are used to provide a preliminary rollup of team results and a description of issues that are being developed by the team. In addition, if a draft report is not to be provided to the site prior to the team's departure, an informal presentation of tentative results may be conducted at the end of the onsite visit. DOE, operations office, and site senior management, as well as site points of contact, are expected to participate.

- **Summary validation.** For a summary validation, one or more team members provide a verbal presentation of key observations, findings, and conclusions to a group of counterparts and interested managers. A summary validation may be conducted when it is appropriate to involve site managers early in the validation process, to provide more information on one or more topics than they would otherwise get in the exit briefing.

- **Team interactions.** Team members also work together to compare the information they have collected during various stages of the appraisal process. This interaction increases the value of evidentiary information with validation by multiple sources. Team members should understand that each type of data and information has its limitations and should be used accordingly, and that the information presented for validation must be as thorough, accurate, and concise as possible. Finally, it is essential that conflicts in data and information are resolved as soon as possible, either between team members or between team members and site personnel.

Report Validation Strategy

Reports from the ES&H appraisal are provided to site personnel for review of factual accuracy at key stages in appraisal report generation. The reporting process provides both site personnel and management

with a number of opportunities to communicate concerns about factual accuracy to the team. The report validation process is as follows:

- Provide the draft evaluation report and technical appendices to the site.

- Conduct informal pre-validation meetings between team members and counterparts regarding the content and conclusions of the draft report and technical appendices. These small group meetings are extremely useful for conducting detailed discussions of the findings, correcting factual accuracy problems at the working level, and addressing the identified problems.

- Conduct a formal validation with key DOE/contractor counterparts. Roundtable discussions are held with site management and counterparts on their concerns about the facts or conclusions presented in the report and technical appendices. Headquarters line managers may also attend the formal validation, especially if the appraisal will result in findings that Headquarters organizations are primarily responsible for addressing. These sessions are also used to further explain issues, and they have been very effective in promoting buy-in with site management. Any findings related to DOE ES&H policies should be validated with the appropriate policy organization. After review, comments from formal validation are incorporated into the final draft report as appropriate, and it is then provided to the site.

- Provide the final draft report and technical appendices to the site and allow ten working days for their detailed review. The site is encouraged to provide specific written comments on any factual inaccuracies or other concerns.

Keys to Successful Validation

Some key items for successful validation are provided in Table 4-2.

Table 4-2. Keys to Successful Validation

- Candid and frequent communications with line management and site points of contact
- Effective communication of issues and findings to counterparts and site managers
- Adequate development of issues, findings, or conclusions, including performance examples, to assure validity, understanding, and acceptance by line management
- Communication of emerging issues, findings, and supporting examples, to assure that all information is provided and that the issue is understood and valid
- Opportunities for review at various stages of report generation

Section 5 – Appraisal Closure

Introduction

The closure phase of an appraisal normally takes place after data collection and validation are essentially complete (although at times, closure activities may identify additional data needs). Data must be organized, assimilated, and analyzed in order to form conclusions and report the results. This section discusses the various tasks to be accomplished during the closure phase, including data analysis, determination of findings, assignment of ratings (if appropriate), and report preparation.

Goals

The main goals of this phase are to thoroughly analyze all available data, draw valid conclusions from that analysis, and, based on the analysis and conclusions, prepare a report that accurately reflects the status of the program(s) being examined and provide appropriate managers the information they need.

Analysis of Results

Although analysis is an ongoing process during all phases of an appraisal, it culminates during the closure phase. Analysis involves a critical review of all data collection results, particularly any identified program strengths and weaknesses, and leads to logical, supportable conclusions regarding how well the program functions and satisfies the intent of DOE policy.

Analysis begins informally through daily team discussions about the observations and results of data collection. As data collection activities are completed, the results are incorporated into templates and worksheets to help guide each team member through a preliminary data analysis. All team members work in concert to continually identify underlying causes of flaws or deficiencies in management systems, program design, and/or implementation. Each specialist needs to know the details (who, what, when, where, how, and why) of the subject being evaluated to gain a full understanding of the supporting systems and how they function. Frequent and open communication with other team members is the key to identifying and "rolling up" information and issues to determine their impact.

Data analysis occurs throughout an evaluation, but it begins in earnest during the first onsite data collection and analysis visit. Before the team begins to write a report, the members must clearly identify the strengths, weaknesses, and mitigating conditions, and must integrate the results and findings.

The analysis leads to logical and supportable conclusions about the effectiveness of the programs being evaluated and how well the status of the programs satisfies the intent of DOE policy. Analysis should always lead to a conclusion regarding the site's ability to mitigate the consequences of incidents, and to protect site workers and the public. Any deficiencies must be discussed in terms of their importance and impact at the site.

If there are no deficiencies, analysis is a relatively simple matter. If there are findings, weaknesses, deficiencies, or standards that are not fully met, these must be considered individually and collectively and then balanced against any strengths or mitigating factors to determine the overall impact on the performance of line management and the program's effectiveness. Factors that should be considered during analysis include:

- Whether the deficiency is isolated or systemic
- Whether program managers and other line managers knew of the deficiency and, if so, what actions were taken
- The importance or significance of the standard affected by the deficiency
- Mitigating factors, such as the effectiveness of other programs or program elements that may compensate for the deficiency
- The deficiency's actual or potential effect on mission performance or accomplishment
- The magnitude and significance of the actual or potential deficiency to DOE, the site, workers, the public, and the environment.

The analysis must result in—and support—conclusions regarding how successfully the evaluated program meets requirements.

Findings and Ratings

One product of analysis in certain types of appraisals (e.g., inspections and follow-up reviews) is the identification of findings (i.e., safety issues). Findings are used to indicate significant deficiencies that merit managers' priority attention. Team members are responsible for identifying potential findings for consideration by team management. Findings usually identify aspects of a program that do not meet the intent of DOE policy, Federal or state laws, or other applicable requirements. The conclusions reached through analysis of results lead to the assignment of ratings. Section 5 of the *Independent Oversight Appraisal Process Protocols* discusses findings and ratings in more detail.

Report Preparation

A report is issued as the formal product of any appraisal. Reports are the only published records of specific appraisals and are intended for dissemination to the Secretary and appropriate managers at DOE Headquarters and field elements (including, when appropriate, facility contractors). Reports for various types of appraisals may vary in format; the most appropriate format for the specific purpose will be used. Appendix F of the *Independent Oversight Appraisal Process Protocols* provides guidance for preparing the portions of appraisal reports that are targeted at senior management. ES&H inspection reports are typically prepared using the report format in Appendix F of the *Independent Oversight Appraisal Process Protocols*. For all Independent Oversight activities, report preparation activities share a common process:

- The team prepares an initial draft report and technical appendices. The different subteams (for example, work planning and control processes, focused nuclear safety inspections, VSF, focus areas, and feedback and improvement systems) draft assigned sections in technical appendices and provide sectional draft writeups that are consolidated into the initial draft report. The entire team reviews the initial draft technical appendices and draft report to ensure that the information is correct and consistent between the sections of the report and between the report and the technical appendices. This team review is particularly important for the section on feedback and improvement systems because the analysis and conclusions are usually supported by examples from the other sections of the report and technical appendices. The outcome of these reviews and corrections forms the draft report and technical appendices.

- The draft report and technical appendices are provided to the Quality Review Board (QRB) for their review. The QRB focuses its review on the draft report to ensure that it is readable and logical, and that it contains adequate, balanced information to support conclusions (and, if appropriate, ratings). The QRB may require revisions to the report and technical appendices.

- After review by the QRB and tentative approval by the Chief Health, Safety and Security Officer, the draft report and technical appendices are provided to appropriate line organizations for a factual accuracy review. A copy of the draft report and technical appendices is provided to the responsible DOE field element and the representative of the cognizant secretarial office (CSO), if on site, which are allowed a limited time to provide verbal and written comments regarding factual accuracy. All comments are reviewed and appropriate changes are made to the draft report and technical appendices, creating the final draft report and technical appendices.

The final draft report and technical appendices are provided to the DOE field element with a copy to the CSO. The DOE field element and CSO have ten working days to comment on the final draft report and technical appendices. This review ensures that the report and technical appendices contain sufficient detail, are factually accurate, and serve as a tool for improving performance. The review is not intended to allow the reviewers to eliminate conclusions, findings, or ratings that show the site or office in an unfavorable light.

Briefings

The closure process for appraisals often includes a requirement to brief appropriate managers on the progress, results, and conclusions of the activity. Briefings fall into two main categories: internal and external. The HS-64 Director and/or Inspection Team Leader are responsible for conducting briefings on inspection results as directed by the Director of the Office of Independent Oversight.

Process Improvement

HS-64 consistently strives to improve its internal processes as part of its continuing effort to improve its products and the value they provide to the Department. During the closure phase of each major appraisal, and typically before the team leaves the site, Team Leaders meet with the team members to identify any lessons learned in conducting the appraisal. Team members may also provide written comments to the ES&H Team Leader as to how the appraisal process could be improved. The ES&H Team Leader submits a written lessons-learned report to the HS-64 Director, identifying both positive and negative aspects of the appraisal and any recommendations for improving the appraisal process. Recommended improvements should address any necessary revisions to the ES&H Appraisal Process Guide.

Section 6 – Appraisal Follow-up

Headquarters Briefings

Prior to returning to Headquarters, HS-64 develops a one-page summary of appraisal results for submittal to the Chief Health, Safety and Security Officer. The one-page summary must be validated with site personnel to ensure factual accuracy. The purpose of the one-page summary is to communicate the results of the appraisal to senior DOE managers, including the Secretary, the Deputy Secretary, the Under Secretary, and/or the Administrator of the National Nuclear Security Administration. Upon request, the HS-64 Director or Appraisal Team Leader may be required to brief these senior managers on the one-page summary. Other senior Headquarters managers may be included at the discretion of the senior official being briefed.

HSS Organization Briefings

The Appraisal Team Leader, supported by key team members, should conduct a combined briefing to internal HSS organizations. As appropriate, participants should include representatives from the Offices of Health and Safety; the Office of Nuclear Safety, Quality Assurance and Environment; the Office of Corporate Safety Analysis; the Office of Enforcement; and other HSS organizations based on the scope and results of the review.

Final Report

The affected line organization has ten working days from their receipt of the final draft report and technical appendices to provide HS-64 with their consolidated comments regarding its factual accuracy. HS-64 then considers the comments, holds consultations between managers and the appropriate staff members, and determines the HS-64 action on each response.

HS-64 publishes the final report after receipt of the consolidated comments. The final report is distributed to the Office of the Secretary, the CSO, and the DOE field element. HS-64 makes further distribution of the final report as directed by the Director, Office of Independent Oversight. In addition, HS-64 provides copies of the final technical appendices to the DOE field element and others, as directed by the Director, Office of Independent Oversight to facilitate development of corrective actions plans, as appropriate.

Corrective Action Plans

Protocols for corrective action plan development, review, comment, and approval are contained in DOE Order 470.2B, *Independent Oversight and Performance Assurance Program*, and in Attachment 4, DOE Order 414.1C, *Quality Assurance.*

Within 60 working days of their receipt of the final report, the CSO and DOE field element are to issue a final corrective action plan. Final corrective action plans should address, in detail, all completed, ongoing, and long-term actions associated with each finding in the report.

The appropriate HS-64 personnel then review the proposed corrective actions. Preferably, this review is conducted by the appraisal team members who reported on the deficiencies being addressed in the plans.

Corrective Actions and Follow-up

After the final report has been distributed, HS-64 coordinates with the Office of Environmental Policy and Assistance to enter any ES&H findings into the CATS database. In accordance with DOE Order 470.2B and DOE Order 414.1C, CSOs and DOE field elements are responsible for entering and updating corrective actions in CATS. HS-64 monitors the progress of and validates corrective actions through subsequent appraisals and follow-up review.

Section 7 – Records Management

Introduction

The final appraisal report provides a formal, permanent record of the results of ES&H appraisals. However, much of the detailed information regarding conduct of appraisal activities, results of data collection efforts, and the deliberations and analyses of team members is not specifically included in the final reports. While the goal is to include sufficient detail in each report to fully justify its conclusions and enable the report to stand on its own, there is a need to retain some documentation that provides additional detail regarding various aspects of an appraisal activity. Consequently, it is necessary to archive certain types of information associated with appraisal activities to enable an accurate response to potential queries for additional detail.

Records Management on the HSS Website

Following approval, each ES&H appraisal report is placed on the HSS website, except for rare cases where the report may contain sensitive information. HS-64 will make every attempt to keep ES&H appraisal reports unclassified and free of sensitive information.

Records Retention Requirements

Records associated with each appraisal activity are assembled and archived for a period of ten years from the date of the final report of the activity. At a minimum, the archives contain the following types of information, in either electronic or hard copy form:

- Inspection Plan
- Correspondence pertinent to the appraisal, including comments on corrective action plans
- Site/field element/program office formal comments on draft report(s)
- Issue Forms, if utilized (including site's written response to any Issue Form used)
- Slides from closeouts and Headquarters briefings
- Final report.

Other information may be retained in order to fully document a particular appraisal activity. The specific types of information and the level of detail of documentation vary depending on the nature of the activity.