Table of Contents

Tab Section:

Enhanced Work Planning Overview

The Program

I. Overview Of The Enhanced Work Planning Process

A. Introduction
B. Project Goals and Objectives
C. Elements of EWP Project

II. Carrying Out an Enhanced Work Planning Project

A. Build Management Consensus
B. Develop EWP Implementation Plan
C. Roles and Responsibilities of EWP Teams and Participants
D. EWP Meetings
E. Benchmarking and Performance Measures
F. Identification and Planning Candidate Work Packages
G. Implementation and Demonstration of Enhancements
H. Identify Lessons Learned.
I. Validation of Results
J. Preparation of Reports
K. Schedule / Time Line

The Enhanced Work Planning Implementation Plan

Introduction - FAQ

Sample Plans

The Briefing Manual

Introduction and Overview

Sample Briefing Manual

Table of Contents (cont.)

Performance Measures and Metrics

Introduction and Overview

Safety Performance Indexing (Kodak)

Typical Time Line

Lessons Learned / Successes

Technical Assistance

Introduction - FAQ

Technical Assistance - A Springboard to Excellence

Misc Resource Information

Sample Presentation Overheads

Enhanced Work Planning (Single Page) Descriptions

HQ Enhanced Work Planning Management Plan

Misc.

Training Resources

Courses available

Training materials available

Reference Resources

Summary Enhanced Work Planning Reports

HQ and Site Contacts

Enhanced Work Planning Overview

Enhanced Work Planning Initiative
An Issue Analysis Paper

Background

The Department of Energy (DOE) is undergoing dramatic changes in its longstanding missions, the most fundamental of which has been the movement from defense-related activities to those of post-Cold War environmental cleanup. This has had a profound effect on the nature of work at DOE sites. From a relatively stable routine of operating complex facilities supported by an experience, skilled workforce, DOE is transitioning to a considerably more dynamic work environment where, increasingly, less skilled workers will be performing unfamiliar tasks. Where managers once relied on detailed procedures developed from facility-specific Safety Analysis Reports that defined an analytic "safety envelope", line managers are increasingly required to develop innovative approaches that mitigate diverse hazards. This requires enhanced skills in identifying and evaluating hazards and prescribing "necessary and sufficient" requirements to provide effective controls for each work activity.

Private industry has undergone a similar transformation in the wake of events such as the accident at the Three Mile Island Nuclear Power Plant, the toxic gas release at Union Carbide's Bhopal Plant, and the explosion at Phillips Oil refinery in Texas. As a result of these and other events, private industry has moved from reliance on regulations, requirements and procedures to ensure safety to a more analytic approach that focuses on human factors, hazard analysis, and improving safety management. For example, the chemical industry pioneered "process safety management' to improve analysis of in-plant systems based on hazards and define essential safety programs.

Accident investigations within the DOE complex have consistently shown that inadequate consideration of safety and health hazards early in the work planning process is a leading contributor to avoidable injury and illness. Many private sector companies, including those recognized as excellent performers by the Occupational Safety and Health Administration (OSHA), have used an approach to work planning that focuses on teams and on obtaining as much input as possible early in the work planning process. For these progressive companies, safety and health considerations, including worker input, are so thoroughly built into the work planning process that review and approval by safety organizations appears almost "seamless".

Results from DOE accident investigations and the experience of superior performers in the private sector have underscored that how work is planned and accomplished is fundamental to the prevention of worker injury and illness, as well as to maximizing efficiency and productivity of any operation. In situations where hazards are multiple, dynamic, complex, or of high consequence, an effective management system must be developed (as part of the work planning process) to pro-actively identify, analyze, and control hazards.

Problem Definition.

Work planning at DOE facilities has followed a traditional model involving preparation of work packages, review and comment by supporting safety and health staff and line management, resolution of comments, and final approval of work packages. The sequential nature of the process requiring review and re-review of documents produced a system that often required more time to prepare and issue documents than to actually perform the work. Comments and input to the review process produced conflicting, overlapping, or duplicative suggestions resulting in ineffective communications, adversarial relationships, and lack of focus on the needs of the customer. As a result, hazards were often not accurately identified, feedback was limited, and needed information on exposure monitoring requirements, acceptable work practices, and requirements for special permits did not always reach either the work planner or key decision-makers.

The sequential nature of the effort also prevented the safety and health staff from fulfilling their true role as advisors to line management. Disciplines such as occupational safety, industrial hygiene, radiological protection, and occupational medicine should assist line management in developing work packages that ensure workers are protected while minimizing burdensome requirements that could decrease productivity. Instead, results from their reviews were often provided late in the process of preparing work packages resulting in delays, wasted effort, and a sense that safety and health was adversely affecting production.

Another adverse consequence of the traditional model of work planning is the absence of collaboration and prompt resolution of emerging issues and concerns. Without a complete understanding of the proposed work, safety and health staffs may focus undue efforts on ensuring literal compliance with a lengthy list of requirements that are of little or no value in ensuring the safety of the workers. Likewise, the fact that safety and health staffs review the work package has in many cases given line management a sense that others are concerned with safety and health, and therefore they need focus their attention only on performing work efficiently. This negates any sense of ownership of safety and health on the part of line management.

The traditional approach to work planning has not contributed to ensuring effective medical surveillance for workers which is an important component of DOE's programs to protect workers at DOE sites. The potentially significant role of the occupational medical department in supporting planning and performance of work has not always been effectively communicated. In addition, the occupational medical departments frequently operate in isolation with limited linkages to the safety and health staff or even to the workers. The isolation of the occupational medical department has limited DOE's effectiveness in collecting needed information on exposure of workers to specific health risks and precluded DOE from implementing all of the long term health monitoring programs that may be needed.

As the Department's work efforts increasingly focus on its hazardous waste cleanup mission, work will increasingly be "projectized", that is, completed as short-term, discrete decontamination, deconstruction, or environmental remediation activities. Numerous subcontractors will be involved in these activities using large numbers of lower skilled workers. Much of the work will consist of short duration projects involving diverse hazards such as asbestos, beryllium, lead, and a wide range of radiological hazards. Currently, short term workers employed by subcontractors are not generally included in the work planning, hazard analysis and control, onsite exposure tracking or medical monitoring programs.

Enhanced Work Planning as a Solution

The Office of Environment, Safety and Health, in partnership with a cross section of DOE field elements, has initiated a comprehensive effort to improve work planning throughout the DOE complex. The overall effort hinges on three fundamental principles: (1) Work planning, hazard analysis and hazard control are essential for effective management of Environment, Safety and Health; (2) Environment, Safety and Health in all work activities is fundamentally the responsibility of line management and; (3) Worker participation greatly enhances the effectiveness of Environment, Safety and Health programs.

The effort has focused on developing a new approach to work planning that eliminates the sequential process that has traditionally been used. This new process brings together a team of planners, safety and health staff, craft labor, and line management to collaberatively develop work packages. Through this approach, line management, the safety and health staff, and workers become partners in ensuring effective protection of workers and maximizing efficiency and productivity. The safety and health organizations are restored to their appropriate role as advisors to line management.

This enhanced work planning process is expected to produce significant benefits:

- Improved protection of workers from hazards through early involvement of safety and health professionals in the planning process.
- Improved communications between safety and health and line management through establishing a collaborative work planning team.
- Increased efficiency through eliminating repetitive review, comment, and comment resolution cycles.
- Decreased need for re-work through early involvement of labor in work planning.

Recent Experience

Pilot projects completed over the last year for the Department's "Necessary and Sufficient" initiative and for the Enhanced Work Planning initiative have consistently shown the value of line management "ownership" of safety, and the benefits of establishing collaborative work teams. Initial demonstration efforts for both of these initiatives have validated the importance of moving away from traditional "command and control" management structures to empowered work teams. Both efforts have reinforced the value of line managers focusing on completing work safely and efficiently through identifying associated hazards, selecting the appropriate requirements and standards, and establishing appropriate controls to mitigate the identified hazards.

In the pilot projects for the necessary and sufficient process, line managers have taken the initiative to reduce existing workplace hazards and prevent accidents or exposure to hazards in order to reduce the burdensome requirements that must be imposed on work. This has the benefit of improving the focus on requirements and standards that contribute significantly to worker safety and health while simultaneously eliminating requirements that impose burdens with little or no net safety benefit. In addition, the effort improves communications among the contractor, DOE field elements, and DOE Headquarters to ensure that all parties agree on the appropriate requirements that are necessary and sufficient to ensure safety.

For the Enhanced Work Planning initiative, demonstration projects have been conducted at Fernald Environmental Management Project, Hanford Site, Idaho National Engineering Laboratory, Oak Ridge Reservation, Mound Plant, Savannah River Site, and the Pantex Plant. These demonstration projects have shown the potential to significantly improve communications through establishing a collaborative team to plan work activities. In addition to impressive improvements in ensuring safety and health of workers, the demonstration projects have also produced substantial gains in efficiency and productivity by eliminating the sequential approach to work planning.

The Program

I. OVERVIEW OF THE ENHANCED WORK PLANNING PROCESS

A. Introduction

B. Objectives

C. Elements of an Enhanced Work Planning Project:

1. Hazard control through work planning
2. Employee involvement
3. Coordination and communication
4. Hazard identification and assessment
5. Medical surveillance
6. Lessons learned
7. Performance Indicators

II. CARRYING OUT AN ENHANCED WORK PLANNING PROJECT

A. Building Management Consensus

Develop Objectives
Develop Communications Plan

B. Develop EWP Implementation Plan

C. Roles and Responsibilities of EWP Teams and Participants

1. Participants
   - Enhanced Work Planning Project Team (EWP Project Team)
     - EWP Project Team Leader
     - Assistance Team
     - Interested Stakeholders
     - EWP Project Facilitators
       - On-site Facilitator
       - EH site Facilitator

D. EWP Meetings

E. Bench marking and Performance Measures

Baselining
Performance Measures
Focus on Groups Warranting Enhancements
Focus on Issues Warranting Enhancements

F. Identification and Planning Candidate Work Packages

G. Implementation and Demonstration of Enhancements

Implementation
Demonstration of Enhancements
Feedback

H. Identify Lessons Learned

I. Validation of Results

J. Preparation of Reports

K. Schedule / Time Line

I. OVERVIEW OF THE ENHANCED WORK PLANNING PROCESS

A. Introduction

Three key elements of the Office of Environment, Safety and Health programs throughout the Department of Energy complex are:

- Work planning, hazard analysis, and hazard control are essential for effective management of health and safety;
- Line management is fundamentally responsibile for health and safety; and
- Worker participation greatly enhances the effectiveness of health and safety programs.

Enhanced Work Planning (EWP) addresses these three elements through the use of multidisciplinary teams to integrate health and safety into the sites' existing work planning process. Incorporation of the EWP process into existing programs will improve communication amoung all parties involved in work planning.

Work Planning is a process that determines the requirements, means, and design to accomplish intended work. Factors considered during work planning include: task to be accomplished; hazards; methods and procedures; interface with support organizations; impact on operations; materials and resources; priorities and schedules; hazards and controls; quality assurance; and costs. Work planning may be initiated in response to requests by line management, engineers, planners, or other plant personnel.

The rigor of the planning process depends on factors such as risk, safety, complexity, and routine versus nonroutine work. An appropriate degree of rigor in planning is important to the effective and efficient conduct of operations. Depending on the nature of the work, planning can involve many technical specialists, such as occupational health and safety (industrial hygiene, safety, health physics, and occupational medicine), waste management, and engineering, with addition input from various levels of management and from workers.

The challenge of work planning is to conduct work in a timely, effective, and efficient manner, while ensuring the identification, evaluation, and control of workplace hazards. In a traditional approach to work planning, these 'subject matter experts' are generally given work packages for review during various phases of the work planning process. When changes are made by any of the specialists the package must be reviewed again by all parties. This is a sequential review similar to that shown in Figure 1. *Traditional Work Planning*.

Conversely, Enhanced Work Planning is designed to improve the traditional work planning process by implimenting a cooperative team approach and fully integrating health and safety early into the process. This can be accomplished, in part, by:

- Fully integrating the input of occupational health and safety organizations, worker (craft), and other professionals early into the planning process. This up-front, multidisciplinary planning approach reduces unnecessary rework of planning documents and decreases work stoppages in the field due to unantcipated safety or workability issues.

- Enhancing productivity through the use of the 'Necessary and Sufficient' process to reduce unnecessary controls, monitoring, and medical surveillance.

- Taking an approach that balances the rigor of planning with the risk and complexity of the job. This necessitates the use of an appropriate level of hazard analysis and control.

- Improving communication and interaction between line management, workers (crafts), occupational health and safety, planning and design professionals, and all other groups involved in the planning process.

- Identifying the appropriate customer and addressing their specific needs in a timely fashion.

B. Objectives

Each site within the DOE complex is different; each has its own set of unique problems and methods for addressing them. As a result, no single work planning process works best for all sites. There are, however, several objectives that apply to improving all work planning processes.

The sites undertaking the incorporation of the EWP process should:

- Baseline the current work planning procedures;

- Identify barriers and opportunities for improvement;

- Examine health and safety issues;

- Develop enhancements to test; and

- Be innovative.