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Bechtel Jacobs Company LLC

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Revision 0

Integrated Safety Management System Supplement

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Integrated Safety Management System Supplement

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Prepared for the
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BECHTEL JACOBS COMPANY LLC
managing the
Environmental Management Activities at the
East Tennessee Technology Park
Y-12 National Security Complex Oak Ridge National Laboratory
Paducah Gaseous Diffusion Plant Portsmouth Gaseous Diffusion Plant
under contract DE-AC05-98OR22700
for the
U.S. DEPARTMENT OF ENERGY

CONTENTS

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FIGURES

ACRONYMS

AHA	Activity Hazard Assessment
ASA	Auditable Safety Analysis
ATLC	Atomic Trades and Labor Council
BIO	Basis for Interim Operations
BJC	Bechtel Jacobs Company LLC
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CNF	Central Neutralization Facility
DEAR	DOE Acquisition Regulation
DOE	U.S. Department of Energy
ECS	Engineering and Construction Services
ES&H	Environment, Safety and Health
ETTP	East Tennessee Technology Park
HR	Human Resources
IHA	Initial Hazard Assessment
ISMS	Integrated Safety Management System
LLW	low-level waste
M&I	management and integration
MOP	manager of projects
ORNL	Oak Ridge National Laboratory
ORO	Oak Ridge Operations
PACE	Paper, Allied-Industrial, Chemical and Energy
PAD	Paducah Gaseous Diffusion Plant
PORTS	Portsmouth Gaseous Diffusion Plant
PPE	personal protective equipment
P/QA	Performance/Quality Assurance
RFP	Request for Proposal
ROD	Record of Decision
RWP	radiation work permit
S/RID	Standards/Requirements Identification Document
SA	safety advocate
SAB	safety authorization basis
SAR	Safety Analysis Report
SOW	statement of work
STR	subcontract technical representative
TSCA	Toxic Substances Control Act
WBS	Work Breakdown Structure
WSS	Work Smart Standards

INTRODUCTION

The *Integrated Safety Management System (ISMS) Supplement* reflects the Bechtel Jacobs Company LLC's approach for flowing down the functions and principles of integrated safety management to the work execution level. This document focuses on the five core functions and how they are related to the overall Work Breakdown Structure (WBS) and project, task and activity planning. This supplement document is designed to provide additional clarification on the systems used by Bechtel Jacobs Company to ensure that:

- Major Environment, Safety and Health (ES&H) risks and vulnerabilities are identified, communicated, and incorporated into the budget planning process;

- U.S. Department of Energy (DOE) expectations for continuing performance and the final project, task, or activity endpoint are clearly understood and communicated and incorporate the appropriate level of ES&H; and

- Functional program systems (such as Standards Management and Labor Relations) are used to support the functions and principles of integrated safety management.

This supplement document, along with the *Integrated Safety Management System Description*, provides a roadmap to the project, task, and activity manager on how to plan and execute work while protecting the health and safety of workers and the public and minimizing the impact to the environment. This ISMS supplement is organized as follows.

- Section 1.0 describes the relationship between the WBS and the Bechtel Jacobs Company ISMS.

- Section 2.0 provides details on the planning process necessary to perform work safely.

- Section 3.0 describes a variety of management systems that support and foster the functions and principles of ISMS.

- Section 4.0 provides roles and responsibilities for the effective implementation of ISMS.

- Section 5.0 provides a matrix of attributes of an acceptable ISMS description and maps each attribute to the ISMS description and to other review documents.

- Section 6.0 identifies and describes the various aspects of the ISMS Oversight, Feedback and Improvement Program.

1.0 WORK BREAKDOWN STRUCTURE

Bechtel Jacobs Company integrates ES&H into all aspects of its work through the use of the five core functions and seven guiding principles as they relate to the WBS. The overall DOE WBS is composed of seven levels as shown in Fig. 1.1.

In accordance with DOE requirements, a DOE-level WBS is prepared for each program to define the levels and elements of the program and designate the way the work will be executed. The DOE WBS is then further divided and passed to the contractor, who is responsible for managing the safe accomplishment of work. This section describes how the WBS structure relates to the implementation of ISMS within Bechtel Jacobs Company.

Using the management and integration (M&I) Management Life Cycle Baseline documents as examples, the WBS levels under DOE direct control are WBS Levels 1 (DOE Program) and 2 (DOE Office). Level 1 involves the Environmental Management (EM) Program at DOE Headquarters (Program); Level 2 involves Oak Ridge Operations.

Included in the Bechtel Jacobs Company work scope are WBS Levels 3 (area/watershed); 4 (project); 5 (area/watershed defined); 6 (subproject); and 7 (activity). The President, Vice President and General Manager, and Deputy General Managers represent the Oak Ridge M&I, or Bechtel Jacobs Company. WBS Level 3 relates to the managers of projects [e.g., East Tennessee Technology Park (ETTP), Paducah, etc.]. Levels 4 and 5 are reporting categories that summarize cost and budget information from activities performed at Level 6.

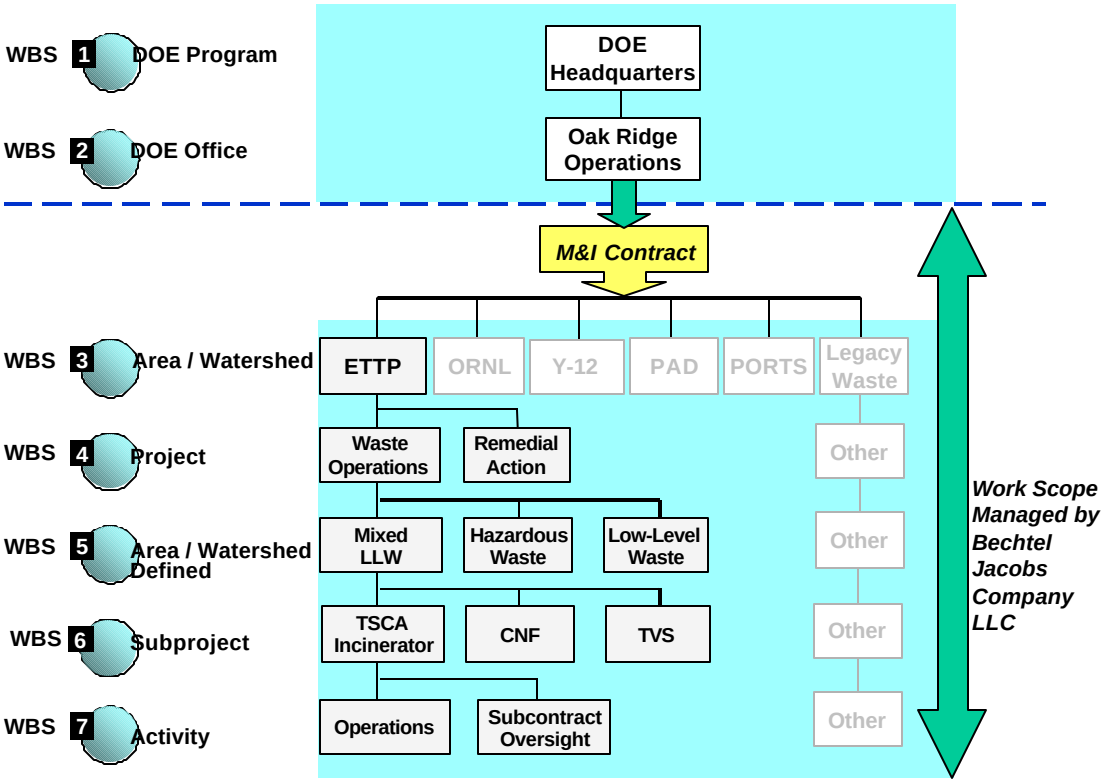


Fig. 1.1 We implement our Integrated Safety Management System through all WBS levels.

The subproject (Level 6) activities are managed by project managers who report to the managers of projects (MOPs). Level 7 includes lower tier work activities within the subproject. These activities may be subcontracted or self-performed. The Bechtel Jacobs Company organizational relationship to the WBS is depicted in Fig. 1.2.

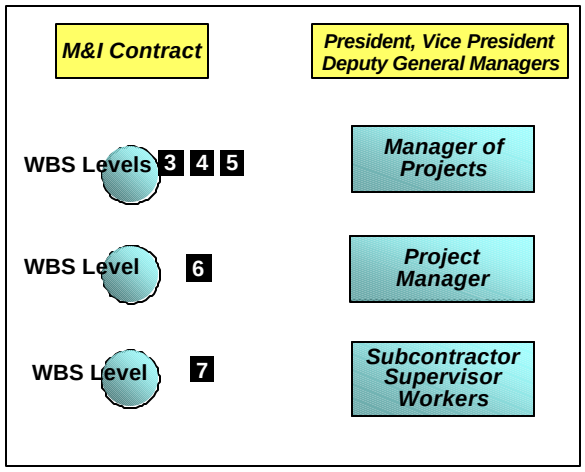


Fig. 1.2 The correlation between Bechtel Jacobs Company organization and the WBS.

Project Planning

Bechtel Jacobs Company works with DOE-ORO to perform subproject planning at WBS Level 6. by providing proposed schedules, scopes of work and funding allocation requests, but final decisions rest with DOE. Funding and work scope authorizations are provided to Bechtel Jacobs Company at WBS Level 6. The M&I Management Life Cycle Baseline documents are used to define the scope of work, schedule and cost of subprojects (Level 6). This work is conducted in accordance with the M&I contract and the standards and requirements as identified by the Work Smart Standards (WSS).

Scope of Work

As noted in the ISMS description, Bechtel Jacobs Company is committed to clearly identifying the scope of work. This is the first essential step in ISMS implementation. To accomplish safe work, it is essential that the worker at WBS Level 7 have all the information and equipment needed to perform the work without injury, accident or error. To this end, it is crucial that each management/organizational level accurately and carefully define expectations, which then become input to personnel at other organizational levels. As already indicated, subproject planning and work scope definition occurs at WBS Level 6 and is rolled up or summarized by Bechtel Jacobs Company at Levels 3, 4 and 5. The overall work scope is also included in the M&I contract. Additional detail is then provided at Level 7 through subcontracts, work plans, job packages and procedures.

Hazard Analysis

Numerous mechanisms are used to define the hazards associated with a scope of work. At the M&I contract level, issues such as liability associated with corporate policies and priorities are a primary concern. At WBS Levels 3 through 5, Basis for Interim Operations (BIO), Safety Analysis Reports (SARs), and Auditable Safety Analysis (ASA) documents comprehensively assess the risks and hazards associated with a particular facility or task. These documents are used at WBS Level 6 to identify hazards and assist management in its decision regarding whether to self-perform or subcontract each element.

When scope is defined at the subproject level, the project team completes an Initial Hazard Assessment (IHA). Information gathered during the IHA is incorporated into the subcontract package and communicated to prospective bidders. Once a subcontract is awarded, the subcontractor is responsible for completing an Activity Hazard Assessment (AHA). For self-performed work, the responsible supervisor assembles a team to conduct the hazard assessment at WBS Level 7.

Workers are encouraged to participate in developing the AHA because individuals performing the work have a vested interest in identifying and planning for all hazards before the work begins. In addition, all workers participate in pre-job briefings in which hazards are communicated by line supervisors, the subcontractor's ES&H representative (for subcontracted work), and workers who participated in the hazard assessment process.

Implement Controls

When the hazards have been identified, controls necessary to mitigate or prevent the hazards are selected and implemented. Controls implemented at the M&I contract level, designed to protect both the

client and the company, include the Management Description, Work Smart Standards, subcontract *pro forma*, corporate policies and procedures, charters and programs such as ISMS and the Radiation Protection Program (RPP). Controls at Level 3 may include site or project-specific procedures if appropriate. Controls at Level 6 include specific subcontract requirements, ES&H plan and subcontract procedures. At Level 7, where work is performed, controls include work permits, personal protective equipment (PPE), engineered control, training and procedures. Various mechanisms used to implement ISMS are shown in Fig.1.3.

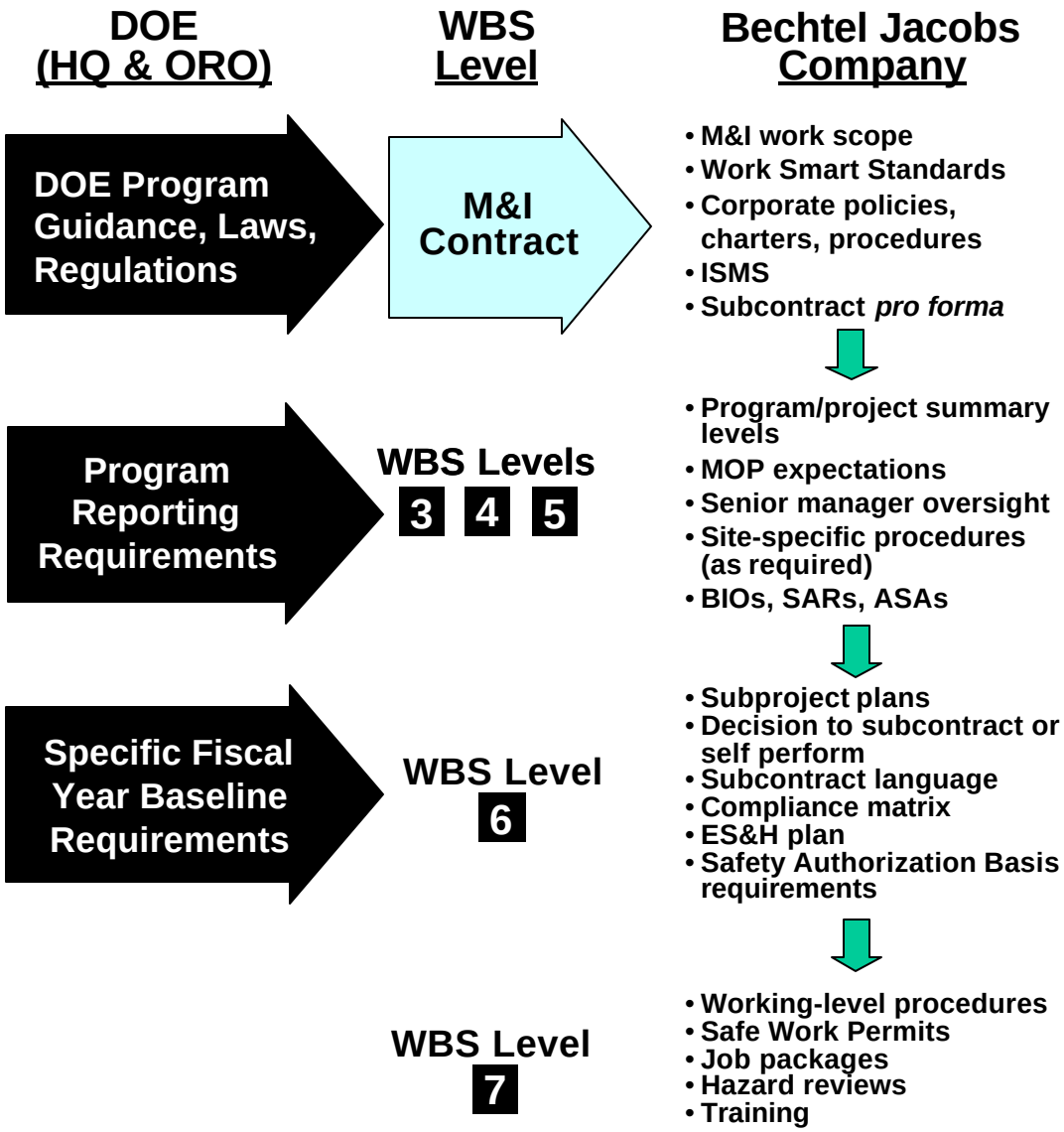


Fig. 1.3 Various mechanisms are used to implement ISMS at every level.

Perform Work

After work scope planning is performed at Level 6 by the subproject team, baseline plans are rolled up to WBS Level 3. These plans are reviewed and approved by the responsible MOP and the Bechtel Jacobs Company General Manager and Deputy General Managers before being submitted to DOE. ES&H requirements are incorporated into the baseline plans through active involvement of ES&H at all stages of the planning process. The project manager and his/her team decide whether to sub-contract or self-perform the work, based on scope of work and hazards identified.

If the work is subcontracted, Level 6 activities will include completing the compliance matrix and developing an ES&H plan. At Level 7, a hazard assessment is developed and safety documents such as Safe Work Permits (e.g. Lock-out/Tag-out, Radiation Work Permit, Confined Space, etc.) are generated. For self-performed work, the project team passes the information to the work planning team. The work planning team then develops the necessary elements for the work package.

The output from Level 7 makes up the input for work to be performed safely. As stated earlier, the endpoint is to provide a clear, definitive scope of work and appropriate hazard controls to facilitate the workers performing their jobs safely. Safe completion of work is the output for WBS Level 7. Figure 1.4 shows the process for performing work safely.

Feedback and Continuous Improvement

Supporting the collection of information to promote continuous improvement is the responsibility of all employees. The Performance/Quality Assurance (P/QA) organization has responsibility for coordinating and disseminating the collected information. P/QA has established a variety of programs and mechanisms to capture feedback from work performed and identification of lessons learned. For work performed, workers are encouraged to participate in post-job briefings in which work recently completed is reviewed and improvements are noted. In addition, incidents, accidents and occurrences undergo a critique.

A P/QA system coordinator is responsible for reviewing and distributing information related to occurrence reports, red alerts, yellow alerts and any other information deemed appropriate for a lesson learned. P/QA also manages a database that tracks and trends audit findings and corrective actions. All of these mechanisms can be used at any stage of the work planning process.

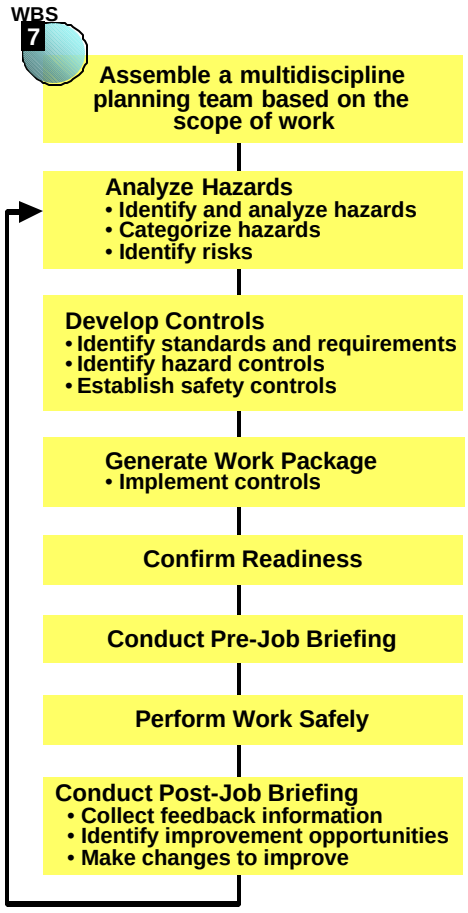


Fig. 1.4 Team planning helps ensure that the worker is protected.

2.0 PLANNING

As mentioned in Section 1.0, Bechtel Jacobs Company works with DOE-ORO to perform subproject planning at WBS Level 6. Existing information is often limited, requiring that additional data be collected, and different processes are applicable, depending on hazards, experience, and available resources. A real challenge of the subproject planning phase is to manage these considerations and associated uncertainties to accomplish the work safely.

When the work scope moves to Level 7, additional work planning must be performed. Figures 2.1 and 2.2 provide more detailed diagrams of the work planning process for self performed and subcontracted work.

Bechtel Jacobs Company uses source documents such as Life Cycle Baselines to assess programmatic risks. This risk assessment is based on the same parameters used by DOE—technical risk, work scope definition, and inter-site dependency. When the risk assessment identifies uncertainties associated with work scope and waste disposition issues, decisions are made regarding budget and resource allocations, and the divided work scopes are assigned to appropriate managers of projects.

After the managers of projects go through a process for planning their assigned work, they assign the divided scope of work to project managers and subproject teams (WBS Level 6). The subproject teams are also actively involved in the decision process for self-performance of work versus subcontracting. If the decision is made to self-perform, then the subproject team assigns a work planning team that performs the work from hazard assessment to work package development. If the work is subcontracted, the subcontract formation teams perform the steps indicated in Fig. 2.1, from initial hazard assessment to readiness review.

Section 4.0 of the Bechtel Jacobs Company ISMS Description describes the process used by a subcontract formation team to develop the sub-contract package and select a subcontractor.

Having a multi-disciplined subproject team (for self-performed work) or subcontract formation team (for subcontracted work) at WBS Level 6 is critical to the success of the planning process. Subproject teams typically consist of a project manager; workers who are familiar with the work to be performed; personnel from ES&H; Procurement; Engineering and P/QA; subcontract technical representatives (STRs); and other personnel as appropriate. However, over the life of the subproject, the overall team composition is subject to change based on the project activities. Subproject team members are selected based on the following factors:

- type of subproject function or activity,
- nature and type of hazards involved,
- complexity of work, and
- level of client or stakeholder interest.

To function at optimum levels, work planning teams must have:

- clearly defined roles and responsibilities, including those between the prime contractor and subcontractors;
- management support;
- appropriate mix of disciplines; and
- a clearly defined scope and objective.

The ISMS description defines the processes used by Bechtel Jacobs Company to support the subproject team or work planning team.

The work planning team or subcontractor organization develops the work controlling documents, the work package, and the ES&H plan. Hazard assessment documents identify potential work hazards and the controls used to support safe execution of this work. The type and extent of the hazard assessment document must be consistent with the requirements of DOE-STD-1027, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE 5480.23,* and DOE-STD-5502-94, *Hazard Baseline Documenta-tion.* These standards require that the level of detail in the hazard assessments be commensurate with the scope of work to be performed, the hazards identified, and the controls necessary to do work safely. Figure 2.3 provides the overall approach for performing effective hazard analysis.

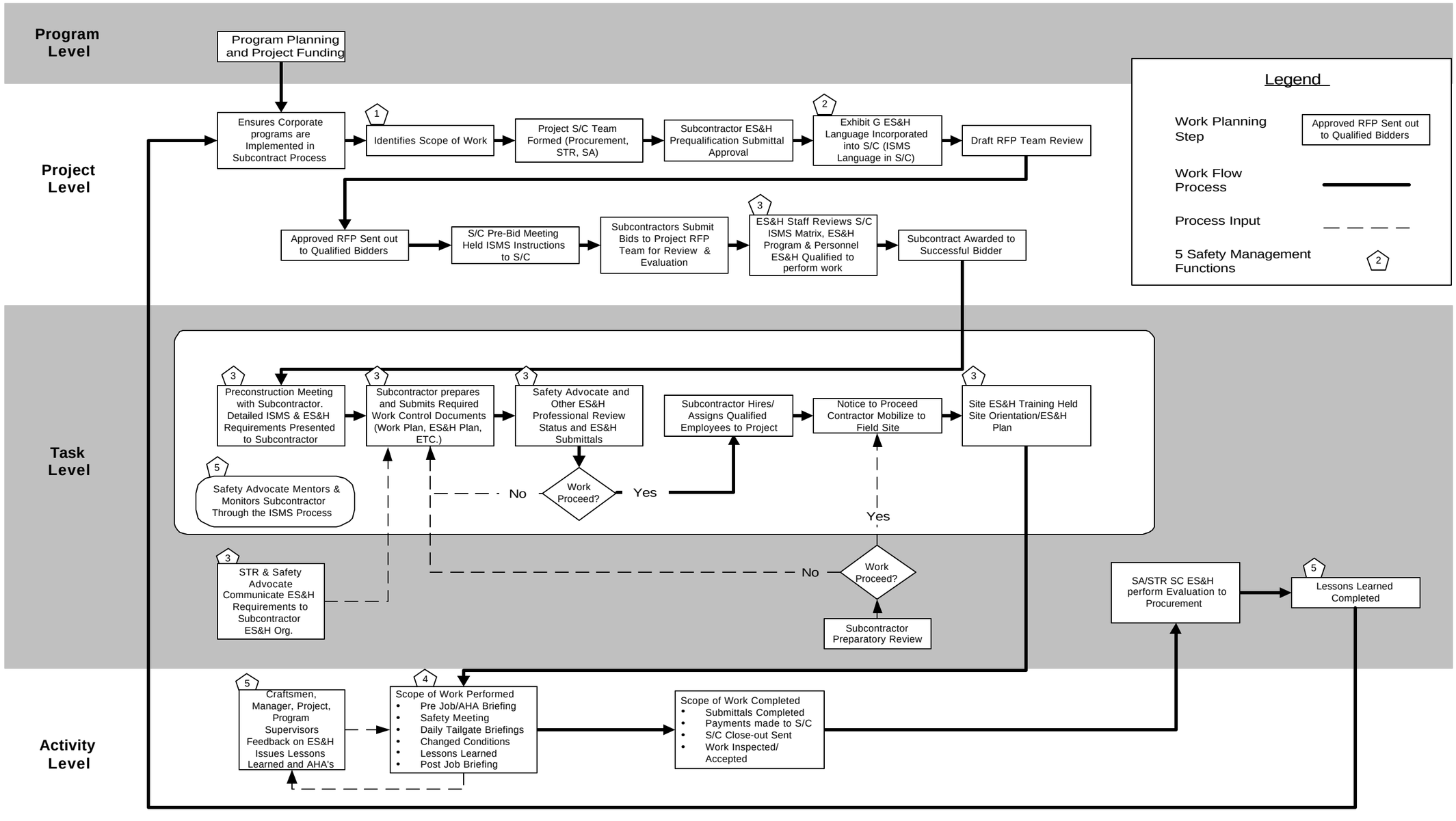


Figure 2.1. *Subcontracting work planning diagram.*

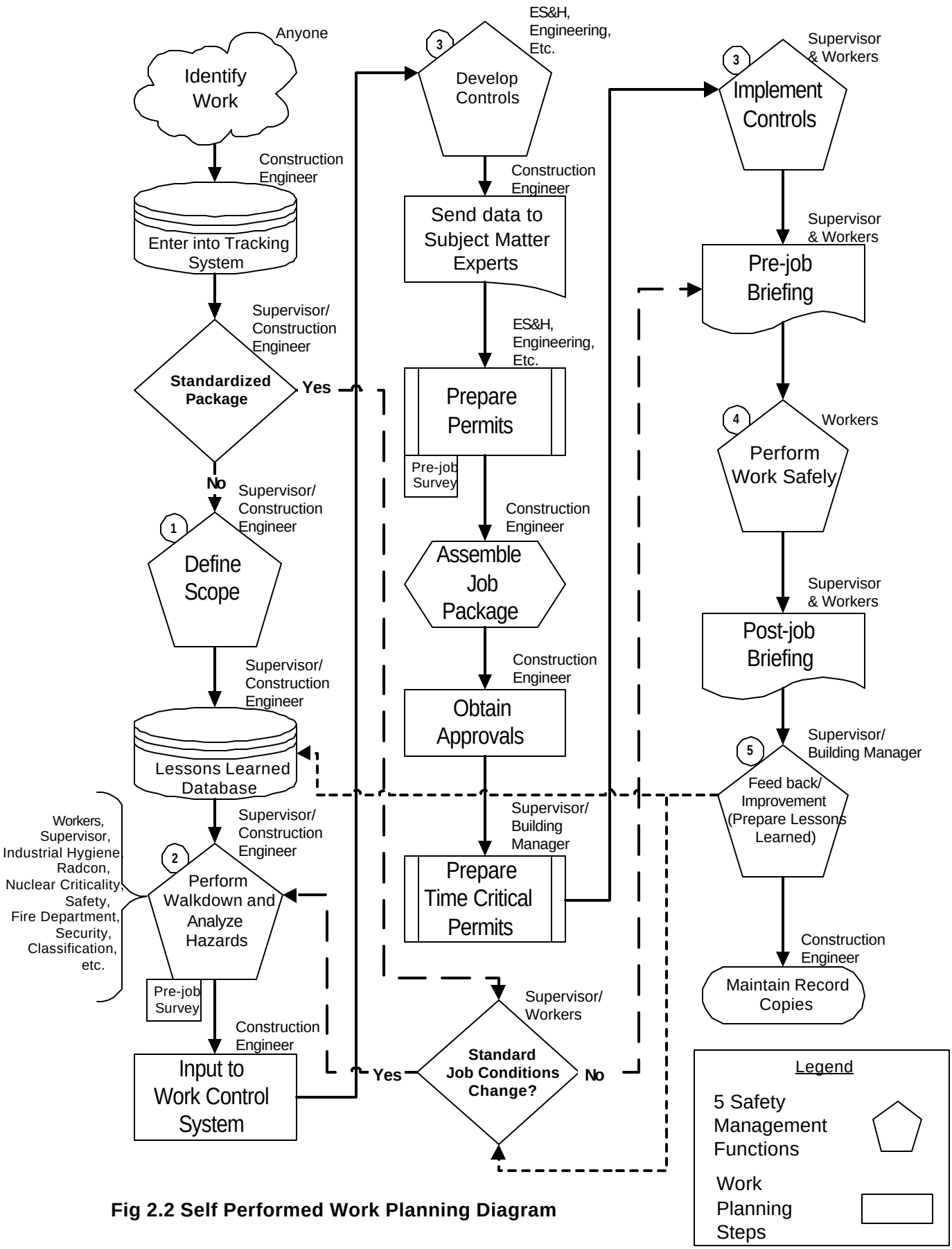


Fig 2.2 Self Performed Work Planning Diagram

Summary: *Hazard identification and control are improved by thinking of the four blocks identified below as the necessary components of Hazard Analysis and understanding that we must emphasize Final Confirmation along with the Recognition of Changing Conditions.*

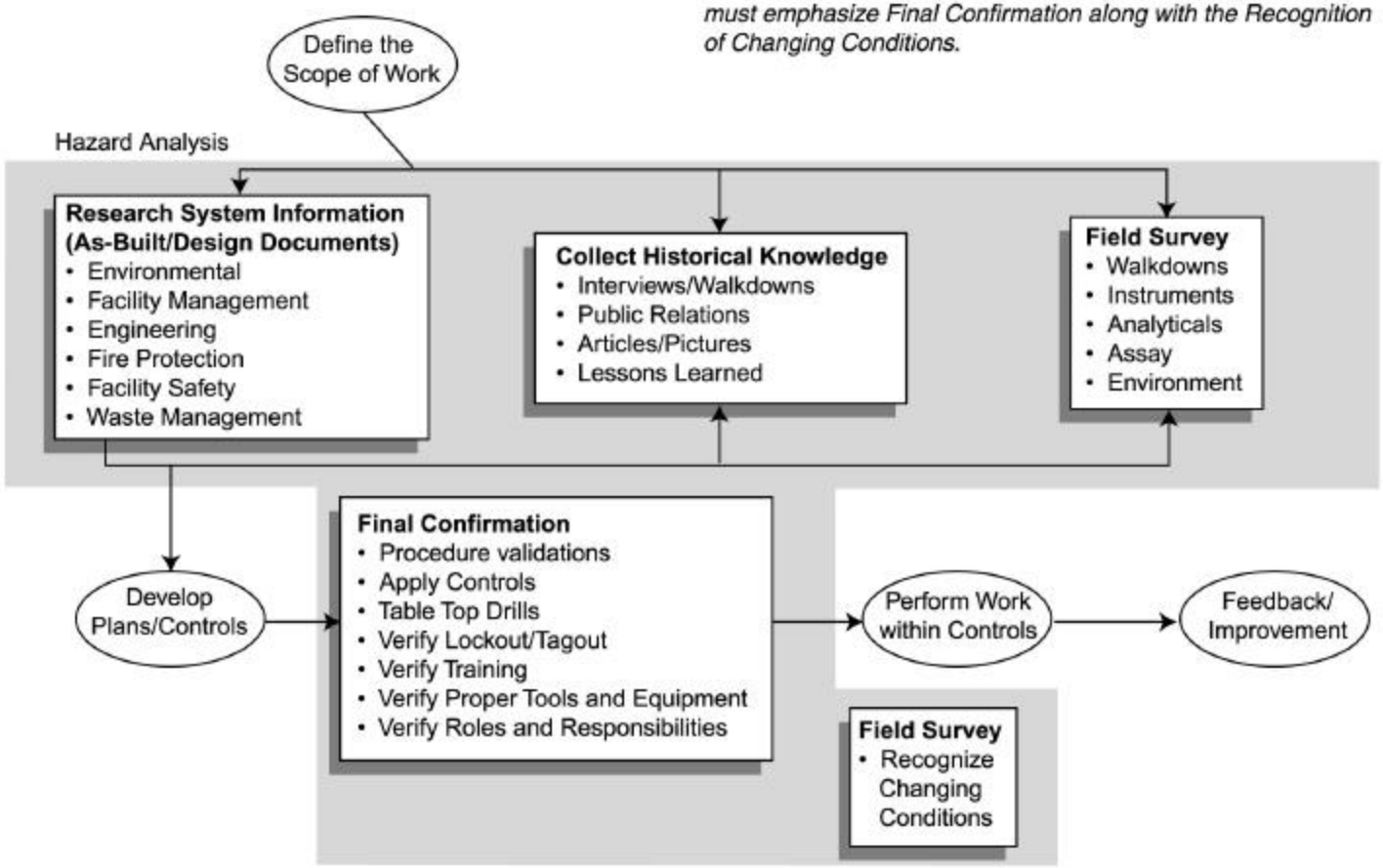


Fig. 2.3 Elements of Effective Hazard Analysis

Work packages or procedures are prepared specifically for a given task before its execution. Work packages should include worker input on detailed task description, hazard analysis, work permits necessary to control hazards, training requirements, equipment and materials requirements, necessary PPE, emergency response actions, and expected results at the end of the work. If the work is performed using a procedure, the procedure development process should include worker validation before completion.

ES&H plans support the work planning and execution processes. ES&H plans primarily emphasize worker safety and are updated as changes in worksite conditions occur.

When the work package, applicable procedure and ES&H plan are complete, a readiness review is conducted to evaluate whether the work is ready to begin. The readiness review ensures that hazards are identified, appropriate ES&H requirements are addressed, and controls for hazard mitigation are in place. The scope and degree of rigor for a readiness assessment vary, depending on the type and magnitude of identified hazards and the complexity of the tasks to be performed.

According to BJC-PQ-1510, "Readiness Reviews," and DOE-STD-3306-95, *Planning and Conduct of Operational Readiness Reviews*, readiness should be evaluated not only before the initial work begins, but also when there is a transition from one phase to another (e.g., from surveillance and maintenance to decontamination and demolition), there is a change in contractor or major subcontractor, or there are significant changes that affect safety or safety basis documents.

Readiness reviews focus on the following aspects of work:

- operations (work to be performed);
- quantities and physical forms of hazardous materials and substances;
- configuration of the work area;
- personnel experience, qualifications, and abilities; and
- hazard controls.

Each readiness review should confirm that:

- hazards have been identified,
- the ES&H requirements (including permits) have been applied appropriately and have been met,
- a hazard analysis has been completed and controls are in place,
- safety and emergency response procedures have been developed and are in place,
- personnel are knowledgeable of the scope of work and hazards, and
- necessary safety systems are operational.

When readiness has been confirmed, a pre-job briefing is conducted and work begins. As work progresses, periodic meetings are held with the workforce to reinforce safety considerations, and work performance is reviewed by ES&H and P/QA staff; subcontracted work is reviewed by the STR and safety advocate. These oversight activities provide information for feedback and continuous improvement and help ensure that work is performed safely. A post-job briefing provides an additional mechanism for feedback and improvement and identification of lessons learned.

3.0 MANAGEMENT SYSTEMS

This section identifies the management systems used by Bechtel Jacobs Company line managers to implement ISMS for the areas of their responsibility. To accomplish its mission in a safe, efficient, disciplined and timely manner, Bechtel Jacobs Company manages and controls work through an integrated system of policies, plans, procedures and other written directions across a set of management systems. This overall approach for managing the M&I work scope is defined in the Bechtel Jacobs Company Management Description BJC-GM-1000.

Bechtel Jacobs Company has established basic management systems that are critical to effective and consistent implementation of ISMS. Each individual system plays an important role in ensuring that safety is integrated into all aspects of work planning and execution. The following sections describe the system, discuss the functional organization responsible for the system, describe how the system supports ISMS implementation, and present examples of system processes.

Bechtel Jacobs Company uses several management systems to support ISMS.

- Assessment
- Budget and Financial Management
- Communications
- Emergency Management
- Engineering
- Human Resources
- Issues Management and Lessons Learned
- Labor Relations
- Planning
- Procurement
- Standards Management
- Training and Qualification
- Work Control

Work Smart Standards

One of the key elements supplementing integrated safety management is WSS. These standards are the end result of a process for reviewing laws, regulations, and standards to determine applicability to the scope of work. The WSS process involves the workforce in determining the adequate level of protection for accomplishing the work. The WSS process uses a bottoms-up team approach to tailoring requirements. The benefits of the WSS process include: reduction of regulatory requirements, cost savings, increased schedule efficiency, and increased worker involvement. Responsibility for the maintenance of the WSS process rests with the P/QA organization.

Assessment

The assessment program provides a level of confidence that Bechtel Jacobs Company operations are conducted safely, effectively, efficiently, and in accordance with all applicable requirements. These requirements are detailed in the M&I contract, WSS, and procedures. The P/QA organization establishes and maintains the assessment program, but each functional and project organization has responsibility for providing useful feedback from work performed and implementing appropriate improvement processes. Not only do the assessment programs strongly support the feedback and continuous improvement functions of ISMS, they assist in tailoring standards and requirements, guiding principles, and hazard assessment and control implementation functions. The assessment system involves program-level audits, independent assessments, self-assessments, and event investigations.

Budget and Financial Management

The budget and financial planning system relates the charge code structure to the WBS and establishes the framework for providing adequate resources. The charge code breaks down a project for the purpose of cost control and reporting. Both the WBS and the charge code structures increase in detail as the level increases, and the charge code captures the costs associated with every WBS element. Charge codes are incorporated into the WBS to provide uniformity in cost estimating and accounting, provide a basis for comparing costs of similar work, create a record of actual costs, and provide a means for detecting omissions or duplications.

The Planning and Controls organization establishes and maintains the integrity of the overall budget process as related to the Bechtel Jacobs Company mission and regulatory strategies. Mission and regulatory strategies are developed jointly with DOE and Bechtel Jacobs Company Planning and Controls. Because of the links between the WBS and charge code, the budget and financial management system

supports all five core functions (scope of work, hazard analysis, control implementation, work performance, and feedback). This system also provides a framework to ensure that priorities are balanced and resources are appropriately allocated.

Communications

Communications processes provide workers at all levels with the information necessary to assist them in accomplishing their tasks effectively, efficiently, and safely. Such processes are critical to the success of ISMS because they provide required information to workers, relate lessons learned, inform stakeholders, and raise ES&H awareness.

Each employee has some responsibility for maintaining effective communications processes. Employees should communicate their concerns regarding work processes or ES&H concerns as part of the hazard assessments process, as part of a pre-job or post-job briefing, or through use of the I Care/ We Care program. Each employee can also use Suspend/Stop Work Authority if necessary to address safety concerns.

Employees also have input through the Bechtel Jacobs Company Zero Accident Council. This council, chaired by our President, is made up of a wide representation of the workforce. The council members meet monthly to discuss safety performance, concerns, and programs. The council defines safety goals and expectations for ES&H performance for the Bechtel Jacobs Company M&I contract. Workers are encouraged to bring their safety issues to the attention of the council members if they are not promptly resolved through other processes.

The ES&H and Public Relations organizations have program-level responsibility for communicating ES&H concerns and awareness to the workforce, educating the stakeholders, and communicating with the public regarding work performed.

Communications processes are part of all five core functions and must be used at all organizational levels. Communication processes are also essential in implementing the seven guiding principles.

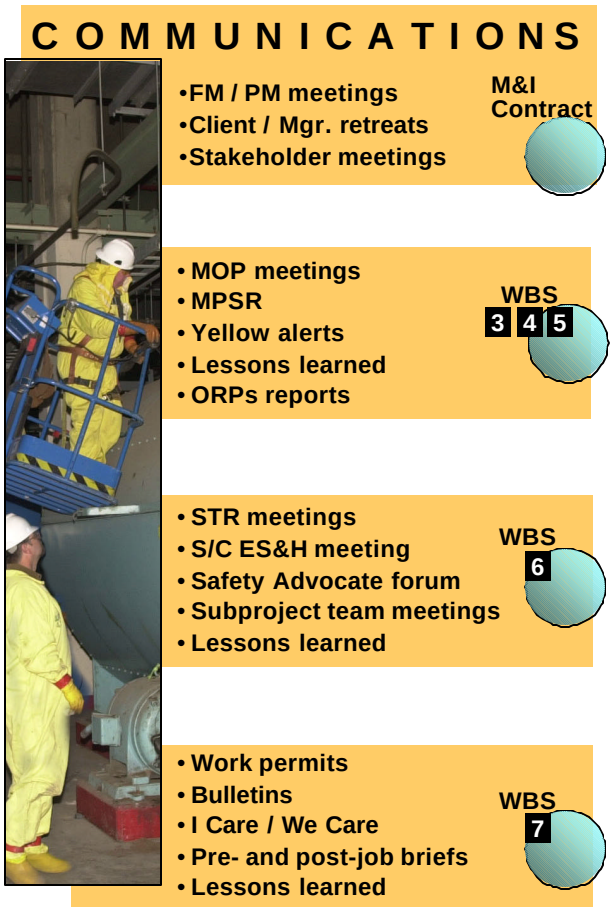


Fig. 3.1 Communication at each level supports ISMS.

Effective communication processes include:

- monthly program status reviews with the client,
- FM/PM meetings,
- subproject team meetings,
- pre-job and post-job briefings,
- hazard assessment process
- regular communication with employees (e.g., "M&I Times"),
- policies and procedures,
- training programs,
- safety meetings,
- material safety data sheets,
- "Eye on Safety" bulletins,
- "I Care/We Care,"
- safe work permits, and
- lessons learned.

Emergency Management

The emergency management system directs response to emergency and off-normal conditions. It focuses on identifying hazards, planning for response to the hazards identified, communicating the appropriate response to the workforce, and training individuals and organizations to mitigate and stabilize the hazards when needed. Responsibility for the emergency management system rests with the Security, Fire and Emergency Management organization.

Emergency management includes planning for fires, spills or releases of hazardous material, and medical emergencies based on the ISMS work planning and hazard analysis functions. Emergency management involves developing and implementing controls to mitigate hazards, including those resulting from natural phenomena and terrorist activities. Emergency management also supports feedback and continuous improvement—events requiring emergency response are reviewed to identify areas for improvement in both normal work controls and emergency response processes.

Emergency management processes include overall site hazard identification and assessment, risk analysis, emergency planning, maintenance of emergency response facilities and equipment, personnel response training, and drills and exercises.

Engineering

The engineering system provides project managers with resources, tools, and processes to assist in the safe performance of work. The Engineering and Construction Services (ECS) organization provides processes for identifying options for performance of the scope of work and for developing engineering controls. Engineering and Construction Services also supports the project teams in identifying and analyzing hazards. The engineering system supports the first four of the core functions.

ECS processes include:

- nuclear criticality evaluations;
- facility modification reviews;
- facility design, including engineered controls;
- unreviewed safety question determination;
- off-project design review;
- nuclear safety analysis; and
- safety significant systems identification.

Human Resources

The Human Resources (HR) system provides processes for staffing, compensating, assessing, and developing the workforce. Developing and maintaining the HR systems is the responsibility of the HR organization. However, all individuals who manage or supervise personnel (including subcontractor personnel) are responsible for implementing appropriate HR programs and ensuring that work under their area of responsibility is performed safely.

HR systems provide processes for continuous improvement of each individual's performance, set expectations for the scope of work, and support the guiding principles by defining roles and responsibilities and ensuring competency commensurate with the job responsibilities. The HR system includes selection and hiring of the workforce, establishing performance evaluation (including ES&H) criteria, providing tools to assess the physical requirements and working conditions under a scope of work, developing job descriptions to define roles and responsibilities, and supporting development of accommodations for disabled employees.

Issues Management and Lessons Learned

The issues management and lessons learned systems provide processes for collecting data from internal and external sources and developing improvements to enhance the safe performance of work. Figure 3.2 provides an overview of the mechanisms of these systems. P/QA is responsible for maintaining the issues management and lessons learned systems, which primarily support the feedback and continuous improvement function of ISMS. Each organization (program, function, or project) is responsible for identifying information that should be documented to facilitate improved work performance, and for assessing available information for applicability to their scope of work.

Among other things, the issues management and lessons learned systems include collecting, analyzing, and trending data from audits, assessments, and occurrence reports. Additional input includes incident investigations, root cause analyses, and corrective action development. The process provides useful information for scope definition and hazard identification, allows for line managers to be

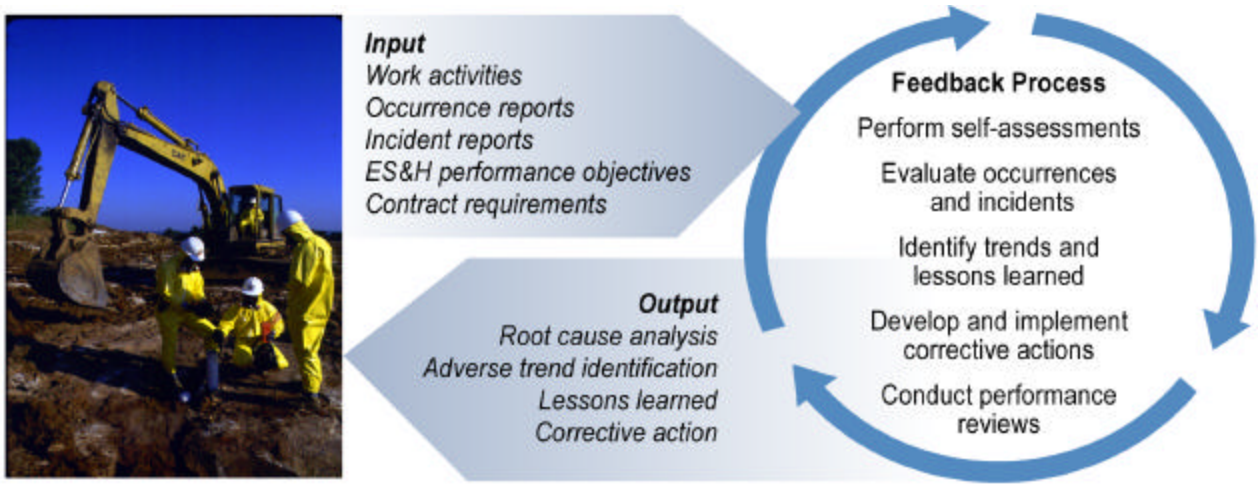


Fig. 3.2. *Information management systems and lessons learned systems support the feedback process of ISMS.*

held responsible for corrective actions to findings, and helps balance priorities.

Labor Relations

The labor relations system provides a corporate framework for interfacing with bargaining unit employees. Development and maintenance of this system is the responsibility of the Labor Relations organization, which ensures cooperative labor management relationships through use of tools such as the Labor Alliance.

The labor relations system provides for worker involvement in defining the scope of work, analyzing hazards, identifying controls, and communicating feedback for continuous improvement. The labor relations system plays an important role in identifying roles and responsibilities and ensuring that the workforce is competent to perform the work assigned.

Labor relations processes and the Paper, Allied-Industrial, Chemical and Energy Workers (PACE) and Atomic Trades and Labor Council (ATLC) contracts include:

- union safety and health representatives and division safety advisors,
- Safety Advisory Committee,
- labor agreements
- processes of dispute resolution, and
- processes for negotiation.

Planning

As described in Section 2.0 of this document, planning for work scope execution is conducted using a team approach to convert the scope of work to a usable work package for the work force at WBS Level 7. Each MOP is responsible for assigning a project manager to assemble and lead the team in developing the subproject plan, conducting the initial hazard assessment and determining whether the work should be subcontracted or self performed.

Procurement

Procurement systems provide mechanisms for acquiring goods and services for functional and project organizations to support completion of their scope of work. These systems are the responsibility of the procurement organization.

Procurement systems support ISMS functions for scope definition and implementation of controls to mitigate hazards. Procurement systems also support communication between Bechtel Jacobs Company and its subcontractors. The primary means through which the procurement processes support ISMS are:

- use of subcontract formation teams,
- preparation and organization of all exhibits in requests for proposals,
- establishment and maintenance of a qualified bidders list,
- evaluation and administration of subcontracts, and
- development and maintenance of subcontract language to control risk.

Bechtel Jacobs Company ES&H expectations for subcontractors are detailed in the standard subcontract language (Exhibit G) developed by the ES&H organization. For each scope of work, the subcontract formation team tailors Exhibit G to address the hazards for the scope of work. Further discussion of the interfaces between ES&H and Procurement are available in Section 4.0 of the ISMS Description.

Standards Management

A standards management system provides the mechanism to identify requirements applicable to the scope of work assigned to Bechtel Jacobs Company under the M&I contract. Standards management systems that capture and document requirements such as maintenance of the WSS and Standards/ Requirements Identification Documents (S/RIDs) are the responsibility of the P/QA organization.

WSS and S/RIDs tailor requirements to the scope of work and the identified hazards to ensure an appropriate balance in the implementation of controls. Documents such as these are key to consistent implementation of ISMS at every WBS level. Standards management processes have been established for:

- identification of new or revised DOE directives,
- assessment of impact of new directives and standards on the work to be performed,
- revisions of the WSS for our contract,
- implementation planning,
- flowdown of requirements, and
- feedback and continuous improvement.

Training and Qualification

Training and qualification identifies and develops needs and skills for the workforce and documents knowledge, experience, abilities, and competencies of the workforce. This is especially critical in a subcontracting environment. The responsibility for development and maintenance of these systems is assigned to the Human Resources organization

Without the proper training and qualifications, hazards might not be identified, optimum controls might not be selected, and work could be performed inappropriately. Training and qualification systems are essential to supporting all five ISMS core functions, providing support to communications systems, and assisting in ensuring that competence is commensurate with responsibility. Examples of training and qualification systems include certification documentation for subcontract employees, needs assessments for worker assignments, control of training programs, oversight of training programs, and determination of training needs for a defined work scope.

Work Controls

The work control system provides processes to convert the task level scope of work into a working level document that is easy for the workforce (subcontractor or self-perform) to understand and use. The ECS organization is responsible for developing and maintaining the work control processes, which support all five ISMS core functions. Examples of work control processes include:

- operating procedures,
- work packages,
- work group coordination,
- pre-job and post-job briefings,
- work monitoring and oversight,
- daily oversight and management of subcontractors, and
- worker involvement.

Subcontractors performing field work will have a work control system that implements the work control requirements contained in their subcontract.

4.0 ROLES AND RESPONSIBILITIES

Each employee, whether employed by Bechtel Jacobs Company or a subcontractor, has roles and responsibilities associated with the effective implementation of Integrated Safety Management. Effective ISMS implementation must occur at every organizational level for Bechtel Jacobs Company to be successful in achieving the objective of "Perform Work Safely."

The following are ISMS roles and responsibilities associated with various job categories.

President/Vice President and General Manager/Deputy General Managers

- Communicates the importance of ISMS, Zero Accident Performance and the ES&H Program.
- Provides financial resources necessary to ensure the development and implementation of the Environment, Safety and Health Program.
- Includes ES&H performance in periodic performance reviews and annual appraisals of senior management and supervision.
- Chairs the Zero Accident Council.
- Ensures that all Bechtel Jacobs personnel are informed of communication channels available to them for addressing ES&H concerns.
- Ensures that ISMS field evaluations (Management Walk-Abouts) are included in management self-assessment schedules
- Participates in at least one ISMS field evaluation each month to ensure expectations are being met.

Manager of Projects/Project Managers

- Is responsible for environment, safety and health in self-performed and subcontract work activities and ensures that all ES&H initiatives are consistent with the Bechtel Jacobs ISMS.
- Notifies the Vice President and General Manager, and the Manager of ES&H immediately of all significant ES&H-related incidents.
- Ensures that all subcontract work activities (including non-field work) are assigned an STR and a Safety Advocate with appropriate experience and knowledge to support the work. (Coordinates with ES&H regarding the assignment of the Safety Advocate.)
- Includes ES&H performance in periodic performance reviews and annual appraisals of project personnel.
- Includes ISMS-related criteria in management self-assessment activities.
- Establishes mechanisms to encourage Bechtel Jacobs and Subcontractor employee communication of ES&H- related issues and for resolution of employee concerns.
- Ensures that line management/supervision has training and information necessary to understand ES&H compliance issues.
- Understands the Bechtel Jacobs Company ISMS and implements the Five Safety Management Functions and the Seven Guiding Principles within assigned areas of responsibility.

Functional Managers

- Establishes Bechtel Jacobs Company management systems, programs, policies and procedures that support the implementation of ISMS.
- Includes ES&H performance in periodic performance reviews and annual appraisals of functional personnel.
- Understands the Bechtel Jacobs Company ISMS and implements the Five Safety Management Functions and Seven Guiding Principles within assigned functional areas.
- Provides technical guidance and deploys technical resources to support projects

Area Manager /Project Superintendent

- Promotes and fosters Zero Accident Performance.
- Ensures that facilities, equipment, procedures, and programs are maintained to provide continuing quality of ES&H controls.
- Ensures that Bechtel Jacobs and Subcontractor personnel assigned to work in his or her area of responsibility are instructed in ES&H requirements and precautions.
- Designates individuals for participation in ES&H-related activities such as inspections, safety meetings, and investigations.
- Notifies the site ECS Organization Manager, the Manager of Projects and BJC Manager of Safety immediately of ES&H-related incidents.
- Understands the Bechtel Jacobs Company ISMS and implements the Five Safety Management Functions and the Seven Guiding Principles within their area of responsibility.
- Ensures that front-line supervision communicates effectively with workers regarding any information related to ES&H awareness in the workplace. This can range from facilitating resolution of ES&H concerns to ensuring that the supervisor listens to and responds to worker input.
- Ensures that all Bechtel Jacobs Company subcontract management personnel are qualified to perform their job functions prior to being assigned work.

Front-Line Supervisor

- Promotes and fosters Zero Accident Performance.
- Understands the Bechtel Jacobs Company ISMS and implements the Five Safety Management Functions and the Seven Guiding Principles within their area of responsibility.
- Ensures that personnel assigned to his/her group are instructed in, and comply with, ES&H requirements. Additionally ensures that personnel are informed of potential hazards through Hazard Review Process, Lessons Learned, and necessary ES&H measures and precautions. Provides for worker participation in hazard analysis activities.
- Ensures that necessary protective clothing and equipment are provided, properly used, and maintained.
- Ensures that employee ES&H concerns receive prompt attention and response.
- Ensures that employees attend safety meetings.
- Instructs each employee to immediately notify supervision of any accident, illness, injury, or near miss incident.
- Ensures appropriate investigation of all accidents, illnesses, injuries and near miss incidents.
- Requests prompt medical attention, if needed, preserves any evidence of an accident scene, and initiates appropriate corrective actions in response to ES&H-related incidents.
- Notifies the Area Manager or immediate supervisor and the BJC Manager of Safety of all ES&H-related incidents, injuries, accidents, and near-miss incidents, and participates in the accident investigation process.
- Ensures that responses and input from workers are listened to, that follow-up is conducted and responses (action or no action) are communicated to employees in a timely manner.
- Ensures worker input on work packages (task description, hazard analysis, work permits, equipment and materials and the expected results at the end of the work).
- Holds periodic meetings with workers to stress the importance of ES&H.

Subcontract Technical Representative

- Confirms that subcontractor employees are trained and qualified for their work assignments before starting work

- Works with the subcontractor and Safety Advocate to strengthen the subcontractor's ES&H program

- Provides oversight, reporting and task direction to subcontractor

- Encourages subcontractor to empower their employees to actively participate in ES&H program development and review

- Serves as the primary focal point through which all formal communication flows between the subcontractor and Bechtel Jacobs Company.

- Mentors the subcontractor

Safety Advocate

- Assists the subcontractor in transitioning to programs and performance that meet Bechtel Jacobs Company ES&H expectations for their scope of work.

- Assists subcontractors in defining or establishing programs pertinent to applicable requirements of ISMS.

- Fosters implementation of the Bechtel Jacobs Company ES&H programs, where appropriate, including Zero Accident Performance

- Reviews subcontractor-generated ES&H data and reports, such as air monitoring and bioassay results, as well as tracking and trending ES&H performance

- Suggests improvements for trends identified by Bechtel Jacobs Company or the subcontractor and provided to the STR

- Serves the subcontractor and STR as a technical resource for ES&H program implementation and compliance

- Coaches the subcontractor in developing and implementing corrective actions resulting from audits and self-assessments

- Assists the subcontractor in incident or near miss investigations

- Monitors the subcontractor ES&H work trends and promotes continuous improvement processes as needed.

Employee

- Understands the concept of ISMS and how the Five Safety Management Functions apply to his/her specific work activities.

- Complies with ES&H requirements.

- Reports any ES&H concerns and unsafe practices or conditions observed to his/her supervisor, the Plant Shift Superintendent, and/or appropriate bargaining unit representative.

- Immediately reports all injuries, accidents, illnesses, or near misses to supervision.

- Participates in hazard assessment and improvement activities as appropriate. Such activities include job walkdowns, pre- and post-job briefings, and issues/concerns reporting processes.

- Makes safety a personal value and accepts responsibility for personal safety.

- Uses his/her delegated authority to suspend/stop work when necessary to protect him/herself and/or other co-workers.

- Is qualified to perform the work task to which he/she is assigned.

Environment, Safety and Health Organization

- Develops Bechtel Jacobs Company ES&H programs, policies and procedures

- Provides qualified ES&H personnel to support project management in the implementation of ISMS and ES&H programs

- Monitors the effective implementation of the Bechtel Jacobs Company ES&H programs and policies.

- Assists employees and line management with evaluations, recommendations, and procedures

for ensuring prevention of, and/or protection from, hazards. Informs appropriate management of identified ES&H hazards and potential non-compliances and provides control recommendations.

- Advises DOE management, Bechtel Jacobs Company management, and employee representatives of ES&H requirements and maintains the records specified by these directives, codes, standards, and regulations.

- Through Zero Accident Council meetings and other communications, helps the Line Managers maintain an awareness of ES&H-related issues.

- Communicates ES&H concerns and awareness to the workforce through a variety of mechanisms such as M&I Times/Delta Times, safety bulletins, etc.

- Notifies appropriate bargaining unit leadership of ES&H-related incidents involving bargaining unit employees.

- Maintains subcontract language in Exhibit G to ensure program consistency throughout the projects.

- Trains Safety Advocates to work with STRs, Subcontract Formation Teams, and subcontractors to execute the Bechtel Jacobs Company ISMS throughout all projects to which they are assigned.

Subcontract Formation Team

- Assembles subcontract package to meet the requirements for the approved scope of work.

- At a minimum, the team will consist of representatives from Procurement and Quality Assurance, an STR, a Safety Advocate, and the Project Manager. Other personnel such as Engineering and ES&H subject matter experts are included as appropriate.

- Ensures that Bechtel Jacobs ES&H and ISMS requirements are appropriately included in the RFP.

Site Subcontractor Representative (Senior Subcontractor Manager)

- Ensures that facilities, equipment, procedures, and programs are maintained to provide continuing quality of ES&H controls.

- Ensures that Subcontractor personnel assigned to work in his or her area of responsibility are instructed in ES&H regulations and precautions.

- Ensures that all Subcontractor personnel have been oriented in zero accident performance and in Integrated Safety Management System fundamentals.

- Ensures that ES&H is integrated into all aspects of work planning and execution by being proactively involved in walk-downs, the hazard-assessment process and pre- and post job briefings.

- Designates individuals for participation in the ES&H-related activities such as inspections, meetings, and investigations.

- Notifies the Bechtel Jacobs STR and Safety Advocate immediately of ES&H-related incidents.

- Understands the concept of the Bechtel Jacobs Integrated Safety Management System and ensures the implementation of Five Safety Management Functions and the Seven Guiding Principles within the scope of the subcontract.

- Ensures that project supervisors communicate effectively with workers regarding any information related to ES&H awareness in the workplace.

- Ensures that all workers are trained and qualified to perform the tasks to which they are assigned prior to starting work.

Management Walk-Abouts

A key step in achieving Bechtel Jacobs's goals for Integrated Safety Management is the increasing and sustained presence and involvement of managers out at the work locations in their areas of responsibility. We must expect high standards of performance from all people in our areas of responsibility and hold them accountable for this performance. Integrated Safety Management defines the expected standard.

Managers are key to implementing change and achieving our Integrated Safety Management goals. While walking spaces, the manager should focus on mentoring and coaching field personnel to achieving higher expectations for ISMS.

The table below reflects the suggested/recommended minimum time each Bechtel Jacobs manager should be in the field walking spaces and communicating expectations. The duration of each walk-about should be targeted at a minimum of between one and two hours. An ISMS coach may accompany the manager on the walk-about.

Management Walk-Abouts

Function	Target Commitment	ISMS Coach
President/Vice President/ Deputy General Managers	6 hours per month	ES&H Manager BJC Manager of Safety P/QA Manager
Functional Managers	6 hours per month	Site Health and Safety Manager P/QA Representative
Managers of Projects	6 hours per month	Project ES&H Supervisor P/QA Representative
Project Managers	12 hours per month	Project ES&H Supervisor P/QA Representative
Area Managers	12 hours per month	Safety Advocate P/QA Representative

5.0 ISMS GUIDELINES MATRIX

Purpose

This section, developed by the joint DOE/Bechtel Jacobs Company ISM team, provides guidelines as required by 48CFR970.5204(e). These guidelines are intended to serve as a resource to assist the contractor and subsequent reviewers determine the acceptability of the ISM System Description. These guidelines address attributes of an acceptable ISM System Description, as determined from various sources.

Table 5.1 provides a mapping of each ISMS guideline element to the respective ISMS Description section, as well as to other company-level documents.

Sources

The following sources were used during to develop these guidelines:

- DOE P 450.4, Safety Management System Policy, October 15, 1996
- DEAR Clause: 970.5204-2, Integration of Environment, Safety and Health into Work Planning and Execution. (June 1997)
- LAWS Clause: 970.5204-78, Laws, Regulations, and DOE Directives. (June 1997)

Basic Premise

DOE Policy 450.4 (Safety Management System Policy) states that "Safety Management Systems provide a formal, organized process whereby people plan, perform, assess, and improve the safe conduct of work." The system encompasses all levels of activities and documentation related to safety management.

The DEAR Clause directs that the contractor is to "manage and perform work in accordance with a documented Safety Management System" and the "documentation of the system shall describe how the contractor will" perform the five basic functions of ISMS.

To meet the DOE Policy expectation of a "formal, organized process", documents associated with the Description must be under some level of configuration/change control.

Note: On the following pages abbreviations are used to reference ISMS Functions (e.g., [F1]), ISMS Principles (e.g., [P1]), DEAR Clause sections (e.g., [D-(a)]), and LAWS Clause sections (e.g., [L-(a)]).

Table 5.1 ISMS Guidelines Matrix

#	ISMS Element	Explanation	ISMS Description Reference	ISMS Supplement Reference	Review Documents
1	Safety encompasses **Environment, Safety, and Health**, including pollution prevention and waste minimization **[D-(a)(1)]**		Policy and Management Commitment and Leadership sections on page 3 Pollution Prevention, page 4		BJC-GM-020 *Integrated Safety Management System* Exhibit G
2	Proactive approach to ES&H Issues should be a primary attribute of the basic implementation strategy.		Zero Accident Performance-page 5		BJC-FS-1001—*Work Control Requirements* BJC-EH-2010—*Hazard Review* BJC-NS-1002—*Safety Documentation* BJC-NS-1003—*Nuclear Criticality Safety Program*
3	"Employees" include subcontractor employees **[D-(a)(2)]**		The Empowered Worker-page 19	Section 4.0 Roles and Responsibilities, page 23	BJC-EH-2015—*Safety Concerns(I Care/We Care)*
4	In performing work under the contract, the contractor shall perform work safely, in a manner that ensures adequate protection for employees, the public, and the environment, and shall be accountable for the safe performance of work. The contractor shall exercise a degree of care commensurate with the work and the associated hazards. The contractor shall ensure that management of environment, safety, and health (ES&H) functions and activities becomes an integral but visible part of the contractor's work planning and execution processes. **[D-(b)]**	For the purposes of this element, employees is intended to include co-located workers and lessee tenants.	Section 1. Commitment—pages 3-4, specifically Our Safety Culture and Policy on page 3 Section 4. Approach—pages 27-34	Section 2.0 Planning-pages 7-15	BJC-FS-1001—*Work Control Requirements* BJC-EH-2010—*Hazard Review* Exhibit G
5	The contractor shall, in performance of work, ensure that - Line management is responsible for the protection of employees, the public, and the environment. Line management includes those contractor and subcontractor employees managing and supervising employees performing work. **[P1]**		Management Commitment and Leadership-page 3 Section 3. Bechtel Jacobs Company Organization, specifically Managers of Projects-pages 20 & 23	Section 1.0 Hazard Analysis - page 4	BJC-EH-2010 *Hazard Review* BJC-FS-1001—*Work Control Requirements* BJC-GM-101—*Managers of Projects* Exhibit G

Table 5.1 ISMS Guidelines Matrix (continued)

#	ISMS Element	Explanation	ISMS Description Reference	ISMS Supplement Reference	Review Documents
6	Line management should be identified as a key participant in development and implementation of ISM. • Line management should participate in developing the approach to ISM. • Line management should be committed to implementing the ISMS. - At the site level. - At the facility/activity level	Although the system description document does not discuss the development of the system, a team, including line management, was used to develop the program.	Section 3. Bechtel Jacobs Company Organization, specifically Managers of Projects (page 20) and Project Teams (page 23)		Bechtel Jacobs Company Performance Documents—General Management BJC-GM-020-*Integrated Safety Management System*
7	Clear and unambiguous lines of authority and responsibility for ensuring ES&H are established and maintained at all organizational levels. **[P2]** • Line management for each facility or activity should be identified. • Line management should be clearly identified for those facilities with multiple organizations responsible for different activities. • Line management should be clearly identified in formal contractor documents. • Responsibilities should be identified for each safety management function and mechanism.	The ISM System Description provides a general description of the lines of authority and responsibility. Details regarding specific facility roles and responsibilities are maintained within the respective line organization.	Section 3. Bechtel Jacobs Company Organization—pages 19-25.		Bechtel Jacobs Company organization chart BJC-GM-1000 *Bechtel Jacobs Company Management Description* BJC-GM-020-*Integrated Safety Management System* Exhibit G
8	The Description addresses work coordination with other contractors to preclude adverse synergistic impacts. Memoranda of Understandings, work agreements, implementing manuals, and procedures which are used to control implementation of the ISMS should be referenced in the Description.	MOUs, work agreements, etc. are discussed in general in the ISM System Description. Specific MOUs, etc are maintained within the responsible line organization.	Facility Management for other DOE Reservation Residents—pages 33-34		Master Service Agreement Work Authorizations with UT-Batelle, BWXT Y-12, USEC ETTP Site Safety Council

Table 5.1 ISMS Guidelines Matrix (continued)

#	ISMS Element	Explanation	ISMS Description Reference	ISMS Supplement Reference	Review Documents
9	The System Description should reflect how the work processes and management systems used to accomplish work address ES&H, and how the ES&H mechanisms are integrated into the work processes.		Section 4.Approach—pages 27-34	Section 1.0 Hazard Analysis - page 4 Section 2.0 Planning-pages 7-15	BJC-FS-1001—*Work Control Requirements* BJC-EH-2010—*Hazard Review* Exhibit G
10	The contractor shall submit to the contracting officer documentation of its System for review and approval. Dates for submittal, discussions, and revisions to the System will be established by the contracting officer. Guidance on the preparation, content, review, and approval of the System will be provided by the contracting officer. On an annual basis, the contractor shall review and update, for DOE approval, its safety performance objectives, performance measures, and commitments consistent with and in response to DOE's program and budget execution guidance and direction. Resources shall be identified and allocated to meet the safety objectives and performance commitments as well as maintain the integrity of the entire System. Accordingly, the System shall be integrated with the contractor's business processes for work planning, budgeting, authorization, execution, and change control. **[D-(e)]**	The DOE-ORO Manager approved the BJC ISMS Description on April 3, 2000.	Section 2. The Bechtel Jacobs Company Integrated Safety Management System, page 8, Define Scope of Work; page 9, Prioritize Tasks and Allocate Resources. Section 6. ISMS Milestones, page 45 Section 7. ES&H Performance Expectations, pages 47-53	Section 1.0 Work Breakdown Structure-pages 3-4	BJC-PC-1004 *Environmental Management and Uranium Programs Baseline Management and Change Control* BJC-PC-1003 *Definition and Organization of Work Scope* BJC-PC-1006 *Scheduling*
11	The System Description should be tailored to the Bechtel Jacobs Company LLC contract terms and conditions and identified scope of work.	The System Description was written for the Bechtel Jacobs Company contract and work scope.	INTRODUCTION page 1 SCOPE page 2		

Table 5.1 ISMS Guidelines Matrix (continued)

#	ISMS Element	Explanation	ISMS Description Reference	ISMS Supplement Reference	Review Documents
	Define Scope of Work [F1				
	Translate Mission into Work				
12	The ISMS Description should explain/describe the business agreements or other mechanisms (e.g. project data documents, etc.) that assign DOE missions to the contractor. The description should include: • an explanation of how activities necessary to accomplish the missions are developed. • an explanation of how these activities are further developed into discrete work activities. • an explanation of line management's involvement.	The general approach is discussed in the system description. Specific details are included in operating documents.	Section 2.I. Define Scope of Work—pages 8-10	Section 1.0 Work Breakdown Structure-pages 3-4 Section 2.0 Planning-pages 7-15	DOE prime contract with Bechtel Jacobs Company DOE financial plan to Bechtel Jacobs Company FY 2001 baselines Requests For Proposals Work authorizations
13	The ISMS Description should describe the mechanisms for establishing performance objectives/measures for work assigned to the contractor. The description should include: • an explanation of how these performance objectives/measures are linked to the discrete contractor work activities. • an explanation of how safety objectives are integrated with work performance objectives/measures. • line management's role in establishing these objectives.		Section 2.I—Set Expectations –page 9 Section 4.-Subcontractors-page 28 Figure 4.4-page 32 Section 4.-Subcontractor Compliance-page 33		DOE/BJC prime contract sections H-13 and C-2.4 Prime contract mod 31 dated 9/30/99 DOE Performance Evaluation Plan for Bechtel Jacobs Company for period 10/1/00-9/30/01 Letter from Robert Sleeman to Jim Thiesing dated 9/25/00 *Environmental Safety and Health Expectations for Fiscal Year 2001.*

Table 5.1 ISMS Guidelines Matrix (continued)

#	ISMS Element	Explanation	ISMS Description Reference	ISMS Supplement Reference	Review Documents
	Prioritize Tasks and Allocate Resources				
14	The contractor shall, in performance of work, ensure that - Resources are effectively allocated to address ES&H programmatic and operational considerations. Protecting employees, the public, and the environment is a priority whenever activities are planned and performed. **[P4]**		Section 2.—Prioritize Tasks and Allocate Resources -pages 9-11	Figure 1.3 page 5	BJC-PC-1003 *Definition and Organization of Work Scope* BCJ-PC-1006 *Scheduling* BJC-PC-1004 *Environmental Management and Uranium Programs Baseline Management and Change Control*
15	The ISMS Description should describe the mechanisms that will be used to prioritize activities. The description should include: • an explanation of how major ES&H risks and vulnerabilities are identified, communicated, and incorporated into the budget planning process • an explanation of how prioritization occurs at all levels of planning. • the bases for determining priority (ES&H, DOE, Programmatic, Stakeholders, etc.). • a risk-based structure for determining priority. • line management's role.		Section 2.—Prioritize Tasks and Allocate Resources -pages 9-11	Section 1.0 Hazard Analysis page 4 Figure 1.3 page 5	BJC-PC-1003 *Definition and Organization of Work Scope* BCJ-PC-1006 *Scheduling* BJC-PC-1004 *Environmental Management and Uranium Programs Baseline Management and Change Control*
16	The ISMS Description should describe the mechanism used for change control regarding prioritization of tasks and allocation of resources.		Section 2.—Prioritize Tasks and Allocate Resources -pages 9-11		BJC-PC-1004 *Environmental Management and Uranium Programs Baseline Management and Change Control*

Table 5.1 ISMS Guidelines Matrix (continued)

#	ISMS Element	Explanation	ISMS Description Reference	ISMS Supplement Reference	Review Documents
17	The ISMS Description should describe the mechanism(s) used for allocating resources • Resource allocation should be based on priority. • The mechanism(s) should be designed to ensure a balance between operational considerations and safety when assigning resources. • Safety resources should be integral, yet discernible.		Section 2.—Prioritize Tasks and Allocate Resources—pages 9-11	Section 1.0 Perform Work- page 6	BJC-PC-1003 *Definition and Organization of Work Scope* BCJ-PC-1006 *Scheduling* BJC-PC-1004 *Environmental Management and Uranium Programs Baseline Management and Change Control*
	Analyze Hazards **[F2]**				
	Identify and Analyze Hazards				
18	The ISMS Description should describe the mechanisms for identifying hazards. • The mechanism(s) should address all types of hazards (e.g., nuclear, industrial, fire, external events, construction, etc.). • The mechanism(s) should address hazard identification for all facilities. • The mechanism(s) should address hazard identification for all activities (e.g., weapon/research/clea nup activities, normal operations, mainten-ance, facility modification, etc.). • The mechanism should address worker involvement in the hazard identification process.	The ISMS Description identifies the mechanisms in a general manner. Specific details are contained in operating procedures.	Section 2.II—Analyze Hazards--pages 11-13	Section 1.0 Hazard Analysis - page 4 Section 2.0 Planning- pages 7-15	BJC-EH-2010—*Hazard Review* BJC-FS-1001—*Work Control Requirements* BJC-NS-1001—*Unreviewed Safety Question Determinations* BJC-NS-1002—*Safety Documentation* Exhibit G

Table 5.1 ISMS Guidelines Matrix (continued)

#	ISMS Element	Explanation	ISMS Description Reference	ISMS Supplement Reference	Review Documents
19	The ISMS Description should describe the mechanisms for analyzing the different types of hazards. • All facilities/ activities should be addressed by a hazard assessment. • Facilities/activities with risks above specified thresholds should be addressed through risk assess-ment techniques. • The mechanism should address worker involvement in the hazard analysis process.	The ISMS Description identifies the mechanisms in a general manner. Specific details are contained in operating procedures.	Section 2.II.—Analyze Hazards—pages 11-13	Section 1.0 Assessments -Fig. 1.4 page 6 Section 1.0 Hazard Analysis -page 4 Section 2.0 Planning-pages 7-15	BJC-EH-2010—*Hazard Review* BJC-FS-1001—*Work Control Requirements* BJC-NS-1001—*Unreviewed Safety Question Determinations* BJC-NS-1002—*Safety Documentation* Exhibit G
	Categorize Hazards				
20	The ISMS Description should describe a mechanism for categorizing hazards. • The categorization mechanism should consider how the categories will be used. – For selecting standards. – For determining the level of safety analysis. – For grading documentation requirements. – For determining the approval authority for starting/restarting operations. – For prioritizing facilities/activities for ISM implementation. – Categorization should be based on unmitigated hazards.	The ISMS Description identifies the mechanisms in a general manner. Specific details are contained in operating procedures.	Section 2.II.-Categorize Hazards—page 13; Section 2.IV.—Confirm Readiness—page 15	Section 2.0 Planning-pages 7-15	BJC-EH-2010—*Hazard Review* BJC-FS-1001—*Work Control Requirements* BJC-NS-1001—*Unreviewed Safety Question Determinations* BJC-NS-1002—*Safety Documentation* Exhibit G

Table 5.1 ISMS Guidelines Matrix (continued)

#	ISMS Element	Explanation	ISMS Description Reference	ISMS Supplement Reference	Review Documents
	Develop/Implement Controls **[F3]**				
	Identify Standards and Requirements				
21	The contractor shall, in performance of work, ensure that before work is performed, the associated hazards are evaluated and an agreed-upon set of ES&H standards and requirements are established which, if properly implemented, provide adequate assurance that employees, the public, and the environment are protected from adverse consequences. **[P5]**		Section 2.III DEVELOP AND IMPLEMENT HAZARD CONTROLS—page 13	Section 3.0 Work Smart Standards page 17 Standards Management page 21	BJC-PQ-1150 *Standards Management* Exhibit G
22	The ISMS Description should describe the mechanism to be used to establish the set of standards and requirements for each facility and activity. • The set tailored for each facility/activity should be commensurate with the hazards involved. • The mechanism should be an established, accepted process (e.g., S/RIDs, WSS) or include the fundamental objectives and principles of accepted processes. • The mechanis m should stress the use of applicable laws, statues, Federal rules, national consensus standards, DOE directives, and DOE technical standards. • The mechanism should include a process for DOE concurrence. **[L-(c)]**		Section 2.III. DEVELOP AND IMPLEMENT HAZARD CONTROLS , page 13 Section 4.—Approach for Requirements Flowdown, page 30	Section 3.0 Work Smart Standards-page 17 Section 3.0 Standards Management-page 21	BJC-PQ-1150 *Standards Management*

Table 5.1 ISMS Guidelines Matrix (continued)

#	ISMS Element	Explanation	ISMS Description Reference	ISMS Supplement Reference	Review Documents
	Identify Controls to Prevent/Mitigate Hazards				
23	The contractor shall, in performance of work, ensure that – Administrative and engineering controls to prevent and mitigate hazards are tailored to the work being performed and associated hazards. Emphasis should be placed on designing the work and/or controls to reduce or eliminate the hazard and to prevent accidents and unplanned releases and exposures. **[P6]**		Section 2.—Identify Controls to Mitigate or Prevent Hazards—page 14	Section 1.0 Implement Controls pages 4-5 Section 3.0 Engineering page 19	BJC-SH-2010 *Hazard Review* BJC-FS-1001 *Work Control Requirements* BJC-PQ-1102 *Performance Documents* BJC-PQ-1104 *Procedure Process* Exhibit G
24	The ISMS Description should include a mechanism/criteria for identifying engineered and administrative controls. • The mechanism should tailor the controls to the work and associated hazards. • The mechanism should address controls for all activities (e.g., normal operations, maintenance work, facility modifications, etc.). • The mechanism should address controls for all aspects of the work (e.g., initiation, review, authorization, and execution). • The mechanism should address line management involvement. • The mechanism should address worker involvement in the process for identifying controls.		Section 2.—Identify Controls to Mitigate or Prevent Hazards—page 14; Section 4.—Worker Involvement, page 28; Subcontractor Accountability and Responsibility, page 31	Section 1.0 Implement Controls, pages 4-5 Hazard Analysis, page 4 Section 3.0 Engineering page 19	BJC-SH-2010 *Hazard Review* BJC-FS-1001 *Work Control Requirements* BJC-PQ-1102 *Performance Documents* BJC-PQ-1104 *Procedure Process* Exhibit G

Table 5.1 ISMS Guidelines Matrix (continued)

#	ISMS Element	Explanation	ISMS Description Reference	ISMS Supplement Reference	Review Documents
	Establish Safety Envelope				
25	The contractor shall, in performance of work, ensure that - The conditions and require-ments to be satisfied for operations to be initiated and conducted are established and agreed upon by DOE and the contractor. These agreed upon conditions and requirements are requirements of the contract and binding upon the contractor. The extent of documentation and level of authority for agreement shall be tailored to the complexity and hazards associated with the work and shall be established in a Safety Management System. **[P7]**		Section 1.—Facility Safety Programs, page 4; Section 2.—Establish Controls, page 14; Operations Authorization, page 16; Section 4.—Subcontractor Accountability and Responsibility, page 31; Subcontractor Compliance, page 33 Section 5.—Authorization Agreements and Safety Authorization Basis Documents pages 35-44	Section 2.0 Planning, pages 7-15	BJC-PQ-1510 *Readiness Reviews* BJC-NS-1015 *Generation, Review, Approval and Control of Authorization Agreements and Radioactive Waste Management Basis* Authorization Agreements
26	The ISMS Description should describe the mechanism for establishing the safety basis/authorization for facilities and activities. • The composition of the safety envelope or authorization basis should be defined. • The mechanism should include the appropriate conditions and requirements (e.g., controls). • There should be an identification of those facilities or activities requiring a facility- or activity-specific safety envelope (i.e., an authorization basis).		Section 2.—Categorize Hazards, page 13 Section 5.—Authorization Agreements and Safety Authorization Basis Documents pages 35-44	Section 2.0 Planning, pages 7-15	BJC-NS-1001 *Unreviewed Safety Question Determinations* BJC-NS-1002 *Safety Documentation* BJC-NS-1003 *Nuclear Criticality Safety Program* BJC-NS-1005 *Nuclear Criticality Safety Program Elements* BJC-NS-1015 *Generation, Review, Approval and Control of Authorization Agreements and Radioactive Waste Management Basis*

Table 5.1 ISMS Guidelines Matrix (continued)

#	ISMS Element	Explanation	ISMS Description Reference	ISMS Supplement Reference	Review Documents
27	The ISMS Description should describe a process for obtaining DOE agreement, and criteria for determining the need for DOE's agreement, on the conditions and requirements for operating a facility, conducting an operation, or performing a project. • The agreement should contain/reference a complete and appropriate set of conditions and requirements. • The agreement should list the specific "authorization" basis documents. • Specific facilities and activities requiring an agreement should be identified. • The process should address change control for any agreement.		Section 2.—Categorize Hazards, page 13; Operations Authorization, page 16; Management of Change, page 16 Section 5.—Authorization Agreements and Safety Authorization Basis Documents pages 35-44	Section 2.0 Planning pages, 7-15	BJC-NS-1001 *Unreviewed Safety Question Determinations* BJC-NS-1002 *Safety Documentation* BJC-NS-1003 *Nuclear Criticality Safety Program* BJC-NS-1005 *Nuclear Criticality Safety Program Elements* BJC-NS-1015 *Generation, Review, Approval and Control of Authorization Agreements and Radioactive Waste Management Basis*
	Implement Controls				
28	The contractor shall comply with, and assist the Department of Energy in complying with, ES&H requirements of all applicable laws and regulations, and applicable directives identified in the clause of the contract on Laws, Regulations, and DOE Directives. The contractor shall coordinate with Federal and non-Federal agencies having jurisdiction over ES&H matters under the contract. **[D-(f)] [L-(a)] [L-(b)]**		Section 2.—Identify Standards and Requirements, page 13; Implement Controls, page 15	Section 3.0 Work Smart Standards, page 17 Standards Management page 21	ORO O 250 *Standards Management* BJC-PQ-1150 *Standards Management*
29	The contractor is responsible for compliance with the ES&H requirements applicable to the contract regardless of the performer of the work. **[D-(h)] [L-(d)]**		SCOPE, page 2		

Table 5.1 ISMS Guidelines Matrix (continued)

#	ISMS Element	Explanation	ISMS Description Reference	ISMS Supplement Reference	Review Documents
30	The contractor shall include a clause substantially the same as this clause in the subcontracts involving complex or hazardous work on site at a DOE-owned or –leased facility. Such subcontracts shall provide for the right to stop work under the conditions described in paragraph (g) of this clause. Depending on the complexity and hazards associated with the work, the contractor may require that the subcontractor submit a Safety Management Plan for the contractor's review and approval. **[D-(i.)]**		Section 2.—Suspend/Stop Work Authority, page 16; Section 4. SUBCONTRACTORS (Specifically the last sentence of paragraph 2) on page 28; Figure 4.3, page 31; Subcontractor Accountability and Responsibility, page 31		Exhibit G BJC-EH-2018—*Suspension of Work (Safety Related)*
	Perform Work **[F4]**				
	Prepare for Work				
31	The ISMS Description should describe the mechanism the contractor will use to prepare for operation by implementing the controls as described in the authorization basis. • The ISMS Description should describe the mechanism for preparing and controlling procedures. The ISMS Description should describe how controls will be translated from the authorization basis documentation to working level procedures that are used by workers (e.g., Operating Procedures, Technical Work Documents, Manuals of Practice, etc.).	The ISMS Description identifies the mechanisms in a general manner. Specific details are contained in operating procedures.	Section 2.—Identify Controls to Mitigate or Prevent Hazards, page 14; Implement Controls, page 15; PERFORM WORK, page 15	Section 1.0 Implement Controls, pages 4-5 Section 2.0 Planning, pages 7-15	BJC-PQ-1104—*Procedure Process* BJC-PQ-1102 *Performance Documents* BJC-PQ-1080—*Inspection & Test Control* BJC-NS-1002—*Safety Documentation*

Table 5.1 ISMS Guidelines Matrix (continued)

#	ISMS Element	Explanation	ISMS Description Reference	ISMS Supplement Reference	Review Documents
	• The ISMS Description should describe the mechanism for identifying and performing necessary testing (e.g. safety system surveillance requirements).				
32	The contractor shall, in performance of work, ensure that - Personnel possess the experience, knowledge, skills, and abilities that are necessary to discharge their responsibilities. **[P3]**		Section 2.—Implement Controls, pages 15; Section 3.—THE EMPOWERED WORKER, page 19; Section 4.— Subcontractor Technical Representatives (STRs), page 28 (last bullet)	Section 3.0 Training and Qualification, page 21 Section 4.0 Roles and Responsibilities, Pages 23-27	BJC-GM-006 *Training* BJC-HR-0702 *Training Program* Exhibit G
33	The ISMS Description should include a mechanism (e.g., a personnel training and qualification program) to ensure that personnel are qualified to discharge their responsibilities. • The mechanism should analyze work assignments to identify necessary experience, knowledge, skills, and abilities for each assignment. • The mechanism should provide for training personnel in the knowledge, skills, and abilities required for their work assignments. • The mechanism should apply to all personnel who perform a safety function (e.g., managers, supervisors, workers, support staff, etc.).		Section 3. THE EMPOWERED WORKER, page 19; Section 4. –Subcontract Technical Representatives (STRs), page 28; Subcontractor Accountability and Responsibility, pages 31 & 33(last 2 paragraphs)	Section 3.0 Training and Qualification, page 21	BJC-GM-006 *Training* BJC-HR-0702 *Training Program* Exhibit G

Table 5.1 ISMS Guidelines Matrix (continued)

#	ISMS Element	Explanation	ISMS Description Reference	ISMS Supplement Reference	Review Documents
	Confirm Readiness				
34	The ISMS Description should describe a mechanism for contractor verification of operational readiness of facilities and activities. • Prior to requesting DOE's authorization to operate. • Independent verification commensurate with hazards. • Of sufficient rigor to provide confidence that the facility or activity will be operated safely.		Section 2.IV.—Confirm Readiness—pages 15-16	Section 2.0 Planning, pages 7-15	BJC-PQ-1510 *Readiness Reviews* BJC-PQ-1401 *Independent Assessments* BJC-PQ-1420 *Management Assessments*
35	The ISMS Description should describe the mechanism for determining operational readiness for contractor-authorized facilities and activities.		Section 2.IV—Confirm Readiness—pages 15-16	Section 2.0 Planning, pages 7-15`	BJC-PQ-1510 *Readiness Reviews*
	Execute Work				
36	The ISMS Description should establish that line management is responsible and accountable for performing work safely. • The ISMS Description should assign primary safety responsibility (i.e., day-to-day ES&H oversight) to line management. • Safety management activities should be a routine part of line organization work. • The ISMS Description should indicate that safety organizations support line organizations, and are not assigned primary safety management responsibility.		Section 3. BECHTEL JACOBS COMPANY ORGANIZATION, pages 19-25 (specifically Managers of Projects, pages 20-23) Section 4. Environment, Safety and Health Organization, page 27 Figure 4.1, page 27	Section 4.0 Roles and Responsibilities, Pages 23-27	BJC-GM-020 *Integrated Safety Management System* BJC-GM-101 *Managers of Projects* Exhibit G

Table 5.1 ISMS Guidelines Matrix (continued)

#	ISMS Element	Explanation	ISMS Description Reference	ISMS Supplement Reference	Review Documents
37	The ISMS Description should identify and describe the mechanisms (e.g., work practices) for ensuring that safety requirements are integrated into work execution. • Line management responsibility and accountability. • Work practices applied routinely to all work, commensurate with the hazards (e.g., conduct of operations or formality of operations program). • Work practices of sufficient rigor to perform work safely and prevent accidents, releases, and exposures considering the hazards. • Safety requirements a discernible part of the work practices • Necessary safety support functions identified. • Interfaces with safety support organizations described.		Section 3. Bechtel Jacobs Company Organization, pages 19-25 Section 4. Approach, pages 27-34	Section 1.0 Implement Controls, pages 4-5 Perform Work, page 6 Section 2.0 Planning, pages 7-15 Section 4.0 Roles and Responsibilities, pages 23-27	BJC-GM-020 *Integrated Safety Management System* BJC-GM-101 *Managers of Projects* Exhibit G

Table 5.1 ISMS Guidelines Matrix (continued)

#	ISMS Element	Explanation	ISMS Description Reference	ISMS Supplement Reference	Review Documents
38	The contractor shall promptly evaluate and resolve any noncompliance with applicable ES&H requirements and the System. If the contractor fails to provide resolution or if, at any time, the contractor's acts or failure to act causes substantial harm or an imminent danger to the environment or health and safety of employees or the public, the contracting officer may issue an order stopping work in whole or in part. Any stop work order issued by a contracting officer under this clause (or issued by the contractor to a subcontractor in accordance with paragraph (i.) of this clause) shall be without prejudice to any other legal or contractual right of the Government. In the event that the contracting officer issues a stop work order, an order authorizing the resumption of the work may be issued at the discretion of the contracting officer. The contractor shall not be entitled to an extension of time or additional fee or damages by reason of, or in connection with, any work stoppage ordered in accordance with this clause. **[D-(g)]**	The primary portions of this section are DOE responsibility	Section 2. Suspend/Stop Work Authority, page 16; Identify Continuous Improvement Opportunities, page 17; Implement Corrective Actions, page 18	Section 3.0 Assessment page 17	BJC-EH-2018 *Suspension of Work(Safety Related)* Exhibit G
	Feedback/Improvement ***[F5]***				
39	The System shall describe how the contractor will establish, document, and implement safety performance objectives, performance measures, and commitments in response to DOE program and budget execution guidance while maintaining the integrity of the System. The System shall also describe how the contractor will measure System effectiveness. **[D-(d)]**		Section 2.—Set Expectations, page 9; Feedback and Continuous Improvement, pages 17-18; Section 4—Figure 4.4, page 32 Section 7—ES&H Performance Expectations, pages 47-53	Section 3.0 Budget & Financial Management pages 17-18 Section 6.0 ISMS Oversight, Feedback and Improvement Program pages 49-66	

Table 5.1 ISMS Guidelines Matrix (continued)

#	ISMS Element	Explanation	ISMS Description Reference	ISMS Supplement Reference	Review Documents
	Collect Feedback Information				
40	The ISMS Description should contain line organization feedback mechanisms for operational safety. • Self assessment should be addressed. • Monitoring against performance objectives should be addressed. • Occurrence reporting should be addressed. • Routine observation(s) should be addressed.	The ISMS Description identifies the mechanisms in a general manner. Specific details are contained in operating procedures.	Section 2.—Set Expectations, page 9; Feedback and Continuous Improvement, pages 17-18; Section 4.—Figure 4.4, page 32 Section 6.—ISMS Oversight, Feedback and Improvement Program	Section 1.0 Feedback and Continuous Improvement, page 6 Section 2.0 Planning, pages 7-15 Section 3.0 Assessment page 17 Issues Management and Lessons Learned, pages 19-20 Section 6.0 ISMS Oversight, Feedback and Improvement Program pages 49-66	BJC-PQ-1210*Issues Management Program* BJC-PQ-1220 *Occurrence Notification & Reporting* BJC-PQ-1221 *Occurrence Notification & Reporting Guidance Document* BJC-EH-2015 *Safety Concerns (I Care/We Car)* BJC-PQ-1420 *Management Assessment*
41	The ISMS Description should contain a mechanism for collecting operational safety feedback from independent oversight programs.		Section 2.—Set Expectations, page 9; Feedback and Continuous Improvement, pages 17-18; Section 4.Figure 4.4, page 32	Section 3.0 Assessment page 17 Section 6.0 ISMS Oversight, Feedback and Improvement Program pages 49-66	BJC-GM-1001 *Bechtel Jacobs Company LLC Integrated Assessment and Oversight Process Description* BJC-PQ-1450 *Subcontractor Oversight* BJC-PQ-1420 *Management Assessment* BJC-PQ-1401 *Independent Assessments*
	Identify Improvement Opportunities				
42	The ISMS Description should contain a mechanism to evaluate operational information. • A specific process for translating operational information into recommendations for improvement should be included. • Lessons learned should be similarly reviewed. – Lessons learned from on site. – From other sites.		Section 2.—Set Expectations, page 9; Feedback and Continuous Improvement, pages 17-18; Section 4.—Figure 4.4, page 32	Section 1.0 Feedback and Continuous Improvement, page 6 Section 3.0 Assessment page 17 Issues Management and Lessons Learned, pages 19-20 Section 6.0 ISMS Oversight, Feedback and Improvement Program pages 49-66	BJC-PQ-1230 *Root Cause Analysis* BJC-PQ-1240 *Lessons Learned*

Table 5.1 ISMS Guidelines Matrix (continued)

#	ISMS Element	Explanation	ISMS Description Reference	ISMS Supplement Reference	Review Documents
43	The ISMS Description should describe worker feedback mechanism for improving safety (including both the collection of worker suggestions for improvement and the dissemination of lessons learned).		Section 2.—Set Expectations, page 9; Feedback and Continuous Improvement, pages 17-18; Section 4.—Figure 4.4, page 32	Section 1.0 Feedback and Continuous Improvement, page 6 Issues Management and Lessons Learned, pages 19-20 Section 6.0 ISMS Oversight, Feedback and Improvement Program pages 49-66	BJC-SH-2015 *Safety Concerns (I Care/We Care)* BJC-PQ-1240 *Lessons Learned*
	Make Changes to Improve				
44	The ISMS Description should contain a mechanism for ensuring management considers and dispositions recommendations for improvement and worker suggestions.		Section 2.—Set Expectations, page 9; Feedback and Continuous Improvement, pages 17-18; Section 4.—Figure 4.4, Page 32	Section 1.0 Feedback & Continuous Improvement, page 6 Section 3.0 Communications, page 18 Section 6.0 ISMS Oversight, Feedback and Improvement Program pages 49-66	BJC-SH-2015 *Safety Concerns (I Care/We Care)* BJC-PQ-1240 *Lessons Learned*
45	The ISMS Description should contain mechanisms for translating feedback from assessments, lessons learned, and other sources into improvements.		Section 2.—Set Expectations, page 9; Feedback and Continuous Improvement, pages 17-18; Section 4.—Figure 4.4, Page 32	Section 1.0 Feedback & Continuous Improvement, page 6 Section 3.0 Communications, page 18 Section 6.0 ISMS Oversight, Feedback and Improvement Program pages 49-66	BJC-SH-2015 *Safety Concerns (I Care/We Care)* BJC-PQ-1240 *Lessons Learned*
	Oversight and Enforcement				
46	The ISMS Description should provide for oversight by contractor management.		Section 2.—Set Expectations, page 9; Feedback and Continuous Improvement, pages 17-18; Section 4.—Figure 4.4, Page 32	Section 3.0 Assessment page 17 Section 6.0 ISMS Oversight, Feedback and Improvement Program pages 49-66	BJC-GM-1001 *Bechtel Jacobs Company LLC Integrated Assessment and Oversight Process Description* BJC-PQ-1450 *Subcontractor Oversight* BJC-PQ-1420 *Management Assessment* BJC-PQ-1401 *Independent Assessments*

6.0 ISMS OVERSIGHT, FEEDBACK AND IMPROVEMENT PROGRAM

Purpose

The Integrated Safety Management System Oversight, Feedback and Improvement Program has been established to provide continued focus on ISMS implementation and to facilitate ISMS improvements throughout Bechtel Jacobs Company. Rather than establishing additional over-sight or improvement mechanisms, the program activities have been integrated into existing tools and processes. The purpose of this section is to identify and describe the various aspects of the ISMS Oversight, Feedback and Improvement Program.

Background

On February 16, 1998, Bechtel Jacobs Company submitted an ISMS Description to DOE as its first contract deliverable. That document described the overall approach Bechtel Jacobs Company would use to implement ISMS. Subsequent updates to the ISMS Description were issued in September 1998, April 1999, September 1999, and October 2000. In addition, Bechtel Jacobs Company developed this ISMS Supplement document, which provides additional detail on ISMS implementation and serves as a roadmap from the ISMS Description to the company's implementing documents. The supplement is updated periodically.

The DOE performed a combined Phase I/II Verification of the Bechtel Jacobs Company ISMS from January 24 through February 18, 2000. For Phase I, the Verification Team found that the Bechtel Jacobs Company ISMS Description satisfies the requirements in DOE Acquisition Regulation (DEAR) clause 970.5204-2, the expectations of the DOE-ORO Manager, and other pertinent DOE management requirements. The ISMS Verification Team recommended that the DOE-ORO Manager approve the *Integrated Safety Management System Description*, BJC/OR-87. Revision 2, dated September 1999. The DOE-ORO Manager subsequently approved the document on April 3, 2000.

For Phase II, the Verification Team concluded that the "ISMS would be satisfactorily implemented upon correction and verification of selected deficiencies". The team concluded that, overall, Bechtel Jacobs Company was "successfully carrying out its mission activities in harmony with the core functions and guiding principles of ISM". During February through August 2000, Bechtel Jacobs Company implemented actions to correct the opportunities for improvement identified by the Verification Team. As a part of the DOE validation process, DOE-ORO conducted additional Phase II verification activities at Paducah and Portsmouth during September. During this verification process, the DOE-ORO Verification Team identified several emerging issues for Bechtel Jacobs Company. Bechtel Jacobs Company identified improvement initiatives associated with those emerging issues in a letter from Joseph F. Nemec to Rodney R. Nelson, dated September 28, 2000. Based on the presence of the basic ISM mechanisms, the progress to date in implementing ISM in Bechtel Jacobs Company activities, and Bechtel Jacobs Company's commitment to continuous performance improvement in ISMS implementation, the DOE-ORO Manager stated that the "BJC ISM program is judged to be acceptably in place" in a September 29, 2000, letter to DOE-HQ.

Major Program Elements

Key to future success will be a continuing emphasis on effective integration of ES&H into all work planning and execution activities, with a structured focus on continuous improvement. The ISMS Oversight, Feedback and Improvement Program

activities have been incorporated into existing tools and processes to create an efficient and integrated approach. The major elements of the program are depicted in Fig. 6.1 and are described in this section.

Commitments in September 28, 2000, Letter

Bechtel Jacobs Company identified improvement initiatives associated with the DOE-identified emerging issues in a letter from Joseph F. Nemec to Rodney R. Nelson on September 28, 2000. As a result of these initiatives, 22 specific actions have been identified and entered into the Issues/ Corrective Action Tracking System (I/CATS) to be tracked and reported on monthly. The Deputy General Manager, Operations, has been assigned responsibility for ensuring timely closure of each action.

Corrective Actions from ISMS Follow-Up Verification Activities

During September 2000, DOE-ORO conducted additional Phase II verification activities at Paducah and Portsmouth. The report of these follow-up activities identifies additional opportunities for improvement that need to be addressed. Corrective actions for each identified opportunity for improvement are being identified and entered into I/CATS. The corrective actions will be tracked and reviewed monthly until closure.

I Care/We Care

The I Care/We Care Program provides a process by which employees, subcontractors and visitors can submit suggestions, near-misses and concerns relating to safety, health and environmental issues to Bechtel

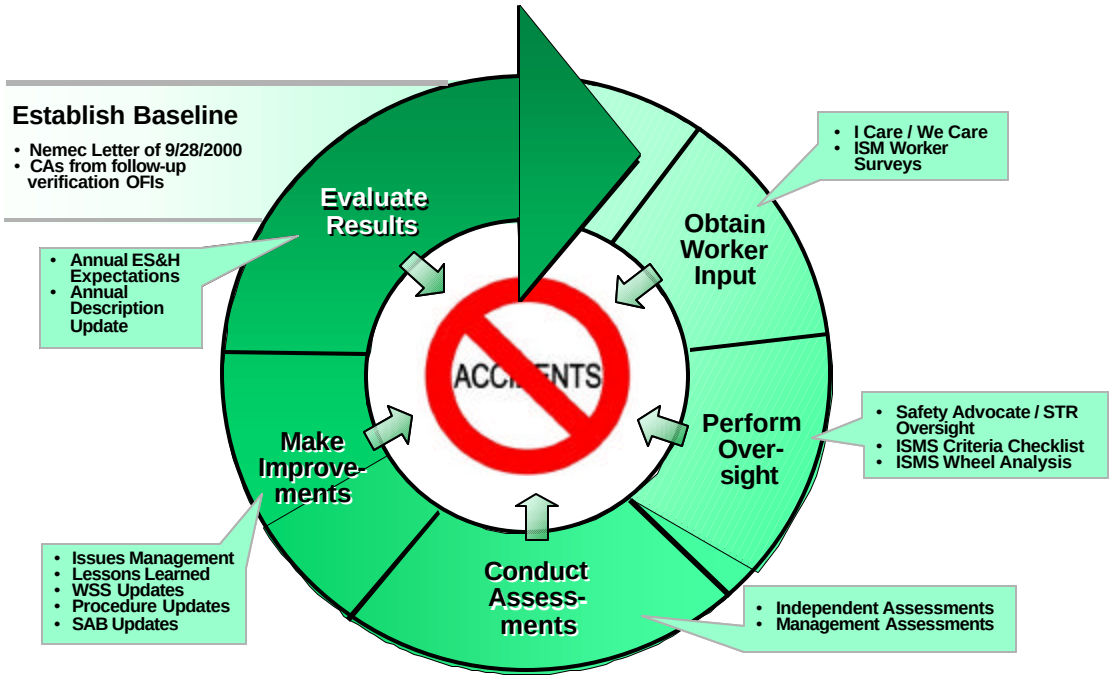


Figure 6.1. The goal of our ISMS Path of Continuous Improvement is *Zero Accident Performance.*

Jacobs Company. The program is administered in accordance with Bechtel Jacobs Company procedure BJC-EH-2105, "Safety Concerns (I Care/We Care)". Each installation (ETTP, Paducah, Portsmouth, the Y-12 Complex and ORNL) has a Safety Concerns or I Care/We Care site safety committee that consists of a cross section of employees. The com-mittee reviews each issue to determine that appropriate follow-up action is being taken. The issues are tracked in I/CATS until completion. To facilitate timely closure, all issues over 30 days old are reviewed by the Zero Accident Council monthly.

ISM Worker Surveys

Bechtel Jacobs Company has worked with union health and safety representatives from PACE and ATLC to obtain feedback from hourly workers on ISMS implementation. In addition to other feedback mechanisms, an ISM worker survey is conducted twice per year. Information from the survey is analyzed by the union health and safety representative and shared with appropriate Bechtel Jacobs Company and subcontractor management. The survey form is shown in Exhibit. 6.1.

Safety Advocate and STR Oversight

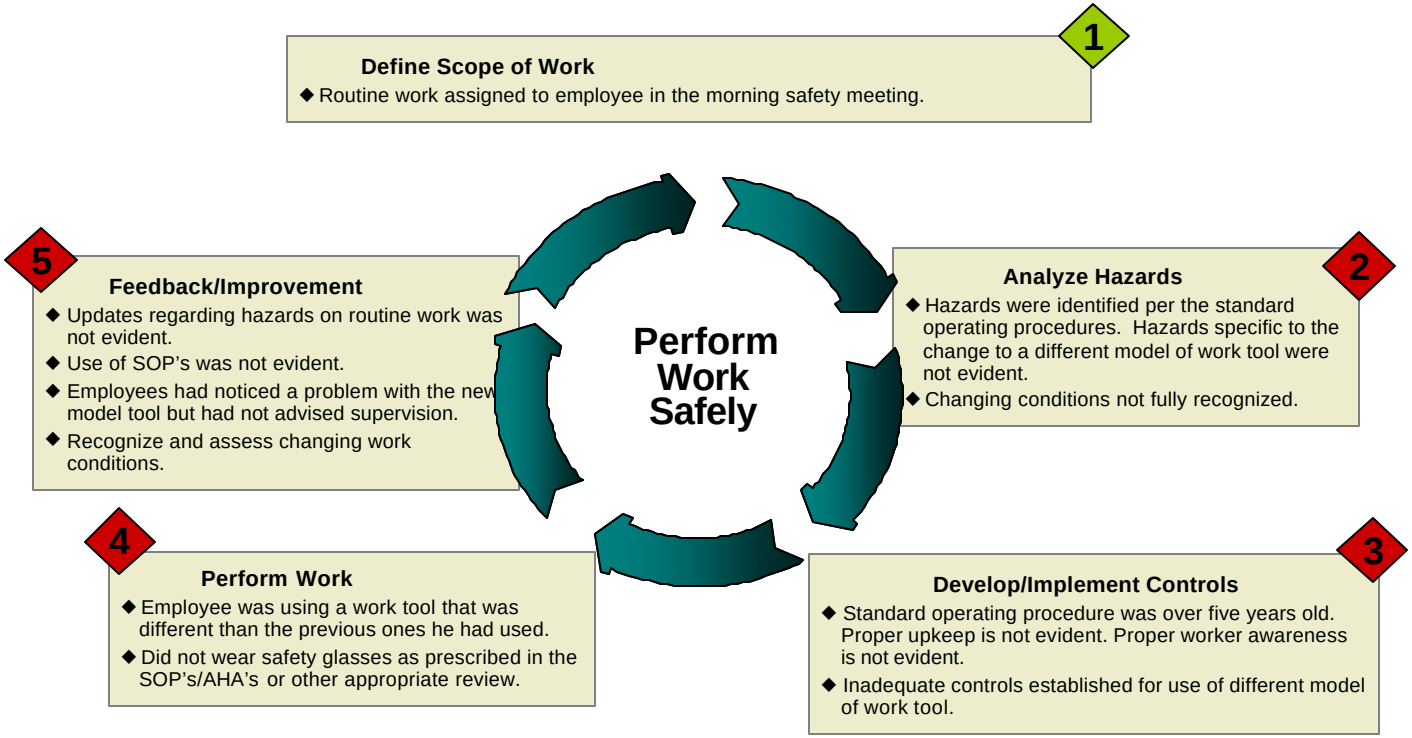
Approximately 90% of the Bechtel Jacobs Company work scope is performed by subcontractors. Hence, the implementation of ISMS within the subcontractor community is crucial to maintaining and improving the overall Bechtel Jacobs Company ISMS. Each subcontractor has both a Safety Advocate and a STR who together are responsible for providing oversight of subcontractor activities and mentoring the subcontractor in ISMS implementation as defined in the ISMS Description and Supplement documents. Each subcontractor submits an injury/illness summary report to the STR monthly. In addition, Safety Advocates provide to the ES&H Subcontracts Manager periodic evaluation reports regarding subcontractor ES&H performance, including ISMS performance. This information is reviewed and tracked to determine trends in ISMS implementation.

ISMS Criteria Checklist for Subcontractor Implementation

The Safety Advocate's role in oversight and mentoring the subcontractor is a very important avenue for accelerating the rate of ISMS improvement. The ISMS Implementation Criteria Checklists (Exhibits. 6.2 and 6.3) were developed to aid the Safety Advocate in performing ISMS oversight and mentoring subcontractors. One checklist is used to evaluate subcontractors performing field work; the other is used to evaluate subcontractors who do not perform field work. Although the checklist criteria are not intended to be all inclusive, they allow a consistent review of some critical ISMS elements. The Safety Advocates are encouraged to add additional elements as appropriate for a subcontractor's particular scope of work. As a part of the Bechtel Jacobs Company ongoing feedback and improvement process, the Safety Advocate completes the checklist at least every six months for subcontractors performing field work and annually for subcontractors who do not perform field work.

ISMS Wheel Analysis

A work activity, incident, injury or near miss event is analyzed against each of the five core functions using the ISMS wheel. The key contributors, positive or negative, to each function are identified using information from investigations and evaluations conducted and entered into a chart next to the applicable function. A color code (red, yellow or green) is used to characterize the implementation relative to each function for the specific activity or event analyzed. An example is shown on Fig. 6.2. This analysis does not replace any investigation process or procedure; it is used as a tool to simplify and characterize the key issues and relate them to the ISMS functions. The analysis also provides a tool for communicating the



Red

Yellow

Green

Fig. 6.2. ISMS Wheel Analysis—Generic Example.

lessons learned in an organized, integrated fashion. Results from these can be combined into the ISMS Implementation Evaluation form and analyzed relative to composite implementation for work activities, incidents, injuries or near miss events.

Independent Assessments

DOE P 450.5, *Safety Management System Policy*, recognizes that an important element in maintaining an effective ISMS program is the contractor independent assessment program. The Bechtel Jacobs Company independent assessment program is described in procedure BJC-PQ-1401, "Independent Assessments". These assessments are designed to evaluate compliance with environmental, health, safety, quality and regulatory requirements; evaluate process performance; and promote improvement. ISMS elements are incorporated into these independent assessments, and the results provide senior management with information concerning ISMS implementation and corrective actions needed to improve ISMS implementation and effectiveness.

Management Assessments

DOE P 450.5 also recognizes that an important element in maintaining and improving ISMS is the contractor self-assessment program. The Bechtel Jacobs Company self-assessment program is described in BJC-PQ-1420, "Management Assessment". The management assessments are specific, limited-scope assessments of short duration designed to assess the effectiveness of performance in meeting objectives in a manager's area of responsibility. The management assessment is a periodic process managers use to assess the performance in their area of responsibility, identify potential improvement areas, determine compliance to requirements, and review expectations of organization goals and objectives. ISMS elements are incorporated into the management assessments. The results of the management assessments provide each manager with information concerning ISMS implementation and actions needed to improve ISMS effectiveness.

Issues Management

The Bechtel Jacobs Company process for handling conditions that may be adverse to safety, health, operations, quality, security or the environment is defined in BJC-PQ-1210, "Issues Management Program". This process requires that issues be assigned to the appropriate manager, that they be systematically analyzed, and that corrective actions be identified and implemented. As required by this procedure, information from each Issue Response Report (BJCF-371) is entered into I/CATS for tracking and trending purposes. Each issue is coded with the applicable ISMS code(s). ISMS trending information is periodically analyzed to determine if adverse trends exist or if additional management actions are required.

Lessons Learned

The Lessons Learned Program is an essential element of Bechtel Jacobs Company's proactive approach to preventing ES&H issues and fostering continuous improvement opportunities. Bechtel Jacobs Company makes use of lessons learned from DOE-ORO, the DOE complex, and other government and commercial operations. The Bechtel Jacobs Company process for identifying, disseminating and making use of positive and negative operating experiences (i.e., Lessons Learned) is defined in BJC-PQ-1240, "Lessons Learned Program".

Work Smart Standards Updates

The Bechtel Jacobs Company WSS form the baseline of ES&H requirements for the M&I work scope. Because identification of standards and requirements is a fundamental element in developing and implementing hazard control, maintaining an appropriate set of WSS is critical to effectively implementing ISMS. As work scope changes or

Company procedure BJC-PQ-1150, "Standards Management".

Procedure Updates

To accomplish its mission in a safe, efficient, disciplined and timely manner, Bechtel Jacobs Company manages and controls work through a set of policies and procedures as defined in BJC-GM-002, "Organization Principles, Policies and Procedures". Requirements from the WSS are incorporated into procedures or other program documents to provide implementing guidance and direction. Process improvements from lessons learned, new requirements, etc., are incorporated as appropriate. Each procedure sponsor is responsible for maintaining these documents in accordance with Bechtel Jacobs Company procedure BJC-PQ-1104, "Procedure Process," and BJC-PQ-1102, "Performance Documents".

Safety Authorization Basis

Controls to mitigate hazards are identified through safety analysis reports, operational safety requirements, technical safety requirements and other safety authorization basis (SAB) documents. Bechtel Jacobs Company procedure BJC-NS-1002, "Safety Documentation," defines the process for establishing the SAB. Bechtel Jacobs Company has established the authorization basis for all nuclear; radiological; and moderate and low hazard, non-nuclear facilities. Configuration control of the SAB is maintained through the Unreviewed Safety Question Determination process as defined in BJC-NS-1001. In addition to the maintenance of SAB documents, Bechtel Jacobs Company is planning the implementation of 10CFR830 Subpart B—Safety Basis Requirements.

Annual ES&H Expectations

Bechtel Jacobs Company and DOE-ORO are firmly committed to the safety of workers and the public and to protection of the environment. Effective integration of ES&H into all aspects of Bechtel Jacobs Company work planning and execution is a fundamental element of this commitment. ES&H performance expectations are jointly developed on an annual basis and included in the annual update to the ISMS Description. These expectations include specific deliverables and required due dates.

Reporting

ISMS Improvement Activities

Bechtel Jacobs Company will submit a report of ISMS Improvement activities to DOE-ORO semi-annually. For FY 2001, these reports will be submitted by April 30, 2001, and September 15, 2001.

Annual Report to DOE

The DEAR clause requires that "on an annual basis, the contractor shall review and update, for DOE approval, its safety performance objectives, performance measures, and commitments consistent with and in response to DOE's programs and budget execution guidance and direction." In addition, it is the expectation of the DOE-ORO Manager that "each ISM System Description be updated annually and submitted to DOE no later than October 31 of each year to reflect changes made in management processes and objectives for meeting ES&H performance commitments in the upcoming year." Bechtel Jacobs Company will submit to DOE annually an updated ISMS Description in accordance with the stated guidance.

ISMS Configuration Control Process

The DEAR clause requires contractors to review and update their approved ISMS, for DOE approval, to reflect major assessment findings, lessons learned or changes in mission activities, performance measures, etc. Establishing an effective ISMS configuration control process is essential to maintaining an updated ISMS. Configuration control of the Bechtel Jacobs Company ISMS is maintained through the various ISMS elements. By maintaining config-

uration control of the various program elements, configuration control of the overall ISMS is also maintained. The following major ISMS program elements are maintained under configuration control.

- M&I contract
- Fiscal year baseline
- WSS
- Policies and Procedures
- Issues Management Program (includes Occurrence Reporting, I Care/We Care, etc.)
- SAB documents
- Facility Categorization
- Authorization Agreements
- Subcontract pro forma documents including Exhibit G
- Training requirements

In addition, the annual update of the ISMS Description goes through a formal review and approval process to make sure it appropriately reflects ISMS processes and status.

Exhibit 6.1. *Worker survey.*

Questions	Evaluation
1. My work control document (work package, procedure, work instruction, etc.) includes all the information I need to do the job (who, what, where and how). ***CF1***	Strongly Agree Agree Neutral Disagree Strongly Disagree
2. I, or one of my co-workers, participate in walking down the work site prior to the start of the job. ***CF1, WI***	Strongly Agree Agree Neutral Disagree Strongly Disagree
3. I have an opportunity to have input into how the job will be performed. ***CF1, WI***	Strongly Agree Agree Neutral Disagree Strongly Disagree
4. I understand the hazards associated with my job. ***CF2***	Strongly Agree Agree Neutral Disagree Strongly Disagree
5. MSDSs for the hazards associated with my job are readily available. ***CF2***	Strongly Agree Agree Neutral Disagree Strongly Disagree
6. I have an opportunity to have input into the hazard identification and analysis process. ***CF2, WI***	Strongly Agree Agree Neutral Disagree Strongly Disagree
7. I understand the controls that are used to mitigate hazards. ***CF3***	Strongly Agree Agree Neutral Disagree Strongly Disagree

Exhibit 6.1. *Worker survey (continued).*

Questions	Evaluation
8. The controls that are in place are appropriate for the hazards involved. ***CF3, GP6***	Strongly Agree Agree Neutral Disagree Strongly Disagree
9. I have an opportunity to have input in determining what the appropriate controls should be. ***WI***	Strongly Agree Agree Neutral Disagree Strongly Disagree
10. I have the PPE, procedures, training, permits, etc. that I need to do my job safely. ***CF4, GP7***	Strongly Agree Agree Neutral Disagree Strongly Disagree
11. Lessons learned are reviewed prior to the start of the job. ***CF4, CF5***	Strongly Agree Agree Neutral Disagree Strongly Disagree
12. I feel comfortable stopping a job when necessary. ***CF4, GP4***	Strongly Agree Agree Neutral Disagree Strongly Disagree
13. I have an opportunity to provide feedback on improvement suggestions in my work group. ***CF5, WI***	Strongly Agree Agree Neutral Disagree Strongly Disagree
14. I am aware of the Lessons Learned that are applicable to my job. ***CF5***	Strongly Agree Agree Neutral Disagree Strongly Disagree

Exhibit 6.1. *Worker survey (continued).*

Questions	Evaluation
15. Management provides feedback on improvement suggestions in our work group. ***CF5***	Strongly Agree Agree Neutral Disagree Strongly Disagree
16. I feel that the workers are involved in the development of work packages, and procedures. ***WI***	Strongly Agree Agree Neutral Disagree Strongly Disagree
17. We are also given an opportunity to be involved with assessments, and our safety systems (safety meeting, employee concerns, etc). ***WI***	Strongly Agree Agree Neutral Disagree Strongly Disagree
18. I understand my "Suspend/Stop Work Authority" responsibility. ***CF4, WI***	Strongly Agree Agree Neutral Disagree Strongly Disagree

Exhibit 6.2. Criteria for Evaluating Subcontractor Implementation of ISMS (Checklist for Subcontractor Performing Field Work)

Define Scope of Work	**Rating 0–8**	**Comments**
Subcontractor has a documented work control process that has been approved by the STR.		
Workers are involved in determining how specific tasks will be performed.		
Work scope is adequately defined in the work packages so that the workers can perform the job safely and effectively. (i.e., Does the worker have to get more information to perform the job?)		
The subcontractor has a documented priority system to define and assign work based on risk.		
ES&H risks and vulnerabilities are identified, communicated and incorporated into the task planning process.		
Overall rating for Define Scope of Work		

Analyze Hazards	**Rating 0–8**	**Comments**
Work packages contain detail hazard information.		
Hazard reviews are performed prior to work authorization.		
Workers are involved in AHA development and hazard reviews.		
Subcontractor maintains AHAs for field activities at the field work location.		
Workers are involved in walking down the job site prior to starting the job .		
Routine tasks (lifting, electrical, radiological, high pressure, etc) are evaluated formally and documented before the work is authorized.		
Chemical inventory information is properly maintained.		
MSDSs are current and easily accessible to all employees.		
Overall rating for Analyze Hazards		

Exhibit 6.2. Criteria for Evaluating Subcontractor Implementation of ISMS (Checklist for Subcontractor Performing Field Work) (continued)

Develop/Implement Controls	**Rating 0-8**	**Comments**
Subcontractor is in compliance with all applicable WSS.		
Subcontractor procedures are in place and being implemented in the field.		
Appropriate engineered, administrative and other controls/procedures are used to reduce or eliminate hazards and prevent accidents/incidents.		
Subcontractor is in compliance with all authorization basis requirements. (as applicable)		
Subcontractor procedure process requires USQ screenings. (where applicable)		
Subcontractor work control process incorporates appropriate lessons learned from similar jobs.		
Procedures, permits and other hazard controls are properly implemented.		
Overall rating for Develop/Implement Controls		

Perform Work	**Rating 0-8**	**Comments**
Workers have the proper procedures, PPE and permits before beginning work.		
Workers have the appropriate qualifications and training to safely and effectively perform their job duties.		
All required training is current.		
All access cards are current		
Training documentation is easily accessible.		
Subcontractor readiness assessment is conducted to ensure that hazards identified are complete and accurate and that proper controls are in place.		
Pre-job briefings are conducted and documented.		
Workers understand Suspend/Stop Work Authority.		
Workers exercise Suspend/Stop Work Authority when appropriate.		
Changing conditions are recognized and properly evaluated.		
Overall rating for Perform Work		

Exhibit 6.2. Criteria for Evaluating Subcontractor Implementation of ISMS (Checklist for Subcontractor Performing Field Work) (continued)

Feedback/Improvement	**Rating 0-8**	**Comments**
Subcontractor has a documented self assessment program and is conducting self assessments in accordance with the program.		
ISMS is included in the subcontractor self-assessment schedule.		
Self-assessments are documented.		
There is appropriate follow-up of issues in self-assessments.		
Workers are involved in self-assessments.		
Subcontractor assessments are performed to ensure that hazard analyses are conducted adequately.		
Workers are involved in providing feedback and making suggestions for improvement		
Post job briefings are conducted.		
Subcontractor has an effective ES&H employee concerns program.		
Opportunities for Improvement as well as proficiencies are fed into the Lessons Learned system and communicated appropriately.		
Suggestions for Improvement are followed up on and implemented as appropriate.		
Management provides timely feedback on improvement suggestions to the work group.		
Line managers are involved in the investigation of accidents or incidents that occur in their area of responsibility.		
Workers are involved in accident and/or incident investigations.		
Overall rating for Feedback/Improvement		

Exhibit 6.2. Criteria for Evaluating Subcontractor Implementation of ISMS (Checklist for Subcontractor Performing Field Work) (continued)

Worker Involvement	**Rating 0-8**	**Comments**
Workers are involved in determining how specific tasks will be performed.		
Workers are involved in AHA development and hazard reviews.		
Workers are involved in walking down the job site prior to starting the job.		
Workers are involved in providing feedback and making suggestions for improvement		
Workers are involved in self-assessments.		
Workers are involved in accident and/or incident investigations.		
Overall Rating for Worker Involvement		

Guiding Principles	**Rating 0-8**	**Comments**
Line management responsible for safety		
Clear roles and responsibilities		
Competence commensurate with responsibilities		
Balanced priorities		
Identification of safety standards and requirements		
Hazard control tailored to work		
Operations authorization		

Rating Scale

6, 7 or 8	Good, strong or excellent evidence that the criteria is being implemented
3, 4 or 5	Some evidence of implementation
0, 1 or 2	No or very little evidence of implementation

Exhibit 6.3. Criteria for Evaluating Subcontractor Implementation of ISMS (Checklist for Subcontractor Not Performing Field Work)

Define Scope of Work	**Rating 0-8**	**Comments**
Employees have a clear understanding of their work scope based upon the subcontract terms and conditions.		
Employees are involved in determining how specific tasks will be performed.		
Management clearly communicates expectations for effective job performance, including working safely and ensuring environmental compliance.		
ES&H risks and vulnerabilities are identified, communicated and incorporated into the task planning process.		
Adequate resources are allocated to perform the work safely.		
Overall rating for Define Scope of Work		

Analyze Hazards	**Rating 0-8**	**Comments**
Subcontractor reviews ES&H plan periodically and updates as appropriate.		
Employees participate in walking down work areas to identify potentially unsafe conditions.		
Subcontractor is proactive in analyzing potential ergonomic issues.		
Employees are knowledgeable of all workplace hazards and the appropriate hazard controls are in place.		
Housekeeping in office areas is neat and orderly. Exits are clearly marked and free of obstruction. Aisles are uncluttered for easy access.		
AHAs are current and easily accessible to all employees.		
Chemical inventory information is properly maintained.		
MSDSs are current and easily accessible to all employees.		
Overall rating for Analyze Hazards		

Exhibit 6.3. Criteria for Evaluating Subcontractor Implementation of ISMS (Checklist for Subcontractor Not Performing Field Work) (continued)

Develop/Implement Controls	**Rating 0-8**	**Comments**
Subcontractor is in compliance with all applicable WSS.		
Appropriate Subcontractor procedures, permits or other hazard controls are in place and being implemented.		
Employees are knowledgeable of emergency procedures.		
Subcontractor incorporates appropriate lessons learned from similar jobs/tasks.		
Overall rating for Develop/Implement Controls		

Perform Work	**Rating 0-8**	**Comments**
Employees have the proper procedures or instructions before beginning work.		
Employees have the appropriate qualifications and training to safely and effectively perform their job duties.		
All required training is current.		
All access cards are current		
Training documentation is easily accessible.		
Employees understand Suspend/Stop Work Authority.		
Employees exercise Suspend/Stop Work Authority when appropriate.		
Changing conditions are recognized and properly evaluated.		
Overall rating for Perform Work		

Exhibit 6.3. Criteria for Evaluating Subcontractor Implementation of ISMS (Checklist for Subcontractor Not Performing Field Work) (continued)

Feedback/Improvement	**Rating 0-8**	**Comments**
Subcontractor has a documented self assessment program and is conducting self assessments in accordance with the program.		
ISMS is included in the subcontractor self-assessment schedule.		
Self-assessments are documented.		
There is appropriate follow-up of issues in self-assessments.		
Employees are involved in self-assessments.		
Subcontractor assessments are performed to ensure that hazard analyses are conducted adequately.		
Employees are involved in providing feedback and making suggestions for improvement		
Formal safety meetings are conducted on a routine basis.		
Subcontractor has an effective ES&H employee concerns program.		
Opportunities for Improvement as well as proficiencies are fed into the Lessons Learned system and communicated appropriately.		
Suggestions for Improvement are followed up on and implemented as appropriate.		
Management provides timely feedback on improvement suggestions to the work group.		
Line managers are involved in the investigation of accidents or incidents that occur in their area of responsibility.		
Employees are involved in accident and/or incident investigations.		
Overall rating for Feedback/Improvement		

Exhibit 6.3. Criteria for Evaluating Subcontractor Implementation of ISMS (Checklist for Subcontractor Not Performing Field Work) (continued)

Worker Involvement	**Rating 0-8**	**Comments**
Employees are involved in determining how specific tasks will be performed.		
Employees participate in walking down work areas to identify potentially unsafe conditions.		
Employees are involved in providing feedback and making suggestions for improvement		
Employees are involved in self-assessments.		
Employees are involved in accident and/or incident investigations.		
Overall Rating for Worker Involvement		

Guiding Principles	**Rating 0-8**	**Comments**
Line management responsible for safety		
Clear roles and responsibilities		
Competence commensurate with responsibilities		
Balanced priorities		
Identification of safety standards and requirements		
Hazard control tailored to work		
Operations authorization		

Rating Scale

6, 7 or 8	Good, strong or excellent evidence that the criteria is being implemented
3, 4 or 5	Some evidence of implementation
0, 1 or 2	No or very little evidence of implementation