INSPECTION TECHNICAL PROCEDURE

I-109

SAFETY INTEGRATION ASSESSMENT

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Revision 1

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Attachment

INSPECTION TECHNICAL PROCEDURE I-109, REV. 1
SAFETY INTEGRATION ASSESSMENT

1.0   PURPOSE

Integrated Safety Management (ISM) is central to the WTP regulatory concept. There are several programs and related documents that are incorporated into the Contractor's Integrated Safety Management Plan (ISMP), including the Safety Requirements Document (SRD), the Quality Assurance Manual (QAM), the Hazards Analysis Report (HAR), and others. The ISMP describes each of these separate programs, and provides an overview of how these programs will be integrated to provide an appropriate safety environment for the River Protection Program Waste Treatment Plant (RPP-WTP) project. The Contractor must perform work according to the processes specified in the ISMP and implementing procedures.

This inspection procedure assesses the integration aspects of the Contractor's Integrated Safety Management program, safety oversight, and safety culture. Specifically, the purpose of this inspection procedure is to provide Office of Safety Regulation (OSR) guidance for:

- Assessing the adequacy of the Contractor's actions to manage the integration of safety throughout the organization

- Assessing the adequacy and effectiveness of the safety committee program to address safety issues at all levels of the Contractor's operation

- Assessing the adequacy and effectiveness of the Contractor's safety improvement program

- Assessing the adequacy of safety integration into the design process

- Assessing the effectiveness of the Contractor's program for developing and maintaining a safety culture.

It should be noted that the OSR inspection program is multifaceted in its approach to inspecting implementation of the ISMP; namely, the program includes assessing quality assurance, configuration management, self-assessments and corrective action, design, standards selection process, training and qualification of personnel, authorization basis management, SRD design standard implementation, and as low as is reasonably achievable (ALARA) for the design program.

2.0   OBJECTIVES

This procedure verifies the Contractor has an effective program for: (1) managing and providing oversight to ensure an integrated safety approach is taken during the design and construction stages of the WTP facility, (2) developing a culture in which safety and quality are central to the actions of each employee, and (3) meeting the Contractor's commitments in the ISMP.

3.0   INSPECTION REQUIREMENTS

3.1   Adequacy of the Contractor's Actions to Manage the Integration of Safety Throughout the Organization

3.1.1   The inspector should verify a qualified person has been assigned overall responsibility for development, implementation, and integration of the Contractor's safety management process. (ISMP, Section 6.1 (item 14))

3.1.2   The inspector should verify a project-wide integrated approach to safety is being conducted. (ISMP, Sections 1.0, 1.2, 6.1 (item 12), and 11.0)

3.1.3   The inspector should verify line management has responsibility for safety. (ISMP, Sections 6.1.1 and 11.0)

3.1.4   The inspector should verify lines of authority and responsibility are clear. (ISMP, Section 6.1.2)

3.2   Effectiveness of the Safety Committee Program

3.2.1   The inspector should verify the Contractor's Executive Committee has been formed and is addressing corporate safety policies related to the WTP project. (ISMP, Section 3.16.1.1)

3.2.2   The inspector should verify the Project Safety Committee has been formed and is addressing facility-specific safety policies and regulatory requirements. (ISMP, Section 3.16.1.2)

3.3   Adequacy and Effectiveness of the Contractor's Safety Improvement Program

The inspector should verify the Safety Improvement Program is implemented, and that safety improvement groups have been established. (ISMP, Section 3.16.2)

3.4   Adequacy of Safety Integration into the Design Process

3.4.1   The inspector should verify facility and system design work is being performed with due consideration for prevention and mitigation of risks. (ISMP, Sections 3.11 and 4.1; SRD, Vol. II, Section 4.1-1 through 4.1-6)

3.4.2   The inspector should verify designs are accompanied by operation and maintenance philosophy documents for each area of the facility. (ISMP, Section 3.6.1)

3.4.3   The inspector should verify flow diagrams and documents are reviewed to address different aspects of design. The inspector should also verify that the process hazards

analysis (PHA) team, which includes representatives from operations, reliability, and relevant technical disciplines, addresses each component of the design from a safety aspect. (ISMP, Sections 1.3.4, 3.6.1, 4.2, and 5.5)

3.4.4   The inspector should verify human factors specialists are involved in the design review such that interfaces between the operating personnel and the WTP facility are closely monitored, and that good human factors and ergonomic practices are followed. (ISMP, Section 3.12)

3.5   Effectiveness of Program to Achieve a Safety Culture

The inspector should verify that steps are being taken on an ongoing basis to develop and maintain a safety/quality culture. (ISMP, Section 3.4)

4.0   INSPECTION GUIDANCE

The assessment of integration of safety management and development of a safety culture requires discussion with multiple individuals at different levels in the organization. As such, this procedure requires multiple interviews to address the various requirements. Attachment 1, "Table of Interviews for Inspection Procedure I-109," lists the interview requirements of this procedure. This table should be used to plan interviews to optimize the number of individuals to be interviewed during this inspection. The lead inspector should plan the interviews to efficiently obtain the necessary information.

4.1   Adequacy of the Contractor's Actions to Manage the Integration of Safety Throughout the Organization

4.1.1   The inspector should interview the Project Manager. Identify who has been assigned overall responsibility for integration of safety. Determine management's basis for assigning this individual to this task. The inspector should also review any job description available to determine if it outlines management expectations for this position. (The job description may be obtained before the inspection for review.) Determine if the individual has other assigned duties, and if so, whether there appears to be sufficient time to carry out the safety integration responsibility. Is the position in the organization appropriate to provide visibility and allow the person to effectively perform the assigned tasks? (NOTE: The interview with the Project Manager may only need to be used for the initial inspection, unless problems are identified or if personnel have changed.)

4.1.2   The inspector should discuss with the Project Manager and with the individual assigned responsibility for integration of safety, how they intend to ensure that an integrated approach to safety is being carried out. Determine what mechanisms exist to ensure that this safety integration also includes different organizations that comprise the Contractor's team, and other subcontractors. (NOTE: The interview with the Project Manager may

only need to be used for the initial inspection, unless problems are identified or if personnel have changed.) The inspector should also review at least three procedures or directives. (Procedures or directives may be obtained before the inspection for review.) Focus attention on how the procedures ensure that safety management is integrated into work planning and performance. Reference items 1-14 listed in Section 6.1 of the ISMP as part of this review.

4.1.3   The inspector should interview at least one line manager or supervisor, other than the Project Manager or individual responsible for integration of safety, to determine if that individual understands the responsibility for safety integration associated with his/her scope of work. Determine if the individual came to that understanding through job or project requirements, performance reviews, training, or other means.

4.1.4   The inspector should review organization charts to verify that lines of authority and responsibility are clear for the design phase. (Organization charts may be obtained before the inspection for review.) As part of the review of procedures completed to satisfy Section 4.1.2 above, also determine if these procedures clarify the lines of authority and responsibilities of different individuals or groups. Verify that policies and procedures clarify safety responsibilities to the workforce. Also determine how personnel have been informed of these policies and procedures. Interview at least four non-supervisors to determine if these individuals understand their responsibility for safety and that employees have stop work authority over any activity they are engaged in that is unsafe or potentially harmful to the environment.

4.2   Effectiveness of the Safety Committee Program

4.2.1   The inspector should interview the Project Manager to determine if the Contractor's Executive Committee has met and to determine if the corporate safety policies related to the WTP have been reviewed. (NOTE: This interview may only be necessary for the initial inspection using this procedure.) Verify that committee membership is consistent with the description in the ISMP. Review the minutes of the last two meetings to determine if the discussions included the review areas specified in Section 3.16.1.1 of the ISMP . Determine if this committee has initiated independent assessments or audits, and if so, the reason for selection of the area audited. The inspector should review at least one of these assessment reports; determine if there were findings and how these were resolved. (Committee membership, meeting minutes and assessment reports may be obtained for review before the inspection.)

4.2.2   Effectiveness of the Project Safety Committee

4.2.2.1 The inspector should interview the Project Safety Committee (PSC) Chairperson to determine the membership of the PSC. Verify that the membership includes managers, specialists, and external members, as needed, from different backgrounds. Such diverse membership will support an integrated evaluation of matters under consideration.

4.2.2.2 The inspector should review the minutes of the last two meetings. (These minutes may be obtained before the inspection for review.) Determine if senior managers were in

attendance to show their support for the program. Determine if the committee has reviewed: (1) results from the safety program, and (2) the indicators and corrective actions that have resulted from assessments or inspections as they relate to the design phase of the project. Ensure that the committee has reviewed audit and assessment reports, and made recommendations to the General Manager for approval of any proposed changes to the authorization basis or important-to-safety design changes. If no proposed changes to the authorization basis or other important-to-safety systems are recorded in the meeting minutes, the inspector should determine the last time such changes were made and confirm that they were afforded appropriate review by the PSC.

4.2.2.3 If possible, the inspector should attend at least one PSC. Verify that all members are present or represented. Observe the manner in which the committee operates and the topics discussed. Verify that committee actions support the general integration of safety considerations for the issues at hand.

4.3   Adequacy and Effectiveness of the Contractor's Safety Improvement Program

The inspector should determine if safety improvement groups have been established, and if so, whether they have identified and implemented any safety initiatives within their respective work areas. If safety improvement groups have not been established, determine the reason. Interview two individuals who have been part of a safety improvement group to assess if they perceive a sense of ownership regarding safety. Determine which reviews have been conducted and the frequency of such reviews. Determine whether these group reviews resulted in safety improvement.

4.4   Adequacy of Safety Integration into the Design Process

Before the inspection, the inspector(s) should have a general understanding of the Contractor's design process. A review of the Contractor's manual for engineering and design process may be useful in this regard.

4.4.1   The inspector should interview at least one design supervisor and two designers to determine how risk prevention or mitigation is addressed in the design process. Determine how reliability, maintainability, and inspectability are implemented into the design. Determine if management directs designers to ensure that specialty groups provide input, as necessary, or if specific disciplines that need to be involved in the design process are identified upfront. Also, determine if individual designers are authorized to seek assistance, and the protocol used for obtaining such assistance. Determine how the design work is performed, specifically as it relates to the prevention and mitigation of risks. Determine whether procedures are used to provide consistency in the design process review.

4.4.2   The inspector should review two completed design documents to determine if there are related operation and maintenance philosophy documents for the appropriate area of the

facility. Determine the manner in which these documents assist in the safety integration process.

4.4.3   The inspector should interview a supervisor from the Technical Organization to determine the basis and extent of that organization's review of process flow diagrams and related documents. Verify that this review ensures a consistent design approach with all project requirements being addressed. For the two design documents reviewed to satisfy the requirements of Section 4.4.2, the inspector should determine whether they have been reviewed by the Technical Organization. Also, confirm that the PHA team has reviewed the same packages. Verify that the PHA team which conducted the review consisted of representatives from operations, reliability, and other relevant technical disciplines, and that they addressed each component of the design from a safety and operability aspect. The inspector should also determine if there are procedures or criteria to ensure consistency and completeness in these reviews.

4.4.4   The inspector should determine how human factors specialists are included in the design process. Interview at least one of these specialists to determine how his/her input adds to the safety of the final product. Determine if there are procedures or criteria to ensure consistency and completeness in these reviews.

4.5   Effectiveness of Program to Achieve a Safety Culture

4.5.1   Safety Culture Assessment

4.5.1.1 The inspector should determine the expectations and performance standards that have been developed to ensure that individuals take responsibility for safety and quality in their work. Determine how these expectations and standards are communicated to employees. The inspector should also determine whether there are procedures that help to achieve these expectations, and if so, how are they used.

4.5.1.2 The inspector should determine what means of communication have been used to 'set the tone' for a safety culture.

4.5.1.3 The inspector should review position descriptions at three different levels in the organization. (These may be obtained before the inspection for review.) Determine if these descriptions contain elements that address personal responsibility for safety and quality in job performance.

4.5.1.4 Based on interviews conducted to address previous requirements of this procedure, the inspector should determine if safety and quality issues have been discussed in recent job performance reviews. Determine if individuals believe they have a personal responsibility for safety in their work and why. Also determine how this personal responsibility manifests itself in routine job responsibilities.

5.0   REFERENCES

Hazards Analysis Report, BNFL-5193-HAR-01, Revision 0, 1997.

Integrated Safety Management Plan, BNFL-5193-ISP-01, Revision 5, 2000.

Quality Assurance Manual, 24590-WTP-QAM-QA-01-001, Revision A , 2001.

RL/REG-98-21, *Regulatory Unit Position on Implementing and Assuring Compliance with Integrated Safety Management*, Rev. 0, U.S. Department of Energy, Richland Operations Office, 1998.

Safety Requirements Document, BNFL-5193-SRD-01, Volumes 1 (Rev. 2, 1998) and II, (Rev. 3, 2000), Bechtel National, Inc.

6.0   LIST OF TERMS

ALARA	as low as is reasonably achievable
HAR	Hazards Analysis Report
ISM	Integrated Safety Management
ISMP	Integrated Safety Management Plan
PHA	process hazards analysis
PSC	project safety committee
QAM	Quality Assurance Manual
OSR	Office of Safety Regulation
RPP-WTP	River Protection Project Waste Treatment Plant
SRD	Safety Requirements Document
WTP	Waste Treatment Plant

Attachment 1: Table of Interviews for Inspection Procedure I-109

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Table of Interviews for Inspection Procedure I-109

Procedure paragraph	Person to be interviewed	Unique aspect of interview	Comments regarding combined interviews
4.1.1	Project Manager	Appointment of individual responsible for safety integration	---------------
4.1.2	Project Manager and individual assigned safety integration	Integration of safety management	---------------
4.1.3	Line Supervisor	Responsibility for safety integration	---------------
4.1.4	Four non-supervisors	Responsibility for safety and knowledge of stop work authority	---------------
4.2.1	General Manager	Executive Committee selection and meetings	---------------
4.2.2	PSC Chairperson	PSC activities	-----------------
4.3.1	Two members of safety groups	Sense of ownership in safety program	May also interview these individuals to satisfy requirements of 4.1.4
4.4.1	Design Supervisor	Safety integration into design process	May also interview individual to satisfy requirements of 4.1.3
	Two non-supervisory designers	Safety integration into design process	May also interview these individuals to satisfy requirements of 4.1.4
4.4.3	Technical Organization Supervisor	Technical Organization input into design process	May also interview this individual to satisfy requirements of 4.1.3
4.4.4	Human Factors Specialist	Input of human factors into design process	May also interview this individual to satisfy requirements of 4.1.4