

COMMENTS

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ON**

INTEGRATED SAFETY MANAGEMENT

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I am glad to be here with you at this workshop on Integrated Safety Management (ISM). As you have heard from Deputy Secretary, Elizabeth A. Moler, the Department of Energy (DOE) is committed to the ISM concept as a way of ensuring the performance of its mission safely. The fundamental tenets upon which this concept rests are really quite simple:

- Work planning and safety planning must be integral functions.
- Doing work and doing work safely are synonymous.
- Safety encompasses protection of the public, workers, and the environment and—the protection of government property.
- Achievement of Safety is a priority objective.

Last month, Congress and this nation were addressed by our President on what he perceived to be the state of our nation. In his address he talked about where we are and where he believed we needed to focus our improvement efforts. He then shared his thoughts on a path forward. I in no way promise you so profound or encompassing view, but I would like to share with you my perception of the state of ISM in the same vein—where we are—where we need to focus—how we might proceed.

WHERE WE ARE

Foremost, let me say that I have seen in the past year a growing acceptance of the concept of managing safety in a more systematic and integrated way. The initial resistance that virtually always results with change has moderated. With reassurance from DOE's senior leadership that the course set in 1996 in the Implementation Plan for Board Recommendation 95-2 is to be resolutely followed, with benefits of so doing demonstrated by those who have tried, and with the enlarged understanding that is taking place by educational undertakings such as this workshop, the upgrades in DOE's safety management program we all seek are progressing.

DOE, however, is not yet where it needs to be—but—during 1997, a commendable number of risk reduction actions and safety management upgrades were completed or advanced significantly. The Board in its Reports to Congress for 1997 (reference: Eighth Annual Report to Congress, February 1998 and FY 1999 Budget Request, February 1998) highlighted a number of those the Board considered most noteworthy. I wish to share some of those with you.

With respect to the commitments of DOE to ISM, DOE actions included the following:

- Issued Policy P450.4 that affirmed Secretarial commitment to integrated work planning/safety planning and to safety management for the protection of the public, the workers and the environment as an integrated whole.

- Issued a revision to its major acquisition regulation, DEAR 970.5204-2, to require contractors to develop and implement Integrated Safety Management Systems (ISMS) as a requirement in existing and future Managing and Operating (M&O) and Management Integration (M&I) contracts.
- Included goals for the Integrated Safety Management program in DOE's 1998 Strategic Plan.
- Issued an ISMS Management Guide.
- Progressed the effort to define safety functions and responsibilities.
- Conducted verification assessments of a number of contractors ISMS's programs, including Savannah River Site H and F Canyons and Rocky Flats Environmental Technology Site. (Lessons learned are to be shared with you by J. King/DOE at this workshop)

In keeping with these DOE actions, DOE's contractors responses include the following:

- Major facilities at Savannah River Site, including H and F Canyons, DWPF, and RTF are operating under facility-specific ISMS's, including Authorization Agreements, developed under a site-wide program defined by the M&O contractor.
- Building 371 at Rocky Flats is operating to an interim Authorization Agreement that reflects major elements of a facility-specific ISMS.
- Building TA-55 at Los Alamos is operating under an upgraded facility-specific safety management program structured on the principles of ISMS. Experience gained in establishing safety protocols for operation in TA-55 are being fed into the site-wide program under development at Los Alamos.
- At Pantex, the contractor and the weapon design laboratories have collaborated in the development and implementation of an upgraded Integrated Safety Process which is a significant improvement in the establishment of safety measures for the assembly, disassembly, and surveillance of nuclear weapons.
- At Oak Ridge, the planning for resumption of Enriched Uranium Operations (EUO) is benefiting from work planning/safety planning integration per the ISMS concept.

- DOE/Nevada, in collaboration with the weapons design laboratories, Los Alamos and Livermore, successfully developed a process for generation of activity specific integrated safety control measures in the conduct of subcritical experiments at the Nevada Test Site (NTS).
- At the tritium facility, 233-H, Savannah River, operations are being conducted to a facility specific safety management program structured to ISMS principles with noteworthy programs for planning and performing hazardous maintenance activities and for performing self-assessments in keeping with DOE Policy P450.5.
- In the non-defense arena, the Pacific Northwest National Laboratory (PNNL) has engineered its safety management program to treat environmental, health and safety issues integral with the business of doing research.

WHERE WE NEED TO FOCUS

While progress is being made, it is not moving fast enough. It behooves us to determine the causes that are limiting the pace and to expeditiously address them. Towards such end, I offer the following as areas that I perceive to be troubling those striving to follow existing guidance:

1. Ambiguity: Phase I Integration Management System Descriptions per the DEAR Clause vs. Facility/Activity-specific ISMSs per 95-2 Implementation Plan.

In any normal progression in a program marked by phases, one naturally expects Phase I to be completed before Phase II. The current draft guidance in the ISMS Verification (ISMSV) Leaders Handbook so advises by stating that:

“ ...it is essential that the ISMSV-1 review be completed prior to the implementation review (ISMSVII).”

To the extent this is suggesting that the establishment and verification of any facility-specific Integrated Safety Management System should begin with determining the availability and applicability of site-wide Manuals of Practice, this is reasonable and logical. However, it can be interpreted to mean that the development and verification of facility/activity specific safety management plans to ISM principles should be delayed pending the maturing of site-wide infrastructure of safety management practices. This is a message not in keeping with the approach we envisioned in our Recommendation 95-2 nor in the approach laid out in the 95-2 Implementation Plan. That approach involved taking ten facilities currently operating, examining anew the safety basis upon which they were operating, and upgrade that basis to be consistent with the concept and principles of Integrated Safety Management. From the experience with so doing for ten facilities at different sites, the adequacy of the existing Manuals of Practice at those sites could also be determined and results fed into site-wide infrastructure upgrades to be applied to other

facilities and activities in the DOE complex. To benefit from the experience of implementing Integrated Safety Management Systems at ten sites using and augmenting existing infrastructure, the Board recommended institutionalizing the results of this experience. Hence the issuance of the DEAR clause. The line of action required of the site Government Contractors to define how they intend to plan and execute the work they and their sub-contractors are contracted to perform, and to do so consistent with the contract requirements laid upon them by DOE, is a separate line of action. The point I want to stress is that as the Board worked with DOE on the Implementation Plan for 95-2, we did not agree that getting on with the definition of safety management programs for facilities that are in operational status should be paced by site-wide infrastructure upgrades. It may help to reflect a bit on Figure 1 for it captures what is taking place at Hanford. This site, with facilities in various life cycle stages from design to decommissioning and a multiplicity of site contractors is a case at point. Manuals of Practice exist at both the site and facilities level. Some of these are residuals of previous contractors, others are contractor specific. Authorization bases of sorts exist as do safety measures derived therefrom. What exists versus what is needed to satisfy the concept of Integrated Management, for priority facilities is being done through a “gap” analysis. I understand the results of review in connection with the K Basins indicates site-wide infrastructure is deficient. Facility specific programs or other compensating measures may be required for safe operation of individual facilities. Identifying and institutionalizing site-wide programs required in common by the different facilities could benefit the site-wide implementation efforts. However, defining ISMS for operational facilities should not be delayed pending completion of the site-wide infrastructure.

2. Requisites of ISMS Descriptions (DEAR Clause) vs. Requisites of Facility-Specific ISMS.

I believe the guidance provided by DOE in DOE G450. 4.1 on these two directives is quite good. However, it appears from monitoring various efforts to assess whether existing infrastructure satisfies these two directives that additional guidance may be required. My perception is that efforts to comply are being complexed by attempts to order the sites infrastructure too mechanistically to a matrix that is comprised of Functions and Principles. This may be unduly complexing the task. I suggest that a more simplistic way for visualizing the interrelation of functions and principles is illustrated by Figure 2. Figure 2 simply says that site contractors are to provide the tools and the practitioners, skilled and organized to use them. This differentiation could facilitate and sharpen development of pertinent lines of inquiry. It also is consistent with the structure of DOE requirements as they are presented in Volume 2, Appendix 2, of DOE G 450.4-1. This is a matter that should be discussed during this workshop. The experiences from DOE’s verification efforts to date should be helpful.

3. Worker Protection.

With the exception of certain design and operational constraints such as criticality, the development and implementation of control measures to protect workers has been delegated largely by DOE to the contractors. As I identified in the Report, DNFSB/TECH 16, one of the challenges for implementation of the ISM concept was to come to grips with practices for ensuring worker safety, given the large variety of tasks, routine and non-routine that the work force must perform. The use of work control permits is common practice but the job hazards analysis and work planning that precedes the execution of hazardous work is anything but regularized. Multiple hazards analysis and work planning techniques are in existence at the sites but not sufficient management guidance exist as to which applies under what circumstances. This problem is particularly evident when there are multiple contractors on site, each doing their own thing. Evidence through incidents reported clearly indicate more effective planning processes are required for worker protection. Its time to make enhanced work planning a site-wide reality with the safety functions of ISM appropriately tailored and executed for all activities, big or small.

4. Life Cycle Stages.

Much emphasis is being focused upon operating facilities and rightfully so. However, we need to continually bear in mind that the functions and principles of Integrated Safety Management are applicable at each Life Cycle Stage (Figure 3). There are within the DOE complex, facilities and activities currently in each of these stages. One or more of them could serve well as pilots for others in like stages. The experiences with developing integrated safety management systems for other than operational facilities should be captured and shared. The Decommissioning Operational Plan being developed for Building 779 at Rocky Flats is a case in point as is the design/construction of the Spent Fuel Project at Hanford.

5. Verification/Assessment Findings.

The assessments done thus far as to the status of ISM programs at both the facility-specific level and site level have resulted in findings of deficiencies of one sort or another. DOE management must act promptly to establish action programs to address them. This is especially true for findings resulting from the facility/activity assessments. I can see a parallel in the treatment of findings from Operational Readiness Reviews. Some findings may well merit immediate or expedited follow-up action, others more delayed but timely responses with interim compensating measures. The important thing is to make certain through management actions that the requisite follow-on program is defined and the resources needed are provided.

With respect to verification findings, let me express a caution. The tendency towards grade inflation and readiness declaration that marks our public school systems should not be the standard by which adequacy of ISM systems should be judged. Our standards should be tough and demanding. Only by doing so can we attest with surety that DOE has in place as it fulfills its missions, a safety management system that will provide protection of the public, workers and the environment.

6. Need to Move On.

DOE has a myriad of hazardous activities being performed by contractors that would benefit by safety management structured to functions and principles of Integrated Safety Management. With a few notable exceptions, such as Savannah River, that assessed a substantial number of its major operations against principal elements of ISMS, DOE's programmatic offices have not pressed forward aggressively on this matter. The ten priority facilities identified in 95-2 were meant as a jump start. Well, the result has been a jump-start all right, but, too few have put the "foot to the pedal."

The Board has identified approximately 100 facilities in the Defense Nuclear complex that merit such management. As a way of accelerating and focusing the path forward for ISMS implementation, the Board targeted in a December 23, 1997, letter to DOE, 50 facilities and activities for which we asked a status report. The report seeks to establish the state of the existing safety management programs relative to key elements of an ISMS. I believe that DOE will find that existing management plans have been formulated to a large extent from the exercise of functions and to principles of Integrated Safety Management. Results will very likely show where upgrades are warranted. My observation relative to exercise of safety management is that it is the *adherence* to plans—the management of what has been planned—that requires the most upgrading. In any case, results should provide information that will allow system upgrade efforts to be focused on areas of greatest need. Such efforts should be expeditiously made. Let us get on with it!!

In summary let me leave you with a few parting thoughts. I urge you to:

- Keep this program from becoming convoluted and unduly complex.
- Stick to Basics.
- Keep Focused on End Objectives.

Implementation of Integrated Safety Management

	Site-Wide	Priority Facility	Other Facilities
Infrastructure	<ul style="list-style-type: none"> ■ Site-Wide ISMS Plan ■ Manuals of Practice, e.g. Emergency Planning Maintenance USQ Definitions 	<ul style="list-style-type: none"> ■ Safety Programs Manuals, e.g. Conduct of Operations Maintenance Personnel Selection & Training Work Planning & Controls 	Develop Safety Program Manuals
Implementation Structure	<ul style="list-style-type: none"> ■ Safety Programs, e.g. Emergency Management Fire Protection Radiological Protection Quality Assurance 	<ul style="list-style-type: none"> ■ Authorization Agreement or Equivalent Work Definition TSRs Engineered Safety Features Administrative Controls Change Control Procedures Organization & Mgt Structure 	Develop Authorization Agreement or Equivalent
Confirmation	<ul style="list-style-type: none"> ■ Performance Assessment, e.g. Drills Assessments 	<ul style="list-style-type: none"> ■ Operational Readiness Review ■ Readiness Assessment ■ Self Assessment ■ Feedback ■ Incident Reporting 	Confirm Safety Management Program Readiness
	Phase I Verification	Phase II Verification	

Figure 1

Safety Management Infrastructure

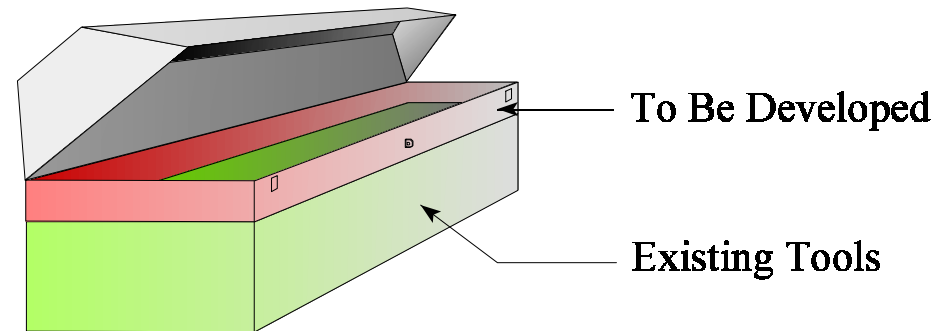
Functions

- ⇒ Define Scope of Work
- ⇒ Analyze Hazards
- ⇒ Develop Controls
- ⇒ Perform Work Safely
- ⇒ Feedback & Improvement

Principles

- ⇒ Line Mgt Responsibility for Safety
- ⇒ Clear Roles & Responsibilities
- ⇒ Competence Commensurate with Responsibility
- ⇒ Safety as a Priority

Tools (Manuals of Practice)



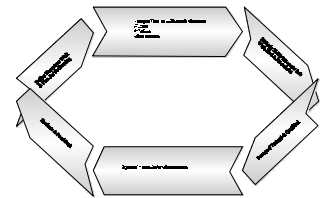
Practitioner (Organization & Mgt)



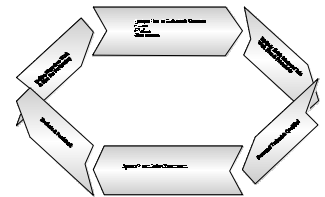
- Use Existing Tools
 - FRAM
 - Personnel Selection and Training
 -
- Identify Gaps, Develop Additional Management Tools

ISM Applies to All Phases of Facility Life Cycle

DESIGN

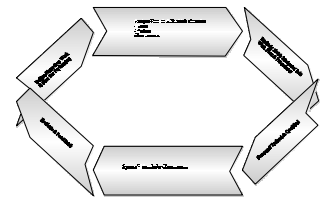


CONSTRUCTION



OPERATION

- Active
- Inactive



POST-OPERATION

- Transition to Deactivation
- Deactivation
- Post-Deactivation Surveillance & Maintenance
- Decommissioning

