

COMMENTARY

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ENHANCED WORK PLANNING WORKSHOP

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Note: The views expressed here are those of the author and do not necessarily represent the views of the Board as a whole.

I am pleased to be able to participate in this workshop. although the detailed comments and observations I will make are my own, I can say to you on behalf of the Defense Nuclear Facilities Safety Board (Board) that we strongly endorse efforts to emphasize and improve work planning. Protection of the public, workers, and the environment requires that we include in such planning the analysis of hazards potential and the establishment of controls needed to enable the work to be done safely. The Department of Energy (DOE) and the Board are committed to a reinvigorated program for doing work safely. The enhancement of work planning is an essential element of that effort.

We have the obligation to get our jobs done safely, but also cost-effectively. Effective work planning for me translates into assurance that both objectives—safety and cost- effectiveness—are likely to be achieved. I know of no one who would dispute the need to do work safely. However, what has been the subject of much debate and deliberation has been and continues to be, is the question, " how safe is safe enough?" This really translates into how much are we willing to pay for added assurances?

In the early days of groping to define "how safe is safe enough," the legal community expressed the test of adequacy of public safety as "reasonable assurance of no undue risk." Over the past 50 years, more quantitative measures have been established for assessing adequacy of public protection. Some of these are set forth as risk limitations and others as limits of exposures to hazardous materials. For worker protection, exposure limits on hazardous materials are augmented by work practices targeted at (1) avoidance of work place deaths or severe accidental injury and (2) lost time injuries. DOE has issued nuclear safety goals concerning protection of the

public.(*) A similar safety goal for workers has not yet been established. In my view, work planning should be targeted at achieving no work place deaths or serious injuries and a lost time injury record that reflects working conditions among the best of comparable hazardous industries. It may be well for DOE to establish such a goal as policy, as a way of affirming DOE's dedication to worker protection.

*DOE Nuclear Safety Policy, SEN-35-91

Enhanced work planning that has been the focus of much of the pilot efforts discussed at this workshop has been targeted at what I call the activity and task levels. I understand fully the priority attention given this level, because so many of the incidents involving deaths, injuries, and near misses are occurring because of either poor planning or poor practices at this level. However, our enhanced work planning initiatives must encompass much more than the work place scene.

What I would like to do is talk to you briefly about enhanced work planning in a broader sense—that reflected in the implementation plan which DOE and the Board mutually agreed upon as a path forward for achieving "Integrated Safety Management." Then I will share with you some thoughts about moving forward with enhanced work planning, complex-wide.

Making work planning and safety planning an integral process is the fundamental thrust of Board [Recommendation 95-2](#) and the Implementation Plan developed by DOE in response. Now, a workshop directed at "enhanced" work planning presumes that there are work planning practices in existence and we are here to share information about them and ways they might be improved. I offer my observations and comments in that context.

Safety planning as a part of work planning within DOE occurs at multiple levels:

- Complex-wide
- Site-wide
- Facilities
- Activities
- Tasks

Safety planning as a part of work planning is directed at protection of different sectors:

- Public
- Workers
- Environment
- Public Property
- National Security

Safety planning as a part of work planning is fractionated by media and hazardous categories:

- Media
 - Air
 - Water
 - Solid Wastes

- Categories
 - Toxic
 - Hazardous (nonradioactive)
 - Hazardous (radioactive)
 - Hazardous (mixed)

When one stands back and looks objectively at DOE's overall work/safety management planning efforts, one sees a program that is highly partitioned. Groups are working diligently on component parts but doing so with no apparent sense of DOE's safety management program as a whole. Board [Recommendation 95-2](#) and DOE's Implementation Plan developed in response are serving to define that program as an integrated whole. As shown on, [Figure 1](#) drawn from the Implementation Plan, work planning is considered an essential function for safety management.

The main lines of safety planning are shown in [Figure 2](#). At the risk of generalizing too much, the controls established over activities are predominantly targeted at protection of the worker. This is in contrast to controls at the facility level established much more for protection to the public offsite and the environment. Standards that drive the development of facility-level controls are more firmly established and uniformly exercised by DOE and its contractors than those that relate to workers. Process Hazards Analysis leading to worker protective measures are not as uniformly conducted by contractors across the complex as facility safety analysis which lead to technical safety requirements and operational limits for protection of the public. Moreover, environmental protective controls are developed by an entirely separate process, though the sources of potential hazardous releases are the same. I submit that we must look for ways to enhance work planning across all sectors. The point I wish to stress in [Figure 2](#) is the need to define clearly through work planning the total set of controls that pertain to hazardous activities and to define clearly the responsibilities delegated for their development, implementation, and compliance oversight.

I submit to you that each of you can find that sector of safety planning where you fit. Our challenge is to bring safety planning, as we have fractionated it, into a more ordered and cohesive state.

Sites represent a locale or setting for work. Facilities provide the means for accomplishing work. Work is really only performed at the activity or task level: Hence, integrated safety management will not be cost-effectively achieved unless work planning effectively brings to bear at the activity or task level the resultant of safety planning for all levels, all sectors and all hazards.

I am not alone in this observation. A number of DOE contractors have shown in their presentations on Integrated Safety Management a clear recognition of this relationship and are structuring their safety management programs accordingly. Programs being developed for the Assembly/Disassembly Facility at Pantex, the H and F Canyons at Savannah River, and the TA-55 and CMR Facilities at Los Alamos are good examples that embody such an approach. I have selected a number of view graphs from presentations made to the Board to illustrate.

[Figure 3](#): Los Alamos--Safety Management Systems

[Figure 4](#): Los Alamos--Work Only Occurs at the Activity Level

This resultant which is in effect the sum of controls and measures within which the defined work is to be conducted constitutes the Safety Envelope. Typical elements of such a safety envelope are illustrated by [Figure 5](#), [Figure 6](#), and [Figure 7](#).

The main purpose for this representation is to give emphasis to the point that enhanced work planning is important at all levels. Enhanced work planning at the activity level needs to be done in context of the whole.

I believe this initiative to improve work planning to be very supportive of the integrated safety management concept the Board and DOE are advocating. Particularly encouraging are evidences of improvement at the activity and task levels through such measures as:

1. Concurrent engineering of work packages by multi disciplined teams focused on the work and the hazards as an integral effort (e.g., radcon, fire protection, industrial safety, etc.);
2. Line engineering lead with ES&H support;
3. Involvement of workers (operational engineers and technicians) in planning;
4. Linking of rationales for controls (e.g., PHAs) to limits or other operational safety controls in procedures; and
5. Emphasis on engineering out hazards rather than analyzing them away.

I believe the cause for enhanced work planning might well be served by the following:

1. A critical examination of hazardous activity work planning processes across the complex. The objective would be the development of consensus on what constitutes elements of good practices that might be captured in a guide on the subject. In effect, establish guidance on development of worker protection controls comparable to the public via the SAR's;
2. A closer coupling of such efforts with the 95-2 implementation effort;
3. Development of common terminology for work planning and control documents (e.g., HAR, NEHA, NESR); and
4. Establishment of clear lines of responsibility—contractor and/or DOE for approval and change control of worker protection operational safety controls.