THE REGULATORY ROLE IN MISSION TRANSITION/D&D

William G. Fraser
U.S. Environmental Protection Agency (HWM-FF)
999 18th Street, Suite 500
Denver, Colorado 80202-2466

ABSTRACT

Subsequent to signing most existing cleanup agreements, DOE announced that weapons-complex realignment would require mission transition leading to Decontamination and Decommissioning (D&D) at several major facilities. This raises technical questions fundamental to statutory compliance and demands reevaluation of the regulatory framework being applied to affected sites. The paramount regulatory concern is the potential for a release of hazardous substances to the environment, which will increase during transition; procedures must be developed for minimizing this risk and communicating how this will be done. Regulatory agencies can make a constructive contribution to the transition planning process as guidance is developed and the effort progresses. In fact, use of the existing site remediation processes could provide significant advantages, and provide relief from procedural requirements which might otherwise apply. Integration of existing schemes to accelerate site cleanups into the Transition/D&D process could yield significant time savings and meet regulatory needs without significant duplication of effort. Only a cooperative effort by all parties concerned can make the transition/D&D effort a success. This will necessitate the free exchange of information; the author sincerely hopes this paper will foster such an exchange.

INTRODUCTION

Existing Interagency Agreements (IAGs) govern many RCRA/CERCLA response actions conducted under Environmental Restoration (ER) programs at DOE sites, but generally exclude what were considered "production" areas at the time the agreements were executed. Subsequent to signing these agreements, DOE announced that weapons-complex realignment would require mission transition leading to Decontamination and Decommissioning (D&D) at several major facilities which contain large quantities of hazardous and/or radioactive materials, in the form of inventory, wastes, or contaminated structures and equipment. These materials will have to be reprocessed, treated, packaged, transported, and disposed of while ER efforts continue in other portions of the site.

These circumstances raise valid technical questions so fundamental to statutory compliance that reevaluation of the regulatory framework being applied to the affected sites becomes obligatory. The responsibility to protect the public has prompted the regulatory agencies to reexamine their role in the DOE decision process, question the ability of existing IAGs to continue meeting their objectives, and recognize a legitimate need to consider incorporating aspects of Transition and D&D work into IAGs between DOE, EPA, and the States.

Ongoing discussions on the regulatory role in the Transition/D&D process and its relationship to ER efforts involve several offices within DOE and EPA Headquarters, and the States. What follows is an examination of the current state of this dialogue and the potential implications of the decisions to be made on regulatory compliance, waste management, risk assessment and environmental restoration.

CURRENT CONDITIONS AND CONCERNS

The regulatory understanding of DOE transition planning is evolving along with the process itself. At this point, it appears clear that transition planning will include both reevaluation of the efficacy and timing of scheduled cleanup efforts, and a reexamination of RCRA compliance requirements. EPA believes these efforts must be coordinated with regulatory entities in the earliest possible time frame. This reflects a desire to see transition and D&D occur in a manner that minimizes the potential for release of hazardous substances into the environment.

Review of briefing materials and documentation developed to date reveals DOE has devised a sound basic approach to orderly transition and D&D, as illustrated in Fig. 1. It also raises several concerns which will likely be the focus of regulatory attention as the process proceeds. These can be summarized as follows:

- The paramount concern is the potential for a release of hazardous substances to the environment which will, by DOE's own admission, increase during transition. Procedures must be developed for minimizing this risk and communicating with the public on measures being taken to protect them.
- The conduct of transition/D&D at a facility concurrent with ER efforts may raise difficult questions about the scope and procedures used in assessing risk. Integrated risk-management decision-making will be required to adequately protect the public from cumulative effects.
- The disposition of wastes to be handled and/or generated and the associated RCRA compliance requirements could overtax existing administrative mechanisms and/or require expanded treatment process development to effect waste minimization, promote pollution prevention, and ensure proper disposal.
- Monitoring and compliance programs are inadequately coordinated with transition activities. This seems particularly critical in surface water and air monitoring programs, which may require major changes to support new types of activities.
- The standards to be applied when transferring buildings into the D&D phase and subsequently releasing structures and facilities for other uses are necessarily

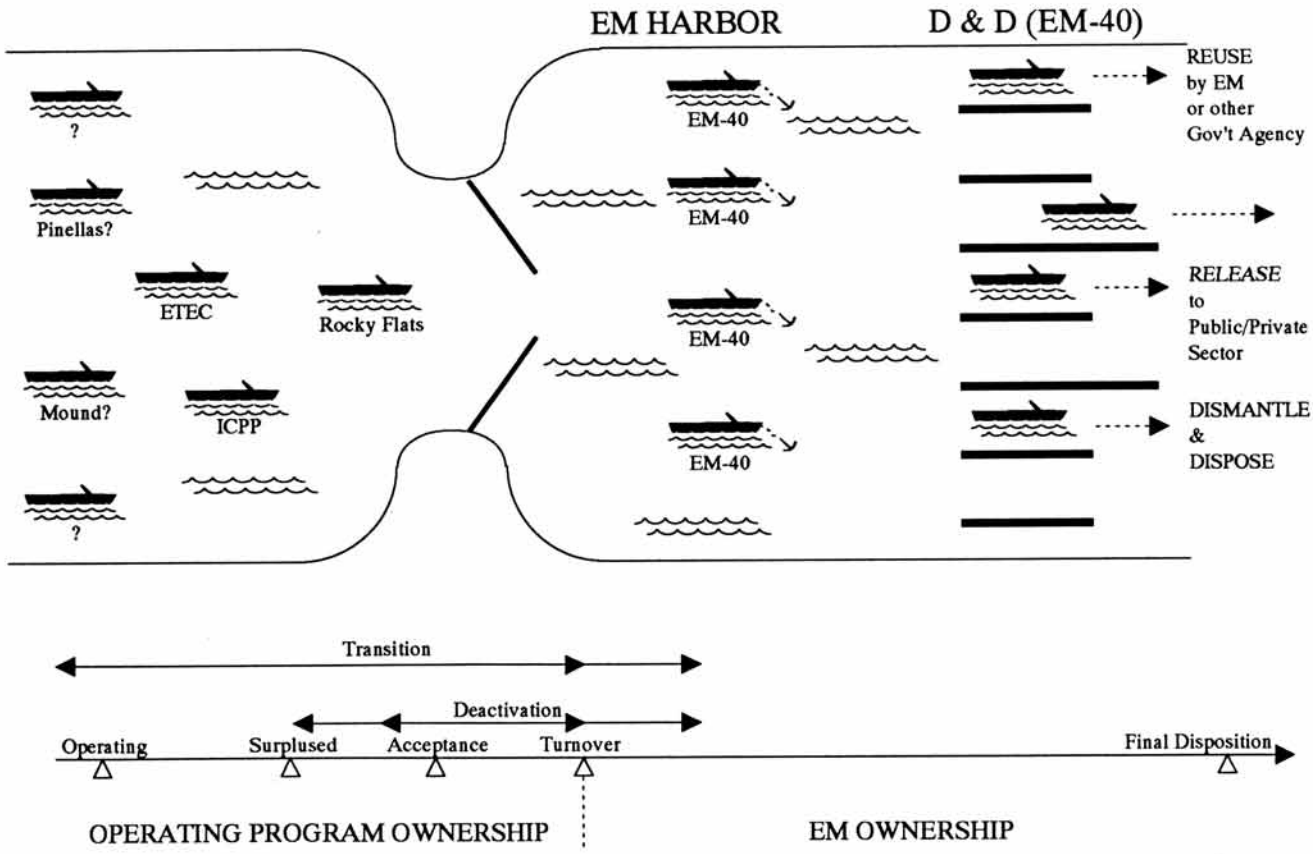

Fig. 1. Transition/D&D.

of concern to the public, and should be the subject of future deliberations involving all potentially affected parties.

THE EVOLVING REGULATORY ROLE

The potential for release of hazardous and/or radioactive substances to the environment during transition/D&D activities will increase due to the necessity to perform non-routine operations, increased handling and transportation, and the eventual need to dismantle containment and control structures. This potential provides a statutory basis for CERCLA jurisdiction under Section 106, and generates a practical concern for the efficacy of ongoing efforts. Such a release could undermine cleanup activities by recontaminating areas where characterization or cleanup is ongoing or completed, thus necessitating repetition of these efforts.

Procedures for minimizing this risk must be developed and presented to the public, who have often demonstrated a high level of sensitivity and sophistication in this area. Despite pressure to proceed with cleanup, it may be prudent to delay some cleanup efforts until such time as transition/D&D progress to the point where the potential for release is appropriately diminished. It may not make sense, for instance, to spend time and money on studying and cleaning up soil affected by a past process waste line leak adjacent to a plutonium processing building. If D&D will likely change conditions at the site and possibly involve removal of the waste line, the situation might best be dealt with as part of an integrated approach to the building, appurtenant structures, and past releases from them.

Situations of this type, where ER and D&D efforts will overlap, may also require some adjustments in the risk assessment process. The current approach of assessing the risk from CERCLA activities on a unit-specific basis and depending on DOE operational standards to control exposures derived from transition/D&D activities cannot be depended on to maintain an adequate level of protection of public health and the environment. It will be necessary to develop a scheme whereby aggregate risks can be assessed using a consistent theoretical basis and methodology. The methodology used to calculate risk under CERCLA was not originally designed to accommodate radionuclides, and may exhibit weakness in the translation, both in supporting data and the validity of some assumptions. DOE methods are based largely on International Commission on Radiological Protection recommendations, which EPA does not consider completely appropriate for estimating health risk to the general population. An integrated methodology is needed which is both technically sound and easily communicated to the public.

Assuming these technical difficulties can be overcome, and a comprehensive assessment of risk completed, difficult risk management decisions will remain. The extent of cleanup, or level of protection, required is inseparably linked to the potential for and modes of exposure, and therefore to the uses of the site during and after cleanup. Given the economic importance of many DOE sites to the host communities,

land-use decisions are inherently contentious, and there will be considerable pressure to release some facilities for alternative uses in the near term. The sheer size of some facilities makes it likely that future uses within a site will be highly diverse. EPA guidance is being developed regarding how to identify likely future use and when to consider it in decisions on protection and cleanup. Final guidance is likely to require a greater degree of involvement by local planning and governmental agencies early in the cleanup process. The intent is to identify a likely future site development scenario which will focus the remaining assessment on answering questions about protectiveness for the relevant, not hypothetical situation. The timing, sequence, and nature of D&D activities can then also be factored into decisions about how aggressively to pursue remediation in specific areas.

The handling and disposition of wastes generated during transition/D&D will be particularly problematic. Procedures developed must effect waste minimization, promote pollution prevention, and ensure proper disposal. DOE's efforts to date with D&D of major facilities include little experience with working under RCRA requirements or a high level of public scrutiny. Likewise, EPA and the States have very limited experience with oversight of such operations. Application of RCRA to major DOE facilities and to new categories of waste in recent years has resulted in the designation of many areas within and around buildings now slated for D&D as Solid Waste Management Units (SWMU). The regulatory requirements for closure of SWMUs are admittedly daunting; they are nothing compared to the complications which could ensue from the States' application of RCRA in a wider D&D context. Such action is likely, and technically well founded.

In light of the recently passed Federal Facilities Compliance Act which clears the way for states to levy fines against federal facility operators under RCRA, DOE could be well advised to recognize State authority in these matters and to make RCRA compliance planning a major element of the transition planning process. Transition planning documents produced to date do not reflect this approach.

An adequate monitoring and compliance program under transition/D&D may look very different than that devised for an operating environment since the nature and rate of discharges to air and water in the vicinity of the facility could change significantly. Current monitoring networks at most DOE facilities are based on Clean Air, Clean Water Act, and RCRA requirements. For the most part, these networks are designed to measure ongoing discharges from a specified point, when the processes and activities with releases tributary to that point are known. While mechanisms to accommodate source modifications are provided in the regulations, they are not designed to accommodate D&D, which essentially amounts to an ongoing modification. Transition/D&D could change the composition, temporal pattern, and mode of releases from a given area. Monitoring systems devised must have the flexibility to accommodate these changes. In fact, given the time frames involved, monitoring and after-the-fact reporting may not be enough to adequately protect public health and the environment; predictive capabilities may be required. This would support an estimation of potential public exposure to contaminants and a check of the ability to maintain compliance with applicable requirements before certain activities begin.

The inevitable question of "How clean is clean?" and who gets to make the call, will only get worse when it comes to D&D of buildings, particularly *if they, or the areas* where they are now located, are to be released for outside use. "Free release criteria" and similar standards have historically been used by DOE to determine appropriate disposition of structures, waste structural materials, and equipment. It is unclear to what extent current criteria are consistent with risk-based levels or applicable RCRA requirements. These criteria will have to be reexamined and statutory compliance demonstrated, within a particularly complicated regulatory framework which does not currently offer a convenient recipe for answering many of the questions that arise in dealing with bulk materials contaminated with both hazardous and radioactive substances.

While the administrative procedures employed to make compliance demonstrations may vary, a consistent scientific basis for evaluating compliance must be devised and adequate protection maintained. Here again, "adequate protection" will be related to the future use of the facilities and lands to be cleaned up. The extent of remedial work performed will have to be coordinated with the future use decisions made in transition planning. We must find ways to comply with the law while avoiding elaborate and expensive cleanups in areas where protective procedures and equipment can offer a more appropriate means of managing risks from residual contamination. However, there is documented failure of institutional controls in the CERCLA program with regard to design, implementation, and enforcement. While DOE may have distinct advantages in providing enforceable controls at their sites, this may become an issue on privately owned land during D&D or on lands sold to private interests after D&D. EPA is currently drafting guidelines for the selection, implementation, and enforcement of institutional controls which advocates involvement at the local governmental level to ensure that effective mechanisms are established.

Regulatory agencies can make a constructive contribution to the transition planning process as guidance is developed and the effort progresses. Policy, guidance, planning, and reporting documents will be produced as facilities move through the stages of transition. An established procedure for outside review of these documents will improve quality and enhance credibility. With proper coordination, regulatory information needs could be largely consistent with DOE's own transition planning and monitoring requirements, and not require significant additional effort. In fact, use of the existing CERCLA process could provide a significant advantage in some cases, as it can provide relief from procedural requirements and permitting processes which might otherwise be required.

ACCELERATING THE PROCESS

No one wants to see the cleanup process made more cumbersome. On the contrary, there is widespread recognition that cleanup programs need to be made more efficient and more effective. To this end, a number of initiatives aimed at accelerating the process and securing greater risk reduction more rapidly and at lower cost are ongoing within DOE, DOD, and EPA. For the most part, these initiatives have been developed independently. It appears that integration of the ideas reflected in these acceleration schemes into the Transition/D&D process could yield significant time savings while allowing it to meet regulatory agency information needs without institutionalizing significant duplication of effort.

Superfund Accelerated Cleanup Model (SACM)

SACM was developed and is being implemented by EPA. It was primarily designed for use at Fund-Lead sites, but may offer significant time savings for some Federal Facility applications. The SACM process, as shown in Fig. 2, revolves around the use of a Regional Decision Team (RDT) to identify the appropriate response actions and their sequence to efficiently reduce risks and clean up sites.

The major time savings anticipated from use of SACM derive from employing a single-step site assessment and the flexible use of removal and remedial authorities, within the legal constraints of CERCLA and the NCP, as directed by the RDT. At Federal Facilities, where site assessment responsibilities and removal/remedial authorities are split between EPA and the facility owner, the situation is a bit more complicated, but not hopeless.

The content and quality of Site Investigation reports could be improved, with sufficient cooperation, to eliminate much of the duplication of effort currently seen in this portion of the process. Use of non-time critical removals could be employed more widely for rapid risk reduction to the extent that regulatory participation in the removal decision process can be established through IAGs and enforceable schedules for such actions provided. Compliance with ARARs and the role of the States in this process would also require agreement, as appropriate to the facility circumstances.

Presumptive Remedy Selection (PRS)

PRS projects are ongoing in several incarnations within EPA and DOD. These efforts aim to establish a "presumptive remedy" for certain types of sites which are both abundant and sufficiently similar in the nature of the problems they pose. Firefighter training areas found at almost all military installations are one example. They generally exhibit similar types of contamination, and the "up-front" application of a presumption that a particular remedy will be applied allows for significant savings in the scope and cost of the RI/FS work.

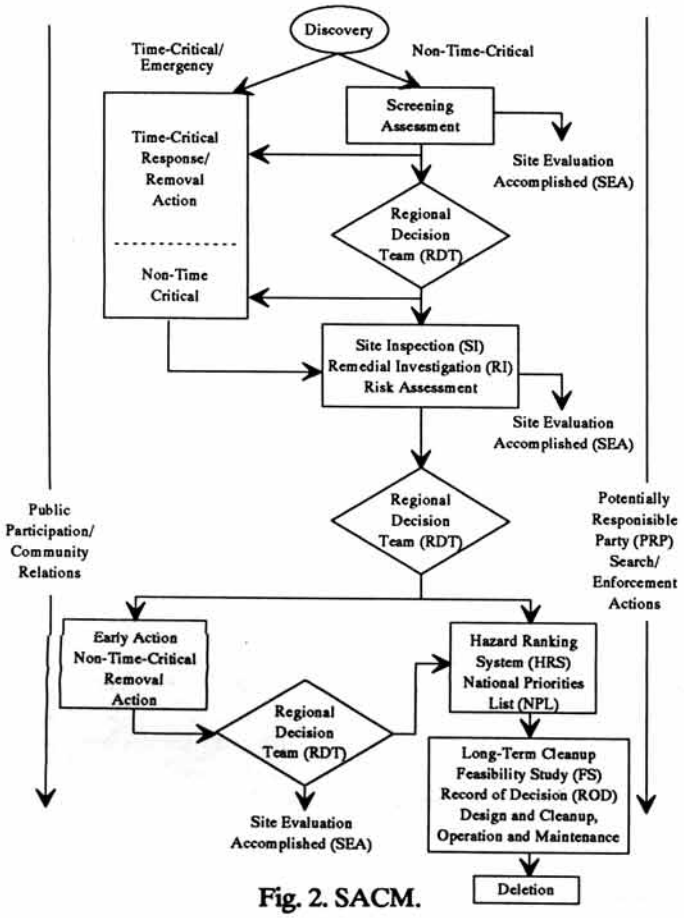

Fig. 2. SACM.

By examining the universe of sites which may need to be dealt with in the future, DOE may be able to identify some where a "presumptive remedy" approach could be applied, either within a facility or nationally. Given that precedent exists, the regulatory agencies may be able to support such an initiative if it is technically sound and offers significant time savings.

Streamlined Approach For Environmental Restoration (SAFER)

The SAFER idea, illustrated in Fig. 3, was developed for DOE and is currently being "pilot tested" at several facilities, including Rocky Flats, where it is being utilized in conducting an interim action for removal of organic contamination in the vadose zone. This approach hinges on the explicit recognition that uncertainty is an inherent part of the site cleanup process and an attempt to eliminate all uncertainty will lead to large expenditures and little cleanup. Instead, SAFER uses a decision tree process and pre-established contingencies derived from the "observational" method long employed in geotechnical engineering to allow work to proceed while uncertainties are adjusted for.

One roadblock to implementation of this approach which has been raised is that it requires a high degree of flexibility in a notoriously rigid procurement and contracting environment. Creative solutions to these difficulties involving application of contracting and task scoping procedures used elsewhere in the Federal government are reportedly being worked on. With a little cooperation, administrative obstructions need not impede further use of this promising idea.

DOD Base Closure Program

This program has, of necessity, worked out some potentially useful strategies for facility closure and property transfers. With numerous sites on the closure list either under consideration for or already included on the NPL, DOD faces a daunting problem with evaluating the environmental conditions of these sites and selling/transferring them for non-military use by private parties and or local governments.

These problems prompted recent passage of the Community Environmental Response Facilitation Act (HR 4016). This act amends CERCLA Section 120 in an effort to facilitate base closure and reuse, but applies to a much broader range of Federal real property transfers. This act provides a statutory means of identifying "uncontaminated" areas for which covenants and other legal devices can then be used to facilitate transfer of property which may previously have been impeded by the "fenceline to fenceline" listing of a facility on the NPL. DOD and EPA are currently working out the specifics of how this will work. When it is in place, this procedure may be of considerable utility to other agencies with similar property transfer problems.

CONCLUSION

Clearly, the transition process and the subsequent D&D efforts across the DOE complex will be among the most challenging and important environmental projects in the

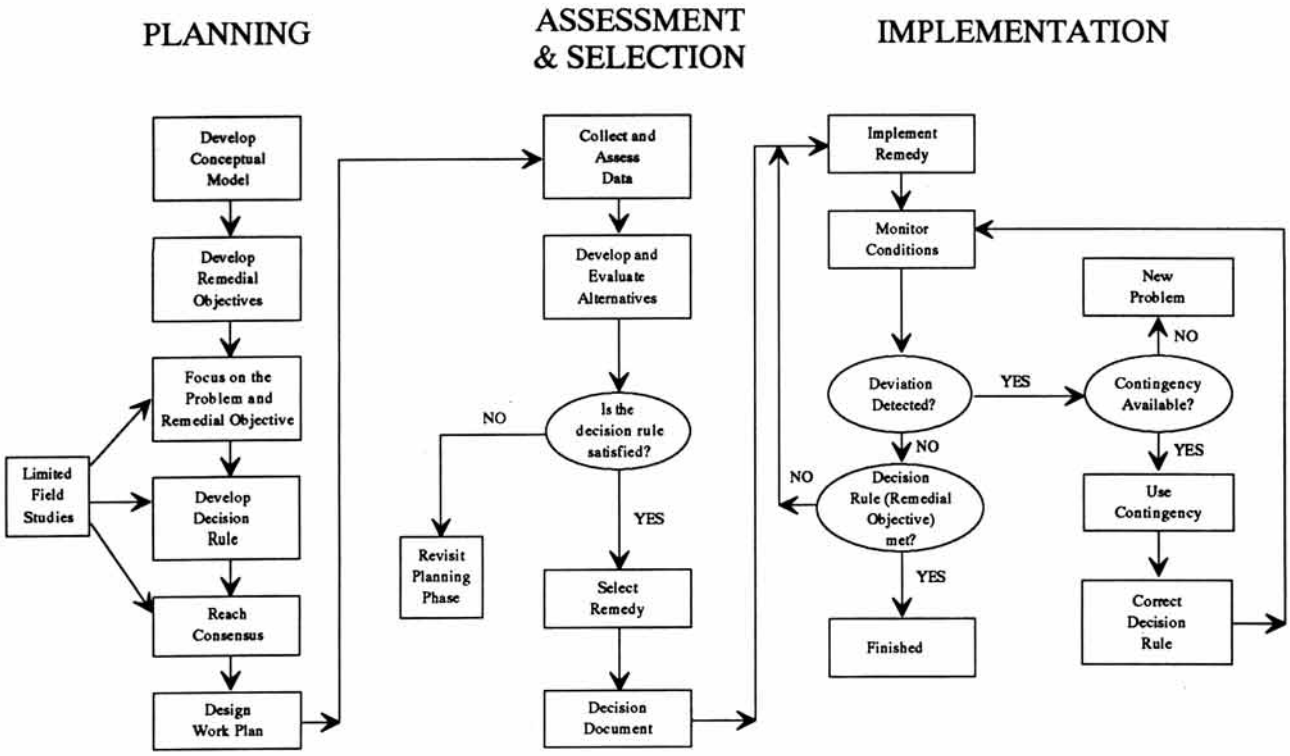

Fig. 3. SAFER.

country in coming years. Recognizing that the transition planning effort is in an early stage, many questions remain unanswered. Workable means to effectively address the public concerns and technical challenges raised by DOE realignment and environmental restoration must be developed. Only a cooperative effort by all parties concerned can make this effort a success. This will necessitate the free exchange of information; the author sincerely hopes this paper will foster such an exchange.