Report to the Senior Advisor to the Undersecretary of Science
United States Department of Energy

Observations and Recommendations on Regulatory Reform

Prepared by the
Environmental Management Advisory Board

April 2021

This report to the Senior Advisor to the Under Secretary of Science was prepared by the members of the Department of Energy's Environmental Management Advisory Board. Members are:

EMAB Chair (2019-2020)
Carol Johnson

Dispute Resolution Subcommittee
Shelly Wilson, Subcommittee Lead
Jack Craig, EMAB Vice-Chair
Mark Fallon
Tracye McDaniel
Josiah Pinkham
Tim Runyon

CERCLA/RCRA Integration and Streamlining Initiatives Subcommittee
Randall Jostes, Subcommittee Lead
Diahann Howard
Elliott Laws
Frazer Lockhart

Risk Based Decision Making, Future Land Use Designation, Points of Compliance, Levels of Protectiveness Standards Subcommittee
Amy Fitzgerald, Subcommittee Lead
David Abelson
Jane Hedges
Kimberlee Kearfott
Nicole Martinez
James Rispoli
Robert Thompson

Executive Summary

Introduction

In June of 2020, the Environmental Management Advisory Board (EMAB) received a charge from Senior Advisor to the Under Secretary of Science Mr. William "Ike" White, related to desired improvement within the area of regulatory reform and requested that the board provide recommendations to help DOE-EM guide the complex Federal and State regulatory processes to improve the pace of clean-up across the EM complex. It is EMAB's privilege to submit the final report for the Charge that follows.

Proposed Charge for the EM Advisory Board (EMAB)

EM is committed to working with the US Environmental Protection Agency (EPA), state regulators, Tribal Nations, local governments, and EM stakeholders to update regulatory approaches to increase the pace of cleanup progress. EM asks that EMAB investigate opportunities to streamline cleanup focusing on field progress, with detailed steps toward implementation, on one or more of the topics below:

1) Clarifying EPA-Related Initiatives That Cause Delays and Confusion - EM is experiencing delays and increased cost due to disputes and disagreements between DOE and its regulators relating to policy and program issues. EPA and the states appear to treat DOE different from other entities. Topics for investigation include:

a. Dispute resolution methods.

b. Levels of protectiveness standards.

c. Lead Agency and Removal Authority roles and responsibilities of each agency.

d. The role of other federal agencies in EPA's National Remedy Review Board (NRRB) process.

e. Substantive requirements vs. administrative requirements.

f. How to regulate within a constrained budget.

g. Milestones are used as a weapon to guide funding rather than guide substantive work.

2) CERCLA/RCRA Integration and Streamlining Initiatives - EM sites are being cleaned up under both CERCLA and RCRA regulations, creating confusion in implementation, and causing inefficiency and inconsistencies in requirements.

3) Risk-Based Decision Making - EM has not been allowed to align its cleanup with risk-based decision making. In 2019, the Government Accountability Office asked EM to develop a program-wide strategy that outlines how it will balance risks and costs across EM sites.

4) Future Land Use Designations - There should be a consistent process and criteria for making, and when necessary, revising land use determinations and devising ways to ensure that land use determinations are used appropriately in risk assessments and other remedy selection steps.

5) Point of Compliance (POC) - POCs deal with concentrations of waste in the buffer zone surrounding the disposed waste. EM can work to justify larger or smaller buffer zone for Land Use Plans and

commitments in Environmental Impact Statement but needs to work with other agencies to communicate that there is no increased risk.

6) Performance Metrics – EM, EPA and States communicate all measure success differently. Various reviews have noted that EM communicates metrics inconsistently across the EM sites

EMAB is charged with reviewing past reports and work on regulatory reform and providing recommendations to EM Leadership. For each of these items, EMAB will determine specific implementable steps that could be taken at one or more EM sites.

EMAB may determine to break up this charge into two phases if multiple topics need to be addressed. EMAB will present its report in the fall 2020.

Approach

While no doubt the regulatory process and inter-agency relationships are complicated between Federal agencies, State environmental agencies, Tribal Nations and local communities, it is EMAB's goal to provide DOE-EM with recommendations that are specific and implementable across the spectrum of stakeholders. We attempted to understand the variability of regulatory frameworks and requirements from state to state and the challenges for DOE to implement consistent processes and improvements across the complex in order to deliver on this charge.

Because the charge contained a variety of topics with some more interrelated than others, EMAB chose to dissect the charge into smaller chunks where subcommittees could tackle the effort in accomplishable pieces. Subcommittees were formed allowing members to participate in topics where they felt they had the most experience and expertise and allowing for the most valuable contributions to be made on each topic. It is important to note that not every discrete topic in the charge was addressed. Due to the restrictions of COVID-19, the Board was not able to meet face to face as subcommittees or as a full Board as has been done previously. Therefore, each subcommittee was given the flexibility to focus on those areas where research and subsequent recommendations could be made within a reasonable timeframe to deliver the final report in the autumn of 2020.

The subcommittees were formed as follows:

Subcommittee 1 addressed Charge topic 1a Dispute Resolution Methods. Members of this subcommittee were: Shelly Wilson, Mark Fallon, Josiah Pinkham, Tracye McDaniel, Jack Craig, Tim Runyon

Subcommittee 2 addressed Charge topic 2, CERCLA/RCRA Integration and Streamlining Initiatives. Members of this subcommittee were: Randall Jostes, Diahann Howard, Frazer Lockhart, Elliott Laws

Subcommittee 3 addressed Charge 3, 4, 5 and 1b topics; Risk Based Decision Making, Future Land Use Designation, Points of Compliance, Levels of Protectiveness Standards. Members of this subcommittee were: Amy Fitzgerald, Kim Kearfott, David Abelson, Jane Hedges, Jim Rispoli, Bob Thompson, Nicole Martinez

The subcommittees met over the course of the summer via virtual sessions. All subcommittees utilized prior reports and studies, areas of success in regulatory processes, case studies, and expertise and experience of the Board members to arrive at recommendations in each of the three subcommittees

noted above. Each subcommittee's individual reports are included along with attachments of various reference materials the Board thought meaningful to EM as EM considers the recommendations.

Summary

EMAB met on March 24, 2021 and approved the Final Report for this charge. While each individual subcommittee is a stand-alone report with recommendations, it is important to point out some commonality of issues and recommendations across all three. Of most importance is an approach we highly recommend across all aspects of this charge; and that is the importance of partnering. Partnering with all stakeholders is essential to achieve faster, more efficient cleanup while reducing conflicts, formal disputes and damaged relationships with regulators and stakeholders which can impact the program cost and schedule for years to come. In our view, partnering would lead to many successful outcomes and far viewer disputes and long-standing conflicts.

The approach to partnering should be viewed by DOE as a 'must do'. A deliberate and formal approach should be developed jointly with DOE and across all regulatory stakeholders. And while some consistency can be applied to the partnering process, the partnering approach will need to be tailored perhaps within each state's set of stakeholders. Often, regulatory processes include EPA, State environmental agencies and DOE, however, the Board feels strongly the local community should be brought into the framework and discussions should take place early and often with local stakeholders.

Partnering is a commonly used term throughout many industries including the DOE and its contractors. However, putting partnering into routine practice is often hard to understand and defining and agreeing what behaviors are necessary by each individual involved in the partnering is necessary for it to be successful. This often entails specific skills development to achieve a level of partnering necessary in critical relationships such as those with regulatory and community stakeholders. The key approaches and outcomes to partnering include the following –

- Development of trust and mutual respect that strives to achieve open, transparent communications and openly acknowledging the difficulties
- Agreeing a common vision both short and long term
- Using a collaborative approach to problem solving using the expertise across all parties
- Recognizing the relationship is developed from individual behaviors with an aligned view of what to expect of each other
- Improved performance and results in all areas are achieved and seen as delivering mutual benefit against agreed objectives

Information, examples of successes and tools to aid DOE in the implementation of this core recommendation are provided in the report. As mentioned above, not all topics in this charge are specifically addressed in the report. If desired by the Department, EMAB is prepared to fully address all aspects in the coming months. However, we felt it important to submit the report with the research, progress and recommendations completed to date.

1) Dispute Resolution Subcommittee

Charge: Clarifying EPA-Related Initiatives That Cause Delays and Confusion – EM is experiencing delays and increased cost due to disputes and disagreements between DOE and its regulators relating to policy and program issues. EPA and the states appear to treat DOE different from other entities. Topics for investigation include:

a. Dispute resolution methods.
f. How to regulate within a constrained budget.
g. Milestones are used as a weapon to guide funding rather than guide substantive work.

Approach: The Dispute Resolution Subcommittee reviewed examples of dispute resolution and dispute prevention from around the DOE complex, flip sides to the same coin. The dispute prevention component is a study in resolving issues or solving problems before a dispute occurs, so that dispute resolution is not needed. Some regulatory paradigms exist where disputes are rare, and progress continues at a steady or accelerated pace. The Subcommittee determined that these examples were well worthy of study for overarching patterns of success. The examples that were studied include: Paducah Alternative Dispute Resolution, Oak Ridge Regulatory Partnership Framework, Savannah River Site Core Team, DoD Partnering in the Southeast, and Tribal Nation negotiation. The Subcommittee also visited work done on dispute resolution by the Dialogue between the Environmental Council of the States (ECOS), DOE, Environmental Protection Agency (EPA), and DOE host states. The Subcommittee is including elements 1.f and 1.g of the charge above as related to the dispute resolution study.

Observation and Analysis: The Subcommittee would like to note the excellent outgrowth of the above noted Dialogue Dispute Resolution Workgroup, which prompted several virtual trainings on the SRS Core Team process. These virtual sessions were made widely available and served to share lessons learned from the successful experience of the SRS Core Team. The Core Team training was also provided at the WM Symposium in 2020 and offered to EM leaders again in the Spring of 2020.

Various members of the Subcommittee contributed to the case study summary below.

Case Study	Basic Elements of Dispute Resolution or Prevention	Status	Frequency of Discussion	Use of Facilitator or Mediator	Other Key Factors in Success
Paducah C400 Project	In January 2020, DOE, EPA Region 4, and the state started an Alternative Dispute Resolution process through EPA's Conflict Prevention Center.	Paducah has held three ADR meetings since February 2020. The meeting attendees have ranged from project managers to the senior managers (Field Manager, Kentucky Commissioner and EPA Region IV Administrator). The meetings have resulted in very positive exchanges between the three parties that have led to a better	Scheduled as needed	Yes	A concurrent action also occurred: there was also a changeout in people involved. Paducah borrowed an EPA representative familiar with SRS Core Team for a while. The fresh outlook was helpful.

		understanding of each agency's concerns and challenges. The discussions have been focusing on DOE's desire to utilize EPA's Area of Contamination Policy. No decisions or resolutions have been reached yet. The Paducah Site is experiencing improved working relationships between the three parties, especially at the technical level. Paducah currently has one open dispute that is centered around the radiological effluent limit. This policy/program issue cannot be resolved until the Oak Ridge dispute related to radiological effluent limits is resolved. This Oak Ridge dispute is currently at the DOE and EPA headquarters level.			The discussion is to reach understanding of mutual viewpoints and differences between a regulation, a policy, and a preference.
Oak Ridge Regulatory Partnership Framework	In February 2020, leaders from DOE, EPA Region 4, the state, and UCOR committed to a process for improving relationships to minimize disputes. The leadership appointed an Emerging Issues Team of policy level representatives from each agency to work together to identify and resolve key issues.	The Leadership Team formed the Partnership in February 2020. The Emerging Issues Team first met in late March 2020. In only four months after formation, the Emerging Issues Team set ground rules, working parameters, identified priority issues, and resolved three of those priority issues. Several of these priority issues had been lingering for years between the parties. The two teams continue to meet frequently to resolve issues for continued cleanup at Oak Ridge. The refinement of the framework is in progress since it is in the early stages of working together and resolving key issues.	The Leadership Team convenes quarterly. The Emerging Issues Team convenes currently on a weekly basis. The informal creation of project teams put in place for reviews of issues and convene as needed.	Yes	The Partnership agreed upon a set of ground rules for operation, focusing on open, frequent communication that centers on interests of the parties rather than positions. The framework has been in place since February 2020; therefore, elements of success are currently being measured. Some early "wins", neutral locations for meetings, have generated higher attendance and use of a facilitator in meeting provides

					an environment where goals and outcomes are clearer. The optimal goal is to create a common voice and align communications for all parties.
Savannah River Site Core Team	Established in the 1990s, the SRS Core Team, made up of project managers from DOE, EPA Region 4, and the state, have made countless cleanup decisions through a collaborative approach with very few disputes.	The Core Team has been going strong for over 20 years and has reached cleanup decisions at the majority of contaminated sites at SRS. Over this time there have been less than five disputes under the Federal Facility Agreement.	The Core Team meets as needed. The leaders of the Core Team meet quarterly. As a matter of practice, the Core Team members communicate weekly.	Yes	The Core team adheres to team developed Principles of Environmental Restoration and refined processes for reaching agreement. Over 20 years of Core Team practice have contributed to strong trust and communication between the parties.
DoD Partnering in the Southeast	In the 1990s DoD established widespread partnering for cleanup at most of its sites in the southeast. The partnering consists of 3 tiers of communication forums that include representatives of DoD, EPA, and the respective state. See attachment for example DoD partnering charters.	Disputes have been drastically reduced using the partnering approach. Rather than setting long term enforceable milestones, the cleanup partners update near term milestones (in two-year increments) in even years through a Joint Execution Plan. Odd years are used for planning. Long term informal milestones are reflected in an Exit Strategy.	Each team tier meets regularly at a specified frequency.	Yes, until the team graduates in maturity to self-facilitation. A facilitator also participates later in less frequent, regular team self-evaluations.	DOD makes a strong and continual investment in team and skills building for team decision making. The skills building is usually provided by the facilitator in a kickoff session and at regular frequencies thereafter. The teams conduct regular self-evaluations of team performance coupled with team maintenance. In SC the partnering process has yielded strong trust and collaboration

					coupled with impressive cleanup results.
Nez Perce Examples of Negotiation Values	This case study focuses on some observations from a Nez Perce representative gleaned from negotiations. The observations noted that most disputes are eliminated through negotiation.	NA	NA	As needed	Nez Perce negotiation seems to center on values that are common to successful conflict prevention in the other case studies, such as: -Negotiate for the sake of relationship preservation. -Endeavor to avoid litigation because of the value placed on relationships. -A smart sovereign checks with its partners. -Start with common values, then understand why there are differences. - "Winning" in a relationship, if the win is not mutually beneficial, it is not a long-term win. -Collaboration in the early stages of idea formation is most effective.

From analysis of the case studies above, the Subcommittee draws the following conclusions:

- Dispute resolution is a necessary option. However, there are significant risks if participants rely too heavily on dispute resolution as a decision-making process. Potentially negative impacts include:
    - Disputes can take a long time to resolve. Resolution is unpredictable and jeopardizes cost and schedule.
    - Disputes can have negative residual effects. Cooperation at some point in the future will be necessary, usually when least expected.
    - Continuing disputes increase the possibility that a conflict eventually becomes intractable.
    - Continuing disputes negatively affect media coverage and community confidence.
    - High level or long-term disputes jeopardize funding.

- Sustained cleanup progress requires continual engagement and agreement of all decision makers. Cleanup is a marathon rather than a sprint, which is why a "win this time" approach

does not work long term. If one of the decision makers is out of sync or perceives a power imbalance, they will find a way to address that imbalance, including causing delay. The collaborative partnering approach aligns decision makers, enhances power, and enables mutual decisions. A collaborative approach is the best way to speed up decisions, meet schedule expectations, build trust for more flexible and innovative decisions, and improve decision quality.

- Success tenets across the case studies above include:
    - Formation of regulatory decision-making team (typically DOE, EPA, state, sometimes contractor),
    - Regular and frequent team discussions,
    - Use of an independent, third party facilitator,
    - Investment in team decision making and other team building skills,
    - Regular team self-assessment of efficacy,
    - Commitment to collaborative values, and
    - Team alignment to common goals.
- It is never too late to turn towards a more collaborative team process that prevents disputes. However, it should be noted that when conflict has become intractable, additional or independent expertise may be needed.
- Steady, sustained cleanup progress gains the highest efficiencies from a constrained budget. Rolling milestones that are updated annually for the near term (current year plus one or two) take advantage of
    - Most current site conditions, technologies, and budget knowledge,
    - The IDIQ contract with reliance on Task Orders, and
    - Flexibility for out years.
- A shift as much as possible to rolling near term milestones will allow DOE to make best use of IDIQ contracts and avoids holding budgets hostage to potentially unrealistic future milestones. However, this approach only works well if the regulatory decision framework yields cleanup progress in a sustained, reliable manner. If regulators do not have confidence in steady, sustained cleanup progress, they will continue to put emphasis on the importance of out year milestones.
- Dispute prevention through early collaborative partnering is the most certain path to success in sustained cleanup that maintains schedule and works well with the current desired contracting approach and budget challenges.

<u>Recommendation #1</u>:
Explore increased use of collaborative partnering as the regulatory framework for DOE cleanup projects across the complex, incorporating success tenets from the case studies. This would include:

- **Formation of regulatory decision-making team (typically DOE, EPA, State and sometimes contractors),**
- **Regular and frequent team meetings and discussions,**
- **Use of an independent, third party facilitator when needed,**
- **Investment in team decision making and other team building skills,**
- **Use of regular team self-assessments to evaluate efficacy,**
- **Commitment to collaborative values, and**
- **Team alignment to common goals.**

<u>Recommendation #2</u>:

Arrange for a leadership briefing by DOE-SRS, South Carolina Department of Health and Environmental Control, and Environmental Protection Agency Region 4 on the SRS Core Team to all EM Headquarters and Field Managers to ensure the entire organization understands the benefits of collaboration among the cleanup decision makers. Field Managers may invite their respective state and EPA leadership to participate as well.

2) CERCLA/RCRA Integration and Streamlining Initiatives Subcommittee

Charge: EM sites are being cleaned up under both CERCLA and RCRA regulations, creating confusion in implementation, and causing inefficiency and inconsistencies in requirements.

Approach: In an effort to find solutions and proffer concrete suggestions, the CERCLA/RCRA Integration and Streamlining Subcommittee first identified root causes that inhibit integration and streamlining of the CERCLA and RCRA programs under the umbrella of the Federal Facility Agreement (FAA). As inhibitive root causes were identified the subcommittee turned its attention toward methodologies both proven and calculated to reduce inter-agency and inter-program friction.

Inherent at most EM cleanup projects is a triad consisting of The Department of Energy, the US EPA, and various State Regulatory Agencies. Inasmuch, the subcommittee chose to interview subject matter expert's representative of each branch of the aforementioned triad. Those interviewed for this report were:

- **Jane Hedges (State Regulatory Agency Perspective)**
  Former Program Manager for the Washington State Department of Ecology (Ecology) Nuclear Waste Program. Ms. Hedges Represented the State of Washington concerning DOE's Hanford Nuclear Facility cleanup. In addition, Ms. Hedges is a member of EMAB

- **Charles Howland (US EPA Perspective)**
  Former Senior Assistant Regional Counsel at the US EPA's Mid Atlantic Regional Office. Mr. Howland has been a key driver in the successful integration of CERCLA and RCRA programs at Department of Defense sites, as well as, private sector sites. (See attached Sparrows Point White Paper)

- **Jim Woolford (US EPA & Federal Facilities Perspective)**
  Former US EPA Director of Superfund Remediation and Technology Innovation, former Acting Deputy Assistant Administrator for the Office of Environmental Information and former Director of the Federal Facilities Restoration and Reuse Office. Mr. Woolford has first-hand experience at integrating CERCLA and RCRA as he led EPA's Superfund program from 2006 until his retirement this year.

- **Brian Hennessey DOE-SR (DOE Perspective)**
  Current Federal Facilities Agreement Program Manager at DOE's Savannah River Site (SRS). Mr. Hennessey has a successful 25-year history integrating CERCLA with RCRA. Mr. Hennessey has lectured on "The Principals of Environmental Restoration – Improving and Accelerating the Cleanup Decision-Making-Process".

Observation and Analysis: The U.S. Department of Energy (DOE) must comply with the complex integration of two environmental statutes that address both the investigation and the remediation of releases of hazardous substances and hazardous wastes into the environment. These two statutory programs, the corrective action program of the Resource Conservation and Recovery Act of 1976 (RCRA) as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA) and the remedial response program of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), are the two main regulatory programs that directly impact Environmental Restoration activities at DOE facilities.

Problem Identification: RCRA has traditionally focused on the regulation and the granting of permits for ongoing hazardous waste activities, while CERCLA has traditionally focused on sitewide cleanup of discontinued operations. While the overarching objectives and goals of the agencies and the two programs align well with each other, difficulties arise concerning implementation and process. The respective programs differ in:

- Terminology
- Methodology
- Standards
- Procedures
- Interpretation
- Structural Mechanism
- Culture
- Policy

Predictively, the outcomes derived from the blending of CERCLA and RCRA often lead to:

- Duplication of Effort
- Disputes
- Mediation
- Litigation
- Loss of Schedule
- Cost Overruns

The implementation of the two distinct and dissimilar programs at one cleanup site can be analogous to having two steering wheels, two gas pedals, two brakes and two drivers with separate approaches determined to simultaneously drive the same bus across town.

Recommendation #1: Two sub-recommendations are part of Recommendation #1.

- **Multi-agency partnership agreements should be negotiated at the highest agency level and memorialized in writing concerning each DOE site. Subsequently, the partnership agreements should be re-ratified by all executives during the course of established executive level meetings.**

- **Intensive training regarding the benefits, techniques and implementation of partnering should be deployed to all field level personnel and refreshed on a quarterly basis.**

In spite of the significant programmatic differences that defy the integration and streamlining of CERCLA and RCRA, the subcommittee has interviewed multiple individuals demonstrating superior inter-agency and inter-program successes at their respective, past and current, projects. It has become abundantly clear to the subcommittee that the development of inter-agency and inter-program success is largely dependent upon the development of trust and cooperation between the parties at the field level.

Therefore, short of a legislative solution that would effectively unify CERCLA and RCRA into a singular indisputable statutory program to be followed by all, the subcommittee strongly recommends an enhanced implementation of an Inter-agency partnering program. For a good example, the DOE need look no further than to the efforts at the Savannah River Site (SRS).

Inter-agency trust and cooperation must first be promulgated at the highest levels.

In 2003, a "*Memorandum of Agreement for Achieving an Accelerated Cleanup Vision"* was signed by all parties at SRS[1]. Including but not limited to:

- Deputy Commissioner for Environmental Quality Control South Carolina Department of Health and Environmental Control
- Regional Administrator U.S. Environmental Protection Agency – Region 4
- Manager Savannah River Operations Office U.S. Department of Energy
- FFA Project Manager Division of Site Assessment and Remediation Bureau of Land and Waste Management South Carolina Department of Health and Environmental Control
- FFA Project Manager Environmental Restoration Division Savannah River Operations Office U.S. Department of Energy
- FFA Project Manager DOE Remedial Section Federal Facilities Branch Waste Management Division U.S. Environmental Protection Agency – Region 4
- Program Manager Operations and Decommissioning Division Savannah River Operations Office U.S. Department of Energy

The executed Memorandum of Agreement was preceded a year earlier by a foundational letter dated May 8, 2002. The foundational letter was signed by the following:

- Assistant Secretary for Environmental Management U.S. Department of Energy
- Manager Savannah River Operations Office U.S. Department of Energy
- Deputy Commissioner for Environmental Quality Control South Carolina Department of Health and Environmental Control
- Regional Administrator U.S. Environmental Protection Agency – Region 4

The following foundations and principals were set forth in the letter:

[1] The Memorandum of Agreement can be viewed at:
https://www.srs.gov/general/programs/soil/gen/moaaccel.pdf

Foundation

- The parties agreed that accelerating the reduction of risk and cleanup, in a cost-effective manner, is in the interest of the Parties, and the people of South Carolina and the region.

- The parties shared a vision for Environmental Management (EM) activities at SRS to accelerate completion of all cleanup by 2025.

- The parties have built a cooperative and effective relationship and base of success. The efforts contemplated herein will build on that success to mutual benefit, improving on the performance of a strong program. Such a commitment, including funding necessary to sustain the accelerated cleanup objectives, provides a truly significant opportunity to accelerate risk reduction and site cleanup.

- The parties agree that all activities will reflect the respective responsibilities of each, and will be done in compliance with applicable laws and regulations.

- The parties continue to value the importance of enforceable commitments to sustain progress.

- The parties agree, in setting priorities and cleanup strategies, to recognize, consider and include the principle of addressing greatest risk first, balanced by risk to workers, the public and the environment.

Principles

- Support risk-based decision making

- Support accomplishment of Performance Management Plan (PMP) initiatives with the exception of those initiatives affected by ongoing federal litigation. The Parties are committed to the overall goals and objectives of the PMP and will strive to make significant progress in PMP implementation recognizing that difficult policy and regulatory issues may arise. We will continue to seek opportunities that build on our mutual successes within the applicable laws, regulations, and agreements.

- Support EM accelerated cleanup beyond PMP initiatives. Through numerous productive collaborations and working sessions at all levels. EPA, SCDHEC and DOE are actively identifying opportunities for fulfilling their SRS Federal Facility Agreement and Site Treatment Plan obligations by using more efficient methods, leading to accelerated cleanup.

An additional example of superlative CERCLA/RCRA integration at SRS centered upon the HLW tank closure, which also integrated the Clean Water Act and Section 3116 of the 2005 NDAA. Although the regulatory requirements were extensive and complex, the state, SRS and the contractors chose to combine all regulatory reviews into “One Process”. The outcome of the one process approach radically reduced duplicity of process, workhours and expenses. [See attached, *“Savanah River Site Liquid Waste Regulatory Interaction Framework”]*

The successful Rocky Flats Closure Project which also benefitted from strong inter-agency partnership had a similar regulatory underpinning as in the SRS example above. The July 1996 Rocky Flats Cleanup Agreement (the DOE, EPA, and Colorado FFA) was preceded by Rocky Flats Vision statement signed by the DOE Assistant Secretary for Environmental Management, the DOE Rocky Flats Site Manager, the Governor and Lt. Governor of Colorado, the EPA Deputy Administrator, the Acting Regional Administrator for EPA Region 8, and the Executive Director of the Colorado Department of Public Health and Environment. The Rocky Flats Vision was included as Appendix 9 to the FFA and also served as the basis for a Preamble to the FFA which provided objectives "…to guide implementation of the Rocky Flats Cleanup Agreement (RFCA) in order to achieve the goals expressed in the Vision."

Another partnering framework that could also be used is the Department of Defense through its base realignment and closure program that has a common vision process and framework. (https://www.acq.osd.mil/brac/docs/DoD-BRAC-2005-Report-to-Commission.pdf.)

Many experts have published white papers and articles pertaining to the methodology and success derived from inter-agency partnering at federal cleanup sites. Following is a paraphrased opening paragraph of one such white paper entitled, *Overview Of Partnering, And Its Potential Usefulness For Reducing Disputes Under Superfund Enforcement Documents, And Improving The Timeliness Of Resolving Those That Remain,* Charlie Howland, February 10, 2018.

> "Several EPA Regions have successfully used partnering to improve the quality and pace of cleanups at federal facilities…to help reduce the number of disputes that enter the dispute resolution process set out in our enforcement documents, and speed the resolution of those that still must be addressed. **In short, partnering recognizes that the best way to resolve disputes is to prevent them in the first place…[p]artnering constitutes a mutual commitment by the parties on how they will interact… [It] is primarily an attitude adjustment where the parties form a relationship of teamwork, cooperation, and good faith performance."** [Emphasis added] (Full white paper attached)

The subcommittee has observed that the most effective Inter-agency partnering programs start at the highest levels and work their way down to the project level. However, the long-term success of partnering programs is primarily dependent upon sustained buy-in and application from individuals at the field level. Administrations change. Secretaries, directors, and deputies come and go as opportunity presents, but the sites and the work ahead remain. Therefore, the subcommittee strongly recommends the establishment and ongoing maintenance of partnering training at the field level.

"When you have one bus simultaneously driven by two drivers, teach the drivers to cooperate."
CERCLA/RCRA Integrations and streamlining - EMAB Subcommittee, 2020

Recommendation #2:
Consider developing and advocating for specific legislative language that would provide shared enforcement authority under CERCLA to State participants in FFAs.

Legislative language may be a tool that could facilitate use of the CERCLA basis for environmental remediation decisions in a manner that would be acceptable to state officials. In Federal Facility Agreements the state environmental offices and elected officials typically insist upon inclusion of the Resource Conservation and Recovery Act (RCRA) legislation and implementing regulations as a basis for

the DOE environmental program in their state, sometimes as the primary basis. Most states have authority for RCRA regulation enforcement delegated to them from the Environmental Protection Agency (EPA) and thus state environmental staff are more familiar with RCRA as compared to CERCLA regulations. Often these State RCRA authorities have environmental standards that are stricter than corresponding Federal standards. Also, the states have legal enforcement options available through RCRA that are not available through CERCLA. Currently the only legal enforcement options through CERCLA must come from EPA and the Federal level. At most DOE sites the most engaged partner in the FFA is the state. This is entirely understandable since the state has the most direct interest in the environmental remediation for state residents. In a number of cases, the EPA Regional Offices are located in different states with only limited physical visits to the DOE site. This greater state engagement has the effect of increasing the role of RCRA regulations in management of the environmental remediation. However, CERCLA risk-based decision framework is better suited to most DOE remediation situations, and thus the greater influence of the RCRA standards-based decision framework is counter to best remediation management. The variability in environmental standards between states also means that the greater reliance on RCRA tends to work counter to consistency in environmental remediation across DOE sites in different states. In addition, CERCLA has a much more robust and interactive community participation regime than is available under RCRA.

Legislative language that would allow EPA to designate states with some enforcement authority under CERCLA could be a means to make greater reliance on CERCLA regulations that would be acceptable to the states. In any FFA the states will insist upon the ability for legal enforcement independent from Federal action. If legislation allowed designation of some enforcement authority under CERCLA to states for FFA implementation, it could lead to greater acceptance and use of the CERCLA risk-based remediation framework. Since RCRA enforcement authority has already been delegated to most states, the precedent already exists for delegation of authority to states from federal environmental legislation.

There would still be challenges to implement a legislative approach. State environmental staff and Attorney General (AG) offices would have a learning curve concerning the regulatory and legal aspects of CERCLA and their application to protect state interests. A similar learning curve would even occur in EPA Regional Offices which have both RCRA and CERCLA focused offices that have sometimes presented conflicting opinions within the EPA about a particular DOE site. Also challenging to work out would be the specific delegation and coordination of enforcement authority between EPA and state AGs. A legislative approach is therefore a longer-term approach that will require resolution of technical, legal, and political issues. However, it is seen to offer a path to more permanent improvements in overall FFA implementation, partnership, and consistency that cannot be achieved if the inherent conflicts between CERCLA and RCRA continue as part of the FFAs.

Use of a legislative approach requires a more holistic analysis and more careful preparation than the FFA improved partnering approach from Recommendation #1 because of the legal and political aspects of the solution. A macro level concept of implementation would involve the major steps below. Many more detailed steps would need to be developed and iteration is likely since the application across all states and DOE sites to gain consistency would therefore require coordination with all impacted states.

- Document the basic concept of partial CERCLA delegation to states and vet with DOE Office of General Counsel

- Coordinate and vet with EPA regulatory policy and legal staff
- Coordinate and vet with Congressional Cleanup Caucus
- Coordinate and vet with the most impacted states, likely those with longest term DOE environmental remediation missions
- Charter multi-agency team (DOE, EPA, selected states) to develop draft legislative language for consideration
- Support consideration and implementation of new legislative language

3) Risk Based Decision Making, Future Land Use Designation, Points of Compliance, Levels of Protectiveness Standards Subcommittee

As stated, EM is committed to working with the U.S. Environmental Protection Agency (EPA), state regulators, Tribal Nations, and EM stakeholders to update regulatory approaches to increase the pace of cleanup progress.

This subcommittee is tasked with examining four topics which are integral to the cleanup process. The subcommittee has sought to identify key studies, issues and cases that illustrate challenges and opportunities in each area. Recommendations and next steps for implementation are provided, with a goal toward helping EM achieve progress across a range of diverse field sites.

Topic #1: Risk Based Decision Making, led by Jim Rispoli

Charge: EM has not been allowed to align its cleanup with risk-based decision making. In 2019, the Government Accountability Office asked EM to develop a program-wide strategy that outlines how it will balance risks and costs across EM sites. *(See U.S. General Accounting Office, Priority Open Recommendations: Department of Energy, GAO-20-285PR, Published: April 22, 2020. Publicly Released: April 29, 2020).*

Introduction: EMAB has researched and considered the topic of "risk informed decision making," not to be considered equivalent to "risk-based decision making" or "probabilistic risk assessment (PRA)." In the process of prioritizing work in the EM cleanup program, as with any program, consideration of risk is an essential component. To foster an approach of risk informed decision making, the steps are: identification of risk; risk analysis; risk management steps to include mitigation, removal, or sometimes acceptance. The result would ideally be a list of projects and activities within the EM program, prioritized by risk (i.e. risk based). This approach would then permit inclusion of other aspects of significance, such as workforce stability, utilization of technology, regulatory provisions and legal requirements, short term completion of remediation of lower risk activities, local government values and priorities, and so forth (i.e., risk informed).

Observation and Analysis: It is recognized that this subject has been recently studied, and reports issued, by both CRESP and by the National Academies. Two recent reports, respectively, are the "Omnibus" report done by CRESP, and the "Assessment of Science and Technology for the Department of Energy's Defense Environmental Cleanup Program" (S&T Report) by the Nuclear and Radiation

Studies Board at NASEM, among others. The consistent recommendations include the formulation of a Department-wide priority list that is "risk informed" considering risk and other factors. It is not readily apparent that transparency in the cleanup program includes such a listing that is complex-wide, as compared to site by site. (It should be noted that the NASEM report suggested bringing in the Corps of Engineers to perform a complex-wide cost and schedule review, for both consistency of approach throughout the program, and to remove any "unconscious bias." This effort would result in a consistent identification of technical and programmatic risk which would then be used to develop a risk-informed complex-wide priority list to be used in decision making on S&T needs among other things.)

It is also important to recognize that risks posed at the various DOE sites are not exclusive to nuclear and other contamination, whether within buildings and facilities, or in soil and groundwater. For example, the maintenance condition of infrastructure could impose a significant risk to safety of the worker and the public. One example of this is the WESF at the Hanford site, where it is publicly reported that the deterioration of the concrete in the basin could compromise the retention of the nuclear material currently being water-cooled in the basin. Other examples of deterioration of infrastructure and maintenance condition would include the collapse of a tunnel at the Hanford site, aging water treatment infrastructure at the Oak Ridge site, and the risk of loss of cooling water resulting from deterioration of water supply mains on the installation, as well as aspects of the underground facilities and installed systems at the WIPP.

It is likewise important, in a true complex-wide identification of risk, and risk analysis (steps one and two of a risk management plan) that there will be risks that are not yet recognized, but are emergent. Such would have been the case with the recognition of the threat posed by mercury at the Oak Ridge site. Thus, a true risk analysis must begin with identification of risk across the facilities and infrastructure, as well as the contamination from both recognized sources and other potential emerging sources.

The process of developing a risk management plan, to include identification of such risks, and then a deliberative process to address whether to accept, mitigate, or remediate (remove) those risks would be essential. Were a numerical ranking system to be consistently implemented across all the DOE sites, it would then be possible to integrate the list across all the sites.

This type of approach would ideally offer transparency such that it could be used with the EPA and State regulators, as well as the DNFSB.

This approach would help with budget prioritization, recognition of similar applicable approaches to risk management (lessons shared across sites), and improved collaboration on technology development to address the mitigation or remediation of risks based on the integrated priorities. Decisions are regulatory decisions that have risk standards as a basis, based on cleanup level requirements.

Key considerations such as scheduling, budget and regulatory mandates must be included in risk informed decision making. Often a lower risk activity may make perfect sense when done in tandem with a higher risk project. For example, completing a 'regional' or areawide cleanup project rather than doing a single high risk action and leaving lower risk cleanup to be done at a later date doesn't reflect positive benefits of completing an area with trained workforce, equipment scheduling and use or repeated monitoring/sampling in the unfinished zones.

Who determines risk and what is the yardstick for measuring cleanup? Use of existing regulations, land use designation and potential for exposure should all weigh into the decision.

Recommendation:
The EM program should develop a consistent approach towards risk management, with the objective being a risk-informed, complex-wide integrated priority list of projects and other work. This approach would permit identification of similar risks across the remaining sites, a focus on technology development to address those risks as may be applicable, better informed consistent decision making concerning the options to address the risk, and a more transparent budget process that is informed by such an approach. Continue or re-invigorate the discussions with states, EPA and DOE (HQ and Field) to put definitions and directions around risk determination and decision making. Include local government representatives and community stakeholders at the beginning of the process to communicate program goals and objectives, and to incorporate local views that may impact risk-informed prioritization. Where appropriate, include local affected tribal nations in this dialog.

Review Risk Evaluation tools such as the CRESP Risk Report done for Hanford, which pointed out some key risks {tunnels} to all the parties that hadn't been high on the priority list and when a tunnel collapsed, focus was diverted from all other activities to address the risk.

Update Land Use Plans so final decisions on site use are clearly determined which will require tribal, stakeholder and particularly local government involvement and acceptance.

Topic #2: Future Land Use Designation, led by Amy Fitzgerald

Charge: Future Land Use Designations - There should be a consistent process and criteria for making, and when necessary, revising land use determinations and devising ways to ensure that land use determinations are used appropriately in risk assessments and other remedy selection steps.

Introduction: According to the U.S. Department of Energy (DOE), the Environmental Management program is currently responsible for overseeing nearly 600,000 acres of land across the country, which is equivalent to approximately 13 times the size of Washington, D.C. (Source: https://www.energy.gov/em/mission). Of these, tens of thousands of acres of land are expected to be transferred to DOE's Office of Legacy Management (LM) after active environmental remediation has been completed. Anticipated future land use is a major factor that determines the level and cost of remediation, but also affects the long-term mortgage costs associated with monitoring and institutional and land use controls. Consistent with the EM mission, it is appropriate that the agency would examine the process for making and revising land use determinations to identify opportunities to reduce programmatic costs and liability. The issue of future land use also relates to risk prioritization, as contaminated real property may be deemed a high priority for reuse by local authorities or as a high-risk that threatens human health or the environment. (See discussion in U.S. Government Accounting Office, *Priority Open Recommendations: Department of Energy GAO-20-285PR*: Published: Apr 22, 2020. Publicly Released: Apr 29, 2020).

Observation and Analysis: The issue of land use designation in the context of DOE's EM program is complex, but for purpose of this report, focus is placed on two factors that significantly affect federal

government liability and cost at DOE sites. The first of these is that sites which successfully complete remediation share a strong emphasis on stakeholder/community engagement with DOE, the Environmental Protection Agency (EPA), and state regulators in the development of future land use plans.

At the outset of the federal cleanup program, a number of DOE sites were placed on the National Priorities List, which required the sites to be cleaned up under the provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). These were among the most challenging and environmentally complex sites: the Oak Ridge Reservation (ORR), the Savannah River Site (SRS), the Hanford Site, and Rocky Flats Nuclear Weapons Plant. Other sites were added including Brookhaven, Fernald, Idaho, Lawrence Livermore, Mound, Paducah, and Weldon Spring.

As site characterization progressed at these sites, it was increasingly clear that the relationship among baseline risk assessment, remedy selection and future land use would directly impact the cost and direction of the EM program. The question of "how clean is clean?" became a common theme across the DOE complex. Future land use plans were developed at many of the DOE sites to describe likely future use scenarios for real property within the EM portfolio.

A directive issued by EPA in the early years of the EM program is still relevant as it clearly explains the importance of land use designations and community involvement: "Future land use assumptions allow the baseline risk assessment and the feasibility study to be focused on developing practicable and cost effective remedial alternatives. These alternatives should lead to site activities which are consistent with the reasonably anticipated future land use." (EPA Office of Solid Waste and Emergency Response Directive No. 9355.7-04). The agency emphasized that discussions early in the scoping phase with local land use planning authorities and other appropriate officials increased understanding about the "reasonably anticipated" future uses of the land.

DOE's land use planning across the complex varies from site to site. An example of the formal, comprehensive approach is the Hanford Comprehensive Land-use Plan Environmental Impact Statement (HCP-EIS) (DOE/EIS-0222, 1999), which addressed anticipated future land uses for the Hanford site. Other DOE sites have not undertaken site-wide National Environment Policy Act (NEPA) studies, relying on land use documents prepared locally, usually in consultation with stakeholders at the site.

The Rocky Flats closure is among the best examples of DOE's engagement in future land use, as a wide array of federal, state, and local government officials---along with interest groups and regional stakeholders---participated in the development of cleanup up standards and long range land use plans for the site. Congress passed the Rocky Flats National Wildlife Refuge Act of 2001, which established the framework for the cleanup and closure of Rocky Flats, and transfer of administrative responsibilities from the Secretary of Energy to the Secretary of the Interior. The Rocky Flats Coalition of Local Governments was active in the process, and instrumental in garnering public acceptance for future use of the site.

As a result, the 5,237-acre Rocky Flats National Wildlife Refuge was created in 2007 and is managed by the U.S. Fish and Wildlife Service. While the cost to remediate the site approached $7 billion cleanup in 2005, it likely would have climbed much higher if the parties had not agreed on the designated future

land use. DOE's LM organization maintains an additional 1,300 acres at the site to ensure long-term institutional controls are functioning as designed.

A second factor affecting cost is the ability of DOE to transfer excess or underutilized real property at EM sites. Early consensus on how real property will be used upon transfer---the property's future use--may reduce, defer, or in some case, eliminate the federal government's liability. DOE Order 430.1B, *Real Property Asset Management*, requires DOE sites and program offices to consider a real property asset's disposition before decisions are made. The Order calls for the agency to "establish a corporate, holistic, and performance-based approach to real property life-cycle asset management that links real property asset planning, programming, budgeting, and evaluation to program mission projections and performance outcomes."

DOE has statutory authority to transfer real property using several methods: (1) direct transfers to local governments and other third parties using the Atomic Energy Act or the Atomic Energy Communities Act; (2) real property transfers to state entities or through auction by the General Services Administration; or (3) utilizing the authority of Title 10 CFR Part 770, *Transfer of Real Property at Defense Nuclear Facilities for Economic Development.*

The East Tennessee Technology Park in Oak Ridge is a useful example to show how DOE, the agency's contractors, and the community partnered for almost 20 years in planning the redevelopment of the former K-25 uranium enrichment site, located on DOE property inside the city limits of Oak Ridge. Early on, key stakeholders, including state, city and county representatives, reached consensus that the ~1200-acre site would be redeveloped as a brownfield site for future industrial reuse. The "Reindustrialization" team at DOE utilized the Title 10 CFR Part 770 authority to transfer property to the local community reuse organization. Using this authority had the extra advantages of transferring property at little or no cost if the future use was to promote economic development, and allowing DOE to provide indemnification to the new owners in the event that an environmental liability was discovered at a later date.

Recommendation:
Land use designations have a direct impact on cleanup standards; whether the end state is unrestricted use, recreational use, or industrial use have ramifications and will likely affect programmatic cost and schedule. The degree to which DOE engages EPA, state regulators, local governments and the public can significantly also affect the cost, and ultimately the success of cleanup.

Early involvement in decisions about future land use can build trust and create consensus. In some communities, local government officials are frustrated that they don't have a seat at the table early in the process. The CERCLA process does not lend itself to early communication or comprehensive site wide future land use planning. As a result, DOE and regulators---particularly if there is a dispute—will work to reach agreement and then release their decision to the community in the form of a draft Record of Decision. By that point in the process, the community may have little influence the decision absent a legal challenge or congressional mandate. Site wide land use planning could be institutionalized using NEPA processes, reviewed and amended, as appropriate.

DOE should begin the process to update or amend land use plans so they reflect community values and current land use needs. Many of the land use plans within the complex are dated. They may not

reflect adjacent community growth, neighboring land use designations, or changing missions. Some may not have had active local government, tribal or stakeholder input into the development.

DOE sites also vary significantly in their proximity to populated areas. As such, DOE should establish and maintain relationships with regulators, affected local governments and planning organizations to regularly discuss how cleanup goals align with public health and safety, community development, and desired future land use. Build upon and replicate successful initiatives from around the DOE complex.

Topic #3: Point of Compliance, led by David Abelson

Charge: Point of Compliance (POC) - POCs deal with concentrations of waste in the buffer zone surrounding the disposed waste. EM can work to justify larger or smaller buffer zone for Land Use Plans and commitments in Environmental Impact Statement but needs to work with other agencies to communicate that there is no increased risk.

Introduction: Points of compliance are one of the most misunderstood elements of environmental cleanups. To most outside of the fence, including members of Congress and their staffs, standards, whether for water or air, are presumed to be met everywhere, not simply at specified areas (i.e., POCs). And yet, fundamental to a successful cleanup is establishing technically and politically sound reasons for adopting POCs and communicating the reasons for POCs widely.

Observation and Analysis: Of note, while the charge to the EMAB focuses on buffer zone around waste, the following examples concern water quality compliance.

Typically, there are four primary considerations when establishing POCs:

1. Proximity of the resource to sources of contamination
2. Technical practicability of achieving particular cleanup levels
3. Vulnerability of the resource and its possible uses
4. Exposure and likelihood of exposure and similar considerations[2]

Within that context, the EMAB recommends the following additional evaluation criteria be utilized. Each part is interconnected, and each is integral to risk-informed decision making.

1. Establish clarity of purpose: POCs bridge what is technically required with on-the-ground challenges (e.g., terrain) and overall goal for the cleanup. Clarity of purpose should provide the foundation for developing POCs, because only through clearly identifying and articulating the purpose are the parties able to link priorities and interests, identify creative outcomes and support risk-informed decision-making.

2. Link the goals for the POCs to agency and community priorities and interests: In complex environmental cleanups there is no singular priority or interest. By linking decisions regarding the

[2] "Handbook of Groundwater Protection and Cleanup Policies for RCRA Corrective Action for Facilities Subject to Corrective Action Under Subtitle C of the Resource Conservation and Recovery Act," April 2004 https://www.epa.gov/sites/production/files/2017-02/documents/gwhb041404.pdf

establishment of POCs to priorities and interests, DOE, the regulatory agencies, Congress and the communities move towards their shared goals for the cleanup. As the following example from Rocky Flats highlights, the twin goals were water quality protection for water leaving the federal site and regulatory relief upstream where meeting standards was less assured. Establishment of POCs was central to the agreement reached.

3. Identify creative outcomes that can be utilized: Generally, there are many regulatory-compliant options for where the agencies can establish POCs. In developing strategies for bringing together federal, state and local interests, creativity in where and why POCs are established often allow the parties to adopt solutions that area broadly supported. The two examples discussed below provide excellent case studies to support these criteria.

4. Draw a tight nexus between the goals of risk-informed decisions and the establishment of POCs: Across federal facilities, POCs vary depending on the parties' goals. As discussed earlier in this EMAB report, at the center of risk-informed decision-making is risk identification and risk management. POCs can prove central to that analysis and resulting decisions.

Case Studies:

Savannah River: There were two old landfill areas in the same general area: Mixed Waste Management Facility (MWMF) and the Old Burial Ground (OBG). The MWMF was managed under RCRA and the OBG was managed under the FFA (both a RCRA and a CERCLA unit). Both had groundwater plumes that were commingled and essentially inseparable.

Rather than set two points of compliance for the two landfills, the parties set one POC downgradient of the combined, comingled plumes, essentially treating the groundwater as one plume. In effect, the OBG got a small break as its groundwater got a little more room for dispersion, but technically the remediation was better in a holistic sense and the parties were not needing to determine which source a molecule of tritium was coming from, only that it was managed appropriately.

Rocky Flats: During cleanup, local governments, led by communities directly downstream of Rocky Flats, prioritized water quality protection. These communities in particular supported the applying the state's plutonium standard – a standard that is 100 times more protective than the applicable federal alpha radiation water quality standard – to all surface water flowing off-site onto non-federal lands. Inherent in this position was establishing POCs that would measure water leaving the federal site. The state regulator obviously supported this view.

DOE agreed to support this request and worked with the communities to establish POCs at points that would lend technical and political credence to the idea that water quality was protected. In return, DOE sought regulatory relief upstream of a specified point. In securing regulatory flexibility upstream of the POCs, DOE's was addressing in regulatory space an important uncertainty: it was unclear whether cleanup actions would ensure water standards would be met in the parts of the drainage closer to the old production areas.

The deal that was struck ensured that DOE and the communities' interests were met—and central to this agreement was agreement on the placement of the POCs. This outcome was creative as it was allowable under the existing regulatory framework but did not track a standard approach to the establishment of POCs.

Recommendation:
The four additional criteria offered herein are broadly applicable to POCs and other elements of environmental cleanups. The EMAB recommends DOE adopt the four additional criteria discussed above and develop mechanisms to ensure site managers utilize them in decision-making. Notably, like other recommendations included in this report, their successful use is contingent on the parties' willingness and openness to find broadly supported solutions. Agency intransigence must be struck.

Towards this end, DOE should work with the regulatory agencies to develop outreach and education plans that include a concerted effort to engage stakeholders in such conversations and decision-making. Only through those actions can the veils of this part of the cleanup decision-making be pulled back.

Topic #4: Levels of Protectiveness, led by Jane Hedges

Charge: Clarifying EPA-Related Initiatives That Cause Delays and Confusion EM has identified Levels of Protectiveness as an area of concern because they affect cost and may cause programmatic delays due to disputes and disagreements between DOE and its regulators. A key issue is the perception that EPA and the states appear to treat DOE different from other entities.

Introduction: Protectiveness levels are usually defined within remediation levels as the concentration of a contaminant with applicable land use controls that is protective of human health and the environment. In relation to site cleanup across the Department of Energy complex these protectiveness levels are set either by EPA within their CERCLA decision making records of decision or by the states either under their RCRA permitting authority or as a Applicable or Relevant and Appropriate Requirements (ARARs) such as Safe Drinking Water Standards. In addition, DOE is self-regulating regarding radioactive components which are often mixed with hazardous wastes and in most cases require protectiveness decisions in coordination with EPA and/or state regulatory decisions.

Observation and Analysis: Because protectiveness levels are based on risk analysis and directed to be levels at which there is no known or anticipated adverse effects on the most vulnerable receptor they can vary. Determining vulnerability and adverse effect may change over time and with new scientific understanding of the contaminant of concern. The most vulnerable receptor may be a pregnant woman or a small child or an animal. An example of a protectiveness standard which is outside the 'norm' would be the treatment level for chromium at Hanford requiring cleanup levels below drinking water standards because the contaminant is entering the Columbia River adjacent to salmon spawning grounds and chromium is extremely toxic to fish. Federal treaties protect fish and fishing rights in the area for the Native American tribes which is a consideration for determining 'adverse effects.'

Differences in protectiveness standards among cleanup sites may be the result of differences in current and future land use designation, the specific determination of the vulnerable receptor, and/or the type of media (soils versus groundwater for example) that are under consideration. Different choices for remedial actions for similar contaminants may also result from other criteria such as short versus long term costs or efficiency in contracting and scheduling. Or in some cases regulatory differences such as stricter individual state RCRA requirements.

The DOE cleanup is one of the most complex undertakings in modern history. There have been varying degrees of uncertainty about the type, levels and impacts of contamination at each site. The size and complexity of those cleanups make it difficult or in some cases impossible to draw direct comparisons to other cleanup sites.

Recommendation #1:
Jointly determine who the vulnerable receptor is and assure that the most current risk data is used for the contaminant(s) of concern. Enlist assistance from CDC's Agency for Toxic Substances and Disease Registry (ASTDR) and/or colleges and universities and/or national laboratories to determine the most current and scientifically valid risk and adverse impacts information available for the analysis to establish the protectiveness standards.

Recommendation #2:
Update or revise Land Use Plans to reflect current and future adjacent local government land use plans obtaining input from Tribes, stakeholders, and the public. Comprehensive understanding of future land use is a key factor in understanding exposure and vulnerable populations.

Recommendation #3:
Work with regulators to review comparative protectiveness standards for other sites both within the DOE complex and within states where to understand the standards that have been set and what similarities or differences that might currently exist or may occur as remedies are evaluated. Be able to explain those to Tribes, stakeholders and the public when establishing or changing protectiveness decisions.

Recommendation #4:
Employ alternative dispute resolution processes to resolve differences in protectiveness standards when agreement cannot be reached through existing administrative processes.