Table of Contents

INTRODUCTION

Purpose

The purpose of the Munitions Action Plan (MAP) is to identify actions that will help maintain the combat readiness of our armed forces by enhancing explosives safety and improving environmental stewardship across the complete munitions life cycle. Part I of the MAP defines the munitions life cycle and establishes fundamental principles and overarching DoD strategies for addressing explosives safety and environmental issues. It also describes the current and anticipated future challenges facing DoD and establishes a process for continuous improvement in the acquisition, management and use of munitions. Part II of the MAP establishes specific objectives that, when achieved, will result in improved, more effective management of the entire munitions life cycle throughout DoD.

Background

The effective and efficient life cycle management of munitions is key to maintaining the warfighting capability of our armed forces. The continued operation and management of testing and training ranges are crucial to maintaining DoD's warfighting capability. There is increasing concern, inside and outside DoD (from both the general public and regulatory agencies), about the impacts of DoD's munitions-related programs on the environment, including the operations of our range infrastructure. These concerns need to be addressed in a way that enhances and sustains our mission readiness over the long-term. Inaction, or implementation of inappropriate measures, could lead to increased restrictions on our range operations and munitions management procedures, and ultimately detract from readiness.

Strong explosives safety and environmental protection programs are integral components of a strong national defense. It is DoD policy to be good environmental stewards and to conduct all operations in accordance with sound explosives safety practices. DoD believes that sound environmental policy complements explosives safety. Protection of human life is paramount— therefore, nothing in this plan should be interpreted in a way to degrade explosives safety requirements. The DoD also has a responsibility to ensure that explosives safety and environmental policies, including those for munitions-related activities, help sustain the DoD's warfighting readiness, and minimize impacts on the environment. To help meet these responsibilities, the Defense Environmental Security Council (DESC), whose members advise the Under Secretary of Defense for Acquisition, Technology and Logistics (USD (AT&L)) on environmental security matters affecting the DoD's mission, chartered the Operational and Environmental Executive Steering Committee for Munitions (OEESCM) (see Appendix C). Subsequently, the OEESCM was tasked to develop a MAP to identify and improve the life cycle management of munitions. The goals of the plan are to:

- protect and enhance readiness,
- maximize safety, and
- minimize adverse impacts to human health and the environment.

Implementation of the MAP will achieve these goals (see also Appendix D).

The MAP's Mission Statement and Guiding Principles

The DoD will ensure combat ready forces are adequately trained by continuously improving activities and procedures throughout the munitions life cycle. Explosives safety and environmental stewardship requirements will be integrated with operational needs throughout the munitions life cycle. The following principles will guide the DoD's actions:

- Protect public and general safety, human health, and the environment;
- Practice sustainable management of DoD ranges and munitions;
- Safeguard access to ranges necessary to accomplish the DoD mission;
- Maintain a clear and responsive chain of command;
- Protect public and general safety, human health, and the environment;
- Act as a responsible steward of fiscal resources;
- Apply consistent policies throughout DoD;
- Support sound technology development programs;
- Ensure stakeholder involvement and education;
- Seek continuous process improvement.

CURRENT AND FUTURE CHALLENGES

Concerns about explosives safety and environmental management have escalated dramatically. These heightened concerns have the potential to pose real challenges to DoD's development, management and use of munitions. An appreciation of the external setting and our internal challenges is required to develop appropriate management strategies. In short, DoD managers must understand and appreciate the "operational environment" to manage well. Several external and internal factors influence the operational environment. These include:

- **Sustaining Readiness**. Real or perceived explosives safety and environmental concerns have the potential to shut down or interrupt the development, testing and fielding of new and improved weapon systems, the operation of military installations and facilities, and the training of our military forces. Safety and environmental issues affecting the retention, development, or use of space required for training or testing activities (e.g., airspace, electronic warfare and electromagnetic pulse effects testing)

are becoming increasingly prevalent. This trend is
expected to continue over the foreseeable future—both in this country and overseas.

Explosives safety and environmental concerns, either real or perceived, could also affect the ability of the industrial base to support national defense mobilization and also degrade the long-term readiness posture of the nation.

- **Funding**. Severely constrained DoD budgets can be expected to continue for the foreseeable future. The extent to which the explosives safety and environmental concerns involving DoD's munitions-related activities (discussed above) may be valid, and perhaps require investment of new resources, will exacerbate existing budgetary problems for all DoD managers involved in the munitions life cycle. Risk-based decision-making to support and defend program prioritization will be even more important. More and better DoD efforts to jointly plan and undertake common requirements will be required. Joint efforts, like those described in this MAP, should preclude unnecessary duplication and serve to leverage knowledge and investments among the DoD Components.

- **Potential Continued Reduction in DoD Activities and Infrastructure**. "Topline" budget constraints may require further cutbacks in basing infrastructure and operating activities in the next decade. Such reductions will likely involve facilities that supported the manufacture or the testing and use of munitions. These facilities will require significant explosives safety and environmental risk analyses and, when determined appropriate, response ("cleanup") efforts before they can be transferred from DoD control. The nature and size of the response task will be determined by site-specific conditions but potentially will involve both structures and the traditional environmental media (soil, water and air resources). These response activities will require, in the aggregate, significant resources.

- **Maintenance of DoD Credibility and Public Support**. Rising public concern associated with explosives safety and environmental issues confronts DoD with a substantial stakeholder involvement and credibility challenge. The DoD must manage its munitions-related activities in a way that promotes greater public confidence in our stewardship of environmental and natural resources—both at home and abroad. Failure to do so could result in long-term reduction in support for DoD programs. Lack of trust and cooperation and legal challenges are likely consequences of such a loss of credibility.

- **Integrating Explosives Safety and Environmental Considerations over the Entire Munitions Life Cycle.** The integration of explosives safety and environmental considerations into how DoD acquires, maintains, uses, and disposes of munitions and associated systems, facilities and material is a major challenge. Appropriate consideration of long-term environmental effects and costs in the acquisition process is of particular importance. Logistics managers (e.g., supply, transportation, maintenance, etc.) also need to devote greater attention to safety and environmental stewardship issues to minimize DoD's long-term liabilities.

- **Partnership with Stakeholders and Regulatory Agencies**. Considerable regulatory confusion presently exists regarding environmental requirements for munitions-related activities. This is particularly true for response actions involving unexploded ordnance (UXO) and munitions constituents on current and former DoD ranges. This uncertainty may strain DoD's ability to satisfy often overlapping and contradictory requirements that various regulatory agencies might seek to

impose at a particular location or for a particular situation. The uncertainty is fueled, at least in part, by both different requirements and varying interpretations of similar or identical requirements by the federal, state and local agencies charged with oversight and enforcement of environmental standards. These differing requirements can make it difficult for DoD to manage reasonably consistent munitions programs that meet operational needs and achieve economic efficiencies. DoD thus faces a formidable challenge to devise policy and programs that strike the proper balance between valid needs for consistency and pressures to respond to both decentralized requirements and regulatory demands. Achieving this balance, while simultaneously fostering a sense of partnership and involvement with the regulatory agencies and other affected stakeholders, will be a difficult undertaking. It is also reasonable to expect that there will be an increasing demand for obtaining and reporting information about DoD's munitions use to both the general public and regulatory agencies. These additional reporting requests (or reporting requirements, if they are in applicable law, regulations or Executive Orders) will conflict with the DoD's goals to streamline and reduce non-essential reporting and create additional budgetary pressures.

- **Not Enough Reliable Data.** DoD has insufficient readily accessible data on
    - Munitions used (i.e., numbers, types, and locations).
    - Environmental emissions from munitions use.
    - Fate and transport mechanisms of these emissions.
- Toxicological characteristics of residual constituents.

  These data gaps result in significant uncertainties regarding the short- and long-term environmental impacts of our munitions operations and limit our ability to control or mitigate any potential negative effects. Improvements in the scientific understanding of these effects need to be applied, to the extent practicable, to production of existing munitions and the acquisition of new systems and munitions.

- **Munitions-Related Technology Needs Improvement.** Better technologies are needed across the complete munitions life cycle. UXO detection, discrimination and identification technologies need to be significantly improved to reduce the costs of large area UXO response operations. Current technologies are characterized by high false alarm rates in which non-UXO items are detected, or low UXO detection rates, in which too many actual UXO items are not detected. Better technologies are also needed to keep pace with the anticipated increase in operational range clearance requirements. These requirements go beyond detection and identification and encompass the need for recovery and disposal. Improved demilitarization technologies are required to address concerns with the releases from the existing inventory. Pollution prevention technology developments are also required for munitions acquisition, production, and demilitarization to ensure we do not repeat the mistakes of the past.

In summary, scarce resources and growing concerns about explosives safety and environmental issues, whether real or perceived, will confront DoD's munitions managers and users for the next decade. DoD's combat readiness training operations may also be increasingly impacted by these explosives safety and environmental concerns, both in the United States and in foreign nations. To minimize these impacts, DoD

must formulate sound short-term and long-term munitions management objectives and action plans.

THE MUNITIONS ACTION PLAN DEVELOPMENT PROCESS

The Munitions Life Cycle. The OEESCM directed and monitored the MAP's development and will monitor its implementation. The OEESCM's charter directed munitions issues to be addressed using a life cycle approach. One of the committee's first tasks was to define the munitions life cycle. The committee then formed subcommittees to define the issues and to develop improvement initiatives in each phase of the cycle. (See the OEESCM organizational structure in Appendix C.) The munitions life cycle consists of the following phases (the corresponding OEESCM subcommittees are shown in parenthesis):

- **Acquisition** and production of munitions, including conceptual design—for the purposes of this MAP, the acquisition phase of the munitions life cycle also includes munitions-related research and development (R&D) activities, even if the results of the R&D are applied to other phases of the life cycle (**Acquisition Subcommittee**);
- **Stockpile management**, applies to managing the total DoD munitions inventory, i.e., active stocks used for test and training and stored in war reserve, and the demilitarization inventory (including waste military munitions). Management activities encompass packaging, storage, transportation, surveillance and maintenance of munitions delivered by the acquisition phase as well the management issues associated with the sale or demilitarization of excess and obsolete munitions. (**Stockpile Management Subcommittee**. Initially, the OEESCM formed a Demilitarization Subcommittee to address the demilitarization issues, however, this subcommittee was later integrated with the Stockpile Management Subcommittee);
- **Use**, including munitions use in training, testing, or military operations, and the overall management of operational (whether currently active and inactive) test and training ranges (**Range and Munitions Use Subcommittee**);
- **Demilitarization**, removes the military characteristics and addresses the disposition of the 'demil' inventory which consists of excess, obsolete and unserviceable munitions and waste military munitions. Many demil disposition processes are used, including resource recovery and recycling, treatment, and disposal (of waste munitions). Note that the stockpile management phase addresses the management issues associated with the demil inventory whereas the Demilitarization phase addresses the disposition of this inventory. **(Demilitarization Subcommittee** was later disestablished and integrated with the **Stockpile Management Subcommittee**); and
- **Response(s) or response action(s)**, to address UXO, waste munitions or munitions constituents stemming from the use of munitions on current and former DoD properties, except at operational ranges (whether currently active or inactive). This includes, but is not restricted to Closed, Transferred or Transferring Ranges. **(Response Subcommittee; Range and Munitions Use Subcommittee for Operational Ranges—both Active and Inactive)**.

Each subcommittee considered the degree to which changes, or the development and accomplishment of objectives in **other** phases of the munitions life cycle, would result in overall program improvements, cost reductions, or enhancement in either explosives safety or environmental stewardship, or both. Because it is possible that accomplishment of some objectives could be beneficial to one phase of the life cycle but

detrimental to other phases, each subcommittee also considered the effects that implementation of its objectives might have on other phases of the life cycle.

Stakeholder Involvement. A "cross-cutting" subcommittee, the Stakeholder Involvement Subcommittee, was created to provide both non-DoD stakeholders access to the OEESCM and a means for the OEESCM to communicate with non-DoD stakeholders. The OEESCM considers stakeholder involvement to be a key component in the formulation of a viable action plan that supports both the DoD mission and considers the needs of regulators, the public and other Federal land managers.

Scope of the MAP. The MAP is restricted to issues and initiatives that involve only conventional munitions. This plan's scope includes matters that if left unattended or improperly managed could lead to a degradation of either explosives safety standards or environmental conditions, or, if managed or controlled better, would lead to improvements in either explosives safety or the environment.

The Planning Process. Subcommittees developed specific objectives and a strategy to accomplish each objective using the following approach: (1) Identify the need; (2) Analyze the situation (both internal and external factors); (3) Coordinate with all appropriate players (in particular, applicable OEESCM subcommittees coordinated closely with the Defense Test and Training Steering Group regarding their efforts to address range encroachment and sustainability issues); (4) Recommend action (establish and frame the objective); and (5) Develop and briefly describe elements of an implementation strategy; and (6) Repeat the process for additional issues as objectives are completed and new problems or opportunities are identified.

Subcommittees also applied the principles of the Government Performance and Results Act in the development of objectives. Specifically, the subcommittees considered the following characteristics or issues:

- **Identifiable Tasks/Deliverables—**Efforts were made to ensure that the Department would be able to easily determine when the objectives were accomplished or met. In some cases, this meant that measurable metrics were defined and described.

- **Resources—**Preliminary resource planning estimates were developed for each objective. When possible, subcommittees attempted to classify the objectives according to whether or not their accomplishment or implementation would require significant new (i.e., presently unprogrammed or unbudgeted) funding or other resources. Efforts were also made to identify objectives that would **not** require significant new resource investments. The DoD Components are planning to meet short-term requirements (those actions scheduled for completion by the end of FY 03) from their existing funded programs or by reallocating current year (CY—FY 02) and budget year (BY—FY 03) funds. Components will refine these estimates and ensure that appropriate programming and budgeting actions are taken to include longer-term funding requirements in their future program submittals.

- **Schedules—**Preliminary schedules were developed and are included for all objectives. If the objective's accomplishment will take 3-5 years, the objective is considered a **long-term** objective. If

accomplishment can be completed in 1-2 years, the objective is considered **short-term**. For purposes of this plan, an objective targeted for completion by the end of FY 03 is considered a **short-term** objective. (Detailed schedules currently projected for each objective are at Appendix E; a summary rollup of all schedules is included at Appendix F.)

- **Roles and Responsibilities for Implementation—** The DoD Components are responsible for accomplishing the MAP's objectives since they possess the necessary resources and organizational structure to achieve successful implementation. However, coordination among the Components and the active support of all the functional areas involved in the munitions life cycle will be required to realize maximum benefit from the MAP. An Office of Primary Responsibility (OPR) is identified for each objective. The OPR is a DoD Component (or Component sub-organization) having overall responsibility for leading, coordinating, and integrating joint efforts necessary to implement the objective. Offices of Collateral Responsibility (OCRs) are also identified, to the extent they have been identified, for each objective. OCR's are offices or organizations that need to be involved in order to attain a successful outcome; they are normally organizations from the other Components. OPR's will not normally fund or accomplish all of the tasks necessary to implement an objective (i.e., OPR's will not normally program and fund activities conducted by other OCRs/Components under the objective) but they are responsible for funding their own Component's actions. In the event OPRs and OCRs can not agree on significant implementation issues, the Components may choose to elevate the issues to the OEESCM for resolution. Other DoD organizations (e.g., a committee or workgroup, both in and outside of the OEESCM structure) are identified as having or sharing responsibility for some objectives; these other organizations are identified as suggested forums for achieving the requisite coordination among applicable program managers in the Components.

  When it is known, a Program Manager responsible for the day to day implementation of the objective has also been identified in the MAP. The OPRs have the responsibility to designate a Program Manager, if one is deemed necessary, for each objective. (For example, the Department of the Navy may be OPR for an objective, but the Naval Ammunition Logistics Center may be designated as the Program Manager. Similarly, the Department of the Army's Assistant Chief of Staff for Installation Management may be OPR, but could designate the Army Environmental Center as the Program Manager, and so forth.) Some relatively short-term objectives identify program management offices very specifically (e.g., particular divisions, phone numbers, etc.) whereas for some long-term objectives the OPR is identified in very general terms (e.g., a DoD Component or a particular functional area in all applicable DoD Components, etc.). In summary, some objectives list only OPRs, while others also list Program Managers in varying specificity. Finally, OPRs may appoint or change Program Managers as appropriate to ensure effective implementation.

- **Implementation or Accomplishment Strategies**— The subcommittees developed preliminary implementation strategies for each objective. The level of detail of these strategies varies widely depending on the objective. These brief strategies are intended only to provide a general guideline for the DoD Component organizations tasked with implementation. Implementing organizations, however, have authority and flexibility to determine the best way to achieve the objectives.

Implementation and Monitoring Progress

The DoD Component Heads are responsible for implementing this plan. More specifically, the OPRs identified in the **Responsibilities** section for each objective in Part II will be the primary point of contact for reporting progress, problems and overall execution status during the plan's implementation phase. The OEESCM, if requested by OPRs (or by higher authority in any OPR's parent DoD Component) can assist in the coordination and integration of implementation actions for objectives.

The OEESCM will also monitor overall progress of the plan's implementation. OPRs and the applicable DoD Components can expect to receive requests for regular progress updates from the committee. These updates may be either verbal presentations (e.g., at OEESCM Steering Committee or Integration Council meetings) or short written reports to the Executive Secretary for subsequent review by the OEESCM's Co-Chairs. (Simple reporting formats—for both briefings and written reports—will be developed and provided to OPRs to simplify and minimize reporting burdens.) In addition to these routine reporting venues for each objective, OPRs will also be asked to participate in a half-day, joint in-progress review (IPR) session with their counterpart OPRs who are leading associated objectives. (For example, OPRs for all Acquisition objectives could comprise an IPR; other combinations are also possible.) The Committee anticipates that each OPR will attend at least one, but not more than two IPRs in any given 12-month period.

The review and oversight process will attempt to encourage contact and coordination among OPRs/program managers for related objectives. The procedure will provide structured mechanism(s) and opportunities to share progress, problems and successes. In summary, the OEESCM will work to establish an oversight process that fosters a life cycle approach, and that provides OPRs for interdependent objectives with routine and regular contacts.

MUNITIONS ACTION PLAN

PART II

DETAILED OBJECTIVES FOR EACH PHASE OF THE MUNITIONS LIFE CYCLE

INTRODUCTION

The OEESCM established subcommittees to review, analyze, and recommend improvements to the management of the munitions life cycle. This part of the MAP contains the detailed objectives formulated to date by the subcommittees for each phase of the life cycle. Because of its importance, an additional section was also formulated for stakeholder involvement. Accordingly, the following six sections address:

- **Acquisition**
- **Stockpile Management**
- **Ranges and Munitions Use**
- **Demilitarization**
- **Response**
- **Stakeholder Involvement**

Each of the above sections provides a detailed plan of action that, when implemented, will result in significant improvement to DoD's munitions-related policies and business practices. All sections include a **mission statement**, a description of the current **situation** or challenges, examples of **recent initiatives** that have moved us towards the end vision, and **objectives** needed to guide future efforts.

Each objective includes **roles and responsibilities**, preliminary **implementation strategies** and a target **schedule**. An identifier code for each objective has also been assigned for tracking purposes. The implementation strategies and target schedules for each objective are at Appendix E; a summary rollup of all schedules is included at Appendix F. The OEESCM anticipates using this information to track execution of the MAP, to monitor munitions management issues, and to provide integrated and consistent responses to inquiries and issues as they arise.

RESOURCE PLANNING ESTIMATES

The OEESCM developed preliminary planning estimates of funds required to accomplish the objectives detailed in the plan. The current total estimate for implementing all objectives is approximately $207 million for FY 02 through FY 08. The estimates will require revision and updating based on more detailed assessments and early implementation experience.

Significant efforts were made to identify objectives that would **not** require significant new resource investments above those already in current programs. Similarly, attempts were made to define many "low cost" objectives. Almost half of the MAP's objectives are estimated to cost less than or equal to $500K and over two thirds of them are estimated at less than $1 million to fully implement. Many, if not all, of these low cost objectives should be able to be supported by currently budgeted funds, or by modest reprioritization actions within existing, currently approved budgets and programs. For example, the short-term objectives (i.e., those estimated for completion by the end of FY 03) and the FY 02 and FY 03 portions of the estimates for the long-term objectives, will have to be met from current year (CY, FY 02), or budget year (BY, FY 03) programs. The current MAP's total preliminary planning estimates for these requirements are approximately $32 million in FY 02 and about $35 million in FY 03.

Although many of the requirements are already included in, or can be made available by reprioritizing within currently approved programs and budgets, new (additional) resources will also be required to fully implement all of the objectives. The implementing Components' OPRs and OCRs (i.e., the organizations identified in the MAP as responsible for implementing the objectives), have the responsibility to further refine these preliminary planning estimates and to identify any additional longer-term funding requirements (i.e., for objectives requiring funds not already programmed). This responsibility should be conducted in coordination with applicable Component OEESCM subcommittee members so as to ensure appropriate updates to the MAP can be made. Components will review objectives requiring funds not already programmed and take appropriate action to address the requirements in their future program submittals. The estimates and other associated cost and financial information associated with implementation of the MAP's objectives will be maintained by the applicable DoD Components' OPRs and OCRs and their counterpart budget and program offices, as applicable.

IMPLEMENTING STRATEGIES AND SCHEDULES

Preliminary implementation strategies to accomplish the objectives have been developed and are briefly described for each objective. The level of detail of the implementation approach varies widely depending on the objective but all of them are sufficient to provide an overall framework describing "what" should be done. Enough detail is included to convey the requirements for successfully accomplishing the objective. These brief "implementation strategy outlines" are intended only to provide a general guideline for the responsible organizations—implementers are challenged to devise creative and more cost-effective strategies and have the **authority** and **flexibility** to determine the best way to achieve the objectives.

Preliminary implementation schedules have also been developed and are included for all objectives; if accomplishment will take 3-5 years, it was considered (by convention) a **long-term** objective. If an objective could be completed in 1-2 years, it is a **short-term** objective (i.e., an objective targeted for completion by the end-of FY 03 is considered a **short-term** objective). The preliminary schedules and implementation strategies for each objective are integrated in the table at Appendix E. A summary rollup of all schedules is included at Appendix F.

ACQUISITION

Mission

To develop, procure and test munitions that meet military performance and operational requirements while enhancing explosives safety and reducing the potential for adverse effects to the environment during the munitions life cycle.

Situation

The current emphasis in acquisition of munitions of all types (air delivered, ground launched, and sea launched) is on improving accuracy, reliability and increasing distances between firing or launch points and targets (i.e., so-called standoff ranges). At the same time, the public and regulatory bodies are raising concerns about explosives safety and the environmental effects of munitions. The DoD is also becoming more aware of the cleanup and environmental compliance costs associated with training, testing, demilitarization, and unexploded ordnance (UXO) responses.

These developments have highlighted the need for DoD to address environmental and safety concerns, and costs, throughout the munitions life cycle. This cycle starts from the technology development and design phase to the end-state of use, UXO and munitions constituents cleanup on ranges, or demilitarization. Addressing these concerns early in the life cycle (during requirements definition and acquisition) has the potential to significantly reduce costs and avoid problems later. DoD Directive 5000.1 and DoD Regulation 5000.2-R, the governing directives for major systems acquisition, call for incorporating Environment, Safety and Occupational Health (ESOH) considerations as part of the acquisition strategy and the systems engineering process in the acquisition process. Munitions developers, planners and requirements generators, however, need implementation guidance to effectively translate policy into action. For example, weapons developers need to consider emerging, and more environmentally sensitive, technologies for manufacturing, use, and waste disposal. In addition, DoD needs to examine the costing tools available to determine whether total costs (especially for environmental compliance) can be predicted across the complete munitions life cycle. If the tools are not adequate, DoD should investigate developing tools that will facilitate the decision-making process during the requirements generation, planning and acquisition phases when important acquisition program and budget decisions and tradeoffs are being made.

Recent Initiatives

Examples of initiatives from each of the military departments follow.

- Navy: Ongoing R&D efforts involve elimination of lead from initiating explosive compositions, and reuse of explosives and propellants recovered from projectiles and bombs. The Navy is also reconfiguring its gun propellant operations to dramatically reduce solvents used in support of the Navy's Extended Range Guided Munitions (ERGM) program.

- Army: The "Green Bullet" program will eliminate environmentally harmful materials (i.e., lead, volatile organic compounds, and ozone depleting substances in sealants and identification paints) from small caliber ammunition by substituting equally effective, yet less hazardous materials. Another Army effort involves the use of "powder coating" technology instead of paint in projectile tip identification. This initiative significantly reduces the release of harmful pollutants. The Army also reduced its use of chemical igniters containing lead by using laser ignition in some large and medium caliber artillery gun propellants and is exploring ways to employ this technology in other propellants and systems.

- Air Force: To reduce problems with UXO on ranges, the Air Force is evaluating the use of plastic instead of metal practice bombs. The Air Force has also reduced the amount of environmentally hazardous materials in the Advanced Medium Range Air-to-Air Missile (AMRAAM) and other equally significant programs.

DoD's Strategic Environmental Research and Development Program (SERDP) and Environmental Security Technology Certification Program (ESTCP) have focused on munitions-related research needs. Many of the programs conducted by the Services, some of which were discussed above, have been co-funded by SERDP and ESTCP. (Although not directly related to the acquisition process, it bears mentioning that most of DoD's research and development efforts for UXO detection and munitions response activities are being funded under these programs.)

The DoD, and the Navy in particular, has also significantly improved the safety and integrity of munitions through the insensitive munitions (IM) program. Propellants with reduced sensitivity, "cook-off" resistant explosives, and casings that allow weapons to vent contained energy are but a few examples. Another recent multi-agency (DoD, DOE and NASA) and SERDP-funded effort involved an expert panel reviewing energetic materials to gather information and analyze life cycle environmental issues associated with their use. This study identified 46 separate environmental issues associated with gun propellants, rocket and missile propellants, explosives and pyrotechnics. A JANNAF (Joint Army Navy NASA Air Force) effort is aiming at eliminating lead catalysts used in rockets and Hellfire missiles. JANNAF is also trying to eliminate other potentially harmful materials and to develop "solventless" methods under a "Green Missile" program. A new SERDP funded program designed to remove hazardous material from medium caliber munitions is also underway.

These acquisition success stories show that safer and environmentally friendly munitions are generally more stable, require less maintenance, and result in lower total life cycle costs—while having minimal impact on operational performance. The attainment of the objectives included in this plan will result in many more acquisition success stories throughout DoD.

Objectives

The objectives below are designed to support the development and acquisition of munitions and ordnance that are safer to manage and reduce the life cycle burden on the environment. They also focus on decreasing total life cycle costs by including demilitarization, responses to UXOs, and range cleanup

considerations in initial acquisition strategies. These objectives are to be accomplished without compromising the effectiveness and performance of munitions.

Objective ACQ 01—Adequacy of Current Guidance: Identify, review, and assess all DoD and Service policies, directives, and other general acquisition guidance documents that address explosives safety and environmental stewardship with respect to the generation of munitions requirements and the acquisition process.

Background: DoD 5000.2-R, the key regulation for DoD acquisition programs, requires program managers to incorporate pollution prevention in weapon development programs. However, anecdotal information indicates that current general acquisition guidance does not provide adequate direction and assistance to munitions acquisition program managers and staff. Program managers and acquisition personnel need clear, comprehensive guidance for addressing environmental issues during the complete munitions life cycle (to include development, testing, manufacture, usage, demilitarization, and responses to UXO and munitions constituents). An analysis of the applicable environmental requirements documentation should be performed to identify and resolve the deficiencies.

To meet this objective, the following steps must be taken:

- Work with the ESOH Acquisition IPT and appropriate Service experts to determine the adequacy of the current acquisition policies and directives in meeting the explosives safety and environmental criteria and objectives stipulated in applicable Federal environmental laws and regulations (including DoD regulations, policies and guidance).

- Work with the ESOH Acquisition IPT to develop and recommend revisions necessary to fully meet these criteria and objectives, and if necessary, issue new guidance.

- Establish procedures for effective implementation and include mandated coverage at Milestone Reviews, budget documentation, program direction or program costing guidance documents and reviews, and other vehicles. The following documents should be considered:

    - Mission Need Statement (MNS)
    - Operational Requirements Document (ORD)
    - Systems Acquisition Management Plan (SAMP)
    - Test and Evaluation Master Plan (TEMP)
    - Cost Analysis Requirements Description (CARD)
    - Statements of Objectives (SOO)
    - Statement of Work (SOW)
    - Contractor Performance Specifications

  The implementation team for this objective should review the following Air Force-developed documents for consideration as an excellent foundation and reference for achieving this task. (The documents are available and will be provided to the implementation team by the Air Force OCR: SAF/AQPB.)

- "Tactical Environmental, Safety, and Health (ESH) Action Guide," 15 July 1997, Electronic Systems Center, Hanscom AFB, MA
- "Weapon System Environmental, Safety, and Health Evaluation—Development Guidance for the Single Manager," November 1996 and August 1999 Update, Air Force Materiel Command, Wright-Patterson AFB, OH

Responsibilities

ODUSD (I&E) (OPR) in close cooperation with OUSD (AT&L) S&TS, M; DOT&E; ASN (RD&A) and U.S. Army Materiel Command, Deputy Chief of Staff for Ammunition; JCS (J-8); and SAF/AQP as OCRs.

Objective ACQ 02—Obstacles to Implementation: Identify obstacles to the integration of environmental and explosives safety considerations into the acquisition process and establish remedies to overcome these obstacles.

Background: Program managers are responsible for the development and acquisition of new weapon systems that achieve required performance parameters while also meeting schedule and cost criteria. Explosives safety and environmental issues have historically been given inadequate emphasis in munitions acquisition programs. This is often caused by schedule, content, and cost tradeoffs. Greater emphasis needs to be given in the acquisition phase to environmental effects and explosives safety over the entire munitions life cycle. This increased effort must begin with requirements and program definition and continue into design, manufacture and testing. Such efforts are not new. For example, the Joint Logistics Commanders issued a Joint Service Regulation in 1977 requiring that demilitarization and disposal be addressed in the design of munitions. However, the Services did not effectively implement this regulation. If progress in these areas cannot be made, munitions exhibiting the same or similar problems identified in the 1970s will continue to emerge from the development pipeline.

The acquisition process is extremely complex. Program managers must perform within cost, schedule, and performance parameters. Although policy and guidance requires the consideration of environmental and explosives safety impacts throughout the life cycle, anecdotal evidence indicates the policies are not being effectively implemented. This objective will attempt to identify and overcome any obstacles that may be present in the system. Users and operators establish and define the requirement, and in effect, launch the process. Other participants in the process include: those responsible for conducting test programs and maintaining test ranges; logisticians responsible for maintenance and storage; production personnel; environmental managers; and explosives safety managers. All of these specialists collectively define an acquisition program. DoD needs to survey the acquisition process participants to determine the reasons that life cycle environmental and safety concerns are not adequately considered throughout the acquisition

process. The survey should also identify examples that depict the consequences of neglecting environmental and safety concerns.

Responsibilities

Air Force (OPR) with Army, Navy, USMC, and JS as OCRs. The Implementation Team, when formulated, should also work with the ESOH Acquisition IPT and the ESOH Policy Board-sponsored workshop that is seeking to address these issues for all types of weapons systems.

Objective ACQ 03—Life Cycle Environmental Costs: Ensure that cost estimating models, techniques, and cost data required for estimating life cycle explosives safety and environmental costs are available and used in the munitions acquisition process.

Background: When defining and developing munitions acquisition programs, cost estimators use models or procedures that do not commonly include the costs to mitigate a new munition's potentially adverse environmental and explosives safety impacts. Even when addressed, these costs, and related trade-off analyses, are often worked outside any formal cost model process. In addition, little data are available to build life cycle costs into the existing cost models. Program managers are reluctant to expend funds for collecting environmental and explosives safety compliance costs when they perform trade-off analyses during the development of both new and modified munitions. Program managers need a proven model (or an adjunct proven technique) that considers life cycle environmental and explosives safety costs. It is important to note, however, that significant strides have been made in using life cycle cost models in many acquisition programs (e.g., JG-APP and the Comanche). These and other successful efforts must be identified and used as a foundation for meeting this objective. In addition, the effort should be coordinated with other applicable DoD efforts such as the Army Environmental Cost Accounting IPT that is chaired by the Army Cost and Economic Analysis Center.

Responsibilities

ODUSD (I&E) (OPR) in close cooperation with OUSD (AT&L), S&TS (M); U.S. Army Materiel Command, Deputy Chief of Staff for Ammunition; and applicable/counterpart organizations in the other Services as OCRs. (Note that the Services environmental restoration and safety offices' expertise will be needed also.) The involvement of the ESOH Acquisition IPT will also be solicited.

Objective ACQ 04—Environmental Implementation Plan: Develop and implement a munitions acquisition plan to minimize or eliminate undesirable environmental and explosives safety impacts while meeting performance criteria throughout the entire munitions life cycle.

Background: Explosives safety and environmental impacts are present throughout the munitions life cycle (i.e., from development through test, manufacture, stockpile management, use, demilitarization, and response actions). These impacts must be identified, analyzed, and addressed at appropriate points in the acquisition phase. Early consideration in the program definition and acquisition phase will minimize problems and costs later in the munitions' life cycle.

Moreover, a "feedback loop" between the munitions acquisition community and munitions users is needed to ensure that any negative or positive environmental and explosives safety impacts are relayed to acquisition program managers. Using or adapting existing environmental, explosives safety, and general safety and health working groups may facilitate this process.

Most munitions acquisition programs specify performance parameters and leave material selection and other design aspects to the discretion of the contractor. In most cases, this approach leaves the resultant "environmental ramifications decisions" to the contractor as well. Acquisition managers need guidance for preparing contractors' performance specifications that will help reduce the environmental impacts of munitions over their life cycle.

Materials selection needs to be addressed and analyzed more carefully in the acquisition phase. Materials substitution must be carefully weighed to assure that equally harmful or more harmful materials will not be used as replacements for materials that pose known risks. Acquisition program managers should include ESOH and total ownership costs in the materials selection criteria. The emissions and the fate, transport, and migration of potential contaminants generated by munitions during testing, training (use), or demilitarization activities may pose significant concerns. The degradation products from exploding ordnance and UXO might also prove to be more harmful to the environment than the original compounds. A requirement to assess the known environmental emissions and effects of the materials should result in better decisions on performance and environmental/explosives safety issues throughout the development phase. Information gained from such assessments could also be used to help define R&D requirements for development of equally effective, but safer and less environmentally harmful materials. In addition, the findings could be used to improve training and range clearance plans and response programs for munitions that are already in the inventory.

Environmental and explosives safety characteristics data for munitions materials must be organized and available to acquisition managers during program definition and development. Such data must be provided in a useful format to all munitions acquisition program managers. Note that efforts conducted under this objective must use the results from other MAP activities. (For example, data and results obtained under objectives USE 01 and DEM 02 need to be shared with organizations conducting activities to support this objective.) The challenge for objective ACQ 04 is to analyze and organize the data and results provided by others into a form that is useful to acquisition program managers. This objective also includes widely communicating examples of environmental success stories by placing them into the Acquisition Reform program.

Responsibilities

ODUSD (I&E) and OUSD (AT&L)/S&TS, M (OPRs) with appropriate Army, Navy, Marine Corps and Air Force acquisition organizations' as OCRs.

Objective ACQ 05—Technology Exploitation: Maintain technology efforts aimed at improving explosives safety and reducing adverse environmental impacts across the munitions life cycle.

Background: There is a need for a structured plan and program for technology efforts to minimize, to the maximum extent practicable, the adverse explosives safety and environmental impacts created during the munitions life cycle. RDT&E in this area is not keeping pace with the demands on acquisition program managers in selecting ordnance materials, and the acquisition managers themselves have not had adequate program funding in the past to pursue these objectives independently. This history should not preclude consideration being given to placing a responsibility on individual program managers collectively to fund such requirements. Some of the initiatives that should be considered are:

- Change MIL SPECS/STDS (including Technical Data packages) to eliminate hazardous materials used in munitions;
- Develop, implement initiatives to better incorporate pollution prevention actions such as material substitution or material recovery in all munitions manufacturing processes (e.g., heating, drying, thermal conditioning; pressing; extruding; machining; etc.)
- Identify major RDT&E programs that will likely make the largest potential reductions in environmental emissions and hazardous wastes;
- Identify root causes of munitions failing to operate as intended and facilitate work to minimize UXO generation;
- Facilitate improvements in UXO detection and discrimination; and
- Identify unfunded RDT&E programs that promise the largest explosives safety and environmental benefits.

(Note that accomplishment of this Objective needs to be closely coordinated with activities under Objectives ACQ 07, USE 01 and 05, and DEM 03, to prevent duplication and to leverage accomplishments in all areas.)

Responsibilities

DDR&E (OPR) in close coordination with OUSD (AT&L) S&TS, OM; ODUSD (I&E); and with appropriate Army, Navy, USMC, and Air Force offices as OCRs.

Objective ACQ 06—ESOH Acquisition Training: Develop comprehensive explosives safety, human health and environmental stewardship training modules for munitions acquisition managers and program office staffs.

The DoD Components have developed many initiatives in training and educating acquisition staff and program managers. Anecdotal evidence indicates however, that there are gaps in current environmental and explosives safety training programs for personnel in the munitions acquisition and requirements planning communities. The goal of this objective is to provide the munitions acquisition and program

management workforce, as well as the requirements and planning staffs familiar with environmental and explosives safety requirements, the best possible training on environmental and explosives safety issues. This needs to be accomplished by identifying and evaluating all existing courses and programs and using the best of each to determine an optimum DoD-wide program.

Responsibilities

Service Organization serving as the Chair of the Inter-Service Environmental Education Review Board (ISEERB) (OPR); DoD Explosives Safety Board (DDESB), applicable representatives of the Army/Navy/USMC/USAF Safety Review Boards, the Defense Systems Management College, and the Defense Ammunition Center (DAC), as OCRs

Objective ACQ 07—Achieve better understanding of munitions-related environmental impacts and improved UXO-related technologies: Improve scientific understanding of fate, transport and effects of munitions and munitions constituents and identify, develop, and field improved UXO detection, discrimination, and remediation technologies

Background: Better UXO detection, discrimination and identification technologies are needed to reduce the costs of large area UXO response operations. Current technologies are characterized by high false alarm rates in which non-UXO items are detected, or low UXO detection rates, in which too many actual UXO items are not detected. Improved technologies are also needed to keep pace with the anticipated increase in requirements associated with clearance activities at operational ranges. These requirements go beyond detection and identification and encompass the need for recovery and disposal. In addition, DoD needs a better understanding of a separate but related issue—the longer-term fate and effects of munitions constituents on the environment (whether on operational ranges or at other locations). The most crucial need, however, is to ensure that the improved scientific understanding and knowledge of these effects are then applied, to the extent practicable, to production of existing munitions and the acquisition of new systems and munitions.

The purpose of this objective is twofold. First, to identify, develop and field needed UXO technologies for use on closed, transferring and transferred (CTT) ranges as well as operational (for both active/inactive—A/I) ranges. This objective supports basic research, development, demonstration and technology transfer pertaining to the full spectrum of UXO-related requirements. Second, it also addresses the effects and risks resulting from munitions constituents (i.e., with respect to human health as well as fate and transport, and ecological effects). Note that some of these actions will require coordination with activities conducted under other Objectives identified in this plan (e.g., ACQ 05, USE 01, and DEM 03) in order to preclude duplication and to leverage all presently available knowledge and future accomplishments.

Responsibilities

DDR&E in partnership with ODUSD (I&E) (OPRs), with applicable Service R&D organizations and JUXOCO as OCRs. Each OCR will designate a representative to coordinate with DDR&E and ODUSD (I&E).

STOCKPILE MANAGEMENT

Mission

Manage the total conventional ammunition stockpile to support operational requirements while enhancing explosives safety and reducing the potential for adverse effects to the environment.

Situation

DoD manages large quantities of munitions at hundreds of locations throughout the world. Taken together they comprise the munitions stockpile. The total stockpile includes munitions in active stocks used for test and training, war reserve stocks, and the demilitarization inventory, including waste munitions pursuant to the criteria in the Environmental Protection Agency's (EPA) Military Munitions Rule (MR). Munitions normally enter DoD's demilitarization inventory upon determination that they are either obsolete or excess to the active inventory's needs and that they cannot be sold under the Foreign Military Sales program. Managing the stockpile poses inherent explosives safety and environmental risks. Stockpile management includes the packaging, storage, transportation, surveillance, and maintenance of munitions that have been delivered to the Services from the acquisition and production process.

The stockpile's demilitarization inventory has grown significantly over the last five years. This increase was primarily caused by the reduction of global threats; downsizing of U.S. military forces worldwide; the phase-out of weapons systems; and increased use of technologically advanced weapons systems. (See the Demilitarization Section for a description of the challenges associated with this phase of the munitions life cycle.)

DoD has long been aware of the inherent explosives safety risks the munitions stockpile poses. As such, it follows strict guidance issued by the DoD Explosives Safety Board (DDESB) to minimize this risk.

Because of increasing environmental concerns associated with the management of excess and obsolete munitions, DoD has developed and implemented stockpile management procedures for those munitions designated as waste munitions. For example, DoD recently developed policies and procedures to implement the EPA's MR. The EPA MR defines when munitions become subject to the nation's waste management and disposal laws and regulations and also addresses protective storage and transportation of waste military munitions. The EPA MR is a very complicated Federal regulation, which the states can make more restrictive. Violation of the EPA MR can result in fines and penalties being imposed on installations by the environmental regulatory authorities, or, in serious cases, criminal sanctions on individuals.

A joint-Service and OSD effort developed the DoD Munitions Rule Implementation Policy (MRIP). Each of the Services issued the DoD MRIP as Service policy in 1998, but it has not been issued as official, permanent DoD policy or guidance. The absence of official DoD-level guidance could lead to inconsistent

DoD operations over the long-term. In addition, DoD Components now have a significant training challenge to ensure that all munitions managers and users understand the requirements of both the EPA MR and DoD MRIP. State environmental regulatory personnel also now have the new task of enforcing the EPA MR (or their own state munitions rule regulation) on DoD installations without the appropriate understanding of either munitions or DoD's munitions-related activities. This situation (i.e., untrained, unfamiliar regulators and inadequately trained DoD personnel) has the potential to result in both real and perceived compliance problems, which have the potential to seriously affect operational capabilities. DoD Components must address this training challenge and ensure that the EPA MR requirements are incorporated into appropriate oversight procedures (e.g., inspection and evaluation programs, etc.).

The challenges associated with the EPA MR's implementation come at a time when military logistics is undergoing dramatic change. Changing national security threats have required alterations to force structure and operations with a greater focus on rapid deployment to multiple, regional conflicts. In addressing new environmental regulations, like the EPA MR, the DoD must also address increasing requirements to move, store, and maintain munitions under widely varied field conditions, and to train and prepare for such conditions. These dual challenges have the potential to increase explosives safety and environmental concerns.

In summary, the need to maintain and enhance explosives safety standards and to comply with new environmental stewardship requirements for a large and complex stockpile, while simultaneously adapting to dramatically changing logistics systems, creates significant challenges for DoD munitions managers.

Recent Initiatives

Most of DoD's recent stockpile management efforts have been in response to the environmental requirements associated with the EPA MR. Since issuance of the EPA MR in 1997, DoD has implemented numerous actions to comply with its requirements and to streamline DoD's operating procedures. Some examples of these actions are described below.

- The DoD sponsored a partnering effort with several environmental stakeholders (to include state and federal environmental regulatory staff) in an effort to devise more effective implementing policies and storage procedures. The DDESB accepted the recommendations of this partnering group by adopting several new standards for the storage of waste munitions in early 1998.

- The DoD's Munitions Rule Implementation Council, a group chartered under the Joint Ordnance Commanders Group (JOCG), also used the partnering recommendations for developing DoD's MRIP. This policy identifies the required munitions management practices to ensure compliance with the EPA MR. As previously stated, the Services issued this policy to the field in late 1998. (One of the objectives in this MAP calls for its conversion to permanent DoD-level guidance.)

- DoD's Regional Environmental Coordinators (RECs) have also worked closely with the states as the states determined how they would respond to the EPA's MR. States have the authority, under the MR's governing environmental statute, to establish more stringent requirements than those contained in

the EPA's federal rules. This presents DoD with the possibility for significantly different compliance requirements from state to state. The RECs have worked with the states to help them understand DoD's need for a consistent set of compliance rules. Many states are still considering their response to the EPA MR, so the DoD REC initiative will continue to be needed for the foreseeable future.

- The Services have also sponsored EPA MR training initiatives for their personnel. While these initiatives include development and fielding of computer-based training programs, most have involved seminar-style sessions for individuals responsible for both munitions management and environmental programs at the installation level.

Objectives

The following objectives are focussed on achieving full and sustained compliance with the EPA MR while adapting to new and changing logistics and munitions management systems.

Objective STK 01: Institutionalize processes to: (a) accurately identify munitions that are excess or obsolete based on current operational plans; and (b) resource and execute a demilitarization program that ensures needed munitions storage space is available to support readiness and DoD's power projection mission and that minimizes explosives safety and environmental concerns.

The amount of excess and obsolete munitions in storage has been increasing each year. DoD should: (1) review the potential explosives safety and environmental risks inherent in continuing to manage these items, at both the wholesale and retail levels; (2) examine the reasons the Services are reluctant to identify munitions as excess or obsolete, and resolve them; and (3) identify the fiscal and readiness costs associated with continuing to manage these items. The review will recommend corrective actions as appropriate.

(Note: This objective addresses the stockpile management issues associated with the demil inventory. The Demilitarization Section of the MAP will address the disposition of this inventory.)

Responsibilities

Army as the DoD Single Manager for Conventional Ammunition—(SMCA) (OPR) with other Services' Demilitarization Program Managers as OCRs. (It is anticipated that the OEESCM Stockpile Management Subcommittee will be the OPR-OCRs coordinating forum.)

Program Manager:
SMCA, AMSIO-MAS-D
DSN: 793-5273
Commercial: 309-782-5273

Objective STK 02: Ensure DoD's and DoD Components' policies (regulations, guidance, etc.) accurately address MR requirements by conducting an EPA MR Baseline Policy Evaluation.

Analyze DoD and Component directives and policies relating to the EPA MR and the DDESB's Directives and Standards pertaining to the management of waste military munitions. A report that identifies aspects of DoD and the Components' policies and procedures that do not adequately address the EPA MR and DDESB standards will be prepared. The report will include recommended actions to be taken by DoD and the Components to implement and comply with EPA MR and DDESB requirements.

Responsibilities

Marine Corps (OPR) and other applicable OEESCM Stockpile Management Subcommittee committee members as OCRs.

Program Manager:
Office of the Program Manager for Ammunition
Marine Corps Systems Command Code: EES
2033 Barnett Ave, Suite 315
Quantico, VA 22314-5010
Comm: (703) 784-9478
Fax: (703) 784-9496

Objective STK 03: Identify and address explosives safety and environmental risks during the development of munitions logistics initiatives and systems for the active inventory.

Munitions logistics includes the packaging, storage, transportation, surveillance, and maintenance of munitions required to meet training and wartime requirements and of those excess and obsolete munitions awaiting disposition. DoD's logistics system is constantly improving its ability to get the right items, to the right place, at the right time in a cost effective and timely manner. This is particularly true for munitions items. All munitions, however, contain explosives and energetic materials that can react violently and they must be protected from abnormal stimuli or environments (e.g., excessive pressures and temperatures, impact, shock, friction forces, contact with incompatible materials, open flames or sparks, electrical impulse, etc.). As the DoD Components develop innovative methods to improve their munitions management and logistics systems, DoD must ensure it continues to address the inherent explosives safety and environmental risks of munitions.

Responsibilities

Army as the DoD Single Manager for Conventional Ammunition—(SMCA) (OPR) with other applicable Joint Ordnance Commanders Group (JOCG) representatives as OCRs.

Program Manager:
Army Materiel Command, AMSIO-SM
Commercial: (309) 782-1401

Objective STK 04: Identify and evaluate DoD Components' current internal and external EPA MR training programs and develop, if determined appropriate, a comprehensive, integrated DoD training program to meet baseline requirements.

An analysis of DoD Components' training programs to achieve and maintain compliance with the EPA MR and DDESB Standards will be conducted. This analysis will evaluate the need to provide training to state environmental regulatory personnel. If determined necessary, the report will recommend actions needed to develop a consistent "baseline" DoD training course or program.

Responsibilities

Service Organization serving as the Chair of the Inter-Service Environmental Education Review Board (ISEERB) (OPR) and the OEESCM Stockpile Management Subcommittee as OCR.

Objective STK 05: Develop DoD compliance metrics for the EPA MR (e.g., performance goals, standards, etc.).

Using the results achieved under Objective STK 02, this objective will focus on determining clear and measurable performance parameters in order to reliably determine DoD's compliance with the EPA MR. The objective envisions the adoption and implementation of the recommended compliance metrics by all DoD Components to achieve continuous operational improvements.

Responsibilities

Marine Corps (OPR) and other applicable OEESCM Stockpile Management Subcommittee members as OCRs.

Program Manager:
Office of the Program Manager for Ammunition
Marine Corps Systems Command Code: EES

2033 Barnett Ave, Suite 315
Quantico, VA 22314-5010
Comm: (703) 784-9478
Fax: (703) 784-9496

RANGE AND MUNITIONS USE

Mission

Sustain and enhance the operational capability of operational ranges (both active and inactive) to meet military readiness and operational requirements, while enhancing explosives safety and reducing the potential for adverse effects to the environment.

Situation

Regulators and the public are becoming increasingly concerned about explosives safety and environmental issues associated with the management and use of munitions, particularly at ranges. The encroachment of commercial and private development in the vicinity of DoD ranges contributes to this increasing public concern. This trend is exacerbated by the general lack of comprehensive and reliable data with respect to the environmental effects of long-term munitions use. DoD must analyze and address these concerns by undertaking new initiatives that support operational readiness and improve munitions management procedures at ranges.

Access to test and training ranges is essential for sustaining the capability and combat readiness of our Armed Forces. Allowing unnecessary safety risks or environmental degradation at our ranges can undermine the effectiveness of testing and training, limit operational flexibility, and ultimately, result in the loss of DoD's ability to use these facilities. Effective safety programs and responsible environmental stewardship will help ensure the long-term sustainability of DoD's ranges.

Although DoD has downsized significantly (e.g., Base Realignments and Closures) over the past decade, its requirements for test and training ranges have not decreased in proportion to overall force reductions, and in some respects its needs have increased. This is because many current weapons systems and systems under development have significantly greater capabilities and operational ranges than DoD's legacy systems. As an example, modern air combat capabilities and tactics require up to three times the training area required only 20 years ago. Realistic testing and training with modern weapons also require larger safety buffer areas. Increasing capabilities and greater dependence on use of electronic combat and communications systems also drive the need for more space. In summary, today’s standoff weapons and longer-range weapons require significantly more space—whether in air, land, or sea. This trend is expected to continue in the future.

The process of estimating the total long-term requirement for ranges and training areas is not straightforward. DoD’s ability to meet these requirements will be essential to ensuring our Nation's Armed Forces are prepared to fight and win on the battlefields of the future. Continued access to existing ranges or acquisition of additional range assets in the future must be predicated upon sound range management policies and procedures that reduce explosives safety risk, improve environmental stewardship, and ensure operational readiness.

Recent Initiatives

The Services must conduct realistic training that simulates actual combat conditions as closely as possible. The use of virtual simulation systems to achieve training objectives has been increasing for years. Constructive simulations have also been used to replicate units, weapon systems, and terrain to support battle staff training. These simulations replace large-scale exercises. Models and simulations have increasingly reduced the costs and risks associated with range use. Simulation systems have improved training realism and effectiveness while resulting in much safer and more environmentally benign test and training operations. Despite increased reliance on these technological advances, models and simulations cannot replace live training and maneuver operations because they cannot replicate the stress, discomfort, and other physical conditions of combat. Soldiers, sailors, airmen and marines will have to operate real equipment, and use real munitions to remain combat ready.

DoD has developed many other programs to help maintain safety and protect the environment when ranges must be used to support real munitions operations (e.g., live firing tests and exercises). The Army's Integrated Training Area Management (ITAM) Program helps to achieve sustainable use of training lands by implementing a uniform program that inventories and monitors land conditions; determines carrying capacity of the land in terms of the training requirements; and provides for land rehabilitation and maintenance measures. The other Services conduct similar efforts and have programs in place to protect ranges. In many cases, individual installations have created sophisticated environmental and range management systems. As one example, the Eglin AFB test range developed a mission activity database (Range Utilization Report) and combined it with a munitions characterization report (Effector Characterization Report) to produce predicted impacts on the human and natural environment (Effector Analysis Report).

More recently, DoD published policy (DoD Directives 4715.11 and 4715.12) that, when fully implemented by the DoD components, will help ensure the long-term sustainability of ranges while protecting human health and the environment. These directives address a wide range of explosives safety, environmental protection, and stakeholder involvement issues. DoD has also developed a system for obtaining and sharing environmental emissions data from the use of munitions at our ranges with regulators and the public. This system, the Toxic Release Inventory-Data Delivery System (TRI-DDS), was developed by a DoD joint service working group and will assist operational range managers in determining the amounts of TRI listed chemicals used in, and the associated releases to the environment, from munitions use. (The TRI is a publicly available data base maintained by the EPA as prescribed in the Emergency Planning and Community Right-to-Know Act regulations.) The TRI-DDS may also be used by range managers as a planning tool to identify the potential TRI emissions from proposed range use scenarios. The DoD has also conducted selected testing of materials generated by munitions use on ranges (i.e., so called "range scrap," such as expended smoke pots, etc.) to determine if it should be managed as hazardous waste.

To summarize, DoD has improved its management of operational ranges in recent years but recognizes that significant challenges remain. The following objectives have been developed to continue this progress.

Objectives

The following objectives are designed to improve DoD's sustainable use of munitions on its operational training and RDT&E ranges. The attainment of the objectives will: (1) determine the actual impacts and scope of munitions usage (obtaining data); (2) develop guidance and technology to improve the sustainability of operational ranges; and (3) ensure sustainable design of future ranges.

Objective USE 01: Develop a coordinated DoD plan to obtain data, assess current range conditions, and estimate the environmental impacts of current munitions' use on operational (both active and inactive) ranges.

Limited technical information is currently available on the impact of munitions and their residues on the environment. Data gaps are particularly apparent with regard to (1) the types and quantities of constituents (chemicals, etc.) released during the functioning of munitions; and, (2) the environmental fate and effects of those constituents. The Services have conducted individual studies regarding the impacts of both munitions use and the possible releases of munitions constituents on specific ranges; however, DoD has no overall or coordinated effort. A consistent DoD approach is necessary to ensure DoD's critical operational mission requirements are sustained while minimizing or eliminating environmental risks to human health or the environment. (Note: Accomplishment of this objective must be coordinated with activities in Objective ACQ 04; Objective USE 01 will develop sampling and assessment protocols and obtain data on fielded systems, while ACQ 04 will apply the approaches and data to developmental systems. Implementation should also be coordinated with activities conducted under Objectives ACQ 07 and DEM 03 to ensure that all relevant information is obtained and used.)

To accomplish this objective, an approach encompassing three core elements will be developed and executed. The core elements include: (1) Quantitative determination of chemical emissions and residues from current munitions functioning, including determination of dud and low order detonation rates; (2) Assessment of the potential impacts from the residues of current munitions in consideration of site specific parameters; and, (3) Assessment of current conditions on ranges. The information obtained will provide DoD with the capability to rapidly assess range conditions.

Responsibilities

Each Service is responsible for funding and accomplishing the necessary testing, sampling and data collection for Service-specific munitions and environmental sampling on their ranges. The Services' organizations responsible for test and training range oversight (i.e., AF/TE and AF/XOOR, CNO N912 and N3/N5B, TEMA and DAMO-TR, USMC/TECOM, etc.) as well as the Services' staffs with expertise in environmental sampling and analysis (i.e., AF/ILEV and AFCEE, CNO N4, ACSIM—ODEP and AEC, USMC/LF, etc.) will be included in the implementation team for this objective, as appropriate.

Army (OPR) with representatives from SERDP/ESTCP and other applicable DoD Component representatives as OCRs.

Program Manager:
Army Environmental Center
DSN: 584-6847 or 584-6850
Comm: 410-436-6847 or 410-436-6850
Fax: 410-436-6836

Objective USE 02: Develop a DoD inventory of Operational (both Active & Inactive—A/I) Ranges

DoD lacks common and uniform definitions for various components and attributes of a "range." Although the term "range" was defined in EPA's Munitions Rule, significant questions remain with respect to the scope of the definition, to include the issue of how the parts of ranges should be defined for the purposes of maintaining permanent records and collecting future data. Similarly, "ranges" which are part of a multi-range facility often overlap, making clear inventory determinations difficult. Standard policy and procedures need to be established to answer these questions. Such definitions and associated legal interpretations are needed to conduct a consistent range inventory across the Services. DoD should also consider establishment of a central database for the inventory. (Note: The activities conducted under this objective will be coordinated with the joint-Service data standards committee and with MAP objective RES 02, as appropriate.)

Responsibilities

U.S. Air Force (OPR) with representatives from other Services as OCRs.

Program Manager:
AF/XOOR
Comm: 703-601-0224
Fax: 703-601-0210

Objective USE 03: Develop standard DoD Munitions Expenditure Database Requirements

DoD Components are required to maintain permanent records of munitions expended on ranges. However, in most cases, these databases are not fully developed, are inconsistently used, or do not exist at all. Moreover, the collection of munitions expenditure data should allow for integration into a common data management system that will provide useful information for management, range sustainment, and munitions response actions.

Responsibilities

U.S. Marine Corps (OPR) with other Services as OCRs.

Program Manager:
HQMC Installations & Logistics
DSN: 225-8302
Comm: 703-695-8302
Fax: 703-695-8550

Objective USE 04: Determine potential operational limitations for operational (both active and inactive) ranges in light of current and potential future environmental regulatory requirements.

Over the past several years, public and regulatory pressures have increased with respect to munitions use on operational ranges. The Services need to assess current practices and examine existing and potential future regulations to prepare for possible effects on budgets, doctrinal planning and operations. Range management recommendations and guidance must be designed to minimize any potentially adverse impacts or limitations on the usability of DoD ranges.

Responsibilities

OUSD (P&R) (Readiness), DOT&E, ODUSD (I&E), OGC (E&I), (OPRs) with applicable representatives from the Services as OCRs. (It is anticipated that the OEESCM's Legal Advisory Workgroup will be the initial forum used to achieve the necessary coordination among the OPRs/OCRs.)

Program Manager:
Initially, the Office of the Deputy General Counsel (Environment and Installations), will lead the effort through the OEESCM Legal Advisory Workgroup. This effort will be work in close cooperation with the DoD Sustainable Range Work Group (SRWG).

Objective USE 05: Develop risk-based DoD range clearance guidance and management procedures.

Based on the information collected through accomplishment of Objectives USE 01-USE 04 and the policies developed under Objective DEM 02, DoD must provide guidance to the field for sustaining test and training ranges. Range managers need guidance that supports operational needs, while providing environmental assessment approaches and best management practices that will help ensure sustained availability of land, sea and air for training and test use. This guidance must be based on facts and good science. It must help to ensure safe operations, protect human health and the environment, facilitate

recovery of recyclable materials being generated by range operations, and reduce liabilities from munitions use. The guidance must also include effective explosives safety procedures for the management of Munitions and Explosives of Concern (MEC), and Material that Presents a Potential Explosive Hazard (MPPEH). The guidance should include the following topics: control of physical access to ranges, particularly at impact areas; safe clearance ("how safe is safe") of munitions including UXO and MEC; the frequency of clearance; the scope of clearance (surface vs. subsurface) as a function of type of activity conducted on the range (e.g., foot maneuvers only, vehicle maneuvers, digging foxholes, etc.), secondary range use such as hunting or other recreation, use of submunitions, etc.; environmental monitoring protocols (if necessary); and timing and location of large or high impact training events and activities, and so forth. This objective needs to integrate our full knowledge base into a comprehensive program to protect access to ranges and to improve compliance with applicable environmental, health and safety regulatory requirements. This includes OSHA considerations for military and civilian workers likely to come into contact with MEC/MPPEH since there could be significant acute and chronic affects—both carcinogenic and ergonomic—that need to be addressed for these personnel.

Responsibilities

Army (OPR) with representatives from other DoD Components as OCRs. (The OEESCM Range and Munitions Use Subcommittee is anticipated to the coordination forum used by the OPR/OCRs.)

Program Manager:
Army (DAMO-TR) and Air Force (AF/XOOR and AF/ILEXR) are OPRs; other Range and Munitions Use Subcommittee members are OCRs
Comm: 703-697-2562 (Army) and 703-601-0224 (AF)
Fax: 703-695-6818 (Army) and 703-601-0210 (AF)

DEMILITARIZATION

Mission

Demilitarize obsolete, excess, unserviceable munitions and munitions residue (e.g., resulting from fired munitions, etc.) according to Congressional and Department of Defense directives while enhancing explosives safety and minimizing the potential for adverse effects to the environment.

Situation

The demilitarization process removes the military characteristics from unused munitions that are not economically repairable, or are obsolete or excess to DoD needs. Also, DoD must ensure that used (i.e., fired) munitions items undergo demilitarization prior to their release from DoD control for material recovery. There are many demilitarization methods such as resource recovery, recycling, remanufacture, disassembly, reclamation, mutilation, alteration, destruction, treatment and disposal. Munitions are inherently dangerous and demilitarization processes pose explosives safety and environmental issues.

The demilitarization inventory consists of excess, obsolete and unserviceable munitions. Despite unprecedented demilitarization accomplishments, this inventory has grown significantly in the past several years due to: the reduction in global threats (resulting in reduced operational and training requirements); downsizing of forces; and phase out of many weapons systems. The Army, in its capacity as the Single Manager for Conventional Munitions (SMCA), demilitarized, on average, 100,000 tons of munitions annually in recent years. (The other Services also demilitarize munitions, but the amounts are lower and are generally conducted by O&M-funded operations at installation or activity level.) The current inventory is over half a million tons; this represents approximately a 40% increase in the last 5 years. Holding this large and diverse inventory of excess, obsolete and unserviceable munitions contributes to increased maintenance, surveillance and storage costs.

DoD anticipates that the "demil" inventory will continue to grow in the future. However, DoD's annual conventional ammunition demilitarization program budget has remained constant for the past several years (demil funding has averaged approximately $80M-85M per year for the SMCA). Because of competing demands, this level of funding may be reduced in the future. Currently approved future programs provide for only slight increases to this funding level. This funding level, when coupled with forecasting uncertainties, will present DoD with increasing challenges to effectively manage and execute the munitions demilitarization program.

Destructive and resource recovery and recycling technologies are the general categories of demilitarization methods. Current open burning/open detonation (OB/OD) processes or incineration provide DoD the only practical alternatives for treating some munitions because of explosives safety hazards. Therefore, DoD relies on these processes as its principal destruction methods for munitions for which resource recovery and recycling is currently not a viable option. Although it is an efficient and, at most treatment locations, a cost-effective process, environmental regulatory agencies have expressed concerns about the

environmental impacts resulting from these operations. (OB/OD operations are closely regulated by State and federal environmental regulatory agencies and require permits, e.g., RCRA treatment permit, Clean Air Act, etc.). As a result of these concerns, DoD has made a concerted effort to reduce its reliance on OB/OD as a treatment technology and will continue to do so, unless it is determined that OB/OD does not adversely impact the environment. By increasing investment in research and development programs for alternative recycling or treatment technologies, DoD may be able to minimize the operational effects of any reduction in its OB/OD capacity. Similarly, DoD may be able to demonstrate that OB/OD is an environmentally acceptable technology at appropriate locations. It must be recognized, however, that DoD will have to continue to rely on OB/OD since it is still the safest technology for demilitarizing certain types of munitions. (It should also be noted that DoD EOD operations will need to continue to rely on OB/OD for destruction of UXO and fired munitions during range clearance activities and to support emergency responses.)

Material resulting from use or firing of munitions (e.g., such as packaging material, expended cartridges, bodies, tubes, casings, shells, etc.), scrap metal and shrapnel recovered during range clearance operations, target remains, and other materials generated by range operations, are sources of recyclable metals. It is also Material that Presents a Potential Explosive Hazard (MPPEH) and thus presents certain safety risks and liabilities. These items must be certified as free from explosive hazard and demilitarized prior to making them available to the metal recycling industry. There are several inherent explosives safety and environmental issues associated with demilitarizing, recycling, or disposal of these items. From an explosives safety perspective, defining and achieving a "free from explosives hazard" or "free of energetic material" condition poses complex questions. Moreover, MPPEH may also contain reactive or toxic constituents or residues potentially triggering rigorous hazardous waste management requirements.

In summary, the increase of the munitions demilitarization inventory, the heightened environmental and explosives safety awareness associated with managing MPPEH, and the growing desire of the regulatory community to expand current demilitarization technology options, confront the DoD with significant challenges. Existing and anticipated future budgetary pressures exacerbate these challenges.

Recent Initiatives

The DoD demilitarization community has worked hard to coordinate their activities and to address the increasing explosives safety and environmental concerns. The Joint Ordnance Commanders Group (JOCG) has coordinated and provided a baseline and vision for the DoD's demilitarization programs. The JOCG has established and tracked aggressive program goals and execution plans. Numerous JOCG forums, such as annual Global Demilitarization Symposiums and Exhibitions, the 1999 Demilitarization Summit, and the very active and ongoing efforts of the Munitions Demilitarization/Disposal Subgroup have served to leverage all of the Components' efforts.

DoD has improved demilitarization processes and implemented alternative technologies and uses for specific items. Since 1990, support has come from the Joint Service Large Rocket Motor Demilitarization Program (JSLRMDP), the Joint DoD/DOE Munitions Technology Development Program, Technology Coordination Group (TCG) IX on demilitarization, the Army's Conventional Ammunition Demilitarization

(CAD) Research and Development Program, and the Navy's Ordnance Reclamation Program. Support has also been received from environmental science and technology funds for the Military Services, the Strategic Environmental Research & Development Program (SERDP) and the Environmental Security Technology Certification Program (ESTCP). Program efforts have successfully moved the demilitarization of the unused munitions inventory towards resource recovery and recycling. In 1992, Open Burning/Open Detonation (OB/OD) processes accomplished over 80% of the demilitarization program; in 1999, approximately two thirds of the program was applied to resource recovery and recycling. However, OB/OD is still the most cost-effective and safest technology for the demilitarization of certain types of munitions. DoD will continue to rely on it for the foreseeable future.

In addition to developing alternative demilitarization technologies, progress has been made to address the growing demilitarization inventory and the explosives safety and environmental aspects of the demilitarization program. Examples of these initiatives follow:

- MIDAS (Munitions Items Disposition Action System). MIDAS was established to better define and characterize the demilitarization inventory. The system contains detailed information on the components and chemical constituents in the active conventional munitions demil inventory. It has served as a bridge between the demilitarization program managers ("users") and the R&D community. The MIDAS has been invaluable for identifying performance requirements for alternative technologies. It has also served as a central source of demilitarization and disposal information. The Munitions Analytical Compliance System (MACS), an automated, user friendly tool, is being developed within MIDAS to provide the demilitarization communities with the capability to produce various environmental, safety and health analyses and reports. The MIDAS is managed by the Defense Ammunition Center (DAC) and it is being made available to both government and industry users.

- Demilitarization Optimization Model. Another system, the "Demilitarization Optimizer" model integrates many variables, including explosives safety constraints, to produce an optimum long-range program execution plan within established constraints. The model evaluates capabilities, capacities, costs, and technologies to produce a "best business" 10-year program plan.

- Toxic Release Inventory-Data Delivery System (TRI-DDS). This system (which uses munitions constituent information provided by MIDAS and from other DoD emissions testing and modeling programs) is designed to assist demilitarization facility managers in determining the amount of TRI listed chemicals used in, and the associated emissions from munitions OB/OD operations. If certain TRI regulatory emission thresholds for designated chemicals are exceeded, the host installation or activity must then report the amount and any associated releases to EPA and the host state as required by the Emergency Planning and Community Right-to-Know Act (EPCRA) regulations. (The TRI is a publicly available data base maintained by the EPA as prescribed in the EPCRA regulations.) The TRI-DDS was developed to provide a consistent approach across the Services to calculate the amounts of toxic chemicals for comparison with the TRI's reporting threshold values, and to determine the environmental releases associated with these munitions activities. The TRI-DDS is currently being used for munitions OB/OD demilitarization activities and has incorporated additional features for munitions activities on ranges.

Other program initiatives in recent years include emphasizing the use of the private sector's creativity and capability to execute significant portions of the program; and developing the capability to demilitarize munitions overseas, thus precluding the need for costly retrograde to the United States. Overseas demil operations also result in explosives safety benefits due to reduced handling and transportation requirements.

Although DoD has notably improved its demilitarization program in recent years, significant challenges remain. The accomplishment of the following objectives will address many of these challenges.

Objectives

These objectives address high priority issues, and their accomplishment will improve DoD's business practices. Note, however, that these objectives do not include the many ongoing and excellent initiatives managed by the Joint Ordnance Commanders Group, some of which were discussed above (see Recent Initiatives). Rather, most of the MAP's objectives require involvement and participation from munitions managers functionally located outside of the JOCG community (e.g., in particular Objective DEM 04; also, ultimate accomplishment of DEM 03 will require action beyond the JOCG's execution ability). The MAP is therefore primarily designed to supplement and assist the JOCG and the SMCA to meet DoD's demilitarization challenges.

Objective DEM 01: Complete a baseline assessment of recent and existing efforts and initiatives focused on environmental and explosives safety issues in DoD's demilitarization program.

The desired outcome of this objective is three-fold: (1) determine current environmental and explosives safety gaps in demilitarization technologies and studies; (2) share or expand isolated efforts; and (3) minimize duplicative efforts in demil technologies, studies, and work groups.

There are many ongoing demil environmental or explosives safety technology and policy efforts underway within DoD. These efforts include working groups, committees and studies that are potentially duplicative or conflicting. Although groups such as the JOCG provide a mechanism for coordination, there is still a need to better integrate and consolidate efforts and working groups. Notwithstanding the existence of these initiatives, significant environmental and explosives safety gaps may be present in the areas of demilitarization technology, databases and studies. For example, numerous databases and automated systems have been developed over the years (and continue to be developed) to satisfy various unique requirements. These systems need to be assessed to determine the potential for combining or modifying them to meet current and anticipated requirements. Achievement of this objective will identify these duplications and gaps and enable the subsequent development of appropriate corrective actions.

Responsibilities

Navy representative on the OEESCM Stockpile Management Subcommittee is OPR; other appropriate subcommittee members are OCRs
Program Manager:
Navy Demil Office

Objective DEM 02: Develop and implement a consistent DoD protocol for the inspection, processing, turn-in, accountability and ultimate sale or disposal of Material that Presents a Potential Explosive Hazard (MPPEH) generated by range operations.

A 1997 DoDIG report documented significant weaknesses in current DoD range and MPPEH management procedures. These weaknesses have resulted in loss of life. A DoD workgroup has provided recommendations for improvements. In addition, a joint DLA/DRMS team performed site visits at many ranges and gathered important site specific information that can contribute to broader policy and guidance development. Moreover, a Defense Reutilization and Marketing Service (DRMS)/Army Operations Support Command (OSC) group is working to minimize risks posed during the demilitarization process and to improve management controls that will preclude inadvertent release of potentially dangerous materials to the public. DoD must consider the costs, benefits, and liabilities associated with implementing the recommendations resulting from these efforts. Appropriate recommendations must be developed into DoD policy and implementation guidance. The DoD policy must establish clear responsibility for the management of MPPEH. The policy must address the requirements for explosives safety certifications, compliance with environmental regulations, and standards for demilitarization of MPPEH. In addition, DoD must develop implementation guidance that provides procedural standards for meeting the requirements established in the DoD policy. (NOTE: Accomplishment of this objective must be coordinated with activities conducted under Objective USE 05 and with applicable objectives in the Response section of this MAP.)

Responsibilities

Army representative on the OEESCM Management of Material Potentially Presenting Explosives Hazard (MPPEH) Workgroup is OPR; other appropriate workgroup members are OCRs

Program Manager:
Army ODCSLOG (DALO-AMA)
Comm: 703-614-7033
Fax: 703-614-7328

Objective DEM 03: Assess the environmental and human health effects of OB/OD treatment operations.

The desired outcome of this objective is two-fold: (1) obtain sound scientific data to determine if the human health and environmental impacts of OB/OD justify continued use as a viable demilitarization and treatment option for appropriate munitions families; (2) identify and recommend alternatives for munitions families where OB/OD is not the most viable option.

OB/OD is a cost-effective and, when conducted properly, a safe (from an explosives safety standpoint) method for treating waste munitions. However, there are congressional, regulatory, and public pressures to reduce DoD's use of OB/OD technology. In response, DoD has devoted significant effort and resources to the development of alternative disposal processes. There is little scientific evidence, however, to justify these pressures. They are primarily based on concerns about unknown impacts and perceptions.

The most comprehensive environmental study to date was conducted by EPA researchers and concluded, "(OB/OD) can be an environmentally friendly way to dispose of many of the energetic materials in the demil inventories of the world." (It should be noted, however, that endorsement or publication of this information by EPA researchers does not necessarily mean agreement by the entire EPA organization.) Preliminary data gathered by DOE and DoD indicate that environmental impacts vary significantly based on a number of variations in the OB/OD procedure and site-specific conditions (e.g., above or below ground, presence of a concrete pad, soil moisture, depth to ground water, weather conditions, etc.). DoD will continue to investigate OB/OD emissions to identify items and procedures that are environmentally acceptable for treatment by OB/OD. This will provide data to support R&D efforts on the development of alternative treatment methods for those munitions that pose higher human health and environmental risks when treated by OB/OD technology. (Note: Data and results obtained under this objective must be provided to organizations conducting work under objective ACQ 04 , ACQ 05 and USE 01.)

Responsibilities

Navy and Army representatives on the Environmental and Demil & Disposal Subgroups of the Joint Ordnance Commanders Group (JOCG) are co-OPRs; other representatives on the subgroups are OCRs

Program Manager:
Navy and Army representatives are OPRs
DSN: 354-4450
Comm: 301-744-4450, 309-789-2320; Fax: 301-744-6749

Objective DEM 04: Determine the optimum Open Burning/Open Detonation (OB/OD) facility infrastructure, including numbers and types of sites, to support DoD mission requirements.

DOD lacks a comprehensive approach to determine the optimum use of open burning/open detonation demilitarization and disposal technology. OB/OD methods are subject to increased scrutiny by Congress, Federal and State environmental officials, and the public. There is a growing perception that the use of OB/OD results in unacceptable environmental consequences and that other alternatives must be employed

to meet demilitarization requirements. It is anticipated that the pressure to close OB/OD sites will increase. Currently, decisions to retain or close existing OB/OD sites are under consideration at the service and activity level. These decisions should be based on an assessment of the human health and environmental impacts of OB/OD (see Objective DEM 03) as well as the cost effectiveness of operating specific OB/OD sites. Implementation of these decisions will require funding and programmatic actions prior to execution. An OB/OD Optimization study conducted by the JOCG confirmed the need to accelerate the optimization of DoD's OB/OD sites through joint efforts among the Services.

Responsibilities:

Navy and Army representatives on the Environmental and Demil & Disposal Subgroups of Joint Ordnance Commanders Group (JOCG) are co-OPRs; other Component representatives on the subgroups are OCRs

Program Manager:
Navy and Army representatives are OPRs
DSN: 354-4450
Comm: 301-744-4450, 309-789-2320; Fax: 301-744-6749

RESPONSES

Mission

Promote explosives safety and reduce the potential for adverse environmental effects from UXO, waste military munitions, and munitions constituents on DoD current and former properties, except at operational ranges. These properties include but are not restricted to Closed, Transferring and Transferred (CTT) ranges.

Situation

DoD recognizes the need for a comprehensive inventory of its current and former properties containing UXO, waste military munitions (WMM), and munitions constituents. Since a significant amount of DoD property has been, or soon will be, transferred to the public, regulators and the public have become increasingly concerned about the potential explosives safety and environmental hazards posed by these properties. Primary concerns include public safety, liability of DoD and future property owners, and cleanup standards. Environmental regulations alone do not adequately address many of these concerns, and an integrated approach incorporating both explosives safety and environmental concerns is needed. In light of the perceived risks from unexploded ordnance (UXO), many interested parties believe that all UXO needs to be removed before the lands can be returned to the public in a "safe" and reusable condition. However, a “total removal” strategy would pose tremendous financial burdens on constrained DoD budgets, and current technology could not support such a strategy. It should be noted that Congress is also concerned about DoD’s potential liabilities in this area and has required the Secretary of Defense to estimate and report the total financial liability posed by UXO, waste munitions and munitions constituents on current and former DOD properties.

DoD intends to develop and implement a Munitions Response Policy for effectively evaluating and reducing risk posed by UXO, waste munitions and munitions constituents at its current and former properties (except at operational ranges). This policy, and its implementing programs, must comply with all applicable environmental regulatory requirements, guidance, and criteria, as well as the standards of the Department of Defense Explosives Safety Board, and Component explosive safety rules and regulations. Due to the sensitivity of these issues, interested stakeholders outside of DoD (such as EPA, DOI, States, Native American Tribes, and concerned citizen groups) seek involvement throughout the response process. DoD needs to address stakeholder concerns early and often in order to ensure development and implementation of effective procedures and processes.

Current technology and funding constraints limit DoD’s ability to achieve total risk elimination by removing all UXO—an end-state desired by many external stakeholders. Moreover, UXO risk assessment tools for establishing response objectives are still under development. While recognizing the practical limitations to eliminate risk, DoD believes that it should: (1) focus on establishing consistent internal policy, (2) develop decision-making processes and tools, (3) take response actions that reduce risk (short-term); and (4) continue development of risk assessment tools and remediation techniques to allow for site closeouts

(long-term). Such a phased approach—when done in partnership with affected stakeholders—should result in acceptable, and effective, risk reduction.

Recent Initiatives

DoD has made progress with respect to developing a cohesive munitions response policy. Recent DoD initiatives include:

- Range Rule Development Efforts – DoD worked hard to develop a formal federal rule that would establish UXO response policy at its Closed, Transferred and Transferring (CTT) ranges. Although DoD officially withdrew the draft Range Rule from the formal federal rule making process in November 2000, the detailed work which went into it will help the Department develop better munitions response policy and procedures. In particular, the input received from non-DoD stakeholders during the Range Rule development effort will help DoD develop policy that is more acceptable to the public and the regulators. In short, DoD's response actions must adequately address safety, human health, and environmental concerns, and the experience and lessons learned in the Range Rule process will serve as the groundwork for achieving these objectives.

    - Development of the Range Rule Risk Methodology (R3M) – DoD was developing the R3M in conjunction with the Range Rule. It was intended to be the management framework for assessing and communicating risks from UXO and munitions constituents on CTT ranges. When work on the R3M was suspended (due to withdrawal of the Range Rule), it included two phases: the first phase provided a process for selecting actions to reduce risks; and the second phase was designed to provide a process for administrative closeout of sites under the Range Rule. As with the Range Rule itself, the knowledge gained in the development of the R3M will serve as an important tool as DoD works to develop its response policy and programs.

    - DoD Range Inventory – The initial steps in developing a complete inventory of all CTT ranges has been completed by all the Services. This inventory data will be made available to all DoD and interested non-DoD stakeholders after it has been validated by the Services. The inventory will help define initial program requirements and was also used to help satisfy information requested by Congress in Senate Report 106-50 (this report accompanied the *National Defense Authorization Act for Fiscal Year 2000)*. The CTT range inventory is an important start in the identification of all current and former properties containing UXO and munitions constituents.

    - Creation of Joint UXO Coordination Office (JUXOCO) – The JUXOCO is the operational arm of the UXO Center of Excellence, which was chartered to improve the effectiveness and economy of UXO detection and clearance research, development, test and evaluation throughout five mission areas: (1) Active Range Clearance (ARC); (2) Countermine (CM); (3) Explosive Ordnance Disposal (EOD); (4) Humanitarian Demining (HD); and (5) UXO Environmental Remediation (UXO-ER). The JUXOCO improves access to information in all areas; better coordinates all UXO technology development efforts by identifying potential overlap and

duplication of efforts; and leverages capabilities of other government agencies, private sector and academic institutions, both at home and abroad.

Objectives

Accomplishment of the following objectives will result in comprehensive DoD policy and programs that will protect public safety, human health, and the environment at current and former properties (except operational ranges) containing UXO, waste military munitions, or munitions constituents.

Objective RES 01: Develop and issue DoD policy governing responses to UXO, waste munitions and munitions constituents on current and former DOD properties (except at operational ranges).

The purpose of the policy is to establish the scope, regulatory basis and responsibilities for evaluating and responding to explosives safety, human health, and environmental risks posed by UXO, waste munitions and munitions constituents. The policy should address and use the input gained from Federal, State, and local agencies, Indian Tribal governments, and the public, during the course of past stakeholder involvement efforts.

Responsibilities

ODUSD (I&E) (OPR) supported by representatives from the Services (OCRs). (It is anticipated that the OEESCM's Response Subcommittee (RSC) will be the mechanism used to obtain initial input and coordination of the OCRs. The OEESCM's RSC process will not replace formal Service coordination.)

Army – HQDA, Assistant Chief of Staff for Installation Management, Office of the Director of Environmental Programs and the Army Environmental Center
Navy – Office of the Chief of Naval Operations, N453 (Environmental Restoration Branch)
Marine Corps- CMC (LFL) - HQ, Marine Corps (Land Use and Military Construction Branch)
Air Force - SAF/IEE, Deputy Assistant Secretary of the Air Force (Environment, Safety, and Occupational Health) & HQ USAF/ILEV - Environmental Division

Objective RES 02: Establish and refine an accurate inventory of current and former DoD properties (except at operational ranges) containing UXO, waste military munitions or munitions constituents.

The purpose of this objective is to establish a comprehensive DoD-wide inventory of all current and former properties that may contain UXO, waste military munitions or munitions constituents. This includes CTT ranges (but does not include operational ranges, whether active or inactive), Formerly Used Defense Sites (FUDS), and so forth. Preliminary CTT range inventories have been conducted by the Services but

this information needs to be validated and further refined to ensure consistent application of current guidance across the Services and to develop any needed modifications to guidance, or to fill data gaps. Senate Report 106-50 required DoD to provide annual estimates of the current and projected costs for UXO remediation at active and BRAC installations, and FUDS to Congress. An accurate inventory is prerequisite to completing these congressionally mandated estimates. The inventory will also assist in the development and justification of internal DoD POMs and budgets. The DoD currently intends to provide preliminary inventory information for those CTT ranges (i.e., where the financial liability is known or estimated) in its FY 2001 Defense Environmental Restoration Program (DERP) Report. This report is scheduled for public release in March 2002. This objective, however, pertains to actions required to improve the preliminary CTT range inventory and to conduct the initial inventories of other properties. Recurring updates to the inventory in the out-years (FY 04 and subsequent), though required, are not part of the MAP. (Note: This objective will require coordination with Objective USE 02 which provides for the establishment of a database for operational ranges, both active and inactive.)

Responsibilities

ODUSD (I&E) (OPR) supported by Services' counterpart organizations (OCRs). (It is anticipated that the OEESCM's Response Subcommittee will be the mechanism used to obtain the input and coordination of the OCRs.)

Army – HQDA, Assistant Chief of Staff for Installation Management, Office of the Director of Environmental Programs and the Army Environmental Center
Navy – Office of the Chief of Naval Operations, N453 (Environmental Restoration Branch)
Marine Corps – CMC (LFL) - HQ, Marine Corps (Land Use and Military Construction Branch,
Air Force – SAF/IEE, Deputy Assistant Secretary of the Air Force (Environment, Safety, and Occupational Health) & HQ USAF/ILEV - Environmental Division

Objective RES 03: Develop DoD guidance for implementing the munitions response policy.

The purpose of this objective is to develop DoD guidance for implementing the policy that will be developed under Objective RES 01. This guidance should address coordination with other agencies, states and the public; program implementation; and technical issues. Programmatic implementation challenges involve budget development, reporting, and prioritization. Technical issues include sampling and analysis procedures, explosives safety planning, data management, institutional controls, waste management, and other response action requirements (e.g., appropriate site "closeout" criteria that describes when the response process can be safely terminated). The guidance also needs to address effective ways to promote stakeholder involvement. Development of this guidance may require coordination with the US EPA and other appropriate stakeholders. The guidance developed under this objective will establish a common procedural baseline for all DoD components; the existence of this guidance will not preclude individual components from developing more detailed or component-specific guidance as may be appropriate to their needs.

Responsibilities

ODUSD (I&E) (OPR) supported by Services' counterpart organizations (OCRs). (It is anticipated that the OEESCM's Response Subcommittee will be an important mechanism used to obtain the input and coordination of the OCRs; the Subcommittee will also need to be aware and incorporate ongoing efforts of groups and organizations operating outside the OEESCM framework.)
Army – HQDA, Assistant Chief of Staff for Installation Management, Office of the Director of Environmental Programs and the Army Environmental Center
Navy – Office of the Chief of Naval Operations, N453 (Environmental Restoration Branch)
Marine Corps – CMC (LFL) - HQ, Marine Corps (Land Use and Military Construction Branch)
Air Force – SAF/IEE, Deputy Assistant Secretary of the Air Force (Environment, Safety, and Occupational Health) & HQ USAF/ILEV - Environmental Division

Objective RES 04: Develop and implement a DoD methodology for estimating the costs of implementing the munitions response policy.

In order to successfully compete for resources to implement the munitions response policy, program managers must have a consistent and credible tool that accurately estimates costs of various program and project phases (e.g., site assessment and investigation, actual field responses or corrective measures, etc.). In addition, such a tool is required to meet DoD's need for estimating its probable liability to meet these requirements in its routine Financial Statements and for providing credible information to the Congress.

Responsibilities

ODUSD (I&E) (OPR) supported by Services' counterpart organizations (OCRs). (It is anticipated that the OEESCM's Response Subcommittee will be the mechanism used to obtain the input and coordination of the OCRs.)

Army – HQDA, Assistant Chief of Staff for Installation Management, Office of the Director of Environmental Programs and the Army Environmental Center
Navy – Office of the Chief of Naval Operations, N453 (Environmental Restoration Branch)
Marine Corps – CMC (LFL) - HQ, Marine Corps (Land Use and Military Construction Branch)
Air Force - SAF/IEE, Deputy Assistant Secretary of the Air Force (Environment, Safety, and Occupational Health) & HQ USAF/ILEV - Environmental Division

STAKEHOLDER INVOLVEMENT

Mission

To build public confidence and foster more informed decision-making, by maintaining a dialogue with stakeholders concerning munitions life cycle issues that may impact public health, safety, and the environment.

Situation

Current legislation, regulation, and internal policies require DoD to involve the public in decisions and policy development that affect their lives. An effective stakeholder involvement program adds value to the decision-making process. Stakeholder involvement helps DoD identify and address interests and concerns from individuals with differing perspectives, cultural backgrounds, and expertise.

Non-DoD stakeholders are understandably concerned about the potential explosives safety, human health, and environmental risks associated with munitions. Land development near current and former DoD installations places the public in closer proximity to military ranges and munitions-related explosives hazards. Recent base closures and transfers of excess property have also increased the potential exposure of the public to such hazards. The public is increasingly concerned with the management of current military property and potential impacts to future land use.

DoD is currently addressing munitions life cycle issues in several stakeholder involvement forums at the local, regional, and national levels. DoD needs to fully capitalize on these initiatives to improve its decision-making and build public confidence.

Recent Initiatives

Some examples of recent stakeholder involvement initiatives include:

- Installation-specific Restoration Advisory Boards (RABs)
- National Munitions Dialogue
- Public Information Forums on the draft Range Rule
- Mass mailing of the draft Range Rule fact sheets to state and federal regulatory agencies and Native American tribal councils.
- Posting of the draft Range Rule and Military Munitions Rule information on DoD and Army Web sites

- Various regulatory and policy-making partnering initiatives:

    - Significant stakeholder involvement efforts were undertaken as part of DoD's initial Munitions Rule compliance efforts

    - Significant and sustained partnering efforts were conducted during the Range Rule and the Range Rule Risk Methodology (R3M) development efforts

Objectives

These objectives focus on developing an effective process to ensure DoD considers the interests of all stakeholders (DoD and non-DoD) when making munitions-life cycle decisions. Although DoD retains responsibility for achieving these objectives, many of the actions are most effectively achieved if DoD works with non-DoD stakeholders. Similarly, effective implementation of the objectives will require coordination with other DoD committees and groups (both in and outside the OEESCM framework.)

Accomplishment of these objectives will identify the appropriate stakeholders for issues related to the munitions life cycle and set forth a method to ensure that their views are collected, analyzed, and considered in the decision making process. Meeting these objectives will also ensure stakeholders are provided with information needed to understand the military readiness, explosives safety, and environmental issues surrounding DoD's use and management of munitions.

Finally, we wish to emphasize that undertaking these objectives in no way undercuts or diminishes the importance of the vital stakeholder involvement efforts being conducted by DoD installations and field activities. Similarly, the MAP's objectives do not supplant or remove authority or responsibility from the Services and their subsidiary organizations and installations to conduct local and regional stakeholder involvement activities. The best stakeholder involvement is local involvement. The objectives do attempt, however, to complement the myriad of DoD's local efforts by fostering a better-coordinated and more integrated national stakeholder involvement program that can assist local and regional efforts. Accomplishment of the objectives should also serve to encourage and assist installations and activities who do not have local involvement programs (or that have deficient programs).

Objective SIV 01 is a short-term objective that will be completed in less than two years. DoD will realize results from the long-term objectives (SIV 02, SIV 03, and SIV 04) within two to five years, but they will also require on-going execution. Each objective includes a schedule of necessary actions.

Objective SIV 01: Identify and engage representative stakeholders (DoD and non-DoD) to develop and participate in DoD's munitions-related activities.

DoD will identify and involve individuals, organizations, and communities that are most directly affected by munitions-life cycle decisions. This responsibility rests with OSD and the Services at the national level and with individual major commands or installations at the regional and local level.

On a national scale, ensuring the participation of all stakeholders affected by munitions life cycle decisions would be difficult, if not prohibitive. Therefore, DoD must, with stakeholders, identify participants that can effectively represent larger constituencies with similar interests and needs. In addition, DoD should work to ensure that appropriate field organizations are encouraged, and provided with the tools, to help them identify and involve local stakeholders in their activities.

Responsibilities

Air Force and Army (co-OPRs) via OEESCM Stakeholder Involvement Subcommittee

Program Manager:
SAF/IEE and DALO-AMA are OPRs; other subcommittee members are OCRs
Commercial: (703) 693-7705 and (703) 697-8455
Fax: (703) 614-2884 and (703) 614-7328

Objective SIV 02: Develop an effective stakeholder involvement program that integrates local and national efforts.

DoD has addressed munitions life cycle issues in several stakeholder involvement forums at the local, regional, and national levels. To maximize the value of these forums, DoD, with appropriate input from stakeholders, must evaluate the capabilities and effectiveness of these forums and recommend appropriate adjustments to their organizational structures and processes. These separate initiatives may require reorganization to avoid duplication of effort and to ensure the appropriate DoD and non-DoD entities are addressing the issues identified by these forums. The success of DoD's 'corporate stakeholder involvement program' is contingent upon adequate communication among the various efforts. The OEESCM Stakeholder Involvement Subcommittee will coordinate with other applicable groups and committees (e.g., DoD RAB, the DoD Sustainable Range Working Group, etc.) to facilitate the required communication. This involvement program, if implemented effectively should improve DoD's ability to:

- Obtain non-DoD stakeholder input on environmental, safety and health performance for new munitions
- Reduce citizen complaints and legal actions stemming from munitions operations and activities
- Improve public understanding and support for military missions

Effective stakeholder involvement mechanisms include provisions for:

- Establishing standard procedures for the process, and providing these to all stakeholders.
- Informing stakeholders of opportunities to provide input to decisions.
- Providing appropriate education and training (fact sheets, briefings, and courses) to stakeholders.
- Providing conflict resolution and facilitation opportunities.

- Collecting stakeholder input in a transparent and accessible manner.
- Analyzing and distributing stakeholder input to appropriate organizations.
- Applying input (accept, reject, or adjust) to decision making.
- Providing feedback (rationale) to stakeholders with respect to final decisions.

Responsibilities

Air Force and Army (co-OPRs) via OEESCM Stakeholder Involvement Subcommittee

Program Manager:
SAF/IEE and DALO-AMA are OPRs; other subcommittee members are OCRs
Commercial: (703) 693-7705 and (703) 697-8455
Fax: (703) 614-2884 and (703) 614-7328

Objective SIV 03: Develop outreach, educational, and communication materials to support stakeholder involvement activities.

Effective communication requires stakeholders to understand the readiness, explosives safety, environmental, and other public concerns surrounding DoD's use and management of military munitions. DoD must develop informational materials and make them available through a variety of products and mechanisms. These can include:

- Fact sheets.
- Policies, procedures, and regulations.
- News articles and newsletters.
- Brochures.
- Training courses.
- Informational videos.
- Web-based material.
- Commander's Guides

Responsibilities

Air Force and Army (co-OPRs) via OEESCM Stakeholder Involvement Subcommittee

Program Manager:
SAF/IEE and DALO-AMA are OPRs; other subcommittee members are OCRs
Commercial: (703) 693-7705 and (703) 697-8455
Fax: (703) 614-2884 and (703) 614-7328

Objective SIV 04: Monitor progress and effectiveness of stakeholder involvement efforts (Quality Assurance, Measures of Merit, etc.).

DoD must ensure that stakeholder involvement programs provide the benefits for which they are designed. That is, they should enhance communication among DoD and other stakeholders to build public confidence and improve DoD decision making throughout the munitions life cycle. DoD must develop and use qualitative and quantitative measures of effectiveness, leveraging existing measurement methods when possible, to measure the program's impact and success. Some methods of measuring effectiveness include:

- Feedback from dialogue forums.
- Public opinion surveys.
- Focus group sessions in areas where public munitions issues have been raised.
- Meeting with identified stakeholder groups to assess effectiveness of outreach.
- Mailing survey questionnaires to identified stakeholders, at the individual and organizational level.
- Measuring number of formal complaints filed against DoD.
- Measuring costs associated with munitions use and management throughout their life cycle.
- Measuring troop and equipment readiness.

Responsibilities

Air Force and Army (co-OPRs) via OEESCM Stakeholder Involvement Subcommittee

Program Manager:
SAF/IEE and DALO-AMA are OPRs; other subcommittee members are OCRs
Commercial: (703) 693-7705 and (703) 697-8455
Fax: (703) 614-2884 and (703) 614-7328

APPENDIX A. Glossary.

Active Munitions Inventory (or Stockpile). The supply of chemical and conventional military munitions that are available for issue and use for combat, training, demonstrations, or research, development, testing, or evaluation. (See Munitions Stockpile and Demilitarization Inventory)

Active Range. An operational military range that is currently in service and is being regularly used for training, demonstrations, or research, development, testing, or evaluation.

Closed Range. A military range that has either been taken out of service as a range and has been put to new uses that are incompatible with range activities or that is no longer considered to be a potential range area. A closed range is still under the control of a DoD Component.

Demilitarization ('Demil'). As used in this MAP, demilitarization is a process that removes the military characteristics from unused munitions that are either unsuitable for continued storage, excess to DoD needs or before they are released from DoD control. Demilitarization applies equally to munitions in unserviceable or serviceable condition. Used (i.e., fired) munitions items also sometimes undergo demilitarization. There are many demilitarization methods such as recovery, recycling, remanufacture, disassembly, reclamation, mutilation, alteration, melting, burning, detonating, destruction, treatment and disposal. Methods involving **resource recovery and recycling** currently constitute approximately two thirds of DoD's demilitarization programs.

Demilitarization ("Demil") Inventory. The demilitarization inventory consists of excess, obsolete and unserviceable munitions. Munitions are moved from the active inventory to the demilitarization inventory after a determination has been made that they are either not economically repairable, obsolete, or excess to the DoD's needs and cannot be sold under the Foreign Military Sales program. (Also see Active Munitions Inventory and Munitions Stockpile.)

Department of Defense Components. The Office of the Secretary of Defense, the Military Departments and Services, the Joint Staff, the Unified and Specified Combatant Commands, the Defense Agencies, the DoD Field Activities, and the National Guard.

Department of Defense Explosives Safety Board (DDESB). A Joint Service board composed of a chairperson, voting representatives from each of the Services, and a permanent military and civilian Secretariat, to perform Board operational and administrative functions. The DDESB provides impartial and objective advice to the Secretary of Defense and DoD Components on explosives safety matters. (See DoD 6055.9-STD for a detailed assignment of Board functions.)

Emergency Responses (to munitions- or explosives-related or UXO emergencies). An immediate response by explosives and munitions emergency response personnel (i.e., **DoD EOD personnel**) to control, mitigate, or eliminate the actual or potential threat encountered during an explosives or munitions emergency. The response action may include in-place or on-site render-safe procedures, treatment or

destruction of the explosives or munitions, or their transport to another location where these operations may be conducted (see 40 CFR Part 260, et al, the Munitions Rule).

Energetic Material. A component of, or an item of ammunition that is designed to produce the necessary energy required for ignition, propulsion, detonation, fire or smoke, thus enabling the item to function. Also a material (corrosive, oxidizer, etc.) that is inherently dangerous and capable of causing serious damage and which requires regulated handling to avoid accidents in connection with its existence and use.

Explosive Ordnance Disposal (EOD) Personnel: Military members who have graduated from the Naval School, Explosive Ordnance Disposal. They have received highly specialized training to provide time-critical UXO hazard mitigation services during both peacetime and wartime. EOD personnel are trained and equipped to perform Render Safe Procedures (RSP) on nuclear, biological, chemical, conventional, and improvised explosive devices. (Note that EOD personnel are distinguished from UXO Technicians who are civilian contractor or government personnel with specialized training and qualifications in the long-term remediation of UXO.)

Free from Explosive Hazard. Material that has been inspected for explosives and determined not to present a danger of explosion or combustion from explosive or energetic materiel.

Hazardous Waste. A solid waste is a hazardous waste if it: (1) is, or contains, a hazardous waste listed in the Code of Federal Regulations at 40 CFR Part 261 Subpart D, or (2) exhibits characteristics of ignitability, corrosivity, reactivity, and/or toxicity. (Refer to 40 CFR § 261.3 for further explanation.)

Impact Area. The identified area within a range intended to capture or contain ammunition, munitions, or explosives and resulting debris, fragments, and components from various weapon system employments. In simple terms, normally the target area where live fire rounds or bombs impact the earth.

Inactive Range. An operational military range that is not currently being used, but that is still under military control, and which the military both considers to be a potential range area and has not put to a new use that is incompatible with range activities. A potential range area is defined as meeting one of three criteria: (1) (Mobilization and Force Projection) Ranges that are held by a DoD Component for the purpose of preparing individuals and units for worldwide deployment, redeployments, or demobilization in response to war, stability, and support operations or projected training requirements that would exceed current active range capabilities; (2) (Force Structure) Ranges held as inactive during realignment, reorganization, stationing, or re-equipping of units projected to use these ranges under new training requirements; or (3) (Future) Ranges that are held by DoD Components for future use in support of National Security Policy or DoD Component doctrine that ensures the capability to produce, establish, and maintain conditions needed for operational success.

Integrated Training Area Management (ITAM). An Army program designed to improve range conditions by inventorying and monitoring land conditions; determining carrying capacity of the land in terms of the training requirements; and providing for land rehabilitation and maintenance measures.

Material that Presents a Potential Explosive Hazard (MPPEH). Military munitions, to include their components; munitions packaging material; residues from research, development, testing and evaluation (RDT&E), production, use (to include range scrap), operational and quality testing, or demilitarization of munitions; or any other materials, equipment, or facilities potentially contaminated with explosives. Both end items and residues derived from processing end-items within United Nations Organization (UNO) Hazard Class (HC). Munitions-related items, pieces, models, training aids, etc., that are suspected, but not confirmed, to be wholly inert.

Military Munitions. All ammunition products and components produced or used by or for the U.S. Department of Defense or the U.S. Armed Services for national defense and security, including military munitions under the control of the Department of Defense, the U.S. Coast Guard, the U.S. DOE , and National Guard personnel. The term includes: confined gaseous, liquid, and solid propellants, explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries used by DoD Components, including bulk explosives and chemical warfare agents, chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges, and devices and components thereof. It does not include: wholly inert items, improvised explosive devices, and nuclear weapons, devices, and components thereof. (However, it does include non-nuclear components of nuclear devices, managed under DOE's nuclear weapons program after all required sanitation operations under the Atomic Energy Act of 1954, as amended, have been completed.)

Military Range. A designated land or water area set aside, managed, and used to conduct research on, develop, test and evaluate military munitions and explosives, other ordnance, or weapon systems, or to train military personnel in their use and handling. Ranges include firing lines and positions, maneuver areas, test pads, detonation pads, impact areas, and buffer zones with restricted access and exclusionary areas.

Munitions. See **Military Munitions**.

Munitions and Explosives of Concern (MEC). Munitions and Explosives of Concern are **Military Munitions** that are **Unexploded Ordnance (UXO)** or have been abandoned (as defined in the EPA Munitions Rule). Also includes soil, facilities, equipment, or other materials contaminated with a high enough concentration of explosives such that it presents an explosive hazard.

Munitions Constituents. Any materials originating from military munitions, including explosive and/or non-explosive materials, and emission, degradation, or breakdown products.
[The following additional explanation is offered for purposes of this MAP: Munitions constituents are the substances or chemical residues resulting from the proper functioning or use of munitions (e.g., residues created and remaining in the soil, water or air from the burning or explosion of **Energetic Material**), or that are present in **Unexploded Ordnance (UXO)**. Such constituents may or may not present an immediate risk of acute physical injury from fire or explosion resulting from accidental or unintentional detonation or ignition of UXO or energetic materials. Similarly, such constituents may or may not result in environmental contamination requiring a **Response** (i.e., **Response Action**).]

Munitions Rule Implementation Policy. Detailed guidance and procedures issued by the Services that explains how DoD will implement and comply with the EPA Military Munitions Rule.

Munitions Stockpile. The Stockpile includes munitions in the active and demilitarization inventories as well as unused waste munitions as defined in the Environmental Protection Agency's (EPA) Military Munitions Rule (MR). (See Active Munitions Inventory and Demilitarization Inventory)

Open Burn (OB). Open Burning is a controlled open-air process by which excess, unserviceable, and obsolete munitions are destroyed to eliminate their inherent explosives safety hazards. DoD OB units use pans or pads to contain the munitions in order to minimize environmental contamination. DoD OB units are permitted as "miscellaneous units" in EPA's environmental permitting process.

Open Detonation (OD). A process used for the treatment of unserviceable, obsolete, and or waste munitions whereby an explosive donor charge initiates the munitions to be detonated. Although surface detonations can be performed under certain circumstances, most munitions are treated in four to six-foot-deep pits for safety purposes. Most OD sites are permitted as miscellaneous units as part of the EPA environmental permitting process. DoD's units are generally permitted as combined OB/OD facilities.

Operational Range. As used in this MAP, operational ranges are **Military Ranges** that are currently under military control and management; they consist of both **Active Ranges** (currently in service or use) and **Inactive Ranges** (not in current use or service).

Range. See Military Range.

Range Clearance. An operation or procedure conducted to remove and properly dispose of munitions or munitions fragments. (e.g., UXO - "duds," etc.). Several types or degrees of clearance may be conducted (e.g., surface clearance based on visual inspection of the surface; shallow clearance where an area is systematically swept with detectors—normally to a depth of 20-24 inches; etc.) Range clearance, though technically applicable to any range category (i.e., closed, transferred, active, etc.) is often considered as occurring only at active, operational ranges. Clearance operations at these active ranges are normally conducted as part of range maintenance activities to maintain or enhance operational safety conditions at the range facility. Even though it is possible for munitions/UXO to cause environmental contamination (i.e., pollution of soil, surface water, groundwater, etc., from the chemical constituents present in munitions), range clearance is focused on removing and safely disposing of munitions/ordnance items or fragments—not the removal or treatment of any chemical residues or constituents from the munitions or associated environmental contamination. Cleanup of environmental contamination or pollution is normally achieved by **Removal or Remedial Actions**.

Regional Environmental Coordinator (REC). A senior military officer or DoD civilian assigned to one of ten EPA regions who is responsible for the dissemination of information and coordination of environmental matters and public affairs among military installations and environmental regulatory organizations within their respective region. RECs have a liaison role and fully adhere to the Services' chain of command.

Remedial Actions/Remediation/Remedial Action Process. Remedial Actions are longer term activities that complete the cleanup of contamination (or a contaminated site or location) if a Removal Action has not, or cannot, achieve the required degree of cleanup for the contamination problem. A distinction is sometimes made between the control or clean up measures to be implemented, which are called "remedial actions," and the identification, evaluation, decision-making, and design and construction steps required to implement the control measures. These steps collectively are called the "remedial action process."

Removals/Removal Action(s). Removal Actions are intended to be relatively quick actions designed to address imminent threats to human health and the environment posed by releases or spills of hazardous substances. Removals should satisfy one or more of the following tests:

- Imminent Threat - The site or situation poses an imminent threat to public health.
- Source Control - The Removal Action either removes the source of contamination off-site or effectively contains it on-site so that continuing releases to the environment are prevented or reduced.
- Access Limitation - The Removal Action substantially reduces the possibility of human exposure to hazardous substances.

The US EPA has categorized Removal Actions, as Emergency, Time-Critical, and Non-Time Critical. Each of these categories possess their own criteria and procedural requirements.

Response(s) or Response Action(s). Responses or response actions are broadly defined in environmental law and regulations as any scientific or engineering investigation, evaluation, decision-making, design, or implementation step taken in response to (i.e., to clean up) a release or spill of hazardous substances. **Removals** and **Remedial Actions (**or **Remedial Action Process)** are sub-categories of Response Actions. Procedural requirements (established in environmental regulations) for these two types of actions differ substantially, but their definitions are almost as broad as for "responses," allowing the terms to be used almost interchangeably. The various terms are best defined by the procedural requirements that are imposed on them by the applicable environmental regulations.

Resource Recovery and Recycling (R3). As used in this MAP, R3 technologies and processes are used by DoD to demilitarize military munitions. These include reuse, or sale "as is" (e.g., Foreign Military Sales), conversion to a commercial product for sale or industrial use, or disassembly, modification and partial or whole use for a military application.

Single Manager for Conventional Ammunition (SMCA). The Secretary of the Army is DoD's SMCA. The U.S. Army Operations Support Command (OSC) is the day to day operator of the SMCA and serves as the central program manager for the execution of most of DoD's demilitarization requirements. The objectives and responsibilities of the SMCA can be found in DoD Directive 5160.65.

Sustainable Use. Actions taken to ensure ranges maintain the ability to conduct training, research, development, testing, and evaluation of munitions in support of the national defense mission while minimizing adverse effects to human health and the environment.

Sustainable Range Management. Management of a military range in a manner that supports national security objectives and maintains the operational readiness of the Armed Forces; and ensures the long-term viability of the range while protecting human health and the environment. [The following additional explanation is offered for purposes of this MAP: A comprehensive DoD approach that develops and implements the policies, plans, practices and procedures necessary to achieve sustainable ranges. Sustainable ranges are managed and operated in a manner that supports their long-term viability and utility to meet the national defense mission. Sustainable ranges will implement the planning, management, coordination, and public outreach necessary to ensure viable continuity of test and training operations and long-term coexistence with neighboring communities and natural ecosystems.]

Transferred Range. A military range that is no longer under the control of a DoD Component and has been leased, transferred, or returned to another entity, to include other Federal, non-DoD entities, for use.

Transferring Range. A military range that is proposed to be leased or transferred from DoD to another entity or disposed of by conveying title to a non-federal entity. An active range will not be considered a "transferring range" until the transfer is imminent.

Unexploded Ordnance (UXO). Military munitions that have been primed, fuzed, armed, or otherwise prepared for use, and that have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installation, personnel, or materiel and remains unexploded either by malfunction, design, or any other cause. UXO presents an immediate risk of acute physical injury from fire or explosion resulting from accidental or unintentional detonation.

Used or Fired Military Munitions. Used or fired munitions are those military munitions that: (1) have been primed, fuzed, armed, or otherwise prepared for use, and that have been fired, dropped, launched, projected, placed, or otherwise used; (2) munitions fragments, (e.g., shrapnel, casings, fins, and other components, to include arming wires and pins) that result from the use of military munitions; or (3) malfunctions or misfires (e.g., fail to properly fire or detonate).

Waste Military Munitions. A military munition is a "waste" military munition if it is a solid waste per the Code of Federal Regulations at 40 CFR §266.202. Such a waste military munition may also be a hazardous waste if it meets the definition found in 40 CFR §261.3. Waste munitions are hazardous wastes when they exhibit the hazardous waste characteristic of ignitability, corrosivity, reactivity, or toxicity; or are listed as hazardous wastes.

APPENDIX B. Acronyms and Abbreviations.

A/I	Active/Inactive (refers to operational military ranges still under DoD control)
AMSIO-SM	An office located in the Army Operations Support Command that is responsible for executing DoD munitions demilitarization programs.
ARDEC	Army Development and Engineering Center
ASN (RD&A)	Assistant Secretary of the Navy (Research, Development and Acquisition)
BRAC	Base Realignment and Closure
CTT	Closed, Transferring, and Transferred (refers to a subset of military ranges)
DAC	Defense Ammunition Center
DAIM	Department of the Army Installation Management Office
DALO-AMA	Department of the Army Logistics Office-Ammunition Division
DCS	Deputy Chief of Staff
DDESB	Department of Defense Explosives Safety Board
DDR&E	Director, Defense Research and Engineering
DENIX	Defense Environmental Network & Information eXchange
DESC	Defense Environmental Security Council
DFAR	Defense (DoD Supplements to) Federal Acquisition Regulations
DLA	Defense Logistics Agency
DoD	Department of Defense
DoDD	Department of Defense Directive
DoDIG	Department of Defense Inspector General
DOI	Department of Interior
DRMO	Defense Reutilization and Marketing Office
DRMS	Defense Reutilization and Marketing Service
EOD	Explosive Ordnance Disposal
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ERGM	Extended Range Guided Munitions
ESOH	Environment, Safety and Occupational Health
ESOHPB	Environmental, Safety, and Occupational Health Policy Board
ESTCP	Environmental Security Technology Certification Program
FAR	Federal Acquisition Regulations
FUDS	Formerly Used Defense Sites
HQMC	Headquarters, US Marine Corps
ISEERB	Inter Service Environmental Education and Review Board
ITAM	Integrated Training Area Management (a US Army program)
JOCG	Joint Ordnance Commanders Group
JUXOCO	Joint UXO Coordination Office
MIL SPECS/STDS	Military Specifications and Standards

OB/OD	Open Burn/Open Detonation
OCR	Office(s) of Collateral Responsibility
ODUSD (I&E)	Office of the Deputy Under Secretary of Defense (Installations and Environment)
OEESCM	Operational and Environmental Executive Steering Committee for Munitions
OPR	Office(s) of Primary Responsibility
OSC	US Army Operations Support Command, (a subsidiary command of the Army Materiel Command); performs as the Single Manager of Conventional Ammunition for DoD
OSD	Office of the Secretary of Defense
OUSD (AT&L)	Office of the Under Secretary of Defense (Acquisition, Technology & Logistics)
POM	Program Objective Memorandum
RAB	Restoration Advisory Board
R&D	Research and Development
R3M	Range Rule Risk Methodology
RDT&E	Research, Development, Test and Evaluation
SAF/AQPB	Secretary of the Air Force (Acquisition Programs)
SAF/IEE	Deputy Assistant Secretary of the Air Force (Environment, Safety and Occupational Health)
SERDP	Strategic Environmental Research and Development Program
SMCA	Single Manager for Conventional Ammunition (a DoD executive agent responsibility performed by the US Army Operations Support Command)
TRI	Toxic Release Inventory (required by the EPCRA)
UXO	Unexploded Ordnance

APPENDIX C. OEESCM Charter and Organization Chart

Charter for Department of Defense
Operational and Environmental Executive Steering Committee for Munitions
(September 10, 1998; see approved modifications at the end of this document)

1. Mission

The Operational and Environmental Executive Steering Committee for Munitions (OEESCM, or the Committee) will develop overarching DoD policies, positions, and action plans related to the lifecycle management of munitions to support readiness by balancing operational needs, explosives safety and environmental stewardship throughout the acquisition, management, use and disposal of munitions.

2. Purpose of the Committee.

a. Define the DoD **guiding principles, strategic plan, and goals and objectives** for integrating readiness and training, range management, explosive safety and environmental stewardship.

b. Develop and coordinate DoD and Service **legislative positions**, **policies, regulations and instructions** that help ensure readiness and sustainable use of ranges.

c. Oversee **implementation of the strategic plan** and develop the planning, programming and budgeting guidance necessary to obtain **resources** to support the plan and to achieve the goals and objectives established by the Committee.

d. Identify requirements, review and facilitate support for **research, development, test and evaluation of ordnance related technologies** to meet the goals and objectives of the Committee.

e. Facilitate and coordinate, as appropriate, the activities of related OSD/Joint/Service councils, IPTs, committees, and work groups.

f. Develop and monitor a coordinated **public outreach** program.

3. Scope.

The Committee will address environmental implications related to readiness and training and the lifecycle management of munitions with full consideration of explosives safety. The scope includes, but is not necessarily limited to:

- Acquisition
- Manufacturing
- Storage and Transportation
- Demilitarization and Disposal
- Range Management
- Cleanup
- Public Outreach
- Explosive Ordnance Disposal

4. Authority.

a. The Committee is a decision making body established as a committee of the Defense Environmental Security Council (DESC) under the authority of DoD Directive 4715.1. It will report issues to the DESC and provide information and updates to the DoD Environment, Safety and Occupational Health Policy Board (ESOHPB).

b. Decisions of the Committee will normally be reached by consensus. If a consensus cannot be reached, each Service will get one vote. If the vote of all four Services is not unanimous, then the decision will be forwarded to the Joint Staff for staffing and tank processing to the DESC level if required. Minority/dissenting Service positions will be stated. All actions, policies, and commitments of resources must be approved by the appropriate Service chain of command. The DoD Explosives Safety Board (DDESB) will be the sole authority for approval of explosives safety policy; any actions that include or impact explosives safety must be coordinated with the DDESB.

5. Membership.

a. Co-Chairs: The Deputy Assistant Secretary of the Army, Environment, Safety and Occupational Health (DASA(ESOH)) will serve as permanent co-chair. The Director, Operations Division, HQMC (Plans, Policies and Operations) and the Assistant Deputy Chief of Naval Operations for Plans, Policies and Operations will rotate as the other co-chair every 18 months. The Marine Corps representative will serve the first rotation; assignment periods will commence effective with the approval date of this charter.

b. Members:

OSD/DoD/Joint Staff/Other Joint organizations:

- Vice Director for Logistics (J-4), Joint Staff
- Assistant Deputy Under Secretary of Defense (Environmental Security/ Environmental Quality)
- Chairman, Department of Defense Explosives Safety Board (DDESB**)**
- Director, Joint UXO Coordination Office
- Director of Environmental Strategy, Environmental Safety and Policy, Headquarters, Defense Logistics Agency (DLA/CAAE)
- Executive Manager, DoD EOD Technology and Training
- Deputy General Counsel (Environment and Installations), DoD Office of General Counsel
- Deputy Director, Test, Systems Engineering and Evaluation for Resources and Ranges (OUSD(A&T)DTSE&E/RR)
- Chairman, Joint Ordnance Commanders Group (JOCG)

Department of the Army:

- Assistant Deputy Chief of Staff for Operations (ADCSOPS)
- Assistant Chief of Staff for Installation Management (DAIM-ZA)
- Director of Aviation, Munitions and War Reserves (DALO-AMZ), Deputy Chief of Staff for Logistics
- Chief Environmental Division, Directorate of Military Programs, Headquarters, Army Corps of Engineers, (CEMP-R)

Department of the Navy:

- Deputy Assistant Secretary of the Navy (Environment and Safety) (DASN(E&S))
- Assistant Deputy Chief of Naval Operations for Plans, Policy and Operations (N3/5B) (when not serving as the co-chair)
- Director Environmental Protection, Safety and Occupational Health Division (N45)
- Director, Air Warfare Division (N88)
- Assistant Deputy Chief of Staff, Installations and Logistics (Facilities), Headquarters, U.S. Marine Corps
- Director of Operations, Deputy Chief of Staff, Plans, Policies and Operations, Headquarters, U.S. Marine Corps (when not serving as co-chair)
- Commander, Marine Corps Systems Command, Program Manager, Ammunition (PM-AM)

Department of the Air Force:

- Deputy Assistant Secretary of the Air Force (Environment, Safety and Occupational Health) (SAF/MIQ)
- Director of Operations and Training, Deputy Chief of Staff, Air and Space Operations (USAF/XOO)
- Deputy Director of Civil Engineering, Deputy Chief of Staff, Installations, Logistics and Engineering (USAF/ILE)

- Director of Maintenance, Deputy Chief of Staff, Installations, Logistics and Engineering (USAF/ILM)

c. Invited Participants. DoD Components and Services are encouraged to invite subject matter experts to present issues and concerns for consideration by the Committee.

6. Responsibilities.

a. The Committee Co-Chairs will:

- Direct and supervise the operations of the Committee.
- Schedule and preside at Committee meetings.
- Elevate to the Joint Staff, DESC, ESOHPB, or OSD, for information and decision, as necessary, issues that require approval (e.g., new DoD policy).
- Establish sub-committees and assign tasks to carry out assigned projects and actions to discharge the Committee's mission. Initially, this will include the following service chaired sub-committees:

    - Acquisition of munitions
    - Munitions stockpile management
    - Range and munitions use
    - Munitions demilitarization
    - Range response actions

    All Services will provide at least one member for each of these sub-committees and sub-committee chairpersons will be at the GS/GM-15 or O6 level. Other Committee members will provide support as appropriate. Sub-committees will report quarterly to the full Committee.

b. The Army will provide administrative support for the Committee.

c. Committee members will:

- Represent their agencies or groups on all matters addressed by the Committee and propose initiatives and issues for Committee consideration.
- Authorize substitutes to represent their position at meetings.
- Provide resources to support Committee initiatives.
- Provide technical and legal support to the Committee.

7. Administration of the Committee.

a. Committee initiatives will be accomplished through sub-committees that are staffed by the Services, Office of the Secretary of Defense, Defense Agencies, and joint organizations as appropriate.

b. Committee actions and initiatives will be tracked by Committee administrative staff.

c. Meetings will be held at least quarterly, or at the call of the Co-Chairs. Status of all ongoing initiatives will be provided at each meeting.

d. Agenda and read-ahead materials will be prepared and distributed ten days prior to scheduled meetings.

e. Committee meeting minutes will be a record of significant discussions, decisions, and agreed upon actions, and will be signed by the Co-Chairs and distributed to all members. (Draft minutes should be provided to Committee members for coordination within five workdays.)

8. Duration.

The Committee will be chartered for a period of three years from the date of this charter. At the end of the three years, the Committee will review this Charter to determine if the Committee should be continued. This Charter will then be canceled or revised and reissued, as appropriate.

Approved: //original signed// October 5, 1998
Raymond J. Fatz, DASA (ESOH) date
Co-Chairman

//original signed// 3 October 1998
Jan C. Huly, BGen, HQMC (PP&O) date
Co-Chairman

SUMMARY OF MODIFICATIONS TO OEESCM CHARTER

CHANGE 1 (13 Nov 98)

The following changes to the OEESCM charter (dated 10 September 1998) were approved at the 13 November 1998 meeting of the Steering Committee:

- Paragraph 5a of the Charter was amended to include the Air Force as one of the rotating co-chairs of the Steering Committee. The Director of Operations and Training, Deputy Chief of Staff, Air and Space Operations (USAF/XOO) will provide a representative to serve as the operational co-chair for a period of one year. The committee noted that the operational co-chairs of the committee should serve for one year (vice 18 months) before the co-chairmanship is rotated to a succeeding service; the charter's presently approved term (3 years) was not changed.

- Paragraph 6a of the Charter was amended to allow formation of a 'Council of Colonels' to oversee, coordinate and integrate the activities of the 5 subcommittees established by the Committee's original charter. The Army will provide executive/technical support to the Council as part of its overall support to the Steering Committee.

  The Council's **functions** were identified as follows:

- Serve as an integration work group for the 5 subcommittees (e.g., eliminate conflicts/redundancies and determine gaps in action plans, etc.)
- Review/resolve issues before reaching the OEESCM, if appropriate, and determine issues requiring OEESCM action

  The Council's **membership** was identified as follows:

- Chaired by the DUSD(ES/EQ)
- Chairs/co-chairs of the 5 subcommittees
- Steering Committee Co-chair representatives
- Others, as appropriate or required (e.g., representatives of other OEESCM members)

CHANGE 2 (27 May 99)

The following changes to the OEESCM charter (dated 10 September 1998) were approved at the 27 May 1999 meeting of the Steering Committee:

- Paragraph 6a of the Charter was amended to provide for the formation of a 'Stakeholder Involvement Subcommittee.' The **overarching mission objectives** of the SISC are:

- Collect, analyze, and recommend actions concerning input provided by non-DoD stakeholders (at the local, regional, or national levels) about DoD's munitions-related programs and activities.
- Establish processes for dissemination and coordination of policies developed in response to issues raised by non-DoD stakeholders.
- Serve as focal point for reception of products submitted via ongoing dialogue efforts with non-DoD stakeholders (e.g., such as the National Policy Dialogue for Munitions, etc.).

The **Subcommittee's membership** will be diverse and include representatives from each Service and the ODUSD (ES). Functional Areas represented are to be decided by each Service and OSD representative, but military "munitions operators" (e.g., training, logistics, etc.), Public Affairs Officers (PAOs), environmental staff, and other experts, if deemed appropriate, should be represented. Regional Environmental Coordinators' representatives and Major Command and/or installation-level personnel may participate, if deemed appropriate by the applicable Component's chain of command.

CHANGE 3 (5 Aug 99)

The following change to the OEESCM charter (dated 10 September 1998) was approved at the 5 August 1999 meeting of the Steering Committee:

- Paragraph 6a of the Charter was amended to consolidate the munitions Demilitarization Subcommittee into the munitions Stockpile Management Subcommittee.

The reorganized Stockpile Management Subcommittee will include munitions demilitarization in its scope and will be led by the Department of the Navy.

CHANGE 4 (29 Oct 99)

The following change to the OEESCM charter (dated 10 September 1998) was approved at the 29 October 1999 meeting of the Steering Committee:

- Paragraph 5b of the Charter was amended by adding three new members from the OSD staff to the Steering Committee:

    - Deputy Director, Strategic and Tactical Systems, Munitions OUSD(AT&L)/S&TS/OM

- Assistant Deputy Under Secretary of Defense (Environmental Security) for Cleanup, ADUSD (ES/CL)

- Deputy Director, Operational Test and Evaluation, Resources and Ranges (DOT&E/RR)

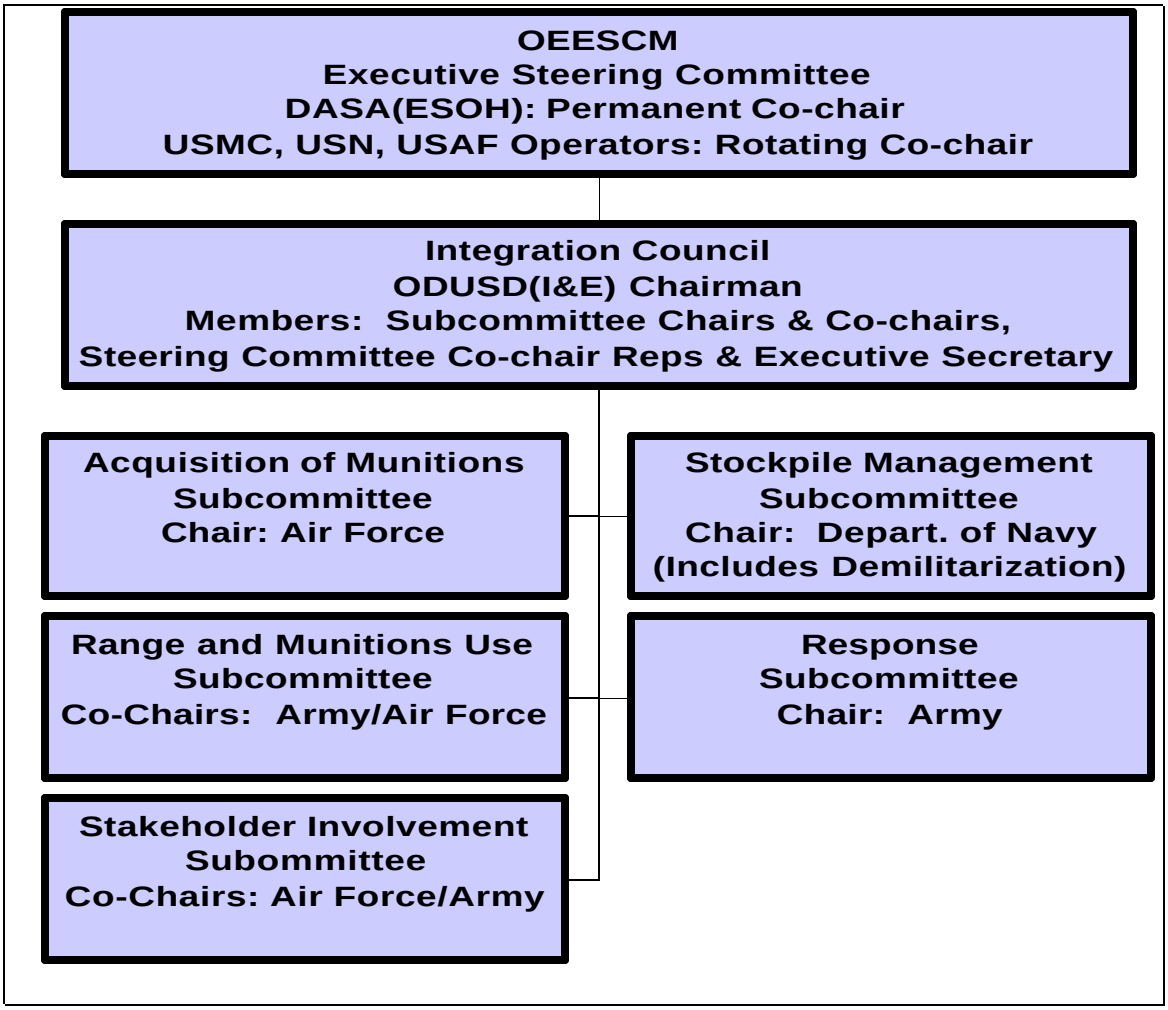
  NOTE: This position is a replacement for the Deputy Director, Test, Systems Engineering and Evaluation for Resources and Ranges (OUSD(A&T)DTSE&E/RR) which was included in the original membership; the new title is a result of an OSD staff reorganization.

CHANGE 5 (16 Mar 01)

- Paragraph 5b of the Charter was amended by adding a new member from the OSD staff to the Steering Committee:
  - Deputy Director, Training Division, Deputy Under Secretary of Defense (Readiness) DUSD (R)

OEESCM ORGANIZATION CHART

(Does not include focused or ad-hoc workgroups formed to address specific purposes.)


OEESCM
Executive Steering Committee
DASA(ESOH): Permanent Co-chair
USMC, USN, USAF Operators: Rotating Co-chair
Integration Council
ODUSD(I&E) Chairman
Members: Subcommittee Chairs & Co-chairs,
Steering Committee Co-chair Reps & Executive Secretary
Acquisition of Munitions Subcommittee
Chair: Air Force
Stockpile Management Subcommittee
Chair: Depart. of Navy
(Includes Demilitarization)
Range and Munitions Use Subcommittee
Co-Chairs: Army/Air Force
Response Subcommittee
Chair: Army
Stakeholder Involvement Subommittee
Co-Chairs: Air Force/Army

APPENDIX D. MAP Implementation Actions—Mandatory References

The MAP outlines actions to maintain combat readiness while enhancing explosives safety and environmental stewardship. However, as with any plan, the actions and objectives cannot be executed in a vacuum, and must comply with existing regulations and DoD policies. MAP implementation actions taken without anticipation of compliance with the following requirements will create significant program risk and challenges for the implementing organizations. Some of these documents are referenced within specific sections of the MAP and other selected, mandatory references for program implementation are listed below.

- **DoDD 4715.1** Environmental Security
- **DoDD 5000.1** Defense Acquisition
- **DoD 5000.2-R** Mandatory Procedures For Major Defense Acquisition Programs (MDAPS) and Major Automated Information System (MAIS) Acquisition Programs
- **DoDD 6055.9** DoD Explosives Safety Board (DESB) and Component Explosives Safety Responsibilities
- **DoD 6055.9-STD** DoD Ammunition and Explosives Safety Standards
- **MEMORANDUM** FOR SERVICE SAFETY CENTERS, Guidance for Clearance Plans, DDESB, 27 Feb 1998
- **DoD 4145.26-M** DoD Contractor's Safety Manual for Ammunition and Explosives
- **DoD 4160.21-M** Defense Materiel Disposition Manual
- **DoD 4160.21-M-1** Defense Demilitarization Manual
- **DoDD 4715.11** Environmental and Explosives Safety Management on DoD Active and Inactive Ranges Within the United States
- **DODD 4715.12** Environmental and Explosives Safety Management on DoD Active and Inactive Ranges Outside the United States
- **29 CFR 1910.120** Hazardous Waste Operations and Emergency Response
- **40 CFR Part 266** Military Munitions Rule
- **49 CFR Part 1502** Environmental Impact Statement

- **49 CFR [sect] 1508.9** Environmental Assessment

APPENDIX E. Preliminary Implementing Strategies and Schedule Milestones for all Objectives (By Life Cycle Phase and by Fiscal Quarter)

ACQUISTION OBJECTIVES:

ACQ 01

Action	Start Date	End Date
Identify/assess adequacy of DoD and Services' explosives safety and environmental stewardship guidance with respect to generation of acq program requirements and the acquisition process	**2Q/02**	**4Q/03**
ACQ 01A Work with Service ESOH acq policy experts to accomplish goal. Coordinate with ESOH Acq IPT	2Q/02	4Q/02
ACQ 01B Work through ESOH Acquisition IPT to propose revisions to acquisition, explosives safety and environmental directives and policies to meet criteria	2Q/02	1Q/03
ACQ 01C Develop required procedures to ensure implementation and oversight	1Q/03	4Q/03

ACQ 02

Action	Start Date	End Date
Identify obstacles to integrating environmental and explosives safety considerations into the acquisition process and establish remedies	**2Q/02**	**4Q/03**
ACQ 02A Survey experienced acquisition managers, logisticians, testers, users, & other experts to determine/define process obstacles in PEO/other programs	2Q/02	4Q/02
ACQ 02B Identify/evaluate several completed munitions development programs; determine environmental/explosive safety successes & problems associated with fielded weapons	3Q/02	1Q/03
ACQ 02C Prepare lessons-learned report with recommendations for users, testers, logisticians, etc., w/respect to incorporating env considerations into acq programs; use Services' existing data (see ACQ 01 for examples of AF documents) as a start	1Q/03	3Q/03
ACQ 02D Develop model scenario/attributes of operationally & environmentally successful munitions	1Q/03	3Q/03

acquisition program		
ACQ 02E Get results in Acq Reform Initiatives; publish lessons learned & acq reform successes	2Q/03	4Q/03

ACQUISTION OBJECTIVES (Continued):

ACQ 03

Action	Start Date	End Date
Ensure cost estimating models, techniques, and cost data required for estimating life cycle environmental and explosive safety costs are available and used in the munitions acquisition process	**2Q/02**	**4Q/04**
ACQ 03A Survey adequacy of existing cost models and cost analysis guides and practices regarding life cycle environmental and explosives safety costs	2Q/02	1Q/03
ACQ 03B Correlate the provisions of these models with requirements in applicable acquisition & environmental regulations	4Q/02	2Q/03
ACQ 03C Modify cost models or adjunct processes to address potential shortfalls	2Q/03	1Q/04
ACQ 03D Identify environmental and explosives safety cost data needed for estimating and develop a process for continuous collection and sharing of such data	2Q/03	2Q/04
ACQ 03E Incorporate guidance for ESOH requirements in appropriate acquisition & cost directives, DFAR/FAR clauses, and source selection documentation	1Q/04	4Q/04

ACQUISTION OBJECTIVES (Continued):

ACQ 04

Action	Start Date	End Date
Develop/implement munitions acquisition strategy or plan that minimizes or eliminates undesirable environmental and explosives safety impacts throughout the life cycle	**4Q/02**	**4Q/05**
ACQ 04A Analyze munitions life cycle to determine points when env/explosives safety effects can be considered/addressed; use existing reports/projects as starting points. Develop approach to address each point & that maintains feedback loop between acq & user communities to ensure ESH impacts are relayed to acq managers/hardware contractors; consider use of stakeholder input to help develop applicable (i.e., not program-specific) ESH performance criteria.	4Q/02	2Q/04*
ACQ 04B Develop guidance on preparing and/or develop model contractors' performance specs for munitions acq programs that will reduce life cycle ESH impacts; ensure guidance addresses flexible materials substitution criteria or incentives. Consider establishing reqmt that acq programs obtain/distribute emissions & residue data for munitions constituents in items being acq/developed	1Q/03	4Q/04*
ACQ 04C Identify env sensitive and successful munitions acquisition or modification programs; incorporate lessons learned into the acquisition strategy and contractor performance criteria; feed success stories to Acquisition Reform Initiative	4Q/02	4Q/04*
ACQ 04D Develop process to provide environmental characteristics data on materials to acq managers during program definition and development; organize data and info in a form useful to acq prog managers	3Q/02	2Q/05*

Action	Start Date	End Date
ACQ 04E Develop plan or methodology for including above actions in the program office or via the prime contractor under TSPR (Total System Performance Responsibility) as part of overall munitions acq strategy; implement results (e.g., by revs to DoD 5000.2-R, Defense Systems Management College courses, program milestone reviews & documentation requirements, and contract provisions).	1Q/03	4Q/05*

*** Completion dates are shown but interim products must be delivered and provided throughout the effort by the implementation team.**

ACQUISTION OBJECTIVES (Continued):

ACQ 05

Action	Start Date	End Date
Expand technology efforts aimed at improving explosives safety and reducing adverse environmental impacts across the munitions life cycle	**4Q/02**	**4Q/04**
ACQ 05A Develop plan for technology projects to improve expl safety/reduce env impacts across munitions life cycle; prioritize by potential payoffs; assess/build on current efforts (e.g., SERDP/ESTCP)	4Q/02	2Q/03
ACQ 05B Assess on-going technology efforts in light of the plan and identify high payoff gaps	1Q/03	3Q/03
ACQ 05C Allocate needed technology investments to support the plan among the Services/develop language for the Defense Planning Guidance	3Q/03	2Q/04
ACQ 05D Establish tech programs to address gaps	1Q/04	TBD
ACQ 05E Develop tracking/oversight methodology and identify/request appropriate OSD office for tracking progress against the plan	1Q/02	4Q/04

ACQ 06

Action	Start Date	End Date

Action	Start Date	End Date
Develop comprehensive explosives safety, human health (OSHA issues, etc.) and environmental training modules for munitions acq managers and program office staffs	**4Q/02**	**2Q/05**
ACQ 06A Review/assess current expl safety, human health & env training for acquisition and requirements personnel in DoD	4Q/02	2Q/03
ACQ 06B Compare current programs with applicable/appropriate expl safety, human health or env education/training reqmts and identify needed additions or changes (incl OSHA reqmts)	2Q/03	3Q/04
ACQ 06C Develop/incorporate changes for expl safety, human health and env training modules in DoD/Service acquisition & requirements planning courses	2Q/04	2Q/05

ACQUISTION OBJECTIVES (Continued):

ACQ 07

Action	Start Date	End Date
Achieve better understanding of munitions-related environmental impacts and improved UXO-related technologies	**3Q/02**	**4Q/08 (Ongoing)**
ACQ 07A Develop Munitions/UXO Research & Technology Metrics for Munitions Responses	3Q/02	3Q/03
ACQ 07B Develop Munitions/UXO Research and Technology Development Action Plan	3Q/02	1Q/03
ACQ 07C Develop and implement procedures that conveys results from munitions-related R&D efforts to munitions acquisition and production program managers (see ACQ 04)	4Q/02	4Q/04
ACQ 07D Improve and increase body of science on fate, transport (including migration and exposure of UXOs through erosion, corrosion), and environmental/ecological effects of UXOs and munitions constituents; aggressively fund RDT&E and deployment of the most promising munitions/UXO-related development initiatives	1Q/03	4Q/08 (Ongoing)

STOCKPILE MANAGEMENT OBJECTIVES:

STK 01

Action	Start Date	End Date
Evaluate implications of inventory growth on readiness, the environment, explosives safety, and total DoD costs	**2Q/02**	**4Q/04 (4Q/07)**
STK 01A Determine reasons for inventory growth (examine contributing factors, etc.)	2Q/02	4Q/02
STK 01B Review environmental and explosive safety risks due to this growing inventory	4Q/02	4Q/03
STK 01C Identify the potential effects of the increasing inventory on readiness	2Q/03	2Q/04
STK 01D Identify the potential effects of the increasing inventory on total DoD costs (e.g., environmental, explosives safety liabilities, etc.)	2Q/03	2Q/04
STK 01E Determine actions required to optimize inventory level to minimize effects on readiness, the environment, expl safety risks, & total DoD costs	1Q/04	4Q/04
STK 01F Implement/monitor actions in STK 01E.	1Q/04	4Q/07

STOCKPILE MANAGEMENT OBJECTIVES (Continued):

STK 02

Action	Start Date	End Date
Ensure DoD-wide and DoD's Components' policies reflect EPA MR requirements by conducting a Baseline Policy Evaluation.	**4Q/01**	**1Q/05**
STK 02A Review and evaluate need for official DoD implementation policy and guidance for the EPA MR.	4Q/01	2Q/02
STK 02B Identify and evaluate DoD and Component explosives safety and munitions management policies, regulations, and directives to determine if the EPA MR requirements have been incorporated.	2Q/02	4Q/02
STK 02C Develop recommendations for appropriate revisions to DoD and Component policies and guidance.	4Q/02	2Q/03

Action	Start Date	End Date
STK 02D Complete Final Report and issue to OSD and DoD Components for implementation.	2Q/03	4Q/03
STK 02E Components implement recommendations.	1Q/04	1Q/05

STK 03

Action	Start Date	End Date
Identify and incorporate explosives safety and environmental risk factors during the development of active inventory munitions logistics initiatives and systems.	**1Q/03**	**4Q/04 (4Q/07)**
STK 03A Conduct a baseline assessment of existing policies and procedures to evaluate level or degree to which explosives safety and environmental issues are addressed.	1Q/03	4Q/03
STK 03B Identify potential environmental and explosives safety issues associated with munitions logistics initiatives through appropriate JOCG subcommittees.	1Q/03	4Q/04
STK 03C Integrate explosives safety and environmental risk reduction mechanisms into munitions logistics initiatives; monitor progress.	3Q/04	4Q/07

STOCKPILE MANAGEMENT OBJECTIVES (Continued):

STK 04

Action	Start Date	End Date
Identify and evaluate DoD Components' current internal and external EPA MR training programs and develop a DoD training program to meet baseline requirements.	**4Q/02**	**2Q/05**
STK 04A Identify and review current training courses and programs	4Q/02	4Q/03

Action	Start Date	End Date
STK 04B Determine need for and develop strategy to provide training to appropriate environmental regulatory personnel	1Q/03	2Q/04
STK 04C Prepare evaluation report and recommendations; determine appropriate delivery mechanism for providing required training program	3Q/04	2Q/05

STK 05

Action	Start Date	End Date
Develop DoD compliance metrics for the EPA MR.	**4Q/03**	**2Q/05**
STK 05A Establish goals for DoD performance under the EPA MR	4Q/03	2Q/04
STK 05B Develop measurable performance criteria	1Q/04	4Q/04
STK 05C Develop and provide metrics to DoD Components for implementation and use	2Q/04	2Q/05

RANGE AND MUNITIONS USE OBJECTIVES:

USE 01

Action	Start Date	End Date
Assess environmental effects on operational ranges	**2Q/00**	**3Q/05**
USE 01A Develop an overarching approach to obtain needed data	2Q/00	4Q/01
USE 01B Conduct searches of published/ongoing munitions testing and sampling efforts	4Q/01	4Q/02

Action	Start Date	End Date
USE 01C Conduct coordinated testing to obtain required emissions data	2Q/02	3Q/04
USE 01D Conduct coordinated sampling to obtain required environmental data from ranges	2Q/02	3Q/04
USE 01E Develop a screening tool for the assessment of environmental risks posed by munitions activities.	3Q/03	4Q/04
USE 01F In cooperation with regulators, finalize a sampling and monitoring protocol for the assessment of environmental impacts of munitions use on ranges.	3Q/03	3Q/05

USE 02

Action	Start Date	End Date
Develop Inventory of Operational (both Active and Inactive) Ranges	**3Q/99**	**4Q/02**
USE 02A Develop database definitions	3Q/99	3Q/01
USE 02B Develop/refine standardized database	2Q/02	3Q/02
USE 02C Develop necessary guidance and action plans for reporting results of inventory (consider establishment of centralized data repository)	2Q/02	3Q/02
USE 02D Services conduct inventory, QA/QC data, and refine guidance and databases (definitions/data/etc.)	2Q/02	4Q/02

RANGE AND MUNITIONS USE OBJECTIVES (Continued):

USE 03

Action	Start Date	End Date
Develop Standard DoD Munitions Expenditure Database Requirements	**2Q/02**	**4Q/02**

Action	Start Date	End Date
USE 03A Determine the data collection capabilities of the Services	2Q/02	3Q/02
USE 03B Define baseline/optional data elements	2Q/02	3Q/02
USE 03C Develop a coordinated DoD guidance document establishing data collection elements/standards for typical range operations	3Q/02	4Q/02

USE 04

Action	Start Date	End Date
Determine potential operational limitations for operational ranges in light of current & potential future env regulatory requirements.	**3Q/00**	**4Q/02**
USE 04A Identify/assess current regulations concerning munitions use on operational (A/I) ranges	3Q/00	4Q/01
USE 04B Develop fiscal & ops impact scenarios to assess possible effects on test & training ops	1Q/02	3Q/02
USE 04C Develop recommendations for long-term fiscal & doctrinal planning (incl potential legal & regulatory clarification & compliance strategies)	2Q/02	4Q/02
USE 04D Develop range management recommendations and guidance	4Q/01	4Q/02

USE 05

Action	Start Date	End Date
Develop risk-based range clearance guidance and management procedures.	**1Q/99**	**4Q/04**
******USE 05A Develop DoD munitions policy for sustainable range management	1Q/99	4Q/99
USE 05B Assess existing range clearance practices	4Q/01	2Q/02
USE 05C Develop risk-based 'minimum clearance' policy for operational ranges	1Q/02	3Q/02
USE 05D Develop/issue DoD implem. guidance	3Q/02	4Q/03

**** Completed by issuance of DoD Directive 4715.11 and 4715.12**

DEMILITARIZATION OBJECTIVES:

DEM 01

Action	Start Date	End Date
Complete a baseline assessment of recent and existing efforts and initiatives focused on demilitarization environmental and explosives safety issues	**2Q/99**	**4Q/99**
DEM 01A Conduct a broad investigative search and screening effort	2Q/99	3Q/99
DEM 01B Synopsize and document demilitarization environmental and/or explosives safety efforts and provide draft results for subcommittee review	3Q/99	3Q/99
DEM 01C Review the research findings and provide recommended additions, deletions and/or further potential candidates for research	3Q/99	3Q/99
DEM 01D Develop DEMIL Subcommittee baseline assessment database	3Q/99	3Q/99
DEM 01E Review the report and make recommendations for combination, sunset, or expansion of existing efforts or new initiatives to Integration Council and OEESCM*	4Q/99	4Q/99
DEM 01F Maintain and update database on annual basis.	1Q/01	1Q/07

***Note: This final report, entitled "OEESCM Demil Subcommittee Baseline of Ongoing Studies, Reports, and Work Groups," dated August 1999, is available upon request by contacting the OEESCM Executive Secretary.**

DEMILITARIZATION OBJECTIVES (Continued):

DEM 02

Action	Start Date	End Date
Implement DoD protocol for inspection, processing, turn-in, accountability and ultimate sale and/or disposal of range MPPEH	**2Q/99**	**4Q/03**
DEM 02A Conduct survey to determine relationships & procedures between ranges and servicing DRMOs; assess results	2Q/99	2Q/99
DEM 02B Review results from range and MPPEH-related processing workgroups, studies, IPTs, and assistance visits	2Q/99	2Q/00
DEM 02C Evaluate costs, benefits, and liabilities associated for various program & procedure options to manage range MPPEH	2Q/00	3Q/01
DEM 02D Develop/issue DoD policy for inspection, processing, turn-in, accountability & ultimate sale and/or disposal of range MPPEH	2Q/00	2Q/02
DEM 02E Develop/issue DoD implementing guidance with performance and procedural standards to meet 02D's policy requirements	2Q/02	4Q/03
DEM 02F Implement range MPPEH management procedures	4Q/03	Ongoing

DEM 03

Action	Start Date	End Date
Determine/assess environmental and human health effects of OB/OD treatment operations.	**2Q/02**	**4Q/06**
DEM 03A Coordinate, collect, and analyze ongoing research studying the effects of open burning and open detonating munitions	2Q/02	3Q/03
DEM 03B Identify data gaps.	2Q/03	1Q/04
DEM 03C Fill data gaps to assess environmental/human health effects of OB/OD	2Q/04	2Q/06
DEM 03D Develop final report summarizing efficacy and environmental impacts of OB/OD	1Q/06	4Q/06
DEM 03E Develop specific recommendations to assist the Services in making environmentally informed decisions with respect to using OB/OD	1Q/04	1Q/05

DEMILITARIZATION OBJECTIVES (Continued):

DEM 04

Action	Start Date	End Date
Operate the optimum Open Burning/Open Detonation (OB/OD) facility infrastructure, including numbers and types of sites, to support DoD mission requirements	**1Q/99**	**2Q/03**
DEM 04A Complete OB/OD Phase II effort	1Q/99	2Q/01
DEM 04B Prepare and provide completed report to OEESCM with recommendations for Service implementation	2Q/02	4Q/02
DEM 04C Develop and submit proposed implementation instructions/guidance for DoD Components to the OEESCM; OEESCM fine-tunes guidance and develops strategy to issue guidance to Services	4Q/02	2Q/03

RESPONSE OBJECTIVES

RES 01

Action	Start Date	End Date
Develop and promulgate DoD policy for responses to UXO, waste munitions and munitions constituents	**3Q/01**	**4Q/02**
RES 01A Review and evaluate previous policy development efforts	3Q/01	4Q/01
RES 01B Review, evaluate and address previous non-DoD stakeholder input	3Q/01	4Q/01
RES 01C Prepare and formally coordinate draft Directive; issue to Services	1Q/02	4Q/02

RESPONSE OBJECTIVES (Continued):

RES 02

Action	Start Date	End Date
Establish and refine DoD inventory of properties containing UXO, waste munitions and munitions constituents	**4Q/01**	**4Q/03**
RES 02A Services review preliminary CTT range inventory data to identify guidance deficiencies, data gaps, etc.	4Q/01	2Q/02
RES 02B Services recommend refinements to inventory guidance/database requirements	2Q/02	3Q/02
RES 02C Services refine preliminary CTT range inventory data (fill data gaps, resolve inconsistencies, etc) and add inventory data for other properties	2Q/02	4Q/03
RES 02D Services conduct any additional/required inventory activities and submit updated inventory results to OSD (Follow-on inventory updates will be required but those requirements are not part of the MAP.)	2Q/02	4Q/03

RES 03

Action	Start Date	End Date
Develop DoD Implementation Guidance for Munitions Response Policy	**2Q/02**	**4Q/03**
RES 03A Review and evaluate previous program implementation development efforts (e.g., R3M, EPA program guidance, etc.)	2Q/02	3Q/02
RES 03B Review, evaluate and address previous non-DoD stakeholder input	2Q/02	3Q/02

Action	Start Date	End Date
RES 03C Prepare and formally coordinate draft DoD Instruction or guidance document; issue to Services	2Q/02	1Q/03
RES 03D Services develop and issue implementing regulations, service-specific guidance, etc.	1Q/03	4Q/03

RESPONSE OBJECTIVES (Continued):

RES 04

Action	Start Date	End Date
Develop and implement cost estimating methodology for implementing the Munitions Response Policy	**2Q/02**	**3Q/04**
RES 04A Services jointly review preliminary cost estimates and approaches (e.g., review assumptions, etc.) used for Senate Report 106-50 submission	2Q/02	4Q/02
RES 04B Prepare draft cost estimation methodology to include guidance for consistent application of default criteria	3Q/02	4Q/02
RES 04C Services conduct joint field test using draft methodology	4Q/02	3Q/03
RES 04D Prepare, coordinate and issue final version of cost methodology to Services	3Q/03	3Q/04

STAKEHOLDER INVOLVEMENT OBJECTIVES

SIV 01

Action	Start Date	End Date
Identify & engage representative stakeholders (DoD and non-DoD) to develop & participate in stakeholder involvement activities	**2Q/02**	**4Q/03**
SIV 01A Identify DoD stakeholders (consider personnel assigned to either national or field-level organizations) to participate in national–level stakeholder involvement activities.	2Q/02	3Q/02

Action	Start Date	End Date
SIV 01B Identify non-DoD stakeholder reps for involvement in DoD national-level stakeholder involvement activities (consider participants involved in previous partnering/dialogue efforts).	1Q/02	3Q/02
SIV 01C Obtain non-DoD stakeholder input on effective methods for involving and communicating with them on munitions issues.	3Q/02	4Q/02
SIV 01D Define national-level involvement issues and activities needed (e.g., workshops, etc.) to address issues or programs of concern	1Q/03	4Q/03
SIV 01E Develop/issue guidance to field activities for identifying & involving stakeholders in their activities.	3Q/02	4Q/03

STAKEHOLDER INVOLVEMENT OBJECTIVES (Continued):

SIV 02

Action	Start Date	End Date
Develop an effective stakeholder involvement program that integrates local and national efforts.	**2Q/02**	**4Q/03 (Ongoing)**
SIV 02A Identify all stakeholder involvement efforts that are currently (or could be) used to address munitions life cycle issues.	2Q/02	3Q/02
SIV 02B Identify and address gaps and deficiencies in existing processes (funding, organizational structure) and stakeholder involvement resources (personnel training, recruiting, knowledge, skills, and abilities).	3Q/02	2Q/03
SIV 02C Establish effective reporting, monitoring, and communication systems to ensure issues are shared among national and local forums for information and action.	3Q/02	4Q/03
SIV 02D Develop and provide recommended processes to assist field activities' stakeholder involvement efforts	2Q/02	4Q/03
SIV 02E Advocate and support stakeholder involvement efforts through adequate program management, funding, training, and policy.	3Q/02	Ongoing

SIV 03

Action	Start Date	End Date
Develop outreach, educational, and communication materials to support stakeholder involvement program.	**3Q/02**	**4Q/03 (Ongoing)**
SIV 03A Identify stakeholder information needs.	3Q/02	4Q/02
SIV 03B Identify appropriate products and mechanisms to meet information needs.	4Q/02	3Q/03
SIV 03C Develop and coordinate content for materials.	1Q/03	4Q/03
SIV 03D Distribute material.	3Q/03	Ongoing

STAKEHOLDER INVOLVEMENT OBJECTIVES (Continued):

SIV 04

Action	Start Date	End Date
Monitor progress and effectiveness of stakeholder involvement efforts (Quality Assurance, Measures of Merit, etc.).	**3Q/02**	**4Q/03 (Ongoing)**
SIV 04A Establish metrics to evaluate effectiveness of activities.	3Q/02	1Q/03
SIV 04B Evaluate and integrate existing measures of effectiveness.	1Q/03	4Q/03
SIV 04C Implement monitoring and evaluation/measurement efforts.	4Q/03	Ongoing
SIV 04D Adjust stakeholder involvement activities in response to metrics	4Q/03	Ongoing

Appendix F. Summary Schedule Roll-Up Information for all Objectives.

OBJECTIVE	OPR(s)	Start Date	Due Date	Complete (Actual)	Description of Objective
ACQUISI-TION					
ACQ 01	**ODUSD (I&E)**	**2Q/02**	**4Q/03**		**Identify, review, and assess all DoD and Service policies, directives, and other general acquisition guidance documents that address explosives safety and environmental stewardship with respect to the generation of munitions requirements and the acquisition process**
ACQ 02	**AF**	**2Q/02**	**4Q/03**		**Identify obstacles to the integration of environmental and explosives safety considerations into the acquisition process and establish remedies to overcome these obstacles**
ACQ 03	**ODUSD (I&E)**	**2Q/02**	**4Q/04**		**Ensure that cost estimating models, techniques, and cost data required for estimating life cycle explosives safety and environmental costs are available and used in the munitions acquisition process**
ACQ 04	**ODUSD (I&E)**	**4Q/02**	**4Q/05**		**Develop and implement a munitions acquisition plan to minimize or eliminate undesirable environmental and explosives safety impacts while meeting performance criteria throughout the entire munitions life cycle**
ACQ 05	**DDR&E**	**4Q/02**	**4Q/04**		**Maintain technology efforts aimed at improving explosives safety and reducing adverse environmental impacts across the munitions life cycle**
ACQ 06	**ISEERB**	**4Q/02**	**2Q/05**		**Develop comprehensive explosives safety, human health and environmental stewardship training modules for munitions acquisition managers and program office staffs**

OBJECTIVE	OPR(s)	Start Date	Due Date	Complete (Actual)	Description of Objective
ACQ 07	DDR&E & ODUSD (I&E)	3Q/02	4Q/08 (ongoing)		Achieve better understanding of munitions-related environmental impacts and improved UXO-related technologies
STOCKPILE MGMT.					
STK 01	Army (SMCA)	2Q/02	4Q/04 (4Q/07)		Identify and evaluate the implications of an increasing inventory of munitions requiring demilitarization (Demil Inventory) on explosives safety, the environment, and DoD readiness. Define and implement corrective actions
STK 02	USMC (MARCOR-SYSCOM)	4Q/01	1Q/05		Ensure DoD's and DoD's Components' policies (regulations, guidance, etc.) accurately address the EPA's Munitions Rule (MR) requirements by conducting a MR Baseline Policy Evaluation
STK 03	Army (AMISO-SM)	1Q/03	4Q/04 (4Q/07)		Identify and address explosives safety and environmental risks during the development of munitions logistics initiatives and systems for the active inventory
STK 04	ISEERB	4Q/02	2Q/05		Identify and evaluate DoD Components' current internal and external Munitions Rule training programs and develop, if determined appropriate, a comprehensive, integrated DoD training program to meet baseline requirements
STK 05	USMC (MARCOR-SYSCOM)	4Q/03	2Q/05		Develop DoD compliance metrics (e.g., performance goals, standards, etc.) for EPA Munitions Rule
RANGE AND MUNITIONS USE					

OBJECTIVE	OPR(s)	Start Date	Due Date	Complete (Actual)	Description of Objective
USE 01	Army (AEC)	2Q/00	3Q/05		Develop a coordinated DoD plan to obtain data, assess current range conditions, and estimate the environmental impacts of current munitions' use on operational (active and inactive) ranges. (This Objective is in preliminary stages of implementation.)
USE 02	Air Force (AF/XOOR)	3Q/99	4Q/02		Develop a DoD inventory of Operational (Active/Inactive --A/I) Ranges
USE 03	USMC (HQMC/I&L)	2Q/02	4Q/02		Develop standard DoD Munitions Expenditure Database Requirements at operational ranges
USE 04	OUSD (P&R) (Readiness), DOT&E, ODUSD (I&E), OGC (E&I)	3Q/00	4Q/02		Determine potential operational limitations for operational ranges in light of current and potential future environmental regulatory requirements
USE 05	Army & Air Force (DAMO-TR & AF/XOOR)	1Q/99	4Q/04		Develop risk-based DoD range clearance policy and management guidance procedures
DEMIL					
DEM 01	Navy (Demil Office)	2Q/99	4Q/99	Yes	Baseline assessment of efforts focused on environment/explosives safety in the demil program
DEM 02	Army (DALO-AMA)	2Q/99	4Q/03		Develop and implement a consistent DoD protocol for the inspection, processing, turn-in, accountability and ultimate sale or disposal of range MPPEH
DEM 03	Navy and Army (Via JOCG)	2Q/02	4Q/06		Assess the environmental and human health effects of OB/OD treatment operations
DEM 04	Navy and Army (Via JOCG)	1Q/99	2Q/03		Operate the optimum Open Burning/Open Detonation (OB/OD) facility infrastructure, including numbers and types of sites, to support

OBJECTIVE	OPR(s)	Start Date	Due Date	Complete (Actual)	Description of Objective
					DoD mission requirements
RESPONSE					
RES 01	ODUSD (I&E)	3Q/01	4Q/02		Develop & issue DoD policy governing responses to UXO, waste munitions and munitions constituents
RES 02	ODUSD (I&E)	4Q/01	4Q/03		Develop consistent, comprehensive DoD inventory of properties containing UXO, waste munitions and munitions constituents
RES 03	ODUSD (I&E)	2Q/02	4Q/03		Develop and issue implementation guidance for the munitions/UXO response program
RES 04	ODUSD (I&E)	2Q/02	3Q/04		Develop and implement consistent cost estimation methodology for munitions/UXO response activities
STAKE-HOLDER INVOLVE-MENT					
SIV 01	Air Force & Army (SAF/IEE & DALO-AMA, via OEESCM SISC)	2Q/02	4Q/03		Identify and engage representative stakeholders (DoD and non-DoD) to develop and participate in munitions dialogues
SIV 02	Air Force & Army (SAF/IEE & DALO-AMA, via OEESCM SISC)	2Q/02	4Q/03 (ongoing)		Develop an effective stakeholder involvement program that integrates local and national efforts
SIV 03	Air Force & Army (SAF/IEE & DALO-AMA, via OEESCM SISC)	3Q/02	4Q/03 (ongoing)		Develop outreach, educational, and communication materials to support stakeholder involvement program
SIV 04	Air Force & Army (SAF/IEE & DALO-AMA, via OEESCM SISC)	3Q/02	4Q/03 (ongoing)		Monitor progress and effectiveness of stakeholder involvement efforts (quality assurance, measures of merit)