



# Department of Defense **INSTRUCTION**

**NUMBER** 4715.14  
November 30, 2005

---

---

USD(AT&L)

**SUBJECT:** Operational Range Assessments

**References:** (a) DoD Directive 4715.11, "Environmental and Explosives Safety Management on Operational Ranges Within the United States," May 10, 2004  
(b) DoD Directive 3200.15, "Sustainment of Ranges and Operating Areas (OPAREAs)," January 10, 2003  
(c) Defense Planning Guidance, FY04-09  
(d) DoD 7000.14R, "DoD Financial Management Regulation," current edition  
(e) through (n), see Enclosure 1

## 1. PURPOSE

Pursuant to reference (a), and to augment requirements in references (a), (b), and (c), this Instruction:

1.1. Establishes and implements procedures to assess the potential environmental impacts of military munitions use on operational ranges.

1.2. Assists the DoD Components in:

1.2.1. Determining whether there has been a release or a substantial threat of a release of munitions constituents of concern from an operational range to an off-range area.

1.2.2. Determining whether a release or substantial threat of a release of munitions constituents of concern from an operational range to an off-range area creates an unacceptable risk to human health or the environment.

1.2.3. Enhancing the DoD Components' ability to prevent or respond to a release or substantial threat of a release of munitions constituents of concern from an operational range to an off-range area.

## 2. APPLICABILITY AND SCOPE

### 2.1. This Instruction applies to:

2.1.1. The Office of the Secretary of Defense, the Military Departments, the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Combatant Commands, the Office of the Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities in the Department of Defense (hereafter referred to collectively as the “DoD Components”).

2.1.2. All operational ranges within the United States except for indoor ranges and small arms ranges that are being assessed as part of an existing environmental compliance program.

2.2. When a DoD Component other than the DoD Component exercising real property accountability operates an operational range, responsibility for compliance with this Instruction is assigned to the operating DoD Component unless the two parties agree otherwise.

## 3. DEFINITIONS

Terms used in this Instruction are defined in Enclosure 2.

## 4. POLICY

This Instruction implements the policy of reference (a) to support references (b) and (c) to:

4.1. Ensure the long-term viability of operational ranges while protecting human health and the environment.

4.2. Enhance the ability to prevent or respond to a release or substantial threat of a release of munitions constituents from an operational range to an off-range area.

## 5. RESPONSIBILITIES

5.1. The Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)) shall:

5.1.1. Have overall DoD responsibility for oversight of operational range assessments.

5.1.2. Coordinate with the Under Secretary of Defense for Personnel and Readiness to ensure that range assessments are coordinated with training and testing requirements and conducted in a manner that supports operational readiness.

5.2. The Under Secretary of Defense for Personnel and Readiness (USD(P&R)) shall:

5.2.1. Issue the necessary guidance to facilitate completion of operational range assessments while maintaining operational capability.

5.2.2. Coordinate with USD(AT&L) to ensure that range assessments are coordinated with training requirements and conducted in a manner that supports operational readiness.

5.3. The Under Secretary of Defense (Comptroller)/Chief Financial Officer (USD(C)/CFO) shall, according to DoD 7000.14R (reference (d)), provide financial management policy regarding funding to:

5.3.1. Conduct operational range assessments.

5.3.2. Respond to any identified releases or threatened releases of munitions constituents of concern from an operational range to an off-range area.

5.4. The Heads of the DoD Components shall:

5.4.1. Develop and maintain a written operational range assessment plan or plans (hereafter referred to as “the Plan”) covering all operational ranges under the DoD Component’s responsibility. The Plan may address one or more operational ranges and shall be designed to assist the DoD Component in determining whether a release or substantial threat of a release of munitions constituents of concern from an operational range to an off-range area creates an unacceptable risk to human health or the environment. The Plan shall be updated whenever significant changes in applicable statutes, regulations, DoD issuances, or other policies affect the Plan’s content. Plans shall be developed no later than one year from the publication of this Instruction. The Plan, at a minimum, shall:

5.4.1.1. Identify the operational ranges, based on the DoD Component’s range inventory, that are subject to the Plan.

5.4.1.2. List the munitions constituents of concern, based on readily available records, contained in military munitions that have been used or are currently being used on the operational ranges covered by the Plan.

5.4.1.3. Discuss the methodology and procedures used to identify sources, pathways, and receptors.

5.4.1.4. Discuss the methodology and procedures used to determine if there is a release or a substantial threat of a release of munitions constituents of concern from an operational range to an off-range area that creates an unacceptable risk to human health or the environment.

5.4.1.5. Discuss procedures for internal and external communication and information dissemination to the appropriate Federal agencies, State, Tribal, and local governments, and the public.

5.4.2. Conduct an initial range assessment at all operational ranges according to the Plan and reevaluate periodically as appropriate.

5.4.3. Respond under Chapter 159 of title 10, United States Code, the Defense Environmental Restoration Program; Section 9601 of title 42; United States Code; E.O. 12580, "Superfund Implementation," January 23, 1987; E.O. 13016, "Superfund Amendments," August 28, 1996; and 40 CFR Part 300, "National Oil and Hazardous Substances Pollution Contingency Plan (NCP)" (references (e) through (i)) where a release or substantial threat of a release of munitions constituents of concern from an operational range to an off-range area creates an unacceptable risk to human health or the environment.

5.4.4. Comply with the Department of Defense's explosives safety requirements according to DoD Directive 6055.9E (reference (j)), should a release of munitions constituents of concern from a range to an off-range area be determined to be in concentrations sufficient to create an explosive hazard.

## 6. PROCEDURES

6.1. Ranges to be assessed. All operational ranges within the United States, as listed in DoD Components' existing inventories of operational ranges, shall be assessed according to this Instruction.

6.2. Range Assessment Strategy. The assessments shall be conducted according to the Plan to assist the DoD Component in determining whether there is a release or substantial threat of a release of munitions constituents of concern from an operational range to an off-range area and, if so, whether the release creates an unacceptable risk to human health or the environment. These assessments shall be consistent with appropriate Federal and State guidance. The DoD Components shall implement the following steps:

6.2.1. Conceptual Site Models (CSM) according to guidance in the USACE Conceptual Site Models for Ordnance and Explosives (OE) and Hazardous, Toxic, and Radioactive Waste (HTRW) Projects, the ASTM "Standard guide for Developing Conceptual Site Models for Contaminated Sites," and the USEPA DQO (Data Quality Objectives) Process (references (k), (l), and (m)). The seven steps of the DQO Process are included in Enclosure 3. The DoD Components shall develop a CSM of the operational range showing at a minimum, the media, hydrology, hydrogeology, topography, boundaries, potential migration pathways, and surrounding activities of the operational range. In the CSM and DQO Process, the DoD Components shall identify and evaluate:

6.2.1.1. Munitions constituents of concern. The Department of Defense will, as a minimum, determine whether RDX, HMX, TNT, or perchlorates have been deposited on an operational range and, if deposited, whether the deposit meets the definition of munitions constituents of concern.

6.2.1.2. Sources.

6.2.1.3. Pathways.

6.2.1.4. Receptors. Potentially affected off-range receptors shall be derived from the source identification and the pathway analysis.

6.2.1.5. Source-Receptor Interaction Analysis. Evaluate existing technical data to determine if there is a potential source-receptor interaction. If data:

6.2.1.5.1. Indicates no potential source-receptor interaction exists (e.g., cases where a release from an operational range to an off-range area is not possible or where such a release does not create an unacceptable risk to receptors based on the CSM), this finding shall be documented and no further analysis will be necessary.

6.2.1.5.2. Is insufficient (data gaps) to determine if there is a potential source-receptor interaction, further analysis (e.g., geophysical analysis, modeling), as dictated by the DQO Process, shall be conducted.

6.2.1.5.3. Indicates there is a potential source-receptor interaction (e.g., cases where a release from an operational range to an off-range area is possible and where such a release may create an unacceptable risk to receptors based on the CSM), sampling, as dictated by the DQO Process, shall be conducted.

6.2.2. Sampling Strategy. DQOs and CSMs shall be used to develop the sampling strategy. Where there are data gaps, the sampling strategy shall provide the necessary information to fill those data gaps. Where data indicate there is potential source-receptor interaction, the sampling strategy shall provide the necessary information to confirm whether a source-receptor interaction exists and whether or not an unacceptable risk to human health or the environment exists.

6.2.2.1. UXO Avoidance. If access to areas known or suspected to contain unexploded ordnance (UXO) is required, UXO avoidance procedures shall be used as described in reference (j).

6.2.2.2. Sampling and Analytical methods. The DoD Components shall use sampling and analytical methods approved by a recognized authority (e.g., American Society for Testing and Materials (ASTM), EPA, the DoD Components, the state regulatory agency in which the operational range is located) to support the data requirements identified during the source-receptor interaction analysis and as dictated by the DQO process.

6.3. Response to Release. Where there is a release or substantial threat of a release of munitions constituents of concern from an operational range to an off-range area, the DoD Component shall determine if a response under references (e) through (i) is warranted. Should a release of munitions constituents of concern from an operational range to an off-range area be

determined to be in concentrations sufficient to create an explosive hazard, the response will also comply with DoD explosives safety requirements (reference (j)).

6.4. Documentation of Findings. The DoD Components shall maintain a record documenting the technical data gathered and the analysis to determine if there is a release or substantial threat of a release of munitions constituents of concern from an operational range to an off-range area that creates an unacceptable risk to human health or the environment.

6.5. Evaluation of Dynamic Conditions. All operational ranges must be periodically re-evaluated to determine if there is a release or substantial threat of a release of munitions constituents of concern from an operational range to an off-range area. This reevaluation shall occur at least every 5 years, or whenever significant changes (e.g., changes in range operations, site conditions, applicable statutes, regulations, DoD issuances, or other policies) occur that affect determinations made during the previous assessment.

6.6. Reporting.

6.6.1. Internal.

6.6.1.1. The DoD Components shall immediately report through the chain of command to USD(AT&L) any discovery of a release or substantial threat of a release of munitions constituents of concern from an operational range to an off range area that creates an unacceptable risk to human health or environment.

6.6.1.2. At the end of each fiscal year, each DoD Component shall submit a report to USD(AT&L) and USD(P&R) indicating progress made in implementing the DoD Component's Plan. This report shall include:

6.6.1.2.1. The number of completed operational range assessments.

6.6.1.2.2. A list of all operational ranges that have a release or substantial threat of a release of munitions constituents of concern from an operational range to an off-range area.

6.6.2. External.

6.6.2.1. The DoD Components shall report a release or substantial threat of a release of munitions constituents of concern from an operational range to an off-range area that creates an unacceptable risk to human health or the environment to the appropriate regulatory authorities.

6.6.2.2. Upon finalization of an assessment, the DoD Components shall make the documentation of findings available to the public.

7. REPORTING REQUIREMENTS

The annual progress report has been assigned Report Control Symbol DD-AT&L(A)2225 according to the DoD 8910.1-M (reference (n)).

8. EFFECTIVE DATE

This Instruction is effective immediately.



Kenneth J. Krieg  
Under Secretary of Defense  
(Acquisition, Technology, & Logistics)

Enclosures – 3

- E1. References, continued
- E2. Definitions
- E3. Seven Steps of DQO Process

E1. ENCLOSURE 1

REFERENCES, continued

- (e) Chapter 159 of title 10, United States Code
- (f) Section 9601 of title 42, United States Code
- (g) Executive Order 12580, "Superfund Implementation," January 23, 1987
- (h) Executive Order 13016, "Superfund Amendments," August 28, 1996
- (i) Title 40, Code of Federal Regulations, Part 300, "National Oil and Hazardous Substances Pollution Contingency Plan (NCP)," current edition
- (j) DoD Directive 6055.9E, "DoD Explosives Safety Management and the DoD Explosives Safety Board," August 19, 2005
- (k) U.S. Army Corps of Engineers Conceptual Site Models for Ordnance and Explosives (OE) and Hazardous, Toxic, and Radioactive Waste (HTRW) Projects, EM 1110-1-1200, February 3, 2003
- (l) American Society for Testing and Materials (ASTM), "Standard guide for Developing Conceptual Site Models for Contaminated Sites," March 15, 1995.<sup>1</sup>
- (m) U. S. Environmental Protection Agency Guidance for the Data Quality Objectives Process, August 2000, EPA/600/R-96/055 (EPA QA/G-4)<sup>2</sup>
- (n) DoD 8910.1-M, "DoD Procedures for Management of Information Requirements," June 30, 1998

---

<sup>1</sup> Available at [www.astm.org](http://www.astm.org).

<sup>2</sup> Available at [www.epa.gov/QUALITY/qa\\_docs.html](http://www.epa.gov/QUALITY/qa_docs.html)



## E2. ENCLOSURE 2

### DEFINITIONS

E2.1.1. Munitions Constituents of Concern. Those munitions constituents that have the potential to migrate from a source area to a receptor (human or ecological) in sufficient quantity to cause an unacceptable risk to human health or the environment.

E2.1.2. Pathway. The environmental medium through which a munitions constituent of concern is transported from the source to the receptor.

E2.1.3. Receptor. Human beings and animal or plant species that are exposed, or that may be exposed, to munitions constituents of concern.

E2.1.4. Small Arms Ammunition. Ammunition, without projectiles that contain explosives (other than tracers), that is .50 caliber or smaller or is intended for use in shotguns.

E2.1.5. Small Arms Range. A designated land area used exclusively for training and recreation with weapons (e.g., pistols, rifles, shotguns, and machine guns) that fire small arms ammunition.

E2.1.6. Source. An area where munitions constituents may have been deposited, disposed, or placed.

E3. ENCLOSURE 3

SEVEN STEPS OF DQO PROCESS

- Step 1 State the Problem
- Step 2 Identify the Decision
- Step 3 Identify the Inputs to the Decision
- Step 4 Define the Boundaries of the Study
- Step 5 Develop a Decision Rule
- Step 6 Specify Tolerable Limits on Decision Errors
- Step 7 Optimize the Design for Obtaining Data