THE UNDER SECRETARY OF DEFENSE
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ACQUISITION,
TECHNOLOGY
AND LOGISTICS

APR - 8 2009

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS

SUBJECT: Minimizing the Use of Hexavalent Chromium ($Cr^{6+}$)

$Cr^{6+}$ is a significant chemical in numerous Department of Defense (DoD) weapons systems and platforms due to its corrosion protection properties. However, due to the serious human health and environmental risks related to its use, national and international restrictions and controls are increasing. These restrictions will continue to increase the regulatory burdens and life cycle costs for DoD and decrease materiel availability. OSD, DoD Components, and industry have made substantial investments in finding suitable replacements for $Cr^{6+}$ for many of the current DoD applications. In particular, a number of defense-related industries are minimizing or eliminating the use of $Cr^{6+}$ where proven substitutes are available that provide acceptable performance for the application.

This is an extraordinary situation that requires DoD to go beyond established hazardous materials management processes. To more aggressively mitigate the unique risks to DoD operations now posed by $Cr^{6+}$, I direct the DoD Military Departments to take the following actions:

- Invest in appropriate research and development on substitutes.
- Ensure testing and qualification procedures are funded and conducted to qualify technically and economically suitable substitute materials and processes.
- Approve the use of alternatives where they can perform adequately for the intended application and operating environment. Where $Cr^{6+}$ is produced as a by-product from use or manufacture of other acceptable chromium oxides, explore methods to minimize $Cr^{6+}$ production.
- Update all relevant technical documents and specifications to authorize use of the *qualified* alternatives and, therefore, minimize the use of materials containing $Cr^{6+}$.
- Document the system-specific $Cr^{6+}$ risks and efforts to qualify less toxic alternatives in the Programmatic Environment, Safety, and Occupational Health Evaluation for the system. Analyses should include any cost/schedule risks and life cycle cost comparisons among alternatives. Life cycle comparisons should address material handling and disposal costs and system overhaul cycle times/costs due to any differences in corrosion protection.
- Share knowledge derived from research, development, testing and evaluations (RDT&E) and actual experiences with qualified alternatives.

- Require the Program Executive Office (PEO) or equivalent level, in coordination with the Military Department's Corrosion Control and Prevention Executive (CCPE), to certify there is no acceptable alternative to the use of $Cr^{6+}$ on a new system. This requirement also applies to the operation and maintenance of a system during the Operations and Support phase of a system's life cycle. The PEO or equivalent, in coordination with the Military Department's CCPE, shall evaluate each certification for validity, taking into account at a minimum the following:

  - Cost effectiveness of alternative materials or processes.
  - Technical feasibility of alternative materials or processes.
  - Environment, safety, and occupational health risks associated with the use of the $Cr^{6+}$ or substitute materials in each specific application.
  - Achieving a Manufacturing Readiness Level of at least 8 for any qualified alternative.
  - Materiel availability of $Cr^{6+}$ and the proposed alternatives over the projected life span of the system.
  - Corrosion performance difference of alternative materials or processes as determined by agency corrosion subject matter experts.

- For such applications where acceptable alternatives to $Cr^{6+}$ do not exist, $Cr^{6+}$ may be used.

The Defense Acquisition Regulation Council will prepare a clause for defense contracts prohibiting use of $Cr^{6+}$ containing materials in all future procurements unless specifically approved by the Government. When applied in weapon system design, procurement, and logistics support contracts, the requirement will apply at system, subsystem, and component level.

The DoD "Advanced Surface Engineering Technologies for a Sustainable Defense" database will be expanded to facilitate knowledge management on RDT&E and experiences using alternatives. The Strategic Environmental Research and Development Program office will provide further information on accessing this database.

As DoD's supply chain integrator, the Defense Logistics Agency will assist the Services in their efforts to eliminate $Cr^{6+}$ from common hardware and DLA-managed items.

This policy applies to all new program starts, new program increments, and procurement of infrastructure materials, goods, and services. Application of this policy to legacy systems will be limited to modifications where alternatives can be inserted in the system modification process and updated maintenance procedures.

The Military Departments are to provide a report to my office by April 2010 that describes the implementation actions taken to minimize $CR^{6+}$. Please provide a point of contact to my office for this initiative within 30 days from the date of this memorandum. My point of contact is Ms. Shannon Cunniff at 703-604-0641 or shannon.cunniff@osd.mil.

John J. Young, Jr.

cc:
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