Applying Acquisition-Based Risk Management to Non-Acquisition Projects

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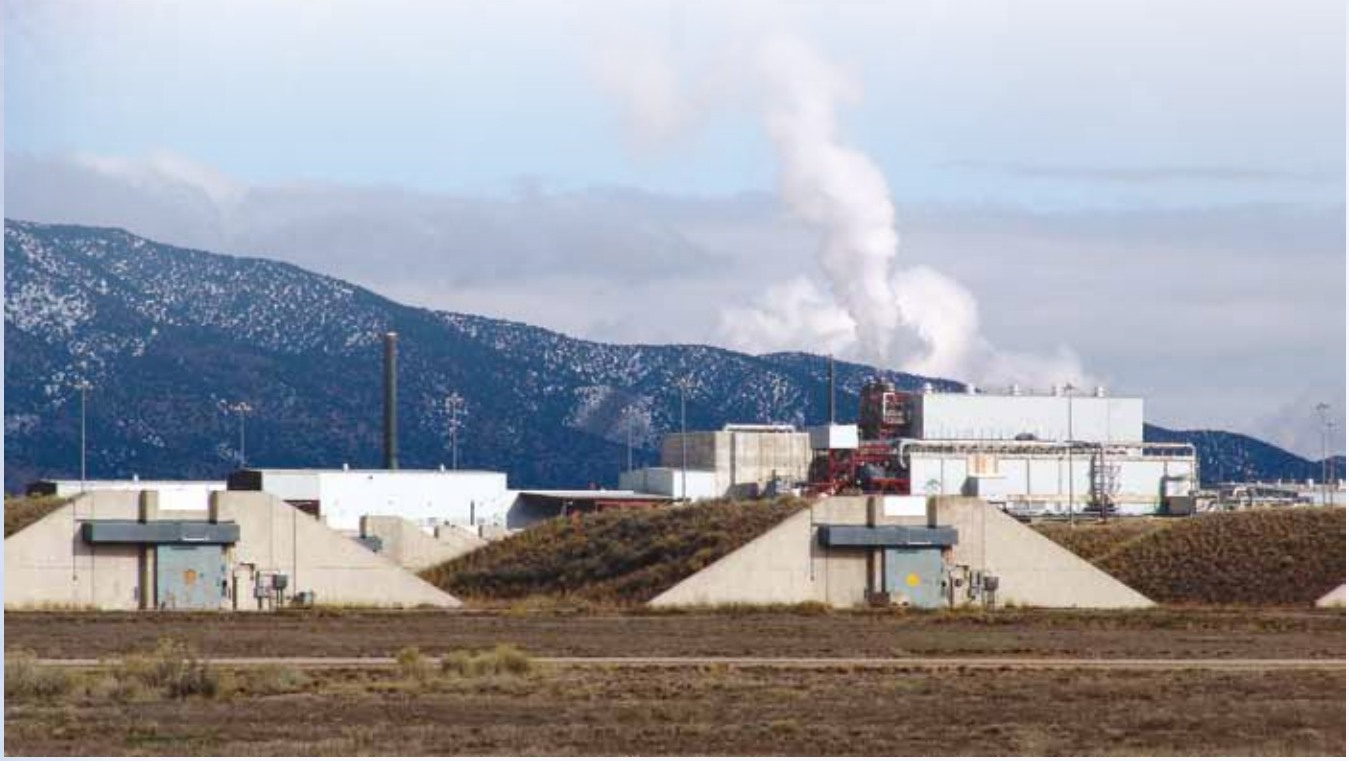

When discussing the storage, maintenance, and demilitarization of the Army's chemical weapons, risk is often thought of in terms of chemical agent release or exposure, but the Chemical Materials Agency (CMA) must also define risk in terms of cost, schedule, and performance impacts.

CMA is organized like many typical Army programs with a program manager who oversees three major project managers as well as supporting staff elements. Where it is atypical is that there are two separate reporting chains—the demilitarization mission through the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASA[AL&T]) and storage and

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maintenance through Army Materiel Command; yet they are interrelated and dependent upon one another's execution. Successful achievement of milestones such as the April 29, 2012, Chemical Weapons Convention treaty can now be evaluated to determine likelihood of success and provide the storage and demilitarization project managers better visibility of cost and schedule risks from within and external to their project.

The CMA has established a risk-based scheduling process for demilitarization using the principles provided in the *Risk Management Guide for DoD Acquisition*. Given the success of the process, CMA is expanding the application of the principles to the storage mission. The intent of this effort is to ensure that risk associated with non-acquisition projects and missions, site closures, and Base Realignment and Closure-related issues are addressed as early as possible so that CMA is positioned to meet established milestones. The goal of this effort is to develop a process that provides value to all, from the site workforce to Army higher headquarters. This process should also be implemented in a manner that is auditable and defensible to the various audit agencies.

CMA has established an integrated process team (IPT) whose mission is to export the Project Manager for Chemical Stockpile Elimination risk-based schedule process to the chemical storage sites under the name of CMA Risk and Integrated Schedule Process (CRISP). The purpose of the CRISP is to incorporate non-acquisition elements into the acquisition risk management process so that the program office can fully identify, analyze, mitigate, and status-project and program risks across the enterprise. The primary objective of the CRISP is to foster communication through the development of a plan of action and milestones (POA&M), an integrated risk landscape (IRL), and an integrated program office estimate (I-POE) of schedule.

Implementing CRISP at Deseret Chemical Depot

Deseret Chemical Depot (DCD) in Tooele, Utah—CMA's most complex site—was selected as the location to begin implementation of the CRISP concept. DCD was considered the most complex site because it has multiple projects, some of which had not implemented a risk management process; there are multiple stakeholders for each of these projects, complicating the interface between projects; and DCD is a site going through realignment as opposed to closure. In addition, DCD has Resource Conservation and Recovery Act hazardous and solid waste management areas, the closure of which requires negotiation between the Army and the State of Utah's environmental regulators to establish an end state of selected facility areas.

As mentioned above, the primary objective of the CRISP is to foster communication through the development of a POA&M chart, an IRL, and an I-POE of schedule. The POA&M is a high-level depiction of all projects and activities occurring at DCD. It also illustrates the inter- and intra-dependencies of these projects. The IRL is a qualitative and quantitative accounting of the risks affecting these projects. The I-POE is the application of those risks to the schedule to determine overall impact to specific milestones of interest to project and program leadership. The CRISP IPT was divided into four phases:

- Phase 0: Evaluate existing resources, processes, and schedule and risk products
- Phase 1: Develop the POA&M
- Phase 2: Develop an IRL and I-POE
- Phase 3: Develop a process for management and maintenance of an integrated process at DCD.

The IPT defined a successful approach as one that provides the CMA/DCD leadership a clear understanding of the risk landscape and potential impacts, both internal and external, across the DCD enterprise. This approach provides a credible basis for establishing confidence in attaining schedule goals. The IPT's products were structured to provide a proactive and actionable basis for managing risks.

The IPT was endorsed and supported by leadership within the project and program offices and was coordinated with key program support functions as well as support and systems contractors. At the conclusion of IPT mission, the IPT was formally closed, initiating ownership of the process by site personnel at DCD.

The Evaluation Phase

During the evaluation phase, the team reviewed the tools the project offices were currently using for planning, scheduling, and risk management. The review included processes, products, existing meetings, forums, and information management utilizing existing processes and products whenever possible. The evaluation phase also allowed for the formal creation, staffing, and endorsement of the IPT, and it established IPT expectations for CMA headquarters and site leadership.

Developing the POA&M

Phase 1 started with the development of a site-wide Gantt chart that considered the project's high-level activities in terms of critical path, current understanding of activity sequencing, intra-project predecessor/successor relationships, and interfaces. Using the forward-looking acquisition concept, a POA&M chart was developed showing major project schedule elements, critical gateway and review milestones, and important logic links that defined critical path to major milestones. This POA&M established the earliest credible plan (ECP) for completion of the mission at DCD. An ECP was defined as a realistic plan that assumes the activities are executed according to schedule (i.e., actual duration = planned duration) and all risks are mitigated.

Developing the IRL and I-POE

Phase 2 of the IPT was initiated through a series of schedule and risk workshops held with representatives from each project team. Project schedules were developed using commercial off-the-shelf software packages that allowed for risk analysis. Individual project schedules at DCD were linked through logic ties to establish the basis for predecessor/successor relationships as defined by the POA&M. Using concepts from the *Defense Acquisition Guidebook* and the *Risk Management Guide for DoD Acquisition*, risk workshops were held to define risks within and across projects. The workshops developed risk landscapes and tied risks to specific schedule activities and milestones. Whenever possible, risks were defined using quantitative information from prior experience or knowledge. A basis of estimate was recorded for each risk such that future evaluation, trending, and status could be determined during the risk monitoring phase.

Individual project risk and a DCD enterprise risk register were developed and staffed through the DCD leadership. Risk analysis was performed on the integrated schedule to evaluate the ECP and most likely schedules at the project, major milestone, and total mission levels at DCD. Outputs from Phase 2 of the IPT included an updated POA&M, no longer based on the planning of the IPT, but an integrated project schedule utilizing an ECP approach. The POA&M has become the document that captures all activities at DCD, providing a communication tool for internal and external stakeholder discussions, and the document that illustrates "one plan, one vision, one mission." The second product from Phase 2 was the IRL, which provides a database of the site's current definition of project risks, their probability and consequence, basis of estimate, risk owner, risk response plan, and time-phased monitoring data. The third product is the I-POE of Schedule, the application of the IRL to the POA&M. From these three products, analytical tools such as confidence curves, tornado diagrams, and confidence trends were developed. The synthesis of those tools aids the communication of a common vision to all stakeholders, both internal and external, up through the acquisition and non-acquisition chains of command.

Developing the Management and Maintenance Process

Phase 3 established the ground rules for how a site-led IPT (the DCD Risk Management IPT or DCD RM-IPT) is conducted; the frequency of meetings; the products and how they would be used; and the processes necessary for dissemination of the information. The IPT determined that a quarterly cycle provides the best benefit for the costs incurred. Project-level IPTs meet as necessary to update project schedules, risk landscapes, risk mitigation strategies, and to evaluate inter-project links fostering the quarterly site-wide risk workshop. Cyclical evaluation of tactical (e.g. complete disposition of process wastes) and strategic (e.g. meet treaty goals) milestones provides a means for tracking progress and remaining risk against achieving those milestones. Since the integrated risk management process helps define a basis for justifying project costs, newly defined requirements, and changes in project scope, its link to the CMA annual update to the current working estimate became inherent to the update cycle.

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CRISP Proves its Worth

CMA's mission is to work significant elements of the agency out of business by destroying the chemical stockpile and closing the chemical agent storage activities and chemical depots. CMA has developed a *Transition Planning Guide*, which includes seven key elements to manage the transition of the agency. An unintended benefit of the CRISP is that it provides a quantifiable means to track the status of these transition planning elements. Using the CRISP to evaluate these elements allows identification of the risks that most impact schedule, communication of those risks to internal/external stakeholders and provides a common understanding of what it means to achieve "End of Mission."

Members of the DCD leadership, both the acquisition and non acquisition project managers, have found value in the CRISP products and processes in reporting to their respective chains of command. It became apparent to the IPT that the real value from the POA&M, IRL, and I-POE is that they all facilitate communication of the risks, issues, and requirements to achieve strategic objectives. Additionally, the products being developed are being used to track not only site-level performance metrics, but enterprise-level internal and external performance metrics as well.

The CMA leadership has expressed a vision that incorporates risk management from the lowest to highest levels in the agency and across the two separate reporting chains. At the writing of this article the CRISP has been completed at one site, is being worked at another, and one site remains for implementation. The challenges the CRISP will face in overcoming opposition to existing paradigms are expected; however, IPT members remain focused on value to site leadership while meeting strategic goals of CMA.

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