Overview of EFCOG’s Critical Few

Energy Facility Contractors Group
Excellence Through Cooperation

Thomas P. D’Agostino, Under Secretary of Energy for Nuclear Security, and Administrator, National Nuclear Security Administration, delivers the opening plenary speech at the 2011 DOE Integrated Safety Management Champions Workshop held September 2011 in Kennewick, Washington
MISSION: EFCOG’s mission is to promote excellence in all aspects of the operation, management, and integration of U.S. Department of Energy (DOE) – including the National Nuclear Security Administration (NNSA) - facilities in a safe, environmentally sound, efficient and cost-effective manner. It is a volunteer, contractor-led, DOE customer-focused organization, directed by senior-level executives and sustained by working-level personnel from member contractors. EFCOG assures continuous improvement and value added to DOE by providing a forum for sharing lessons learned, solving crosscutting problems, and creating and disseminating best practices. EFCOG continues to augment its best practices on the EFCOG website. The website now contains more than 115 best practices in over 20 key subject areas for application across the DOE complex, and in FY 2012, EFCOG is committed to posting more than 30 additional best practices.

BACKGROUND: Membership currently includes more than 105 DOE contractors, with an elected 18-member Board of Directors providing leadership and oversight. The Board of Directors sets high-level policy objectives called “critical few” to guide EFCOG priorities and activities.

The EFCOG critical few areas are focused on management and performance improvements in:

1. integrated safety management
2. security
3. project management
4. infrastructure management
5. contractor performance assurance, and
6. human capital

The Board of Directors sponsors Working Groups that provide forums for detailed and open communication, constructive feedback, and actions that generate proposed solutions to issues related to performance across DOE. These actions result in continuous improvement across the DOE complex. Each EFCOG activity, whether related to a “critical few” or a Working Group function, is regularly reviewed by the Board of Directors to assure that its efforts are aligned with DOE’s current priorities and are meaningful to DOE.

EFCOG currently sponsors 13 Working Groups as follows:

1. Acquisition Management
2. Contractor Assurance
3. D&D and Facility Engineering
4. Energy and Infrastructure
5. Enforcement Coordination
6. Engineering Practices
7. Environment Safety and Health
8. Human Capital
9. Integrated Safety Management and Quality Assurance
10. Project Management
11. Safety Analysis
12. Safeguards and Security
13. Waste Management

Each Working Group operates under the requirements of clearly stated objectives, DOE sponsorship, and tangible, value-added accomplishments. Each Working Group has direct oversight by a sponsoring EFCOG Board of Directors member. The EFCOG Board of Directors reviews the productivity and need for continuation of each Working Group annually. Each Working Group has one or more DOE sponsors who ensure the Working Group objectives and actions are aligned with DOE priorities; to date, the participation and insights of the DOE sponsors as been invaluable. The EFCOG Board of Directors regularly communicates objectives and accomplishments with the key DOE Sponsors and program leads.
**EFCOG’s CRITICAL FEW:** The critical few areas on which EFCOG has been focusing on in the last year are discussed below, with summary highlights of recent achievements and near-term planned activities.

**INTEGRATED SAFETY MANAGEMENT**

Integrated Safety Management has been, and continues to be, one of the key safety management processes that encompasses all aspects of DOE activities and operations. EFCOG’s focus is on promoting excellence in development, implementation, and continuous improvement of integrated safety management programs and processes at the Department of Energy sites by sharing information and by facilitating the application of integrated safety management best practices. Worker and public safety cuts across several of EFCOG’s Working Groups, with initiatives in the following topical areas: human performance improvement, safety culture, occurrence reporting systems, quality engineering, quality assurance (QA) policies and programs, electrical and chemical safety, radiation protection, fire protection, engineering practices, integration of safety into the design process, safety analyses, and safety instrumented systems.

Recent accomplishments include:

- Served as a catalyst for the growing attention within DOE on safety culture with a focus on safety culture training, assisted in the development of the DOE Implementation Plan in response to Defense Nuclear Facilities Safety Board (DNFSB) recommendation 2011-1, “Safety Culture at the Waste Treatment and Immobilization Plant,” and updating the EFCOG website and guidance documents based on lessons learned and DNFSB 2011-1 activities.
- Continued to work on the Work Planning & Control Improvement Initiative Project Plan with NNSA and the Office of Environmental Management. Performed a Work Planning & Control visit assessment at the Los Alamos National Laboratory.
- Continued the development of the Joint Supplier Evaluation Program (JSEP) for the DOE Office of Environmental Management (EM), which included the accessibility of a database for gathering audit data and making it available to the site quality assurance organizations for both contractor and DOE personnel. Also, continued to work with NNSA program personnel to integrate this evaluation program with the NNSA evaluation program.
- Supported the 2011 DOE Integrated Safety Management (ISM) Champions Workshop in September 2011 in Kennewick, Washington, by supplying track leads and speakers, reviewing abstracts, and providing general meeting support.
- Focused on the development of leading and lagging metrics and methodologies in a joint effort with the DOE Office of Health, Safety, and Security (HSS) to mine valuable data contained in DOE databases, explore the Wiki websites, review the lessons learned reports, and view the new videos developed to share best practices and lessons learned.
- Continued to support the DOE EM’s Corporate QA Board.
- Continued to work with the DOE National Training Center (NTC) to: 1. form a partnership for developing commercial grade dedication, configuration management, cognizant system engineer, and general engineering standards training courses; and 2. coordinate delivery and review course material of safety analyst training, maintained a course schedule on the EFCOG website, and extensively supported the development and deployment of a new NTC unreviewed safety question (USQ) course.
- Continued to broaden a partnership with the California Polytechnic University at San Luis Obispo fire protection engineering program to establish a career pipeline/mentoring relationship with DOE and contractor companies.
• Continued to develop an understanding of the requirements of an effective pressure safety program as required by 10 CFR 851 Appendix A Section 4.0, “Worker Safety and Health Program,” including establishment of a pressure vessel SharePoint site and development of an Implementation Guide for Pressure System Safety.

• Participated in the review cycle of the draft DOE Guide for dedication of commercial grade software, including the review of industry standards for a comprehensive path forward for effectively dedicating commercial software.

• Held the annual Safety Basis Workshop to discuss and disseminate information and training on safety-basis related activities, applications, and documentation.

• Supported development and implementation of an expert-based USQ process across the DOE complex, based on the successful pilot study at the Y-12 National Security Complex. Applied feedback and lessons learned to the Y-12 process and data thus far for the second year indicate improved utilization of expert-based USQ determinations. Implemented the expert-based USQ determination process at two other sites based on the Y-12 pilot study.


• Prepared and posted ten best practices to the EFCOG website.

Future planned activities include:

• Further enhance the safety culture model by including high reliability organization principles, capturing lessons learned from pilot facilities, and continuing the ongoing dialogue to promote organizational learning.

• Continue to work with DOE on the DNFSB 2011-1 Implementation Plan team to support development of the Plan and execution of tasks/commitments within the Plan.

• Continue working with DOE Headquarters (EM and NNSA) personnel to develop and implement an improvement plan for Work Planning & Control processes across the DOE complex, focusing on the areas of performance measures, tools, and application of Work Planning & Control in contractor assurance and Federal oversight.

• Co-sponsor the Annual Joint EFCOG/ DOE Chemical Safety and Lifecycle Management Workshop.


• Continue support in safety improvement initiatives in electrical safety, industrial hygiene and safety exposure monitoring, and radiological controls.

• Support the 2012 DOE ISM Champions Workshop.

• Complete a draft of an Implementation Guide for Pressure System Safety per 10 CFR 851 Appendix A.4.

• Plan and conduct the Safety Analysis Workshop.

• Continue DOE-STD-1189, “Integration of Safety into the Design Process” implementation activities, including revision of and conduct of training based on the DOE pilot course for project managers/design engineers/safety analysts, and support of the revision of DOE directives and technical standards to incorporate DOE-STD-1189 principles.

• Interface with the DOE Nuclear Safety Research & Development (R&D) Coordinating Group to continue initiatives to identify and provide input on nuclear safety R&D activities.

• Continue validation and verification work with the DOE Safety Software Expert Working Group’s “Toolbox Code.”
• Work with DOE to develop revisions of the following that potentially will lead to programmatic cost savings while maintaining adequate safety throughout the DOE complex, such as 10 CFR 830, “Nuclear Safety Management”, the DOE USQ Guide (supporting innovations such as the Y-12 and Lawrence Livermore National Laboratory improvements to the USQ process), DOE-STD-3007, “Guidelines for Preparing Criticality Safety Evaluations at DOE Nonreactor Nuclear Facilities,” and DOE STD-1027, “Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports”.
• Develop a white paper for hydrogen safety relative to DOE facilities and the experience at the Japanese Fukushima reactors.
• Continue interface with the NTC for development of safety basis and engineering training classes.
• Develop and post up to thirteen best practices to the EFCOG website.

Security

Assuring adequate security at DOE facilities is essential to mission success. This requires enhancements in the protection of special nuclear material, classified matter, property, and cyber systems. EFCOG is committed to meeting today’s security challenges in a cost-effective, safe, and secure manner. The objectives of this focus area for the EFCOG Working Groups are to enhance collaboration among DOE contractors in the areas of protective forces, cyber security, safeguards, and Price-Anderson enforcement, to facilitate application of information and techniques along with best practices and lessons learned, encourage interaction between DOE management and contractors on complex-wide issues, and to provide value-added feedback and recommendations to DOE.

Recent accomplishments include:

• Completed a study to identify and document root-cause analysis improvements for Incidents of Security Concern (IOSC) and the evaluation of associated corrective actions; the study identified effective training, tools, and methods that exist today which accurately identify the root-cause of IOSC, deficiencies, findings, and non-compliant conditions, provided recommendations for corrective actions to prevent reoccurrence, and supported issuance of a best practice.
• Provided material control and independent accountability assessment resources from the Y-12 National Security Complex, Pantex Plant, Sandia National Laboratory, and Nevada National Security Site to other sites for performing independent assessments.
• Continued a forum of interacting with the DOE HSS’s Office of Enforcement and Oversight to discuss Price Anderson, worker safety/health, and classified information security issues, including lessons learned from recent enforcement actions, enforcement conferences, program reviews, and other interactions with the DOE Office of Enforcement and Oversight.
• Participated in DOE HSS’s Office of Enforcement and Oversight Annual Coordinator training, with a shift in the focus of the training from being directed largely at new coordinators to all coordinator participants.
• Prepared and posted two best practices to the EFCOG website.

Future planned activities include:

• Develop a Safeguards First Principles Initiative Implementation Guide to help sites implement NNSA Policy (NAP) 70.6., “Control and Accountability of Special and Alternate Nuclear Material”, based on the Nevada National Security Site’s participation in a pilot initiative.
• Prepare a Seals Reference Guide, which will provide sites with valuable information about the types of seals on the market for capabilities, cost, and performance reliability.
• Develop a Safeguards Termination Guide to assist sites and standardize the process across the complex.
• Continue to support material control and accountability independent assessments.
• Develop and conduct a workshop that addresses new elements of the IOSC program, focuses on implementation consistency throughout the DOE complex, and fully indoctrinates the student on applicable DOE requirements.
• Develop a self-assessment guide and lead a workshop on the conduct of self-assessments.
• Conduct a peer review of the implementation of the DOE regulatory program for the Nevada National Security Site management and operating contractor, and of other sites/programs as requested.
• Support DOE in implementation of the assist visit process as a mechanism to further improve safety and security performance.
• Support DOE by providing input for the revision of the Enforcement Process Overview guidance document and enforcement coordinator’s handbook, as well as provide input regarding non-compliance tracking system reporting thresholds to accommodate the anticipated revision to the Occurrence Reporting and Processing System (ORPS) Order.
• Develop and post up to three best practices to the EFCOG website.

PROJECT MANAGEMENT

In 1990, GAO designated DOE contract and project management as a high-risk area. To further strengthen DOE’s contract and project management so that it can demonstrate improved results from its contractors, GAO made a series of recommendations that collectively called for DOE to improve its measures for assessing both contractor performance and the Department’s progress toward addressing identified weaknesses in contract and project management, to improve its oversight of contractors, and to strengthen accountability for performance. In addition, Congressional committees have been critical of DOE’s project and contract management efforts.

DOE has made a concerted effort to revitalize project and contract management in the past few years, including establishing the Office of Engineering and Construction Management (OECM) and updating DOE Order 413.3B, “Program and Project Management for the Acquisition of Capital Assets”, with numerous implementation guides to support the updated Order. Also, in response to its Root Cause Analysis on contract and project management issued in April 2008, DOE developed and is implementing a Corrective Action Plan (July 2008) to address the identified root causes. Although these actions have been very beneficial for the DOE and its contractors, there have been many issues related to project management and contract management that must still be addressed by the entire DOE complex. EFCOG, working in cooperation with the DOE – especially OECM, NNSA, and EM – has already addressed numerous key project management, project execution, and contract management issues.

Recent accomplishments include:

• Completed a white paper on project peer reviews, which provides guidance and best practices to assist contractors and federal staff in performing Order 413-3.B peer reviews of projects.
• Completed a white paper, regarding the lack of qualified suppliers (which has the potential for increased project costs and schedules), that provides recommendations on leveraging complex-wide resources to perform joint supplier audits and acquisition strategies, and to develop and maintain a database for audit documentation.
• Continued supporting the DOE Corrective Action Plan developed to address the remaining two systemic project management deficiencies (identified in the 2008 Root Cause Analysis study) that have resulted in DOE remaining on the Government Accountability Office “High Risk” list; continued to work closely with DOE OECM.
and program offices to provide input on the corrective measures from the contractor perspective and to support the implementation plan.

- Completed support of the development and aggressive implementation of revision B to DOE Order 413.3, “Program and Project Management for the Acquisition of Capital Assets.”
- Conducted a survey commissioned by DOE in support of the Contract and Project Management Improvement initiative by providing feedback on the effectiveness of performance evaluation and measurement plans, award fee plans and the supporting development and evaluation processes.
- Continued to provide implementation support for earned value management systems (EVMS), development support of the DOE 413.3B EVMS Guide, and maintenance support of the EVMS website with reference documents.
- Completed a white paper on design maturity to assist in documenting the issues, recommending approaches based on lessons learned, and highlighting successful examples to aid in meeting the goals of DOE’s policy regarding project design maturity.
- Collaborated with DOE EM and Florida International University (FIU) to develop the Decontamination & Decommissioning (D&D) Knowledge Management Information Tool (KM-IT), a web-based knowledge platform, which provides a single-point access into the “collective knowledge base” of the D&D community.
- Supported DOE EM in reviewing issues/problems with processing requests for equitable adjustments and the relationship to contract modifications and baseline changes.
- Coordinated the development and deployment of a contractor training course for effectively managing Federal Acquisition Regulations (FAR) Part 15 contract changes to parallel the training DOE is conducting for DOE EM program federal employees.
- Continued to support the efforts of the update of DOE Order 435.1, “Radioactive Waste Management,” serving on specific Order requirement rewrite teams and preparing drafts for acceptance by DOE.
- Took the successful waste incidental to reprocessing (WIR) citation program that began at Hanford and applied it to the West Valley and the Savannah River Site cleanup projects.
- Transmitted a report to DOE of the results from an investigation of waste with no path to disposal from Los Alamos National Laboratory, Savannah River Site, and Lawrence Berkeley National Laboratory.
- Completed support to DOE in its successful execution of American Recovery and Reinvestment Act projects through a dedicated project team to provide timely support of needed contract changes, safety practices and worker training, innovative D&D techniques, and identification of waste treatment and disposal capabilities.
- Prepared and posted nine best practices to the EFCOG website.

Future planned activities include:

- Continue collaboration with DOE on the implementation of the strategy for improving contract and project management, with special focus on completing the corrective measures from the Root Cause Analysis Corrective Action Plan; remain involved with the cross-program teams from OECM, NNSA, EM, Chief Financial Officer, and the Office of Procurement and Assistance Management as these DOE offices complete implementation of the various measures.
- Support OECM’s next phase of enhancement for Project Assessment and Reporting System (PARS) II.
- Continue collaboration with other professional organizations including the Project Management Institute, American Association of Cost Engineers International, and National Defense Industrial Association.
- Continue to support and partner with DOE OECM as DOE implements measures to improve independent government cost estimating, such as the completion of the DOE Cost Estimating Guide, continued deployment
of cost analysis training, support development of the DOE project cost database, and actions to address any other emerging cost estimating issues.

- Continue support of complex-wide peer reviews conducted by DOE.
- Complete the D&D video for EM in time for the Waste Management 2012 Symposium.
- Continue to identify site points of contact and subject matter experts in D&D techniques (these individuals will support the FIU KM-IT and be a resource available to the help-lines at the ALARA centers).
- Form a task team to pursue a requirements management initiative/pilot for D&D projects, with a goal to control the change of requirements to the absolute minimum in order to prevent unnecessary baseline changes for closure projects or short duration D&D projects.
- Begin implementation of the contractor training course for effectively managing FAR Part 15 contract changes at DOE sites across the complex.
- Incorporate acquisition management as an element into a broader Business Management Working Group, which will have a broader charter to provide improved value to member companies and DOE management.
- Continue to support DOE Environmental Management’s revision of DOE Order 435.1.
- Develop a waste classification library to share across the DOE complex.
- Develop and post up to eleven best practices to the EFCOG website.

**Infrastructure Management**

Maintaining the infrastructure to support DOE missions is essential to success. The DOE complex is faced with numerous challenges related to maintaining and modernizing facilities that, in some cases, are approaching 70 years in age. Management and modernization strategies will continue to be challenged to meet the objectives of new and evolving mission directives with dated and aging facilities. Innovative and cost-effective solutions for maintaining, revitalizing and modernizing these aging facilities are imperative to the advancing DOE missions. For example, NNSA is proceeding with transformation of its facilities complex towards a smaller, safer, more secure, and less expensive enterprise that leverages the scientific and technical capabilities of its workforce to meet all of its national security requirements. Congress has recognized the deterioration of DOE facilities, and has been critical of the ability of DOE and its contractors to address the readiness and status of mission critical facilities. The General Accountability Office has ranked the management of DOE’s real property an area of high risk. Congress also has recognized that the status of DOE facilities and deferral of maintenance activities is due to insufficient funds being allocated to infrastructure maintenance activities and has directed that this problem be addressed. At the same time, the current Administration is aggressively pursuing renewable energy sources and more energy-efficient methods to run the complex’s facilities and infrastructure. EFCOG is committed to promoting excellence in the execution of DOE missions by sharing best industrial practices, applying lessons learned, and providing integrated recommendations to DOE officials in the areas of energy and infrastructure management and modernization.

Recent accomplishments include:

- Continued to support DOE in its implementation of Executive Order 13514, “Federal Leadership in Environmental, Energy, and Economic Performance.”
• Facilitated a significant information exchange with DOE’s Federal Energy Management Program through the joint GovEnergy Conference.
• Led the development and hosting (with support from DOE OECM) of the Achieving Excellence in Facilities Management and Sustainability Workshop in Albuquerque.
• Prepared and posted one best practice on the EFCOG website.

Future planned activities include:

• Conceptualize and document Innovative or site approaches on cost recovery models for funding new mandates
• Develop facility manager qualifications and training
• Discuss and document return on investment criteria for selecting energy projects
• Share information at the National Facilities Maintenance and Technology Symposium.
• Participate in the annual GovEnergy Conference to exchange lessons learned.
• Develop and post up to two best practices to the EFCOG website.

**CONTRACTOR PERFORMANCE ASSURANCE**

With the continuing need to identify and manage risks and conserve resources, there is an increasing emphasis on the Federal/contractor relationship in the execution of DOE’s missions. The move to performance-based contracts with clearly defined scopes of work, changes in how DOE manages its contracts (by specifying the “what” but not the “how”) continues to result in changes both in the way that DOE manages its contractors, and in the nature of contractor performance assurance activities. Also, as the regulator of contractor activities, DOE has stated that it seeks an assessment-driven complex in which contractors find and fix problems before they can impact safety and other mission objectives. Further, DOE has committed to improve its oversight activities in responding to DNFSB recommendation 2004-1, “Oversight of Complex, High-Hazard Nuclear Operations”. EFCOG’s activities will focus on assisting contractors to implement effective assessment programs to exert effective governance, allowing DOE to focus its oversight on the issues most important to safety and mission accomplishment. EFCOG’s focus in this area is aligned with the need for both DOE and its contractors to continually refine the principles for effective contractor assurance and governance, evaluate alternative approaches and compare lessons learned.

Recent accomplishments include:

• Developed and posted a white paper on leading indicators, which provides general guidance in using leading indicators and describes an approach for developing leading indicators that is broadly applicable across sites, helping managers to manage their operations.
• Continued site-to-site sharing of information on contractor assurance system implementation based on numerous site benchmarking visits and independent assessments across DOE.
• Developed, at DOE’s request, contractor assurance training material that can be used during semi-annual training opportunities to inform DOE senior management about contractor assurance.
• Contributed to the contractor assurance system peer reviews and affirmations at several DOE and NNSA sites.
• Supported the NNSA-directed parent organization functional management review of the Los Alamos National Laboratory contractor assurance system.
Future planned activities include:

- Consider development of appropriate guidance for the complex, based on the DOE 2011 ISM Champions Workshop, with discussions about risk, risk management, and risk-informed planning & decision making.
- Continue enhancement of DOE-requested contractor assurance training material that can be used during semi-annual training opportunities at DOE.
- Evaluate and promulgate key elements of a corporate governance model.
- Continue engagement with DOE HSS on topics of common interest: human performance improvement, leading indicators, causal analysis, operating experience, and social media and networking.
- Develop approach to integrate with the HSS Operating Experience Committee (lessons learned program).
- Continue to work with NNSA on implementation of their Governance Reform initiative.
- Develop and post up to two best practices to the EFCOG website.

**HUMAN CAPITAL**

There is great concern that the world-class human resources needed to support DOE missions will not be readily available in the future. The current workforce is aging; much of today’s expertise is either already eligible to retire, or will be, within the next five to ten years. Furthermore, there is fierce competition for the highly specialized knowledge and expertise in science, technology, and engineering that are necessary to maintain a viable, strong national energy security posture well into the 21st century.

The Department of Energy and its contractors are challenged with attracting and retaining critical skills. EFCOG will work with the DOE and NNSA program offices to help define and execute effective human capital management approaches. EFCOG will work across the contractor community to share best practices and lessons learned regarding innovative approaches to human capital management.

Recent accomplishments include:

- Led the effort to understand and address fire protection engineering staffing issues in support of DOE work, including the collection of demographic data, forecasts of future staffing levels, and personnel qualification requirements across the DOE complex.
- Sponsored and organized a workforce planning panel at the 2011 EFCOG Executive Council annual meeting, which featured highlights of strategic workforce planning initiatives from three DOE contractors representing various stages of planning maturity.
- Prepared and posted two best practices to the EFCOG website.

Future planned activities include:

- Complete the evaluation of the fire protection engineer staffing issues.
- Present the results of the fire protection engineer staffing evaluation as a case study to the DOE Sponsors and EFCOG.
- Provide workforce planning recommendations to the DOE Sponsors.
- Develop and post up to three best practices on the EFCOG website.
SUMMARY: In summary, EFCOG’s focus is on: (1) maximizing value to DOE and to its members, (2) creating best practices and sharing lessons learned as widely as possible, (3) cooperating with and avoiding overlap with other groups, and (4) achieving beneficial involvement of all types of DOE contractors. EFCOG does not lobby, duplicate efforts of other groups, exchange contractual, financial or legal information, take independent positions on DOE policy, or require standardization of member positions.

The EFCOG website -- which contains comprehensive information on all of the Working Groups and their charters, membership, planned activities and events, and documents, as well as best practices, knowledge management, contractor guides, and other useful data -- can be found at www.efcog.org.