

Project Management Qualification/Certification Process

Prepared by:

Energy Contractor Facilities Group (EFCOG)

National Laboratory Directors Council (NLDC)

January 18, 2010

NLDC/EFCOG Project Management Qualification/Certification Process

Executive Summary

The contractor community serving the Department of Energy (DOE) is a diverse group of capable Universities and multi-service companies ranging from small businesses to multi-national corporations engaged in the global market. They have recognized value and strategic advantage for possessing strong project management capability and apply their processes, methods and tools to all business lines supporting a wide variety of customers and projects. Contractors have tailored their specific application of project management to fit their approach to business demand, corporate values and diverse customer needs and desires. Successful project performance is the key measure of project management success. The fundamentals of project management remain the same overall, and there are common attributes for all project management training, qualification and certification processes. In December 2008, DOE's Operations Management Council assigned an action for NLDC and EFCOG to provide information on PM certification processes used in the contractor environment. Based on this request, the contractor community participated in a survey to determine the methods used to assure Project Managers (PMs) become trained, and remain, trained and qualified. The results indicate that many of the key common attributes for successful PM training and qualification, which are discussed further in the body of this report, are widely used in the responding organizations PM training and qualification programs. Although there is not an agreed upon and recognized common certification process, all contractors have established processes containing essential criteria to developing and maintaining a highly skilled cadre of PMs.

Background

The National Laboratory Directors Council (NLDC) and Energy Facility Contractors Operation Group (EFCOG) were asked to prepare a report on the processes that the DOE Contractor community utilizes to assure their PMs are qualified and remain qualified to manage projects to which they are assigned. The request was made by DOE's Operations Management Council (OMC) in their December 2009 meeting that included a discussion on project management. DOE has established an Acquisition Career Management Program in DOE O 361.1B that includes a chapter on Project Management Career Development. The Order establishes the requirements and responsibilities for the Federal Project Director (FPD) workforce and describes a framework for DOE's internal project management certification for all FPD's with line management responsibilities for capital assets. The same FPD requirements are also included in DOE O 413.3A, *Program and Project Management for the Acquisition of Capital Assets*. While the certification process does not apply to the specific DOE contractor project management community, this report is intended to describe broadly what processes are utilized by the contractor community to assure project managers have the appropriate training and qualifications to deliver projects successfully to DOE customers.

Discussion

The contractor community by and large has recognized the business value and strategic advantage of establishing and maintaining a strong project management capability. Through a survey of our NLDC and EFCOG membership, there appears to be variability in both the training and qualification methods as different organizations tailored their processes to their established corporate values and differing business line demands of a wide variety of customers. Though there is no universal project management qualification process within the contractor community that serves the DOE complex, common attributes and expectations exist within their processes that form a strong basis for providing a qualified project management workforce. Contractors rely heavily on efforts to recruit qualified PMs and most provide them in-context training on the DOE requirements. Performance management processes and individual development plans guide PM career progression as well as addressing important recognition and retention issues for viability of the PM career.

A membership survey was conducted requesting information from the National Laboratories and EFCOG member companies to determine if their processes for PM qualification and training included certain attributes. The survey questions were held at a high level to ensure common understanding, encourage broad participation, and quick turnaround. Approximately twenty organizations responded and the results are discussed below in the form of common attributes.

PM Qualification/Competency Model

A competency based framework forms a fundamental foundation of an effective PM development and certification program. All responders utilize a form of a PM competency model to determine the areas of technical and managerial qualifications in which PM's need to be competent in order to be assigned in the role of PM. The Project Management Institute (PMI) has developed "Project Management Knowledge Areas" that stand as a good reference to outline the basis for areas of competence. They address project aspects requiring management common to all projects including, scope, schedule, cost, quality, human resources, communication, risk, procurement and integration. In many cases, leadership characteristics identified as contributing to successful projects are also included and evaluated along with training, experience and demonstrated performance.

Number of Qualification Levels

Most all of the responders use an approach that stratifies PM qualifications into several levels. This allows for tailoring the qualifications and competencies to the risks inherent in different categories of projects and level of assignment of rising PM professionals within the company human capital development program. Some contractors maintain a singular project management level and utilized internal certification processes or executive level selection processes for determining project management assignments. In

several cases qualifications for other key roles in the integrated project team are also formally evaluated.

Project Risk Evaluation Processes (Prior to PM Assignment)

Evaluating specific risks inherent in projects prior to selecting a PM was a common attribute of many of the responding organizations. Formalized risk management processes have become common practice and periodic risk/opportunity assessments with ongoing mitigation strategies are required for most capital acquisition projects. In many cases, the members of the integrated project team are assigned based on their ability to mitigate specific project risks perceived by either the company or the customer or both. Project risks and strategies for success are clearly considered in the assignment of the project team and must ultimately fit within the organization's project portfolio and workload demands to deliver expected results to the customer.

Internal PM Training

All organizations responding indicated that internal project management training was expected and provided as a part of their process. Some of the organizations based their training in the PMI knowledge areas, though most focused on processes and tools supporting their business lines. Providing context to the specific requirements for managing projects in the various customer environments is one of the main goals. Many organizations brought focused project management classes on site for topics ranging from basic project management to advanced risk management courses. Some of the DOE sites have become registered education providers with PMI, allowing a more direct connection with the Project Management Professional (PMP) certification and maintenance process.

External PM Training

All of the responding organizations provide access to external PM training for advanced level topics and specialized skills. Project management is increasingly viewed as a professional career and knowledge and practice of a broad array of advanced tools and techniques are viewed as an important element of successful programs. Web based enterprise project management systems are becoming much more common as are web based training systems. Member companies report having their own internal PM education program or acknowledge contracting this service within as a necessary career advancement ladder for their professional PMs.

Internal PM Certification Process

Roughly twenty percent of the responding organizations utilize and require an internal certification process and another ten percent are in the process of developing certification standards within the PM career progression. Most of the organizations relied on initial recruiting, selection, training and qualification for their project management staff without the need of a structured certification process. Evaluation of individual performance and demonstrated success in similarly responsible and complicated project management roles forms the basis for follow-on selection of project assignments.

External PM Certification Process

The PMI PMP Certification was cited most often and widely encouraged, but generally not established as a required item. The curriculum is based on a broad set of project management consensus standards embodied in a document called the Project Management Body of Knowledge. Benefits cited include establishing base level understanding of the fundamental project management process and learning a common language and set of tools used across the project management workforce. With the considerable variability in size and complexity of projects, it is important to establish expectations and align stakeholder understanding of what certification can and cannot provide. Roughly twenty percent of the responding organizations required PMP designation as a base level for larger and more complicated projects.

Continuing Education Requirements

Continuing education requirements were not cited as a common core requirement. The exception is for the PMP certified PMs requiring twenty hours annually to maintain the certification. Only one of the more structured organizations with a noteworthy internal certification requirement implemented continuing education requirements. Most all organizations provide assistance for continuing education and encourage their project management workforce to participate.

Mentor/Protégé Process

Mentoring, both formal and informal, was cited as a valuable element of project management and training and is implemented by over half the organizations. Assigning an experienced senior PM to mentor junior PMs helped to provide the context and insight for managing functions or project teams in demanding environments. This process also enhances the insight into core competencies of the developing project management workforce, and tailoring of individual development to the needs and values of the member company and their customers. Established experience-based requirements for PM's and PM classifications improve companies' ability to mentor and develop PM's on-project and enhance training and education requirements.

PM Lessons Learned/Knowledge Management

The value of a "learning institution" cannot be underestimated. Virtually all the responding organizations have some form of a PM Lessons Learned process or are in the process of developing one. Within the community of project management practitioners, there has been strong recognition of the value of capturing and communicating lessons learned. The complexity of the project delivery environment is continually increasing with changing stakeholders, performance requirements, scientific expectations, budgetary issues, contractual models and public private partnerships. Many of the problems facing individual DOE projects have been experienced elsewhere and effective communication can help to avoid their propagation before the actual trigger events. In addition to the

central DOE requirements, some of the responding organizations are using databases and knowledge sharing forums to provide outreach capability. EFCOG's PM working group has begun dedicating part of their summer meeting forum to sharing lessons learned and encouraging networking as PM's find they are not alone with project delivery challenges. They have also established knowledge sharing forums like the EVMS Clearinghouse web site to foster successful implementation of new contractor requirements.

HR Career Track/Individual Development

Workforce development has become a critical issue as the DOE workforce ages and competes for young PM professionals in the open market. Organizations need to tie strategic planning activities to personnel development in order to sustain performance. The majority of responding organizations have recognized the key value of project management and have developed, or is in the process of developing, a specific project management career track. The core competencies needed to be a successful PM change in both quality and quantity at different stages of a career. Individual development plans help to tailor the training and experience requirements effectively for improvement of the individual, their career track, and the company-customer success factors for good project management outcomes.

Succession Planning

Succession planning is universally embraced though not always specifically applied to the project management function. Eighty percent of the responding organizations included an element for PMs with key positions in their succession planning process. The organizational needs for succession plans are variable and tied to the business line workload forecasts across the entire member company enterprise.

Recognition as a Critical Skill

Project management has gained recognition as an important element of success in a wide variety of business lines from software to pharmaceuticals to capital assets. The structured disciplined approach has become a critical factor in running a companies' internal business and an essential element in product delivery for customers. Essentially all of the responding organizations recognized project management as a critical skill. They have brought focus and management attention to the ongoing recruiting, training, developing and retaining talented PMs along with attention to proper compensation, incentives and rewards for exceptional performance.

Certified Earned Value Management System (EVMS) Tools/Training

The accuracy of cost and schedule data during the execution phase of a project is an important factor in managing projects to successful completion. Earned Value is a project management technique that has emerged as a valuable tool in the management of all projects. With the advent of the ANSI/EIA 748 standard in 1998, the ability to assure accuracy through conformance with the standard became part of a certification process for this toolset. Training of PMs and project teams on correct application is essential to

achieving certification. All the responding organizations reported they currently provide training or are in the process of developing it as part of certification and surveillance.

Conclusion

The contractor community serving DOE, including the national laboratories, has developed varying methods to provide a skilled project management workforce. There is strong recognition of the value of project management and a high degree of common attributes in the training and qualification processes that have been developed. Although there is not an agreed upon and recognized common certification process, all contractors meet in varying ways, those criteria critical to developing and maintaining a highly skilled cadre of PMs. In general, most contractors have developed a competency based model appropriate to their business needs and require both internal and external training to be considered qualified against this standard. External certifications, such as PMI's PMP, are widely used to supplement corporate training. Although not specifically required, a significant fraction of the project management workforce has obtained, and maintains, the PMP credential. Mentoring, continuing education and sharing of lessons learned are used to maintain and enhance proficiency. Project management career tracks are normally developed to provide a progressive path to use in maturing PM's skills and guiding opportunities for advancement. Although varying in content, these approaches adhere to basic principles inherent in all PM qualification programs and produce the desired results: a highly qualified pool of PMs the contractor can draw upon to meet the risk-based needs of specific projects.