World Record Earned Value Management System Certification for Cleanup of the East Tennessee Technology Park, Oak Ridge, Tennessee, USA – 13181

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ABSTRACT

On projects that require Earned Value Mangement (EVMS) Certification, it is critical to quickly prepare for and then successfully obtain certification. This is especially true for government contracts. Projects that do poorly during the review are subject to financial penalties to their company and they lose creditability with their customer creating problems with the project at the outset.

At East Tennessee Technology Park (ETTP), we began preparing for Department of Energy (DOE) certification early during proposal development. Once the contract was awarded, while still in transition phase from the previous contractor to our new company, we immediately began reviewing the project controls systems that were in place on the project and determined if any replacements needed to be made immediately. The ETTP contract required the scheduling software to be upgraded to Primavera P6 and we determined that no other software changes would be done prior to certification . Next, preparation of the Project Controls System Description (PCSD) and associated procedures began using corporate standards as related to the project controls systems. During the transition phase, development was started on the Performance Measurement Baseline which is the resource loaded schedule used to measure our performance on the project and which is critical to good Earned Value Management of the project. Early on, and throughout the baseline review, there was positive feedback from the Department of Energy that the quality of the new baseline was good. Having this superior baseline also contributed to our success in EVMS certification.

The combined companies of URS and CH2M Hill had recent experience with certifications at other Department of Energy sites and we were able to capitalize on that knowledge and experience. Generic PCSD and procedures consistent with our co-operations approach to Earned Value Mangement were available to us and were easily tailorable to the specifics of our contract and site. We also had corporate EVMS experts available to us so as to draw upon their recent certification experiences with lessons learned. This knowledge was especially helpful for training of personnel that were involved in the certification which included Project Controls, Project Management and Control Account Managers. We were also able to bring in these corporate experts to assist with our training efforts.

To assure our readiness for the review, we conducted a “White Hat” review. The “White Hat” team consisted of corporate experts in EVMS along with an industry expert in EVMS from Humphrey and Associates. This review identified early any weaknesses that we had so corrections could be enacted prior to the EVMS Certification Readiness Review. It also helped give the evaluators confidence that we had done proper due dilligence prior to their arrival.

Also critical to our success, was early communication with our evaluators. It is important to start the communications early to ensure you understand the expectations of the certification team and the process that will be used during the certification. Communication through the entire process is critical to understand expectations and issues along the way.

Very important to the overall process was management commitment, support and reinforcement. Management made sure that all personel involved knew the importance and made preparations a priority. This was noted as a key strength by the evaluators during the outbrief.

As a result of our preparation, our review yielded one Corrective Action Report (CAR) and two Continuous Improvement Opportunities (CIOs). The Certification team in their outbrief explained that this was the lowest number of CARs and CIOs in the history of EVMS certifications in the DOE Complex.

INTRODUCTION

The U.S. Department of Energy (DOE) Oak Ridge Reservation (ORR) was created in 1943 as part of the World War II Manhattan Project to support development of the world's first atomic weapon. The ORR is comprised of three sites: (1) Oak Ridge National Laboratory (ORNL); (2) Y-12 National Security Complex (Y-12 NSC); and (3) the East Tennessee Technology Park (ETTP). The Y-12 NSC was originally created to enrich uranium; ORNL was originally established to produce and separate plutonium; and ETTP was originally established to produce highly enriched uranium. Since that time, the missions of these sites have changed; ORNL is DOE's largest science, technology, and energy national laboratory; Y-12 manufactures, stores, and disassembles nuclear weapon components; and ETTP is being environmentally restored for conversion into a private sector industrial park.

The purpose of this Contract is to decontaminate and decommission (D&D) the major facilities at ETTP, which include Bldgs. K-25, K-27, and K-1037, and other facilities; remediate any associated environmental media; and continue DOE Environmental Management activities currently ongoing at ORNL and the Y-12 NSC. Figure 1 is a photograph of many of the facilities and grounds undergoing D&D and environmental remediation at ETTP.

Figure 1. East Tennessee Technology Park

At East Tennessee Technology Park (ETTP), preparations for Department of Energy (DOE) certification began early during proposal development. UCOR's Execution with Certainty strategy was proposed to define the tools and methods needed to implement procedures and

processes. This strategy has been proven to be success for quickly implement the EVMS requirements. Throughout the phases of contract implementation, UCOR relied on this strategy for success. The combined companies of URS and CH2M Hill had recent experience with certifications at other Department of Energy sites and ETTP was able to capitalize on that knowledge and experience through the use of subject matter experts (SMEs).

Figure 2 below shows the timeline for steps and dates for completion of the various steps involved with the EVMS Certification.

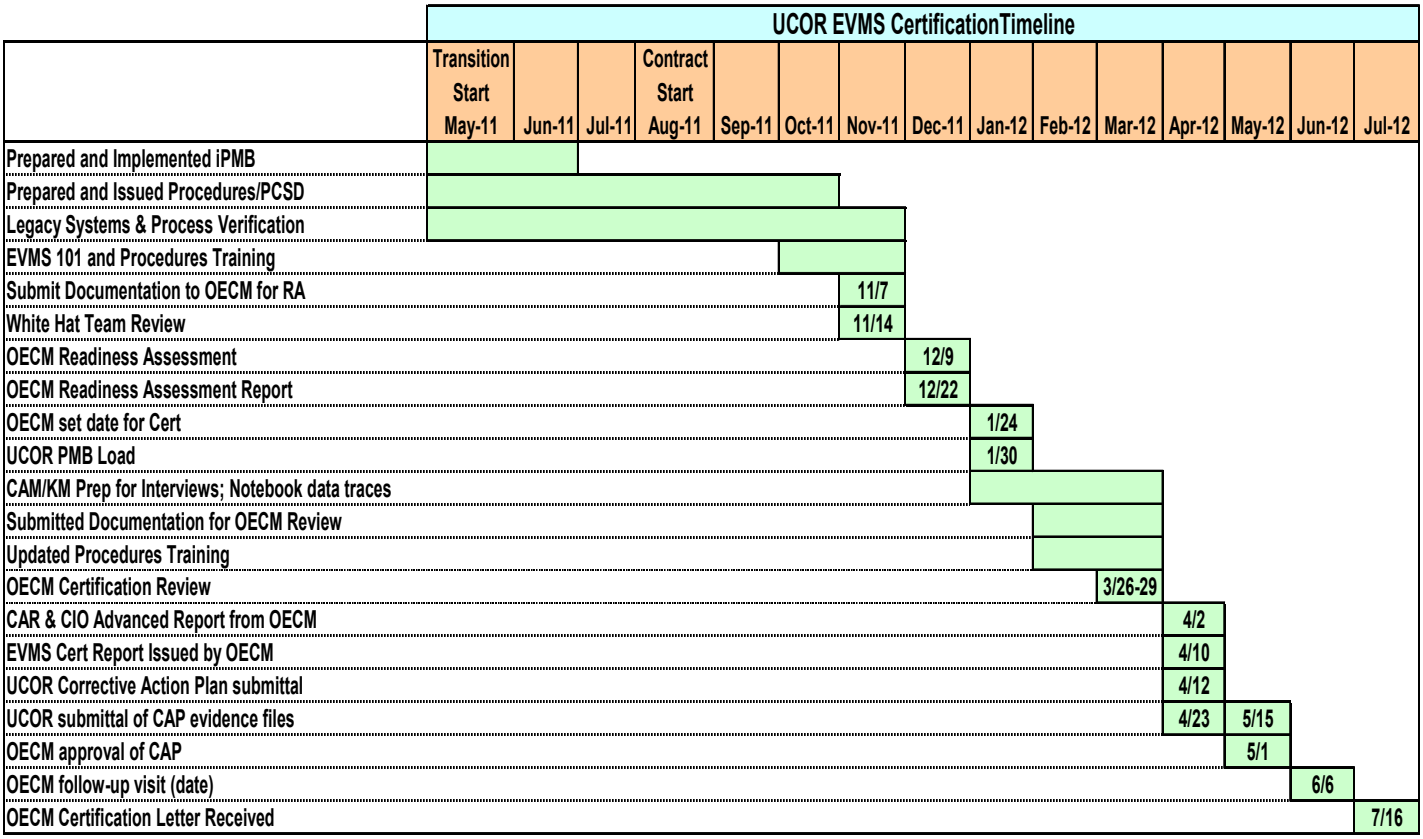

Figure 2. ETTP EVMS Certification Timeline

TRANSITION PHASE

Once the contract was awarded and the project was in the transition phase, the incumbent project controls systems were reviewed to determined if any replacements needed to be made immediately. The ETTP contract required the scheduling software to be upgraded to Primavera P6 and no other software changes were required prior to certification. Corporate SMEs were used to assist in this conversion.

Generic Project Controls System Description (PCSD) and Project Controls procedures consistent with our co-operations approach to Earned Value Management were available through the corporate partners and were easily tailorable to the specifics of our contract and site. As with the P6 conversion, corporate resources were loaned to ETTP to modify the templates and implement the necessary procedures and the PCSD that were needed for the project.

During the transition phase, development was started on the Performance Measurement Baseline (PMB) which is the resource-loaded schedule used to measure our performance on the project and which is critical to good Earned Value Management of the project. The interim PMB (6 months) was established during transition to be able to have accurate performance reporting at the start of the contract. This iPMB was expanded to a full life-cycle PMB that was completed 4 months into the contract. Once again, senior corporate SMEs were used to facilitate the successful development of the PMB. Early on, and throughout the baseline review, there was positive feedback from the Department of Energy that the quality of the new baseline was good. Having this superior baseline also contributed to our success in EVMS certification.

POST-TRANSITION PHASE (AFTER CONTRACT START)

The ETTP Contract started on August 1, 2012. The PMB development and procedure implementation was a primary focus of Project Controls. The procedures were completed and approved for implementation in 3 months and SMEs were then used for training the control account managers (CAMs) and the project controls staff. Storyboards were created from the procedures and documented the major processes of EVMS. These storyboard were provided the Certification team and were displayed on the conference room walls during certification and used to walk the reviewers through current process.

At this time, the ETTP management contacted DOE-APM (formerly known as OECM) and held discussions as to the status of the project, certification requirements, and when ETTP would be prepared for a Readiness Assessment. As a result of the meeting, the ETTP management made a decision stand-up an group dedicated to ensuring EVM compliance throughtout the projects. This organizational change demonstrated to DOE-APM that EVMS would continue to be a critical element of the ETTP project after the certification was received.

ETTP decided to conduct at “White Hat Review” in November to assess our environment before the DOE-APM Readiness Assessment, which was scheduled for December. The “White Hat” team consisted of corporate EVMS experts along with an industry EVMS expert from Humphrey and Associates. All of these experts have been involved in at least one EVMS Certification. The DOE Oak Ridge Office (ORO) EVMS expert was an observer to this process as well. This review was used to early identified any weaknesses in our EVMS implementation so corrections could be enacted prior to the EVMS Certification Readiness Review. “Mock” interviews were conducted with management and the CAMs to simulate a real certification environment. The CAMs were grilled with questions and later received feedback on their responses and performance. DOE-APM was provided with the results of the White Hat and discussed those issues at the Readiness Assessment. Performing this pre-evaluation gave the certifiers confidence that proper due dilligence was done prior to their arrival.

After the Readiness Assessment in December was completed, UCOR once again used the corporate SMEs to provide focused training to the CAMS who would be involved in the Certification Review. Sessions with the CAMs included topics such as the organization and use of the CAM notebooks, knowledge on various procedures, and preparation for the interviews so that they could demonstrate their command and confidence in their projects and the use of EVMS for project management.

In January, DOE-ORO approved the load of the PMB and ETTP documented the step-by-step point adjustments and baseline changes that were required to merge the iPMB and PMB into the official PMB. ETTP assisted DOE-ORO in the validation of the PMB and the impact to the load. The documentation supporting the PMB load was forwarded to DOE-APM as well. Once the PMB was loaded, ETTP's systems and processes were ready for review.

As a result of our preparation, the March EVMS Certification Review yielded one Corrective Action Report (CAR) and two Continuous Improvement Opportunities (CIOs). The Certification team explained in their out-brief that this was the lowest number of CARs and CIOs in the history of EVMS certifications in the DOE Complex. The team positively acknowledged UCOR's efforts in acting on lessons learned from prior EVMS reviews, UCOR management's commitment to EVMS, and applying management changes to influence program culture.

SUMMARY

The major contributors to UCOR's successful EVMS Certification were (1) Management's commitment to enforcing the EVMS principles, (2) Applying lessons learned from other corporate projects, (3) Using corporate SMEs with EVMS experience to assist with training, development of procedures, and review of processes and systems, and (4) Constant communication with the DOE customer to understand the certification requirements and ensure that the correct systems and processes were in place.

REFERENCES

ANSI/EIA-748-B Standard. *Earned Value Management Systems,* June 2007, American National Standards Institute/Electronic Industries Association, New York, NY. (Note: reissued by the Government Electronics and Information Technology Association [GEIA] as GEIA EIA-748-B in June 2007.)

DOE Guide 413.3-5A. *U.S. Department of Energy Performance Baseline Guide*, September 23, 2011, U.S. Department of Energy, Washington, D.C.

DOE Guide 413.3-9. *U.S. Department of Energy Project Review Guide for Capital Asset Projects*, September 23, 2008

DOE Guide 413.3-10. *Earned Value Management System (EVMS), May 6, 2008*

DOE Order 413.3B. *Program and Project Management for the Acquisition of Capital Assets,* November 29, 2010