

## **Plateau Remediation Company – Going Green with an Automated Procedure System – 14611**

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### **ABSTRACT**

The CH2M HILL Plateau Remediation Company (CHPRC) Procedure System (PPS) was implemented in Fiscal Year (FY) 2013 to support the improvement initiative to streamline the procedure process. The initiative was accomplished by ensuring requirements were met while focusing technical authority and procedure writer time on procedure content, rather than processing paperwork, and by eliminating the need for hardcopy documentation through workflow automation. The impact on activities has resulted in increased safety and environmental effectiveness. These improvements include:

- Reduced rework due to improved quality expected to provide a net savings of \$1.7million per year.
- Additional time in the field for procedure writers, expediting walk-downs, validations, and hazard analysis and mitigation.
- Automated processes, which reduce procedure processing cycle times, expected to provide a net savings of \$335,580 per year.
- Reduction in paper footprint (Electronic Record Copy vs. Hardcopy) to realize a savings of 450 cases per year.

Additional savings may soon be realized site-wide as other Hanford Prime Contractors have reviewed the PPS system and are considering implementations of their own.

This paper will share the process improvements and lessons learned to demonstrate how other DOE sites and projects can deliver similar sustainable, environmentally responsible business practices.

### **INTRODUCTION**

The U.S. Department of Energy (DOE) is cleaning up the environmental legacy from over 50 years of nuclear weapons materials production at the Hanford Site, outside of Richland, Washington. Cleanup of the Site is a complex and challenging undertaking. In 2008, DOE selected CHPRC as the prime contractor for the safe, environmental cleanup of the site's Central Plateau, 100 K Area, and the groundwater beneath the 586-square-mile Site. Our scope of work encompasses a wide variety of tasks, including the management of wastes and nuclear material, remediation of contaminated waste sites; decontamination, decommissioning, dismantlement and demolition of facilities; and management of the site groundwater program.

### **DESCRIPTION**

The CHPRC poster to be presented at the WM2014 Symposium will be 40" high by 90" wide and broken into four distinct sections. The sections of the poster will include an introductory description of CHPRC as it relates to the DOE and the Hanford Site, an overview of the retired manual procedure system prior to the development of the PPS, an overview of the requirements used to develop the automated process that became the PPS, and descriptions of the activities, cost savings, and a look ahead for PPS. Although each section is important, an emphasis will be placed on the roll out of the PPS and beyond.

## **DISCUSSION**

The subcategories below address the four focus areas of the poster and phases of the CHPRC Procedure progression from its use as a tedious resource driven manual process, to the requirements gathering for the development of an automated process, through the roll out of a much anticipated electronic workflow, to the success story of a user friendly tool. The tool has not only saved the organization and DOE costs but also reduced impacts to the environment.

### **Introductory Description**

CH2M HILL Plateau Remediation Company is a Prime Contract for the DOE- Richland Operations Office, overseeing cleanup to sections of the Hanford Site located outside of Richland, Washington.

In CHPRC, in proactive alignment with CRD O 436.1 (Supp Rev 0) *Departmental Sustainability*, identified the procedure process as a high value target for process efficiency and productivity improvement. CHPRC developed an improvement initiative to replace the antiquated manual procedure process with an innovative streamlined approach to procedure management.

### **Manual Procedure System Prior to PPS**

Prior to FY2013, CHPRC utilized a procedure process that relied on continual manual intervention and non-dedicated electronic support systems to comply with Quality Assurance and Conduct of Operations requirements. The manual system (Figure 1) imposed operational and programmatic difficulties on performance, which resulted in extensive personnel resource investment to conduct work. Resources were focused on management of the process as opposed to the quality of the instructions. The following are some of the issues identified:

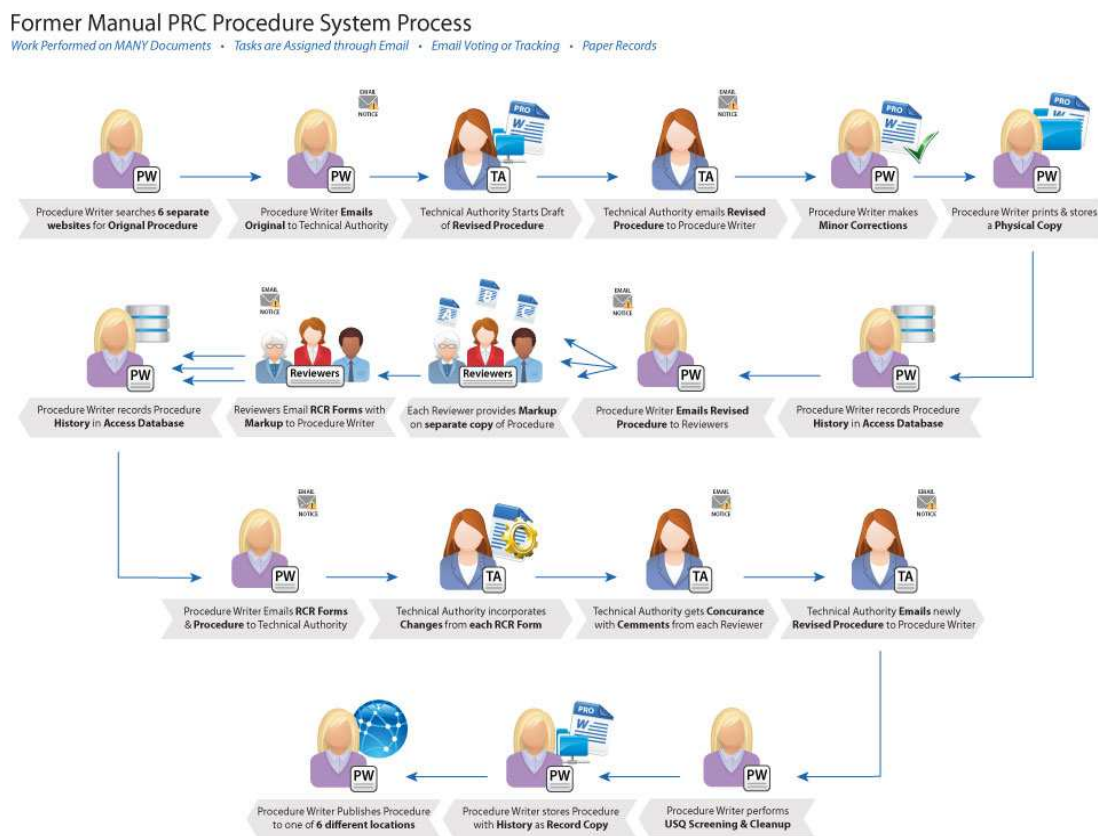
- Systems currently in use such as Microsoft Outlook, which were not designed to support procedure processing requirements, were overloaded.
- Increased backlogs of procedure changes because of inefficient review and comment disposition processed.
- Required physical routing via plant mail or through Microsoft Outlook for development/revision, printing, physical routing for signatures, and scanning.
- Required hardcopy document processing and retrieval from site-wide storage locations.
- Increased costs and realized environmental impacts associated with the processing of paper documentation.
- Rework costs in excess of \$1.7 million per year.
- Manual processes, which increase procedure processing cycle times, exceeded \$335,580 per year.

Additional mitigating factors were identified as follows:

- CHPRC staff was geographically dispersed across the Hanford Site, which impacted the cost to move paper documents between personnel. This was not only a monetary cost but an environmental impact as well.

- Numerous backlogged procedures waited for processing because the higher priority work needed to be completed first.
- The procedure writers were held captive to the manual process, acting more as “gate-keepers”, to a never-ending paper shuffle, rather than to accomplishing their work scope of expediting walk-downs, validations, and hazard analysis and mitigation.

Figure 1 – Manual CHPRC Procedure System Process



## Development of PPS

The PPS was implemented in FY2013 to support the improvement initiative to streamline the procedure process. The initiative was accomplished by ensuring requirements were met while focusing technical authority and procedure writer time on procedure content, rather than processing paperwork, and by eliminating the need for hardcopy documentation through workflow automation. The following system requirements and business process changes were identified to support the development and implementation of the PPS:

- The initiative required company-level program and business process changes to support the new procedure methods for requesting a new or revised procedure, selection of reviewers, response by reviewers, issuance of procedures, and retrieval.

- Consolidation of procedures into one repository whereas previously each project maintained document repositories for their project specific procedures.
- Automation of the manual processes for creating new procedures, updating existing procedures, storing, and updating related procedures.
- The provision of electronic delivery and processing within the Hanford Site Intranet.
- Automation of the procedure life-cycle from creation through cancellation.
- Replacement of the annual procedure change initiation process with a computer-based, user-friendly module.
- Restructuring of the identification of reviewers and the processing of procedure comments during the revision process.
- Implementation of a logic-based mechanism to identify required reviewers and document necessary approvals for new procedures and changes.
- Minimization via workflows of the manual manipulation of documents to produce a publishable product from an approved procedure.
- Automation of records collection and storage, resulting in a paperless process.
- Flexible architecture to add additional modules as business needs arise.

### **Roll Out of PPS and Beyond**

For the first time, the CHPRC PPS automated the development, review, approval, and distribution functions through an integrated electronic workflow tool that streamlines the procedures process (Figure 2). The impact on activities has resulted in increased safety and environmental effectiveness, these improvements include:

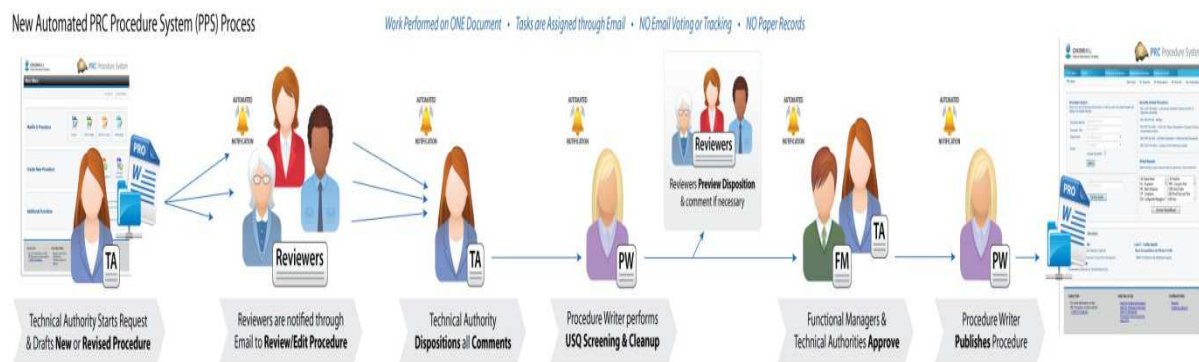
- Reduced rework due to improved quality is expected to provide a net saving of \$1.7 million per year.
- Additional time in the field will be realized for procedure writers, thus expediting walk-downs, validations, and hazard analysis and mitigation.
- Automated processes, which reduce procedure processing cycle times, are expected to provide a net savings of \$335,580 per year.
- Reduction in paper footprint (Electronic Record Copy vs. Hardcopy) will realize a savings of 450 cases of paper per year.
- Signification time efficiencies realized by the elimination of the need to move paper documents
- Automation of processes reduces “paper shuffling”, which resulted in a decrease in Full-Time Equivalent (FTEs) from a high of 33 prior to PPS to 16 at the present time.
- Reduction in writing staff due to decreased in funding and attrition (50%), but was able to maintain a steady level of service.

- Improved file/content configuration management and control ensuring the user has access to the most current version of a document when needed.
- Helps in the assurance that requirements are met.
- Streamlining the review process through the introduction of multi-user editing technology.
- Elimination of hardcopy procedure history packages, thus avoiding additional paper to the physical records holding areas and allows easy retrieval of previous modifications during the review and approval process.

Historically, CHPRC used as many 33 procedure writers as a support function, which today stands at 16 FTEs. Signification frustration levels existed due to the amount of time it took to process procedures and the tedious nature of the manual process. Additionally, a large number of back-logged procedures existed in “waiting for processing”. The CHPRC Procedures Organization was providing writer support that required significant “paper shuffling” with very little time available for technical writing. The PPS allows for more technical writing support. In addition to the quality improvements that will be made possible by refocusing resource time, the PPS is estimated to save millions of dollars during the remainder of the CHPRC contract while improving efficiency of the process.

To promote the arrival of the new PPS, CHPRC undertook a “green” or environmentally responsible poster and campaign. All promotional communications on the product were conducted electronically or in person. Additionally, training sessions were conducted in a hands-on environment with the absence of printed literature. Reference resources for the system were made available electronically through the CHPRC Intranet Site.

Figure 2 – New PPS



## CONCLUSION

Looking back it is difficult to remember how the procedure system used to be, the success of the PPS has overridden our memories of the antiquated system. Here at the Hanford Site, CHPRC can celebrate their achievement by knowing that other Hanford Prime Contractors are considering their own implementations of the PPS system. With the savings that are realized by the efficiencies of PPS, funds can be diverted to other priorities on the Central Plateau, thus further realizing the cleanup mission. The

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process improvements we identified and the system itself can be utilized by other government entities seeking to invest in an efficient, environmentally “green” procedure process.