Hanford Site Excavation Permit Application Automation Project - 15187

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ABSTRACT

Mission Support Alliance, LLC (MSA), on behalf of the Department of Energy’s Richland Operations Office (DOE-RL), recently implemented the Site Excavation Permit Application (SEPA) at Hanford. The SEPA automation replaced a 20-year-old manual excavation permit process that governed all Hanford Site excavation activities. The manual process required time consuming interaction between numerous resources for submitting an excavation permit to 15 separate permit organizations for approvals and signature. The process involved numerous information exchanges - usually by phone or emails, and substantial vehicle travel. It also generated large amounts of paper, lengthy wait periods and the need for continual status updates to permit reviewers until all approvals were obtained.

The new SEPA automated system is an entirely paperless application that streamlines over 25 separate manual permit activities into five Web-based processes. The new application provides sizable environmental sustainability benefits in terms of avoiding paper waste, air pollution and biofuel consumption. SEPA also deploys automated innovations that produce an approximate 50 percent operational cost reduction when compared to the manual permit process.

INTRODUCTION

The SEPA is a new automated web-based application that replaces an over 20 year old intensive manual process. The newly developed application creates notable environmental sustainability benefits while achieving significant operational process reductions. Through innovative development of specific work process mechanics, SEPA allows permit submittal, review and approval to be performed smarter, faster with more complete results. SEPA revolutionized the excavation process in comparison with the previous manual paper based methodology for the Hanford Site.
MSA teamed with Lockheed Martin Service Inc. (LMSI) to develop the SEPA system. When users access the SEPA system, the system initially opens the individual’s SEPA Home Screen (see Figure 1). The Home Screen displays the user’s real-time summary level permit assignments and performance information at a glance. SEPA eliminates a majority of shortcomings associated with the manual process. There are many automated features benefitting permit users beyond what is noted within this paper. For brevity purposes, a sample of SEPA’s features are outlined herein that promotes Environmental Stewardship sustainability goals and objectives.

**Sustainability Goals and Objectives**

**Environmental Management System (EMS):** SEPA aligns with Environmental Stewardship goals and ISO 14001 objectives in areas of electronic stewardship, going green and waste prevention as part of environmental management guiding principles and core elements noted below:
Promoting Environmental Stewardship: SEPA creates the opportunity to engage environmental, cultural and ecological interaction more consistently and efficiently compared to the manual excavation permitting process. Environmental Stewardship was introduced to the Excavation Permit process by ensuring Environmental reviews are a mandatory review within the SEPA application. The application will not allow users to by-pass Environmental reviews in order to complete the permit. This feature guarantees the Environmental group’s involvement with the Site’s excavation permitting process. Environmental reviews were not consistently implemented nor adhered to during the manual process.

Reduced fuel consumption and emission pollution prevention (Going Green): SEPA creates the opportunity to lower gas consumption and carbon dioxide emissions across the Site. SEPA facilitates permit interaction via web-based network processing which results in reduced vehicle trips between Permit Requesters and Permit Reviewer work locations. SEPA creates the potential to avoid consuming several thousand gallons of gasoline annually across the Site since requester and reviewer work locations could be up to 25 miles apart (there is the potential of up to 15 independent reviewers per permit application). Sustained vehicle transportation was an accepted practice for manual permit processing.

Significant Reduction of Paper Waste (Waste Prevention): SEPA is a turn-key paperless web-based automation tool which promotes Environmental Leadership objectives. The application eliminates the need to generate paper for all permit review transactions. The excavation permit data is stored on a centralized server where everyone involved with a specific permit has unconstrained access to the permit data. Therefore, the need to generate paper copies of the excavation permit is greatly reduced. Estimating an average of 270 excavation permits per year, the SEPA automation creates the opportunity to eliminate approximately 16,200 pounds of paper annually for the Hanford Site. Therefore the Site’s Records Inventory and Disposal (RIDS) excavation field files reduction is significant when understanding that each permit requester and all permit reviewers keep independent paper files for all permit activities generated as part of the manual permitting process.

Operational Improvements

In addition to the Environment Sustainability benefits, SEPA creates numerous operational efficiency benefits as well. Some of the benefits are outlined below:
Application Generated Notifications for Improved Responsiveness: SEPA provides 100% two-way automatic transaction notifications. This feature is designed to alert users of an incoming assignment and corresponding responses thus improving process responsiveness. As an example when users initiate an action within SEPA, the application generates email notices alerting the assigned individual of a pending action (see Figure 2). The application generated email contains a weblink so the assignees can immediately access the specific permit assignment. Once the assignee responds, SEPA sends a corresponding email back to the individual initiating the action advising them that a response has been received. This two way email alert notifications feature is used throughout SEPA thereby greatly improving process efficiency.

Ability to Track Permit Reviewer Performance Automatically Saving Time and Effort: SEPA captures all excavation permit information and processes permit activities online. As permit requesters assign permit reviewers to their permit, SEPA posts the reviewer’s assignment and their performance status next to their name (see Figure 3). Once Permit Reviewers are assigned, SEPA monitors the reviewer’s response and automatically posts continued status updates until their permit is complete. SEPA also provides color background to indicate the reviewer’s status (White background – good standing, Yellow background – due date within 2 days, Red background – permit review due date is overdue). At a glance, this feature makes permit tracking very efficient thereby saving time to monitor progress and avoids the drudgery of bird-dogging the reviewers until their actions are complete. During the manual permitting process, Permit Requesters would have to call upon each Permit Reviewer to get progress updates which took considerable time and effort over and over again.
Auto-saving to Official Use Only (OUO) or non-OUO Integrated Document Management System (IDMS) Folders: With innovative processing, SEPA creates the ability of recognizing whether an attached document contains OUO content. The application requests the individual attaching a document to declare whether the attachment contains OUO or not. The application uses the declaration to direct the permit folder to the appropriate share area automatically. This prevents sensitive information from being stored in non-protected archive areas thereby protecting sensitive information and complying with information security regulations.

Establishing A Set-Alternate Reviewer: SEPA establishes a Set-Alternate feature so when users are out of the office, a reviewer’s alternate can act on the reviewer’s behalf for uninterrupted reviewer support. The application automatically sends an email notification to the assigned alternate and re-routes permit review assignments to the alternate during the primary Permit Reviewer’s time off. The application monitors the reviewer’s calendar and returns permit
reviewer assignments back to the primary Permit Reviewer when their scheduled absence expires. This feature ensures continuous reviews without interruption, avoids missed communications, and reduces the potential of permit review backlogs. No other Site application has this capability.

**Transferable Technology to Other Business Units or Contractors:** SEPA lends itself as an effective automated tool for streamlining other business environments whether at Hanford or other government sites. SEPA contains a wide variety of automation features such as: streamlining assigning actions, tracking performance, generating action alerts, creating high quality electronic maps without specialty training, monitoring approvals, automatically transferring data to a centralized archive storage location.

**Significant Operational Cost Savings:** An independent consulting firm performed a cost savings assessment comparing the new SEPA automation versus the manual excavation process. Based on the consultant firm’s evaluation, SEPA creates significant potential operational savings/avoidance when compared to the manual permitting process. The reduction of time, operational efficiencies gained, and the amount of excavation permits processed annually, SEPA creates the potential for sizeable savings approaching 50% or greater.

**Consistent Digital Mapping Data:** SEPA offers a number of process improvement features. One example of a process improvement feature is SEPA’s Map Draw capability (see Figure 4). The Map Draw capability provides Permit Requesters with a standardized drawing tool to create excavation location footprint maps. The tool derives base map information from the Site’s Geographic Information System (GIS) Database. The Map Draw functionality ensures a level of mapping consistency in digital format, quality and accuracy for improved review purposes. It also allows general users to produce high quality drawings without specialized training. In comparison, the manual excavation process only captured mapping print attachments and didn’t
utilize a standardized drawing format so Permit Reviewer received a variety of mapping information to review.

Reviewer Consistency Results in Higher Quality Product: SEPA is designed to streamline process steps and reinforce procedural compliance. The application establishes the Environmental Review Category as one of two mandatory reviews. The mandatory reviews are identified on SEPA’s Assign Reviewer Webpage with a large green check mark next to the review category (see Figure 5). The application will not allow Permit Requesters to complete the excavation permit without the Environmental Review approval. The Environmental group’s participation is guaranteed thus ensuring involvement of environmental processes and procedural compliance.

Information Sharing Improves Permit Reviewer’s Comprehensiveness: All excavation permits are routed to the designated reviewers for each company. The application continually monitors review’s progress and provides “real-time” viewing status of all permit activities. This feature allows Permit Reviewers to easily observe other Permit Reviewer’s comments throughout the permitting process (see Figure 6). The application promotes interactive coordination between all Permit Reviewers resulting in a more comprehensive review and a better permit product.
Figure 6 - SEPA Reviewer Comments
CONCLUSIONS

In summary, Hanford contractors utilize the new SEPA interactive excavation permit toolset for processing excavation permits. SEPA replaces the 20-year-old manual permitting process and greatly improves excavation permit processing effectiveness. The SEPA system promotes environmental stewardship and sustainability goals, creates significant operational efficiencies and is Web-based so the application can be deployed without any special software. SEPA can be shared with all RL contractors, as well as other government sites. DOE-RL and DOE’s Office of River Protection (ORP) also has given high endorsements of SEPA’s innovation.

The SEPA architect will provide a live demonstration of the SEPA to the Waste Management Symposia and be available to answer questions from the audience.