

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 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.

HANFORD SITE
EXCAVATION PERMIT
Home Screen
 DAVE HAVENS - ACTIVITY DASHBOARD

Permits Administration

My Permit Requests		
There are 10 active permits.		
Permit Number	Status	Due Date
DAN14-0062	Draft	
DAN14-0027	Approved	02/16/2014
DAN14-0041	Approved	03/07/2014
DAN14-0045	Approved	03/07/2014
DAN14-0043	Approved	03/08/2014
DAN14-0054	In Review	03/13/2014
DAN14-0040	Approved	03/21/2014
DAN14-0042	In Review	04/10/2014
DAN14-0065	In Review	04/12/2014
DAN14-0032	In Review	04/18/2014
Create New Permit		

My Permit Reviews		
There are 8 open reviews in your queue.		
Design Authority/Technical Representative Due Today.		
DAN14-0065	Due 04/09/2014	Current Review
Environmental Due Today.		
DAN14-0065	Due 04/09/2014	Current Review
Radiological Control Due 1 in day		
DAN14-0065	Due 04/10/2014	Current Review
Transfer Lines & Process Sewer Due 9 in days		
DAN14-0032	Due 04/18/2014	Current Review
Safeguards and Security Due 1 in day		
DAN14-0065	Due 04/10/2014	Current Review
Land Use Planning/800 Area Landlord Due 2 in days		
DAN14-0065	Due 04/11/2014	Current Review
Facility/System Owner(s) (Ad-Hoc Only) Overdue 32 days		
DAN14-0042	Due 03/08/2014	Current Review
Facility/System Owner(s) (Ad-Hoc Only) Due 3 in days		
DAN14-0065	Due 04/12/2014	Current Review

Contact Us for More Information

For questions or information concerning the Hanford Site Excavation Permit application, please contact Dave Havens:
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 Email: David_E_Havens@rl.gov

Figure 1 - SEPA Home Screen

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:

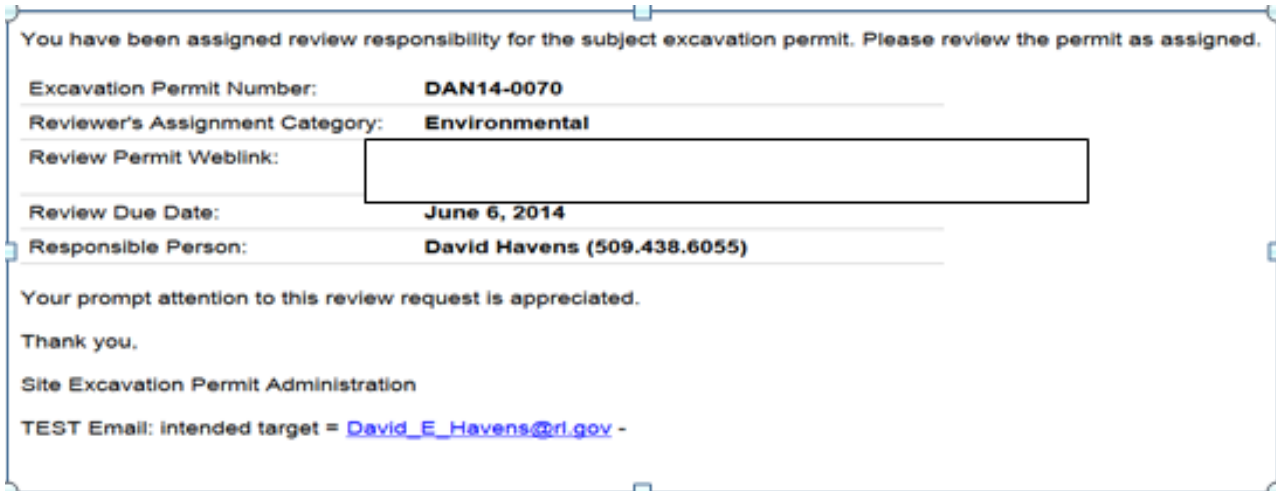


Figure 2- Automated Message

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.

Figure 3- SEPA Electronic Permit

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



Figure 4 - SEPA Map Drawing Tool

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.

HANFORD SITE
EXCAVATION PERMIT
 Permit Requests
 DAVE HAVENS - PERMIT REQUESTER DASHBOARD

Home Create New Permit Edit My Permits Display My Permits DAN14-0070 Permit Editor

Permit Editor Assign Reviewers Submit for Review Cancel Permit Save Permit

Permit Status: Draft

Permit Review Categories
 Please select the reviews required for this permit. By unchecking a review category you are signifying that a review is not applicable to this permit. You will be prompted to verify your response.
 Note: By determining a "not applicable" response for a specific review block, you are accepting responsibility for not obtaining a review by the designated reviewer.

10. Design Authority/Technical Representative
 11. Environmental
 12. Radiological Control
 13. Steam System
 14a. Electrical Utilities (Transmission Distribution)
 14b. Facility Electrical Systems (Secondary)
 15. Water Utilities
 16. Telecommunications
 17. Transfer Lines & Process Sewer
 18. Traffic Engineer
 19. Road and Track Maintenance
 20. Safeguards and Security
 21. Land Use Planning/600 Area Landlord
 22. Sanitary Sewer
 23. Facility/System Owner(s) (Ad-Hoc Only)
 24. Other (Ad-Hoc Only)
 25. Responsible Manager (Ad-Hoc Only)

Selected Review Categories and Reviewers


10. Design Authority/Technical Representative
 11. Environmental [Assign Environmental](#)
 12. Radiological Control
 13. Steam System
 14a. Electrical Utilities (Transmission Distribution)
 14b. Facility Electrical Systems (Secondary)
 15. Water Utilities
 16. Telecommunications
 17. Transfer Lines & Process Sewer
 18. Traffic Engineer
 19. Road and Track Maintenance
 20. Safeguards and Security
 21. Land Use Planning/600 Area Landlord
 22. Sanitary Sewer
 23. Facility/System Owner(s) (Ad-Hoc Only)
 24. Other (Ad-Hoc Only)
 25. Responsible Manager (Ad-Hoc Only) [Assign Responsible Manager \(Ad-Hoc Only\)](#)

Figure 5 - SEPA Assign Reviewer Webpage

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.

HANFORD SITE
EXCAVATION PERMIT
Permit Requests
DAVE HAVENS - PERMIT REQUESTER DASHBOARD



DAN14-0089 Permit Editor
Home | Create New Permit | Edit My Permits | Display My Permits

Permit Editor | Assign Reviewers | Submit for Review | **Review Status** | Cancel Permit | Save Permit

Permit Status: In Review

PERMIT NUMBER	REVISION	LAST PERMITTED START DATE
DAN14-0089	0	

1. Work Package Number **2. W.O. Project Number** **3. Location of Excavation** SY-Tank Farms/Bldg. 252-S

4. Originated By / Primary Requester **Phone Number** **Date**

Co-Requester / Secondary Requester **Phone Number**

5. Change Notice (ECN, DCN, or FMP) Number **6. Drawings, Plans / Procedures**

7. Description of Work

8. Special Instructions and Comments

Hand dig trench 20' long, by 20\" wide, by 24\" deep. The area the trench is required to be dug, is not currently marked as a \"Radiological Controlled Area\" at this time.MSA Water and Sewer Utilities (WU) has buried water lines in the vicinity of this excavation that need to be protected should this activity require equipment to cross those buried lines off normally"/>

9. List Facilities, Services, Utilities, and Groundwater Wells Affected by Excavation

26. U-Dig Ticket Number

Permit Date Tracking

ESTIMATED START	ACTUAL START	ESTIMATED END	ACTUAL END
<input type="text" value="06/18/2014"/>	<input type="text"/>	<input type="text" value="06/18/2014"/>	<input type="text"/>

Submitted by: JEFF SCHATZ

Review Comments

Reviews: Gary Stevens - Water Utilities
[05/29/2014] MSA Water and Sewer Utilities (WU) has buried water lines in the vicinity of this excavation that need to be protected should this activity require equipment to cross those buried lines off normally traveled roadways. In that case contact WU for approval PRIOR TO those crossings. Approval will normally require the requestor to perform potholing on either side of the proposed crossing to confirm burial depth and provide calculations to determine adequacy of cover.

Both potable water and raw water lines are of concern. Potable water lines may be identified on drawing H-2-830462 sheet 17 and raw water lines on H-2-830463 sheet 17.

Document Attachments Add a New File

Excavation Permit DAN14-0089 (05/30/2014)

DAN14-0089 (05/28/2014) Edit Delete

Added in Review: Michael Borchers

EU attachments (05/30/2014) Edit Delete

Added in Review: Bob Tucker

DAN14-0089_TELECOM (05/29/2014) Edit Delete

Maps Create New Map

DAN14-0089 Dig Map A (05/28/2014) View Delete

Reviews Assign Reviewers

10. Design Authority/Technical Representative
Doug L Waterbury OUT FOR REVIEW 06/07/2014

11. Environmental
Daniel C Herrera APPROVED 05/29/2014

12. Radiological Control
Grant Bachaud OUT FOR REVIEW 06/07/2014

13. Steam System
Joe Burrell APPROVED 05/29/2014

14a. Electrical Utilities (Transmission Distribution)
Michael Borchers APPROVED 05/30/2014

14b. Facility Electrical Systems (Secondary)

15. Water Utilities
Gary Stevens APPROVED W/ COMMENT 06/07/2014

16. Telecommunications
Bob Tucker APPROVED W/ COMMENT 06/07/2014

17. Transfer Lines & Process Sewer
Jeff Huth APPROVED 05/28/2014

18. Traffic Engineer

19. Road and Track Maintenance

20. Safeguards and Security
Denise Barbour APPROVED 05/29/2014

21. Land Use Planning/ROD Area Landlord

22. Sanitary Sewer
Gary M Stevens APPROVED 05/29/2014

23. Facility/System Owner(s) (Ad-Hoc Only)
Rod Brown OUT FOR REVIEW 06/07/2014

24. Other (Ad-Hoc Only)

25. Responsible Manager (Ad-Hoc Only)
Doug L Waterbury ASSIGNED

SEPA - Automated Excavation Permit Webpage View

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.