

Establishment of a Hub for the Light Water Reactor Sustainability Online Monitoring Community

Nancy J. Lybeck
Magdy S. Tawfik
Binh T. Pham

August 2011



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**Nancy J. Lybeck
Magdy S. Tawfik
Binh T. Pham**

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**Idaho National Laboratory
Idaho Falls, Idaho 83415**

<http://www.inl.gov>

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ABSTRACT

Implementation of online monitoring (OLM) and prognostics in existing U.S. nuclear power plants will involve coordinating the efforts of national laboratories, utilities, universities, and private companies.

Internet-based collaborative work environments provide necessary communication tools to facilitate interaction between geographically diverse participants. Available technologies were considered, and a collaborative workspace was established at INL as a hub for the light water reactor sustainability OLM community.

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ACRONYMS

EPRI	Electric Power Research Institute
HTTPS	Hypertext Transfer Protocol Secure
INL	Idaho National Laboratory
LWRS	Light Water Reactor Sustainability
NEUP	Nuclear Energy University Programs
NPP	Nuclear Power Plants
OLM	OLM
ORNL	Oak Ridge National Laboratory
PNNL	Pacific Northwest National Laboratory

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1. INTRODUCTION

The implementation of OLM and prognostics in existing U.S. nuclear power plants (NPPs) is the ultimate goal of the OLM pathway. Successful completion of this goal will involve cooperation between many stakeholders, including Idaho National Laboratory (INL), Pacific Northwest National Laboratory (PNNL), Oak Ridge National Laboratory (ORNL), universities participating in the Nuclear Energy University Programs (NEUP), the Electric Power Research Institute (EPRI), utilities, etc. The use of communication tools will be critical for the success of this project. Because the participants are geographically scattered, the use of an Internet-based collaborative work environment was the focus of this research.

There are many collaboration tools available for use, ranging from free applications like Google Docs to enterprise applications like Microsoft SharePoint and Team Foundation Server. These systems offer a variety of capabilities (e.g., e-mail, calendaring, chatting, and file sharing). For this project, the desired capabilities include document sharing and collaborative editing, group calendar, discussions, and task management. Security requirements include the ability to control access to the data, secure data transmission, and the ability to upload encrypted files.

Based on cost, availability, and features, the INL portal technology was selected. The hub was established as a new project under the existing Light Water Reactor Sustainability (LWRS) portal (<https://inlportal.inl.gov>). Access to the project is restricted to named users approved based on the need to know as well as individual security plans. Currently, 13 user accounts have been established, including participants from INL, PNNL, ORNL, EPRI, University of Tennessee, and The Ohio State University.

2. TECHNOLOGY

The INL portal is based on Web Center Interaction, an Oracle product. Communities of users are established with common interests (e.g., the LWRS community). Projects are established within each community to organize material as well as control access. Using role-based security, each individual user will see only the projects to which he/she is granted access. Currently, one project has been established under the LWRS community for the OLM community. Additional projects will be added as necessary.

The INL portal has all the required capabilities for the hub: document sharing and collaborative editing, group calendar, discussions, and task management. All portal files are backed up nightly, and Hypertext Transfer Protocol Secure (HTTPS) encryption is used for secure data transmission. The help capabilities include videos with brief introductions to teach users how to use the system to accomplish specific tasks (spotlights). Using a subscription service, this system can send users notification via e-mail when documents are updated, announcements are posted by the project leader, and items are added to the calendar or task list. Users can also use the system to send e-mail notification of activities to other project members.

The LWRS collaboration page shows users recent information from the common LWRS community and from the specific projects to which he/she is assigned (Figure 1). The project links open in a new window. The standard layout for each project window has five tabs: overview, calendar, tasks, documents, and discussions. Figure 2 through Figure 6 shows screenshots for the OLM project tabs.

Light Water Reactor (LWR) Sustainability Program - Windows Internet Explorer provided by Idaho National Laboratory

File Edit View Favorites Tools Help

https://inportal.inl.gov/portal/server.pt/community/light_water_reactor_%20lwr%29_sustainability_program/451/collaboration/8105

Light Water Reactor (LWR) Sustainability Program

Search: Everywhere

LWR
Light Water Reactor Sustainability

My Home Browse Directory My Account

You are logged in as **Nancy Lybeck**

Log Off

- My Pages
- My Communities
- Mandatory Communities
- Browse Directory

Light Water Reactor (LWR) Sustainability Program

- Home
- Collaboration
- Login

Project Search

All Categories All Projects

All Languages

Community Projects

Project Name Status

Online Monitoring 0%

Collaboration Spotlight Training

This collection of Spotlights provides you with demonstrations on how to do the main tasks within the Portal Collaboration environment.

[More](#)

Community Announcements

New

All Projects View

Welcome to the online monitoring project web site. If you experience any difficulties, or need assistance navigating, please contact Nancy Lybeck at nancy.lybeck@inl.gov. You can also use the collaboration spotlight training (on the bottom left) for general information about using the web portal.

Posted by Nancy Lybeck on 5/9/11 10:57:13 AM in project [Online Monitoring](#)

Community Tasks

New Claim Tasks

Tasks All Projects View

Task	Project	Assigned To	Status	Due Date
No Rows				

Community Documents

Upload

All Projects View

Name	Project	Date Modified	Checked In By
SignalPro.pdf	Online Monitoring	7/22/11 10:39 AM	Jamie B Coble
PHMDesign.pdf	Online Monitoring	7/22/11 10:38 AM	Jamie B Coble
PBMS.pdf	Online Monitoring	7/22/11 10:38 AM	Jamie B Coble
IMS.pdf	Online Monitoring	7/22/11 10:38 AM	Jamie B Coble
Impact for Power Ind.pdf	Online Monitoring	7/22/11 10:38 AM	Jamie B Coble
AOC Overview 2011_rev 0.doc	Online Monitoring	7/22/11 10:34 AM	Jamie B Coble
Watchdog.pdf	Online Monitoring	7/22/11 10:32 AM	Jamie B Coble
Maximo Utilities.pdf	Online Monitoring	7/22/11 10:28 AM	Jamie B Coble
Maximo RCM.pdf	Online Monitoring	7/22/11 10:27 AM	Jamie B Coble
EM Power and Energy.pdf	Online Monitoring	7/22/11 10:10 AM	Jamie B Coble

Trusted sites 100%

Figure 1. LWRs collaboration page.

https://inlportal.inl.gov/projID=88757 - Online Monitoring : Overview - Windows Internet Explorer provided by Idaho National L

Manage Project Help Project Search: Close

Online Monitoring

Choose Project

Overview Calendar Tasks Documents Discussions

Add Module Expand All Collapse All Default Layout

Online Monitoring

Add to My Page Subscribe Subscribe Others Notify

Description: Immediate Email

Status: Summary Email

RSS

Announcements

New Announcement Unsubscribe

Welcome to the online monitoring project web site. If you experience any difficulties, or need assistance navigating, please contact Nancy Lybeck at nancy.lybeck@inl.gov. You can also use the collaboration spotlight training (on the bottom left) for general information about using the web portal.

Posted by Nancy Lybeck on 5/9/11 10:57:13 AM

Updated Documents

Document	Checked in
SignalPro.pdf	7/22/11
PHMDesign.pdf	7/22/11
PBMS.pdf	7/22/11
IMS.pdf	7/22/11
Impact for Power Ind.pdf	7/22/11

Go to Documents

Recent Messages

Collaboration Web Site : collaboration

Posted by Nancy Lybeck on 5/9/11 11:00 AM

What can we do to improve the collaboration web site?

Go to Discussions

Figure 2. OLM project overview tab.

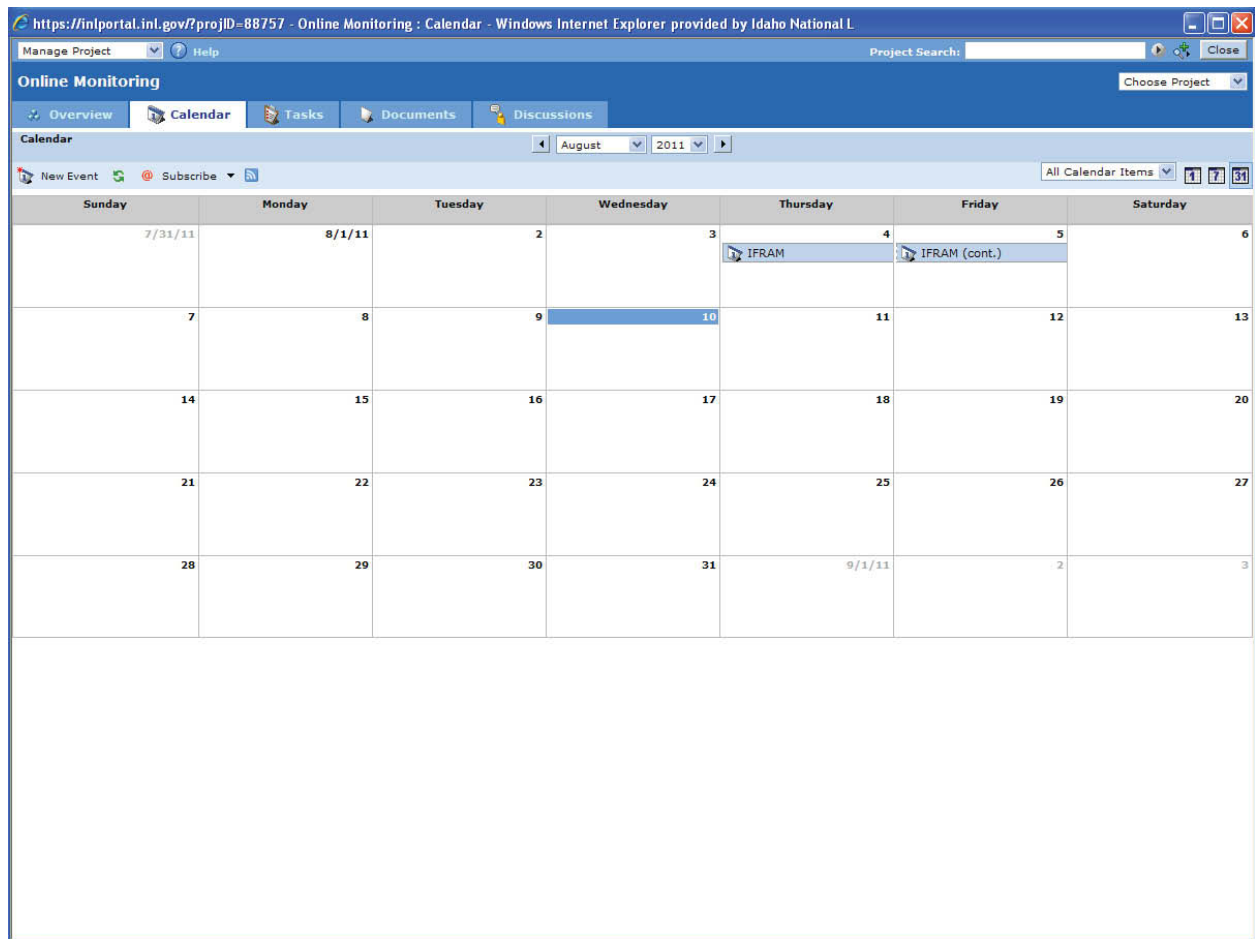


Figure 3. OLM project calendar tab.

https://inlportal.inl.gov/?projID=88757&tasklistID=95974 - Online Monitoring : Task Lists - Windows Internet Explorer provided

Manage Project Help Project Search: Close

Online Monitoring Choose Project

Overview Calendar Tasks Documents Discussions

New Edit Assign Tasks QuickLinks

Task	Assigned To	Status	Start Date	Due Date
<input type="checkbox"/> Hub letter	Nancy Lybeck	50%	9/30/11	9/30/11
<input type="checkbox"/> Communication Pathways report	[unassigned]	0%	9/30/11	9/30/11
<input type="checkbox"/> Collaboration report	[unassigned]	0%	9/30/11	9/30/11
<input type="checkbox"/> Report on papers	[unassigned]	0%	9/30/11	9/30/11

FY 2011 Milestones
Milestones for the online monitoring projects

Subscribe Subscribe Others Notify Alerts Attach Documents Attach Discussions Order Tasks

Properties

Task List Link: https://inlportal.inl.gov/portal/server.pt/gateway/PTARGS_32_0_214_0_1 Copy to Clipboard

Tasks: 4 Start Date: Friday, September 30, 2011

Status: 12% Due Date: Friday, September 30, 2011

Figure 4. OLM project tasks tab.

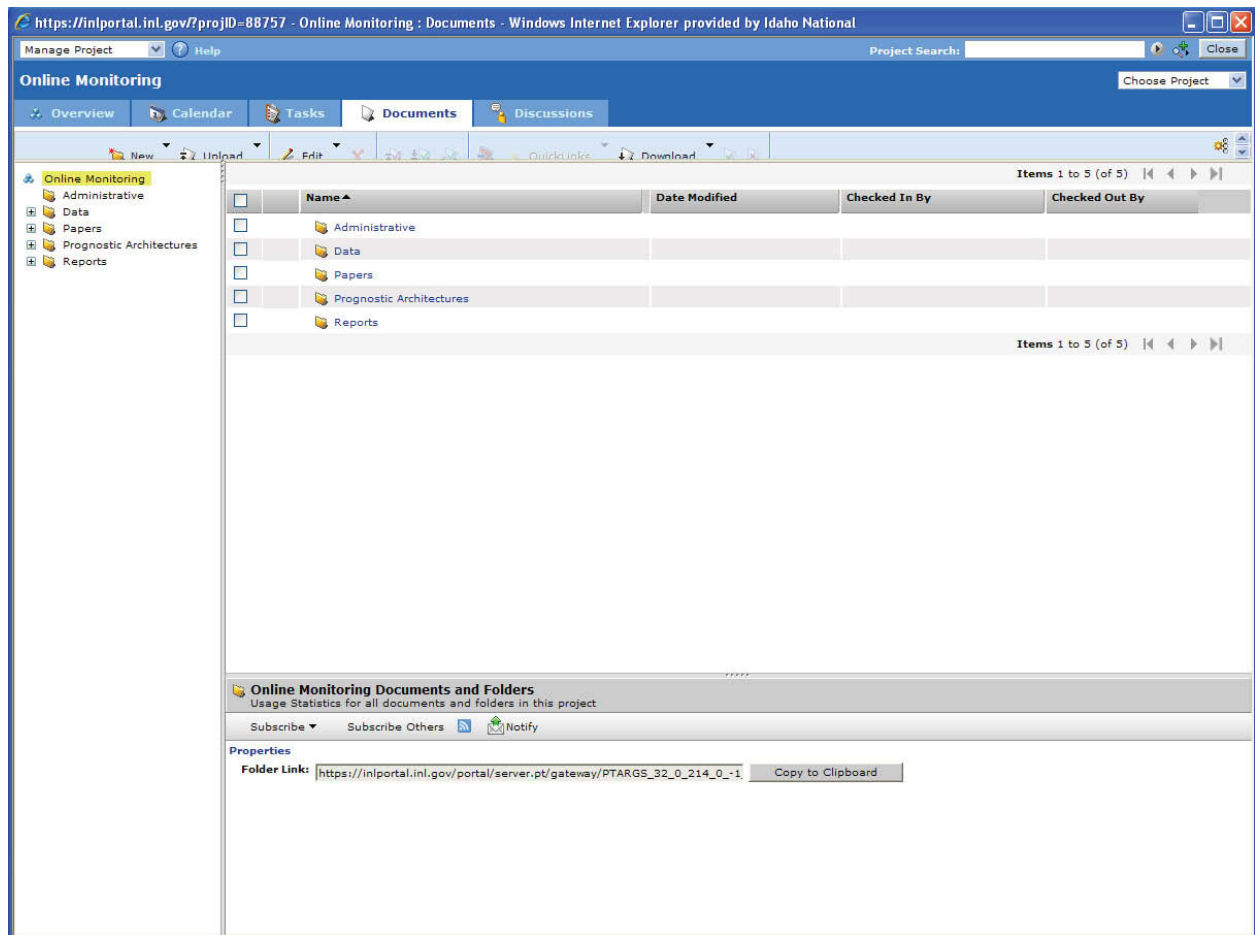


Figure 5. OLM project documents tab.

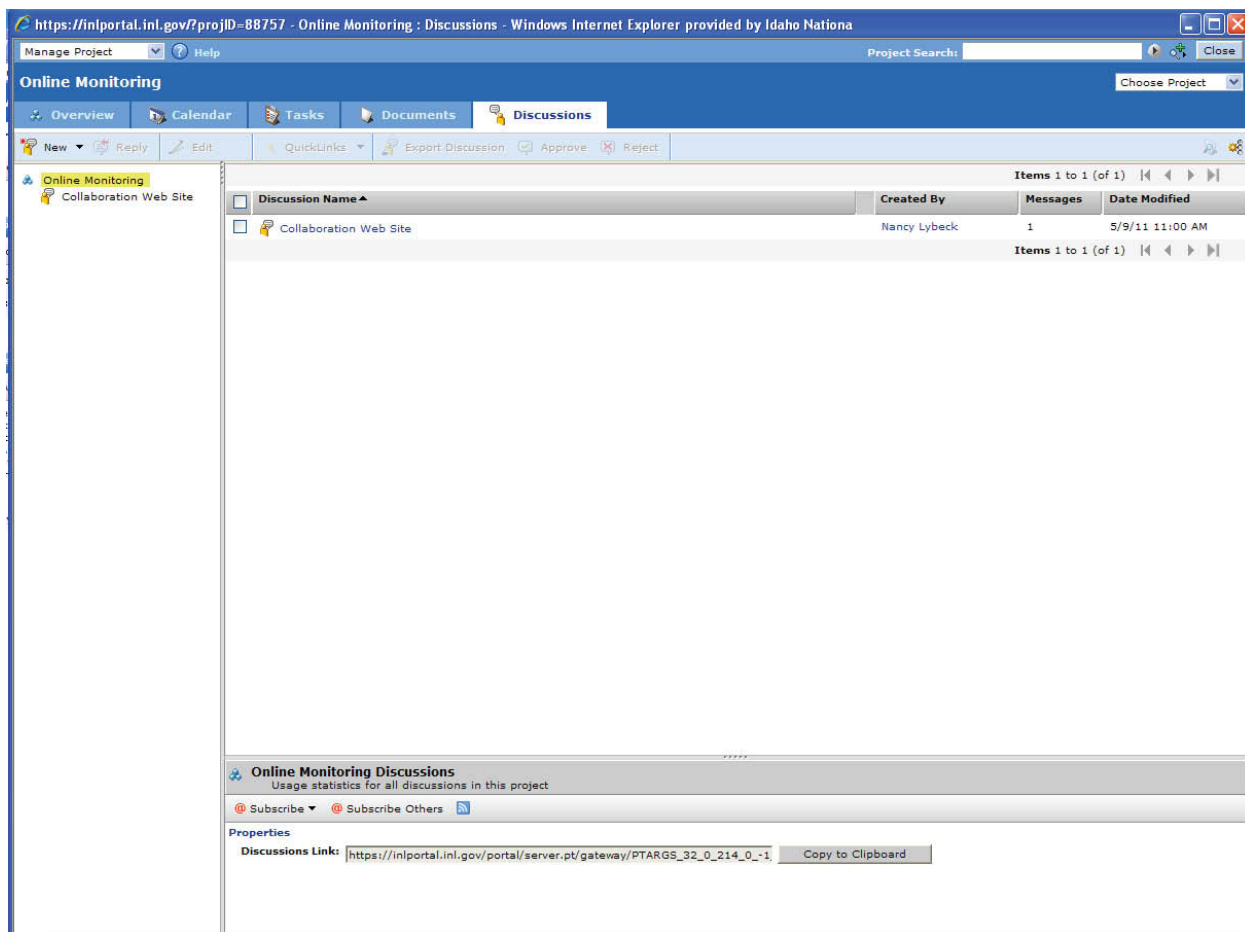


Figure 6. OLM project discussions tab.

3. SUMMARY

A collaborative workspace was established at INL as a hub for OLM, which is a powerful tool that provides the means to safely and securely distribute information, manage tasks, write joint documents, and initiate discussions within the community. It can be accessed from virtually any computer environment, which easily accommodating traveling project members. The hub is expected to be a valuable asset as deployment of OLM moves forward in existing U.S. NPPs. Individuals desiring to use the hub may follow the instructions on the portal login page (<https://inlportal.inl.gov>) to request access to the OLM project under the LWRS community.