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SYSTEM TO IDENTIFY, ANALYZE AND CONTROL THE HAZARDS OF LABORATORY RESEARCH AT ARGONNE NATIONAL LABORATORY

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# A VITAL PART OF THE DEPARTMENT OF ENERGY NATIONAL LABORATORY SYSTEM

Pacific Northwest National Laboratory

Idaho National Laboratory

National Renewable Energy Laboratory

Ames Laboratory

Fermi National Accelerator Laboratory

National Energy Technology Laboratory

Lawrence Berkeley National Laboratory

Brookhaven National Laboratory

Princeton Plasma Physics Laboratory

SLAC National Accelerator Laboratory

Thomas Jefferson National Accelerator Facility

Lawrence Livermore National Laboratory

Savannah River National Laboratory

Oak Ridge National Laboratory

ARGONNE NATIONAL LABORATORY

Sandia National Laboratories

Los Alamos National Laboratory

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WHO WE ARE

$740M

OPERATING BUDGET IN 2015

3,200+

EMPLOYEES IN 2015
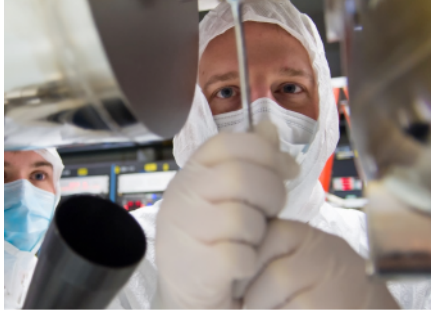
1,250+

SCIENTISTS AND ENGINEERS

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WHAT WE DO…
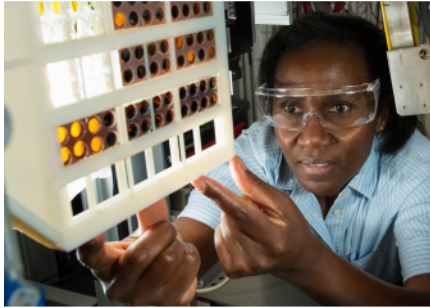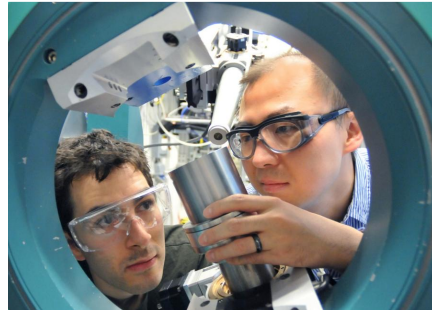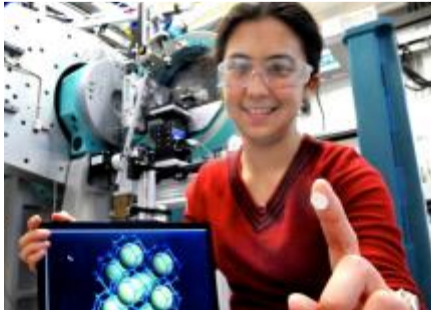
Our tools are science and engineering
Our job is research and discovery
Our goal is a better world

WHY WE PLAN WORK?

Working safely should be a natural part of working, not just something "the safety people do. "Safety is EVERYONE's responsibility." Integrated Safety Management is a process that enables Argonne to perform cutting edge research, while protecting our irreplaceable intellectual capital – our employees, as well as the public and the environment.

INTEGRATED SAFETY MANAGEMENT (ISM)
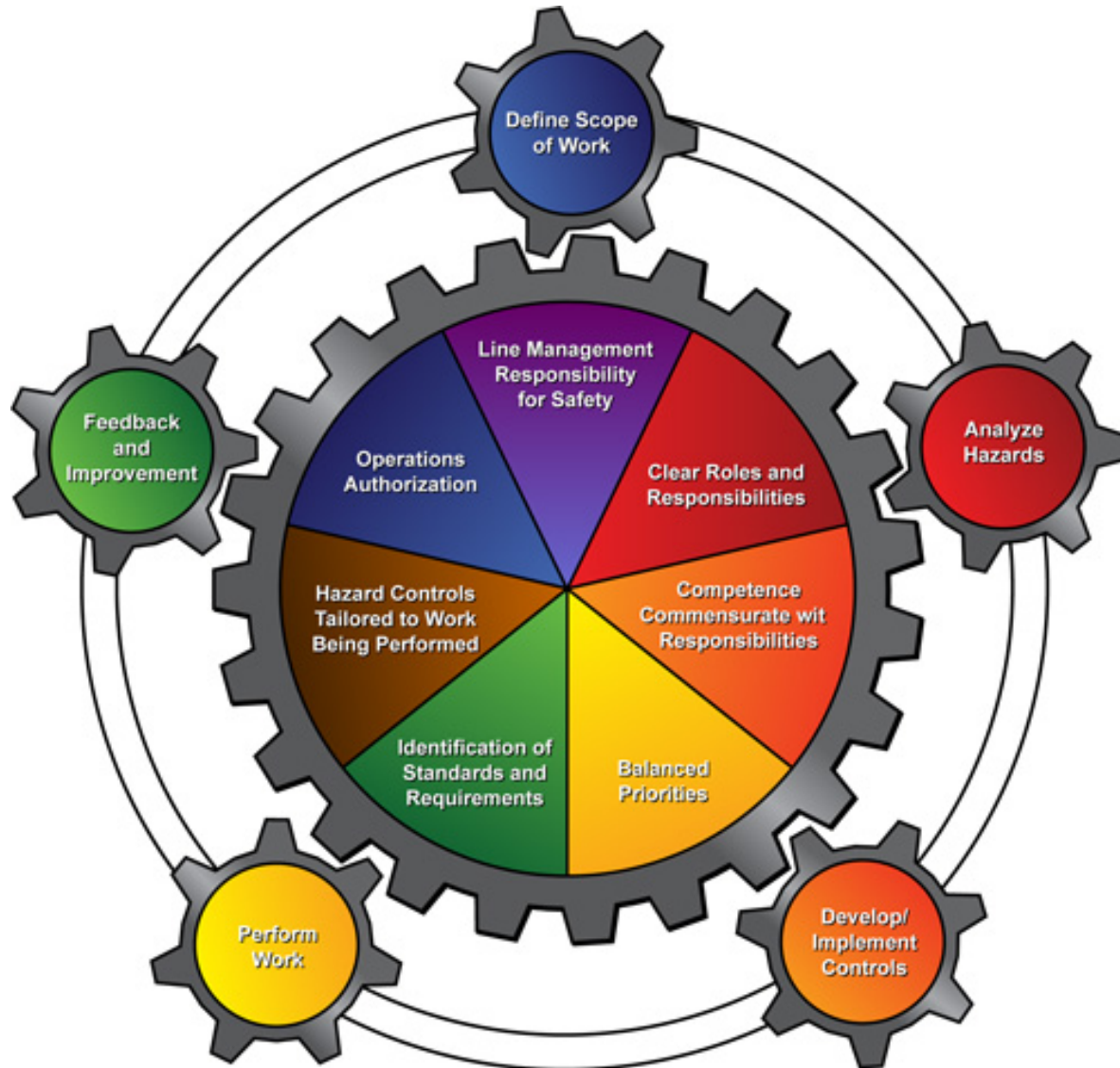
Argonne ISM Objectives

Do it safely, do it right.

No work is so important that it needs to be done without proper safety measures.

ISM is founded on seven guiding principles and five core functions

WORK PLANNING AND CONTROL

WORK PLANNING AND CONTROL

Work planning and control (WPC) is the use of a formal, systematic methods to optimize outcomes, to identify and mitigate mission, environmental, safety, security, and health (ESSH), and business risks, and to optimize the management of available resources, which include, but are not limited to money, equipment, time, and personnel. It is initiated at the earliest stages of work planning and remains in effect through all subsequent phases of work. WPC rigor and formality reflects a degree of care commensurate with the risks and complexity of the work.

Work planning and control is more than ESH.
It is about mitigating risk and optimizing outcomes.
It is more than paper plans.
Control refers to hazard controls and supervisors' control of workers

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EVOLUTION OF WORK PLANNING AND CONTROL

| FY2009 | FY2010 | FY2011 | FY2012 | FY2013 | FY2014 | FY2015 | | FY2016+ |

Future: system integration a cradle to grave approach to planning ◇

WAE electronic signature released: Feb 2015 ◆

WPC feedback & improvement released: November 2014 ◆

WPC SOP usability changes released: April 2013 ◆

WPC web-application Release 2.0: Aug 2012 ◆

◆ WPC policy and procedure (POL-16 and PROC-200): Sept 2011

◆ Lab Director's team recommends WPC improvements: April 2011

◆ WPC web-application Release 1.0: Sept 2010

◆ WPC experimental procedure (PROC-79): May 2009

◆ Non-experimental procedure (PROC-64): February 2009

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WORK PLANNING AND CONTROL SYSTEM

INITIAL SCREEN
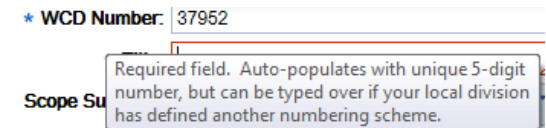

Captures the basic information of the work package

System highlights:
- * Indicates required fields
- Start/end date validation
- Hover over test provides a brief definition of the requirement to complete the field

- System check for completed field (missing fields indicated in red)
- Basic editing functionality
- Drop down menu selections

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WORK PACKAGE MAIN SCREEN

Informational sections

Additional Preparers
- ESH Coordinator(s) pre-populated
- All preparers have the ability to edit the document

Attachments
- Ability to add any type of attachment (e.g. word, pdf, photo, movie) and description

Authorizers
- The person(s) who are able to authorize the work in the WAE application

Cost Codes and Funding Agents
- Field to provide cost codes and funding agents for the project

Organization
- Field to identify other organizations that would be involved in the project

Additional Preparers

⊕ Add

Preparer	Comments		Delete
Eagels, Steven (#58296)	Divisional ESH Coordinator automatically added by default.		⊖

Attachments

⊕ Add

Attachment	File Name	Description	Size	Date	Attacher	Edit	Delete
	ppe-selection-guide.pdf	PPE Selection guide	378857	07/30/2015	Baumann, Susan	✎	⊖

Authorizers

⊕ Add

Authorizer	Comments	Delete
Baumann, Susan (#46571)		⊖

Cost Codes

⊕ Add

Cost Code ▲	Description	Edit	Delete
955312W-331	work planning and control cost code	✎	⊖

Funding Agents

⊕ Add

Funding Agent ▲	Description	Edit	Delete
indirect funding	Indirect funding	✎	⊖

Organizations

⊕ Add

Division	Department ▲	Comments	Edit	Delete
FMS	BIM		✎	⊖

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TASKS

- Ability to define a task per project
- Ability to have multiple tasks per work control document or a single task
- Hazard analysis is defined in the task

INDEPENDENT AND LIMITED WORKERS

- Add, remove, edit workers as independent or limited
  - An independent worker is a worker who has completed all of the required training such that the worker can conduct work within the scope of a work control document WITHOUT supervision
  - Limited worker is a worker who either (a) must work under the direct supervision of a person-in-charge or another independent worker, OR (b) must conduct work within specified conditions in a work control document
- Workers can be added to a specific task or "All" tasks
- Training is verified and missing courses identified

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HAZARD CRITERIA- HAZARD TREE

IDENTIFY SPECIFIC HAZARD

Expand All | Expand Selected | Collapse

- ⊞ General site hazards
- ⊞ Physical safety hazards
- ⊟ Industrial hygiene hazards
  - ⊞ Biohazards
  - ⊟ Physical agents
    - ⊞ Confined space hazard ⓘ
    - ⊞ Heat or cold stress
    - ⊞ Hot or cold surfaces
    - ⊞ Noise
    - ⊞ Laser ⓘ
    - ⊞ Radiofrequency/microwave hazard
    - ⊞ Static magnetic field
    - ⊞ Ultraviolet, visible, and near-infrared radiation
    - ☐ Other physical agent hazard not identified above
  - ⊞ Toxic chemicals and dusts
- ⊞ Environmental hazards
- ⊞ Fire and life safety hazards
- ⊞ Radiological hazards
- ⊞ Operational considerations

TASK RELATIONSHIP & CONTROL SET

Hazard Analysis Criteria *Authorized personnel only for entry*

← Back | ▥ Task | ▦ WCD | 🏠 Home

Code: Authorized personnel only for entry

Description: These confined spaces present no hazard, but should be entered only by personnel wh[o]... so. The two-man rule does not apply to these spaces. Prior to authorizing a non-permit supervisor must consider if the work to be performed may create conditions that would space. Before authorizing entry into a non-PRCS, the entry supervisor must verify that [the] space will not produce any of the hazards that would create a PRCS.

* Task-Hazard Relationship: task for confined space

Additional Control Requirements:

Control Set Name: [▼]

None

Authorized personnel only for entry

Request SME Review:

Request ESH Coordinator Review:

[Update]

Authorized personnel only for entry, Ready-access radio/phone, Inform workers of the Argonne emergency numbers (911, or 630-252-1911 from a cell phone), Entry into non-permit required confined space must be authorized via a division approved work procedure, Written entry procedure, including steps to eliminate or control hazards, retrieval equipment (see LMS-PROC-235 Confined Space Entry), Ready-access radio/phone

Flag colors

- **Green** control is setup properly
- **Yellow** control is setup properly but subject matter expert (SME) review
- **Red** control is not complete

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HAZARD ANALYSIS

Control sections

- Engineering
- Administrative
- Personal Protective Equipment
- Training
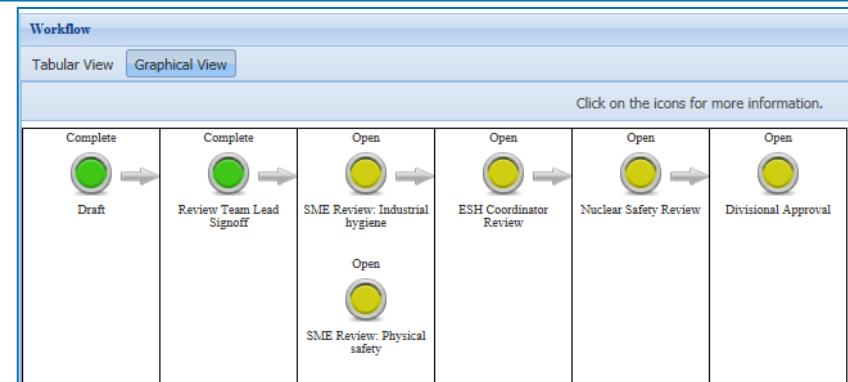- Permits and Other Required Documents

System highlights

- System pre-populates controls
- Additional controls can be added to any of the control sections
- Controls can be deleted. This will trigger a subject matter expert (SME) review
- The value field is used to add details e.g. type of gloves – Nitrile. This field can be set to optional or required.

WORKFLOW

- Tabular view or graph view
- Ability to add custom reviews before, after, or with any of the review groupings
- SME notification is sent in parallel
- Preferred Reviewer can be selected
- If a preferred reviewer is not chosen then all of the reviewers will receive an email notification
- If changes are required, the preparer can return to draft. If the changes to do affect the SME approval, that SME does not have to reapprove

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APPROVAL SCREEN

- A summary of changes is provided to reviewers
- Industrial Hygiene documents recommendation for monitoring based on the task and hazard selected
- Reviewers have the ability to approve or disapprove and add comments

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WHERE WE ARE HEADING

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FUTURE FOR WORK PLANNING AND CONTROL
System integration and system enhancements

- Integration with our chemical management system
  - Ability to select chemicals
  - Pre-populate physical and health hazards
- Reactive chemistry review process
- Integration with our Industrial Hygiene system

- Hazard control set
  - Adding, modifying, and deleting control sets based on users input and changes
- Work flow improvements
- Reporting and metrics
- Streamline system output reports
  - PPE summary reports
  - Print selection table

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THANK YOU.

DO YOU HAVE ANY QUESTIONS?

www.anl.gov

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