



THE Ames Laboratory
Creating Materials & Energy Solutions



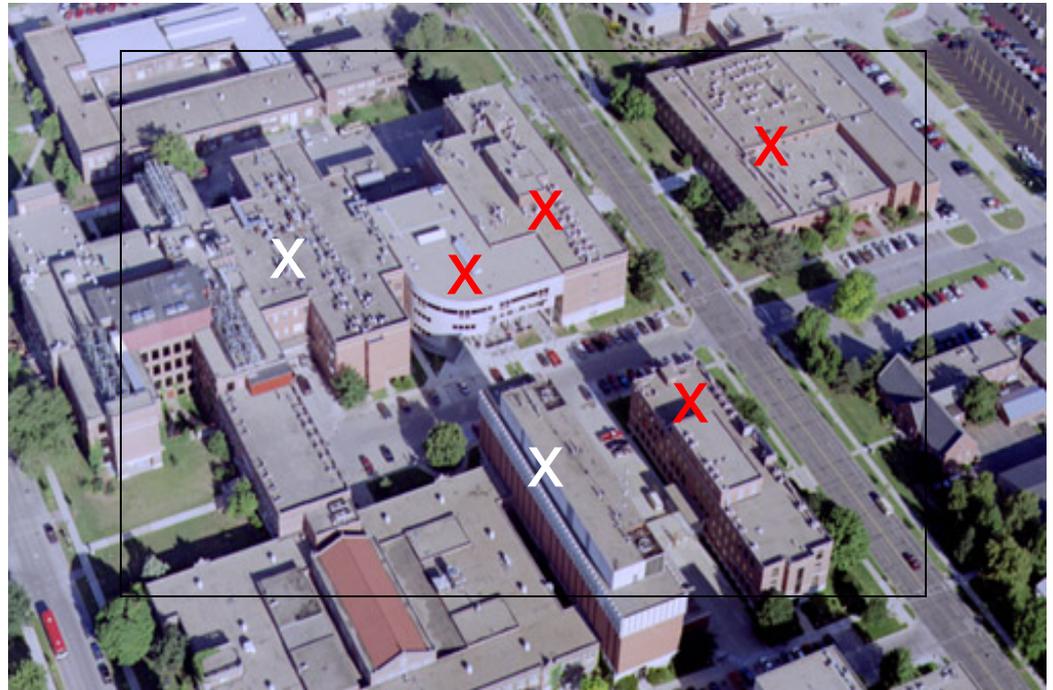
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The Ames Laboratory Readiness Review Process

Tom E. Wessels, ESH&A Manager
DOE 2010 ISM Champions Workshop
September 15, 2010

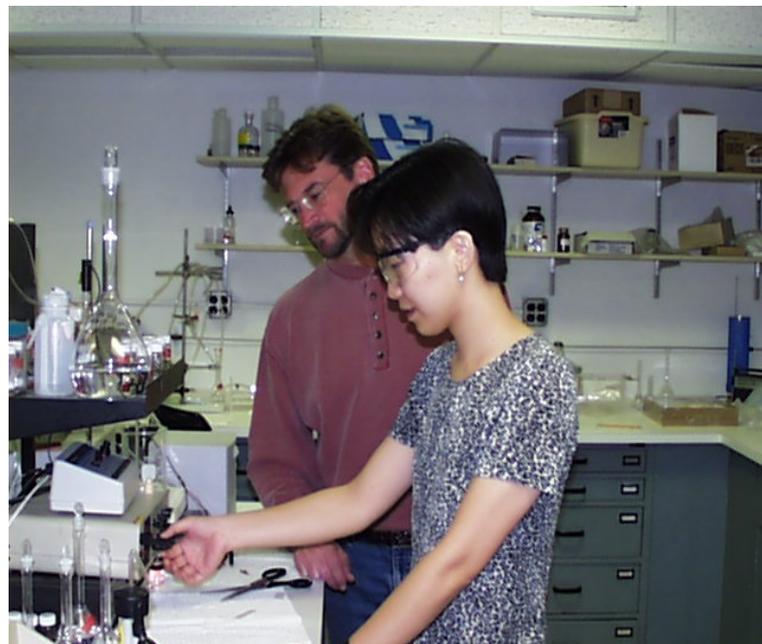
About The Ames Laboratory

- Ames, Iowa
- Iowa State University
- DOE-SC Lab
- 350 FTEs
- \$ 30 million



Nature of Ames Laboratory Work

- Projects vary in scale and duration.
- New projects & hazards.
- Transient population – graduate students.
- Need a review mechanism that is flexible.



Safety Review Committee

- Developed Readiness Review Procedure
- Consists of researchers, safety & other technical specialists.
- Two meetings/month to discuss process and improvements.
- Motivation for researcher participation => researchers created the process.

Readiness Review Key Participants

- Activity Supervisor
- Safety Office – ESH&A Lead Specialist
- Line Management: Program Director, Group Leader, Activity Supervisor, Safety Coordinator
- Safety Review Committee Facilitator

Hazard Levels

- determine rigor of review:

Level I: Office type – no review.

Level II: Typical industrial / laboratory environment – majority of Ames' activities.

Level III: Potential for significant risk to health or safety of public – only 1.

Review Process - in brief

- Activity supervisor defines activity, identifies hazards and documents controls, and records line management approval.
- Information packet routed to interested offices for comments, Hazard Level determined.
- Developmental Approval meeting. Clear communication of all actions required before Operational Approval is granted.
- Operational Approval by specialist and SRC.

Identify Hazards

Checklist:

- Activity Supervisor completes coordinator reviews.
- Defines extent of hazard and hazard controls.
- Establishes “safety envelope”

Activity ES&H Hazard Identification Checklist

Name of Activity: _____

Activity Supervisor: (Print) _____ Location: Room _____ Building _____

ES&H Rep.'s/Coor.'s Signature _____ Employee # _____ Date _____ Group Leader's Signature _____ Employee # _____ Date _____
(Approved by)

IMPORTANT! Attach a hazard management statement for each item checked below.

Check all of the following that are applicable to or involved with the activity. This checklist will be utilized by ESH&A in review of the activity.

- A. Chemical and Biological Concerns**
1. Mercury or mercury compounds (e.g. dimethyl mercury).
 2. Research involving human subjects or animal studies.
 3. Chemicals requiring personnel medical monitoring (see "Federally Regulated Hazards": (www.external.ameslab.gov/esh/ESH&A_Documents/FormHazardInventory.pdf)).
 4. Hazardous or toxic chemicals (www.external.ameslab.gov/esh/ESH&A_Documents/CHPAppeix&BAcuteHazWastes.pdf).
 5. Extremely hazardous substances (<http://edr.gov/access.gov/cv3MeeWoolLdr7CuectR5d55t9b9e3aF20l0C8a2v4d22b772-238rnu-5b5View=front&node=40634770.1.1.11&idpov=0002770.1.1.110.0.0.1d>).
 6. Flammable chemicals (flashpoint < 100°F) in quantities greater than 4 liters (1 gallon) in one room.
 7. Perchloric or picric acid, peroxide-formers (www.external.ameslab.gov/esh/ESH&A_Documents/CHPAppeicesK&L&MPeroxideFormers2.pdf).
 8. Pyrophoric or explosive materials (www.external.ameslab.gov/esh/ESH&A_Documents/CHPAppeicesH&IIncompatiblesShockers.pdf).
 9. Activities that generate potentially hazardous ambient air concentrations of nanoscale and other particulates, mists, fumes, vapors, or asphyxiates.
 10. Generation of chemical, mixed, or radioactive waste (as defined by the Ames Laboratory Waste Management Program Manual).
 11. Generation of new waste streams, or a > 20% increase in an existing waste stream.
 12. Biological materials (including human, plant or animal pathogens) (www.external.ameslab.gov/esh/ESH&A_Documents/ISUBiohazardousAgentsList.pdf).
 13. Suspected and/or confirmed carcinogens (www.external.ameslab.gov/esh/ESH&A_Documents/CHPAppeicesD&ECarcinogens.pdf).
 14. Activities that involve the use of engineered nanoscale materials (< 100 nanometers).
- B. Radiation Concerns**
1. Radioactive materials, radiation sources.
 2. Lasers (excludes laser printers and pointers).
 3. Radio frequency (RF) or microwave generators (excluding personal microwave ovens) of greater than 10 watts average output power.
 4. Ultraviolet radiation, which could expose personnel (e.g. arc welding, inductively coupled plasma, UV reactors, xenon lamps, etc.).
 5. Generation of Radioactively contaminated waste as defined by the Ames Laboratory Waste Management Program Manual.
 6. X-ray generating devices.
- C. Electrical Concerns**
1. Work with exposed electrical wiring or parts with voltages greater than 50 volts.
 2. Work with stored energy systems (e.g. capacitor banks > 10 joules; station battery systems > 50 volts).
 3. Voltage systems of greater than 600 volts.
 4. Current systems of greater than 25 amps.
 5. Electrical devices not certified by a Nationally Recognized Testing Laboratory (e.g. Underwriters Laboratory, CSA, etc.).
- D. Environmental Concerns**
1. Potential to release hazardous, radioactive materials or oil products (include oil filled equipment/containers with a capacity ≥55 gallons) to the sanitary or storm sewers, soil.
 2. Potential for release of chemical, physical, radiological agents (nanoscale and other particulates, fumes, mists, or vapors) to the air via hood or other exhaust system.
 3. Transportation of hazardous or radioactive materials, including laboratory-to-laboratory and on-site or off-site.
 4. Activities requiring an emission permit.
- E. Physical and Mechanical Concerns**
1. Fabrication of major (large mass or volume) equipment, structural supports.
 2. Work that is done in the proximity of floor openings or on elevated work platforms or scaffolds.
 3. Activities that require use of safety eyewear, respirators and/or other forms of personal protective equipment (PPE).
 4. Use of a glove box.
 5. Torch work, exposed source hot-work, or exposed heat sources (e.g. welding, soldering, arc welding, furnaces, etc.).
 6. Rotating parts or pinch points.
 7. Fluids or gases and pressure delivery systems, other than installed building utilities (> +/- 5 psig).
 8. Pressure vessels, vacuum vessels, and glass systems (> +/- 5 psig).
 9. Use of hoists, cranes or rigging.
 10. Cryogenic systems (including thermal and/or oxygen deficiency hazards).
 11. Mechanical stored energy systems (e.g. flywheels, mechanical springs, etc.).
 12. Electromagnetic systems.
- F. Workplace Concerns**
1. Confined space (as defined by Ames Laboratory ESH&A Program Manual, Section 5.18).
 2. Activities that limit means of egress.
 3. Temperature or humidity extremes.
 4. Work which produces acute noise that interferes with normal conversation.
 5. Activities that involve tasks of prolonged repetitive motion.
 6. Activities that involve lifting/moving of 20 pounds, lifting from awkward positions, or pushing/pulling of heavy objects.
- G. Other Concerns**
1. Activities involving sub-contractors.
 2. Public tours of Ames Laboratory facilities or the use of equipment/materials for public displays.
 3. Area renovation.
 4. Activities that involve equipment valued at \$100,000 or more in one room or laboratory.
 5. Activities to be performed at an "off-site" location (ISU lab space, field location, or other off-campus facility). Only check this item if any other item is checked

Approval Form

Part 1. Line management awareness of hazards.

Part 2. Hazard Level and Developmental Approval.

Part 3. Specialist recommends Operational Approval to SRC

Part 4. SRC approves activity.

Readiness Review Activity Approval Form		Activity Number _____ New Activity _____ 5-Year Review _____ New Hazard _____ Last Reviewed _____									
Part 1:	Activity Identification Information. (completed by Activity Supervisor / Group Leader) Please complete and send this form with the Hazard Identification Checklist, Hazard Management Statement and other supporting documentation to ESH&A in G40 TASF.										
	Activity Title: _____	Room: _____ Bldg: _____									
	Activity Supervisor: _____	Phone: _____									
	Office Address: _____	E-mail: _____									
	Please provide a brief description of your proposed activity: _____										

	I have reviewed the hazards identified and approve this activity. <table style="width: 100%; border: none;"> <tr> <td style="width: 60%; border: none;">Group/Section Leader</td> <td style="width: 20%; border: none;">Employee #: _____</td> <td style="width: 20%; border: none;">Date: _____</td> </tr> <tr> <td style="border: none;">Program Director/Dept. Manager</td> <td style="border: none;">Employee #: _____</td> <td style="border: none;">Date: _____</td> </tr> <tr> <td style="border: none;">Reviewed by: SC/SR</td> <td style="border: none;">Employee #: _____</td> <td style="border: none;">Date: _____</td> </tr> </table>		Group/Section Leader	Employee #: _____	Date: _____	Program Director/Dept. Manager	Employee #: _____	Date: _____	Reviewed by: SC/SR	Employee #: _____	Date: _____
Group/Section Leader	Employee #: _____	Date: _____									
Program Director/Dept. Manager	Employee #: _____	Date: _____									
Reviewed by: SC/SR	Employee #: _____	Date: _____									
Part 2:	Developmental Approval (completed by ESH&A) ESH&A will review the activity before acquisition, fabrication, or testing. ESH&A will categorize the activity as a Hazard Level II, or III according to the types of hazards and level or risks associated with the activity.										
	Safety Review Facilitator: _____	ESH&A Hazard Level: _____									
	ESH&A Lead Specialist: _____	Test Plan Date: _____									
	Approved by: _____	Employee #: _____ Date: _____									
	ESH&A Lead Specialist										
	Hazard Level Concurrence: _____	Date: _____									
	SRC Facilitator										
Part 3:	Operational Approval Recommendation (completed by ESH&A) Approval is required before operation of an activity rated ESH&A Hazard Level II, III. Signature by the ESH&A Lead Specialist recommends operational approval to the SRC.										
	Confirmed: SOP: _____	Training: _____									
	Recommended by: _____	Employee #: _____ Date: _____									
Part 4:	Operational Approval (completed by Safety Review Committee)										
	SRC Approval Signature: _____	Employee #: _____ Date: _____									

Form 10200.004 Revision 18 Readiness Review Activity Approval Form Effective Date Jul 2008

Keys to Success

- Simple process developed by line management.
- Regular communication with line management through reminders and meetings with facilitators.
- Technical specialists discuss hazards and control strategies (training, ppe) with activity supervisors.
- Use walk-through program for on-going surveillance of activities.
- Contact new group leaders before arrival on site - let them know this is the way we do business.

Q & A
and
Contact Information

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or

withers@ameslab.gov



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