

Campbell, Vivian

From: Kayser, Richard F. [richard.kayser@nist.gov]
Sent: Monday, June 08, 2009 3:56 PM
To: Kayser, Richard F.; Howell, Art
Cc: Campbell, Vivian; Mengers, Timothy F.; Ringen, Sonja G.; 'James Clark'; Rutledge-Burns, Rosamond; Herbert, Denise L.; Gallagher, Patrick D.; Porter, Gail; Ost, Laura; Rochford, Kent; Karam, Lisa R. Dr.; Brass, Brian; 'dorseyr@bouldercolorado.gov'; Willett, Stephen C.; Grove, Thomas W.; Hill, Joan M.; Covahey, Virginia
Subject: Update on Corrective Actions Taken by NIST
Attachments: Corrective actions cover letter 06-08-09.doc; Corrective Actions 06-08-09.pdf

Art (and Vivian) --

I've attached an update and cover letter on the corrective actions taken by NIST in connection with the incident last June 9 – one year ago tomorrow. My executive assistant, Joan Hill, will be faxing copies of both documents shortly.

As I've indicated in the cover letter, I believe that NIST has taken all of the actions required in the CAL. Please let me know if this is not the case. I will make it a priority to address any unresolved issues.

Art, I will be sending you another letter soon on the subject of releasing the decontaminated rooms for unrestricted use. I sent you an email on that topic a little while ago looking requesting your feedback.

Best regards,

Rich

June 8, 2009

Mr. Arthur T. Howell, III
Director, Division of Nuclear Materials Safety
U.S. Nuclear Regulatory Commission, Region IV
612 East Lamar Boulevard, Suite 400
Arlington, TX 76011-4125

Subject: Confirmatory Action Letter Item 4.a: Update on Corrective Actions Taken by NIST in Response to Plutonium Incident at the NIST Boulder Laboratories on June 9, 2008

Dear Mr. Howell:

As you know, the July 2, 2008 Confirmatory Action Letter (CAL) required NIST to “provide NRC with ... any corrective actions that you [NIST] have taken or plan to take to prevent recurrence.”

As I have indicated previously, NIST has decided not to conduct any research using radioactive materials at NIST Boulder that would involve other than exempt-quantity sources. This “ultimate” corrective action will prevent the recurrence of serious incidents involving radioactive materials at NIST Boulder.

That having been said, NIST has taken many other actions to strengthen its management of safety. While, given the above, these actions are unnecessary to prevent incidents involving radioactive materials at NIST Boulder, we believe that they will strengthen significantly NIST’s overall management of safety. As such, they will reduce the likelihood of all types of incidents at all NIST sites.

I have summarized several of these actions in the attached document, which incorporates the current version of the NIST Safety Action Plan. The NIST Safety Action Plan is the evolving blueprint that we’re following to strengthen key aspects of safety at NIST. Please let me know if you have any questions about any other aspect of NIST’s improvement efforts.

Based on previous discussions with NRC staff, I believe that NIST has taken all of the actions required in the CAL. Please let me know if this to be the case. As always, please feel free to contact me at 301-975-4502 or richard.kayser@nist.gov.

Sincerely,

Richard F. Kayser
Special Assistant for Environment, Safety, and
Health

Enclosure

**Response to Item 4.a in July 2, 2008 NRC Confirmatory Action Letter:
Update on Corrective Actions Taken by NIST in Response to Plutonium
Incident at the NIST Boulder Laboratories on June 9, 2008**

June 8, 2009

Summary

Following the plutonium incident at the NIST Boulder Laboratories on June 9, 2008, NIST stopped all research involving radioactive materials at NIST Boulder. Since then, NIST has decided not to conduct any research using radioactive materials at NIST Boulder that would involve other than exempt-quantity sources. This ultimate corrective action will prevent the recurrence of serious incidents involving radioactive materials at NIST Boulder.

NIST has also received internal and external input on management and safety at NIST more broadly. This input has included:

- City of Boulder Input to House Subcommittee on Technology and Innovation of the House Science and Technology Committee and Notice of Violation of Industrial Wastewater Discharge Permit 2005-3;
- NIST Ionizing Radiation Safety Committee (IRSC) Initial Report of Plutonium Contamination at NIST Boulder (which also considered reports from five external experts);¹
- Independent Oversight Special Review of Safety at the NIST Boulder Laboratories; and
- Final Report of the NIST Blue Ribbon Commission on Management and Safety.

This summary describes actions NIST has taken to address issues identified by the City of Boulder, changes that NIST has made in its management and organization of safety, and the plan NIST has developed to strengthen safety at NIST more broadly.

Issues Identified by the City of Boulder

NIST has worked hard to rebuild its relationship with the City of Boulder through regular communications of its progress on the cleanup project and in addressing the issues identified by the City. Among the numerous actions taken, NIST has:

¹ NIST also commissioned Booze Allen Hamilton to conduct a formal root-cause analysis of the incident. The results confirmed the work of the IRSC.

- Updated the inventory of chemicals at the NIST Boulder Laboratories and properly disposed of substantial quantities of unused, excess, and legacy chemicals;
- Developed an emergency notification checklist and detailed communication plan for reporting events to the City of Boulder and to various jurisdictions and agencies that regulate NIST Boulder's handling and disposal of hazardous materials;
- Developed a standard operating procedure applicable to the entire NIST Boulder staff for reporting accidental releases of hazardous materials;
- Developed a worksite training program for the NIST Boulder staff in the prevention and reporting of accidental hazardous material releases to the environment;
- Evaluated the training of every member of the Boulder staff; and
- Trained more than 500 individuals.

Changes in Management and Organization of Safety

To strengthen safety management at NIST, NIST has created several higher-level management positions; moved safety higher up in the organizational structure reporting to the NIST Deputy Director; and clarified the roles, responsibilities, authorities, and accountabilities (R2A2s) of senior leaders, especially with regard to Boulder. More specifically, NIST has:

- Moved a NIST laboratory-director position to Boulder to establish local line-management responsibility for the safety of laboratory activities in Boulder (immediately filled position with an acting laboratory director);
- Created a new site-manager position in Boulder to coordinate safety, emergency preparedness, and security for the DOC Boulder campus, including NIST, the National Oceanic and Atmospheric Administration, and the National Telecommunications and Information Administration (still recruiting);
- Created a safety executive position reporting to the NIST Deputy Director to oversee NIST's central safety organization (filled with a NIST senior executive);
- Reorganized the central safety organization so that both Boulder and Gaithersburg report directly to the safety executive;
- Created a senior safety management position to oversee the safety organization in Boulder (filled with an experienced safety manager); and
- Significantly increased funding for the central safety organization and associated safety-related programs and activities.

Safety at NIST More Broadly

To strengthen safety at NIST more broadly, NIST and the Department of Commerce arranged for independent assessments of safety management performance at NIST. In addition to the Initial Report of the IRSC, these included a special review of safety at the NIST Boulder Laboratories by the Department of Energy Office of Independent Oversight and an assessment of management and safety at NIST by a Blue Ribbon Commission. NIST has also had numerous discussions with high-performing safety organizations and internal discussions of its safety priorities.

Based on this input, NIST has developed and is now implementing a Safety Action Plan which currently looks out through September 2010 and which comprises the following four elements:

- Communicating individual and management responsibility for safety;
- Providing staff with the tools needed to understand how to protect themselves and those around them;
- Creating safer workplaces; and
- Continually improving the safety culture.

Tasks within the Safety Action Plan include:

- Articulating, communicating, and reinforcing a clear safety vision and message;
- Defining and communicating clear R2A2s;
- Providing managers with training on the NIST safety management system and their responsibility to provide staff with a safe and healthy working environment;
- Developing and implementing NIST-wide requirements for identifying and controlling hazards and authorizing work and workers;
- Providing researchers and managers with training on conducting hazard reviews;
- Conducting hazard reviews;
- Developing and implementing consistent NIST-wide approaches to chemical inventory and labeling, hazard signage, and tracking training; and
- Implementing a new NIST safety Web site.

For further details, please see the attached June 2, 2009 version of the NIST Safety Action Plan.

**NIST SAFETY ACTION PLAN
MAJOR TASKS AND REQUIREMENTS
AS OF JUNE 2, 2009**

Task completed
Task now due or due w/ one week
Task due within two weeks
Task due within three weeks
Normal font = Task
Italics font = Guidance

**NIST
Task**

Listing of Major Tasks and Requirements

Communicating individual and management responsibility for safety

1.1 Clear vision and message that are reinforced continually by senior leadership

- Articulate clear vision and message
- Schedule rolling safety meetings
- Hold rolling safety meetings
- Refine vision and message
- Develop longer-term approaches for reinforcing the vision and message
- Implement longer term approaches

| Owner(s) | Planned Dates | Actual Dates | Comments |
|--------------|---------------|--------------|---|
| DD | Summer | Completed | DD = Deputy Director OUD = Operating Unit Director, CO = Chief Officer |
| OUDs and COs | | Completed | |
| All | Summer | | Have completed ITL, CSTL, BFRL, BNQP, TIP, MSEL, and TS |
| DD | 9/30/2009 | | After completion of rolling safety meetings, should feed into Item 4.2 |
| DD | TBD | | TBD = To Be Determined |
| TBD | Ongoing | | |

1.2 Clear roles, responsibilities, accountabilities, and authorities (R2A2s) for everyone in the organization

- Develop R2A2s for Director, Deputy Director, Chief Scientist, Chief Operating Officer, OU Directors, and Chief Officers
- Obtain comments from OU Directors and Chief Officers
- Approve R2A2s for OU Directors / Chief Officers and above
- Develop R2A2s for other positions in the organization
- Communicate R2A2s
- Review and revise R2A2s

| Owner(s) | Planned Dates | Actual Dates | Comments |
|--------------|---------------|--------------|---|
| DD | | Completed | |
| CS / COO | 5/6/2009 | 5/6/2009 | CS = Chief Scientist, COO = Chief Operating Officer |
| DD | 5/13/2009 | 5/12/2009 | |
| OUDs and COs | 6/12/2009 | | We have provided R2A2s from Oak Ridge National Laboratory (ORNL) for use as a starting point. |
| All | Ongoing | | |
| DD | FY 2010 | | |

1.3 Safety leadership training for all official supervisors and managers and Division Safety Representatives (DSRs)

- Identify suitable leadership training
- Develop plan for providing leadership training in both short and longer term
- Complete training
- Review and improve training
- Provide training on an on-going basis

| Owner(s) | Planned Dates | Actual Dates | Comments |
|---------------|---------------|--------------|--|
| SAESH | | Completed | Good to do, but not as important now as Item 1.3 SAESH = Special Assistant for Environment, Safety, and Health Based on several pilots, we will go with a form of the ORNL safety leadership training. |
| Rich Cavanagh | 5/8/2009 | 5/4/2009 | Lead: Rich Cavanagh, Deputy Director, CSTL The plan as of 5/15/09 is to have ORNL offer one more class in Boulder in July and for NIST to offer one class per month starting in August |
| All | | | |
| SAESH | TBD | | |
| As per plan | Ongoing | | |

1.4 OSHA training for all official supervisors and managers and DSRs

- Identify suitable OSHA training

| Owner(s) | Planned Dates | Actual Dates | Comments |
|----------|---------------|--------------|--|
| SAESH | | Completed | Based on experience to date and on the foundational nature of this training, all official supervisors and managers and DSRs should take the full 4-day OSHA 6000 training. |

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MAJOR TASKS AND REQUIREMENTS
AS OF JUNE 2, 2009**

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**NIST
Task**

Listing of Major Tasks and Requirements

Owner(s) **Planned Dates** **Actual Dates** **Comments**

| | | | | |
|---|----------------------|----------------|--|--|
| <ul style="list-style-type: none"> Develop plan for obtaining/providing suitable OSHA training in both short and longer term | SAESH | 5/15/2009 | | As per discussion at 5/5/2009 NIB meeting, we will develop and offer three different forms of the training: one for laboratory activities, one for office activities, and one for facilities and construction. Bruce Kelly is taking the lead. NOTE: For Gaithersburg, we have been able to schedule the following four four-day classes for laboratory activities to be provided by Federal Occupational Health: June 22-26, July 6-10, July 13-17, and July 20-24. For Boulder, we will continue to use the provider engaged previously by the Boulder DSRs. |
| | All | 7/31/2009 | | Complete training of approximately 120 supervisors, managers, and DSRs |
| | All | TBD | | Complete training of remaining supervisors, managers, and DSRs |
| <ul style="list-style-type: none"> Review and improve training Provide training on an on-going basis | SAESH As per plan | TBD Ongoing | | |

1.5 Management Observation Program that sets expectations for and prepares managers to spend time in the programs

| | | | | |
|--|--------------------------|------------|-----------|---|
| <ul style="list-style-type: none"> Charter group to explore options and develop recommendations Make recommendations to SAESH Make decision on whether, how, and when to move forward with input from all Develop implementation plan Initiate Management Observation Program | SAESH B. Grosshandler | 5/28/2009 | Completed | Lead: Bill Grosshandler, Deputy Director, BRRL Co-Lead: Howard Harary, Acting Deputy Director, MEL |
| | SAESH | 6/18/2009 | | Will discuss at June 10 OU Directors Lunch |
| | SAESH SAESH | TBD TBD | | |

Providing staff with the tools needed to understand how to protect themselves and others

2.1 NIST-wide policies and procedures on hazard reviews

| | | | | |
|--|--|--|-----------|--|
| <ul style="list-style-type: none"> Propose policy and procedures for laboratory activities Vet policy and procedures for laboratory activities Finalize policy and procedures for laboratory activities Finalize policy and procedures for office activities Propose policy and procedures for facilities and construction Vet policy and procedures for facilities and construction Finalize policy and procedures for emergency environments Vet policy and procedures for emergency environments Finalize policy and procedures for emergency environments | CS CS | | Completed | Started discussion on 4/9/2009 with Boulder document, then generated four versions of a NIST policy |
| | SAESH COO | 5/8/2009 6/1/2009 | 5/15/2009 | Currently evaluating the desirability of having a single NIST-wide document covering all types of activities (SAESH) |
| | CFMO CFMO SAESH CFMO CFMO SAESH | 7/15/2009 7/31/2009 8/15/2009 7/15/2009 7/31/2009 8/15/2009 | | |

**NIST SAFETY ACTION PLAN
MAJOR TASKS AND REQUIREMENTS
AS OF JUNE 2, 2009**

**NIST
Task**

Listing of Major Tasks and Requirements

2.2 OU hazard review policies and procedures for laboratory activities
 • Establish OU hazard review policies and procedures for laboratory activities consistent with NIST-wide policies and procedures

2.3 Training on conducting hazard reviews for Principal Investigators and above and DSRs
 • Identify suitable training on hazard identification and controls

• Develop plan for obtaining/providing suitable training on hazard identification and controls

• Complete training, perhaps in phases

• Develop plan for providing improved training on an on-going basis

2.4 General safety training (Ongoing on priority basis)

Need to address short-term needs

Need comprehensive solution

Site OEPs

CPR/AED

2.5 Certified safety professionals with skill sets aligned with organizational needs

• Determine staffing needs looking out 18 months; obtain approval of DD

• Develop plan to obtain the required resources

• Implement plan

• Re-evaluate resource requirements

Task completed
 Task now due or due w/i one week
 Normal font = Task
 Task due within two weeks
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Owner(s) **Planned Dates** **Actual Dates** **Comments**

OU DS 6/30/2009

SAESH

Completed

Priority = HIGH, Timeframe = End of June

Priority = HIGH, Timeframe = Several Phases

Based on successful pilot, we will go with a form of the ABS Consulting one-day hazard identification and control training. This training is oriented toward laboratory hazards, but for managers and supervisors and DSRs there would be some overlap with the OSHA 6000 training.

Completed

SAESH

5/1/2009

Have scheduled classes so far for June 29, 30, July 1, 20, 21, 22, 23; August 17, 18, 19, 20; September 14, 15, 16, 17. Can have up to 30 people per class. Will schedule additional classes beyond September, as needed.

SAESH

9/30/2009

Complete training of approx. 450 staff members

SAESH

12/31/2009

Complete training of approx. 300 additional staff members

SAESH

TBD

Important, but not as important as the OSHA 6000 and hazard identification and control training; dealing with training in general will be an ongoing long-term effort

NOTE: Things are happening here; need to take stock.

Priority = HIGH, Timeframe = Several Phases

SAESH

4/3/2009

S. Willitt

5/18/2009

The plan has three components: (1) selected hires over the next several months; (2) acquisition of short-term contract support under a new 12-18 month Memorandum of Understanding with Federal Occupational Health (FOH); and (3) acquisition of long-term contract support by August 2010 under a new Indefinite Delivery Indefinite Quantity (IDIQ) contract.

September 2009

Complete as many selected hires as possible

SAESH

August 2009

Have FOH contractors on board

SAESH

August 2010

Have IDIQ contractors on board

SAESH

FY 2010

**NIST SAFETY ACTION PLAN
MAJOR TASKS AND REQUIREMENTS
AS OF JUNE 2, 2009**

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Task due within three weeks
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**NIST
Task**

Listing of Major Tasks and Requirements

- 2.6 Updated safety policies, procedures, and programs**
- Continue to update safety materials on an ad hoc basis, e.g., Health and Safety Instructions on Chemical Container Labeling, Laboratory Chemical Storage, Hazard Communication, Cryogenics
 - Develop plan for updating Chapter 12 of the NIST Administrative Manual
 - Implement plan
 - Develop plan for updating NIST Laboratory Safety Manual and Health and Safety Instructions
 - Implement plan

2.7 Solutions to NIST-wide issues

a. Uniform chemical inventory and labeling

- Charge OUD with establishing NIST-wide requirements and identifying potential solutions
- Establish NIST-wide requirements and identify potential solutions
- Select best solution
- Develop plan to implement best solution
- Implement plan

b. Uniform hazards signage

- Charge OUD with establishing NIST-wide requirements and identifying potential solutions
- Establish NIST-wide requirements and identify potential solutions
- Select best solution
- Develop plan to implement best solution
- Approve plan
- Implement best solution

c. Training tracking system

- Charge OUD with establishing NIST-wide requirements
- Develop NIST-wide requirements
- Determine extent to which NIST-wide requirements can be met by the Commerce Learning Center; if there are critical requirements that cannot be met, identify viable alternatives; develop a high-level implementation plan
- Select best solution and finalize implementation plan
- Implement best solution

d. NIST Safety Website

- Charge OUD with proposing design of new safety website
- Propose design of new safety website
- Implement quick fix to current safety homepage

Owner(s)
Planned Dates
Actual Dates
Comments

SAESH
Ongoing
Important, but will require ongoing, long-term effort is happening in the normal course of events; began rollout of new HSIs on Chemical Container Labeling and Laboratory Chemical Storage on 5/1/2009

SAESH
TBD

SAESH
TBD

SAESH
TBD

SAESH
TBD

There was uniform agreement that the topics below warranted the development of NIST-wide solutions. Would like to implement by end of FY 2009

SAESH
R. Cavanagh
Completed

SAESH
Completed

SAESH
R. Cavanagh
Completed

SAESH
Ongoing

SAESH
R. Cavanagh
Completed

SAESH
Ongoing

No responses to our "Intent to Purchase" CISPro so we'll be going with CISPro
Link to plan: INSERT LINK

Would like to implement by end of FY 2009

SAESH
B. Collins
Completed

SAESH
B. Collins
Completed

SAESH
B. Collins
5/8/2009

SAESH
B. Collins
5/15/2009

SAESH
B. Collins
As per plan

Link to plan: INSERT LINK

Will take time and likely involve phases; Will strive for significant progress by end of Calendar Year
Lead: Howard Harary, Acting Director; MEL

SAESH
H. Harary
Completed

SAESH
D. Clough
Completed

SAESH
5/8/2009

SAESH
5/22/2009

SAESH
As per plan

Lead: Debbie Clough, Chief, Leadership and Employee Development

Met with Debbie on 5/5/2009, 5/6/2009, and 6/2/2009; awaiting version 3 of high-level implementation plan

Will happen in the near term without significant burden on OUs

SAESH
B. Collins
Completed

SAESH
Completed

SAESH
3/30/2009

SAESH
Completed

**NIST SAFETY ACTION PLAN
MAJOR TASKS AND REQUIREMENTS
AS OF JUNE 2, 2009**

**NIST
Task**

Listing of Major Tasks and Requirements

- Develop plan for implementing new safety website (current draft page is at <http://safety.nist.gov/new/index/html>)
- Create draft portal pages for each safety topic area
- Send current draft page out for review to NIST DSRs and management
- Update and correct draft safety page based on input from NIST safety reps and management
- Announce and post new NIST Safety site
- Add additional links - ongoing
- Implement NIST Safety Blog

2.8 Building evacuation coordinator program enhancements

Creating safer workplaces

3.1 Hazard reviews for every activity in every OU and Chief Office

- Review progress of hazard reviews for laboratory activities
- Complete hazard reviews for laboratory activities
- Complete hazard reviews for office activities
- Complete hazard reviews for facilities and construction
- Review and provide feedback on hazard reviews
- Improve NIST-wide hazard review policies and procedures

3.2 Internal self assessment

- TBD

3.3 External assessment

- TBD

3.4 Assessments of selected safety programs

- Identify programs to be assessed in FY 2010
- Develop plans to assess these programs
- Assess programs
- Develop action plans to improve programs based on results of assessments
- Implement actions plans

3.6 Establishment of Laboratory Space Manager program

- Change OUD with exploring options and developing recommendations
- Make recommendations to SAESH
- Make decision on path forward with input from all
- Develop implementation plan
- Implement Space Manager Program

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Owner(s) **Planned Dates** **Actual Dates** **Comments**

| | | | |
|-----------------------|-----------|-----------|---|
| G. Porter, J. Covahey | 4/24/2009 | 4/20/2009 | |
| | 5/1/2009 | 5/8/2009 | |
| | 5/8/2009 | 5/14/2009 | |
| | 5/15/2009 | 6/3/2009 | |
| SAESH | 5/18/2009 | 6/3/2009 | Link: http://safety.nist.gov/ |
| | Ongoing | | |
| | TBD | | |

A COO priority -- tracked in COO Action Plan

Priority **HIGH** **Timeframe** **End of Calendar Year**

OUIDs mid September
 OUDs 12/31/2009
 OUDs and COs 9/30/2009
 CFMO 9/30/2009
 SAESH 9/30/2009
 SAESH FY 2010

DD

DD

SAESH 9/30/2009
 SAESH 10/31/2009
 SAESH As per plans
 SAESH Within 30 days
 of assessments
 SAESH Ongoing

SAESH 3/30/2009
 E. Amis 6/30/2009
 SAESH Mid July
 SAESH TBD
 SAESH TBD

Priority **HIGH** **Timeframe** **End of Fiscal Year**

**NIST SAFETY ACTION PLAN
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AS OF JUNE 2, 2009**

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NIST Task Listing of Major Tasks and Requirements Owner(s) Planned Dates Actual Dates Comments

Continually improving the safety culture

- 4.1 Definition, tracking, and regular feedback to managers and staff on key metrics
 - TBD
- 4.2 Establishment of aggressive safety communications program
 - TBD
- 4.2 Establishment of new ESH Awards to replace current NIST Safety Award
 - Develop new awards program
 - Implement program
- 4.3 Discuss safety management with a counterpart in another organization
 - Identify counterpart
 - Summarize discussion, including key takeaways

| | | |
|-----|-----------|--|
| COO | Completed | Discussions are underway with the Department |
|-----|-----------|--|

SAESH TBD

SAESH TBD

SAESH FY 2009 Awards Cycle

Lab Directors 6/15/2009

Lab Directors 9/30/2009