

**Remarks of
Dr. Richard F. Kayser
Special Assistant for Environment, Safety, and Health
National Institute of Standards and Technology**

**Nuclear Regulatory Commission Public Meeting
Boulder, Colorado
September 17, 2009**

Good afternoon. I'd like to thank the Nuclear Regulatory Commission (NRC) for its inspection of the plutonium spill at NIST Boulder and for providing NIST with the opportunity to participate in this discussion.

As the NRC team has noted, the incident happened more than a year ago on June 9, 2008. NIST deeply regrets that this incident occurred and has worked hard since then to strengthen its safety program to help ensure that such an incident will not happen again.

I'd like to start by noting that the preliminary findings presented by the NRC team fully support NIST's own findings as detailed in two reports: NIST's internal investigation of the event and the initial report of the NIST Ionizing Radiation Safety Committee, which in addition to its own work considered reports from five external experts. NIST also commissioned Booz Allen Hamilton to conduct a formal root cause analysis of the incident. The results of the Booz Allen Hamilton analysis confirmed the work of the NIST Ionizing Radiation Safety Committee. That all of these findings are in such close agreement provides confidence that we understand what happened, why it happened, and what can be done to prevent such incidents in the future.

I'd like to address four key areas today:

- Actions NIST took to respond directly to the incident;
- Actions we've taken to respond to issues identified by the City of Boulder;
- Actions taken to strengthen safety at NIST Boulder; and
- Actions to strengthen safety at all NIST sites, including NIST headquarters in Gaithersburg, MD.

Actions in Response to the Incident

As you have heard today, laboratory personnel involved in the incident lacked the required training to handle safely the type of plutonium sample that was spilled on June 9, 2008. In addition, key information about the extent of the spill and about the fact that some of the plutonium had been washed down a sink connected to the sanitary sewer system was not immediately available to NIST officials. This resulted in delays in communicating this information to the City and the public. I want to stress that NIST provided this information as soon as the facts of the event were available to us. Since June 9, NIST has issued 12 news releases and published the texts of several letters to the City of Boulder to describe fully our response to the incident.

I'd like to briefly describe several aspects of our response.

Our primary concern has consistently been the safety and health of our staff and the public. NIST made arrangements for comprehensive dose assessments for individuals potentially exposed to spilled plutonium. In the end, no individual received a radiation dose exceeding regulatory limits or expected by independent medical experts to result in a clinically significant health impact in either the short or long term. The unauthorized release of a small amount of plutonium to the City of Boulder sanitary sewer system did not exceed regulatory limits and was not detectable in the system or in sludge diverted from the system after the incident. We know of no adverse effects of the incident on our staff or the surrounding community.

Immediately following the incident, NIST stopped all research involving NRC specifically-licensed radioactive materials in Boulder. NIST has no plans to resume these activities. We have shipped all specifically-licensed radioactive materials offsite.

To clean up the spilled plutonium and remove contaminated materials, NIST contracted with an NRC-licensed service provider, *EnergySolutions*. We obtained the NRC's approval of the decontamination and final radiation survey plans and monitored the work of *EnergySolutions* from start to finish.

NIST removed the drain pipe leading from the contaminated sink to the sanitary sewer, excavating both inside and outside the laboratory in which the spill and discharge occurred. Surveys of the remaining pipes and of soil samples from the excavated trenches confirmed that all of the spilled plutonium had been removed.

In a letter dated July 24, 2009, the NRC confirmed that NIST had met the NRC's requirements for reopening the decontaminated spaces. The NRC based its conclusion on its review of NIST's final report on the cleanup, information collected through NRC inspections during the cleanup process, and confirmatory surveys by an independent NRC-contracted organization, including surveys of independent soil samples from the pipe excavation.

Lastly, NIST provided funding to the City of Boulder to survey the sanitary sewer system. The contractor hired by the City detected no plutonium-related radioactivity significantly different from natural background levels at several points within the sewer system, at the wastewater treatment facility, or in sludge diverted from the sewer system after the incident. NIST has worked with the City to dispose of the biosolids as non-hazardous fill material at a site in Utah owned by *EnergySolutions*.

Actions in Response to the City of Boulder

NIST has worked to rebuild its relationship with the City and people of Boulder through regular communications of progress on the cleanup project and in addressing issues identified by the City, especially with regard to the handling of hazardous materials.

For example, we have updated the inventory of chemicals at the NIST Boulder Laboratories and properly disposed of unused, excess, and legacy chemicals.

We have also developed an emergency notification checklist for reporting events to the City of Boulder and to other jurisdictions and agencies that regulate NIST Boulder's handling and disposal of hazardous materials.

To address the larger issue of strengthening our safety program, we have developed and implemented a worksite training program for the NIST Boulder staff in the prevention and reporting of accidental hazardous material releases to the environment. All employees and associates have taken the training, and all future employees and associates will be required to take the training as part of their beginning work at NIST.

Finally, we have broad agreement with the City of Boulder on the desirability of formalizing future reporting and coordination functions between the City and NIST Boulder through a new Memorandum of Understanding. We will be pursuing that in the near future.

Actions Taken to Strengthen Safety at NIST Boulder

We've taken a number of additional actions to strengthen safety at NIST Boulder.

We moved a senior-level research-director position previously located in Gaithersburg to Boulder to strengthen local line-management responsibility for the safety of all laboratory activities in Boulder. We immediately filled that position with an experienced laboratory manager.

We established a senior safety management position to oversee the safety organization in Boulder and filled that position with a highly qualified safety manager.

We established a new executive-level site-manager position in Boulder to coordinate safety, emergency preparedness, and security for the entire Department of Commerce Boulder campus, including NIST, the National Oceanic and Atmospheric Administration, and the National Telecommunications and Information Administration. We have selected an experienced executive who is expected to start in this position no later than November 2009.

Finally, we have established and filled a senior-level safety executive position to oversee the safety support organizations in both Gaithersburg and Boulder, and we are strengthening both of those organizations through additional staff and resources.

Actions Taken to Strengthen Safety at All NIST Sites

To strengthen safety at NIST overall, NIST and the Department of Commerce arranged for independent assessments of safety management performance at NIST. In addition to the initial report of the Ionizing Radiation Safety Committee, 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 outside safety experts and internal discussions of safety priorities.

Based on this input, NIST is currently focusing on four areas: 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. Examples of activities in these areas include:

- Articulating, communicating, and reinforcing a clear safety goal and message;
- Defining and communicating clear roles, responsibilities, and authorities;
- Providing managers and supervisors with training on their responsibility to provide staff with a safe and healthful working environment;
- Developing and implementing a NIST-wide policy on identifying and controlling hazards; and
- Developing and implementing uniform approaches to chemical inventory and labeling and hazard signage.

Conclusion

In conclusion, we take our responsibility to protect the health and safety of our staff and the surrounding community very seriously. We will forever regret the event of June 2008. We are grateful that there were no significant health or environmental consequences for the community or NIST staff. Going forward, we are committed to protecting our staff, the public, and the environment by integrating safety into our management and work practices at all levels, working diligently with all staff to ensure that safety is a core value of NIST. Thank you for your attention.