



U.S. DEPARTMENT OF  
**ENERGY**

**Idaho Operations Office**

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# **Order Implementation Challenges in Idaho Falls Facilities**

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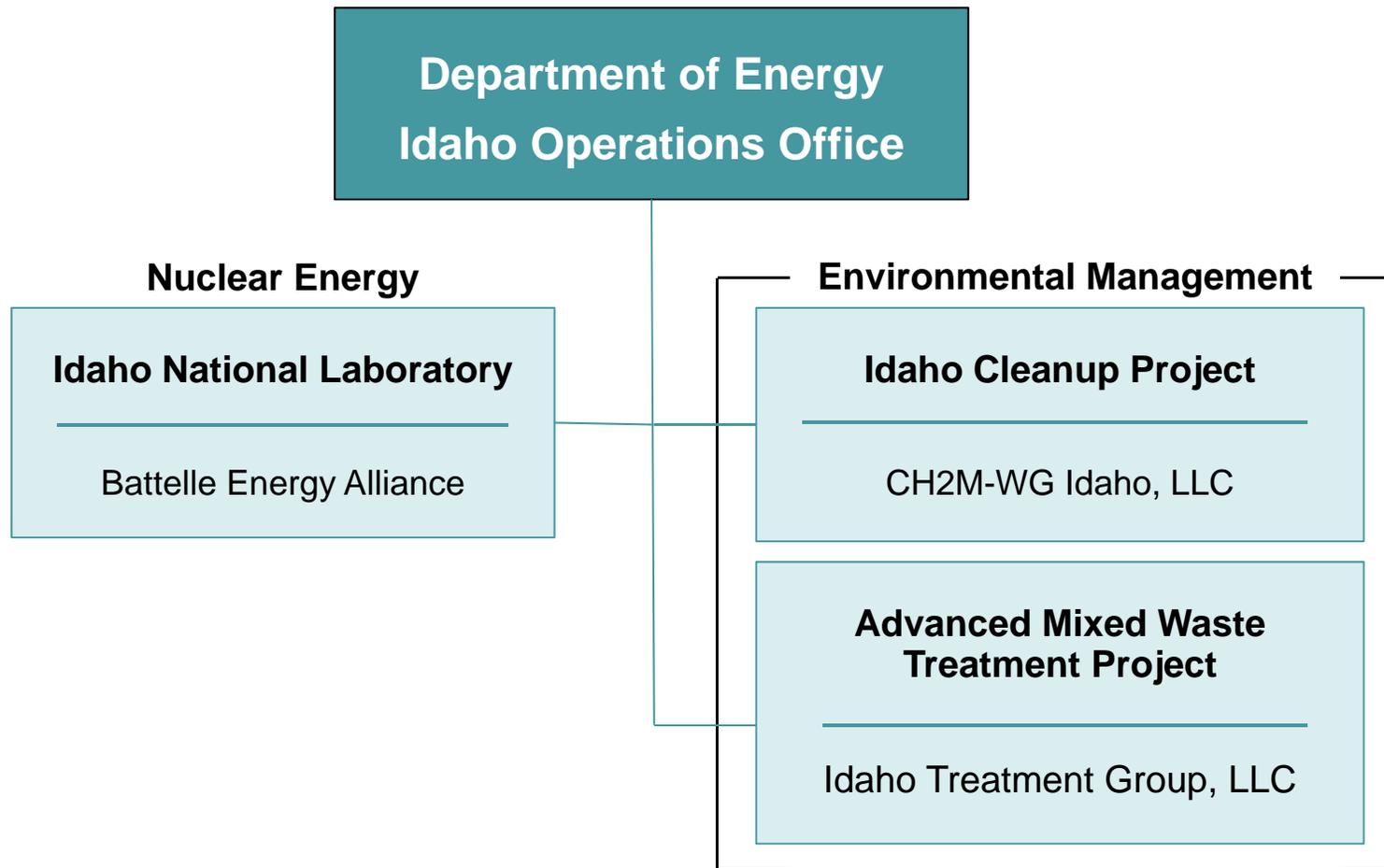
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**Department of Energy Nuclear and Facility Safety Programs Workshop**

**May 5, 2015**



# DOE O 420.1C Implementation

## Idaho Operations Office Implementation Plan Required Several Management Decisions

- ✓ Whether or Not to Insert the Order into the Contracts
- ✓ To Delegate or Not To Delegate
  - Equivalencies to DOE-STD-1066-2012
  - Building Code Official
  - Owner
- ✓ Applicability to Non-Nuclear Leased Facilities



# DOE O 420.1C Implementation

## Contracts

- Idaho Cleanup Project and Advanced Mixed Waste Treatment Project – Idaho Operations Office Requested Exemption from EM-1 and CTA
- Idaho National Laboratory – Idaho Operations Office invoked the Order in the contract in March 2014 at a cost of \$722,176 and a 24-month implementation strategy.



# DOE O 420.1C Implementation

## Delegations

- Delegated the authority to act as Idaho Operations Office representative for the following routine activities:
  - AHJ for matters involving fire protection as defined by NFPA
  - Building Code Official/Building Official as defined by the IBC
  - “Owner,” or other equivalent term, in the application of DOE technical standards or industry codes and standards
  - Approval of equivalencies to DOE-STD-1066-2012 for facilities other than nuclear facilities (INL only)



# DOE O 420.1C Implementation

## Delegations (Cont.)

- Idaho Operations Office retained the right to override decisions, including the interpretation and application of DOE orders, guides, standards, and mandatory codes and standards.
- Delegation excluded:
  - Approval of exemptions and equivalencies to DOE O 420.1C, NFPA codes and standards, and the IBC.
  - Interpretation and resolution of conflicts between NFPA and IBC requirements.
  - Approval of equivalencies to DOE-STD-1066-2012 for nuclear facilities (INL Only).
  - Approval of new and modified gaseous fire protection systems.

# DOE O 420.1C Implementation

## Applicability to Leased Facilities

- DOE O 420.1C, Attachment 2, Chapter II, Section 2

Applicability. This chapter applies to organizations that have responsibility for the design, construction, maintenance, or operation of government-owned or government-leased facilities and on-site contractor-leased facilities used for DOE mission purposes. For leased facilities that are not nuclear hazard category 1, 2, or 3 facilities, the design requirements of Section 3.c of this chapter apply to the extent determined by the field element.

# DOE O 420.1C Implementation

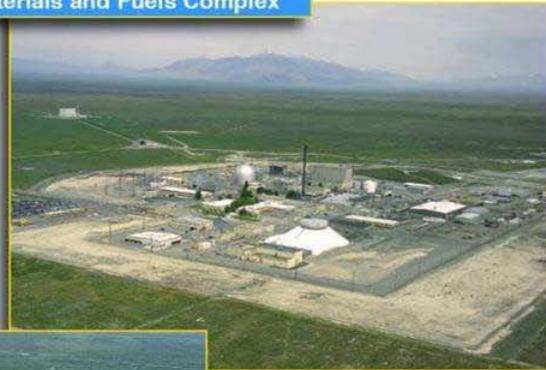
## Contracting Officer Direction:

- DOE O 420.1C applies to all *operations* in contractor leased facilities used for DOE mission purposes.
- The contractor shall provide justification, and obtain DOE-ID concurrence, on the applicability of DOE O 420.1C, Attachment 2, Chapter II, Section 3.c, *Design*, to non-nuclear leased facilities used for DOE mission purposes where:
  1. The value of government property stored or used within the facility is >\$5 million, or
  2. A fire could potentially cause unacceptable mission or program interruption.

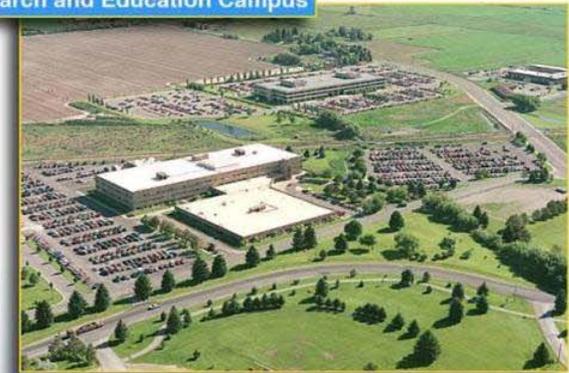


# Idaho National Laboratory

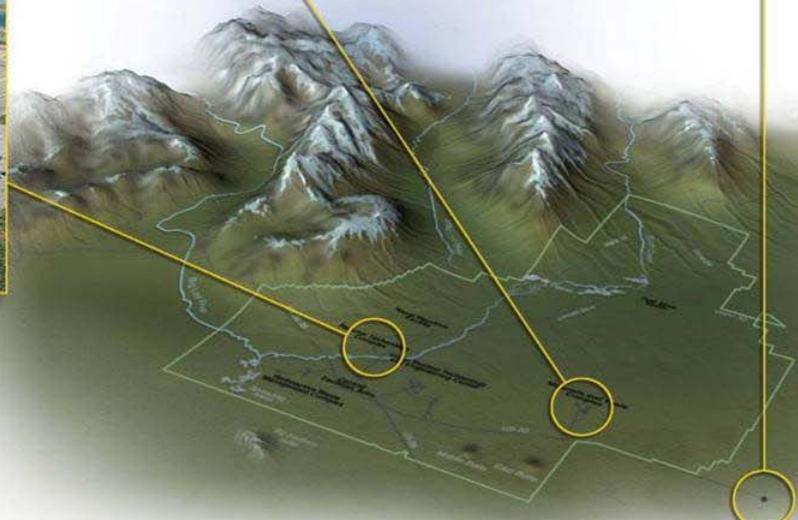
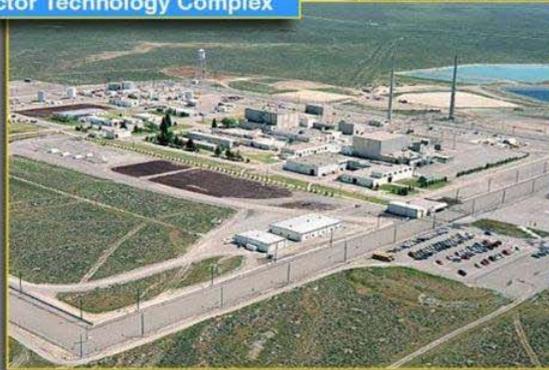
Materials and Fuels Complex



Research and Education Campus



Reactor Technology Complex



# INL Leased Facilities

## Revitalizing the Research and Education Campus

2006 – Utility Corridor

2008 – University Boulevard 1, 2, 3

2009 – Center for Advanced Energy Studies

2010 – University Boulevard 4

2012 – Energy Systems Laboratory

2013 – Energy Innovation Laboratory





# INL Leased Facilities



## Research and Education Complex (REC)

- Operated by Battelle Energy Alliance
- 16 government-owned facilities, fall under the jurisdiction BEA Fire Marshal and BEA Fire Protection Program
- 18 leased facilities, fall under the jurisdiction of Idaho Falls, Ammon, and Bonneville County Fire Marshal. Operate under the BEA Fire Protection Program.
- Leased facilities also operate under adopted city codes and amended city ordinances.
- 1 government-owned facility currently under construction.
- 9 government-owned facilities are radiological
- 3 leased facilities are radiological.

## REC (Cont.)

- No DOE approved equivalencies are applicable to leased facilities.
- BEA has been granted waivers from the City of Idaho Falls for some permits required by the IBC/IFC.
  - Hot work permits
  - Fire system impairments
  - Etc.
- Ammon Fire Marshal's Office is not mature enough yet to request any waivers.
- Local Fire Marshals do periodic inspections in our leased facilities.

## REC (Cont.)

INL/INT-11-24111  
Revision 0

# Emergency Response Baseline Needs Assessment for Idaho National Laboratory Research and Education Campus Facilities

February 2012

The INL is a  
U.S. Department of Energy  
National Laboratory  
operated by  
Battelle Energy Alliance



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## REC Cont.

- None of the REC facilities rise to the level of requiring a DOE O 420.1C fire hazard analysis.
- All REC facilities receive either a “Fire Safety Assessment” (FSA) or “Abbreviated Fire Assessment” (AFA).
  - In excess of \$100 million, high hazard, or vital program = Annual
  - \$3 million to \$100 million = 3 years
  - Less than \$3 million = AFA every three years
- Combined ES&H periodic inspections are performed as required by
  - VPP/ISMS
  - BNA
  - NFPA

# Energy Systems Laboratory (ESL)



## Energy Systems Laboratory (Cont.)

- 91,000 square foot laboratory
- Biofuels
- Feedstock
- Energy Storage
- Advanced Vehicle and Battery Analysis (Supported “Electric Vehicle Battery Hazards” in *Fire Protection Engineering* 2<sup>nd</sup> Quarter 2014)

## Energy Systems Laboratory (Cont.)

- Three IBC control areas (fire zones)
- Two fire zones are constructed to meet H-2 Occupancy Requirements
- Increases chemical inventory
  
- Process Demonstration Unit (PDU)
- Dust explosion is primary hazard
- Extra Hazard Sprinkler System
- Explosion suppression (8) installed on process equipment
- Requires Operational Permit issued by the City of Idaho Falls

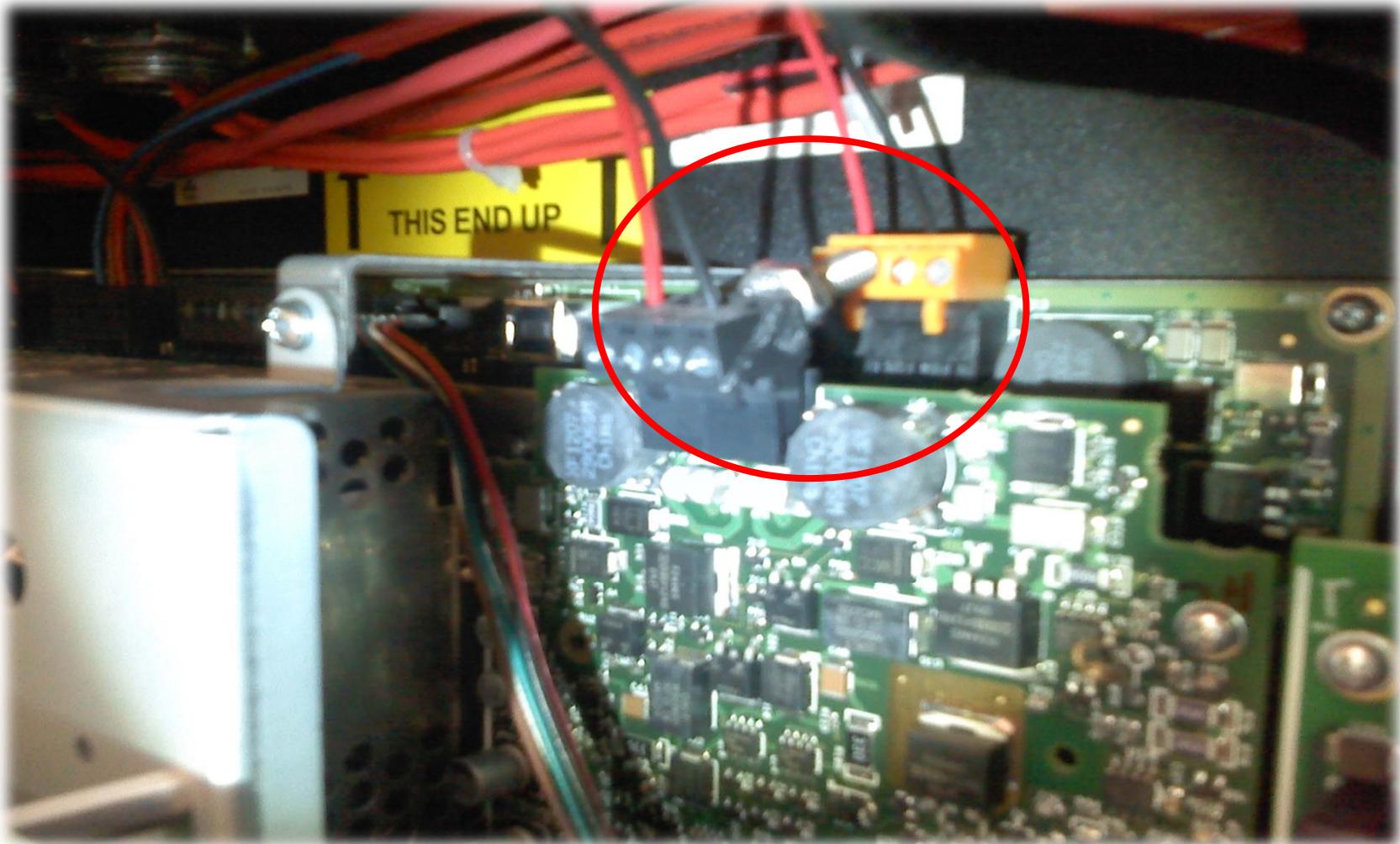
# Energy Innovations Laboratory (EIL)



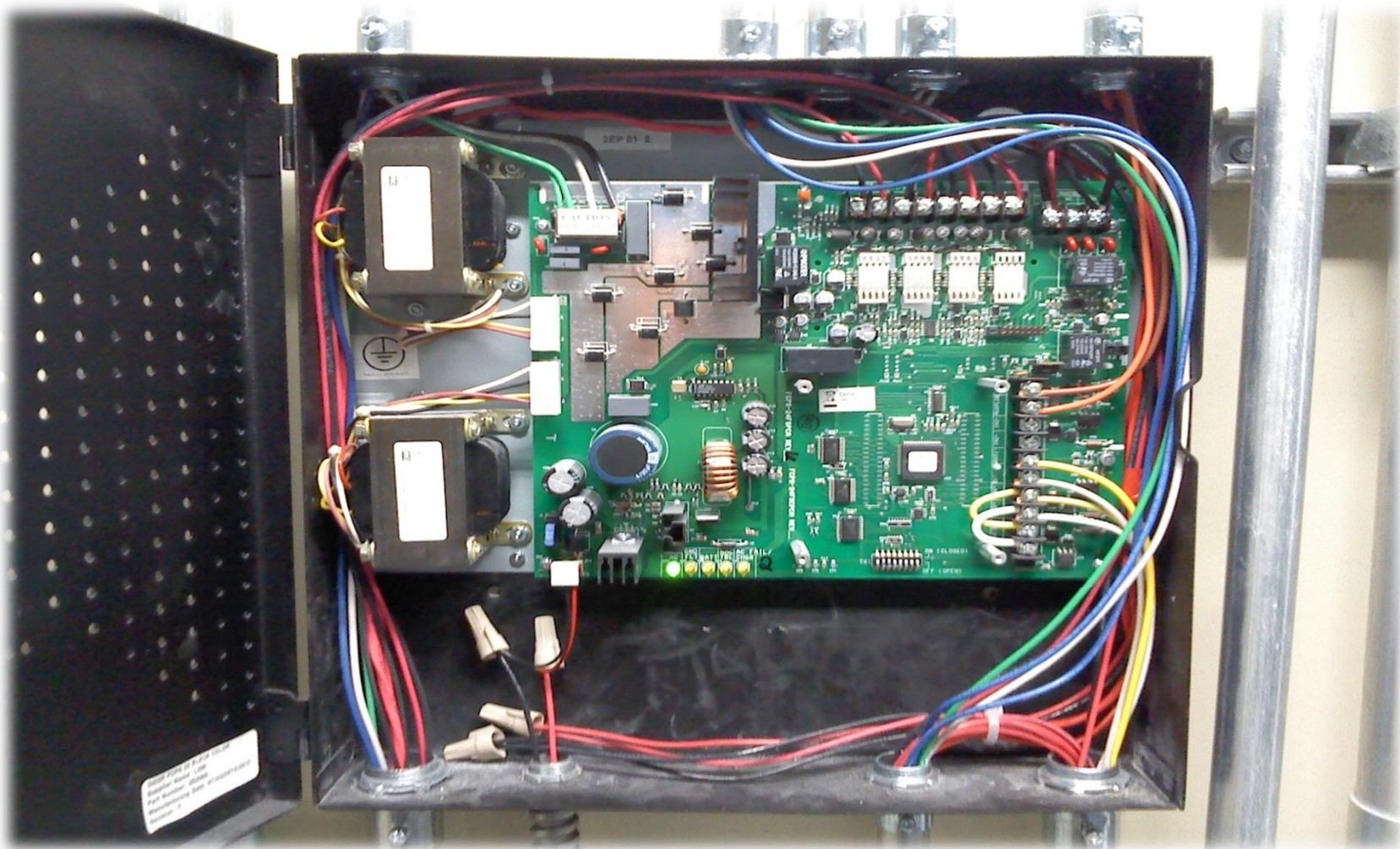
## Energy Innovations Laboratory (Cont.)

- LEED Platinum and 2014 “Go Beyond Award” winner.
- 148,000 square foot state-of-the-art lab space and conference center
- Original intent to replace radiological laboratories at IRC
- Nine separate Control Areas (increase chemical limits)
  - Control Areas resulted in IBC/IFC “required” sprinkler system.
  - Areas of refuge
  - Fire pump/standpipe
- BEA was not part of any of the fire systems acceptance tests.
- Building was turned over to BEA based on receiving Occupancy Certification from the Idaho Falls Fire Marshal.

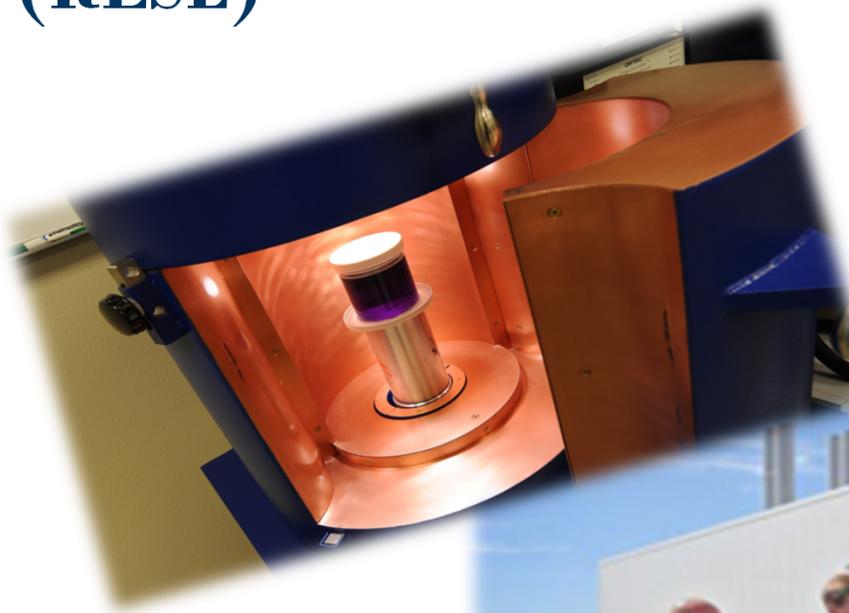
## Energy Innovations Laboratory (Cont.)



## Energy Innovations Laboratory (Cont.)



# Radiological and Environmental Sciences Laboratory (RESL)



## RESL

- The Radiological and Environmental Sciences Laboratory (RESL) is a government-owned, government-operated laboratory operated by DOE-ID since 1949.
- There is no GSA component with RESL.
- RESL operates under their own stand-alone fire protection program.
- AHJ responsibilities have not been delegated, therefore DOE-ID office manager is the fire protection AHJ.
- DOELAP Portion of RESL currently under construction
  - Radiological Facility
  - Fire protection set by pre-FHA

## Conclusion

- **Communicate with customers**
  - Operations
  - DOE
  - City
  - Building Owners
- **Utilize MOU/TUA(s)**
- **Now appears that the \$5 Million figure for the applicability of DOE O 420.1C, CH. II, Section 3.c “Design” for leased facilities needs to be reconsidered.**
- **We need a voice during the construction of lease, build facilities used for DOE mission purposes!!**

**Thank you!**

Questions?

