LA-UR-21-23923
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Title: Case Study 4 - Rocky Flats Plant Fires (1957 and 1969)

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Intended for: NEST NFFW 1110 course (Spring 2021 Semester)

Issued: 2021-04-22

Case Study 4 - Rocky Flats Plant Fires (1957 and 1969)

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Actinide Operations/National Security Education Center

LA-UR-21-XXXXX

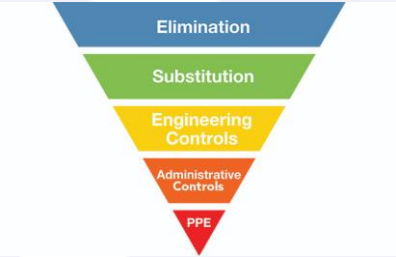
Agenda

1. Background
2. Simply Difficult Videos – “RFP 1957” and “RFP 1969”
   - What is accurate?
   - What is missing?
3. References
   - “A September 11th Catastrophe You’ve Probably Never Heard About” – The Atlantic (2012)
   - “The day they almost lost Denver” - BotAS (1999)
4. What changed as a result?
   - At the Rocky Flats Plant
   - At Los Alamos

What changed as a result of this event?

Facility designed for plutonium metal fire safety

- Atomic Energy Commission/Department of Energy response to the 1969 fire was to design, fund and construct
  - Building 371 at Rocky Flats for pit production
  - TA-55 Plutonium Facility complex for research and development at Los Alamos Scientific Laboratory which was commissioned in 1978
- The latter has been described as “a monument to fire safety”



TA-21 DP contrasted with TA-55 PF-4

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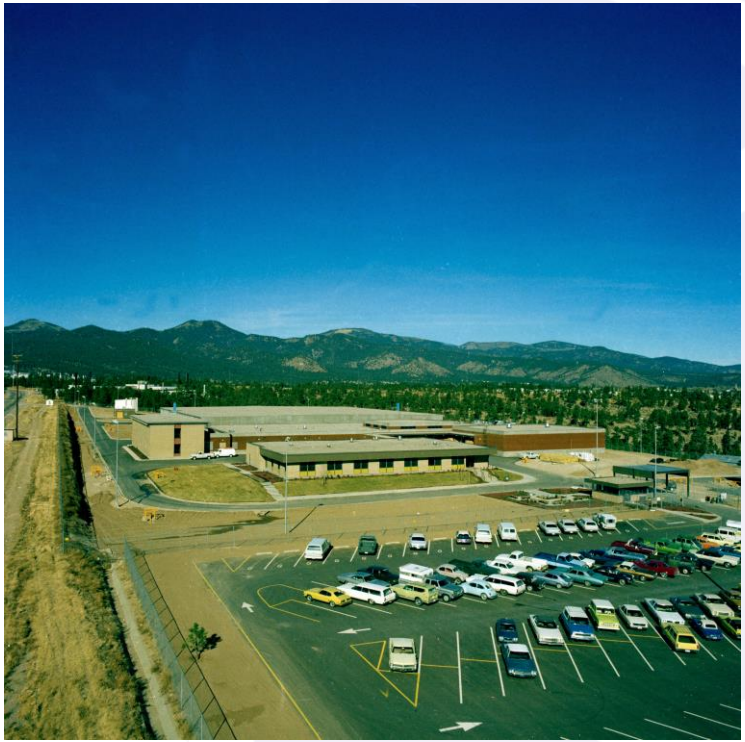

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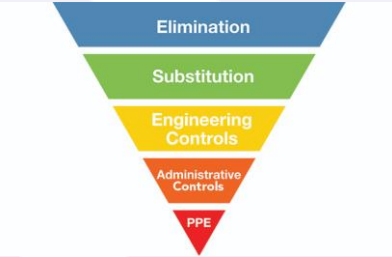
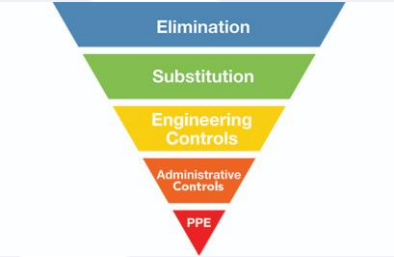
Facility designed for plutonium metal fire safety

- Reinforced concrete structure designed with many small compartments to segregate laboratories and processing areas
- Fire wall between essentially two separate buildings, 100 and 300 Areas
- Gloveboxes constructed of noncombustible materials, fitted with thermal sensors, automated firedoors on the air supply ducts (trolley tunnels) to limit air flow, and local fire alarm buttons
- Fire detection system with 650 detection points (smoke and heat detectors)



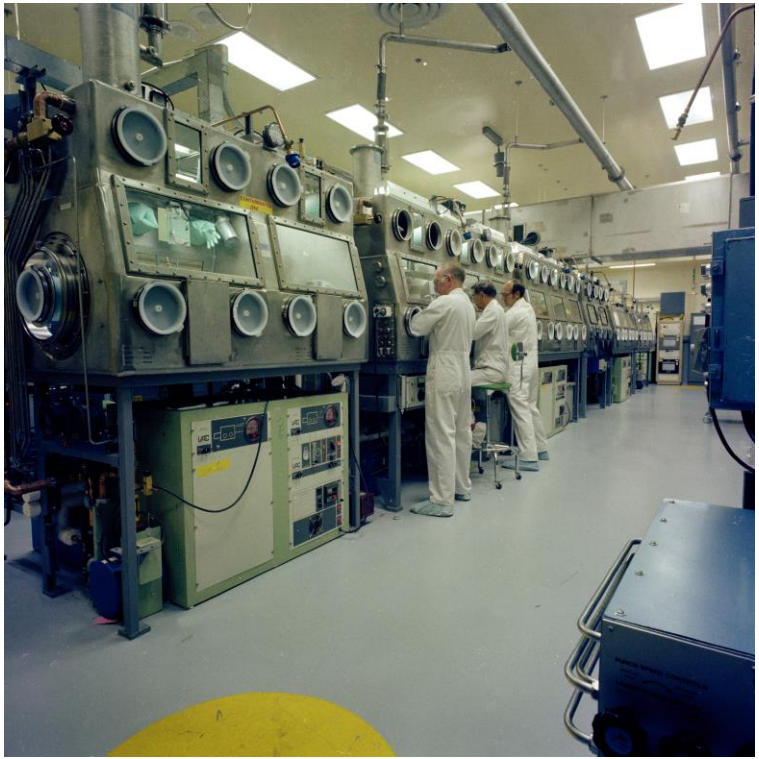
Facility designed for plutonium metal fire safety

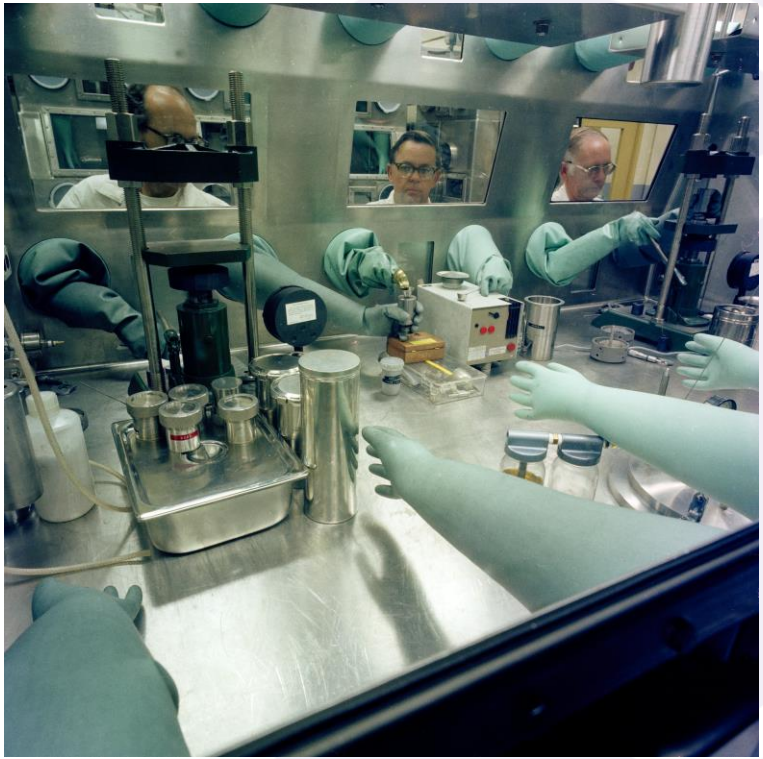
- Fire suppression system with sprinklers fed by two 150,000-gallon water tanks securing the filter plenums
- No collection points for water on the process floor, dished with respect to the safe haven of the hallways
- No processing or storage of Pu in trolleyways, dropboxes or plenums
- Continuous 24-hour/day monitoring from the Operations Center



TA-55 PF-4 Operations Center

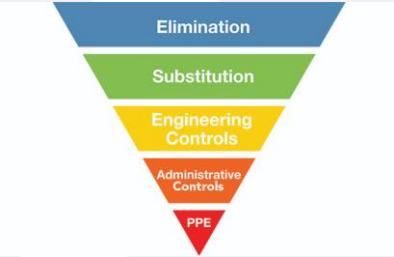
TA-55 PF-4





Process hazards

- Today’s challenge is not to ignore the mundane or common hazards and focus only on the extreme, exotic and unlikely hazards
- Fire safety (mundane) or chemical exposure (common) vs. criticality safety (exotic) or radiation release (detectible)



Questions?