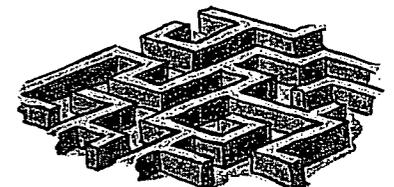
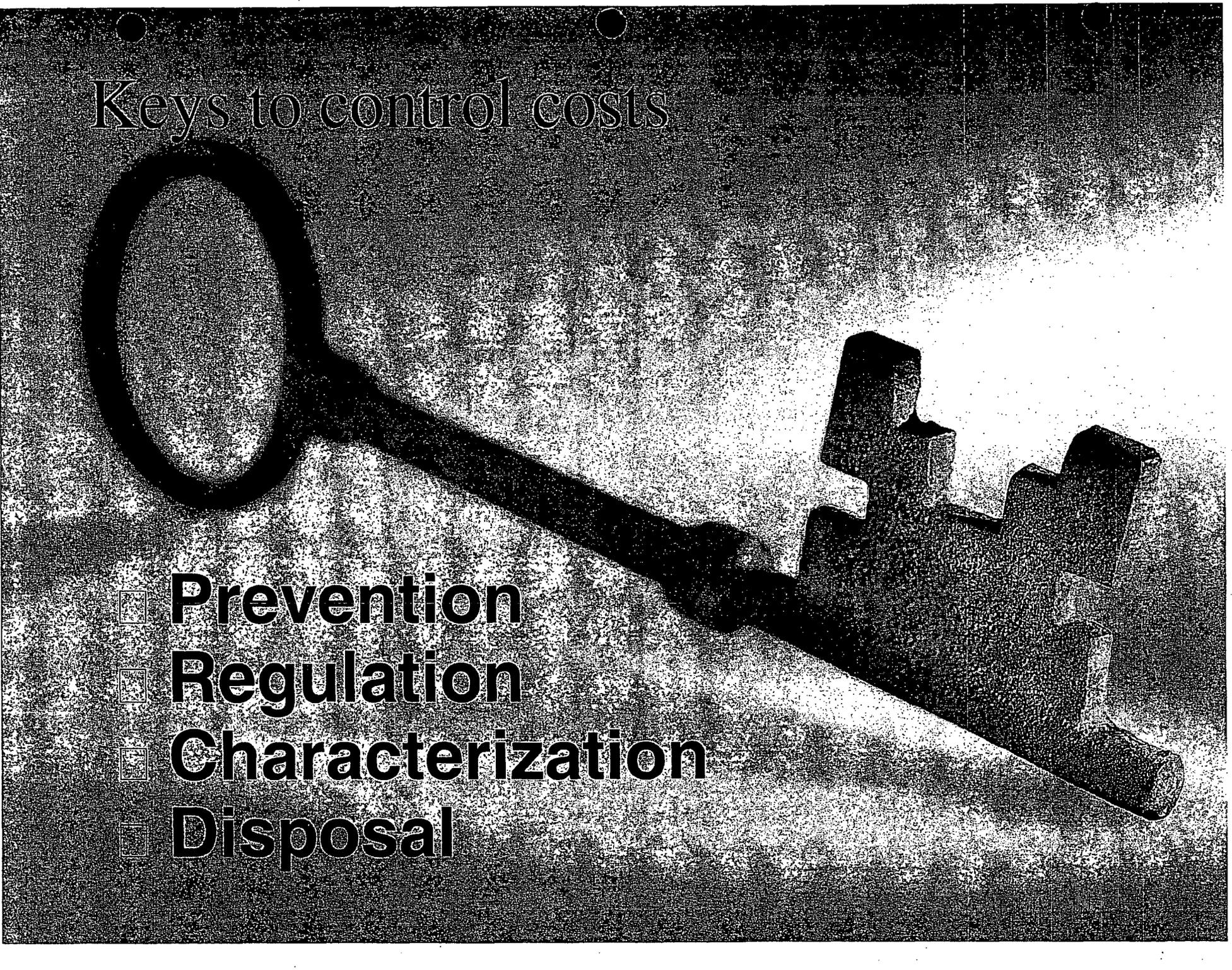


Decommissioning Lessons Learned a State's Perspective

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Radiation Control Program Director
Kansas Department of Health and Environment
Board Member Organization of Agreement States



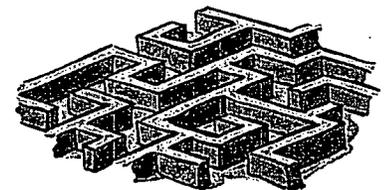
Keys to control costs



- Prevention**
- Regulation**
- Characterization**
- Disposal**

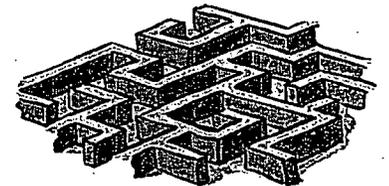
Prevention

- Begins with design
 - Technologies
 - BAT mandate
 - Surfaces
 - Easy to perform decontamination procedures
 - Ventilation systems



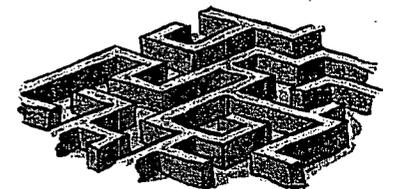
Prevention

- Detection
 - Retention pond designs with leachate detection, liners
- Monitors
 - Area & exhaust air monitors
- Design of hot cells



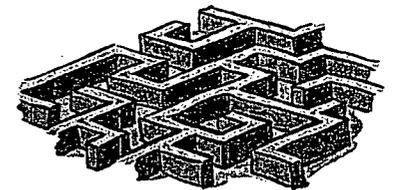
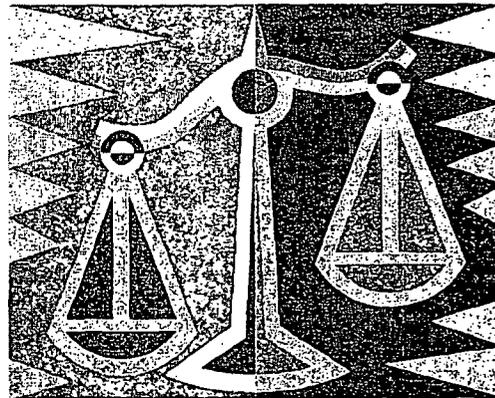
Culture

- Decommissioning not at the forefront during startup
- Decommissioning comes when the income goes away
- Need to look to the future



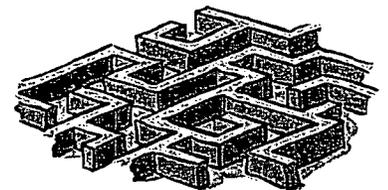
Regulatory

- Address decommissioning during licensing
 - We do them no favors by accommodation
 - In the licensee's best interest
- Need clear direction on cleanup standards
- Must be consistent and equitable across agencies



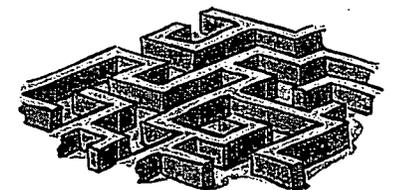
Inspections

- Look for problems and spills
- Don't get stuck in a rut
 - Be imaginative
- Check
 - Around doors
 - On roofs
 - Downwind etc
- Take soil samples



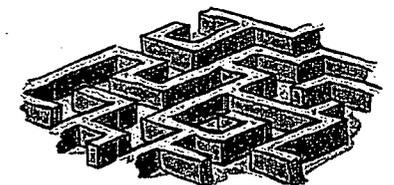
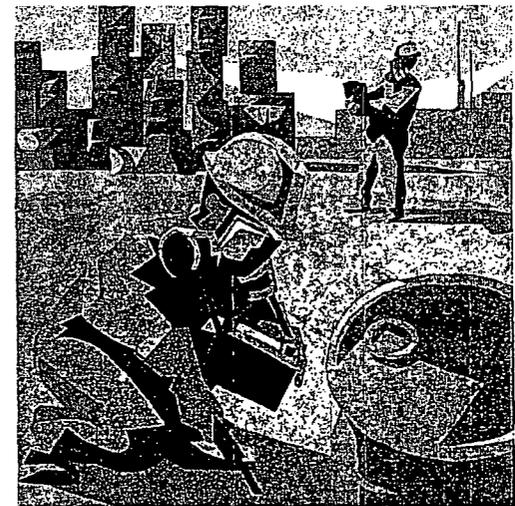
Characterization

- During Operation
 - Mechanism for identification and quantification
 - Spills
 - Leaks



Initial characterization surveys

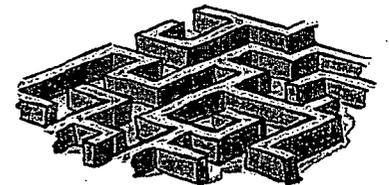
- Look everywhere
- Especially at older facilities
- Hidden rooms
- Unknown spills
- Unknown disposal



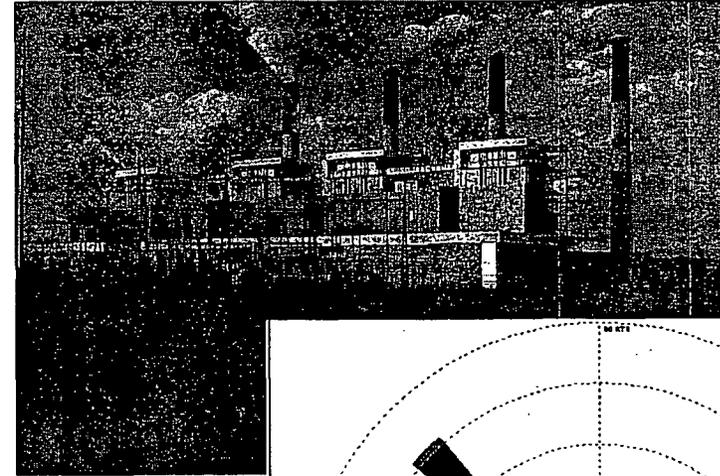
Look for the unexpected



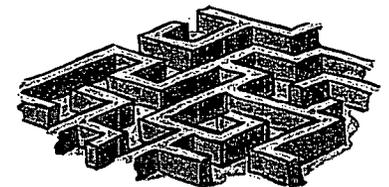
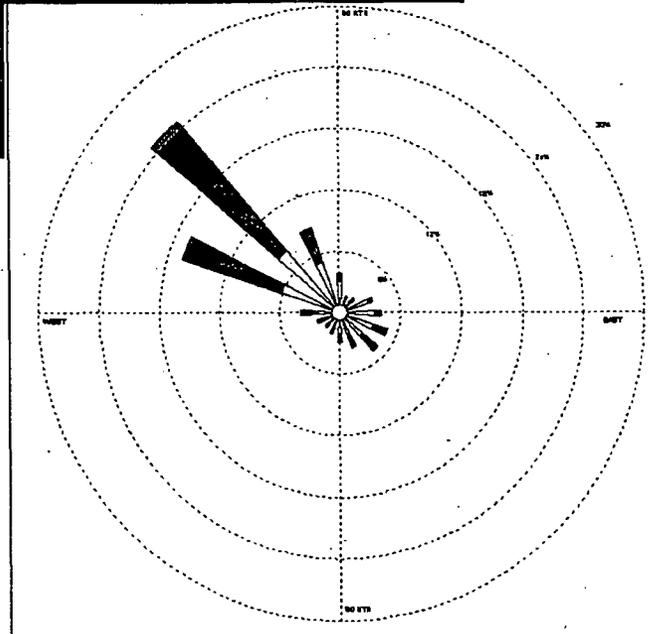
- Hidden rooms
- Contaminated fire pits under parking lots
- Organic vapors stick to plastics



Exhaust systems



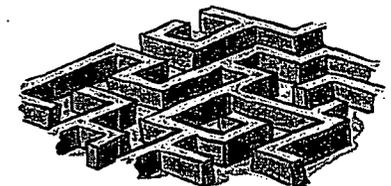
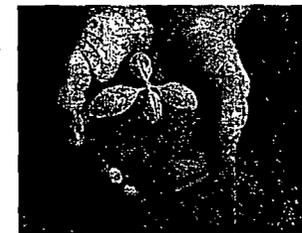
- Track long term plumes
 - Can exceed cleanup levels without exceeding effluent release limits
- Look at wind rose plots
- Effluents may not be as readily dispersible as you thought





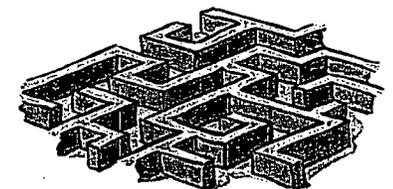
Groundwater and Soil

- Groundwater Issues
 - Uranium tailings impoundments
 - Sites with history of solvent use
- Large sites contaminated with radioactive material
 - Need creative ways to decrease the concentration
 - Reduce amounts of waste
 - Avoid other reclamation issues.



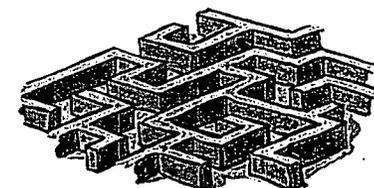
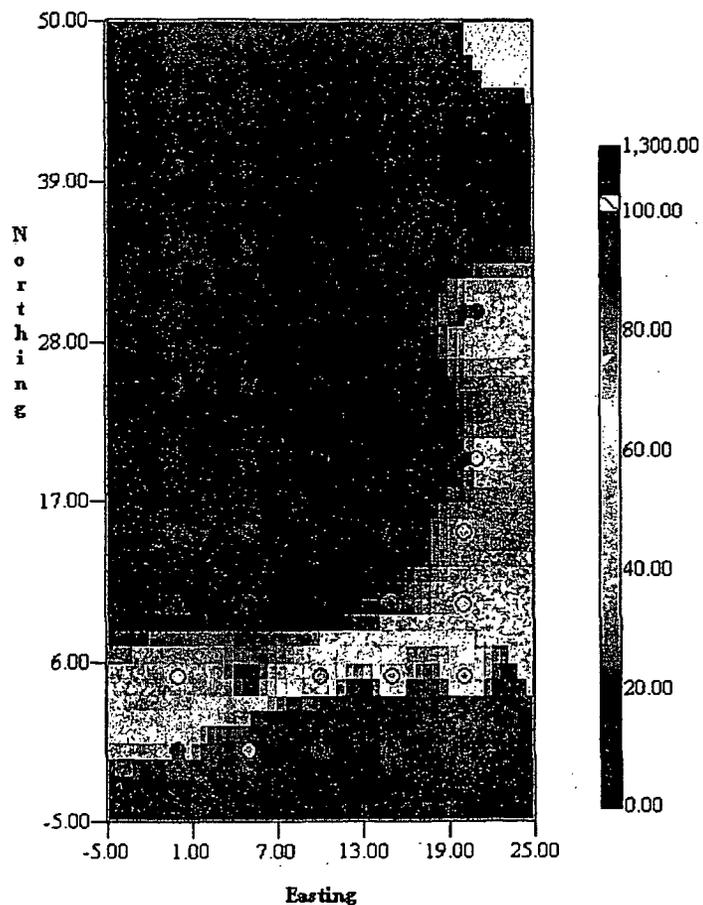


- Major contributor of cost
- Need competition for disposal options
- Minimize volume
- Better characterization equals better control of amount of waste
- Don't dispose of more than necessary



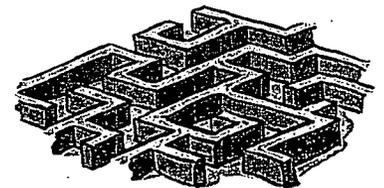
“Discrete” Sources Don’t Stay Discrete

Contamination from Licensed Activities with Discrete Ra-226 Sources (uR/hr)



Decommissioning Summary

To achieve the most cost effective end result, decommissioning planning must begin before the first day of operation and include a hard look at preventative measures, regulatory issues and plans for site characterization and disposal



Questions?

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