Disposal of Sealed Sources

April 17, 2009

Michael J. Zittle

Assistant Radiation Safety Officer,
Oregon State University,

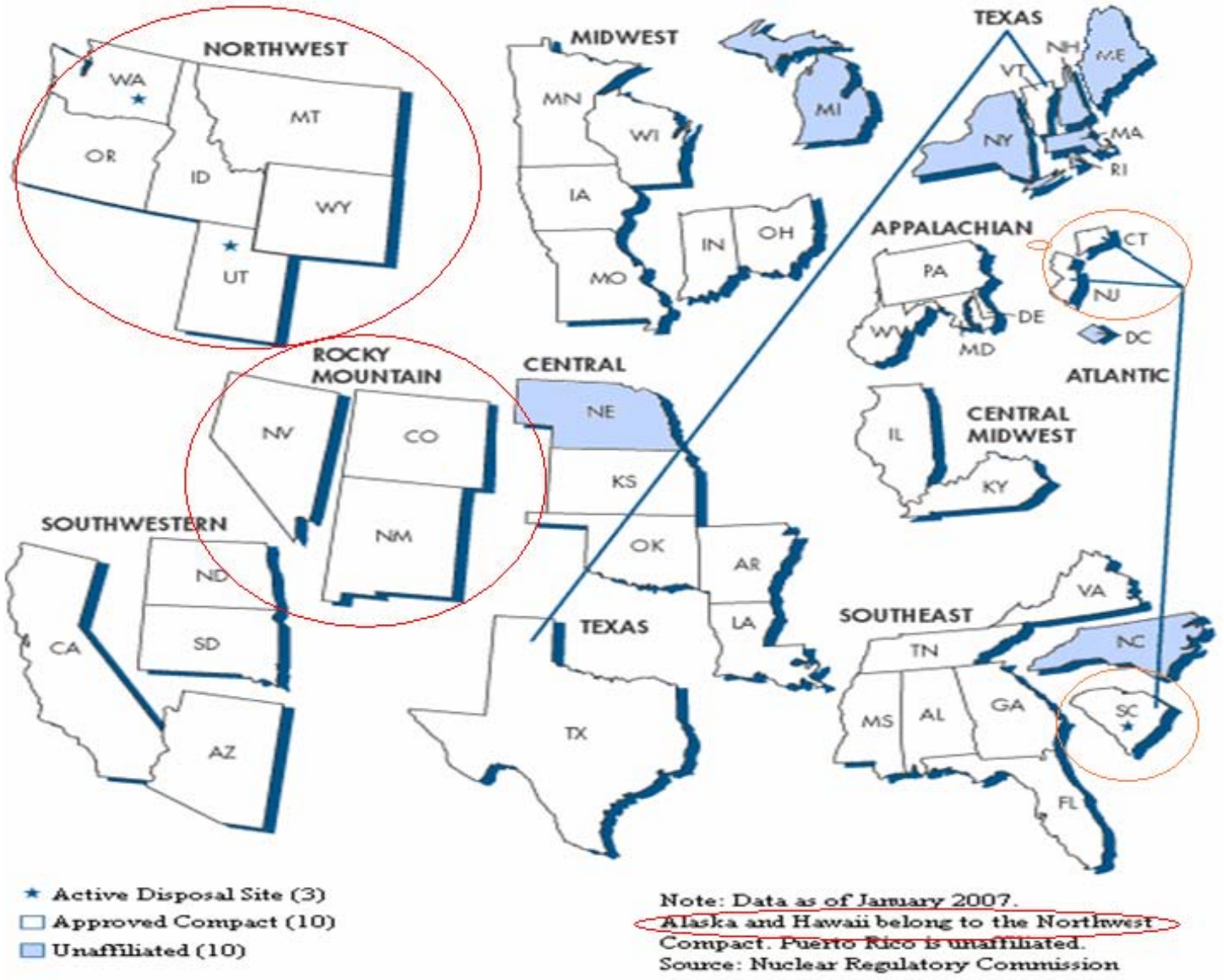
Campus Radiation Safety Officers
(CRSO) Representative

Sealed Source Generators

- Oregon State University (OSU)
- CRSO
  - United States and Canada
- AMRSO
  - Private listserve spanning 4 continents
- Unaffiliated Hospitals and Colleges

LLRW Disposal Sites

LLRW Compacts



Current Sealed Source Disposal Options

1. Class A, B, & C disposal capacity for the “Fortunate 14”
   - US Ecology - Richland, WA
     - Northwest and Rocky Mountain Compacts ONLY
   - Energy Solutions - Barnwell, SC
     - Atlantic Compact ONLY
2. Recycle sources to vendor
3. Recycle to another licensee
4. Store sources for future disposal

Government Sponsored Sealed Source Disposal Options

- SCATR – Source Collection and Threat Reduction Program
  - Funded by NNSA
  - Administered by CRCPD
  - Provides financial assistance to properly secure and dispose
    - Medical brachytherapy sources - ^{226}Ra & ^{137}Cs
    - Eye Applicators – ^{90}Sr
    - Calibration Sources – ^{137}Cs, ^{60}Co, etc.

Government Sponsored Sealed Source Disposal Options

- OSRP – Off-Site Source Recovery Program
  - Funded by NNSA
    - Mission “to remove excess, unwanted, abandoned, or orphan radioactive sealed sources that pose a potential risk to health, safety, and national security”
    - Transuranics – ^{239}Np, ^{239}Pu, ^{241}Am, etc.
    - Other beta/gamma sources - ^{137}Cs, ^{60}Co

Generator Concerns

- Lack of disposal capacity for sealed sources for 36 States
- Prohibitively high disposal costs
- Lack of free market competition
- Onsite storage challenges
  - Inventory
  - Security
  - Exposure
  - Proper Disposal

SCATR Concerns

- Confusion about responsibilities
  - States refers generators to CRCPD
  - CRCPD indicates that States should initiate the process
- Is funding still available?
- What is the status of SCATR?
  - State of Oregon had some movement
  - Inquired about designating OSU as Host Institution
    - Space, security, and personnel are concerns

SCATR Concerns

- Northwest Compact
  - 757 sources on recovery list
- Rocky Mt Compacts
  - 266 sources on recovery list
- US Ecology operates regional disposal facility for two Compacts
  - What about thousands of “Out of Compact” sources?
- CRCPD and States need to coordinate efforts for pickup and consolidation of sources

OSRP Concerns

- Lag time after registration of sources
  - 1 year until acknowledgement
  - 2-3 years until source collection
- Clunky registration process
  - Excel form is difficult to work with
  - Erroneous confirmation inventory
    - OSU confirmation inventory contained (only) 5 of 29 registered sources
    - Unusable spreadsheet

Future Disposal Options

- Amend the LLRWPA
  - To adapt to changing LLRW framework
- Repeal the LLRWPA
  - To create competition and decrease cost of disposal
- Utilize DOE disposal facilities for commercial generators who lack disposal options

More Future Disposal Options

- Develop one or two disposal facilities on Federal land
- Modify DOE's disposal for GTCC waste to include Class B and C
- All options may require Congressional authorization

Conclusion

- The cost of disposal continues to rise but most of our budgets are getting smaller
- Hopefully more disposal options will be available to generators in the future
- Let's be Smart!
  - Stumbling blocks should not prevent mission
- Let's work together and get it done!

Acronyms

- CRSO - Campus Radiation Safety Officers
- AMRSO - Academic and Medical Radiation Safety Officers
- NNSA - National Nuclear Security Administration
- CRCPD - Conference of Radiation Control Program Directors
- SCATR – Source Collection and Threat Reduction Program
- OSRP – Off-Site Source Recovery Program
- LLRWPA - Low-Level Radioactive Waste Policy Act (as amended)
- GTCC - Greater-than-Class-C