



Radioisotopes and the UNOLS Fleet

Licensing to Logistics (and a few
unexpected turns in between)

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Speculations

- Scientists work in campus labs.
- Concerned about their own research.
- Campus H & S provide “ghost” services.
- Marginal health risks.

Radioisotope Science Support

- Licensing
- Regulation
- Logistics
- Spills and Decon
- Trench Stories
- Comments
- Discussion

What Licensing Can Do For You?

- Parameters on the scope of RAM use
- Regulations define program
- Drives program requirements
- Optional aspects (“super clean”).

Licensing – who, what, where?

- State (If “Agreement State”)
- Nuclear Regulatory Commission
 - Paying attention, cross-checking
 - Form 241
 - Letters of Clarification
- Antarctic Treaty Zone – NSF
 - MOU NRC/NSF

Regulatory Requirements

- Acquisition and Receipt
- Security and Control
- Training
- Dose Control
- Contamination Control/Spills
- Transfer and Disposal (and Transportation)
- Documentation
- Inspections/Audits

Acquisition and Receipt

Shore

- Order cross-check
- Wipe test for leakage
- 3 hours
- Rad Safety staff
- Records Management

Ship

- Same
- Same but who?
- How soon?
- Science party
- Records management/return

Security and Control

Shore

- Control To/From
- Controlled spaces
- Locked facilities
- Rad Safety staff
- BIG news since 9/11

Ship

- Anyone's guess
- Same
- Same
- Sci party, RT, crew
- BIG news since 9/11

Trench Stories

- Unauthorized spaces
- “New” procedures
- Minding details
- False assumptions
- BS



Training

Shore

- Attend sessions
- Observe procedures
- Recommend changes
- Difficult to fudge

Ship

- RSO's & PIs word
- Review written proc.
- Recommend changes
- Protests
- Deficiencies
- BS

Security is relative?



Radiation control “Jeopardy”

What is a

- Clean ship
- UNOLS clean ship
- Wipe
- Swipe
- SWAB



Contamination Control

- Where is it?
- It's where someone left it.
- Techniques
- Non-standard options.

Dose Control – Pub & Users

Shore

- Procedures
- Practices
- Anti-spill measures
- Cleanliness
- Shielding & Assessment
- Dosimetry
- Rad Safety Surveys

Ship

- Procedures
- Quiz & Spy, Hope
- Same, enforcement
- Water available?
- Shielding info, calc. & experience, info from RSO
- Dosimetry

Transfer & Disposal

- Strong, clear regs
- Domestic
- International
- Foreign port
- Agents
- Carriers
- Customs
- Tracking



Did we get it all?



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Now what?



Accountability of RSO

- Inescapable (on/off)
- Significant consequences to institution
- Double oversight
- No oversight

Conclusions

- Few completely prepared for RAM use.
- Prepared to review own programs.
- Scale of support.