U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

United States Nuclear Regulatory Commission: Function, Framework, Alternative Technologies (follow-up information)

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Source Management and Protection

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Questions

The Committee provided a list of questions for NRC that encompassed seven broad areas:

1. NRC actions in response to the 2008 NAS study
2. Cost effectiveness determination of requirements
3. The Integrated Source Management Portfolio: the National Source Tracking System (NSTS), the Web-based Licensing system (WBL), and the License Verification System (LVS)
4. Category 3 source control
5. Financial responsibility for disposition
6. Operating experience with lost, abandoned, and stolen sources
7. Regulatory authority in the transportation sector

1. 2008 NAS report recommendations

Recommendation 2: *"…the U.S. NRC should consider radiation sources' potential to cause contamination of large areas resulting in economic and social disruption (area denial) to determine what, if any, additional security measures are needed."*

Recommendation 3: *"…the U.S. government should implement options for eliminating Category 1 and 2 cesium chloride sources from use in the United States and, to the extent possible, elsewhere. The committee suggests these options as the steps for implementation:*

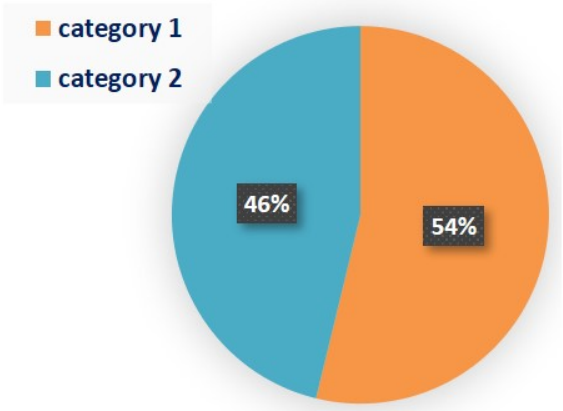
- *Discontinue licensing of new cesium chloride irradiator sources.*
- *Put in place incentives for decommissioning existing sources.*
- *Prohibit the export of cesium chloride sources to other countries, except for purposes of disposal in an appropriately licensed facility."*

Commission Policy Statements

2. Integrated Source Management Portfolio

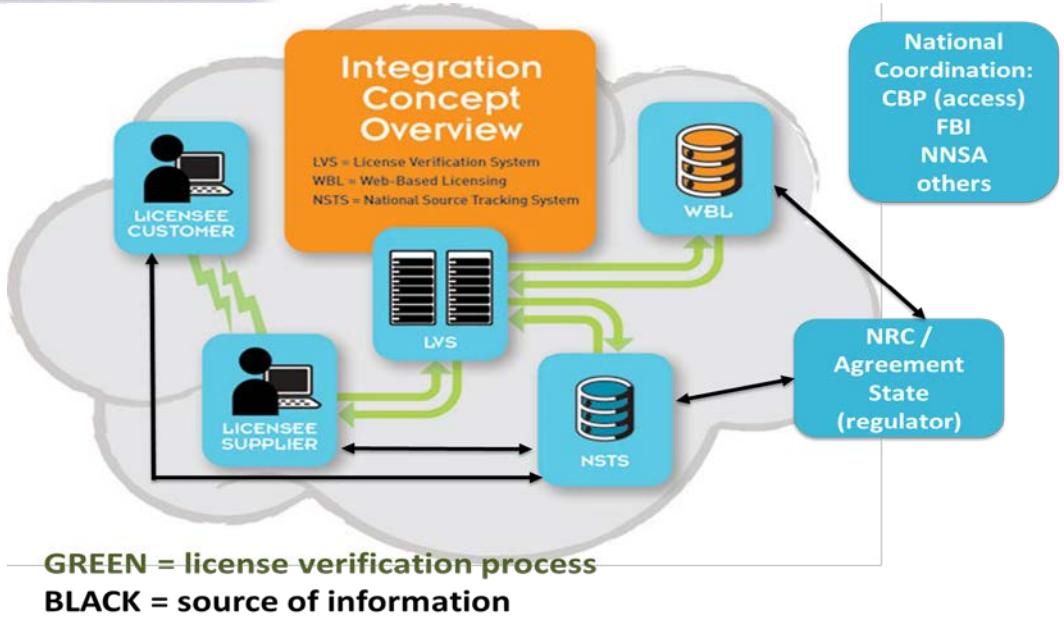
ISMP home page

Source Distribution

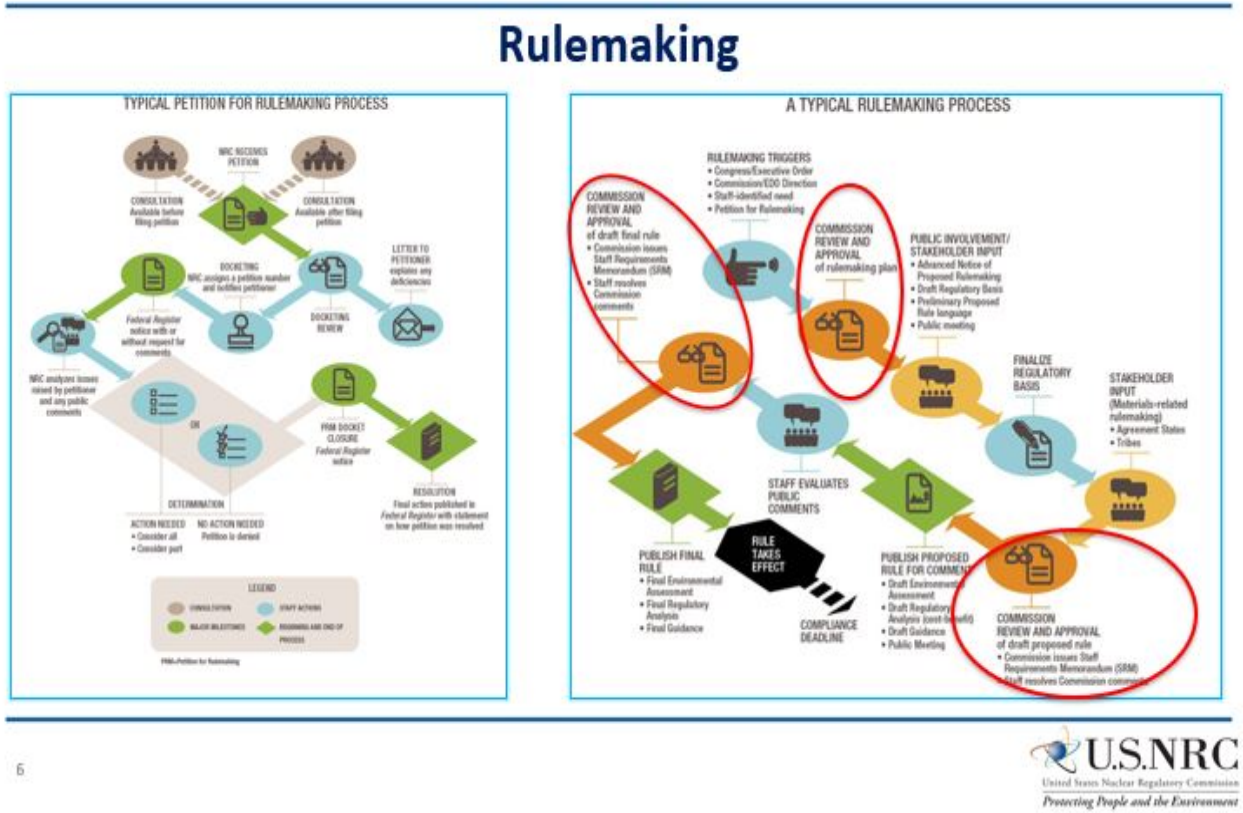


NSTS Facts

- ✓ Total sources >75,000
- ✓ Between 7,500 – 10,000 transactions per month
- ✓ 97% of all transactions involve Ir-192
- ✓ 99% transactions are reported electronically



3. Cost Effectiveness



Regulations.gov Part 37 Final Rule

"…The average licensee will have a one-time cost of approximately $23,375 and an annual cost of approximately $21,736 to fully implement the final rule. The NRC believes that the selected alternative reflected in the final rule is the least burdensome, most flexible alternative that accomplishes the NRC's regulatory objective…"

4. Category 3 Source Control Considerations

2003

- The IAEA Code of Conduct revision and DOE/NRC RDD report developed

2006

- Data collection: category 3 sources

2008

- Consider expansion of new NSTS to include category 3 and 1/10 category 3 sources

2014

- Program Review of 10 CFR Part 37

Program Review home page

2016

- Category 3 Source Security and Accountability Re-Evaluation

C3WG home page

5. Financial Responsibility for Disposition

Commitments of the licensee include, but are not limited to:

- ensuring radiation safety, security, and control of radioactive materials
- the provision of adequate resources
- compliance with regulations and sustaining programs to ensure that the public and workers are protected from radiation hazards

Financial assurance requirements:

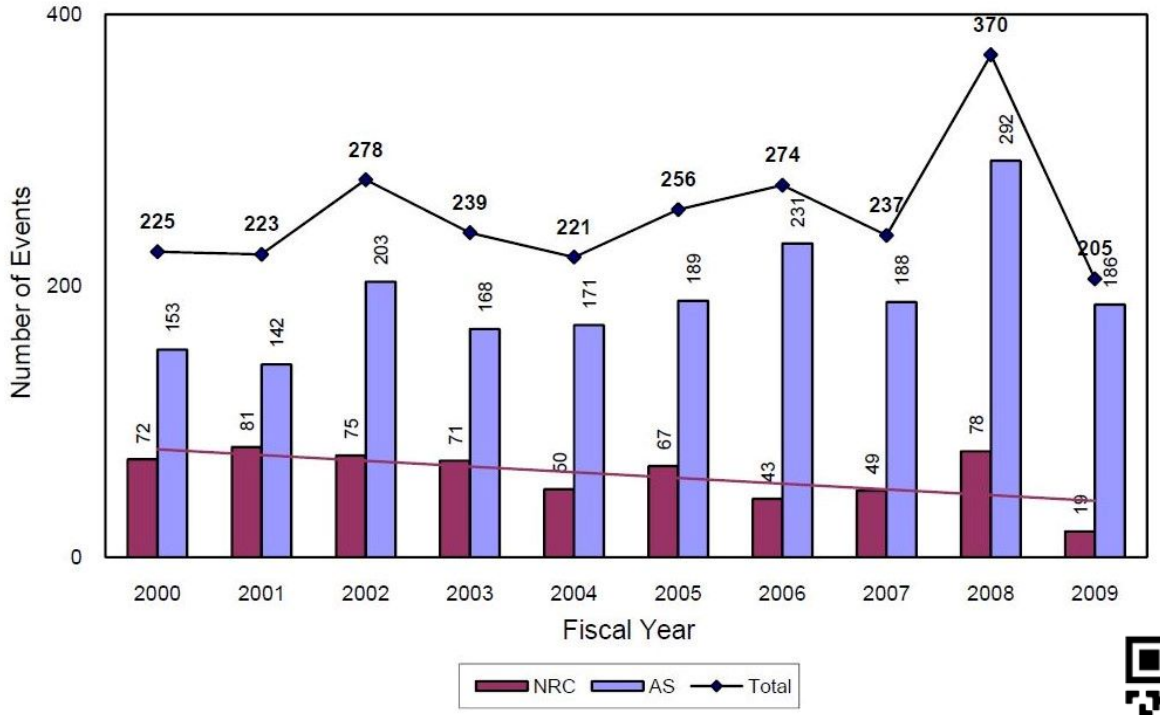
10 CFR 30.35 requires a fixed dollar amount of financial assurance or a decommissioning funding plan for possession of byproduct material with a half-life greater than 120d and at activity levels above thresholds

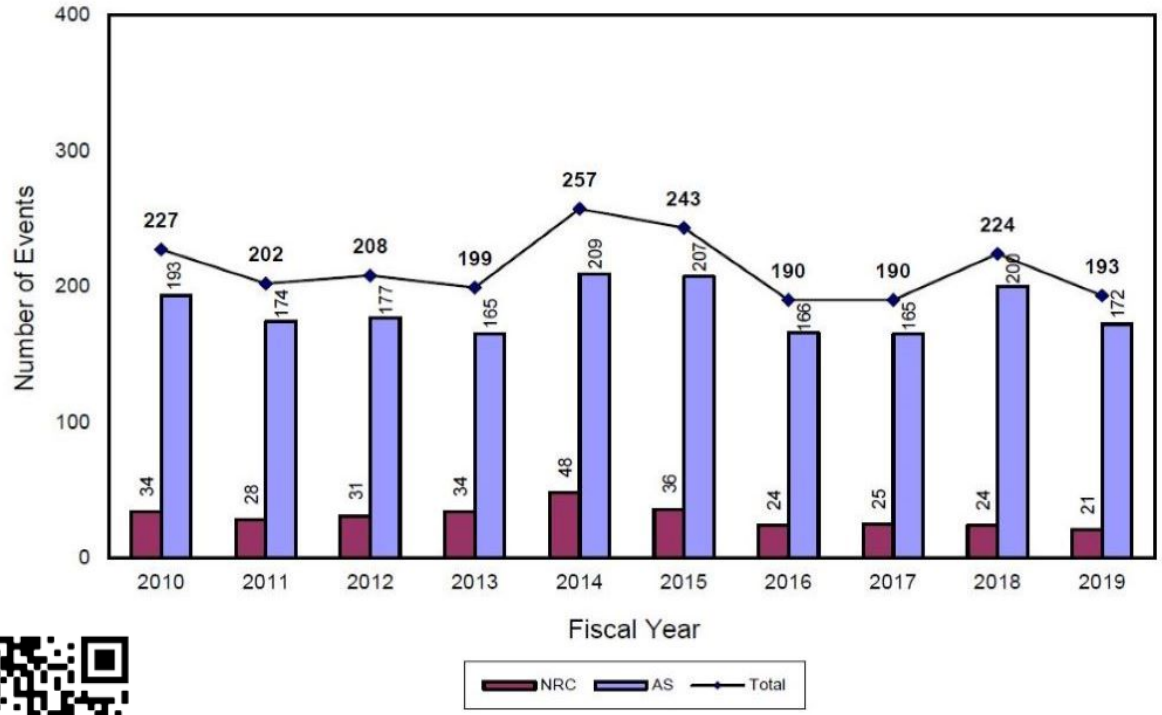
Rulemaking proposals (2):

1. establish financial assurance requirements for category 1 and category 2 disposition
2. disposal of GTCC/TRU waste in other-than geologic waste facility

6. Operating experience

Figures from 2009 and 2019 Nuclear Material Events Database annual reports





NMED home page

7. Transportation

The NRC and DOT are co-regulators for the safe and secure transport of radioactive materials. Additional coordination between DHS, NRC, and DOT for security.

NRC-DOT MOU

The roles of the DOT and the NRC in the regulation of the transportation of radioactive materials were described in an MOU signed in 1979. The MOU includes development of safety standards and regulations, package review, inspection and enforcement, reporting of accidents and incidents, and information sharing.

Additional cooperation on radioactive materials transportation security is described in an MOU signed in 2015 by NRC, DOT, and DHS. The MOU establishes a framework to: • leverage mutual interests; • enhance communication; • reduce duplication of effort; • maximize the success of respective homeland security and civil support missions; • promote the standardization of approach and policy

NRC-DOT-DHS MOU

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Final questions?

References

- Presentation to NAS committee January 2020
- Policy Statement of the U.S. Nuclear Regulatory Commission on the Protection of Cesium-137 Chloride Sources https://www.nrc.gov/reading-rm/doc-collections/commission/policy/
- 10 CFR Part 110 Import and Export of Nuclear Equipment and Material https://www.nrc.gov/reading-rm/doc-collections/cfr/part110/
- 10 CFR Part 37 Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material https://www.nrc.gov/reading-rm/doc-collections/cfr/part037/
- Integrated Source Management Portfolio (links to information on NSTS, WBL, and LVS) https://www.nrc.gov/security/byproduct/ismp.html
- Regulations.gov 10 CFR Part 37 rulemaking docket NRC-2008-0120 (includes the regulatory analysis and estimated costs of implementation) https://www.regulations.gov/docket?D=NRC-2008-0120
- Program Review of 10 CFR Part 37 (includes report and summary) https://www.nrc.gov/security/byproduct/10-cfr-part-37-program-review.html
- Category 3 Source Security and Accountability Re-Evaluation (includes Federal Register notice, public meeting announcements and transcripts, and link to Commission paper plus attachments that include cost-benefit analysis and comments) https://www.nrc.gov/security/byproduct/category-3-source-security-accountability-reevaluation.html

References

- SECY-16-0115 Rulemaking Plan on Financial Assurance for Disposition of Category 1 and 2 Byproduct Material Radioactive Sealed Sources https://www.nrc.gov/docs/ML1620/ML16200A223.pdf
- Greater-Than-Class-C and Transuranic Waste: A Proposed Rule by the Nuclear Regulatory Commission. Rulemaking docket NRC-2017-0081 (includes links to the draft regulatory basis, public meeting transcripts, and relevant DOE products) https://www.nrc.gov/waste/llw-disposal/llw-pa/gtcc-transuranic-waste-disposal.html
- 10 CFR 30.35 Financial assurance and recordkeeping for decommissioning https://www.nrc.gov/reading-rm/doc-collections/cfr/part030/part030-0035.html
- Consolidated Guidance About Materials Licenses (NUREG-1556) (each volume contains specific commitments of applicants/licensees for provision of adequate resources) https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1556/
- Nuclear Regulatory Commission's Nuclear Material Events Database (NMED, includes links to annual reports spanning 2007 to current) https://nmed.inl.gov/
- Memorandum of Understanding between DOT and NRC for transport of radioactive materials https://www.nrc.gov/about-nrc/regulatory/enforcement/moudot.pdf
- Memorandum of Understanding between DOT, NRC, and DHS for transport security https://www.nrc.gov/docs/ML1534/ML15344A371.pdf