40 CFR Part 191

Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes

Background

Issued in 1985 pursuant to the Nuclear Waste Policy Act of 1982

Amended in 1993 pursuant to the WIPP Land Withdrawal Act of 1992

Currently applies to the Waste Isolation Pilot Plant (WIPP) and Greater Confinement Disposal facility (Nevada Test Site)

Contents of 40 CFR Part 191

Subpart A – Management and Storage Standards

- Applicable to NRC-regulated facilities and DOE-operated disposal facilities not regulated by NRC

Subpart B – Disposal Standards

- Containment requirements
- Individual-protection standard
- Assurance requirements

Subpart C – Ground-Water Protection Standards

Subparts B and C apply to any disposal facility

Standards for Management and Storage

Annual dose equivalent to any member of the public outside the facility cannot exceed:

- For NRC-regulated facilities: 25 millirem (mrem) to the whole body, 75 mrem to the thyroid, and 25 mrem to any other critical organ
- For DOE-operated facilities not regulated by NRC: 25 mrem to the whole body and 75 mrem to any critical organ
  - Alternate standards may be approved for facilities not regulated by NRC
- To be demonstrated with reasonable assurance

Standards for Disposal (1 of 3)

Limits on cumulative releases of specified radionuclides to the accessible environment for 10,000 years after disposal

- Must calculate probability of exceeding limits
- Based on probabilistic analysis
- To be demonstrated with reasonable expectation
  - Recognizes significant uncertainties in the level of proof that can be achieved for long-term performance projections

"Accessible environment" is area outside "controlled area," where standards do not apply

- No more than 100 km^2 in area and 5 km in any direction

Standards for Disposal (2 of 3)

Annual committed effective dose to any member of the public in the accessible environment cannot exceed 15 mrem

- Applies for 10,000 years after disposal
- All exposure pathways considered
- Undisturbed performance of the disposal system
- To be demonstrated with reasonable expectation
- Alternate standards may be approved

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Standards for Disposal (3 of 3)

Assurance requirements provide confidence in the long-term compliance with standards: