

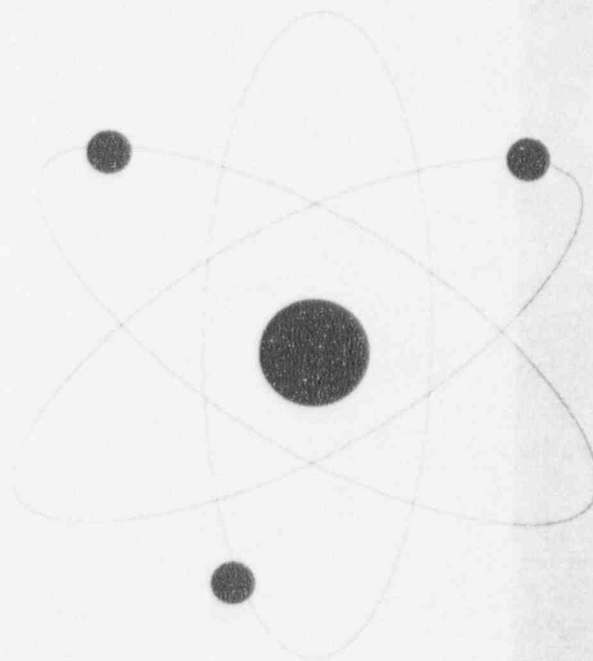
Licensing of Independent Spent Fuel Storage Installations

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THE MISSION OF THE NRC

- TO REGULATE THE CIVILIAN USES OF NUCLEAR MATERIAL
- TO PROTECT THE PUBLIC HEALTH AND SAFETY, THE ENVIRONMENT, AND NATIONAL SECURITY



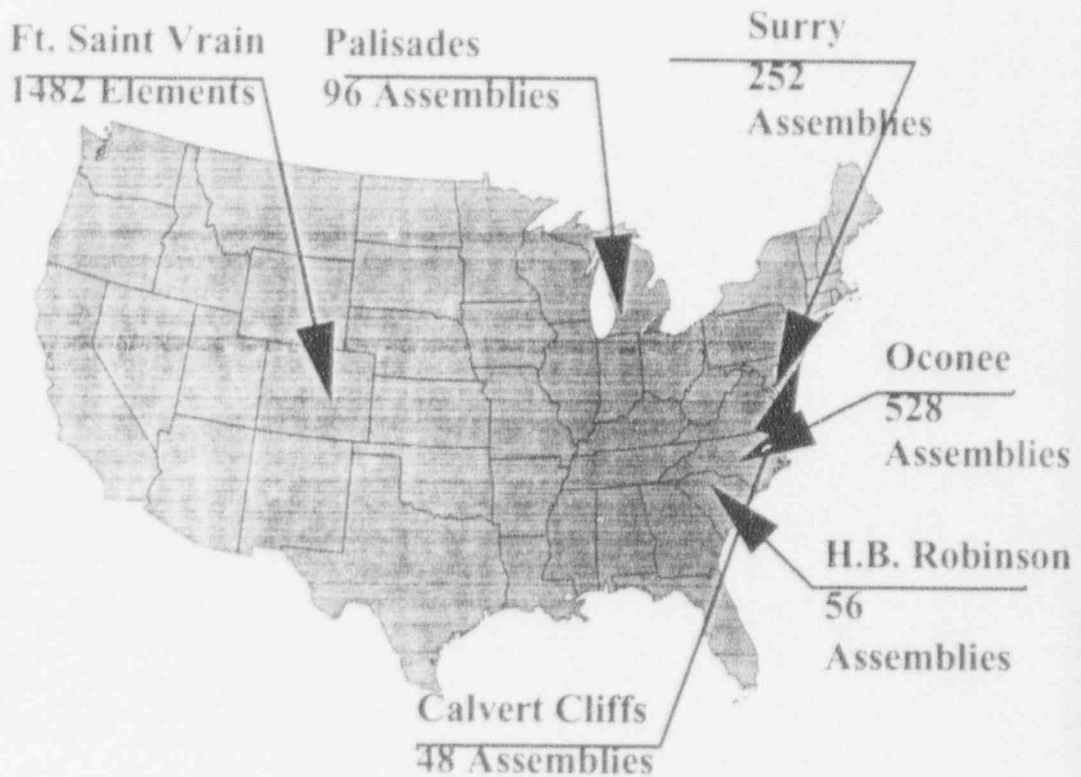
THE NRC MISSION

(Continued)

- LICENSING AND REGULATING THE CIVILIAN USES OF NUCLEAR MATERIAL IN INDUSTRY, MEDICINE AND RESEARCH

- LICENSING AND REGULATING NUCLEAR POWER PLANTS

Spent Fuel in Dry Storage



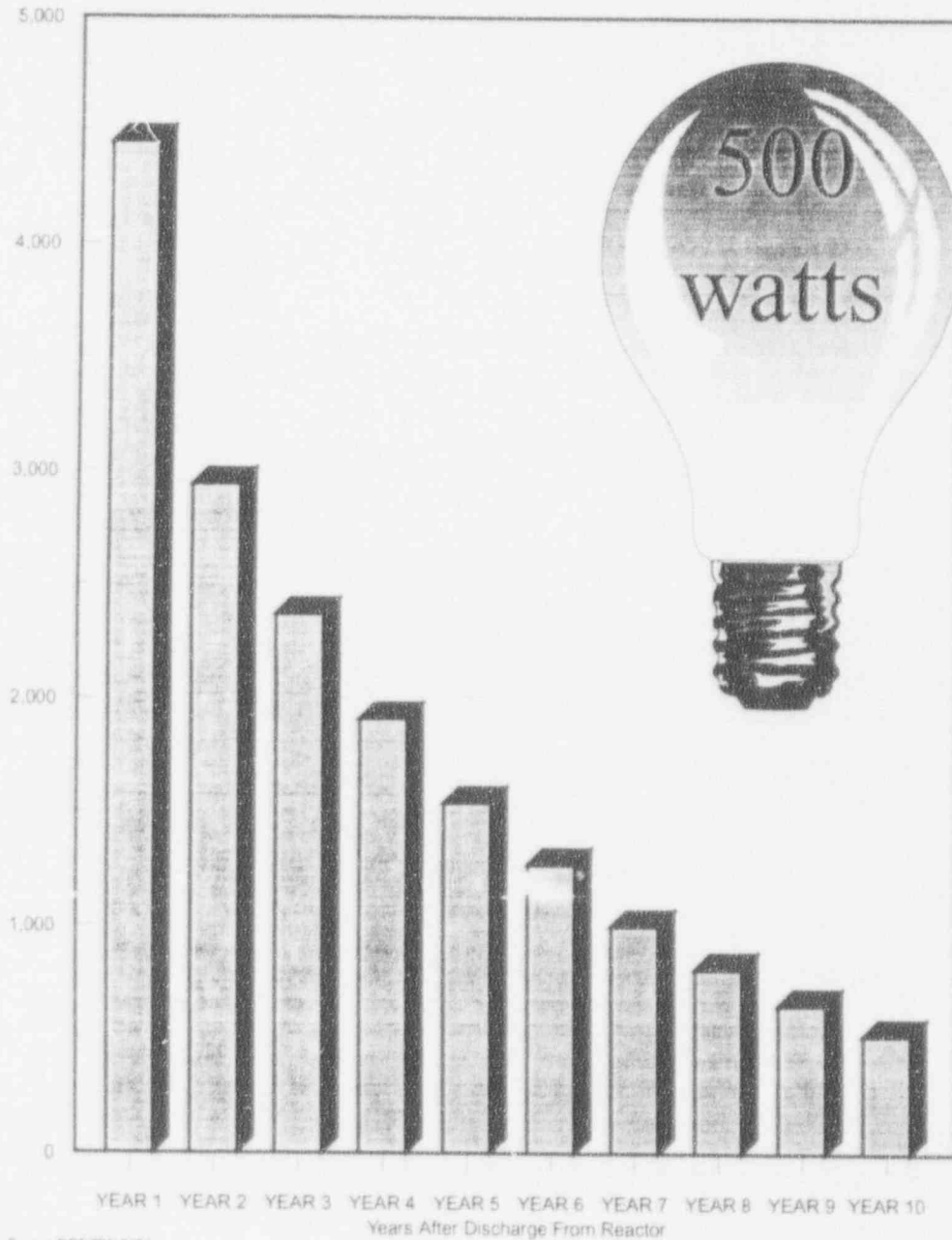
10 CFR Part 72

Regulations

- Technical Requirements
- Siting Criteria
- Design Criteria
- Quality Assurance
- Emergency Planning
- Training
- Physical Protection
- Licensing Methods
 - Site Specific
 - General

HEAT GENERATED BY SPENT FUEL

Heat Generation Rate (WATTS/ASSEMBLY)

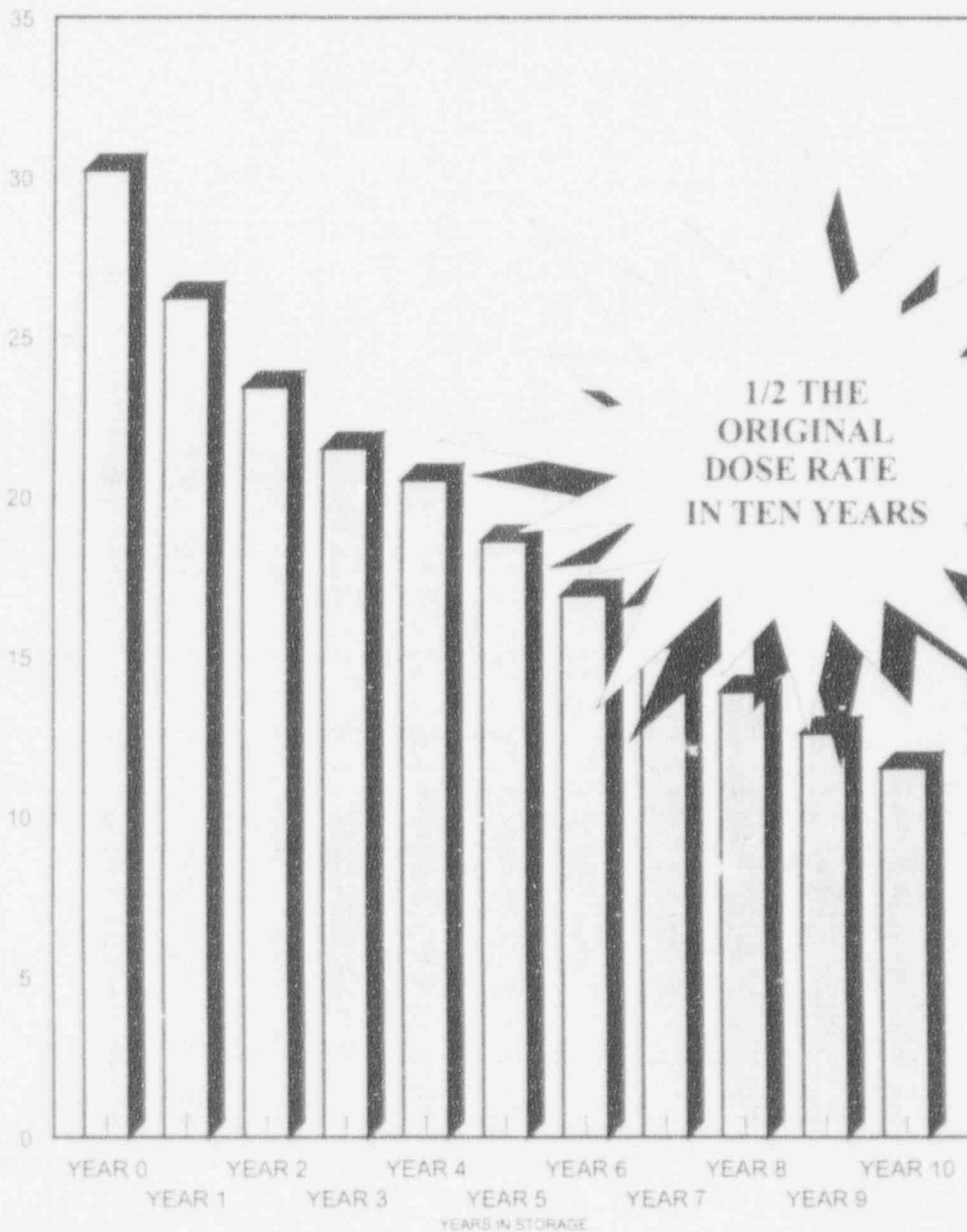


Source DOE/RW-0184

RADIATION AT THE SURFACE OF A DRY STORAGE CASK

FUEL COOLED FIVE YEARS IN A REACTORS POOL

(mrem/h)



SOURCE: CASTOR V21 TOPICAL

Design Criteria

- General Objective
 - Safe Confinement of the Spent Fuel
 - Prevent Degradation of the Fuel Cladding
 - Compatibility with Transportation when possible

The Design Basis for our Regulations

- Prevent Degradation of the Cladding
- Insuring that the fuel is retrievable
 - Cladding is considered the first line of defense protecting the public
 - Prevent any normal or accident loading that would damage the fuel
 - Limit damage to the cladding
 - Limit the highest temperatures that the cladding will see during a twenty year storage period

Design Criteria

■ Natural Events

- Earth Quakes
- High Winds /
Tornadoes
- Wind Driven
Missiles
- Floods
- Lightning

■ Accidents

- Explosions
- Fires
- Drops /
Tipovers

Site Specific Licensing

- Direct Review of an Application
- Approval of a Storage System's Topical Safety Analysis Report
 - or
- Combination of the Above

Site Specific Licensing

- Pre Licensing Consultation
- Application
- Notice of Receipt
 - Opportunity for Hearing
- Hearing if Requested
- Environmental Review
 - Publish with FONSI
- Safety Review
- Hearing Board Decision
- Commission Approval

Site Specific Licensing

- Review Safety Analysis Report
 - Q&A's to resolve issues
 - Supplementary Information
 - Confirmatory Calculations
- Review Quality Assurance Program

Cask Safety Review

- Design criteria
- Thermal Evaluation
- Shielding
- Structural
- Decommissioning
- Confinement Barriers
- Criticality
- Testing & Maintenance

Site Evaluation Factors

- The MINIMUM distance from ISFSI to Controlled Area Boundary is 100 Meters
- During Normal Operations
 - Annual Dose Equivalent to any Real Individual, located beyond the controlled area boundary must not exceed 25 mrem to the Whole Body or 75 mrem to the Thyroid
- Under Accident Conditions
 - Dose to an Individual located at the Controlled Area Boundary must not exceed 5 rem to the Whole Body or any organ.

Site Evaluation Factors

Miscellaneous Factors

- Snow & ice loadings.
- Tornado and wind loading.
- Air plane crash (NUREG 0800)
- Sabotage

Licensing Technical Specifications

- Conditions for use of cask
 - Requires written operating procedures
 - ISFSI QA in accordance with Appendix B, 10 CFR Part 50
- Preoperational Conditions
 - ISFSI training and certification program
 - Dry run training exercise

Licensing Technical Specifications

- Functional and Operating Limits
 - Surveillance / maintenance requirements
 - Inert gas pressure
 - Leak tightness
 - Surface dose rates and contamination limits
- Lift height restrictions
- Type of fuel
 - Cooling time
 - Burnup / heatloads
 - Initial Enrichment