

# US NRC Research Reactor Decommissioning Requirements

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# Research Reactor Decommissioning Requirements



**From Title 10 of the Code of Federal Regulations:**

**1) 10 CFR 50.75(f)**

- **Preliminary Decommissioning Plan**
  - **Two years prior to end of operation**
  - **Decommissioning Cost estimate and funding assurance**
  - **Updated assessment of Decommissioning Factors**
    - **Decommissioning Alternative (Strategy)**
    - **Necessary Technical actions for safe decommissioning**
    - **Waste disposal facilities**
    - **Residual radioactivity criteria**
    - **Site Specific factors**

# Research Reactor Decommissioning Requirements



**From Title 10 of the Code of Federal Regulations:**

## **2) 10 CFR 50.82**

- **Licensee must apply for license termination within 2 years**
- **Application must include a proposed Decommissioning Plan (DP)**
- **Detailed DP must be approved prior to start of activities**
- **If decommissioning is not immediate, a separate decommissioning fund must be established**

# Required (Final) Decommissioning Plan Contents

- ✓ **Selected Decommissioning Alternative (Strategy)**
  - **Delays are to be minimal**
  - **SAFSTOR rare for RTRs**
  - **Description of activities involved**
- ✓ **Description of controls and procedures**
  - **For occupational and public health and safety**
- ✓ **Description of planned final radiation survey**
- ✓ **Updated cost estimate, and**
  - **Evaluation of adequacy of funds**
- ✓ **Description of Technical Specifications, including**
  - **Quality Assurance plans, and**
  - **Physical Security plans**

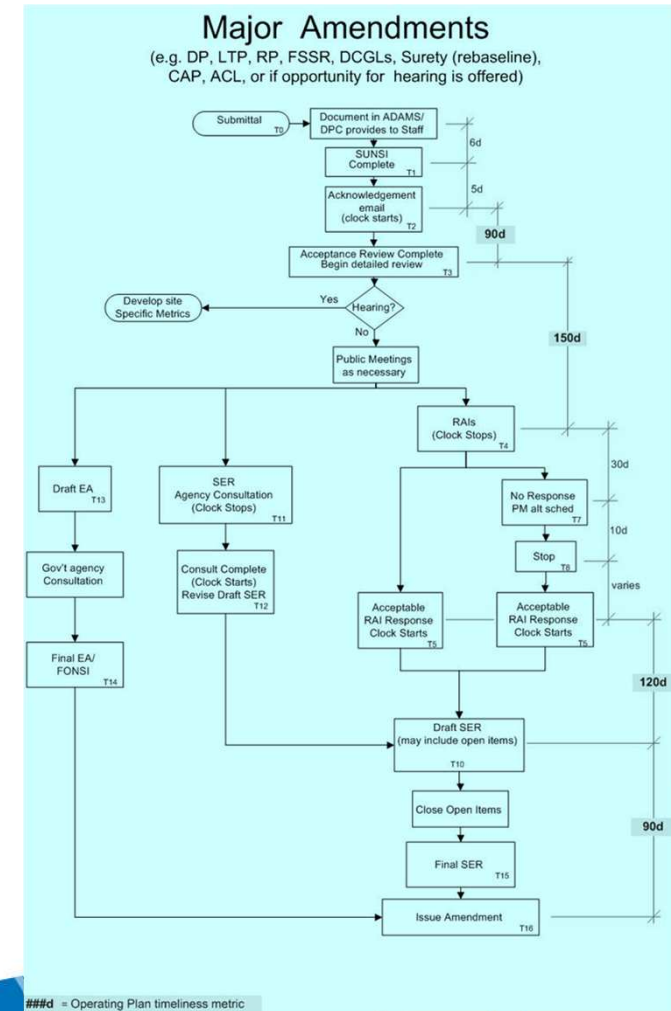
# Decommissioning Plan Review

- **Regulatory Guidance**
  - **NUREG-1537, Part 2, Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors, *Standard Review Plan and Acceptance Criteria*, February 1996, Chapter 17**
  
- **Areas of Review**
  - **Management and Organizational Structure**
  - **Methods, Techniques, and Equipment for radiological assessment**
  - **Methods, Techniques, and Equipment for removing contaminated material**
  - **Methods for Controlling radioactivity for acceptable disposal**
  - **Methods for assessing and limiting personnel exposures to radiation**
    - **i.e. monitoring & protecting from undue external exposure and internal doses from ingestion, inhalation or skin contact**
  - **Methods, Techniques, and Equipment for accurately measuring low exposure rates and concentrations of residual radioactivity**
  - **Approach and Format for reporting radiological information of final radiation survey**

# Decommissioning Plan Review, 2

## Safety Evaluation Report (Safety Case)

- **DP must accomplish the following:**
  - **Show that the licensee will comply with technical & regulatory requirements**
  - **Describe methods to properly dispose of radioactivity**
  - **Demonstrate that the licensee has resources needed to complete decommissioning**



# NRC DP Areas of Review

- **Summary**
- **Activities**
  - **Alternative (Strategy)**
  - **Facility Radiological Status**
    - **Operating History**
    - **Current Radiological Status**
    - **Release Criteria**
  - **Tasks & Schedule**
  - **Organization and Responsibilities**
  - **Training**
  - **Contractor Assistance**
  - **Documents and Guides**
- **Protection of Health & Safety of Workers and Public**
  - **Radiation Protection (ALARA-dose optimization)**
  - **Radioactive Waste Management (including fuel)**



# NRC DP Areas of Review, 2

- **Radiological Accident Analyses**
- **Proposed Final Radiation Survey Plan**
- **Technical Specifications**
- **Physical Security Plan**
- **Emergency Plan**
- **Environmental Report**
- **Changes to the Decommissioning Plan**
  - **Procedures indicating when NRC approval will be required.**
  - **Typically any change that *could* result in leaving more residual radioactivity**
  - **See *NUREG-1700 Appendix 2*, for an example**
- **References**