# IAEA Safety Standards for Fuel Cycle Facilities

**March 2010**

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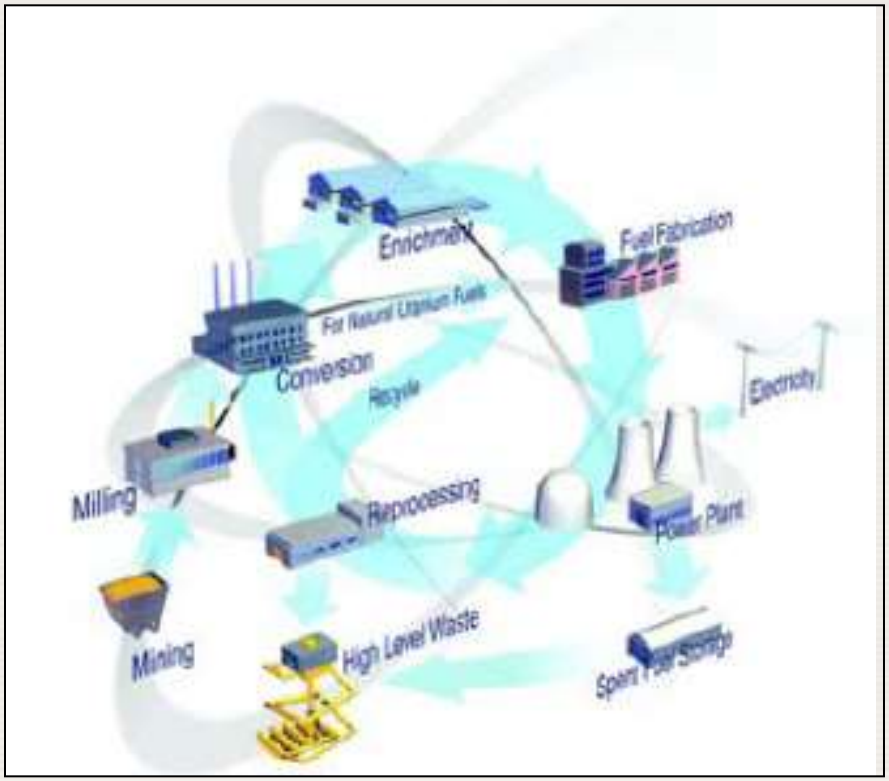
IAEA
International Atomic Energy Agency

# Nuclear Fuel Cycle Facilities




- **Front End:**
  - Mining & Milling
  - Conversion
  - Enrichment
  - Fuel Fabrication
- **Back End:**
  - Spent Fuel Storage
  - Reprocessing
  - Waste Management

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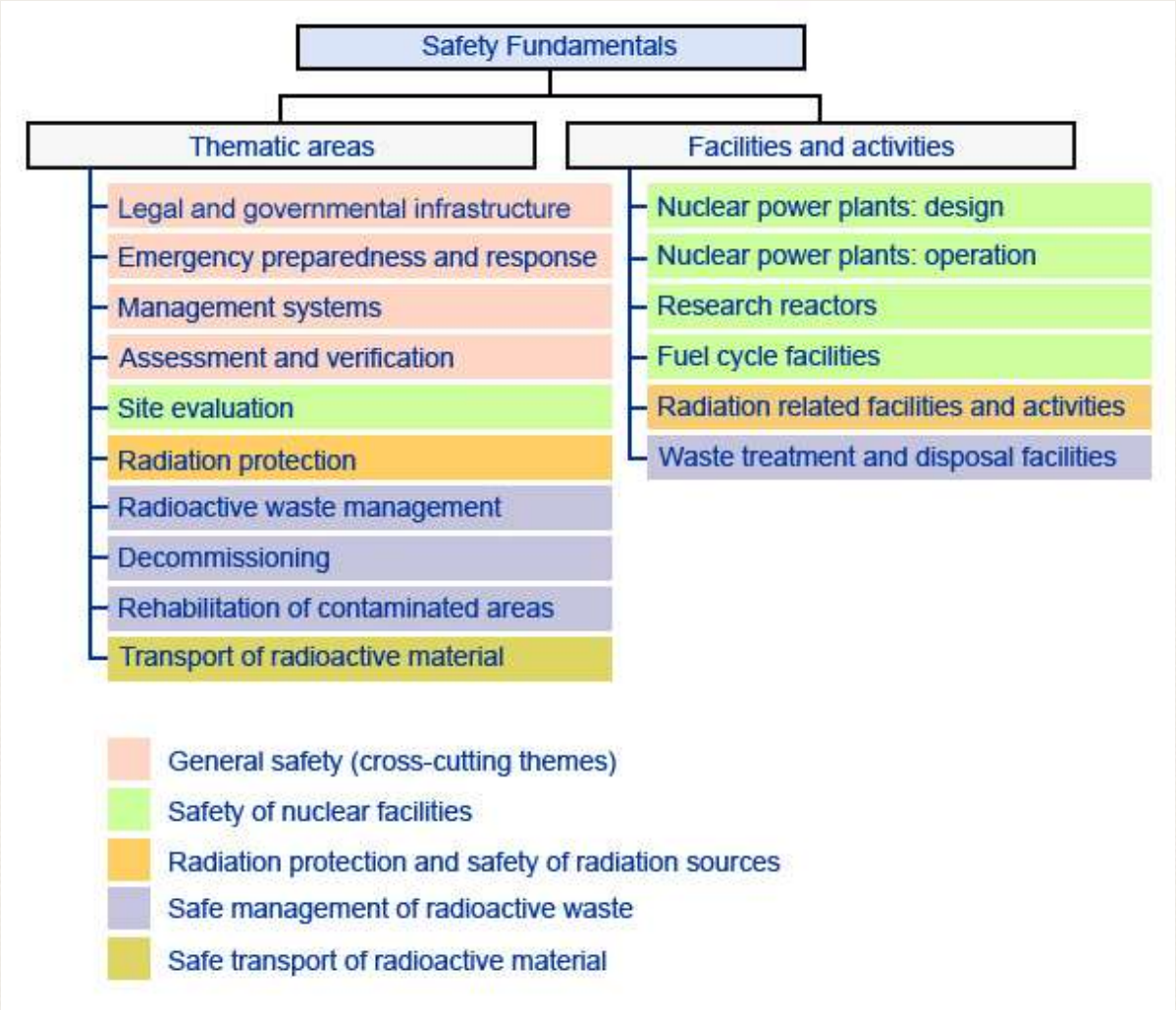
# Fuel Cycle Facility Safety Standards

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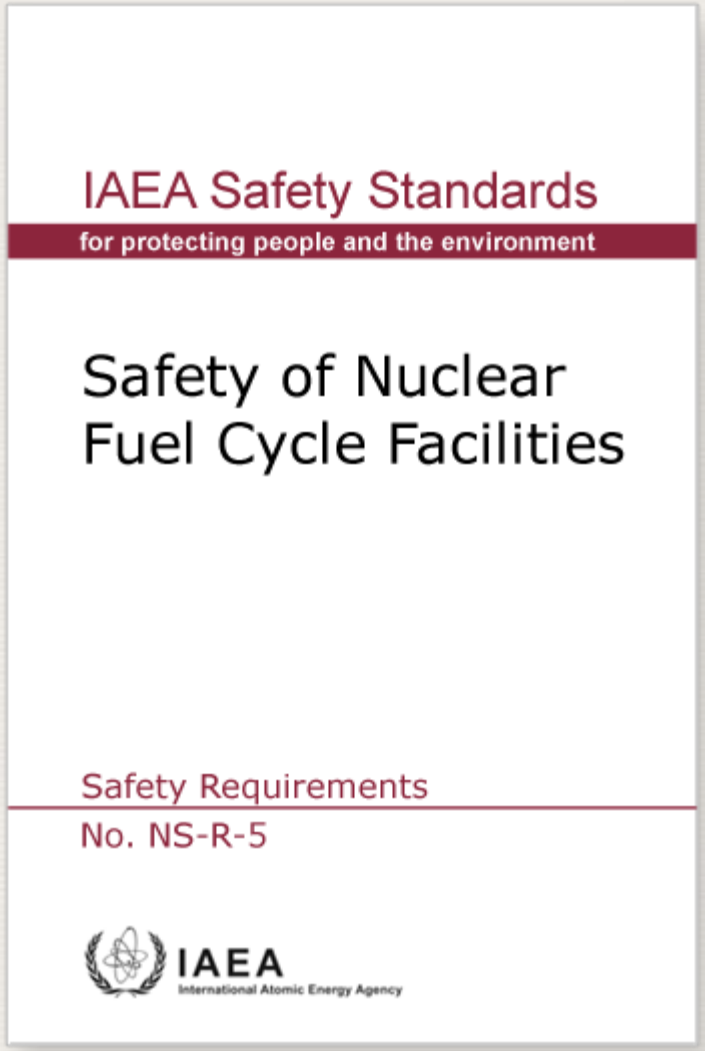
# Fuel Cycle Facility Safety Standards

- NS-R-5 Scope:
  - **Front End:**
    - Conversion & Enrichment
    - Fuel Fabrication
  - **Back End:**
    - Spent Fuel Storage
    - Reprocessing
  - **Other:**
    - R&D Facilities
    - Criticality

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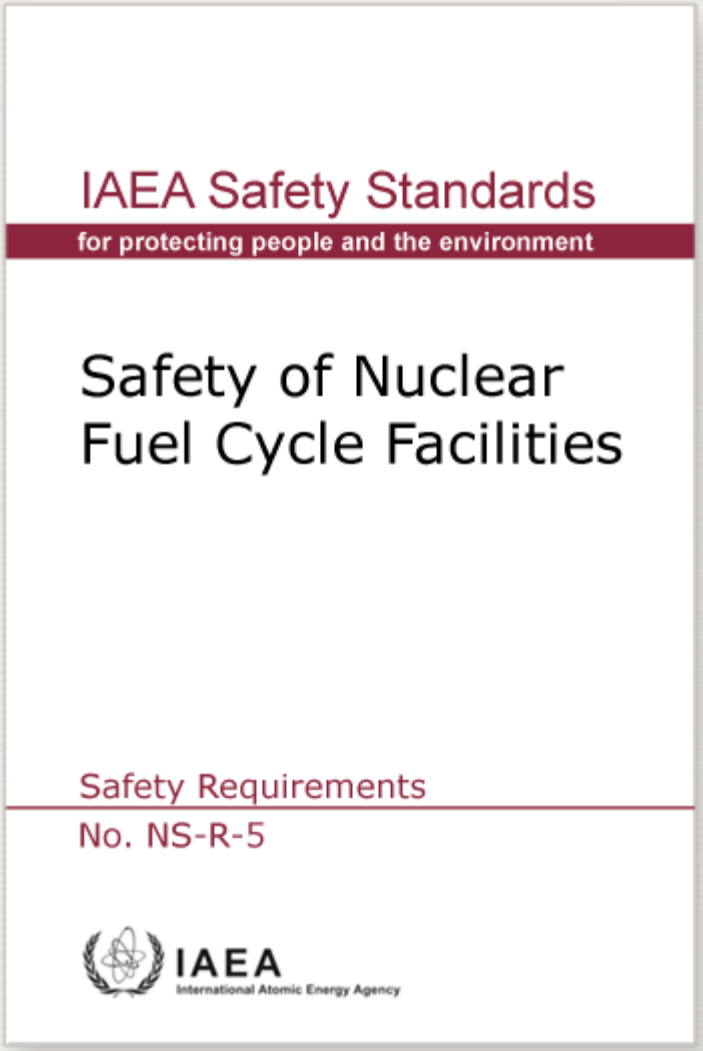
# Fuel Cycle Facility Safety Standards

- NS-R-5 Structure:
  - Safety Management System
  - Siting
  - Design
  - Construction
  - Commissioning
  - Operation
  - Decommissioning

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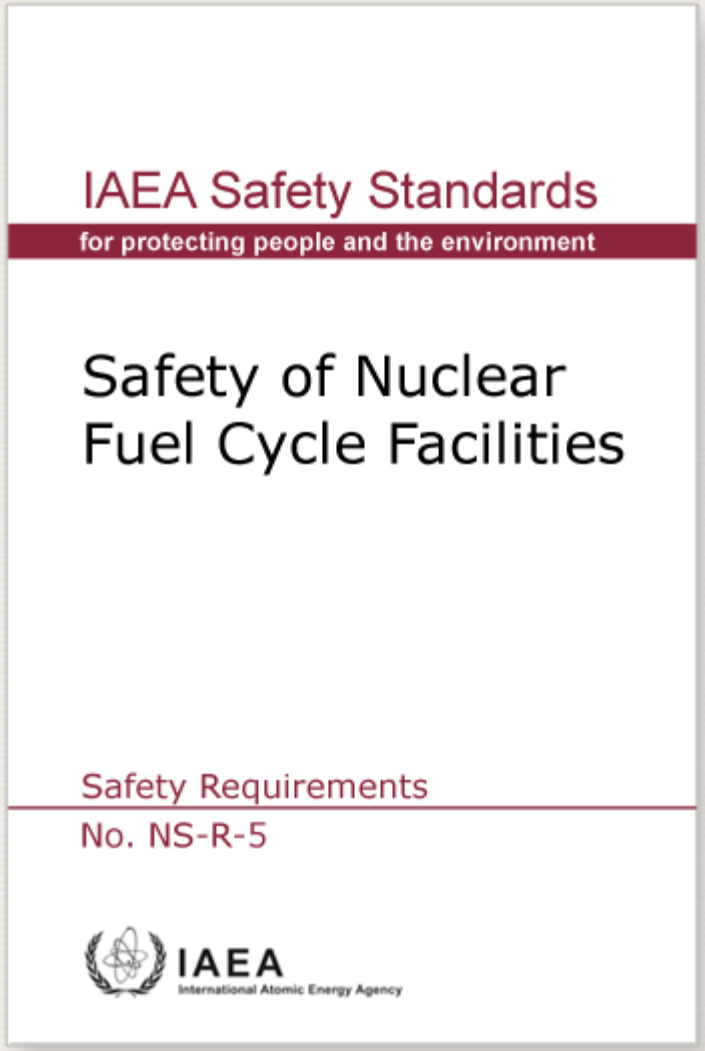
# Fuel Cycle Facility Safety Standards

- NS-R-5 General Safety Requirements:
  - Defence in Depth
  - Demonstration of Safety
  - Safety Analysis
  - Safety Management System
  - Safety Culture
  - Emergency preparedness
- NS-R-5 Specific Safety Requirements:
  - Conversion & Enrichment
  - Uranium Fuel Fabrication
  - MOX Fuel Fabrication

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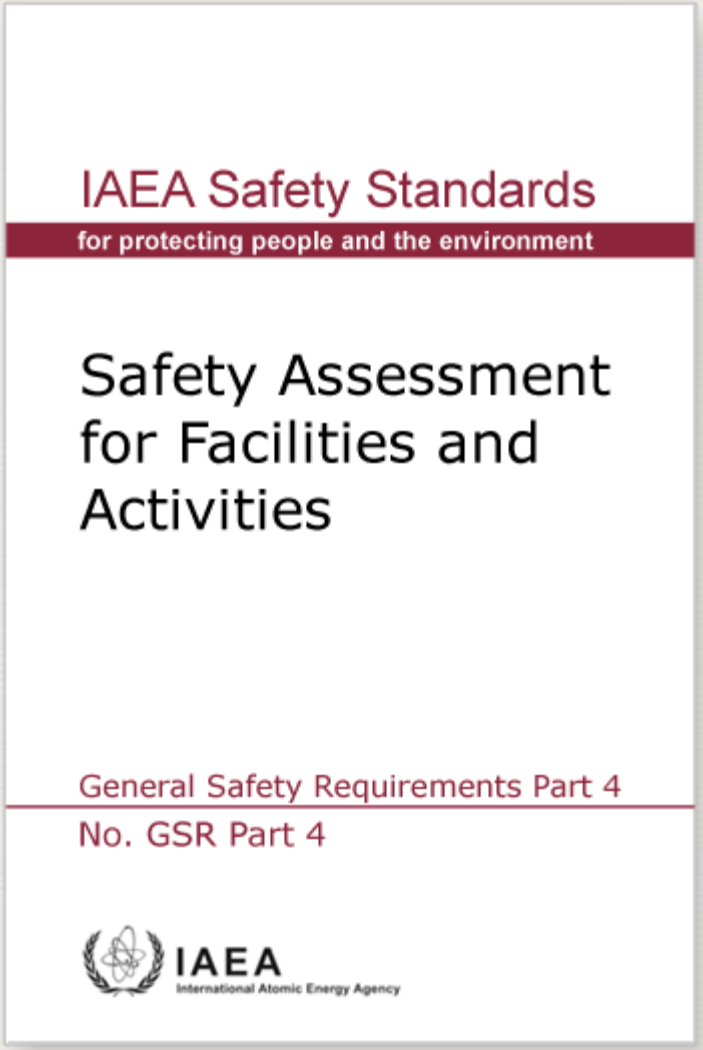
# Fuel Cycle Facility Safety Standards

Graded Approach:

- **Magnitude of "possible radiation risks"**
- **Maturity of Facility/Activity**
  - Proven design and practices
  - Existence of operational experience of similar facilities or activities
- **Complexity**

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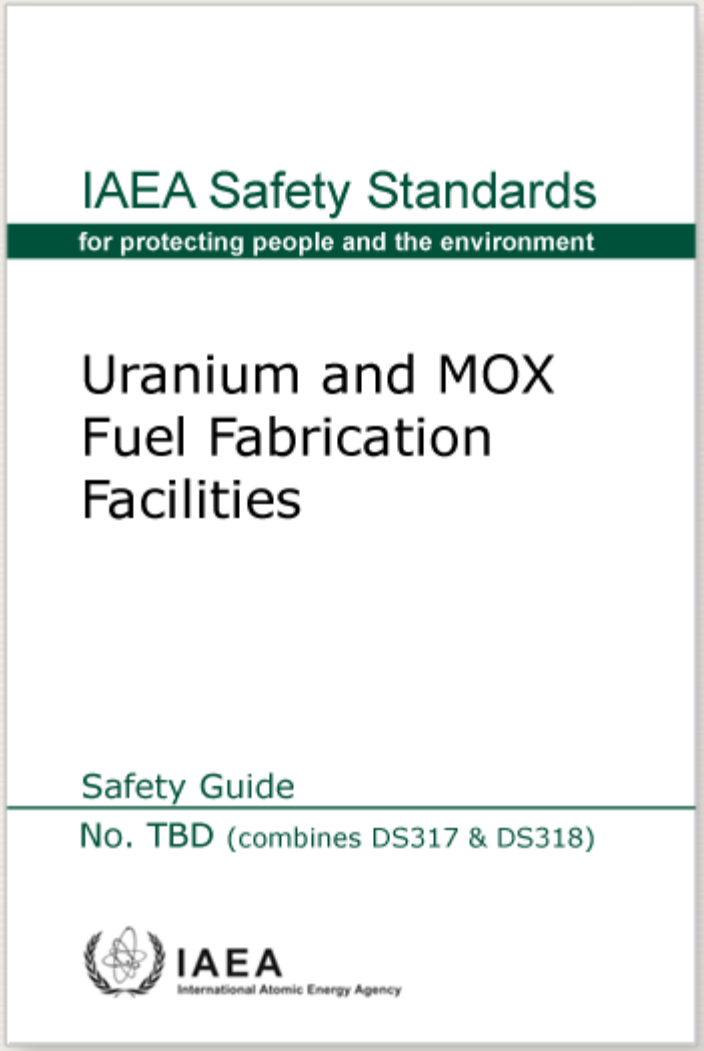
# Fuel Cycle Facility Safety Standards

## FCF Safety Guides:

- Published in 2010:
  - **SSG-6** Safety of Uranium Fuel Fabrication
  - **SSG-7** Safety of Uranium and Plutonium Mixed Oxide Fuel Fabrication Facilities
  - **SSG-5** Safety of Conversion Facilities and Uranium Enrichment Facilities
- Published in 2012:
  - **SSG-15** Storage of Spent Nuclear Fuel
- In Development:
  - **DS360** Reprocessing
  - **DS381** Research & Development Facilities
  - **DS407** Criticality Safety

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# Concluding Remarks

The set of Safety Standards for Fuel Cycle Facilities will be:

- **A useful support for Member States to ensure the highest level of Safety,**
- **The basis for the *IAEA Safety Review Service* (Safety Evaluation During Operation- SEDO)**

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