



International Atomic Energy Agency

**Safety Standards and Publications Useful
in Applying the Code of Conduct on the
Safety of Research Reactors**

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Structure of the Code of Conduct

- **Scope**
- **Objective**
- **Application of the Guidance**
- **Role of the State**
- **Role of the Regulatory Body**
- **Role of the Operating Organization**
- **Role of the IAEA**

Application of the Guidance in the Code

States should:

- **Apply the Code through national safety regulations;**
- **Make appropriate use of IAEA Safety Standards;**
- **Apply a graded approach commensurate with the hazard potential;**
- **Communicate any difficulties faced and assistance required in application of the Code to the IAEA.**

Application of the Guidance in the Code

- **“Application of this Code is accomplished through national safety regulations pertaining to all stages in the life of research reactors. In doing so, States are encouraged to make appropriate use of IAEA safety standards relevant to research reactors and relating to the legal and governmental infrastructure for nuclear, radiation, radioactive waste and transport safety.”**

IAEA Safety Standards and Publications

- **Safety Standards Series**
- **Safety Series – Superseded by SSS**
- **Safety Report Series**
- **INSAG Reports**
- **Technical Report Series**
- **IAEA Technical Documents (TECDOCs)**
- **IAEA Services Series**
- **Accident Response**

Basic Documents

- **DS298: Fundamental Safety Principles.**
- **SS No. 110: The Safety of Nuclear Installations (1993).**
- **INSAG-10: Defence in Depth in Nuclear Safety (1996).**
- **INSAG-12: Basic Safety Principles for Nuclear Power Plants (75-INSAG-3, Rev 1) (1999).**
- **NS-R-4: Safety of Research Reactors (2005).**

Legal and Governmental Infrastructure

- **GS-R-1: Legal and Governmental Infrastructure for Nuclear, Radiation, Radioactive Waste, and Transport Safety (2000).**

Regulatory Process

- **GS-G-1.1: Organization and Staffing of the Regulatory Body for Nuclear Facilities (2002).**
- **GS-G-1.2: Review and Assessment of Nuclear Facilities by the Regulatory Body (2002).**
- **GS-G-1.3: Regulatory Inspection of Nuclear Facilities and Enforcement by the Regulatory Body (2002).**

Regulatory Process (contd.)

- **GS-G-1.4: Documentation for Use in Regulating Nuclear Facilities (2002).**
- **INSAG-17: Independence in Regulatory Decision Making (2003).**
- **Safety Report Series 24: Communication Planning by the Regulatory Body (2002).**

Management of Safety

- **GS-R-3: The Management System for Facilities and Activities (2006) – was DS338.**
- **GS-G-3.1: Application of the Management System for Facilities and Activities (2006) – (Supersedes SS 50-SG-Q1 through Q7 – was DS339).**
- **DS349: Management Systems for Nuclear Facilities (Supersedes SS 50-SG-Q8 through Q14).**

Management of Safety (cont'd)

- **INSAG-4: Safety Culture (A Report by the International Nuclear Safety Advisory Group) (1991).**
- **Safety Report 11: Developing Safety Culture in Nuclear Activities – Practical Suggestions to Assist Progress (1998).**
- **INSAG-15: Key Practical Issues in Strengthening Safety Culture (2002).**

Safety Assessment and Verification

- **SS 35-G1: Safety Assessment of Research Reactors and Preparation of the Safety Analysis Report (1994).**
- **SS 35-G2: Safety in the Utilization and Modification of Research Reactors (1994).**
- **TECDOC-792: Management of Research Reactor Aging (1995).**
- **TECDOC-1263: Application of Non-destructive Testing and In-service Inspection to Research Reactors (2001).**

Financial and Human Resources

- **TECDOC-1254: Training the Staff of the Regulatory Body for Nuclear Facilities: A Competency Framework (2001).**
- **DS325: The Operating Organization and the Recruitment, Training and Qualification of Personnel for Research Reactors.**

Quality Assurance

- **50-C/SG-Q: Quality Assurance for Safety in Nuclear Power Plants and other Nuclear Installations: Code and Safety Guides Q1-Q14 (1996).**
- **See also the documents cited under 'Management of Safety.'**

Radiation Protection

- **SS No. 115: International Basic Safety Standards for Protection Against Ionizing Radiation and for the Safety of Radiation Sources (1996).**
- **DS340: Radiation Protection and Radioactive Waste Management in the Design and Operation of Research Reactors.**

Emergency Preparedness

- **GS-R-2: Preparedness and Response for a Nuclear or Radiological Emergency (2002).**
- **GS-G-2.1: Arrangements for Preparedness for Nuclear or Radiological Emergencies (2006).**

Site Evaluation

- **NS-R-3 Site Evaluation for Nuclear Installations (2003).**
- **There are six Safety Guides on various aspects of site evaluation for nuclear power plants:**
 - **Evaluation of seismic hazard;**
 - **Geotechnical aspects of site evaluation and foundations;**
 - **Meteorological events and flood hazards;**
 - **External human-induced events;**
 - **Dispersal of radioactive materials and population considerations.**

Design, Construction, Commissioning

- **NS-R-4: Safety of Research Reactors (2005).**
- **DS340: Radiation Protection and Waste Management in the Design and Operation of Research Reactors.**
- **NS-G-4.1: Commissioning of Research Reactors (2006).**

Operation, Maintenance, Modification and Utilization

- **NS-R-4: Safety of Research Reactors (2005).**
- **DS325: The Operating Organization and the Recruitment, Training and Qualification of Personnel for Research Reactors.**
- **DS261: Operating Procedures and Operational Limits and Conditions for Research Reactors.**
- **NS-G-4.2: Maintenance, Periodic Testing and Inspection of Research Reactors.**
- **DS350: Core Management and Fuel Handling for Research Reactors.**

Operation, Maintenance, Modification and Utilization (cont'd)

- **DS340: Radiation Protection and Waste Management in the Design and Operation of Research Reactors.**
- **TECDOC-792: Management of Research Reactor Aging (1995).**
- **TECDOC-1263: Application of Non-destructive Testing and In-service Inspection to Research Reactors (2001).**

Extended Shutdown

- **Safety Report 36: Safety Considerations in the Transition from Operation to Decommissioning in Nuclear Facilities (2004).**
- **TECDOC-1387: Safety Considerations for Research Reactors in Extended Shutdown (2004).**

Decommissioning

- **WS-R-2: Predisposal Management of Radioactive Waste, incl. Decommissioning (2000).**
- **WS-G-2.1: Decommissioning of Nuclear Power Plants and Research Reactors (1999).**

Some Useful IAEA Web Addresses

- **Convention on Nuclear Safety:**
 - www-ns.iaea.org/conventions/nuclear-safety.htm
- **The Code of Conduct on the Safety of Research Reactors:**
 - www-ns.iaea.org/downloads/ni/code-rr/code_conduct_March04.pdf
- **Safety Standards:**
 - www-ns.iaea.org/standards/

Some Useful IAEA Web Addresses

- **Publications:**
 - www-pub.iaea.org/publications/index.html
- **Nuclear Installation Safety publications:**
 - www-ns.iaea.org/publications/
- **Research Reactor Safety home page:**
 - www-ns.iaea.org/tech-areas/research-reactor-safety/