

Working to Protect People,
Society and the Environment

Safety Assessment



Nuclear Safety and Security Programme

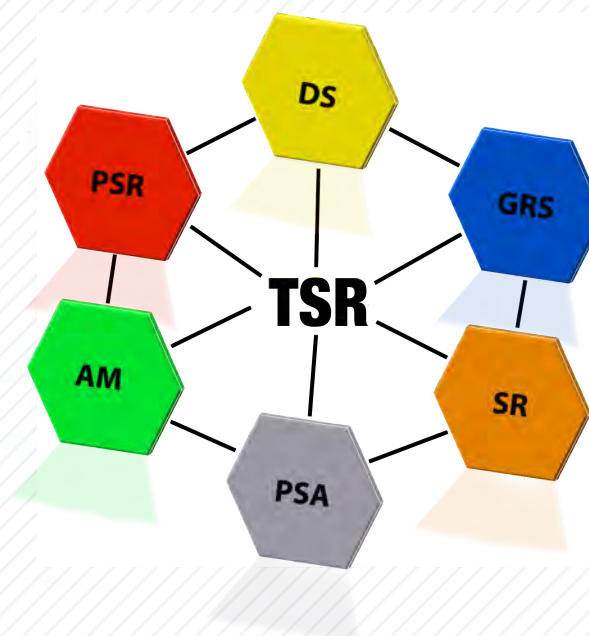


Safety Assessment

IMPROVING SAFETY ASSESSMENT

The IAEA's safety assessment activities focus on the development, promotion and application of an integrated approach to safety assessment and evaluation by:

- **Developing IAEA safety standards** for a broad range of plant conditions and nuclear power systems to ensure an integrated focus on safety performance;
- **Applying safety assessment expertise** through Technical Safety Review (TSR) services that are conducted in support of Member States during the following life cycle stages: conceptual design, various pre-licensing as well as licensing phases, nuclear power plants construction and operation including periodic safety reviews and life time extension. Additionally, TSR can address specific technical or regulatory aspects, such as plans for plant modifications or safety regulations developed consistent with IAEA design safety and safety assessment requirements;
- **Sharing safety assessment expertise** by assisting Member States in increasing their capacity and competences to achieve a high level of safety through an integrated and consistent approach in the application of the IAEA safety standards;
- **Connecting safety assessment experts** through the Global Safety Assessment Network (GSAN) links experts worldwide and facilitates focused collaboration on safety assessment capacity building. GSAN harmonizes and supports global nuclear safety assessment activities, especially for those countries expanding and developing nuclear programmes worldwide.

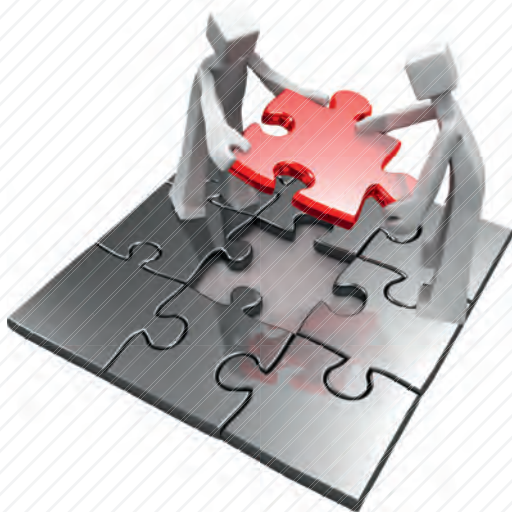


DEVELOPING IAEA SAFETY STANDARDS

The IAEA is authorized by its statute to establish and provide for the application of its safety standards. The IAEA safety standards comprise hierarchically structured safety fundamentals, requirements and guides with the aim of protecting people and the environment from the harmful effects of ionizing radiation through their application.

Safety standards are internationally developed by means of an open, transparent and consensus-driven process that integrates safety knowledge and best practice from the Member States to achieve a high level of safety. The IAEA Safety standards are periodically reviewed and revised as needed.

One of the most important activities related to safety assessment is the development of safety standards and related technical documents for deterministic and probabilistic safety assessment and nuclear power plant design.



APPLYING SAFETY ASSESSMENT EXPERTISE Through PEER REVIEW SERVICES

Qb' ekf ^i Safety Review (QSR)

Upon Member State request, the IAEA provides QSR services to address the needs of Member States at most stages of development and deployment of nuclear power programmes. This review is based on the IAEA safety standards and incorporates services dedicated to the following subject areas:

- Design Safety (DS)
- Generic Reactor Safety (GRS)
- Safety Requirements (SR)
- Probabilistic Safety Assessment (PSA)
- Accident Management (AM)
- Periodic Safety Review (PSR).

QSR services provide a tailored, independent evaluation of the plant design safety and safety assessment documentation to address the specific needs of a requesting Member State.

TSR services encompass the spectrum of safety analyses performed in support of design, licensing and operation. The reviews address deterministic and probabilistic methods as well as risk-informed decision making approaches and makes recommendations for enhancements and improvements to safety.

SHARING SAFETY EXPERTISE Through the SAET Programme Safety Assessment Education and Training (SAET) Programme

The SAET Programme supports Member States in developing the required safety assessment capacity and competences.

The SAET Programme is comprehensive, sustainable, and:

- Provides a consistent set of ready-to-use training modules evaluated by senior experts;
- Ensures content quality and maximum education and training effectiveness;
- Delivers a sustainable means of conducting high quality workshops and seminars;
- Includes multilevel training – from introductory to analyst training.

Developed for a wide range of training needs

The SAET Programme addresses the education and training needs of regulatory authorities, technical support organizations and plant operators from countries developing new or expanding nuclear power programmes seeking to enhance their safety assessment competency.

Based on the IAEA safety standards and international expertise

The SAET Programme is based on the IAEA safety standards used in safety assessment activities.



CONNECTING Through GSAN

Global Safety Assessment Network (GSAN – GSAN.iaea.org)

The IAEA has established the GSAN knowledge network to facilitate focused collaboration on safety assessment capacity building to support global nuclear safety assessment activities, especially for countries expanding and developing nuclear programmes worldwide.

The GSAN framework and platform:

- Supports safety assessment knowledge management and capacity building;
- Shares safety assessment experience;
- Promotes collaboration on safety related projects.

The GSAN hosts the SAET Programme, and collaboration space for work on documents, reviews, etc. GSAN content is publicly available, with the exception of areas dedicated to specific projects.

For further information:

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See: <http://www.GSAN.iaea.org>

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