

# NUCLEAR SAFETY THROUGH INTERNATIONAL COOPERATION



The Fukushima Daiichi nuclear accident was the worst at a nuclear facility since the Chernobyl accident in 1986. It caused deep public anxiety and damaged confidence in nuclear power. Following this accident, strengthening nuclear safety standards and emergency response has become an imperative at the global level. The IAEA is leading in developing a global approach, and the IAEA Action Plan on Nuclear Safety is providing a comprehensive framework and acting as a significant driving force to identify lessons learned and to implement safety improvements.

Strengthening nuclear safety is addressed through a number of measures proposed in the Action Plan including 12 main actions focusing on safety assessments in the light of the accident. Significant progress has been made in assessing safety vulnerabilities of nuclear power plants, strengthening the IAEA's peer review services, improvements in emergency preparedness and response capabilities, strengthening and maintaining capacity building, as well as widening the scope and enhancing communication and information sharing with Member States, international organizations and the public. Progress has also been made in reviewing the IAEA's safety standards, which continue to be widely applied by regulators, operators and the nuclear industry in general, with increased attention and focus on accident prevention, in particular severe accidents, and emergency preparedness and response.

## Strengthening the Global Nuclear Safety Framework

The IAEA's safety standards reflect an international consensus on what constitutes a high level of safety for protecting people and the environment from ionizing radiation. To assist Member States in implementing these standards and enabling valuable experience and insights to be shared, the IAEA provides a variety of advisory services and peer review missions on design, siting and engineering, operational, radiation, transport safety, as well as radiation protection and the safe management of radioactive waste.

The IAEA's safety standards represent a harmonized and globally accepted body of

guidance, requirements and standards. To continuously improve these standards, we gather feedback from Member States on their implementation and then incorporate this information into subsequent revisions of the standards; this helps ensure that they continue to meet Member States' needs. The process used for the review and revision of the IAEA's safety standards in the wake of the Fukushima Daiichi nuclear accident is not different in essence. This is another illustration of the continuous efforts to achieve ever higher levels of safety.

Since the Fukushima Daiichi nuclear accident, the designs of many existing nuclear power plants, as well as the designs for new nuclear power plants, have been enhanced. This includes additional measures to mitigate the consequences of complex accident sequences involving multiple failures and of severe accidents. Complementary systems and equipment with new capabilities have been backfitted to many existing nuclear power plants to help to prevent severe accidents and to mitigate their consequences. Guidance on the mitigation of the consequences of severe accidents has been provided at all existing nuclear power plants as all vendor owners' groups have developed generic severe accident management guidelines (SAMGs) to be used as a basis for the development of plant specific SAMGs. The IAEA is strongly promoting plant-specific development through our peer review missions. The design of new nuclear power plants now explicitly includes the consideration of severe accident scenarios and strategies for their management.

Standards, guides and codes are essential for the safe operation of nuclear facilities. But they are not enough. They must be implemented and accompanied by expert peer reviews. Strengthening and expanding the global nuclear safety framework is, therefore, dependent upon the strong commitment, full cooperation, collaborative participation and complete involvement of the entire nuclear community to support the continuous work of the IAEA for future generations.

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