ENSREG

European Nuclear Safety Regulators Group

European Commission

Information for the online stakeholder consultation on candidate topics for Topical Peer Review III (v.26 Oct 2026)

The topic of the third Topical Peer Review will be decided by the European Nuclear Safety Regulators Group (ENSREG) in December 2026. The following topics have been proposed, based on an analysis of their safety significance, regulatory relevance, and technical merits:

- Climate change and natural hazards
- Operating experience (OPEX)
- Grid disturbance.

The summary below provides stakeholders with an overview of each topic proposed. Feedback is welcomed through the designated EU Survey form. The survey is open until 11 November 2026.

Topical Peer Review – what is it?

The amended Nuclear Safety Directive (2014/87/Euratom) established a European system of Topical Peer Reviews (TPR) starting in 2017 to enhance cooperation, transparency, and continuous safety improvement of nuclear safety among EU Member States.

Through the TPR framework, Member States jointly review a specific technical nuclear safety topic, share experiences, and find ways to strengthen safety measures. The first review focused on 'ageing management' of power plants and research reactors, while the second focused on 'fire protection' at nuclear installations. Detailed reports on these reviews are available on the ENSREG website: **Link**

Candidate topic: Climate change and natural hazards

Nuclear installations are designed to cope with natural hazards, and their safety is periodically reviewed. However, climate change can exacerbate natural hazards such as wildfires or extreme weather phenomena such as droughts, and these could occur more frequently or simultaneously with other external hazards that further challenge the nuclear safety of installations. Climate change is a long-term and evolving issue that is relevant for both existing installations, and the design of new installations.

Focusing on nuclear safety impacts, the peer review would aim to share information on how the effects of the changing climate are considered in the safety of nuclear installations. It would review regulatory and licensee approaches, identify good practices and areas for improvement, and share lessons from climate-related events that challenge nuclear safety. It would look at how new scientific knowledge is used in hazard assessments and how the results can be used to identify additional measures to maintain adequate protection of nuclear installations throughout their lifetime.

Candidate topic: Operating experience (OPEX)

Operating experience (OPEX) involves the systematic collection and analysis of information from the operation of nuclear installations, with the aim of identifying lessons learned, preventing the recurrence of events and continuously improving nuclear safety. OPEX is a key driver of continuous improvement, and can reveal potential failures of equipment or safety functions, common issues, weaknesses in design, maintenance, procedures, human factors or organisational arrangements and the need for corrective actions. The topic is relevant not only for licensees but also for regulators. It can evaluate how regulators set reporting rules, assess licensee programmes, apply operational experience to inspections, and improve their own regulatory processes.

The peer review would look at the practices and tools for collection, storage and analysis of data from operating experience, allowing to better understand how OPEX feedback is implemented by licensees, review its effectiveness, and the regulatory practices for its oversight. It can help improve the efficiency of existing practices both nationally and at the international level and provide opportunities to learn from each other.

Candidate topic: Grid disturbance

Electricity grid disturbances could affect the safety of nuclear installations. Electricity grid disturbances can be caused by unexpected, abnormal variations in the voltage, frequency, or electrical current flowing through a power grid. The impact of such disturbances on the stability of the electricity grid and possible effects on electricity supply sources such as nuclear power plants are becoming increasingly important, as the European power system undergoes a transformation through increased renewable energy integration, expanded energy storage and increased interconnections, alongside possible natural and human-induced hazards.

Reliable connection to the external grid and a stable off-site power supply are particularly essential for nuclear power plants. A peer review would allow to share experience on types of grid disturbance, compare regulatory and oversight approaches, identify the safety-relevant effects on nuclear installations and discuss measures to manage and reduce the risks. This topic would support specific safety improvements by identifying the consequences of grid disturbances, deriving lessons learned, good practices and recommendations.