

## IAEA Activities on Fuel Irradiation Tests, Post Irradiation Examination (PIE) and PIE Facilities Database

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Fuel irradiation tests and related post irradiation examinations (PIEs) are necessary to demonstrate the acceptable performance of the power reactor fuels under various plant states and to justify the specified maximum burnup limit for a new design. Under sub-programme 1.2.2, the IAEA has traditionally led international cooperation in these areas, aiming at discussion about status, problems and perspectives of fuel irradiation testing and PIE facilities; development and application of new techniques for PIE; and characterization of conventional and innovative power reactor fuels. The IAEA also supports maintaining a database for PIE facilities under this sub-programme.

The cost of fuel irradiation tests in material test reactors and PIE continues to increase, while the availability of facilities for such activities has steadily decreased in the last decades. Under these circumstances, the IAEA has recognized that there is a need to promote efficient use of such facilities. Maintaining the PIE facilities database could be the first step moving forward in this direction. As the next step, an advanced model could be considered to facilitate international collaboration, by which Member States can gain timely access to relevant infrastructure based on existing PIE facilities for training or research purpose. Indeed, the IAEA has developed a set of services to support building of nuclear competence using existing nuclear facilities. The International Centre based on Research Reactors (ICERR) is an example to illustrate such IAEA's efforts.

In this presentation, the authors are intended to provide an overview of IAEA activities related to fuel irradiation tests and PIE as well as status of PIE facilities database that is maintained by the IAEA. The overall concept of ICERR is also introduced as an example for further consideration of international collaboration.