

ACTIVITIES OF THE OECD/NEA EXPERT GROUP ON ASSAY DATA FOR SPENT NUCLEAR FUEL

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Abstract – Management of spent nuclear fuel is a key issue for many NEA member countries. As interim storage facilities in many countries reach their design capacities, the need to optimize spent fuel storage is becoming an increasingly important issue to managing fuel cycle costs. In nuclear criticality safety, the decision of many countries to advance burnup credit as part of their licensing strategy has heightened recent interest in measurement data that are needed to validate computer code calculations for a burnup credit methodology. The importance of measured isotopic assay data from irradiated fuel experiments to validate computer code predictions of spent fuel composition used in safety-related studies has long been recognized by members of the OECD/NEA/NSC/WPNCS (Working Party on Nuclear Criticality Safety). Under the auspices of the WPNCS, an Expert Group on assay data has been formed to help coordinate isotopic assay data activities and facilitate international collaboration between NEA member countries developing or implementing burnup credit methodologies. An important contribution of the WPNCS in this area has been the electronic database for publicly available spent nuclear fuel composition data, SFCOMPO. The objectives of the Expert Group on assay data include (1) expanding the SFCOMPO experimental database of spent fuel isotopic measurements, (2) making the data accessible through the SFCOMPO website, (3) sharing best practices on radiochemical analysis methods, (4) indentifying input data and modeling requirements, and (5) evaluating uncertainties associated with the measurements and deficiencies in documented design and reactor operating history information. This paper discusses recent activities of the Expert Group, focusing on the planned expansion of the database of spent fuel measurements, SFCOMPO, a description of the new fuel samples and measurement data they provide, and future activities.

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