INTRODUCTORY NOTE

France relies heavily on nuclear energy for its electricity production, with 56 power plants in operation producing more than 62 GW(electric), corresponding to more than 75% of the national electricity consumption.

As all industrial activities, the production of nuclear energy generates waste. The safe development of the nuclear industry and its acceptance by the public require that the management of this radioactive waste be exemplary.

The French strategy for the management of the end of the fuel cycle depends on spent-fuel reprocessing, with recycling of uranium and plutonium. Although the major part of medium- and high-level activity waste is produced during reprocessing, all steps of the nuclear fuel cycle and research activities produce radioactive waste, such as ore processing, uranium enrichment and fuel fabrication, power plants operation, and so forth.

According to the radioactivity level, this waste is either disposed of in near-surface sites (low-level waste) or kept on interim storage sites (medium- and high-level waste) waiting for a possible geological disposal.

Whatever the eventual fate of the waste, its acceptance on the sites is strictly regulated and depends on a thorough knowledge of the physical, chemical, and radioactive properties, important for the safety of handling, transporting, storing, and final disposal of the waste. These properties must satisfy the specifications established by the regulatory authorities and by the waste manager. Characterization is the process by which the proof of this adequacy is given.

This issue includes a short presentation of the French organization for radioactive waste management, and the activities of the French Atomic Energy Commission in the field of characterization are illustrated by a selection of papers.

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