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Cost drivers associated with spent nuclear fuel storage options and technologies

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The work was conducted in the context of the International Atomic Energy Agency's (IAEA) newly initiated activity on "approaches for nuclear power costs estimation and analysis"(the "Nuclear Cost Basis", or NCB, project). The NCB provides guidelines and resources for developing consistent cost estimates and analyses covering, basically, all areas of a country's nuclear power programme; from nuclear infrastructure development; to reactor construction and operation; to management of radioactive waste. The paper focuses on technologically mature, widely used, spent nuclear fuel storage options and technologies. Storage of spent nuclear fuel can be made At-Reactor (AR) or Away-from-Reactor (AFR) — at Reactor-Site (AFR-RS) or Off-Site (AFR-OS) —. These options may involve wet (water pools) and dry storage technologies (casks, vaults, silos). For each of these technologies and options, an effort has been made to synthesize existing literature and compile a comprehensive list of key factors affecting costs. This list will be used as a basis for developing standard cost categories and cost breakdown structures for costing purposes.

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