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Lessons for the Organization of Nuclear Decommissioning from the UK and the US: Risks, Challenges, and Opportunities

In the coming decades, nuclear decommissioning is set to become a challenge of increasing significance for the nuclear industry and regulators alike as more and more nuclear power plants (NPP) will reach the end of their respective operational lifetimes (Laraia 2018). So far, only a handful of projects have been successfully completed, with some lasting several decades due to immense complexity of the task (Schneider et al. 2022). While technical expertise is steadily increasing as decommissioning projects advance, only limited literature on regulation and organization of nuclear decommissioning exists. This is highlighted by previous research that encourages further research into organizational issues around nuclear decommissioning (Wimmers et al. 2023). While some countries follow approaches that rely mostly on state-run or state-funded actors, such as France, other countries, such as Germany or the United States of America (US), allow for more market-based approaches. The United Kingdom (UK) had previously implemented a market-based approach based on tendering that has since been retracted due to organizational challenges and limited performance (Holliday 2021). In this paper, we compare the organization model behind the UK's past market-based system and the approach followed by US regulators today by means of transaction cost economics (Williamson 1975; 1985) in order to identify best practices for regulators and policy makers in countries that currently are and those that will be facing the challenge of nuclear decommissioning .

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