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Study on the manning method for the world's first 'Linglong-1' reactor

Abstract: One of the advantages of SMR is the number of operating personnel, which is significantly reduced compared with a conventional pressurised water reactor, which is important for reducing operating costs and improving economics. However, as the world's first reactor'Linglong-1'faces many uncertainties and challenges. How to reduce the number of personnel on duty in the main control room, give full play to the advantages of small reactors, and realize cost reduction and efficiency is a key issue to be explored. This paper firstly investigates the current mainstream large-scale third-generation pressurised water reactor main control room staffing and compares it with the expected main control room staffing of SMR. Secondly, it analyses the problems and risks faced by less manned small SMRs and, through further research, finally proposes a number of methods and measures to reduce the number of staff on duty in the main control room of small SMRs.
The research results of this paper help to subsequently promote the practice and dissemination of less manned duty in SMRs.

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