

PSA Perspective of Proposed New Build Plants in the UK

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ABSTRACT

Internal and external hazards often create extreme environments which can affect several of a nuclear power plants systems and therefore have a significant contribution to the overall risk to nuclear safety, depending on plant design specifications, location and hazard protection.

It is widely recognised that such hazards should be included in the plants Probabilistic Safety Analysis (PSA) models; which according to the UK nuclear regulatory body, the Office for Nuclear Regulation (ONR), should be: "a systematic analysis to identify all important fault sequences which can lead to radiological consequences and to evaluate their contribution to the risk." and "identify all the significant contributions to the risk".

The primary objective of this dissertation project was to analyse how the different proposed UK nuclear new build reactor designs, in their current form, are affected by and mitigate against hazards from a PSA perspective, using publicly available information.

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