

Proposing a roadmap for building human capacity in probabilistic safety assessment and supporting fields

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Probabilistic safety assessment (PSA) is a powerful tool that can be used to identify and assess the risks associated with nuclear power plants (NPPs). Nevertheless, PSA is a complex and data-intensive process, and it requires a significant level of human expertise to be conducted reliably. As a result, there is a need to build a human capacity for PSA in order to ensure that it is used effectively in licensing NPPs.

There are a number of steps that can be taken to build a human capacity for PSA. First, it is important to develop a strong understanding of the principles and methods of PSA. This can be done through training programs, workshops, and other educational initiatives. Second, it is important to develop a database of relevant data on the reliability of NPP components and systems. This data can be collected from a variety of sources, including plant operating experience, industry databases, and research studies. Finally, it is important to develop a team of experienced PSA practitioners who can conduct and interpret PSA studies. By taking these steps, it is possible to build a human capacity for PSA that will enable NPPs to be licensed in a safe and informed manner. There are also a number of other factors that can contribute to the success of PSA in the licensing of NPPs.

There is also a need to form a robust R&D group for PSA that includes experts from a variety of supporting fields, such as: nuclear, mechanical, industrial, reliability and human factors engineering, computer science, statistics and probability, mathematics and computer sciences. This paper will discuss in detail the human capacity requirements to excel in PSA that is essential in licensing NPPs, and outlines the supporting fields to PSA in order to form a robust R&D group for performing PSA.

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