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P2.225 Assessment on radioactivity source term release and public impact for CFETR

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CFETR is now in engineering design phase (EDP) and will hopefully complete this phase around 2020. It is essential to evaluate the public impact due to the radioactivity release in this stage. In this work, the radioactive inventory and property of source terms were evaluated, discussed and compared with ITER. Then, under normal operation radioactivity release limit was researched comprehensively considering the Chinese regulation for public individual dose limit and exhausting from nuclear power plant. And for accident condition, potential risk of the radioactivity release was also evaluated preliminarily. The public and environmental impact were estimated by atmosphere dispersion modelling and migration along food chains. Countermeasures were also discussed based on the objective that to eliminate emergency evacuation for fusion power plant. As a conclusion from this assessment, the safety objectives and requirements were proposed for CFETR to ensure nuclear safety.

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