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## Dealing with Ignorance: Resilience for Nuclear Safety-Security

How should ignorance be addressed in conceptualising nuclear safety-security (NSS) such that policymakers are better prepared in building new commercial nuclear power plants (NPPs)?

In building nuclear power plants (NPPs), reducing uncertainties plays an important role in maintaining nuclear safety-security (NSS). Nuclear safety aims at mitigating accidents, while nuclear security aims at preventing malicious acts from individuals to access the equipment, both lead to radioactive hazards[1]. Nuclear safety and security are approaches dealing with uncertainties about future hazards by factoring in possible risks. However, it is difficult for these approaches to take the unknown unknowns –also sometimes called ignorance about the future –into account[2].

As a contribution from nuclear energy ethics, this paper proposes how to take ignorance into account via resilience thinking. We do this by 1) showing how current NSS conceptualisation and assessments emphasise on quantifying uncertainties; 2) explaining the importance of realising that ignorance remains and needs to be addressed as such beyond researches on reducing it; 3) suggesting how ignorance consideration from resilience thinking can strengthen NSS' emphasis on uncertainties; 4) showing how the strengthened NSS conceptualisation benefit nuclear policymaking with the development and commercialisation of small modular reactors (SMRs) as the example.

**Keywords:** nuclear safety-security (NSS), uncertainties, ignorance, resilience thinking, nuclear energy ethics

### References

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