**ONR Summary of ONR-RRR-115**

Climate change can impact the magnitude and frequency of some natural hazards that may affect nuclear safety, for example, flooding and air temperature hazards. Climate science is a dynamic topic area; the science is rapidly evolving with emerging theories and information. ONR need to keep informed of new science to ensure our regulatory guidance remains fit-for-purpose, and aligned with relevant good practice. We do this by various means including our Expert Panel on Natural Hazards, in particular the sub-panel for meteorological and flooding hazards sub-panel, and research.

ONR Expert Panel on Natural Hazards produced [ONR-RRR-055](https://www.onr.org.uk/media/orpnjasz/onr-rrr-055.pdf), which concluded that there are three emerging aspects of climate science that ONR would benefit from conducting additional research on. These topics comprise:

* Tipping points.
* Compound flooding events.
* Modelling uncertainty.

ONR commissioned this research project on the aforementioned topics to:

* Determine the current scientific understanding.
* Provide technical advice to ONR in relation to these aspects.
* Highlight areas of uncertainty.
* Identify potential future developments.

Three reports have been developed; one report per topic. The reports have been authored by appropriate members of the ONR Expert Panel on Natural Hazards. They are being published to share this information with our stakeholders. These reports will inform future iterations of the Expert Panel papers that support the meteorological and flooding hazard specific annexes of [NS-TAST-GD-013](https://www.onr.org.uk/publications/regulatory-guidance/regulatory-assessment-and-permissioning/technical-assessment-guides-tags/nuclear-safety-tags/ns-tast-gd-013-external-hazards/).

The reports provide a concise summary of the topics and the associated challenges that we need to be aware of. The reports are not, and were not intended to be, exhaustive on these topics. This is due to the evolving nature of climate science and breadth of literature available. ONR will continue to develop our understanding of these topics, and supplement the information contained within the ONR-RRR-115 reports, as needed and proportionate to the nuclear safety risk.