**Integration Group for the Safety Case (IGSC) Symposium 2024**  
*MOVING TOWARDS THE CONSTRUCTION OF A SAFE DGR – GETTING REAL*

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| **Abstract Title:**  Demonstrating Long-term Environmental Safety of On-site Disposals: Experience from the Trawsfynydd Magnox Reactor Site | |
| **Abstract (300-500 words):**  The operator of the Trawsfynydd Magnox power reactor decommissioning site is Nuclear Restoration Services (NRS) – a subsidiary of the UK Nuclear Decommissioning Authority. The submission in December 2023 by NRS of an application for on-site disposal (OSD) of radioactive waste at the site is the first of its kind in the UK. The application is to enable the demolition, infilling, and capping of the Trawsfynydd Ponds Complex; the area of the site concerned is known as the Disposal Area. The purpose of the project is to put the Disposal Area into an interim state (including a reinforced concrete capping slab over infilled subsurface voids) that will allow it to be integrated into the operational area supporting future decommissioning of the two reactors. The interim state is to be capable of becoming part of the overall site end state without further work involving radioactivity. NRS is therefore seeking a variation to the site’s Radioactive Substances Regulation permit to allow OSD of radioactive waste, both as disposal of radioactive structures in-situ, and through using radioactive demolition arisings to fill subsurface voids.  To demonstrate compliance with the internationally accepted principles of radioactive waste management, NRS has developed a strategic approach to OSD, based on the principle that safety is central to all processes and activities. In this context, the term “safety” can be regarded as representing the achievement of appropriate conditions such as to provide an adequate and optimised level of protection to workers, members of the public and the environment from hazards. The approach is based on implementing five key processes and/or activities:   * Develop an adequate understanding of the wastes, the site and its surroundings. * Confirm that the public and environment are protected against radiological and non-radiological hazards. * Identify optimised configurations for OSDs. * Work in an open and inclusive manner. * Operate within a sound management framework and a positive environmental safety culture.   Owing to the staged approach to achieving the Trawsfynydd site end state, with decommissioning of the Ponds Complex some decades ahead of full decommissioning of the reactor buildings, NRS must demonstrate how the proposed near-term OSDs have been optimised, and how they could impact future site-wide optimisation decisions.  This paper will discuss the strategic approaches followed by NRS at Trawsfynydd and will present aspects of the approach to optimisation and environmental safety assessment of the proposed near-term OSDs. | |