

International Institute Of Risk And Safety Management North East & Cumbria Branch

Learning and Discussion Points from Branch Visit to Sirius Minerals

The IIRSM North East and Cumbria Branch recently had a fantastic opportunity to visit Woodsmith Mine near Whitby, where Sirius Minerals are developing a new facility to extract Polyhalite, a unique type of potash and multi-nutrient fertiliser.

During the visit, IIRSM members gained an understanding of the technical challenges and risk management activities involved in delivering a large-scale construction project. The key stages of the project are:

- Sinking shafts at Woodsmith Mine to access the polyhalite deposit
- Developing a 37 kilometre-long underground mineral transport system (MTS), to transfer the material
- Building a materials handling facility (MHF) in Teesside for receiving polyhalite and granulating the mined material into the final product
- Constructing harbour facilities comprising of a 3.5 kilometre-long overland conveyor, a ship berth and a ship loader adjacent to the River Tees

The scale of operations involved in developing Sirius Minerals' site was truly impressive, with a number of engineering approaches being combined to create the series of shafts and tunnels that will eventually form the principal infrastructure of the new mine.

Key learning and discussion points from the visit included:

Project Risk Management

- Funding model means that private finances have to be raised to fund the project – delivery in line with project plans and timescales is essential. The date for first extraction is fixed and the rest of the project has been developed to hit that date.
- Location within a National Park and involvement of several landowners means that stakeholder engagement is crucial. Beginning the process early was instrumental in securing planning permission, and ongoing stakeholder involvement ensures that any potential issues can be effectively managed.
- Creation of a team ethos (regardless of whether employed directly or as a contractor) has ensured that everyone involved in the project is focused on successful delivery, regardless of their role in the project.

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Health, Safety and Environment

- Construction activities occur within ringfenced locations, with different Principal Contractors responsible for each area.
- A high level of co-operation and co-ordination between all parties working on site was clearly evident – e.g. permitry management
- Use of innovative construction and tunnelling techniques will enable on-time, on-cost delivery of the project – extending the envelope of equipment capability in a managed and controlled environment.
- Work area segregation and pedestrian/traffic routes had been very well planned
- Environmental considerations – management of noise, light, and surface water are hugely important to meet planning consent restrictions.
- Mandatory daily alcohol testing for all workers on site – zero tolerance approach with option for self-testing before presenting for work.