

WMS2012 Fukushima Panel Session

UK Challenges and Experience

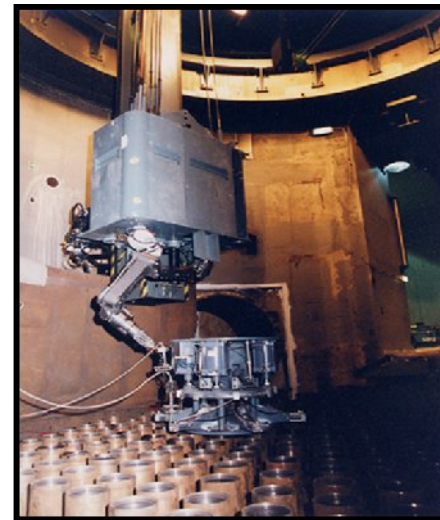


National Nuclear Laboratory



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Challenges in UK

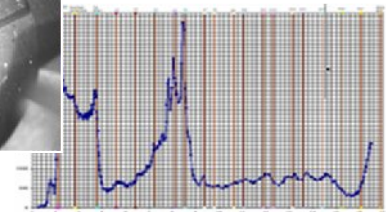


UK Japan Symposium on Post-Cold Shutdown

- Held 6-7 Oct 2011 in the British Embassy in Tokyo.
- Attended by UK and Japanese Nuclear organisations, governmental, regulatory and private sector
- Understand Japan's vision for Fukushima post cold-shutdown
- Consider the policy and technical challenges that may arise
- Offer relevant practical experience of difficult clean-up and decommissioning projects in the UK, and of the organisational and regulatory framework that support them

Relevant Experience

- Spent fuel ponds monitoring and characterisation
- Spent fuel retrieval and remote operations of damaged fuel in difficult environments
- Remote engineering deployment and inspection
- Difficult waste characterisation & treatment
- Novel monitoring techniques in high radiation environments
- Decontamination
- Effluent treatment
- Environmental remediation



Windscale Pile 1

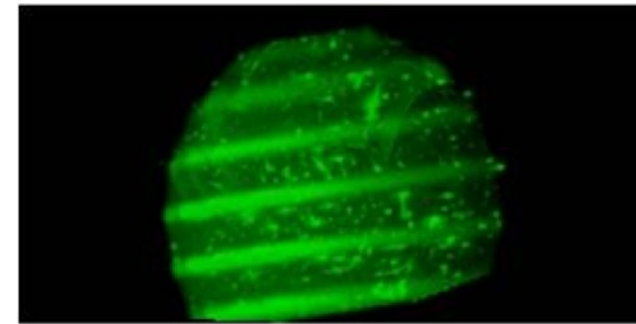
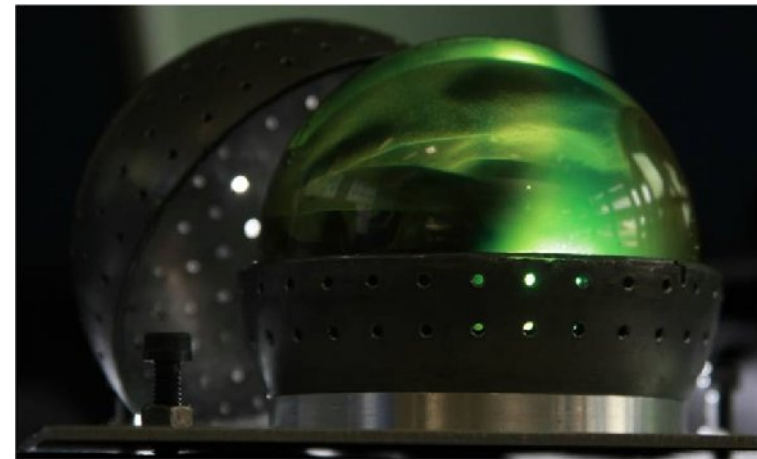
- In October 1957 a fire broke out in Windscale Pile 1 which was subsequently extinguished by air starvation and water deluge.
- Many challenges to be overcome including uncertainty in the amount of inventory present, its location and the effects of materials in a damaged reactor
- Remote inspection techniques to investigate condition of fuel
- Use of chemical and other modelling techniques to predict nature of fuel





RADBALL: THE DEPLOYABLE RADIATION MAPPING DEVICE

- **RadBall** can **locate** and **quantify** radiation hazards from a single position.
- Radiation mapping in:
 - Active cells
 - Confined spaces
 - Hard to reach parts of the plant
 - Underwater in ponds
 - Plants with high radiation levels (up to Sv/hr)



RadLine

- Deployable as a single detector, a chain, or as an array giving the ability to monitor large process areas.
- Tolerant of a high level of radiation
- Has a wide radiation detection range.
- deployed into small, difficult to access areas

