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& Development Office

Technical Challenges in Nuclear Disarmament Verification

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UK Policy



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- To work towards a world free of nuclear weapons
- Part of our commitment to the nuclear non-proliferation treaty
- To have a viable disarmament treaty it is essential it can be verified
- Work on verification now builds momentum, ensures UK voice in negotiations

What is verification?



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- Inspection
- Monitoring & Technology
- Confidence building
- Compliance



- Without appropriate technologies and understanding of the science of verification none of this will be possible

UK Programme



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- 1998 Strategic Defence Review (SDR)
- 2001 UK-US
 - Issues of reciprocity
 - Importance of the Mutual Defence Agreement (MDA)
- 2007 UK-Norway Initiative (UKNI)
 - First involvement of a NNWS
- 2015 Quad
 - Multilateral – UK-US-Norway and Sweden
- 2015 IPNDV (<https://www.ipndv.org/>)
 - >25 States, including academic involvement

Key challenges



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- How do you know an item is a nuclear weapon?
- How do you keep chain of custody of weapons and monitoring equipment in secure facilities?
- How do you trust equipment supplied by another party?
- How do you trust data generated by non-trusted equipment and/or transferred through insecure networks?

Nuclear measurements

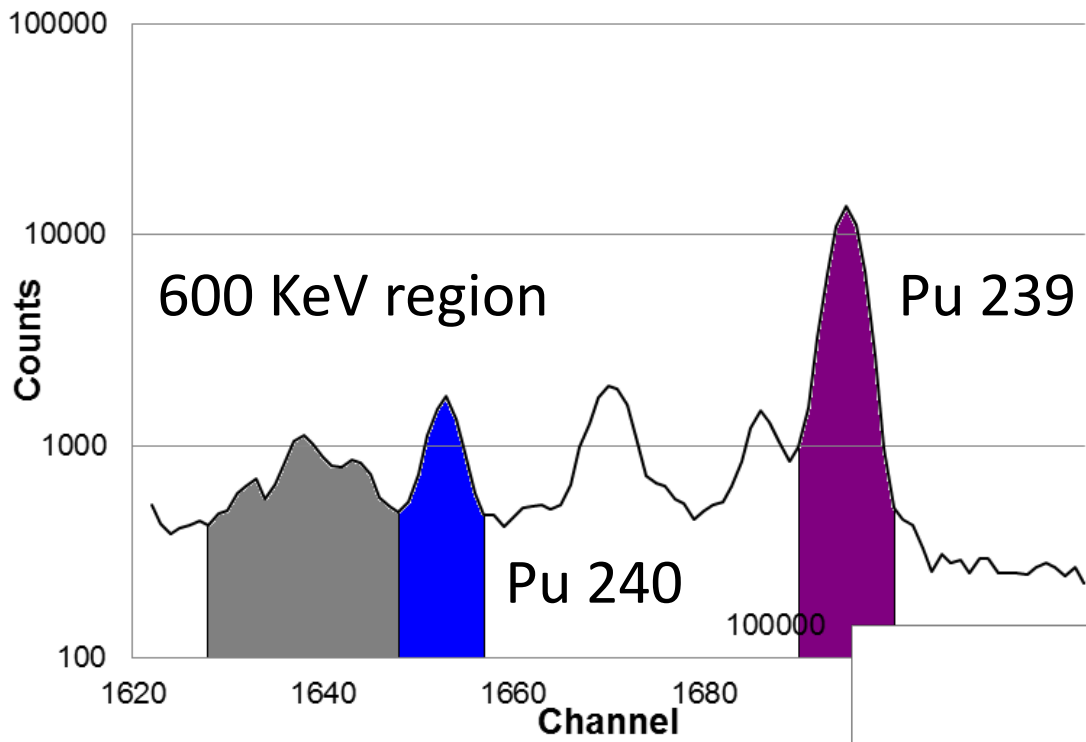


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- Challenging due to circumstances
- Compliance with Non-proliferation, security and safety obligations
- Inspectors cannot know the design details of the nuclear weapon they are inspecting
- Confirm it is a weapon through indicative measurements
 - Contains relevant nuclear and explosive material of the right grade in a substantive quantity
 - Without revealing exact figures or details
 - Yes/No answers behind an information barrier



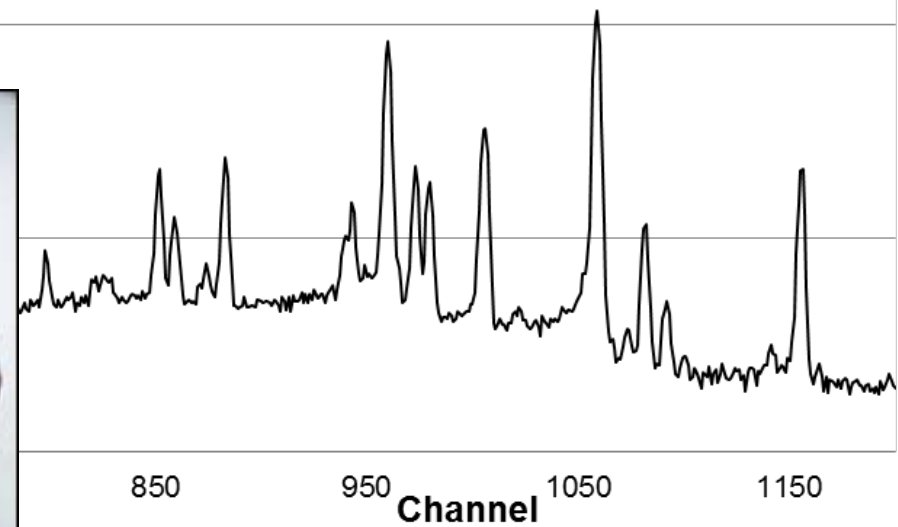
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UKNI Information
barrier

<https://ukni.info/>

Pu 350-450 KeV region



Opportunities



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- New and novel approaches are required
- Requires innovative ways of using simple, and therefore trustable, technologies
- UK has a wealth of knowledge and experience in the individual techniques just not applied to arms control and disarmament
- Looking to build a UK community that can contribute to an issue of national and international importance

Any Questions or for further information please contact David.Chambers@FCDO.gov.uk

