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Impact of UCMS on Safeguards effectiveness and efficiency

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In 2014, the European Commission designed and implemented a composite detection system to verify operating records relative to the shipment of PuO₂ packages from the production facility to the storage area of the Magnox reprocessing plant in Sellafield. The Unattended Combined Measurement System (UCMS) was developed in cooperation with plant operator, did not require the presence of inspectors on site, and it was successfully operated for the last 4 years to validate the declarations over remote data connectivity with Euratom head quarter.

Comparing the implementation of safeguards before and after the UCMS active commissioning, this paper analyses its impact in terms of effectiveness and efficiency, safeguards confidence, and resources allocation. The authors conclude discussing the lesson learned in terms of technological implementation and outline how future safeguards approaches might benefit from remote detection systems integrated with machine learning algorithms and remote data connectivity.

Which "Key Question" does your Abstract address?

TEC3.4

Which alternative "Key Question" does your Abstract address? (if any)

TEC3.6

Topics

TEC3

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