

: Xenon Environmental Nuclide Analysis at Hartlepool

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The Xenon Environmental Nuclide Analysis at Hartlepool (XENAH) collaboration involves scientists from the U.K., U.S and Sweden who are performing measurements of routine emissions from Hartlepool Power Station with cooperation of the reactor operator, EDF Energy. Three diverse and complimentary radionuclide monitoring techniques are being deployed, aiming to characterize radionuclide emissions of an operating nuclear reactor and understand how emissions from such facilities may affect the International Monitoring System. Direct measurements of radioxenon emissions at source are being collected using a stack monitoring system. Remote, stand-off measurements of radioxenon after atmospheric transport of several kilometres have been obtained using an array of stand-alone air samplers and analysers. Ultralow background measurements of environmental samples which have been collected at and near the reactor have also been analysed. The results from these measurements will provide a representative fingerprint of an operating civil nuclear facility and provide knowledge of radioxenon backgrounds close to operating facilities. Isotopic ratios of radioxenon will be calculated and compared to the discrimination line proposed by Kalinowski. The measurement effort and techniques will be described, along with the scientific questions that aim to be addressed. Preliminary results from measurements undertaken using the three complementary techniques will also be presented.

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Promotional text

XENAH: a collaboration taking a multi-faceted approach to radio xenon monitoring that is connecting with civil nuclear operators and broadening communities involved in the support of CTBT through industry/academic partnership.

Oral preference format

in-person

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