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## **Background measurements at Hartlepool Nuclear Power Station to assess the viability of on-site-antineutrino detection**

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In the field of nuclear security, safeguard and non-proliferation antineutrino flux profiles have the potential to be used as a verification tool to ensure operations at a nuclear facility are being accurately reported. Due to this potential, there is an interest in performing antineutrino measurements on an operating reactor site, such as the Hartlepool Advanced Gas Reactor. To help assess the viability of obtaining antineutrino flux measurements from the operating reactor the background neutron and gamma radiation measurements were performed at various locations within and outside of the Radiation Controlled Area at Hartlepool Nuclear Power Station. The results of the analyzed measurements are used to provide accurate background data to be used in modelling and to determine a potential site for an antineutrino detector to perform near-field antineutrino measurements

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