ID: Type: **Poster**

T2.4-P09. RADIXENON IN NIGERIAN RESEARCH REACTOR 1 (NiRR-1)

RADIOXENON IN NIGERIAN RESEARCH REACTORN (NIRR-1) Abstract By: Ake Oluwatosin Aderinoye Nigerian Nuclear Regulatory Authority Email: ake_sin2001@yahoo.com Radioxenon isotopes (Radioactive xenon) are noble gases mainly produced in nuclear fission e.g., uranium-235, either via neutron-induced or spontaneous fission or via neutron activation of xenon gas and other reactions. Most radioactive isotopes of this element are produced by a nuclear fission reaction of uranium-235, uranium-238, or plutonium-239. Xenon-133 is the most abundant radioxenons observed in environmental samples. The minimum detectable concentration (MDC) for 133Xe in routine samples is about 1 mBq m−3. For distinguishing between nuclear explosions and other man made releases, atmospheric monitoring of radioactive noble gas isotopes, xenon isotopes in particular, is of interest to the non-proliferation community. Radioxenon releases can originate from nuclear weapons tests (atmospheric, underground, and underwater), research and commercial reactors, and medical isotope production facilities. Their impacts on atmospheric sample analysis have to be well understood to distinguish between them. This work will describe the production, applications, occurrence, and measurement of xenon isotopes in NiRR-1.

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