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NIRR-1 to LEU Core Conversion and Safety Measures

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ABSTRACT

The NIRR-1 is a 31 kW miniature neutron source reactor (MNSR). The reactor went critical on February 3, 2004. NIRR-1 uses U-235 fuel enriched to about 90.2%.

Nigeria is a signatory to the Non-Proliferation Treaty (NPT) and as part of the non-proliferation program, there is a global effort to convert this type of research reactor to low enriched uranium fuel (LEU). The core will be replaced with a LEU fuel consisting of uranium dioxide (UO₂) with nominal enrichment of 13%.

Safety Measures:

- Nigeria has signed a formal Request for Assistance with the IAEA's Director General, to initiate HEU Core removal and Transportation activities.
- Nigeria has developed its transportation regulation for nuclear materials transportation which covers License application to Emergency responds etc.

Conclusion:

This Paper highlights the capacity, competence available and discusses the Transportation of the HEU and LEU fuel as interpreted by Nigerian Regulations on the Transport of Nuclear Materials.

