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NIRR-1 Fuel Conversion Programme: Challenges and Opportunities

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ABSTRACT

Nigeria is embarking on a fuel conversion programme in view of her being a signatory to the Non-Proliferation Treaty and by extension, acceptance of the non-proliferation programme which encompasses a global effort to convert her type of research reactor to low enriched uranium (LEU) fuel. The Nigeria Research Reactor (NIRR-1) is a 31kW Miniature Neutron Source Reactor (MNSR) situated at the Centre for Energy Research and Training (CERT) Ahmadu Bello University (ABU), Zaria. The reactor was acquired through the tripartite project and supply agreement between the Federal Government of Nigeria, International Atomic Energy Agency (IAEA) and China Institute of Atomic Energy (CIAE). The reactor attained criticality on the 3rd February 2004 and has since been used for Neutron Activation Analysis (NAA), Experiments and Training in Nuclear Science and Technology. NIRR-1 uses U-235 fuel enriched to about 90.2%. This paper analyzes the progress made, milestones reached, lull in activities, prospects (opportunities) and challenges with respect to the impending conversion of NIRR-1 fuel.