Abstract Submitted
for the APR05 Meeting of
The American Physical Society

Dose Rate Calculations of Spent MTR-HEU Fuel Elements of the IAN-R1 Research Reactor[1] JOSE ANTONIO SARTA FUENTES[2], Nuclear Physics, LUIS ALVARO CASTIBLANCO BOHORQUEZ — With cooperation of the International Atomic Energy Agency (IAEA) and the Department of Energy (DOE) of the United States, several tasks related to the waste disposal of spent MTR fuel enriched nominally to 93% were carried out for the conversion of the IAN-R1 Research Reactor from MTR-HEU fuel to TRIGA-LEU fuel. In order to remove the spent MTR-HEU fuel of the core and store it safetly, a program was established at the Instituto de Ciencias Nucleares y Energìas Alternativas (INEA). This program included training, acquisition of hardware and sofware, design and construction of a decay pool, transfer of the spent HEU fuel elements into the decay pool and his final transport to Savanah River in United States. In this paper are presented external dose rates which were calculated for a standard spent MTR-HEU fuel element of the IAN-R1 Research Reactor. The calculations take in consideration the activity due to contributions of fission, activation and actinides products for each relevant radionuclide present in a standard spent MTR-HEU fuel. The datas obtained were the base for the respective dosimetric evaluations in the transfering operations of fuel elements into the decay pool and for shielding calculations in designing of the decay pool.

[1]IAN-R1 Research Reactor
[2]61007604

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Date submitted: 17 Feb 2005 Electronic form version 1.4