Radioactive materials and nuclear techniques in general have been used in Tanzania for peaceful purposes for more than four decades without any Legislation on the control of ionizing radiation. Legislation to control ionizing radiation was first enacted through the Protection from Radiation Act 1983. Even with this development, a sound radioactive waste management infrastructure and capability could not be developed until 1993 when Tanzania started to participate in an IAEA project under AFRA. Through this project, Tanzania became extensively involved in the development of national radioactive waste management infrastructure and capability in line with the AFRA radioactive waste management activities. As a result of this Tanzania enacted radioactive waste management regulations in 1999; and in the same year initiated the provision of a Temporary Radioactive Waste Storage Facility in Arusha within the hired premises of the then National Radiation Commission. Following the availability of this Facility which was basically a 30 feet ISO container bought by using government funds, most of the spent radioactive sources including radium needles were collected from various parts of the country and safely stored in this Temporary Storage Facility. The radium needles were conditioned with the assistance of the IAEA recruited experts under the project and stored in this Facility. From there on, Tanzania continued to extensively strengthen her radioactive waste management regime in line with the project.

Efforts by the National Radiation Commission (now the Tanzania Atomic Energy Commission) to seek funds from the Government of the URT for the construction of a Central Radioactive Waste Management Facility (CRWMF) started in 1999; and in 2001 these efforts bore fruits when the government allocated funds for the construction of the Facility. The construction works of the Facility started in the same year in the outskirts of Arusha municipality on a plot belonging to the then National Radiation Commission.

In early 2005 the Facility was completed and commissioned in the same year. The total cost of the Facility was Tshs. 218,559,405 (about USD 220,000). The completion and commissioning of this Facility paved the way to a better radioactive waste management regime in the country.
Disused/spent radioactive sources, which were stored at the Temporary Radioactive Waste Storage Facility, were safely transferred to the CRWMF in 2005 by TAEC staff for storage.

With the assistance of the IAEA recruited experts under the project, radioactive sources imbedded in walls at the old radiotherapy units of Muhimbili National Hospital and Ocean Road Cancer Institute were also recovered and transferred to the CRWMF for safe storage in July 2005. These sources from the two Centers are Sealed High Activity Radioactive Sources (SHARS). Also during the same mission, SHARS were collected from the Tsetse and Trypanosomiasis Research Institute (TTRI) in Tanga and transferred to this CRWMF for storage.

The CRWMF is a single floor building with approximately 380 square meters (see photograph below) with steel trusses. It is supplied with electricity and water. Physical security is provided by guards for 24 hours and also alarms are installed for ultimate security. Most of the thick walls including those partitioning the rooms of the Facility are constructed of reinforced concrete. The Facility has rooms specifically designated for: receipt, decay, operational area, storage of high activity sources, fume hood and a room for the storage of conditioned radioactive sources. In this storage room, up to 150, two hundred litre drums, can be satisfactorily stacked while allowing space for the movement of personnel and a small size fork lift for manipulation of the drums. In addition there is also an office, a physics room and shelves for staff to store their belongings. There are also shower rooms and toilets.
Upcoming Programs- management of SHARS

With the availability of this CRWMF, the government of the URT through the Tanzania Atomic Energy Commission is continuing effectively in solving the problems pertaining to the management of radioactive waste in line with the AFRA program on radioactive waste management. In the near future, it is planned under the project, with IAEA assistance and experts, to have the safe storage of SHARS in special shields. A premission to this effect was conducted by the experts from 25-29 June 2007; and that the actual conditioning of the SHARS is planned for January/February 2008. During this period all the other spent sources that are in the inventory, including the neutron sources, will be conditioned and safely stored in the Facility. Staff of TAEC will be working together with the experts during this undertaking.

Conclusion.

It is to be noted that, the AFRA program on radioactive waste management has brought about a very big impact on the attainment of a sound radioactive waste management regime in Tanzania. This has been possible due to the full participation of the government of the URT which realized that the problem of radioactive waste would be a great hindrance towards the expansion and beneficial utilization of nuclear techniques for social economic development in the country. There is therefore great appreciation that can be recorded by the country as the presence of a sound radioactive waste management regime allows for the utilization of nuclear techniques.

The co-operation among AFRA Member states has been a very fruitful cooperative arrangement for arriving at such a successful program. It is therefore very import that, African countries continue to intensify their co-operative activities in building capacity and infrastructure for radioactive waste management so as to facilitate the safe utilization of nuclear techniques and in particular nuclear technology for electricity generation under the emerging nuclear power renascence.

The government of URT highly appreciates and commends the IAEA for the provision of experts and support in the development of the appropriate technologies such as the SHARS facility, a mobile hot cell for the handling of high activity sealed radioactive sources in the conditioning process. This technology could be an alternative option to the Borehole one.