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Evolution of Radiation Safety Culture in Africa: Impact of the Chernobyl Accident

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Synopsis

The use of ionizing radiation in Africa is more than a century old but the awareness for radiation safety regulation is still work in progress. The nuclear weapon tests carried out in the Sahara Desert during the early 1960's and the resultant radiation fallout that drifted into West Africa with the northeasterly winds provided the first organized response to the hazards of ionizing radiation in Nigeria. The Nigerian Government in 1964 established the Federal Radiation Protection Service (FRPS) at the Physics Department of the University of Ibadan but without the force of law. In 1971, draft legislation on Nuclear Safety and Radiation Protection was submitted to Government for consideration and promulgation. It never went beyond a draft until June 1995 only after IAEA intervention!

The April 1986 Chernobyl nuclear accident unfortunately did not provoke as much reaction from African countries, probably because of geography and climate: Africa is far from Ukraine and in April the winds blow from SW-NE, unlike if it had happened in December when the wind direction would have been NE-SW and Africa would have been greatly impacted with little or no radiation safety infrastructure to detect the radiation fallout or to respond to it; and weak economic infrastructure to mitigate the economic impact of such radioactive deposits on agriculture and human health. Africa was shielded by both geography and climate; but not for long. By 1988, some unscrupulous businessmen exported to Nigeria and to several African countries radiation contaminated beef and dairy products which were meant for destruction in Europe. This led to the establishment of laboratories in several African countries for the monitoring of radiation contamination of imported foods. Fortunately, the international response to the Chernobyl accident was swift and beneficial to Africa and largely spurred the establishment of radiation safety infrastructure in most if not all African Member States. Notably amongst the IAEA interventions towards the establishment of radiation safety infrastructure are the RAPAT missions and the Model Project on "Strengthening Radiation Protection Infrastructure". The Model Project (1994-2004) aimed at assisting Member States in meeting the requirements of the international basic safety standards. The Model Project achieved a lot but its closure in 2004 compelled regulatory bodies in the Africa to search for alternative mechanism for building on the success of the Model Project and find ways and means of expanding the scope of the Model Project but without the sole sponsorship of or promotion by the Agency by taking ownership of radiation safety infrastructure in their countries. This resolution led to several discussions and consultations among regulatory bodies in the region which culminated in 2009 into the formation of the Forum of Nuclear Regulatory Authorities in Africa. The IAEA RASSIA Missions and the IRRS Missions provide the opportunity to peer-review the radiation safety infrastructure and promote continuous improvement. The ultimate goal of all these efforts is the emplacement of a sustainable radiation safety culture, which is a fabric that can be woven with different fibres: legislation, institutions, manpower, national and international support, etc. Development of radiation safety infrastructure in Africa and indeed the evolution of the radiation safety culture in the region is indeed work in progress.

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