

Physical Protection Considerations during Decommissioning of Destroyed Nuclear Facilities and Sites in Iraq

Abstract:

The six major stages in the lifetime of a nuclear facility and of the associated licensing process are siting, design, construction, commissioning, operation, and decommissioning. The decommissioning stage includes activities that will ultimately lead to the removal of nuclear and other radioactive materials from the nuclear facility.

There are a number of destroyed sites within former Iraqi nuclear program which have been used for nuclear activities and which contain potentially significant amounts of radioactive material. Many of these sites suffered substantial physical damage during the 1981's airstrike and 1991 Gulf War's airstrikes and several have been subject to looting of materials and equipment as a consequence of the challenging security situation in the country after 2003's Gulf War. All of these sites have high degree of contamination and require decommissioning and remediation in order to ensure nuclear safety and security. Many of these sites are located at Al-Tuwaitha Nuclear Research Site.

Al-Tuwaitha Nuclear Research Site (20 km to the south of Baghdad) was established in the 1960's and grew to include three research reactors and facilities for nuclear fuel fabrication, radiochemistry, uranium enrichment, radioactive waste treatment, and biological research.

The strategic plan to decommission all nuclear facilities and sites in Iraq consists of three phases, which are (2008-2010) phase, (2011-2015) phase and (2016-2025) phase.

During a decommissioning phase of nuclear facilities, simply the physical protection and security measures should be maintained until removing of all nuclear and other radioactive materials.

The level of physical protection and security measures will be down based on decommissioning steps, and other facilities such as radioactive waste storage facilities might be needed and should be considered with regards to physical protection as well.

The current paper discusses the considerations of physical protection and technical measures for decommissioned destroyed nuclear facilities and those nuclear facilities being decommissioned and generated radioactive waste at Al-Tuwaitha nuclear site to protect them against malicious acts and to enhance safety and security measures.

Gender

Male

State

Iraq

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