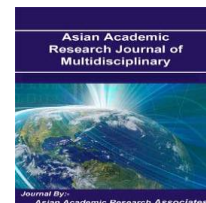




A Peer Reviewed International Journal of Asian
Academic Research Associates

AARJMD

**ASIAN ACADEMIC RESEARCH
JOURNAL OF MULTIDISCIPLINARY**



THE IMPACT OF GRAPHITE REFLECTOR MODIFICATION ON NEUTRONIC PARAMETERS OF A TYPICAL MTR TYPE RESEARCH REACTOR

RANI OSAMA A.AZIZ¹; E. H. AMIN²; H. ABOU-SHADY³

¹Physics Department-Faculty of Science, Cairo University

²National Center of Nuclear Safety and Radiation Control, Atomic Energy Authority,
Cairo, Egypt

³Nuclear Studies and Peaceful Application Center, Cairo University

Abstract

Neutronic analysis of a typical swimming pool type research reactor, Pakistan research Reactor-1 (PARR-1), was carried out for determine the effect of graphite reflector configuration modification as a way to optimize the neutron flux in the irradiation positions. Standard computer codes WIMSD and CITVAP were employed to calculate core excess reactivity, neutron fluxes, power distribution, and burn-up distribution. A comparison between four different core configurations is presented in this article.

Keywords: Graphite reflector, neutronic analysis, MTR reactor neutronic parameters
