

# URANIUM RESOURCE DEVELOPMENT IN THE EASTERN DESERT OF EGYPT

(EGY/3/014) B1 New

MODEL PROJECT

## CORE FINANCING

YEAR	Experts		Group Activity	Equipment	Fellowships		Scientific Visits		Group Training	Sub-Contracts	Misc. Comp.	TOTAL
	m/d	US \$	US \$	US \$	m/d	US \$	m/d	US \$	US \$	US \$	US \$	US \$
1999	2/15	36,750	0	50,000	0/0	0	1/15	16,200	0	0	0	102,950
2000	3/15	54,075	0	60,000	2/0	7,200	1/15	17,100	0	0	0	138,375
2001	1/19	26,460	0	0	2/0	7,500	0/0	0	0	0	0	33,960

First Year Approved: 1999

**OBJECTIVES:** To evaluate the uranium potential in granitoid and related rocks found in the Eastern Desert of Egypt with the objective of delineating economically viable uranium ore deposits.

**BACKGROUND:** Prospecting nuclear raw materials is emphasized in Government plans as one of the key factors to ensure sustainability of nuclear technology and energy programmes. Over the past years, Egyptian uranium exploration programmes have been carried out in sandstone and granitic formations. The Nuclear Materials Authority (NMA) is presently focusing its exploration programme on uranium mineralized areas in granitoid and related rocks. Since 1980, a comprehensive programme in the Eastern Desert has resulted in the discovery of several mineralized zones, particularly in El Missikat, El Erediya and Gabbal Gattar prospects. With Agency assistance, metallogenic studies for the evaluation of the most promising exploration targets were undertaken and the presence of episyenite, which is known to host major uranium deposits, has been observed and reported. Under the current project, the Agency has been requested to assist in reviewing existing and new data collected in the field and in developing the best prospects. An inventory of all uranium occurrences and their prioritization will be made through intense prospecting. Then the most promising occurrences found will be assessed through detailed prospecting and preliminary resource estimation for possible development and feasibility study.

**PROJECT PLAN:** The first phase of the project will determine all granitic bodies in the Eastern Desert showing the presence of episyenite and related structures. This will be accomplished through the revision and interpretation of existing data and an active prospecting field programme, covering at least two field seasons. The second phase, starting one year later and overlapping the first phase, will consist of detailed prospecting in selected areas where episyenite is present. The use of detailed geochemistry and geophysics as well as prospecting is necessary; some trenching and limited drilling are also recommended. Teams of geologists and geophysicists will be assigned to the field for extensive periods to accumulate data. It is expected that this work will yield several prospects that will lead to the third phase, which will consist of prioritizing the best prospects or targets for extensive drilling in order to evaluate the resource and later the reserve.

**NATIONAL COMMITMENT:** The NMA has well equipped laboratory facilities, operational field exploration teams and competent scientists and engineers, and will provide infrastructure, field equipment and logistics.

**AGENCY INPUT:** Equipment for field work, training and expertise in uranium geology and metallogeny.

**PROJECT IMPACT:** The outputs of the project will serve to evaluate and develop uranium resources based on the extensive exploration work carried out in previous years by NMA and to delineate economically viable uranium ore deposits. Availability of sufficient uranium resources will be a major factor for consideration in Government planning towards ensuring long term sustainable development of nuclear power in Egypt. The resource potential of the Eastern Desert is estimated at around 10,000-15,000 tonnes of uranium to be discovered and evaluated over a period of several years with systematic geological work. A reserve of 6,000 tonnes can fuel a 1,000 MeW nuclear power plant for over 20 years. If this minimal reserve can be proven, it will have a great impact on the country's economy.