

**THE
AGENCY'S TECHNICAL
CO-OPERATION ACTIVITIES
IN 1991**

REPORT BY THE DIRECTOR GENERAL



INTERNATIONAL ATOMIC ENERGY AGENCY

International Centre of Insect Physiology and Ecology in Nairobi. The programme focussed on research, the culture and identification of organisms and the separation, purification and characterization of cellulose-degrading enzymes. The Agency provided personnel for co-ordination and planning as well as equipment and miscellaneous supplies. Fungi, bacteria and Actinomycetes in guts of higher termites. *Macrotermes michealseni*, were isolated and identified. Five Actinomycetes and six bacterial species were isolated from worker termite guts and the symbiotic fungus *Termitomyces* spp. were cultured in artificial media. The project provided guidelines for similar areas of study and training programmes. Although the objectives were very broad, it was possible to focus on specific aspects and to make progress in these areas.

INT/5/094

FATE OF TRYPANOCIDE DRUGS IN CATTLE

COMPLETED: 91-11-13

TOTAL COST: \$1,348,245

TO DETERMINE THE FATE OF TRYPANOCIDE DRUGS IN CATTLE INFECTED WITH TRYPANOSOMES, USING RADIOLABELLED DRUGS.

A long term expert was assigned to assist in a study on the fate of trypanocide drugs in cattle, using radiolabelled compounds, and to train project personnel in methods of investigation including the application of radiolabelled compounds. Excellent facilities were established, including a modern radioisotope laboratory where the fate of trypanocide drugs in cattle could be investigated. Training was provided not only to the project personnel but also to fellows from other African countries. Five trypanocide drugs were selected for investigation. It is expected that the findings on completion of the project will provide a basis for more effective administration of trypanocide drugs. The work is continuing under Project KEN/5/013.

ISLAMIC REPUBLIC OF IRAN

IRA/4/016

NUCLEAR REACTOR DESIGN

COMPLETED: 91-12-31

TOTAL COST: \$45,088

TO DESIGN AND CONSTRUCT A SUBCRITICAL ASSEMBLY AND A ZERO POWER EXPERIMENTAL REACTOR.

Expert services were provided to advise in the preparation of technical specification for the supply of elements for the research reactor and to advise on conversion of the reactor frame from high enriched uranium to low enriched uranium. The Agency also assisted Iran in the transfer of fuel from Argentina at no cost to the Agency. Advice on planning activities for the design of a zero power reactor and on selection of the reactor computer codes was also given. Fellowship training for one national specialist was provided.

COMPLETED: **91-12-10**TOTAL COST: **\$1,610**

TO REVIEW THE BIDS AND ADVISE ON THE SELECTION OF A VARIABLE ENERGY CYCLOTRON.

Iran is giving high priority to the construction of a cyclotron for nuclear medicine. The Agency was requested to help the counterpart review the bids and to give advice on the selection of a variable energy cyclotron. This was achieved during a meeting sponsored by the Agency and held in Vienna.

IRELAND

IRE/1/002

DOSIMETRY LABORATORYCOMPLETED: **91-09-12**TOTAL COST: **\$49,372**

TO ESTABLISH A DOSIMETRY SERVICE FOR RADIATION PROTECTION.

In 1987, the Nuclear Energy Board in Dublin requested Agency assistance to set up a Secondary Standards Dosimetry Laboratory (SSDL) for the calibration of personnel dosimeters and radiation monitoring instruments. The Laboratory was also intended to facilitate the implementation of radiation protection regulations to conform with international standards. The project was approved in 1989. Equipment, which included an ionization chamber for dosimetry calibration sources, filters and other accessories, and a laser guidance device for precision settings, was procured for the Board. About one quarter of the money spent was provided as trust funds by the Irish authorities. An Agency expert undertook two missions to advise on the project and instructed the counterpart staff on calibration settings and maintenance of the instrumentation for the integrity of the SSDL measurements. The counterparts are using the SSDL equipment for a countrywide personnel dosimetry service for which the Board is responsible, as well as for environmental radioactivity measurements.

JAMAICA**JAM/4/002 RESEARCH REACTOR CENTRE**COMPLETED: **91-12-31**TOTAL COST: **\$521,084**

TO FACILITATE SITE SELECTION, NUCLEAR SAFETY, ORGANIZATION OF LABORATORIES, AND COMMISSIONING AND TESTING OF A RESEARCH REACTOR AND ITS COMPONENTS.

This project was initiated in 1982 with an estimated duration of six years, funded by the IAEA and an extrabudgetary contribution from the USA. The main objective was to assist the staff of the Centre for Nuclear Sciences of the University of the West Indies to develop an adequate framework for the installation, operation and utilization of a research reactor for analytical work, directed towards local and regional problems. The main emphasis was on the development and application of neutron activation analysis methods, the