STRENGTHENING TRAINING FOR OPERATIONAL SAFETY AT PAKS NPP (HUN/9/019) I3

CORE FINANCING

YEAR	Experts		Equipment	Fellowships		Scientific Visits		Training	Sub-contracts	Misc. Comp.	Total
	m/d	US $	US $	m/d	US $	m/d	US $	US $	US $	US $	US $
1995	8/ 0	91,200	62,000	-	-	5/ 0	63,000	-	-	-	216,200
1996	7/ 0	84,000	55,000	-	-	6/ 0	79,200	-	-	-	218,200
1997	4/ 0	50,400	45,000	-	-	-	-	-	-	-	95,400

FOOTNOTE a/ FINANCING

YEAR	Experts		Equipment	Fellowships		Scientific Visits		Training	Sub-contracts	Misc. Comp.	Total
	m/d	US $	US $	m/d	US $	m/d	US $	US $	US $	US $	US $
1995	6/ 0	75,600	-	-	-	-	-	-	-	-	75,600
1996	6/ 0	79,200	-	-	-	-	-	-	-	-	79,200

First Year Approved: 94 Total expenditure to 30 September 1994: $671,025 (TACF)
$14,854 (EXTRA)
$685,879 (TOTAL)

OBJECTIVES: To implement a systematic and comprehensive national education and training programme for NPP personnel, to maintain and enhance safety, quality and reliability in the operation and maintenance of the Paks NPP – specifically to improve operational safety and personnel performance by upgrading the Paks Training Centre.

BACKGROUND: The Paks Nuclear Power Plant (NPP) is situated about 150 km south of Budapest. It has four WWER-440 units in operation (Model V-213), which were started up in 1982, 1984, 1986 and 1987, respectively. Paks operation is being overseen by the Hungarian Atomic Energy Commission (HAEC) from the nuclear safety and regulatory point of view. There are currently no nuclear power reactors under construction but operation of the existing plants will continue, and it is envisaged that the nuclear power programme will expand. The installed nuclear capacity at Paks already provides about 50% of the electricity generated in the country. In view of this significant contribution and the serious consequences for the Hungarian economy of any supply interruption, it is absolutely vital to maintain and enhance safety, quality and reliability in the operation and maintenance of the plant and to minimize the risk of human error. This requires highly qualified, competent and motivated personnel, as well as continuous learning and improvement on the part of the individual and the organization. The Paks NPP operators, however, contrary to NPP operators in Western countries, cannot rely on the suppliers' support for training and maintenance of the plant. Hungary has had to develop its own complete infrastructure. Today plant personnel perform all the maintenance and service work using local capabilities. Thus, the continuous training and qualification of plant personnel is one of Paks' vital tasks. It has to achieve self-sufficiency in education and training to ensure the availability of resources at all times. The assistance requested from the Agency is not only considered extremely valuable, but is in fact essential for achieving success. The Paks NPP units have consistently achieved, by international standards, high availability and load factors (about 85%). The good operating experience is attributed partially, if not mainly, to the importance assigned to the qualification and competence of plant personnel.

Maintaining and improving competence is considered an essential factor for ensuring safety and reliability of NPPs; a Training Centre was therefore established at Paks in 1986. The Company's Training Department has developed a comprehensive range of software, documentation and training material to perform its responsibilities. There is also a Simulator Centre that has a full-scope replica simulator, a basic-principle simulator and an emergency control room simulator. The existing training facilities, and especially the simulators, are essential prerequisites for the implementation of the proposed model project.

PROJECT PLAN: This project was approved as part of the 1994 programme. A Project Co-ordinating Committee, consisting of representatives from the Paks NPP, the HAEC, the Technical University and AEKI, has overall responsibility for execution of the project from the Hungarian side. Approximately 30 professionals are assigned either full or part-time to the project. Additionally, an in-house expert has been assigned to the project to oversee project activities at Paks NPP. The in-house expert gives special attention to monitoring progress and results achieved under the project. Some 20 specific indicators related to safety, quality and performance will be monitored continuously.

NATIONAL COMMITMENT: The estimated total cost of the project is $7,090,800, excluding computer-assisted maintenance equipment that is to be acquired by Paks directly. Of this amount $5,400,000 will be provided by the Hungarian Government. The existing buildings at Paks for workshops, maintenance and stores are to be used to upgrade the Maintenance Centre. The Board of Directors of Paks has authorized the project leader to seek financing in Europe for part of the funds required to proceed with the project. The HAEC is also fully supporting the project at the Government level.

AGENCY INPUT: The Agency is providing expert services in the form of advisory missions, seminars, workshops, and the services of an in-house expert who would oversee project implementation. The Agency's contribution is mainly aimed at achieving qualitative improvements. Nonetheless, as the project is intended to achieve self-sufficiency for Hungary in education and training for operational safety, these contributions are considered essential for the success of the project. During 1994, most of the essential equipment, such as steam generator, circulating pumps, parts of the reactor pressure vessel, etc., have been supplied.

IMPACT: The project is expected to have a significant economic, political and social impact for the end users and the country. It is expected that the benefits of the project would become apparent already in the short term, in particular through operational safety improvements which are to be introduced during project execution. The full impact will, however, be felt in the medium and long term, once the project is fully implemented. The results would have a direct impact on the improvement of operational safety and performance of Paks NPP, and would also lead to a more efficient use of resources, which would result in lower electricity generation costs. The impact is not expected to be limited to Hungary. The training programmes and facilities would offer a possibility in the future to provide training to experts from countries operating WWER units.