COOPERATION POTENTIAL WITHIN NEW ORGANIZATION OF ÇEKMECE NUCLEAR RESEARCH & TRAINING CENTER

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SUMMARY

Çekmece Nuclear Research and Training Center (ÇNAEM) was established in 1962. ÇNAEM as a subsidiary of TAEK is charged to perform R&D activities on whole area of nuclear science and technology. Within 2006, the center has been re-organized in all departments and divisions for focusing of resources and capabilities on more nuclear-related activities. In this presentation, breafly, activities of the institute and then potential cooperation fields between ÇNAEM and other institutions will be explained.

1. HISTORY

- 1955, Turkey signed with the USA a bilateral agreement on "peaceful uses of nuclear energy".
- 1956, the Turkish Atomic Energy Commission was created.
- 1957, Turkey became member of the IAEA.
- 1959, building of the first Turkish Research Reactor, TR-1 (1 MW), was started at Istanbul.
- 1962, TR-1 commissioned, and the establishment of the Çekmece Nuclear Research and Training Center (ÇNAEM) completed.
- 1979, Turkey signed the NPT.
- 1982, the structure and the name of the Turkish Atomic Energy Commission transformed to the Turkish Atomic Energy Authority (TAEK) to adopt itself to new administrative, scientific and technological developments.
- 1984, the TR-2, pool-type 5 MW reactor, was commissioned (replacing TR-1 reactor).

1. TODAY

- TR-2 is operational.
- ÇNAEM has been performing activities in whole area of nuclear science and technology for 45 years.
- Benefits
  - — Installations, systems,
  - — Equipment, instrumentation,
  - — Experienced manpower (the most important).
- ÇNAEM is located beside the Küçükçekmece lake and covers an area of 2.2-million m^2.
- The total number of personnel employed at ÇNAEM between 1961-2006 is 966 and in groups of 416 professionals, 207 technicians and 343 support ones.
- Now employed personnel at ÇNAEM is 215; including 42 Ph.D.'s, 69 MS/BS's, 43 technicians and 61

administrative support staff.

1. ACTIVITIES

- Manufacture of radiation measurement devices (survey meters, lab monitors, etc),
- Development and manufacture of detectors for use in the Network of Radiation Early Warning System (RESA),
- Calibration of radiation measurement instruments (SSDL).
- Radiation protection service of ÇNAEM,
- Radiation monitoring around İstanbul,
- Indoor radon measurements,
- Radioisotope production and dispensing for use in industry and hospitals,
- Development and production of radiopharmaceutical diagnostic kits (MDP for bone, DTPA for kidney),
- Processing and interim storage of low level radioactive waste from hospitals and the industry,
- Analysis of all kind of uranium and thorium,
- Radioactivity analysis and certification of food products for import and export,
- Radioactivity analysis environmental samples (water, sediment, soil, and biota) for research and monitoring purposes,
- Radiobiology,
- Radiation cytogenetics (biodosimetry),
- Non-destructive testings,
- Measurement and testing of powder and ceramic material.

2. TRAINING AND INFORMATION

- Training on radiation protection (staff and public),
- Training on processing and storage of low level waste (IAEA regional training courses),
- Training and certification industrial workers who use non-destructive testing devices,
- International courses,
- Fellowships and scientific visits,
- Public information regarding nuclear energy.

3. POTENTIAL COOPERATION FIELDS BETWEEN ÇNAEM AND OTHER INSTITUTIONS

- Radiation monitoring,
- Indoor radon measurements,
- Radioactivity analysis in environmental samples by gamma spectrometry, beta and alpha counting methods,
- Radiation cytogenetics (Measurment of Chromosome aberration),
- Development, Production and QC of radiopharmaceutical cool kits,
- Core conversion of research reactor,
- Characterization of UO_2 based nuclear material (ceramics),
- Development of radiation measurement instrument,
- Processing and storage of low level radioactive waste,
- Accelerator utilization,
- NDT (gammagraphy and ultrasonic)