

### **Introduction**

The history of Medical Physics in Greece started in 1959 when four physicists started working in hospitals, namely Dimitris Binopoulos, Konstantinos Ilias and Ioannis Sfontouris at Alexandra Hospital and Vassilis Proimos at Agios Savas Hospital which was the first Anticancer hospital in Greece. The radiotherapy –teletherapy was performed using X-rays equipment working at 30 – 250 kV and Cobalt machines. The radiotherapy specialist/doctor was in charge to decide for the energy, the area, the number of units and the exact position which would be irradiated using mainly his experience. The individual radiation therapy scheme ended according to the skin erythema of the patient.

Dosimetry and radiation protection were unknown terms those days.

The brachytherapy was performed only with Radium sources. The radiation protection was in its first steps. The patient with the inserted sources was not isolated in a special room. The doses received by the staff, other patients in the same ward and close relatives were unknown. The sources were put aside in boxes and not in safe/shielded areas. As a result Ra sources were occasionally lost and found some years after. Iodine -131 was also administered those days.

Therefore, urgent actions had to be taken, the necessity of more physicists to be educated as medical physicists and work at hospitals and a law to establish and cover all the issues of radiation protection.

In 1960 the first School of Hospital Physicists was organised under the supervision of the Greek Atomic Energy Committee (GAEC). Professor Vassilis Proimos, Laodamas Sklavenitis, physicist working at GAEC and Vassilios Malamos doctor working at GAEC, were the pioneers of this first programme. The school took place for four more times and was the source of the first medical physicists in Greece.

Nowadays, postgraduate programmes exist in Greek universities, namely M.Sc. in Medical Physics which can also lead to Ph.D. diplomas. Throughout the years a significant number of medical physicists have been also educated abroad, mainly in United Kingdom and France.

### **Radiation Protection Regulations**

A great breakthrough in radiation protection was achieved in 1974 when the first law N. 181/74 established the radiation protection, the use of ionizing radiation and the necessity of a regulatory framework. It took four years of continuing work against bureaucracy before Sergios Tsialas, member of a committee with Pontifikas, Chatziantoniou, Binopoulos and Proimos managed to succeed this task and the Radiation Protection Regulations were published at FEK 422/1978. The regulations were renewed with FEK 280/85, FEK 539/91 and FEK 216/01. The Hospital Physics profession and the role of the Hospital Physicists in everyday work was recognized as well as the necessity of hazard reports and radiation shielding calculations.

### **Medical Physics Society**

The Hellenic Association of Medical Physicists was established on 15/3/1969 under the name “Association of Radiation Physicists” and had only 27 members, the necessary number to be recognized by law as an official society. It was subsequently renamed as HAMP on 17/9/1981. In accordance with the last modification of the Association’s constitution on 20/5/1997, the Association has both scientific and professional orientation. The mission of HAMP is to advance medical physics practice in Greece, through scientific workshops, courses and seminars, to promote the professional improvement of medical physicists, to advance the quality of medical services for patients and inform the general public about the use of ionizing and non ionizing radiation. HAMP is member of the European Federation of Organisations for Medical Physics-EFOMP and the International Organization for Medical Physics-IOMP and has currently 300 members. HAMP is actively collaborating with all major scientific and professional organizations. In the recent years, HAMP is involved in the Continuous Professional Education and Development of its members by organizing a series of national and international seminars, workshops and congresses in the fields of ionizing and non ionizing radiation.

The Medical Physicist is a well known profession in health sciences with important contribution in Radiology, Nuclear Medicine and especially Radiotherapy departments. Medical Physicists work and serve their profession in hospitals, universities, Greek Atomic Energy Commission and in private sector companies and in big companies associated with radiology, radiotherapy, nuclear medicine and radiation protection devices.

### **Greek Atomic Energy Commission**

The Greek Atomic Energy Commission (GAEC) is the national regulatory authority, competent for the control, regulation and supervision in the fields of nuclear energy, nuclear technology, radiological and nuclear safety and radiation protection. GAEC history goes back in 1954, when for the first time an organization competent to promote peaceful nuclear energy and technology applications, under the name "Greek Atomic Energy Commission" was established in Greece. In 1987, following the separation from the National Centre for Scientific Research "Demokritos" in 1985, GAEC was re-established as the competent authority for radiation safety. In 2014, the new legislative framework of GAEC was amended specifying the roles and responsibilities of GAEC as regulatory authority.

In 1974 the law for the first radiation protection regulations (RPR) was published supported by several legislative decisions and documents. In 2018, the presidential decree transposed to the national legislation the new BSS Directive 2013/59/Euratom, which forms the current RPR.

GAEC responsibilities include: Regulatory – legislative work; Authorization and Inspections for ionizing radiation practices; In situ measurements of electric and magnetic and electromagnetic fields emitted by man-made applications; Personal dosimetry of the occupationally exposed workers; Coordination of the environmental radioactivity monitoring program and the telemetric environmental monitoring network; Spectroscopic analyses in food and consumer goods; Radon measurements; Operation of an ionizing radiation calibration laboratory; Preparation of and response to radiological/nuclear emergencies, including contribution to combating illicit trafficking in radioactive materials; Training activities; Participation in committees of national, European and international organizations; Public information.

GAEC established and participates in the Medical Physics post graduate course (M.Sc.) jointly with all Greek universities.