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**DEPARTMENT OF NUCLEAR SAFETY AND SECURITY  
DIVISION OF RADIATION, TRANSPORT AND WASTE SAFETY**



**EDUCATION AND TRAINING APPRAISAL  
IN RADIATION PROTECTION AND THE SAFETY OF RADIATION  
SOURCES**

**CUBA**

17 - 21 October 2016

## **1. APPRAISAL TEAM - PARTICIPANTS**

### **Appraisal Team**

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Julio Barcelo	Spain (Team Leader, Expert)
Konstantinos Karfopoulos	Greece (Expert)
Andrea Luciani	IAEA (Team Coordinator)

### **List of Participants**

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#### ***Ministry for Science, Technology and Environment***

Mr, José Fidel Santana Nuñez – Vice-Minister

#### ***AENTA***

Mr Daniel López Aldama – President

Mr Manuel Fernández Rondon - Director

#### ***CNSN***

Mr Pablo Jerez Veguería – Head of Department

Ms Maidelys Rosa Rodríguez Rodríguez – Senior Specialist

Mr Conrado Alfonso Pallarés – Senior Specialist

Mr Yamil López Forteza – Senior Specialist in Radiological Emergencies

Ms. Karen Soler Bascó – Senior Specialist

Mr Luis Jova Sed – Advisor

Mr Cruz Duménigo González – Head of medical practices group.

Ms Yolanda Pérez Reyes– Head of industrial practices group.

Ms Lediansy Alemán González – Senior Specialist

#### ***MINSAP***

Dra. Teresa Romero – Oficina Nacional lucha contra el Cáncer

#### ***DNSA-MINSAP***

Ms Roxana de la Mora Machado – Grupo Central Regulatorio

#### ***CPHR***

Ms Gladis López Bejarano – Director General

Mr Omar García Lima, Director Management and Human Capital/Research

Ms Niurka González Rodríguez, Radiation Protection Office

Ms Maryzury Valdés Ramos

### ***InSTEC***

Ms Alina Gelen Rudnikas – Professor, Radiological Protection

Ms Amaya Casanovas Díaz –

### ***CECMED***

Ms Yaquelin Rodríguez Valdés – Deputy Director

Ms. Liana Figueras Fernández – Deputy Director

Mr. Adalberto Machado Tejeda – Medical Physics Specialist

Mr. Ernesto Suárez Rodríguez – Section Head

### ***HOSPITAL HERMANOS AMEIJERAS***

Dr. Reynaldo Denis de Armas – Vice Director de Medios Diagnóstico

Dr. Alfredo Herrera González – Vice Director de Consultas Externas

MSc. Luis Sánchez Zamora – RP Officer

Ing. Adlin López Díaz – Jefa de Servicio Medicina Nuclear

Lic. Maritza Alvarez – Jefa Técnica Servicio de Imagenología

Dr. Jorge Ortiz Roque – Reserva del Jefe de Servicio de Imagenología

### ***CENTIS***

Dr. Jorge Caridad Cruz Arencibia – Director

Ing. Miguel Antonio Soria Guevara – RP Officer

Ing. Fernando Enrique Ayra Pardo – RP Specialist

Msc Zayda Amador Balbona – Radiation Protection Specialist

### ***DIC-CENTIS***

Dr. Juan F. Bautista Cuellar – Director

Dr- Alejandro Perera Pintado – PhD

Dr. Leonel A. Torres Aroche – PhD

Mr Alex Vergara Gil – RP Officer

## **BACKGROUND**

At the request of the Ministry of Science, Technology and Environment (CITMA) an Education and Training Appraisal (EduTA) was agreed to be conducted on 17-21 October 2016 under the Technical Cooperation project RLA9075 'Strengthening National Infrastructure for End-Users to Comply with Regulations and Radiological Protection Requirements'. The request for an EduTA was complemented with an expression of interest to become a centre of resources for the region to be able to provide training and to promote the IAEA strategic approach.

The EduTA pre-mission questionnaire was sent out to the Cuban counterpart at the National Agency for Nuclear Energy and Advanced Technologies (AENTA), with a request to fill out the core modules (Module A on the legal and regulatory framework for education and training, and Module B on the national strategy for education and training). Module C, conceived to be filled out by organizations conducting the Postgraduate Educational Course in radiation protection and the safety of radiation sources (PGEC) under the auspices of the IAEA, was not considered as part of the appraisal mission.

The filled questionnaire, with the supporting documents, was sent back to the IAEA contact point before the conduction of the mission for a preliminary assessment.

## **OBJECTIVES AND TERMS OF REFERENCE OF THE EduTA MISSION**

The general objectives of the EduTA are:

- To carry out a detailed appraisal of the status of the provisions for education and training in radiation protection and the safety of radiation sources;
- To identify areas in education and training, where the provisions should be improved to meet (i) the IAEA safety standards, (ii) the national education and training needs;
- To provide the host Member State with recommendations and suggestions for improvement;
- To provide key staff in the host Member State with an opportunity to discuss the legislative framework and the national policy and strategy in the field, with the EduTA team members who have experience in the issues at stake;
- To promote the IAEA Standards and Guidelines relevant to the scope of the appraisal.

In this framework, the terms of reference of this appraisal mission were:

- To revise and review, together with the counterpart, the information provided in Module A and B of the EduTA questionnaire on the legal and regulatory framework for education and training in radiation protection and safety, and the national strategy for education and training respectively;
- To provide an opportunity to continuously improve the provisions and overall infrastructures for education and training in radiation protection and safety.

## **2. CONDUCT OF THE MISSION**

The EduTA mission was conducted according to the agreed Mission Programme. The opening session of the mission took place at the premises of the National Agency for Nuclear Energy and Advanced Technologies (AENTA) on the first day of the mission. The EduTA team was welcomed by Mr Daniel Lopez Aldama, AENTA President.

Representatives of AENTA, National Nuclear Safety Center (CNSN), National Office of Environmental Health (DNSA) from the Ministry of Public Health (MINSAP), Centre for Radiation Protection and Hygiene (CPHR), Higher Institute of Technology and Applied Sciences (InSTEC), Hospital Hermanos Ameijeiras and Centre for Isotopes (CENTIS) participated in the opening session.

The EduTA team leader presented the scope and objectives of the mission, the procedure for conducting the mission and the general structure and content of Module A and B of the questionnaire.

The representatives of the Cuban authorities and organizations, provided several presentations on the national legal and regulatory framework, with particular emphasis on requirements for education and training in radiation protection, and on the activities and infrastructures for training in radiation protection. Some presentations were provided in the following days during the technical visits.

Presentations were provided on:

- Overview on activities and facilities in Cuba with use of ionizing radiations/radiation sources; National Legal and Regulatory Framework for E&T in Radiation Protection and Safety; Human Resources and infrastructures for E&T in Radiation Protection and Safety (E&T providers); Mr Pablo Jerez – CNSN;
- National Strategy for Education & Training in Radiation Protection & Safety; Mr Omar Garcia – Steering Committee for the Strategy – CPHR;
- Education & Training in the Regulatory Body; Mr Conrado Alfonso Pallarés – CNSN;
- CPHR Overview; Ms Gladys López Bejarano – CPHR;
- Capacitación en materia de Seguridad Radiologica; Ms Niurka González – CPHR;
- Banco nacional de dosis de la República de Cuba, Maryzury Valdés – CPHR;
- CECMED Overview; Mr. Adalberto Machado – CECMED (Centre for State Control of Drugs, Medical Equipment and Devices);
- General Background of the Regulatory Body work, Overview on activities and facilities in Cuba with use of Diagnostic Radiology, Current Legislation and perspectives, Main activities related to E&T on Safety and Radiological Protection in Diagnostic Radiology; Ms Roxana de la Mora DNSA/MINSAP;
- Direction of Clinical Research, Centre for Isotopes; Mr Alex Vergara – CENTIS-DIC;
- Formation of professionals in the fields of Nuclear Physics, Radiochemistry and Nuclear Engineering needed for the development of the Cuban Nuclear Programme; Amaya Casanovas – InSTEC;
- Education and Training in Radiation Safety of the CENTIS’ Staff; Ms. Zayda Amador Balbona – CENTIS.

After the presentations, the information provided to the EduTA team by the Cuban counterpart prior to the mission was discussed in detail, explanations on completing the questionnaire were given by the EduTA team and additional information was requested where necessary. Numerous documents were provided to the team before the mission. Additional information was received during the mission. These new documents are used as a reference in the text of this report.

In accordance with the mission programme, the EduTA team visited several facilities as follows:

- CPHR Headquarters: in order to look into the facilities devoted to E&T, i.e. classrooms, laboratories and administrative offices;
- CECMED: to receive information about E&T activities and a presentation from DNSA about legal framework on E&T for radiodiagnostic services;
- Hospital Hermanos Ameijeiras;
- CENTIS: Headquarter and the Direction of Clinical Research (DIC);
- CNSN Headquarters to review information.

On the last day, an exit meeting was held with the Cuban officials at the AENTA premises. The EduTA team leader presented a brief outcome of the assessment. Conclusions, recommendations and suggestions were agreed with the counterpart.