IAEA Technical Meeting on the Assessment and Evaluation of the Occupational Radiation Protection Appraisal Service (ORPAS)

Mission ORPAS – Dominican Republic

27 August - 05 September 2018
Dominican Republic is the second largest country in the Caribbean
- 48,445 square kilometers
- estimated population of 10 million inhabitants, one million of whom live in the capital, Santo Domingo
OVERVIEW OF THE PROCESS AND INITIAL STEPS

Preparatory Phase

1. Conduct preparatory mission
   ORPAS Team, Host country
2. Conduct self-assessment
   Host country
3. Prepare ORPAS mission
   Team Leader, IAEA Coordinator

Initial ORPAS team meeting
ORPAS team

ORPAS Mission

4. Entrance meeting
   ORPAS Team, Host country
5. Conduct ORPAS review
   Meetings, review of written materials, interviews, direct observation
   ORPAS team, Host country
6. Evaluate and develop recommendations/
suggestions/good practices
   ORPAS team
7. Preparation of preliminary appraisal
   report
   ORPAS team
8. Exit meeting
   ORPAS Team, Host country

Post Mission Activities

9. Prepare final appraisal report
   ORPAS team leader
10. Submit appraisal report
    IAEA coordinator
11. Prepare Action Plan
    Host country
12. Review of implementation of ORPAS
    mission findings
    ORPAS Team, Host country

Follow-up mission
IDENTIFICATION OF THE NATIONAL COUNTERPARTS

2 Regulatory body

➢ MEM-Vice Ministry of Nuclear Energy
➢ National Energy Commission

End users

➢ Medical Applications
➢ Industrial applications
➢ Industrial irradiator
➢ Radionuclide / Radiopharmaceutical Production

Technical service providers
OVERVIEW OF THE PROCESS AND INITIAL STEPS

RADIATION AND WASTE SAFETY INFRASTRUCTURE PROFILE (RaWaSIP)

✓ 32 industrial facilities
✓ 13 nuclear medicine
✓ 10 radiotherapy
✓ 300 diagnostic radiology

Information about:

✓ National register on occupational exposures
✓ SSD laboratory in place or bilateral agreements with other country to provide the service
✓ External and internal dosimetry services in the country
PREPARATION FOR AN ORPAS MISSION

Counterpart: The Radiation Protection Department of the National Energy Commission (DPR-CNE)

The National Coordinator defined the list of facilities to be visited during the mission

SELECTION OF THE TEAM LEADER

Rodolfo Cruz Suárez - IAEA Expert
Flavio Andrade - Mission Team Leader

No observers (from ILO, WHO) accompanied the mission
PREPARATION FOR AN ORPAS MISSION

8 different regions
Instruction to complete self-evaluation questionnaires to:

✓ National coordinator
✓ Regulatory Authority
✓ Service providers
✓ End Users (applications in medicine and industry)

Requested all relevant information and background according to each topic to the National Coordinator

Dates for the delivery of documentation and for the accomplishment of the Mission were established

A preliminary Mission Agenda was prepared
Communication between the participants of the team of reviewers was established quickly and easily.
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<th>Sun 26 Ago</th>
<th>Mon 27 Ago</th>
<th>Tue 28 Ago</th>
<th>Wed 29 Ago</th>
<th>Thu 30 Ago</th>
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<td><strong>MORNING</strong></td>
<td>Arrival</td>
<td>09:00-10:00 Meeting for logistic organization</td>
<td>10:00-10:30 Recess</td>
<td>10:30-11:30 Opening with installations that will be visited</td>
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CONDUCT OF THE ORPAS MISSION

INITIAL ORPAS TEAM MEETING

Expert Team (EE) meeting for general adjustments

MEDICAL, 2 Ex

INDUSTRIAL and SERVICES, 2 Ex

RADIOPHARMACUTICAL PRODUCTION, WASTE MANAGEMENT, 2 Ex

REPORT and QC, 1 Ex

Facilities to be visited – 25
Facilities visited
TOTAL 31
CONDUCT OF THE ORPAS MISSION

REMARKS...in the beginning

✓ Internal problems in the country regarding political structure in regulatory body brought some delays in the evaluation

✓ The receptivity of the mission's team, both by the regulatory body and by the end users evaluated was, for the most part, exceptionally positive

✓ The agenda agreed during the pre-mission was changed including other facilities, changing logistic and team member distribution

✓ All self-assessment questionnaires were not sent in time for the preparation of a pre-assessment by the specialists, only 3 installations sent information

✓ Self-assessment not available, documentation was revised during site visit
REMARKS...during the mission

✓ The country has large and complex facilities, which demand more time to evaluate the radiological protection programs implemented

✓ The information exchange by the mission's specialist team with the end users was, for the most part, exceptionally positive

✓ The language in which the communication between the evaluators and appraisers was fundamental to establish trust between them, explaining the mission's objectives, mainly so that it was not interpreted as punitive, but rather as a tool for implementing improvements in radiation protection safety

✓ In addition, the language adopted by the reviewers being the same as the one evaluated, makes it possible to interview technical personnel involved in practices that do not master English language
REMARKS...at the end of mission

The mission was completed on schedule and successfully

✓ 10 days of mission for 31 evaluations was really a challenge, mainly because it involved highly complex practices such as gamma knife radiotherapy, industrial irradiator and cyclotrons

✓ There was a need for assistance or exchange of experts between teams in order to achieve all scheduled evaluations

✓ Integration and trust between team members were fundamental to the success of the mission

✓ Daily meetings were very important for this synergy to be achieved

✓ In addition, the exchange of information and experiences provides an overview of the status of ongoing occupational radiation protection actions in the country
PRELIMINARY REPORT AND COUNTERPART REVIEW

✓ The report was sent to the users, and they returned with few comments and suggested little changes, which indicates that the non-conformities found by the reviewers were accepted by the users

✓ The same was observed for Nacional Coordinator

POST-MISSION ACTIVITIES

FINAL REPORT

✓ Review draft report for each facility was made by e-mail between reviewers and team leader

✓ The final report was finished and sent to the counterpart as scheduled
**MAIN CONCLUSIONS**

1. At end users, there is a general limitation on the provision by management of appropriate financial and personnel resources to establish and maintain general radiation protection programs for all radioactive facilities.

2. Technical service providers are limited in financial resources and appropriate personnel to offer services at the state-of-the-art level of conventionally accepted methods.

3. In general, the quality management systems necessary to guarantee the constant availability of appropriate and updated training, information and record-keeping systems on radiation protection are not applied for all employees who perform tasks related to ionizing radiation.

4. Lack of comprehensiveness in risk analysis and security evaluations.

5. Lack of comprehensiveness in the analysis and dissemination of the safety culture.

6. Radiation safety training is limited to specific practices and there is no national policy and framework for initial and ongoing training for all employees who need it.
SUMMARY OF MAIN FINDINGS
Latin America & Caribbean
ORPAS meeting 2020, Rodolfo Cruz-Suarez

Facilities & Activities (end-users)

1. Lack of appropriate Radiation Protection Programme
2. Lack of Safety Assessment and Optimization process
3. Co-operation agreement between employers missing
4. Financial considerations are limiting the full coverage of the workers monitoring
5. Limited workplace monitoring programme in place at many facilities
6. Limited Quality Management System
7. Limited of RP Training programme
8. Limited Leadership & promotion of Safety Culture
9. Medical surveillance very limited
The expected outcomes of an ORPAS mission are:

— To identify areas for improvements of the occupational radiation protection arrangements to meet the IAEA Safety Standards;
— To make recommendations and suggestions related to the identified areas for improvement;
— To provide assistance, if necessary, for the development of an action plan to achieve improvements.

There was a plan to execute the ORPAS follow-up mission in 2020, but it was postponed to 2021.

However, if the host country do not follow the progress in the resolution of the non-conformities presented during the mission, or even prepare the action plan to address the priority recommendations, no other evaluation can be made.
Thank you all

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