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MISSION REPORT ON 2nd REGIONAL COORDINATION AND PLANNING MEETING ON DEVELOPMENT OF TECHNICAL CAPABILITIES FOR THE PROTECTION OF HEALTH AND SAFETY OF WORKERS OCCUPATIONALLY EXPOSED TO IONIZING RADIATION (RAF/9/032), CAIRO, EGYPT, 15 – 20 APRIL 2007

Representatives from twenty eight (28) countries in the Africa region¹, participating in the regional project on *Development of Technical Capabilities for the Protection of Health and Safety of Workers Occupationally Exposed to Ionizing Radiation* [Thematic Safety Area 2, (RAF/9/032)] met in Cairo, Egypt, 15- 20 April 2007, at the 2nd Coordination and Planning Meeting. The objectives of the meeting were as follows:

- (i) to present, discuss and assess the current status of national activities relating to the development of a sustainable system for the protection of workers occupationally exposed to ionizing radiation in the participating countries,
- (ii) to identify priority needs in this area with a view to addressing these needs along the lines of guidance contained in related IAEA publications and the Generic Work Plan, and
- (iii) to prepare country-specific Action Plans based on the identified priorities and national commitment by Member States concerned and, as well as on agreed Agency's input for the project implementation in 2007 and 2008.

Each country presented the status report in accordance with the guidelines provided by the Agency. The reports constituted the basis for extensive discussions, information and experience sharing. The country status reports covered the following elements of the Thematic Safety Area (TSA) 2:

- Regulatory Infrastructure for Occupational Exposure Control,
- Individual Monitoring for External Radiation Sources (IMERS),
- Individual Monitoring for Intakes of Radio-nuclides (IMIR), where applicable,
- Workplace Monitoring (WM),
- Service providers,
- Implementation of the requirements by end-users,
- Occupational Exposure to Natural Sources

Accordingly, activities for radiological protection of workers, reported by the participating countries, were grouped in seven critical **tasks** as indicated above.

¹ Algeria, Bénin, Botswana, Burkina Faso, Chad, Central African Republic, Côte d'Ivoire, Democratic Republic of the Congo, Egypt, Ethiopia, Gabon, Ghana, Kenya, Lybia, Madagascar, Mali, Mauritius, Morocco, Namibia, Niger, Nigeria, Seychelles, Sierra Leone, Sudan, Tunisia, Uganda, the United Republic of Tanzania, Zambia.

Considerable time was devoted to general and round table discussions on the country presentations. This facilitated the identification of regional and national priorities for the development of appropriate technical capabilities for sustainable system for the protection of workers occupationally exposed to ionizing radiation.

Comprehensive information was provided on the objectives, participation and the current status of the on-going Regional Intercomparison Exercise on measuring Hp(10) for the photon radiation. A few countries that have not acceded to the exercise have been encouraged to do so with no delay.

Country specific action plans 2007-2008 were prepared to address prioritized needs in each of the seven commonly agreed, critical tasks. Detailed write-ups of each task were provided to all participants. The write-ups included actions to be taken by the participating Member States, as well as the agreed IAEA inputs. The goals to be achieved were clearly identified, using the result- and outcome-based approach.

Due consideration was given to the needs of those countries which acceded to the project in the current biennium, and have not participated in its phase 2005 - 2006.

Action plan 2007-2008 for regional activities was agreed upon. The regional action plan is focused on building capacity and developing technical capabilities for the implementation of the aforementioned tasks (ref. Annex II, Table).

The action plans worked out during the meeting address both groups of priority needs, namely those specific to each country, as well as the needs common to all participating countries. With regard to modalities of the IAEA input, it was agreed that the identified priority needs be categorized accordingly in the proposals for national training events, provision of training and reference material, expert services (through consultations with the expert using electronic means of communication or through missions), provision of essential standard equipment to a selected institution (national service provider) of each participating country, designated as focal point in the implementation of this project and committed to fulfill its objectives. It was further agreed that activities relating to the implementation of country-specific action plans be delivered under RAF/9/032, (ref. Annex II).

The meeting acknowledged the IAEA consistent approach to capacity building in radiation protection through education and training of professionals and technical staff in charge of or involved in implementing national programmes for occupational radiation protection and exposure control. These endeavors were recognized as important inputs to accomplish the project objectives.

As mentioned above, national technical capabilities will continue to be developed with the IAEA support to national training events through the provision of expertise and standard training material. On-the-job fellowship training and scientific visits will continue to be supported by Agency, when justified by the country's needs, as part of the established strategy for capacity building in the areas consistent with the project objectives. Standard packages of equipment will be provided, subject to the availability of resources, in response to national activities and demonstrated commitment to meet project objectives for radiological protection of workers and

for ensuring adequate level of occupational exposure control, in compliance with the international BSS.

To achieve a desired level of transparency, all actions relating to the IAEA input under this project were discussed and agreed to in the meeting, so that the participating Member States know clearly what can be provided, in support of national commitment to accomplish tasks included in the country – specific Action Plan.

The summary of the discussions on project areas is presented below.

PROTECTION OF HEALTH AND SAFETY OF WORKERS OCCUPATIONALLY EXPOSED TO IONIZING RADIATION

The meeting was in agreement that to protect workers effectively, the following infrastructure must be in place in the participating Member States:

- Regulatory infrastructure, with requirements for occupational exposure, complemented by practice-specific requirements or regulatory guidance;
- Adequate number of well-trained regulatory staff to operate the system for notification, authorization, inspection and enforcement, to ensure compliance with occupational radiation protection and quality management requirements;
- Adequate number of well-trained staff at end-user (licensee) institutions including Radiation Protection Officers, to operate facilities, and ensure adequate level of radiological protection of workers;
- An active collaboration and interaction between regulators, end-users (licensees), facility Radiation Protection Officers (RPOs) and national authorities in charge of occupational health and safety to ensure the protection of workers;
- A national system in place for skilled training of relevant staff in occupational radiation protection, related exposure control and quality management.

Furthermore, the meeting was in agreement that the primary responsibility for radiological protection of workers lies with the management of end-user institution (e.g. license-holder), with secondary responsibility assigned to a facility RPO. The role of regulators is to ensure that applicable national legislation, regulations and guidance for the protection of the worker in all operations involving occupational exposure are applied in accordance with the relevant standards, and this is done by the authorization process and regular inspections, based on established procedures and check lists, rather than testing equipment or measure individual doses, except for audits or radiation surveys of licensee facilities.

Based on the Generic Action Plan for Thematic Safety Area 2, and the Country Status Reports, the participants completed self-assessment of seven critical elements in occupational radiation protection infrastructure, referred to above. Priorities relating to each element have been identified. The summary of the self-assessment is presented in Annex I.

There was a general agreement that, while in many countries and in most elements of the TSA 2, there were still major gaps to be bridged, the following common priorities could be identified:

1. Individual monitoring of workers occupationally exposed to radiation remains a top priority. There is a need to establish and strengthen technical capabilities in this area in a number of Member States which joined the IAEA in recent years and in those where legislative framework and regulatory authorities are relatively new. Regional activities and country-specific action plans are designed to address this critical area. Due attention will also be paid, where appropriate, to expanding the coverage of personnel monitored so that in the course of time, the group includes all workers categorized as occupationally exposed to radiation. The latter action applies specifically to countries, where individual monitoring programme has been in place, but gaps have been identified in its scope and effectiveness.
2. Designation and training of Radiation Protection Officers at major end-user institutions has been highly prioritized as a means of strengthening the protection of workers.
3. There is an urgent need to establish and/or develop work place monitoring in most participating countries.
4. In countries with extensive mining activities, action will be initiated or continued, where applicable, to incorporate this sector in the programme for occupational health and safety. This applies specifically to the assessment of occupational radiological hazards due to NORM in mines.
5. In a number of participating countries, there is a need to follow up with actions, initiated and pursued during the 2007-2008 cycle, with a view to meeting principal requirements of the BSS in the area of occupational radiation protection. These efforts need to be coordinated by national competent authorities, preferably by the regulatory authority in conjunction with major stakeholders.
6. There is a common need to promote and apply quality-based approach to measurements in external dosimetry in the region. This pertains to countries with established calibration and individual monitoring services, as well as those where such services are still to commence.
7. Strategy to be adopted in the implementation of the project includes regular semi-annual reports by the participating countries on actions taken and results achieved against each task agreed upon in the country-specific action plan, including the related time frame.

GENERAL ISSUES

1. The meeting unanimously recognized the achievements of RAF/9/032 in all aspects of establishing and/or upgrading infrastructure for the protection of workers and occupational exposure control. The participants expressed the view that the adopted approach offered an effective way of addressing the Member States' needs in meeting the principal requirements of the BSS in this area. The meeting recognized, however, that time was now ripe for actions directed at end-users (licensees) as front-runners in ensuring tangible progress the protection of workers.
2. The meeting also recognized that this progress strongly depends on the effectiveness of

national regulatory infrastructure [TSA (milestone) 1], and that continuing interaction between the regulatory body and the stakeholders is prerequisite to the success of this project.

3. The meeting acknowledged with appreciation the effort of the IAEA in producing standardized training packages, implementing its strategy for education and training. It was recognized that efforts should continue to establish a core group of qualified trainers in Member States. The trainers will constitute a nucleus for transfer of knowledge and skills required for a systematic approach to training at the national level. The regional training programme should address this need to ensure sustainability of national programmes for radiological protection of workers and effectiveness in occupational exposure control.

4. In connection with the on-going Regional Intercomparison Exercise on measuring Hp(10) for photon radiation, initiated and coordinated by the Agency under RAF/9/032, the meeting recognized and acknowledged this activity as an important means of setting up and/or upgrading a national Quality Management System for dose assessment of workers occupationally exposed to radiation.

5. Taking into account the country reports presented, it was recognized that there was a need to have a unified and consistent assessment scheme using performance indicators. The meeting appreciated the efforts of the IAEA in this direction and recognized that the performance indicator scheme serves as an effective tool for self-assessment and reporting on the achievement of project objectives by the participating Member States. The participants of the meeting were given the opportunity to perform self –assessment, using the performance indicators grading system, leading to the identification of prioritized needs, and the country-specific action plans.

6. Using the forum provided by this meeting, the participating countries successfully prepared and/or adjusted country-specific Action Plans for the project implementation in 2007 and 2008. The participants recognized with appreciation the opportunity provided by the meeting to exchange and learn from each others' experiences. An Action Plan 2007-2008 for regional activities under the TSA 2 has been agreed upon. The Plan is focused on education and specialized training in this area.

7. It is the considered view of the participants that the objectives of this meeting have been fully accomplished.

RECOMMENDATIONS

TO GOVERNMENTS/NATIONAL COORDINATORS OF THE PARTICIPATING COUNTRIES:

1. It is essential that adequate Government commitment, with the allocation of necessary resources, be ensured for the success of the project.
2. Ensure that National Coordinators involve all stakeholders required for an effective implementation of the project, and be fully involved in the execution of the project throughout the 2007-2008 cycle.
3. Facilitate human and material resources needed for the implementation of the country-specific action plans agreed upon at the meeting.
4. National Coordinators are urged to create the enabling environment to foster an effective collaboration between regulators, end-users (licensees) and other stakeholders with commitment to ensure the protection of workers in activities involving occupational exposure.
5. National Coordinators are urged to facilitate the establishment and/or upgrading of a national programme for training of personnel involved in occupational radiation protection including Radiation Protection Officers, as one of the primary means for capacity building in this area.
6. It is recommended that due priority be given to the nomination of appropriate candidates for Agency-supported regional and national training events, as well as fellowships and scientific visits.
7. It is further recommended that all participating countries take full advantage of the on-going Regional Intercomparison Exercise on measuring Hp(10) for photon radiation, with a view to upgrading the quality of measurements for dose assessment in occupational exposure control.

TO THE IAEA:

1. The meeting acknowledged the long-standing commitment and dedication of the IAEA to addressing the needs for the protection of workers and occupational exposure control. It should be emphasized that this regional project has had a significant impact on establishing and developing essential elements of infrastructure, in compliance with the international BSS. It is therefore recommended that current efforts continue to provide adequate support to meet critical needs identified in both country-specific and regional action plans worked out and agreed to during the meeting.
2. There has been unanimous agreement that close collaboration and interaction are required between national authorities concerned, regulators and all stakeholders, with a view to ensuring commitment and sustainability for the radiological protection of workers. It is therefore recommended that the mechanisms established through the IAEA programme for upgrading radiation protection infrastructure, including the Technical Cooperation regional project RAF/9/032, as well as the momentum established by this Coordination and Planning Meeting, continue to be used to foster such interaction and cooperation, particularly through the support

to national sensitization seminars and training events.

3. It is recommended that the Action Plan 2007-2008 for regional training activities in this area be fully implemented under RAF/9/032. Specifically, assistance should be provided in the holding, in 2007, of a *Regional Training Course on Operation, Maintenance and Troubleshooting of TLD –based Radiation Monitoring Equipment*, and in 2008, of a *Regional Training Course on Workplace Monitoring* in both official languages of the region (English and French). Such a regional training should respond to persistent needs in this area, and serve the purpose of “doing more where more is needed to be done”.

4. The meeting recognized that project activities have successfully continued since the beginning of the current biennium and that the 2st Coordination and Planning Meeting provided a very useful forum for setting the project scene in 2007 and 2008. It was noted that additionally, four weeks or so were needed to get the country-specific action plans worked out and agreed to during the meeting, endorsed by national competent authorities of the participating countries, and follow up with the implementation of the plans. It was further recognized that a minimum period of five years was needed for the project to accomplish its stated objectives. It was noted that the participation of new Member States of the Agency actually initiated activities in this area. It is therefore recommended that due consideration be given to the continuation of this project during the 2009-2011 cycle.

CONCLUSIONS

1. The objectives of this 2nd Coordination and Planning Meeting on the project RAF/9/032 have been fully accomplished. All parties involved in the implementation of the agreed action plans 2007-2008 should fulfill their committed roles, so that the expected outcome of the project is realized in each participating Member State.
2. The participants acknowledged with appreciation excellent arrangements made and support provided by the Government of Egypt through the Egyptian Atomic Energy Authority which contributed to the success of the meeting.

Cairo, Egypt, 20 April 2007.