



Regional Training Course in the application, the use and the maintenance of laboratory instruments for differentiation and quantification of radioisotopes in animals and animal products

Hosted by the Government of Belarus

through the

Research Institute of Radiology

Gomel (Homel), Belarus

27 November 2017 – 8 December 2017

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Information Sheet

A. Purpose

The purpose of the event is to train participants in the application, the use and the maintenance of laboratory instruments for differentiation and quantification of radioisotopes in animals and animal products. The project RER/9/137: “Enhancing National Capabilities for Response to Nuclear and Radiological Emergencies”, component on the “Re-enforcing Veterinary Authorities to Respond to Nuclear Emergencies” aims to generate standardized guidelines and technical plans for responses to nuclear and radiological emergencies in the animal production systems, compatible with the existing standards of the International Atomic Energy Agency (IAEA), and to integrate the requirements of these standards in the overall disaster management plans of international organizations, such as the World Organization for Animal Health (OIE), the Food And Agricultural Organization of the United Nations (FAO), the World Health Organization (WHO) and the United Nation Office for Disaster Risk Reduction (UNISDR).

The scope of the project covers the establishment and/or upgrade of an emergency response structure, at management (head veterinary offices) and technical (laboratories and field services) level, critical to enable efficient coordination and implementation of the required remediation measures.

So far, three workshops were organized under the RER/9/137 project, as follows:

1. Regional Workshop to Review International Emergency Preparedness Response Standards and Examine Veterinary Authority Participation,
2. Regional Workshop on Distribution of Radionuclides in Agricultural Facilities and Setting-up Mitigation Measures for the Animal Production Systems, and,
3. Regional Training Course on the Use of Decision Making Tools for Remediation Measures in Animal Production Systems.

In 2017 as planned in the project work-plan, two training courses on detection and differentiation of the radiological contamination of animals and animal products are planned: i) Training course in the application, the use and the maintenance of field survey instruments (duration 1 week) and ii) Training in advanced, laboratory based methods for differentiation of radionuclides (spectrometry, scintillation counting and others laboratory technologies / techniques), duration 2 weeks). Both courses will start simultaneously and will have part of the lectures together!

This prospectus refers to the training course on the advanced, laboratory based methods for differentiation of radionuclides, and will cover the following topics:

- a. Refresher lectures from basic radiology for veterinary professionals (isotopes, ionizing radiation, types of ionizing radiation, physical and biological characteristics of radionuclides, effect of contamination in animals, public health considerations);
- b. Techniques used for differentiation and quantification of radioisotopes:
 - Scope of application;
 - Construction and principle(s) of work;
 - Measurement ranges (advantages and limitations) and scope of application;
 - QA / QC issues (verifications and calibrations);
 - Regular maintenance and check-up;
- c. Practical laboratory techniques used for differentiation and quantification of radioisotopes in animal production facility / ies and animal products;
- d. Risk estimations of the measured concentrations into potential radiation equivalent doses

B. Working Language(s)

The working language(s) of the event will be English.

C. Deadline for Nominations

Nominations received after 16 October 2017 will not be considered.

D. Expected Output(s):

The expected outputs of the training course are:

- Participants will understand the importance of early detection of radiological contaminations in the animal production systems;
- Participants will understand the principles of functioning, advantages and limitations, as well as the required maintenance and QA/QCV of the field monitoring instruments;
- Participants will learn how the field monitoring instruments are used in animal production systems (monitoring contaminations of live animals and animal products);
- Participants will learn data interpretation, sample collection and submission to the designated laboratory / ies;

E. Scope and Nature

The training course will consist of presentations and practical classes on the topics mentioned above.

Presentations from relevant experts are also expected.

The presentations and the practical classes are expected to be sufficient to enable participants independent work upon return in their home institutions, as well as for further dissemination of the knowledge at national level.

F. Background Information

Veterinary authorities, as a key stakeholder for management of animal production systems, already have a well-defined international structure (www.oie.int) and standards established to monitor the production processes on daily basis and ensure food security and safety of the products of animal origin aimed for human consumption. Moreover, the principles and regulations developed and accepted by OIE are transferred through other relevant international organizations (FAO, EU) into the national legislations and consequently implemented at the national level.

These standards and legislative acts specify the technical roles of all officially designated institutions in Member States (MS), such as maintaining registers of farming animals, and usually address the roles of the competent authority (head veterinary offices), designated laboratories and the designated field veterinary services. Although there are clear standards for food safety and security in the European region (EU legislation, EU regulation EC 882/2004, Codex Alimentarius by FAO and WHO), there are still no strong linkages between the IAEA radiation safety standards and the EU legislation in the field of animal production systems. At national level, MSs of the IAEA European region would need significant facilitation of the linkages between the national nuclear safety and veterinary authorities, definition of clear roles of the individual designees of the veterinary systems (starting from preventive monitoring or routine uptake of the existing official monitoring data, through the early detection of contamination threats and response to nuclear and radiological emergencies in the animal production systems).

Additionally, there is a need to clearly map the stakeholders and their roles (actions needed) in a nuclear or radiological emergency, such as farms (structure and farming system), designated officials (nuclear safety authorities) and the executive entities (veterinary authorities through their official designees).

At international level, strengthening of the regional communication between the officially designated nuclear safety and veterinary authorities is needed; upgrade or establishment of sustainable communication linkages between the national as well as the regional authorities and the existing active platforms of the IAEA (Nuclear Safety and Security's Incident and Emergency Center-IEC) is needed. The whole complex of above mentioned mechanisms will contribute to the prevention or early detection and the management of radiological contamination(s) in the animal production systems, as well as the prevention of the entry of contaminated product of animal origin in the food supply chain for people.

In the context of the current training course, early detection, differentiation and quantification of radiological contaminations are critical to initiate the start-up of the response chain which should basically prevent placement of animal products in the food chain of people. Moreover, systematic monitoring of animal production systems should be able to generate sufficient data for the decision makers, to enable for situation analysis, decision making, evaluation of remediation measures, prognosis and future planning.

G. Participation

The course is open to 20 participants from IAEA Member States in the Europe Region.

The target countries are all MS who have expressed interest for participation in the RER/9/137 project.

H. Participants' Qualifications and Experience

The course is open to one participant from the veterinary authority or designated field veterinary services in member states

I. Application Procedure

Candidates wishing to apply for this event should follow the steps below:-

1. Access the IAEA TALEO page (<https://iaea.taleo.net/>) and complete the Candidate Profile.
2. Be registered on the Nucleus page of the IAEA (<https://nucleus.iaea.org/>).
3. Through Nucleus, access the InTouch+ platform where the Profile is completed (My Profile tab) (<https://nucleus.iaea.org/Pages/InTouchPlus.aspx>).

NOTE: The email used for TALEO and Nucleus must be the same. If not, the candidate's profile will not appear complete.

4. On the InTouch + platform, under the 'My InTouch +' tab, the candidate needs to:
 - a. select the institute / organization that he/she works at / represents ('My Institute' section);
 - b. click on the link called '**Refresh Personal History Form**' to update the system, *otherwise the nominations submitted will have these fields empty and it will not be possible to evaluate*

them during the selection of candidates ('IAEA Recruitment Platform' section).

NOTE: Once the above steps are finalized, the candidate's profile will appear as completed and he/she can apply for Technical Cooperation events.

5. In the InTouch+ platform (<https://Intouchplus.iaea.org>), in the 'Applications' tab, search by the event number provided in the invitation.

The help for each step is located at the top of the page. For additional help on how to register, create a profile and apply for an event, please refer to the online guide and training videos available under the following links: [how-to guide](#) and [training videos](#). Any issues or queries related to the new system can be addressed to InTouchPlus.Contact-Point@iaea.org or TC-AIPS-PL4.Contact-point@iaea.org.

Should this not be possible, applicants may download the Nomination Form for the TN from the IAEA website <https://www.iaea.org/services/technical-cooperation-programme/how-to-participate>.

Applications should contain sufficient information to establish that the nominees have the required qualifications. Completed applications need to be endorsed by the relevant national authority, i.e. the National Liaison Office and submitted through the established official channels.

J. Administrative and Financial Arrangements

Nominating authorities will be informed in due course of the names of the candidates who have been selected, and will at that time be informed of the procedure to be followed with regard to administrative and financial matters.

Selected participants will receive an allowance from the IAEA sufficient to cover their costs of lodging, daily subsistence and miscellaneous expenses. They will also receive either a round-trip air ticket based on the most direct and economical route between the airport nearest their residence and the airport nearest the duty station through the IAEA's travel agency American Express, or a travel grant, or they will be reimbursed travel by car/bus/train in accordance with IAEA rules for non-staff travel.

K. Disclaimer of Liability

The organizers of the event do not accept liability for the payment of any cost or compensation that may arise from damage to or loss of personal property, or from illness, injury, disability or death of a participant while he/she is travelling to and from or attending the course, and it is clearly understood that each Government, in approving his/her participation, undertakes responsibility for such coverage. Governments would be well advised to take out insurance against these risks.

L. Note for female participants:

Any woman engaged by the IAEA for work or training should notify the IAEA on becoming aware that

she is pregnant.

The Board of Governors of the IAEA approved new International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources. The Standards deal specifically with the occupational exposure conditions of female workers by requiring, inter alia, that a female worker should, on becoming aware that she is pregnant, notify her employer in order that her working conditions may be modified, if necessary. This notification shall not be considered a reason to exclude her from work; however, her working conditions, with respect to occupational exposure shall be adapted with a view to ensuring that her embryo or foetus be afforded the same broad level of protection as required for members of the public.

M. Organization

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Subsequent correspondence on scientific matters should be sent to the Programme Management Officer and correspondence on other matters related to the training course to the Administrative Contact.