

QUESTIONNAIRE TO THE REGULATORY BODY MEETING TURKU 2008

INVITATION

In conjunction with the 2008 ISOE Symposium, 25-27 June 2008, we are preparing a 3rd Senior Regulatory Body representatives meeting, to be held 24 June 2008 in Turku (Finland). We hope to encourage your participation in this meeting which follows on from the very successful Regulatory Body representatives meetings in 2004 (Lyon) and 2006 (Essen). The purpose of the meeting is to provide a forum for open exchange and discussion within specialised regulatory audience concerned with occupational radiation protection. For this occasion, the contamination management in NPPs from the occupational point of view has been chosen as the main topic.

OBJECTIVES OF THE MEETING

The main objectives of the meeting are:

- To meet with regulators from other organisations
 - To exchange information regarding regulatory control on **contamination management in NPPs from the occupational radiation protection perspective** focusing on
 - controlled and supervised areas inside NPP
 - occupational exposure control and assessment due to both external and internal contamination.
- This meeting will not deal with aspects of contamination management other than those related to occupational radiation protection.
- To help to improve national regulatory effectiveness on occupational radiation protection by comparing national reality versus international context

AGENDA

- Introduction of the different representatives
- Brief presentation on national requirements on contamination management
- Discussion
- Conclusions

OBJECTIVES OF THE QUESTIONNAIRE

In order to introduce the Regulatory Body representatives meeting it is expected to draw an overview of regulatory control on contamination management in NPPs from an occupational perspective in the different ISOE member countries with their similarities and differences. Therefore we would like you to answer, briefly, to the following questionnaire to stimulate information exchange and discussions. Only one response per country is necessary.

Please do not go into the details, just describe a few "objective data".

Even in case you will not be able to attend the meeting the information you can provide is precious. If you agree, questionnaires filled in by national authorities will be sent to the regulatory contacts participating in ISOE.

Yes, I agree

The information can be used only in the RB-meeting

COUNTRY AND REPRESENTATIVE IDENTIFICATION

- ❑ **Country:** Slovakia
- ❑ **Name of the Regulatory Body:** Public Health Authority of the Slovak Republic
- ❑ **Name and post of the person(s) who fill in the questionnaire:** Dušan Viktorý, radiation protection department

REGULATORY CONTROL ON CONTAMINATION MANAGEMENT IN NPP

- ❑ **Legal framework on contamination control**
 - Does your legal framework have requirements on radioactive contamination control? If so, give a short description of the content of references.
Basic requirements for management and control of the contamination in our legislation:
 - monitoring program should cover systematic monitoring of surface contamination and airborne contamination in controlled areas and if necessary in supervised areas also, Governmental decree No. 345/2006 Col.
 - working procedures for work in controlled areas must be developed and they should contain rules for waste treatment and for restriction and control of contamination at a working places, Governmental decree No. 345/2006 Col.
 - at any exit from controlled area must be created a monitoring point for control of surface contamination and for decontamination, Governmental decree No. 345/2006 Col. and Health Ministry regulation No. 545/2007 Col.; in practice control points are usually established also on the exit from potentially contaminated rooms or working places,
 - any worker in controlled area must be equipped with protective clothes and protective tools, Governmental decree No. 345/2006 Col.
 - rules for control of contamination of tools and material which are crossing the border of the controlled area, Health Ministry regulation No. 545/2007 Col.
 - general rule: the contamination of surfaces should be kept as low as reasonable achievable, Governmental decree No. 345/2006 Col.
 - maximum tolerable levels for contamination of surfaces are fixed in Governmental decree No. 345/2006 Col.
 - intervention levels for surface decontamination must be at least one third of maximum tolerable level, Health Ministry regulation No. 545/2007 Col.
 - individual personal dose monitoring must be ensured in controlled areas, Governmental decree No. 345/2006 Col.
 - control of internal contamination of workers in controlled area must be ensured, Governmental decree No. 345/2006 Col.
 - Does your legislation specify reference levels for contamination?
In the Governmental decree No. 345/2006 Col., there are established the maximum tolerable levels for surface contamination of working places.
- ❑ **Reference contamination levels on official documents**
 - Does some official document of the licensee specify levels for contamination?
Yes
 - If so specify the document.
Radiation protection program and instructions, guides or manuals based on RPP
 - Are the reference levels for contamination in NPP the same for all NPPs in your country?
Not obligatorily

REGULATORY CONTROL ON CONTAMINATION MANAGEMENT IN NPP

□ Contamination control in controlled or supervised areas in NPPs.

- How many controlled area categories could exist on NPP site?
In legislation, there are specified two categories of controlled area, but in NPPs they establish usually three categories of controlled area.
- What are the maximum contamination levels allowed in the different categories of controlled areas of NPPs for different categories of radionuclides/ types of emissions? If levels are specific for each site, please give an order of magnitude of the range covered for the different reference levels (Registration, Investigation and Intervention).
for active part of controlled area (with limited or restricted access)
alpha-radionuclides with high radio-toxicity 4 Bq/cm^2
other alpha-radionuclides 40 Bq/cm^2
beta radionuclides 40 Bq/cm^2

for other parts of control area
alpha-radionuclides 0.4 Bq/cm^2
beta radionuclides 4 Bq/cm^2
- What are the basic technical requirements in NPP to control spread of contamination? Which of them are specified by legal or approved documents and on which the licensee may decide in his own responsibility?
Requirements specified by legislation are given above.
Licensee may decide on technical details of construction and equipment, on monitoring system and on local rules and reference levels. These details are a part of documents required in licensing process.
- Does your legislation or approved documents include requirements about the monitoring program? Which document? What kind of requirements (periodicity, certificated instruments, exclusive performed by RP-personal with special education and training, averaging surface (volume, duration), registration and reporting)?
Requirements on content of monitoring program are in the annex No. 4 of the act 355/2007 Col. Act on public health protection and in the Health Ministry Regulation No. 545/2007 Col., but these are mostly not technical requirements.

□ Contamination control of personal protective equipment.

- Does your legislation or approved documents (company instructions) include requirements about contamination of protective personal equipment? Which document?
- Which requirements?
Governmental decree No. 345/2006 Col.
There are maximum tolerable levels for any relevant radionuclide, based on radio-toxicity for contamination of external surfaces of protective clothes and for internal surfaces of protective clothes.
Radiation protection program and related documents of licensee contain rules for control and treatment of protective personal equipment.
- What are the reference levels for contamination of protective personal equipment?
Maximum tolerable levels (Governmental decree No. 345/2006 Col.) for external contamination of clothes $3 \cdot 10^0 - 3 \cdot 10^4 \text{ Bq/cm}^2$ and for internal surfaces of protective clothes $3 \cdot 10^{-1} - 3 \cdot 10^3 \text{ Bq/cm}^2$.
Radiation protection program and related documents of licensee contain their own reference levels which are smaller.
- Is it allowed to enter controlled areas with street clothes?
No
- Is it allowed to wear protective clothes outside controlled areas on the NPP site?
It is allowed to wear protective clothes outside controlled area (in some object it is necessary), but it is forbidden to wear the same protective clothes as in the controlled area (the color and quality is different).

REGULATORY CONTROL ON CONTAMINATION MANAGEMENT IN NPP

- ❑ **Contamination control of reusable working materials at the exit of controlled areas.**
 - Does your legislation or approved documents (company instructions) include requirements about the levels of contamination allowed for reusable working material at the exit of controlled areas? Which document? If affirmative, provide reference levels: Governmental decree No. 345/2006 Col., there are maximum tolerable levels for any relevant radionuclide, based on radio-toxicity ($3 \cdot 10^{-1} - 3 \cdot 10^3$ Bq/cm²).

- ❑ **Estimation of effective dose from internal contamination**
 - Does your legislation or approved documents include requirements about internal contamination of occupational exposed persons? Which document?
Health Ministry regulation No. 545/2007 Col. and RPP of licensee
 - Which requirements?
In regulation, there is a general requirement that internal contamination should be assessed on a base of a workplace monitoring and it should be individual monitored if it is expected (on a base of area monitoring) that contribution of internal dose could be higher as one tenth of the limit.

 - What are the methods and criteria for assessment of internal doses?
The system of criteria is different in NPPs.
Approved documents of licensee contain a set of criteria for monitoring of internal contamination. There are few “levels” of monitoring. Any workers internal contamination is measured on a fast scan (and urine tests) when he accede to work, ones a year and when he finish the work. If this screening monitoring is positive it follows the measurement on whole body monitor.
Internal contamination of workers working in high risk is monitored routinely – usually monthly.
The internal contamination of any worker is monitored also by the screening measurements on quick body monitor on the exit from controlled area. In case that the measurement is positive, the workers internal contamination should be measured on the whole body counter, excreta analysis would be performed and the dose commitment will be assessed. The other reason for dose commitment assessment is or could be the surface contamination of the body, mainly of the face, or volume concentration of radio-nuclides in the air on the working place, or any other relevant suspicion.
 - What are the reference levels for internal doses (please give examples for typical nuclides, allowed averaging volume or surface or ...)?
General reference level are not established.
Some NPPs use a calculation method for calculation of nuclide-specific recording and investigation level for routine monitoring of dose commitment in RPP of the licensee.

- ❑ **Estimation of effective dose from external contamination. Skin doses**
 - Does your legislation or approved documents (company instructions) include requirements about contamination of skin? Which document?
Governmental decree No. 345/2006 Col.
 - Which requirements?
General information how to assess the skin dose, there are no limits nor reference levels for skin contamination nor technical requirements.
 - What is the triggering level of contamination to carry out an assessment of skin dose?
The triggering level is not established in regulations.
It depends on local system of monitoring of body surface contamination. For example in NPP Mochovce it is the total activity of 1000 Bq on skin area of 300 cm² (average contamination 3 Bq/cm²).

REGULATORY CONTROL ON CONTAMINATION MANAGEMENT IN NPP

- What is the maximum level allowed for personal contamination at the exit of the controlled area?
It depends on local system of monitoring of body surface contamination, but the differences are small. For example in NPP Mochovce it is 0.2 Bq/cm² (for Cs-137).
- How contamination is measured in 1 cm²? For discussion in plenary session.
Proportional pan-cake detector with shielding with the window - diameter 1 cm
- **External risk versus internal risk perception**
 - External risk versus internal risk perception and practice in your country? How and why do you weight the risks different? What is the practice in your country? What are the experiences? For discussion.

Do you have some additional topics, which you would like to discuss during the RB meeting: