Draft Safety Guide DS434
(Radiation Safety of Accelerator based Radioisotope Production Facilities)

Step 11 - Action requested from the Committee
(approval for submission to CSS)

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Division of Radiation, Transport and Waste Safety
Background

• The development of the draft Safety Guide was started in 2015
• 2015-16 TO - Mr. Gusev; 2017-18 Mr. Haridasan Pappinisseri
• Two consultancy meetings
• The isotope production at research reactors was excluded to avoid duplication
• Only accelerator based production facilities covered.
• RASSC41 – Nov 2016 approved the draft for sending to MS
• Draft was also approved by EPreSC, TRANSSC, WASSC, NSGC
Scope

To provide recommendations on how to meet the requirements of the BSS with regard to radioisotope production facilities. This Safety Guide provides specific, practical recommendations on the safe design and operation of these facilities for use by operating organizations and the designers of these facilities, and by regulatory bodies.

Applicable for Accelerator based facilities and not reactor based production facilities.

- covers radioisotopes produced in cyclotrons and linear accelerators
- purified from other sources are processed into radioactive products for subsequent use, for example, in nuclear medicine
Structure

1. Introduction
2. Justification of practices
3. Types of radioisotope production facility
4. Duties and responsibilities
5. Safety assessment
6. Radiation protection programme
7. Training and education
8. Individual monitoring of workers
9. Workplace monitoring
10. Environmental monitoring and effluent discharge
11. Personal protective equipment
12. Nuclear security considerations
Structure

13. Testing and maintenance of equipment
14. Radioactive waste management and decommissioning
15. Transport of radioactive material
16. Emergency preparedness and response

References : 52

Annex I. Key radiation safety issues to be taken into account when planning production of accelerator based radioisotopes
Annex II. Example of immediate onsite response actions in case of emergency at a radioisotope production facility.
# MSs comments (120 days comments period)

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Nature of the MSs comments

General
• Well structured (Romania)
• Many sections well written (Sweden).
• Good overview – no further suggestions (Switzerland)
• Supports the draft (Tajikistan)

Most comments are editorial.

Some of the comments are on direct quotes from fundamental safety principles and cannot be changed.

Question on consistency with Euratom directive: Safety guide is to provide guidance on GSR part 3 requirements. However, in general no inconsistency is noted.
Comments…

• **Rejected comments**
  – Mainly if contradicts with the requirements or fundamental safety principles
  – In cases of no specific suggestions or lack of information.
  – Cases of out of scope of the guide.

• **Title**
  – Radiation safety of accelerator **based** radioisotope production facilities

• **Terminologies**
  – Radioisotope production facility (cyclotrons or linear accelerators)
  – Radiation protection officer

Resolution of comments table posted on committee website
## Comments by the Committee – second review

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Comments and Resolutions

Resolution table posted on the website.

Few editorial comments

Accelerator room – to designate as controlled area (Germany and France comments accepted).

Pakistan comments to include waste classification: GSG1 provides detailed guidance on waste classification (rejected).

Some comments from Turkey rejected – relevant guidance in EPR series documents are already available.
Comments from EPReSC

• Iran
  – Two editorial comments: both accepted.
• RASSC 44 : Approval and would like to see the final text after incorporating any further comments from other committees.

• TRANSSSC approved the draft.
You are kindly requested to approve the submission to the CSS
Thank you!