



Strål
säkerhets
myndigheten

Swedish Radiation Safety Authority

NKS-B GammaRate

Safe use of portable gamma radiation ratemeters
for environmental monitoring

2008-2010

Project group: SSDL nordic country + Iceland

- ➔ Lead organization:
Norwegian Radiation Protection Authority
- ➔ Contact person: Hans Bjerke +47 67162575



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2009-03-27

GammaRate

- ➔ Harmonize calibration of handheld dose rate meters



Background

- ➔ dose assessments are the base for risk assessment



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Background

- Calibrated and proper dosimeters -> certain dose assessments -> reliable advice from an emergency organisation
- SSDL calibrated instrument -> dose assessments are globally accepted

First year 2008 -workshop

- Tor Wøhni, NRPA: Radiation protection dosimetry – external radiation
- Jan-Erik Grindborg, SSM: Measuring resources in Sweden
- Þorgeir Sigurdsson, GR: Existing Practices for Testing & Calibrating Portable RP Instruments
- Þorgeir Sigurdsson and Sigurður Emil Pálsson, GR: Development of a mobile gamma spectrometric measurement system (2): The small VASIKKA potential use and initial experience.
- Þorgeir Sigurdsson, GR: Basic description of radiation monitor usage.

First year 2008 -workshop

- ➔ Teemu Siiskonen and Kaj Vesterbacka, STUK: The Dose Rate Monitoring Network in Finland
- ➔ Jan Erik Dyve, NRPA: Knowing the background - Understand the Crisis
- ➔ Mark Dowdall, NRPA: Mobile measurements – LIVEX, DEMOEX, equipment, methods.
- ➔ Antti Kosunen, STUK: ISO and IEC standards and STUK ANVISNING VAL 1.3 Anvisning om användning för bekräftelsemätningar samt gransknings- och kvalitetskrav på mätare.

First year 2008 -workshop

- Harmonise and improve the quality of measurements out in the field during a nuclear or radiological emergency
 - Develop and maintain a national standard for ambient dose equivalent $H^*(10)$
 - Calibration procedures for different instruments
 - Guidance of on-site calibration procedures for permanent measurement stations

'GammaRate' is in the second year, 2009 , concentrate on:

- Calibration of portable dosemeters
 - Calibration comparisons of handheld dosemeters at the SSDLs.
 - Calibration in low background calibration room
- Calibration certificate or label on dosemeters?
- Capability and usability of different dosemeters





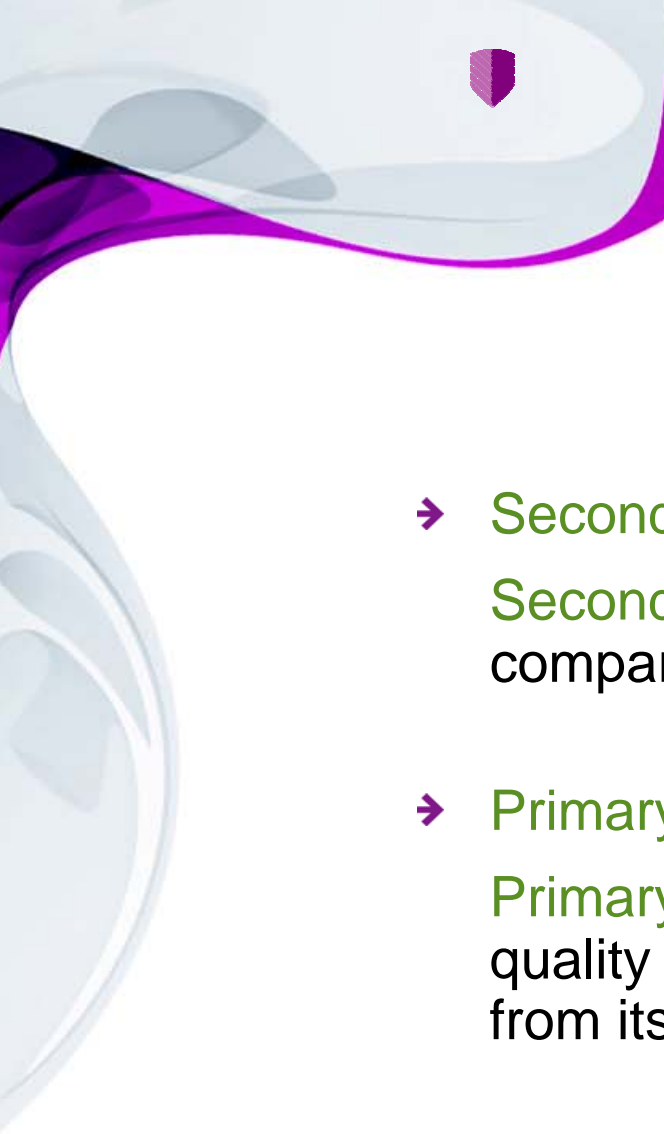
Third year 2010

- Report on the calibration comparison
- Make the final report from the project.

Thank you

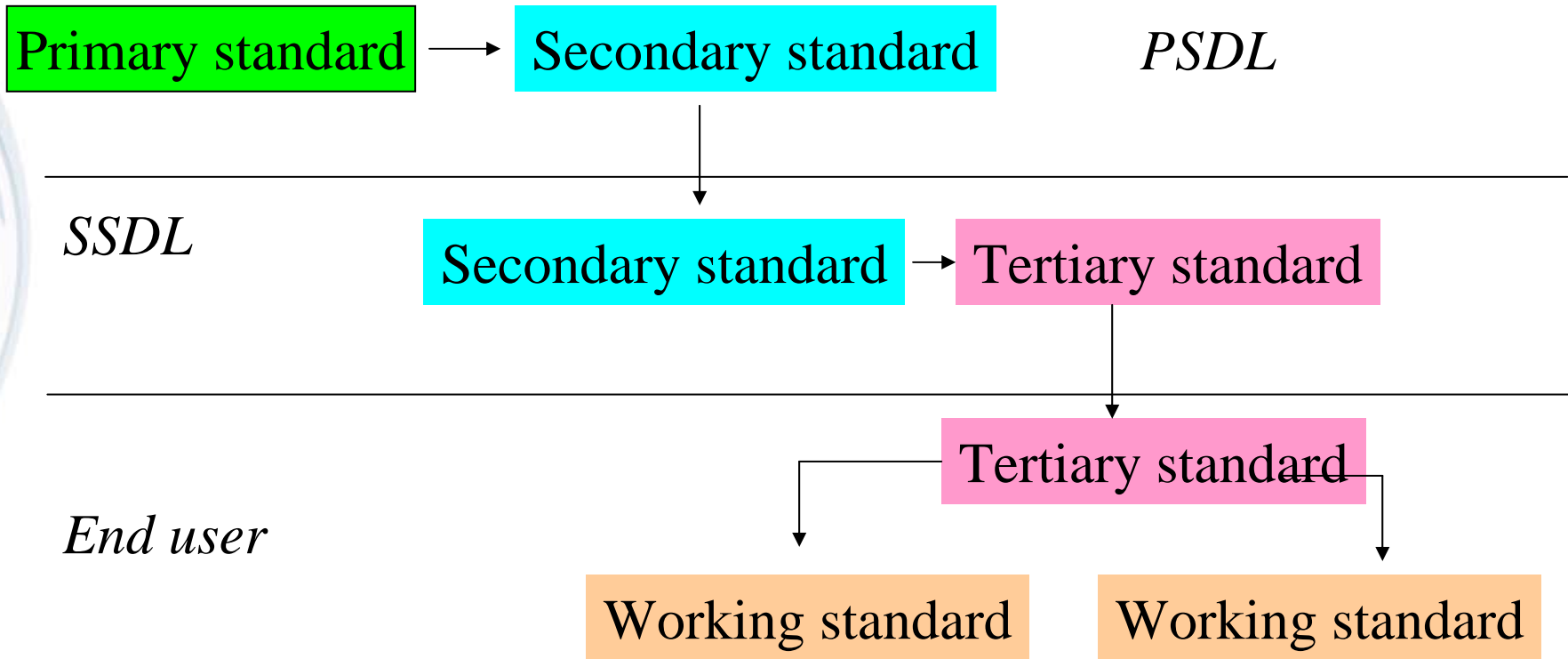


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- Secondary Standard Dosimetry Laboratory, SSDL,
Secondary standard: An instrument calibrated by comparison with a primary standard.
 - Primary Standard Dosimetry Laboratory, PSDL,
Primary standard: An instrument at highest metrological quality that permits determination of the unit of a quantity from its definition.



Traceability chain



Calibration services

- Energy calibration (Co-60, Cs-137 and Am-241)
- Dose rate calibration ($\mu\text{Sv/h}$ to mSv/h)
- Angular dependence of the dosimeters
- Overload
- Specific energies from x-ray beams (ISO 4037 narrow beams)
- Response time

