

Gamma spectrometry at FFI

GammaSem

IFE, 16 Sept. 2009

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Norwegian Defence Research Establishment (FFI)

- Established 1946
- Major defence R&D organisation in Norway
- Staff 685
- Annual turnover 664,7 MNOK (2008)

Radiological laboratory FFI

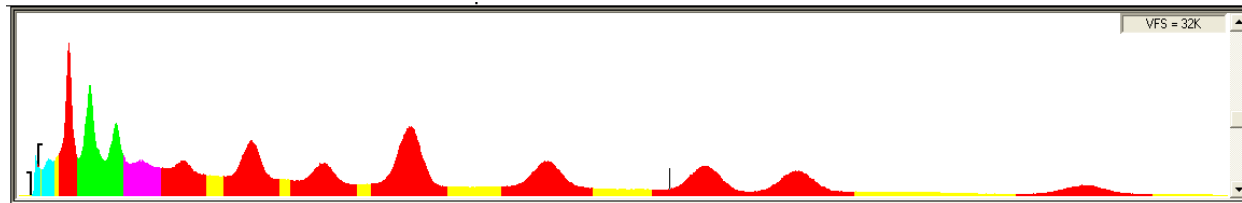
FFI



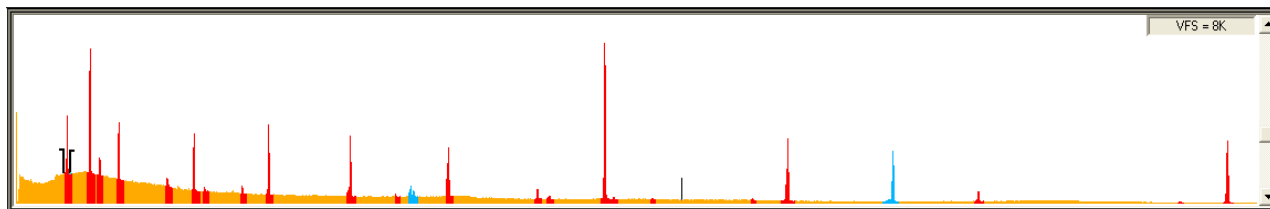
1. Detecting radiation, alpha/beta/gamma
Hand held doserate meter



2. Preliminary identification
Hand held low resolution gamma spectrometer



3. Confirmatory identification (NATO) and quantification
High resolution gamma spectrometer





Gamma spectrometer

- 30 % coax, bought in 1992
- New DSA-1000
- Genie2000 software

- Efficiency calibrations for water (20 ml + 100 ml), earth (20 ml + 100 ml) and swipes

- Two scientists work part time in lab
 - Total of 4 days per month
 - Planning increased effort



What are our niches?

- Mixed samples
 - Only institute in Norway capable of (and willing to) handle samples potentially containing mixtures of hazardous biological, chemical and radioactive substances.
 - Operates a NATO approved laboratory for analyses of chemical warfare agents and their decomposition products
 - Operates a biosafety level three laboratory for biological threat agents
- Sensitive samples
 - All personnel have security clearance



Cooperation

- Cooperation with IFE
 - IFE can perform alpha- and beta analysis
 - IFE is discussion partner in gamma spectrometry
 - Scientific cooperation
 - Both institutes can lend detector capacity
- Why IFE
 - Physical location
 - Already close cooperation between institutes in other areas

NATO



- The laboratory supports FFIs participation in NATO groups
 - Sampling and Identification of Biological, Chemical and Radiological Agents (SIBCRA)
 - Radiological and Nuclear Defence Sub-Group (RNDSG)



Upcoming work

- Decontamination of radioactivity – in cooperation with FFI project focusing on chemical decontamination
- Handling of environmental samples from Norwegian armed forces



FFI





Participation in exercises

- NATO
 - Mixed sample 2007
 - Radioactivity 2008
 - Mixed sample 2009 (planned)
- NKS
 - MALRAD 2009 (planned)