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Characterization and Clearance of m/s Sigyn

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m/s Sigyn

m/s Sigyn

- 2200 metric tons ship
- 1200 measurement locations
- 6 days for measurements
- Measurement team:
  - 2 persons handling the measurements
  - 1 assistant

Method for Characterization and Clearance

- Nuclide distribution
- Detector effectiveness
- Exclusion of hotspots
- Categorization of surfaces
- Measurements of homogeneous units
- Parametric statistics
- Clearance levels
- Discussion
- Future optimization of the method

- History
- Material samples

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- Scintillation detectors
- Energy dependent
- $\frac{kBq/m^2}{CPS}$

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- Detector effectiveness
- Material sample
- Operational scan value

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- Contaminated over clearance limits
- Risk for contamination over clearance limits
- Low risk for contamination over clearance limits
- Extremely low Risk for contamination over clearance limits

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- Areas with assumed Gaussian distributed contamination
- Randomly located measurements
- Verifying that contaminations was Gaussian distributed

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- Bayesian statistics
  - UCL95

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- UCL95 calculations for every present nuclide is compared to regulations.

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- Why the method was chosen
  - Small need for pre-surveys
  - The profit with Bayesian statistics
  - Fast and cheap

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- A number of measurements instead of an area part for every unit.
- Bigger units for low contaminated areas.
- Non parametric statistics for low contaminated areas.

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Symposium on

Preparation for Decommissioning

Lyon, France
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