

KNF-
WASTE-06

Radioactivity Measurement of Radioactive Waste

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Radioactivity Measurement and Radionuclide Analysis are performed for the purpose of radioactive waste treatment, decontamination, clearance, low-level waste permanent disposal and storage.

Description

● Purpose and Necessity

- Measuring radioactivity is to manage and classify radioactive wastes. Nuclear facility must comply with legal requirements such as Nuclear safety act for the purpose of treatment, decontamination, clearance, permanent disposal and storage of radioactive waste.
- Since there are many different kinds of radioactive waste, it is important to use suitable equipment correctly and conduct a right process.

● Method

- Radioactivity Measurement and Radionuclide Analysis for the purpose of radioactive waste treatment/clearance/permanent disposal/storage.
- Classification and management of radioactive wastes.

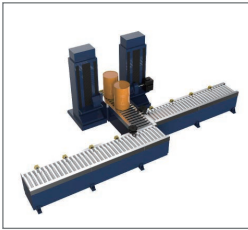
● Principle

- Using HPGe or NaI gamma spectrometer to analysis Radionuclide(U-235, Pa-234m)
- Using Drum-scanner to measure low energy radiation emitted from radioactive waste drum.

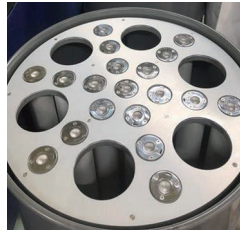
- Using Pyrolyser Furnace & Liquid Scintillator Counter to analysis Radionuclide(H-3, C-14)

● Equipments

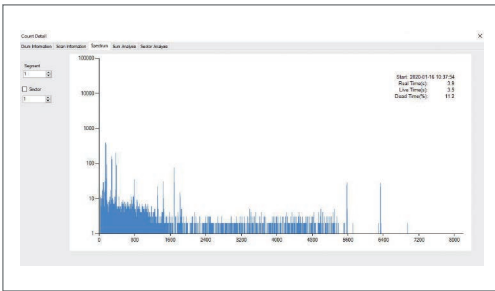
- Drum-scanner



< Drum-scanner overview >



< Efficiency calibration drum >



< SSGS spectrum analysis & report >

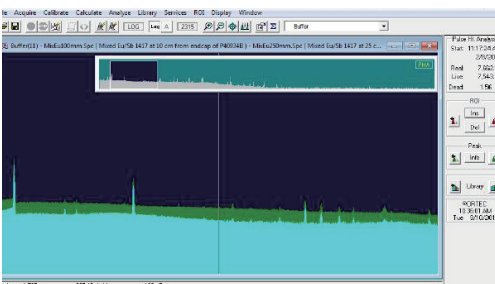
- HPGe Gamma spectrometer & Auto Sampler



< Auto sampler >



< Gamma spectrometer >



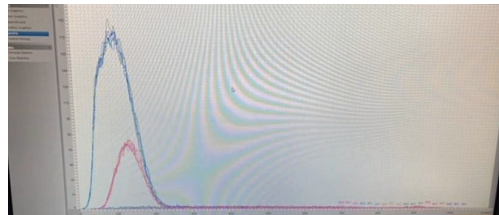
< Spectrum analysis & report >



< Pyrolyser furnace >



< Liquid Scintillation counter >



< Spectrum analysis & report >

Distinctiveness

● Characteristic

- Improve accuracy and precision in measuring radiation through a low-energy emission nuclides measurement technology(uranium in particular) and optimal sampling technique.

● Benefits(Quantitative and Qualitative)

- Enhanced Radioactivity Measuring technique and abilities.
- It can be used as a base technology for Radioactivity Measurement of radioactive waste released when nuclear facilities are dismantled.

Experience

- Radioactive waste occur from a nuclear fuel manufacturing facility in the process of treatment, clearance, permanent disposal, storage and etc.

Deliverables

- Equipment operation training

Technology Readiness Level (TRL)

Actual system proven through operation

Business Model

Technology Transfer

Licensing

Joint Search

Service Execution

Etc