



UPDATE OF ALPHA AND BETA AIR MONITORING SYSTEM IN A NUCLEAR FUEL REPROCESSING PLANT

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/ CONTEXT

Operated by ORANO, the la Hague site is a nuclear fuel reprocessing facility in northern France. It extracts uranium on one side and plutonium on the other side. Plutonium is recycled in MOX fuel in ORANO MELOX plant. Thanks to its vitrification process, ORANO la Hague enables a safe and long term management for fission products.

The la Hague plant authorized annual capacity is 1.700 tons coming from France and abroad.

There are on site about 5.000 employees. In light of its sphere of activity, nuclear safety, occupational safety and transparency have absolute priority for ORANO la Hague. How well the site perform economically is conditioned on protecting the health and safety of the group's employees, subcontractors and nearby communities. The monitoring systems used on site are controlled by the French Nuclear Safety Authority (ASN).



Nuclear waste reprocessing plant of ORANO la Hague (France)

/ AIR MONITORING

Air monitoring is an important topic for the ORANO la Hague plant. Due to the nature of the reprocessed material, ORANO la Hague staff and subcontractors need a precise and efficient detection system for alpha and beta particles.

In order to improve the monitoring and reinforce the safety level on site, ORANO asked Saphymo to update the air monitoring system in la Hague with the current BAB-A7 mobile beacons. The main issue was to upgrade the beacons compatibility to the plant surveillance system network.

The BAB-A7 beacons are used for Alpha/Beta radiation monitoring inside the plant buildings.



BAB-A7 mobile beacons

/ RESULTS

The BAB-A7 complies with the specifications expressed by ORANO la Hague in terms of:

- Robustness: the BAB-A7 has to be operational in a potentially hostile radioactive environment
- Measurement reliability: the measurements have to be constant and accurate
- Autonomy for on site maintenance: the beacon was developed in order to allow the on-site workers to maintain and calibrate it, as it cannot leave the facilities
- Ergonomics: all parameters are already defined in different programs. The worker can easily set up the program corresponding to his task directly on the beacon
- Direct connection on the supervision network: the BAB-A7 beacon has a digital output, able to trigger the general alarm system on site, in case of contamination
- Mobility: the BAB-A7 can easily be moved from place to place

/ CONCLUSION

ORANO la Hague reprocessing plant is a place where air monitoring is an important topic. Due to the nature of the reprocessed material, ORANO la Hague staff and subcontractors need a precise and efficient detection system for alpha and beta particles. The BAB-A7, developed with the expertise of Saphymo, aims to detect those alpha and beta particles by performing accurate and reliable air monitoring. There are currently 90 BAB-A7 beacons in operation in la Hague plant, taking part of the whole site surveillance system.