

Ground-breaking ceremony for RECUMO

The RECUMO facility will transform radioactive residues
into reusable raw materials.

From 2026 onwards, the nuclear research centre SCK CEN will transform radioactive residues into low-enriched uranium and will purify them in its brand new RECUMO facility. These residues resulting from the production of medical radioisotopes on the site of the Institut National des Radioéléments (IRE). Today, the first sod was turned for the RECUMO building. With it, IRE and SCK CEN are literally creating a European first on Belgian soil.

Belgium is amongst the world's elite in nuclear medicine. It owes its reputation to the Belgian Nuclear Research Centre (SCK CEN) and the Institut National des Radioéléments (IRE). This dynamic duo is behind a quarter of the global production of medical radioisotopes. These are radioactive particles used to detect and/or treat cancers, heart diseases and other illnesses. "We have been producing them for more than 50 years, that is to say five decades of making a difference for millions of patients. To keep fulfilling this public health role, we needed a structural solution for radioactive residues resulting from the production process", explains Erich Kollegger, IRE CEO. With the RECUMO project, the structural solution appeared at the end of 2018.

Circular economy

In practical terms, the nuclear research centre SCK CEN will transform radioactive residues into low-enriched uranium and will purify them. The goal is to recover uranium so that this high-quality material can be reused. "We are giving a second life to these radioactive residues. They become reusable raw materials that can be used as fuel for research reactors or as 'targets' for the production of new radioisotopes", highlights Peter Baeten, SCK CEN director-general, with pride. As such, RECUMO guarantees the security of supply of medical radioisotopes around the world.

The facility must be built before the first residues can be purified. In March 2022, the competent authorities have officially approved this project. The Federal Agency for Nuclear Control (FANC) has granted the establishment and operating permit, while the Flemish Region has issued the environmental permit. Today, less than a year later, the two project partners launch the ground-breaking ceremony.

European first

"We are witnessing a historic event for IRE, SCK CEN and Belgium, by being the only country in Europe that will have such a unique facility", states Erich Kollegger (IRE). The completion of the facility is planned for 2025. Shortly after that, SCK CEN will commission the facility and start purifying the residues. The facility will be processing the current residues and those resulting from the production until 2038. These residues come from IRE in Fleurus.

State-of-the-art technology

For the purification process, RECUMO uses state-of-the-art radiochemistry technology. This is not the first time that SCK CEN has made use of this technique. In the 1980s, it was already performed in laboratories. Today, IRE and SCK CEN have developed, optimised and fine-tuned it. "We are proud of our collaborators, those of 1988 and today. In 1988, they paved the way for this technique. In 2020, we could apply it on a semi-industrial scale," concludes Peter Baeten (SCK CEN).

A watchful eye

The RECUMO project of SCK CEN and IRE is being implemented in close cooperation with the Directorate-General for Energy of the FPS Economy, SMEs, Self-employed and Energy, and under the supervision of the Federal Agency for Nuclear Control (FANC), Euratom and the United States. They impose safety and security standards and carry out checks to ensure that these are strictly complied with.

SCK CEN

70 years of experience in nuclear research and technology

SCK CEN is one of the largest research institutions in Belgium. Every day, more than 850 employees dedicate themselves to developing peaceful applications of radioactivity. SCK CEN's research activities focus on three main areas: innovative nuclear systems, nuclear waste management and dismantling, and the crucial fight against cancer. SCK CEN is world-renowned and shares its knowledge through countless publications and training courses, so that this pool of exceptional competence can be maintained.

More info: www.sckcen.be

IRE – IRE ELiT

IRE, the Institut National des Radioéléments, is a public utility foundation whose main activity is the production of radioisotopes for diagnostic and therapeutic applications in the area of nuclear medicine. It is a global leader in the production of Molybdenum-99, the “parent” isotope of metastable Technetium-99m and the most widely used in nuclear medicine for numerous examinations (heart, bones, lungs, thyroid, brain, kidneys, etc.).

Besides its production activities, IRE contributes via its IRE Lab entity, to protecting and monitoring the environment thanks to its many services: measurement of radioactivity in various samples, radiological characterization of contaminated waste and elements, technical consultancy and support in the radiological and nuclear fields.

IRE ELiT is the innovation subsidiary of IRE which was created in 2010 in order to develop radiopharmaceuticals used in imaging and treatment of some cancers as well as for palliative care. IRE and IRE ELiT employ 250 people at the moment.

More info: www.ire.eu

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