



The background is a solid green color with several large, curved, overlapping shapes in a slightly darker shade of green, creating a sense of movement and depth. These shapes resemble stylized leaves or flowing ribbons.

Italian skills  
Worldwide safety

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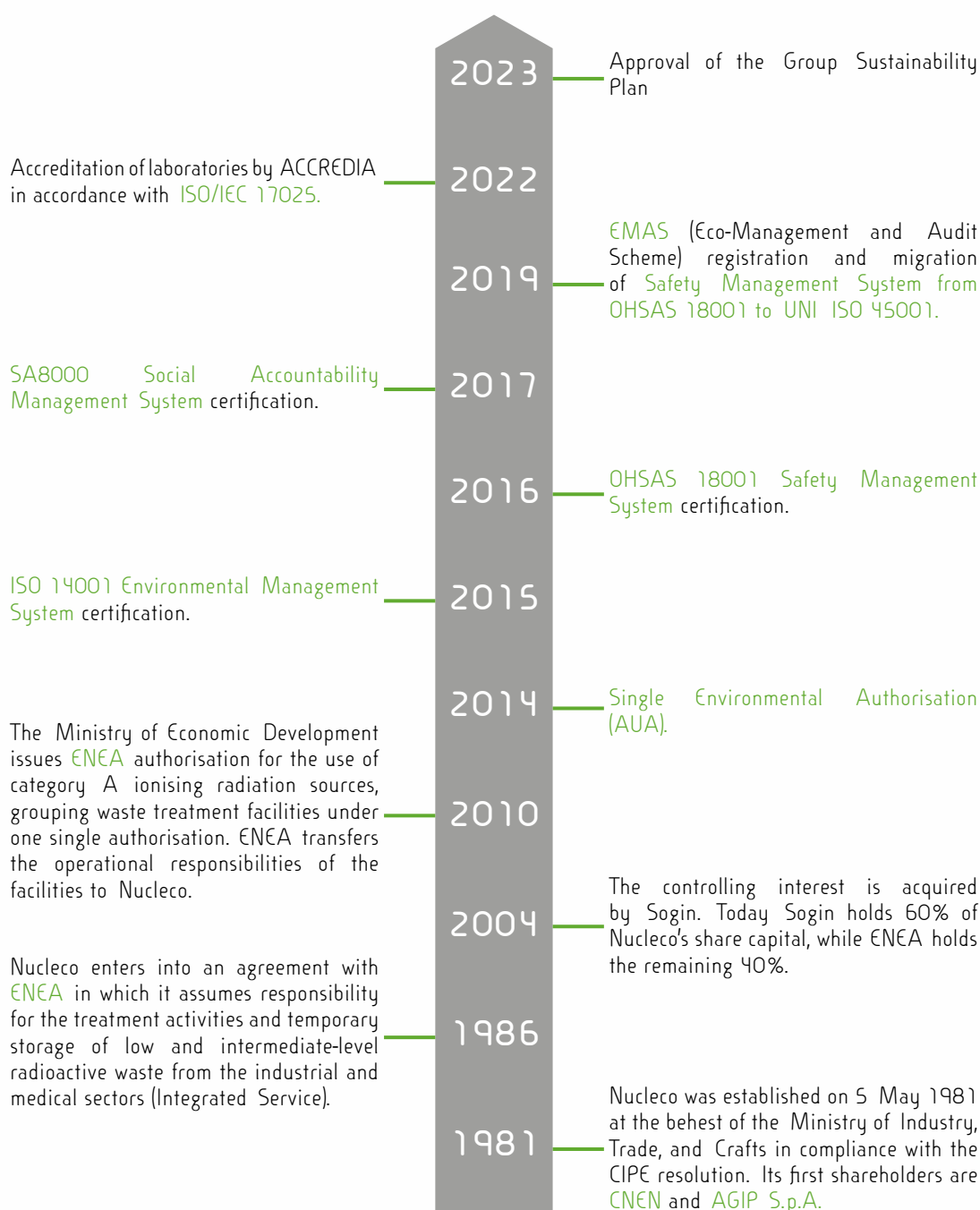


## 1 ABOUT US

Nucleco is the Sogin Group's Italian leading company in the sector of radiological services, radioactive waste management, decontamination and remediation of industrial sites and nuclear facilities.

The Company is qualified for the collection, treatment, conditioning and temporary storage of radioactive waste and sources resulting from nuclear medicine, industry, scientific research activities and decommissioning of national nuclear fuel cycle installations. and scientific and technological research.

Nucleco has unique know-how in its sector, with peaks of excellence in radiological characterisation, the planning and execution of decontamination and dismantling processes, and the development and implementation of environmental reclamation.





## 2 NUCLEAR DECOMMISSIONING

Nucleco has over forty years of experience in the decommissioning of nuclear installations. Using innovative solutions and techniques, the Company performs all decommissioning activities in the facilities in the main supply chains (PWR, BWR, GCR) and reprocessing facilities (including those of the Uranium-Thorium and MOX cycle), guaranteeing the highest safety standards in radioactive waste management. The Company provides a comprehensive service, from the design and development of decontamination and dismantling work to final characterisation activities for the release of sites without radiological constraints.

### 2.1 Preparation and planning

The services provided include the following engineering and project management activities preparatory to obtaining licences and starting decommissioning work:

- Planning and cost estimation
- Feasibility studies
- Design
- Environmental Impact Assessment
- Development of engineering solutions
- Project Management

### 2.2 Characterisation

Nucleco has long experience in radiological and chemical characterisation and it provides:

- Analysis and preliminary characterisation of nuclear facilities and research centres
- Estimation of radiological inventory and of waste that can be produced during operations and dismantling
- Analysis using non-destructive techniques (NDA: gamma/tomography scanning, active and passive neutron analysis, X-rays, proprietary simulation code and database)
- Analysis using destructive techniques (DA: specimen processing, alpha, beta and gamma spectrometry; chemical analysis)
- Characterisation with combined gamma and neutron systems for on-site and off-site surveys (NIWAS, Nucleco Integrated Wasted Assay System)
- Characterisation for the unconditional release of waste and facilities

### 2.3 Decontamination and dismantling

Nucleco offers project management, planning, radiation protection, dismantling of large components, development of specific dismantling technologies and supply of waste treatment systems.







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## 2.4 Radioactive waste management

Nucleco is the leading company in Italy in the treatment and conditioning of radioactive waste produced during the decommissioning of nuclear power plants, fuel cycle facilities and research centres. Nucleco's services include:

- Collection, packaging and transport of radioactive waste and radioactive sources, including calibration, neutron and high-activity sources
- Sampling and analysis of hard-to-detect radionuclides in radiochemical laboratories
- Reduction in volume, through supercompaction, of solid waste
- Conditioning into qualified products
- Treatment of liquid waste through biological, chemical and physical treatment processes
- Temporary storage of radioactive waste in authorized repositories
- Unconditional release of materials that can be moved away

Nucleco has mobile units for the treatment and conditioning of waste and mobile laboratories for radiological characterisation. It has a modern laboratory for the qualification of the cementation methods used in the various conditioning processes. The Company also handles hazardous waste, such as asbestos, contaminated with radioactive substances.

## 2.5 Safety and radiation protection

Nucleco develops and implements safety procedures for all decommissioning phase. It also provides the main assessment services for nuclear safety such as:

- Safety analysis and probabilistic assessment
- Emergency planning
- HAZOP (Hazard Operation) analysis
- HAZID (Hazard Identification) studies

When carrying out all its activities, the Company applies the ALARA (As Low As Reasonably Achievable) principle to ensure that, in each intervention, radiological exposure is as low as possible.

Nucleco has extensive experience in the design and construction of shielding and remote operation systems.





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## 2.6 Main projects

### 2.6.1 Closing the nuclear cycle in Italy

Nucleco has been operating for years in the field of decommissioning of nuclear power plants and facilities managed by Sogin. For each of the different plant technologies present on the Italian territory, Nucleco has carried out important activities, developing suitable intervention methods.

#### **Caorso (Piacenza) nuclear power plant**

Type of reactor: BWR – Boiling Water Reactor

Gross electrical power: 860 MWe

Italy's largest power plant - it belonged to the second generation of nuclear plants and was in operation from 1981 to 1986. Nucleco began working at this plant immediately after it was shut down, coordinating the activities for the pilot incineration campaign of low-level waste and the qualification of the ash conditioning process (using facilities abroad). In the early 1990s, it also undertook a campaign for the supercompaction of over 2,300 drums. Then, on behalf of Sogin, Nucleco worked on the decontamination of the primary circuit, of materials and metal components from the turbine building and of the pressure suppression pool. More recently, Nucleco has been involved in the packaging and transport of radioactive materials and waste, and in the preparation for transport of radioactive resins and sludge that Sogin is transferring to the treatment facility in Bohunice (Slovakia).

#### **Garigliano (Caserta) nuclear power plant**

Type of reactor: BWR – Boiling Water Reactor)

Gross electrical power: 160 MWe

A first-generation power plant that started operating in 1964 and was shut down in 1982. In the mid-1980s, Nucleco took part in the design of the GECO plant for the solidification of liquid radioactive waste and later, from 1996 to 1999, it was responsible for the solidification of resins, sludges and concentrates, producing over 1,700 products suitable for final disposal. Then, on behalf of Sogin, it conducted asbestos removal operations in the reactor building and the related supercompaction campaign of radioactive drums. It also carried out the remediation of the trenches, recovering and treating radioactive waste that had been buried there during operation. After completing the scarification and demolition of the plant's chimney, the Company was in charge of the characterisation of the metallic materials produced during the operations and their subsequent release. More recently, Nucleco has been involved in the packaging and transport of radioactive materials and waste and, as of 2021, it has been working on the dismantling of the upper internals of the vessel inside the reactor building and the treatment of equipment recovered during decommissioning activities from various areas of the plant. Lastly, Nucleco is using 3D Survey technology at the Garigliano power plant to plan the decommissioning of the reactor and to improve the traceability of materials.





**Latina nuclear power plant**

Type of reactor: GCR - Gas Cooler Reactor

Gross electrical power: 210 MWe

The first plant ever built in Italy - it was commissioned in 1963 and shut down in 1987 and belonged to the first generation of nuclear power plants. In the mid-1980s, Nucleco carried out a pilot campaign to extract waste from the plant's "splitter pits". Then, on behalf of Sogin, it carried out various activities for the decommissioning of the plant, including the executive design of a facility for the extraction, sorting and radiological characterisation of Magnox residues, and the planning and implementation of activities for the treatment of rock wool produced during the removal of insulation from the primary circuit. The company was also responsible for the executive design and integrated construction of facilities and plants for the extraction of 78 cemented tanks from the 1970s underground repository called 'KCFC pit', and for their transfer to a temporary storage site. Nucleco also surveyed all areas of the power plant with radiation monitoring through coring and gamma spectrometry measurements. Recently, the Company contributed to the hot testing of the LECO plant for the extraction and conditioning of radioactive sludge. Nucleco is currently engaged in the digging and removal of anthropogenic materials found in separate areas adjacent to the site and in the setting up of a confinement structure necessary for the excavation of the area around the collection pit of the old Radwaste line.

**Trino (Vercelli) nuclear power plant**

Type of reactor: PWR - Pressurised Water Reactor

Gross electrical power: 270 MWe

With the best performance standard among Italian power plants, the Trino plant became operational in October 1964 and was shut down in 1987. In 1993 Nucleco carried out a supercompaction campaign with a mobile press of over 1,600 radioactive drums. Then, on behalf of Sogin, it carried out various activities aimed at decommissioning the plant, including repackaging, supercompaction and characterisation of radioactive waste produced while the plant was in operation and during its decommissioning. The company also handled the remediation of asbestos from the reactor 'head' and the 'Test Tank' building during the work to adapt it to a temporary buffer for the storage of radioactive waste. Furthermore, Nucleco carried out a remote inspection of the purifiers containing the ion exchange resins in the auxiliary building and was involved in the removal and transport of 'activated' components from the pool of purifiers (shavings and septa produced by cutting the reactor heat shield). More recently, the Company has been entrusted with the sorting, radiometric control and transport of large materials and their subsequent management. Nucleco is also using 3D Survey technology to help plan the decommissioning of the reactor and primary circuit and to improve the traceability of materials.







**Saluggia (Vercelli) EUREX plant**

Type: nuclear fuel cycle research facility

The EUREX (Enriched Uranium Extraction) plant became operational in 1970 and was designed to research the reprocessing of irradiated fuel in order to separate and recover reusable nuclear materials (uranium and plutonium).

Between 1988 and 1995, Nucleco dismantled the technological systems of the IFEC nuclear fuel fabrication plant on behalf of Enea, which was managing the plant, and carried out a supercompaction campaign of over 3,000 radioactive waste drums. From 2011, on behalf of Sogin, which has been entrusted with the decommissioning of EUREX, Nucleco has been carrying out preliminary characterisation, treatment and conditioning of radioactive waste, including that produced by the reclamation of the pool. In particular, in 2017 Nucleco also managed solid radioactive waste generated during the dismantling of IFEC, including approximately 30 tonnes of components defined as 'abnormal' due to their large size. Such material was characterised, sorted and supercompacted at Nucleco's site to be stored in temporary storage facilities at the EUREX plant in Saluggia.

**Rotondella (Matera, Italy) ITREC plant**

Type: nuclear fuel cycle research facility

ITREC, a plant for the retreatment and remanufacturing of fuel, was built between 1965 and 1970 by the CNEN (Italian National Committee for Nuclear Energy) to carry out research into retreatment and remanufacturing processes for the uranium-thorium cycle.

In the 1980s and 1990s, Nucleco carried out campaigns for the remediation of buried radioactive waste, and related areas, as well as for the supercompaction of technological waste (about 5,000 drums). It also carried out two campaigns for the conditioning of liquid radioactive waste in a cement matrix.

On behalf of Sogin, Nucleco assists in the management of solid radioactive waste at the plant with the dual objective of maximising the storage capacity of the site repositories and reducing the volumes of plant materials.

The Company offers its know-how in the SIRIS project (Solid Waste Placement), which involves the characterisation, treatment and conditioning of solid radioactive waste, including materials produced by the demolition of the sea discharge pipeline and the approximately 50 tonnes of potentially contaminated materials and equipment present in the plant's service room called 'Corridor', whose areas were subsequently reclaimed. Nucleco is also participating in the reclamation project of Pit 7.1, which recently saw the completion of the extraction and storage of the reinforced concrete 'monolith' containing medium-level radioactive waste produced during the plant's past operations. The project required the adoption of a specific, internationally unprecedented engineering solution. Nucleco is currently working on the remediation of the areas affected by the activities, in order to release them without radiological constraints.





**Bosco Marengo (Alessandria) FN plant**

Type: plant for the manufacture of fuel elements

The FN (Nuclear Manufacturing) plant in Bosco Marengo became operational in 1973 and produced fuel elements for nuclear power plants in Italy and abroad. In the mid-1990s, Nucleco carried out its first supercompaction campaign, processing more than 2,600 drums. More recently, it has carried out asbestos remediation and radioactive waste repackaging operations.

On behalf of Sogin, the Company worked directly on the site; it dismantled the production plants and equipment, carried out the characterisation of the plant premises, and managed the radioactive waste produced, transporting it and conditioning it at its facilities in Casaccia. As part of the reclamation carried out at the site, Nucleco was entrusted with a support service for the environmental characterisation of the area and the disposal of any buried waste found.

**Casaccia (Rome) OPEC and IPU plants**

Type: nuclear fuel cycle research facilities (Plutonium and Hot operations plants)

Located within the Enea - Casaccia Research Centre, the OPEC plant (OPErazioni Calde - Hot operations), made up of two systems called OPEC1 and OPEC2, carried out research on nuclear fuel elements, while the IPU plant (Plutonium Plant) researched technologies for producing nuclear fuel using mixed uranium and plutonium oxides. Nucleco is involved in the decontamination and reclamation of the hot cells of the OPEC1 plant, in the dismantling and reclamation of the underground liquid waste tanks (Waste A&B), as well as in the completion of the dismantling of the Glove Boxes (SaG) in the IPU plant, which were the main equipment used for research activities aimed at the production of nuclear fuel elements.

The Company also carried out inspection and radiological survey activities inside the cylindrical collection tanks of OPEC1, now decommissioned, which conveyed into the liquid collection system (Waste A&B) already dismantled.

In 2020, Nucleco began the executive design of the intervention for the dismantling and reclamation of the premises containing the underground liquid waste collection tanks (Waste A&B).



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## 2.6.2 Research facilities

### **Politecnico di Milano - CESNEF (Enrico Fermi Nuclear Studies Centre) - Milan / 2015-today.**

Nucleco carried out the radiological characterisation, packaging and safe storage of contaminated materials and the removal of radioactive sources for subsequent decommissioning of the LS4M 'Enrico Fermi' reactor. It also provided the technical documentation required for the relevant decommissioning application, which is currently underway. The reactor is located in the centre of Milan, within the Department of Nuclear Energy of the Politecnico.

### **Applied Nuclear Energy Laboratory (LENA)- University of Pavia (Italy) / 2018.**

Nucleco, in collaboration with Sogin, carried out the radiological characterisation of the EURACOS converter (Enriched Uranium Converter Source), located at the LENA Laboratory at the University of Pavia. The US Department of Energy (DOE) has expressed interest in repatriating the EURACOS converter as part of the M3 (Material Management and Minimization) programme, formerly known as GTRI (Global Threat Reduction Initiative), promoted by the Nation Nuclear Security Administration (NNSA), which supports the repatriation to the USA of nuclear materials of US origin.

### **Ministry of Defense / CISAM (Centre for Military Applications Studies)- San Piero a Grado (Pisa, Italy) / 2015-2018.**

As part of the decommissioning project of the RTS-1 'Galileo Galilei' research reactor, Nucleco carried out the dismantling of the primary circuit, of the effluent and active drainage circuits and of the pool water decontamination system.

### **ENEA Casaccia Research Centre, Rome / 1981-today.**

The Training Research Isotopes General Atomics Plant (TRIGA RC-1 - built in 1960) is a research reactor used for training operators, for studying radiopharmaceuticals, and for producing isotopes for medicine and industry. The TAPIRO (TAratura Plla Rapida potenza zero - rapid tare timing at zero power), which became operational in 1971, is a reactor used for research activities in the field of new generation reactors, for experimentation in nuclear medicine, and as a training support in specialized courses.

The CALLIOPE facility is used to perform gamma irradiation tests on ceramic matrix composites for fusion reactor components and tests on cementitious mortar specimens for nuclear waste storage.

The ENEA Laboratory for the Characterisation of Nuclear Materials is a technical-scientific structure that deals with the handling and radiochemical characterisation of materials containing radioisotopes.

Nucleco is responsible for the routine and extraordinary management of the radioactive waste produced in these plants and in the various laboratories of the Casaccia Centre with the aim of keeping the site safe. In particular, it collects solid and liquid radioactive waste, performs radiological characterisation, treatment, conditioning and temporary storage, and carries out laboratory, chemical and radiochemical analyses.









Norwegian Radiation Protection Authority  
(NRPA)  
NORWAY

Belgian Agency for Radioactive Waste and  
Enriched Fissile Material (ONDRAF/NIRAS)  
BELGIUM

Joint Research Centre/Institute for  
Transuranium Elements (JRC/ITU)  
KARLSRUHE, GERMANY

Joint Research Centre/Ispra (JRC/ISPRA)  
VARESE, ITALY



European Commission  
KOLA, RUSSIAN FEDERATION

Fincantieri, Rosatom  
RUSSIAN FEDERATION

European Commission  
BOHUNICE, SLOVAK REPUBLIC



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## 3 INDUSTRY

### 3.1 Petrochemical, Chemical, Oil & Gas industries

Nucleco offers safe, effective and environmentally friendly solutions for the management of materials containing naturally occurring radionuclides, NORM (Naturally Occurring Radioactive Materials) and TENORM (Technically Enhanced Normally Occurring Radioactive Materials), from the petrochemical, oil & gas, mining-extractive and fertiliser production sectors.

In this area, the company provides the following services:

- Baseline studies and surveys
- Planning
- Consultancy
- On-the-job training
- Research and development in NORM and TENORM
- Risk management
- Facility and site remediation
- Radiological monitoring
- Treatment, storage and disposal
- Emergency interventions

### 3.2 Metallurgy and heavy industry

Nucleco possesses the skills, technology and tools to carry out remediation and decontamination services at a variety of facilities, such as industrial production environments, shipyards and construction sites, hospitals, manufacturing facilities and steel mills. The following services are offered:

- Planning and management of projects
- Analysis and monitoring
- Characterisation
- Decontamination of spaces used for the processing or fusion of radioactive materials and on-site reclamation
- Licensing and management of transport and treatment of radioactive waste at facilities, including international facilities, with the aim of reducing waste volumes
- Management, including in emergency situations, of contaminated sources or other materials discovered
- Training and consultancy in the field of radiation protection





### 3.3 Main project

#### **Avogadro storage facility - Saluggia (Vercelli, Italy) / 2021.**

Nucleco prepared the operating procedures and provided engineering support for the drafting of the operating plan for the reclamation of 4 contaminated 'wells' at the Avogadro storage facility. Then, the Company remediated the wells, enabling the reuse of the drain line without radiological constraints.

#### **IROM - Poggibonsi (Siena, Italy) / 2020.**

Nucleco was appointed to perform the remediation of natural uranium and the radiological characterisation of the IROM industrial site, near Poggibonsi (Siena). The aim of the activity was to release the plant area and equipment, and to temporarily store on site the contaminated materials that could not be released.

#### **Tioxide Europe, Scarlino (Grosseto, Italy) / 2012.**

Applying innovative radiological characterisation techniques, Nucleco determined the radiological status of certain metal tanks, as well as the level of contamination and the type of natural radionuclide (TENORM) present. It then decontaminated them by removing the contaminated ebonite coating.

#### **Syndial- ENI Group, Gela Refinery (Caltanissetta, Italy) / 2009-2011.**

At the Gela refinery, Nucleco performed a feasibility study, including cost analysis, and radiological characterisation for the decommissioning of a plant that produced phosphoric acid.

#### **ENI, Porto Marghera (Venice, Italy) / 2000-2001.**

Nucleco carried out the characterisation and subsequent remediation of a phosphoric acid plant contaminated with NORM in the port of Marghera. Its operations focused on the demolition of the plant itself and the accompanying remediation of areas, as well as the environmental monitoring, with relevant analyses performed in a laboratory set up at the site, and the removal of releasable materials.

#### **AGIP, Caviaga (Lodi, Italy) / 1994-1995.**

Nucleco conducted a study for AGIP on decontamination techniques, preventive and corrective measures and training to prevent the deposition of NORM. In particular, the study was carried out on drill pipes contaminated by deposits of radium 226 salts and other isotopes from the uranium-radio family. The analysis demonstrated that it was technologically feasible to decontaminate the pipes by using a closed circuit with high-pressure water.



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## 4 ENVIRONMENT

Nucleco is responsible for the remediation of plants, infrastructures and land affected by chemical and radiological contamination, offering its clients expert management based on the best available technologies.

Remediation and containment services include:

- Chemical monitoring of the areas that require remediation
- Planning and management of remediation projects
- Planning of reindustrialization interventions
- Containment interventions
- Decontamination
- On-site treatment of waste for disposal and/or differentiated recycling
- Dismantling of facilities and land remediation
- Health and environmental risk analysis

### 4.1 Main projects

**NSPA/NATO, former 'Punta della Contessa' firing range – Brindisi (Italy) / 2017-today.**

In 2017, Nucleco was awarded a contract with the NATO Support Procurement Agency (NSPA) for the environmental remediation of the former Air Force firing range at 'Punta della Contessa'. The areas under remediation are on a Site of National Interest (SIN) and Community Interest (SCI) in Brindisi. In 2019, the project was approved and the activities were authorised to start. The works included war remediation at sea and on land, excavations for the removal of conventional waste, and soil characterisation. Once the excavation and remediation activities will be completed, the structures will be demolished, the excavations backfilled and the area re-naturalised.

**Commissioner for the reclamation of former illegal landfills - Riano (Rome) / 2021.**

The Extraordinary Commissioner for the implementation of the interventions necessary to bring the illegal landfills present on the Italian territory into compliance with the regulations in force, appointed Nucleco to carry out the following activities:

- investigations required by the Environmental Characterisation Plan (Piano di Caratterizzazione ambientale, PdC), drawn up by the Water Research Institute (IRSA-CNR), for the site of the former illegal landfill in Piana Perina, in the municipality of Riano.
- investigations envisaged in the Environmental Characterisation Plan (PdC) for the site of the former illegal landfills in Fornace and Carpineto, in the Municipality of Trevi (in Lazio).

In particular, Nucleco took care of the geognostic survey and sampling of soils and groundwater and their chemical analysis, as required by the PdC.



**Extraordinary Commissioner, former Cemerad storage facility- Statte (Taranto, Italy) / 2017-2021.**

Appointed by the Extraordinary Commissioner for the containment of the former Cemerad storage facility, Nucleco is in charge of the removal, containment and management of hazardous and radioactive waste and of the remediation and environmental reclamation of the area. The strategy outlined by the Company and approved by the Commissioner aims to contain the approximately 17,000 radioactive drums present on site and to release the area and its facilities without radiological constraints. At the end of 2020, more than 13,600 drums had been removed in total. Of the approximately 3,000 drums still present at the Statte site, about 900 require minimal operational intervention - namely, completion of the transport documentation and acceptance by the final consignee - while the remainder are ready to be removed.

**Government commissioner, Bussi sul Tirino (Pescara, Italy) / 2015-2017.**

Nucleco was involved in the containment of a production site in Bussi sul Tirino. In particular, the project focused on the reindustrialization of the area through the elimination of any possible source of secondary pollution. Nucleco will also provide a period of assistance in monitoring the area after its release.

**Fugro Oceansismica – Sellafield (Great Britain) / 2016.**

Nucleco carried out radiation protection and radiological monitoring services on board the ship Fugro Seeker, which was used to carry out very high-resolution oceanographic surveys in shallow- and deep-water areas in front of the Sellafield plant in England. The activities carried out on board the ship made it possible to: guarantee the safety of the personnel working in the recovery operations and of the working areas, using precise radiological monitoring; safeguard the marine ecosystem by recovering the seabed mapping instruments, verifying that there was no contamination.

**Prefecture of Milan (Italy) / 2013.**

On behalf of the Prefecture, Nucleco carried out a joint operation with ARPA Lombardia (the Regional Agency for the Protection of the Environment), the Fire Department and the A.S.L. (Local Health Authority) of Milan for the containment of the premises of a building where radioactive sources had been found using electrophysical equipment. The operation involved: shielding the premises, measuring the amount of radiation and packaging the radioactive sources in lead-lined polyethylene bags. Lastly, the premises were released, free from radiological constraints.

**Municipality of Brescia, former Piccinelli quarry (Brescia, Italy) / 2012.**

After having sealed the area, Nucleco removed the waste contaminated by caesium 137 from inside a warehouse in the former Piccinelli quarry. During these operations, the company carried out radiometric inspections of the internal buildings, the mapping of radioactive substances, the collection and packaging of waste in 220-litre drums, radiometric measurements and spectrometric analysis.

**Prefecture of Campobasso, Castelmauro (Campobasso, Italy) / 2009.**

In the historic centre of the city of Castelmauro, Nucleco oversaw the remediation and containment of premises in which drums containing radioactive waste were stored. The waste was removed and transported to Nucleco for treatment. Radiological monitoring and characterisation operations were carried out for the remediation and subsequent release of the area.







## 5 BIOMEDICAL

Nucleco is qualified - in compliance with Italian and European regulations - to collect, treat, condition and temporarily store waste and radioactive sources that derive from nuclear medicine and scientific and technological research activities managed by public and private bodies.

In particular, Nucleco specialises in:

- the management of national, regional or local plans for emergency operations following the discovery of radioactive material
- the storage of low and intermediate level radioactive waste in its temporary repositories and the conventional disposal of very short-lived radioactive waste after the necessary time has elapsed for its decay

Nucleco works with leading radiopharmaceutical manufacturers to minimise the volume of waste produced in diagnostic and therapeutic interventions.

### 5.1 Main projects

#### **Integrated service, Italy / 1986-today.**

Under a specific agreement with ENEA, Nucleco is the national operator entrusted with managing radioactive waste from the medical and health sector and from scientific and technological research. The goal is to provide an 'Integrated Service' that includes the collection of such waste from where it is kept/produced, as well as its characterisation, treatment, conditioning and safe storage in Nucleco's temporary repositories.

#### **European Union, Kosovo / 2014-2015.**

As part of the EU project 'EC-IPA-PROJECT for KOSOVO - Support to Radiation Protection and Nuclear Safety', Nucleco supervised a review of the radioactive waste inventory in Kosovo and created a record of radioactive sources and waste for the Nuclear Agency of Kosovo (KAPRPNS).

#### **Ministry of Health, Italy / 1985-2010.**

Nucleco provided for the collection, packaging and handling of radiferous preparations up until their containment in the company's repositories. The operation was part of the campaign, launched in the 1980s by the Italian Ministry of Health, to withdraw all preparations used for the treatment of cancer and held by various hospitals throughout the country.



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## 6 TECHNOLOGICAL INNOVATION AND KNOW-HOW

Nucleco adopts innovative technological solutions in the fields of nuclear decommissioning, radioactive waste management and industrial remediation in order to guarantee maximum safety, minimise waste production (in respect of a circular economy) and strengthen its competitive position in the relevant markets.

### INTEGRATED WASTE ASSAY SYSTEM (NIWAS)

A system to quantify the radiological content of a drum through the integration of several independent measurement techniques: segmented gamma spectrometry, passive and active neutron counting measurement system and radiographic analysis.

### TOMOGRAPHIC GAMMA SCANNER (TGS)

An advanced segmented gamma spectrometry system capable of quantifying the radiological content of a drum and reconstructing a 3D image of the matrix and of the contamination distributed within it.

### IMAGING

A gamma radiation imaging system for radiological characterisation with 'non-destructive' techniques that allows reconstructing the position and distribution of contamination sources in any type of room or object.

### 3D SURVEY

A reconstruction of virtual models of complex facilities using 3D scanning techniques and 3D parametric modelling technologies, for the planning of decommissioning, remediation and dismantling operations and for exploration facilities using Virtual Reality (VR) and Augmented Reality (AR) systems.

### DRONES

The use of drones to perform environmental dosimetric mapping and 3D topographic surveys using scanning and photogrammetry techniques.

## 7 TRAINING

Nucleco invests in the continuous professional development and training of its staff to the highest standards of excellence, including through Sogin Group's Radwaste Management School. With over 1,000 resources, the Group is the most significant source of professional expertise in Italy in the field of waste management, reclamation and decommissioning of nuclear plants. The expertise acquired by the Company allows it to offer training services with customised content and goals. In particular, training courses focus on different topics, such as field training, radiation protection, nuclear and standard safety.





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## 8 SUSTAINABILITY

Nucleco designs and implements services for the environmental, economic and social sustainability of both the national territory and the international contexts in which it operates. Through its activities, the Sogin Group contributes to the achievement of the Goals of the UN 2030 Agenda for Sustainable Development. This commitment is accounted for in the Sustainability Report, published on the company's website, which contains the main economic, industrial, social and environmental data and performances on decommissioning and radioactive waste containment activities.

## 9 QUALITY, ENVIRONMENT AND SAFETY

Nucleco performs all its activities with respect for the health and safety of workers, the population and the environment, adopting strict measures to prevent pollution. Quality is a key factor in achieving the company's objectives and is an essential component and skill set required of each and every staff member at Nucleco.

The Company is constantly looking for new technological innovations and best practices applicable to its sector, ensuring the professional development of its staff and spreading a culture of environmental protection, health and safety at work, radiation protection of workers and any other person affected by the Company's activities.

Nucleco is certified according to UNI EN ISO 9001 (Quality), UNI EN ISO 14001 (Environment), UNI ISO 45001 (Health and Safety at Work) and SA8000 (Social Accountability) standards. Pursuant to EMAS registration, the Company publishes an annual Environmental Declaration which is a voluntary tool, validated by a certifying body, to assess, monitor and demonstrate one's growing commitment to improving its environmental performance.

Nucleco's development plans and strategies constantly and increasingly integrate environmental, economic and social elements and considerations into all of the company's production processes, fostering a culture of sustainability throughout the supply chain.







edited by

**Nucleco's Personnel, Organisation and Services - Sogin's Communication and Sustainability**

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**September 2021**

Nucleco S.p.A.

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Rome Companies Register - Tax Code 05081150582

VAT No. 01352541005

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Company managed and coordinated by Sogin S.p.A.

Share capital EUR 6,000,000 fully paid up

**Contacts:**

nucleco@nucleco.it



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