2019

ANNUAL REPORT

ALMARAZ TRILLO

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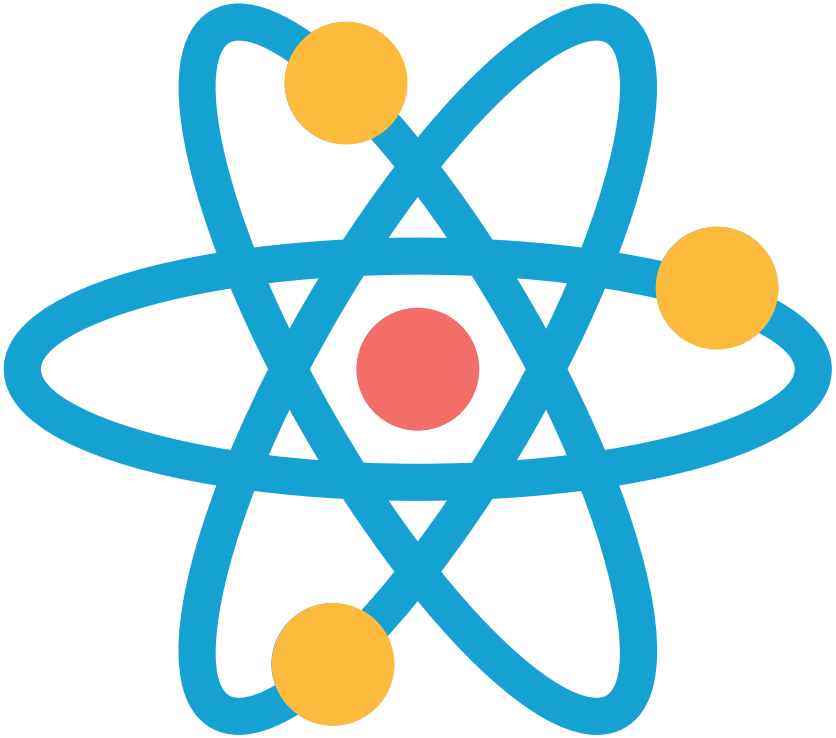


Edition: **© Centrales Nucleares Almaraz-Trillo May/June 2020**

Coordination: **CNAT Communication**

Design and Layout : **Cambio de Sentido**

Photographs: **CNAT Photographic Archive**

ALMARAZ NPP(UI-UII)

OWNERS:

Iberdrola Generación Nuclear, S.A.U. (52.687%)

Endesa Generación, S.A.U. (36.021%)

Naturgy Generación S.L.U. 11.292%

LOCATION:

Almaraz (Cáceres)

TECHNICAL SPECIFICATION:

Reactor Type: Pressurized Water Reactor (PWR)

Supplier: Westinghouse

Thermal Power: 2,947 MWt (U-I) - 2,947 MWt (U-II)

Fuel: Enriched Uranium Dioxide (UO2)

No. of fuel elements 157

Gross Electrical Output: 1,049.43 MWe (U-I) - 1,044.45 MWe (U-II)

Net Electrical Output 1,011.30 MWe (U-I) - 1,005.83 MWe (U-II)

Cooling: Open Circuit. Arrocampo Reservoir

COMMENCEMENT OF COMMERCIAL OPERATIONS:

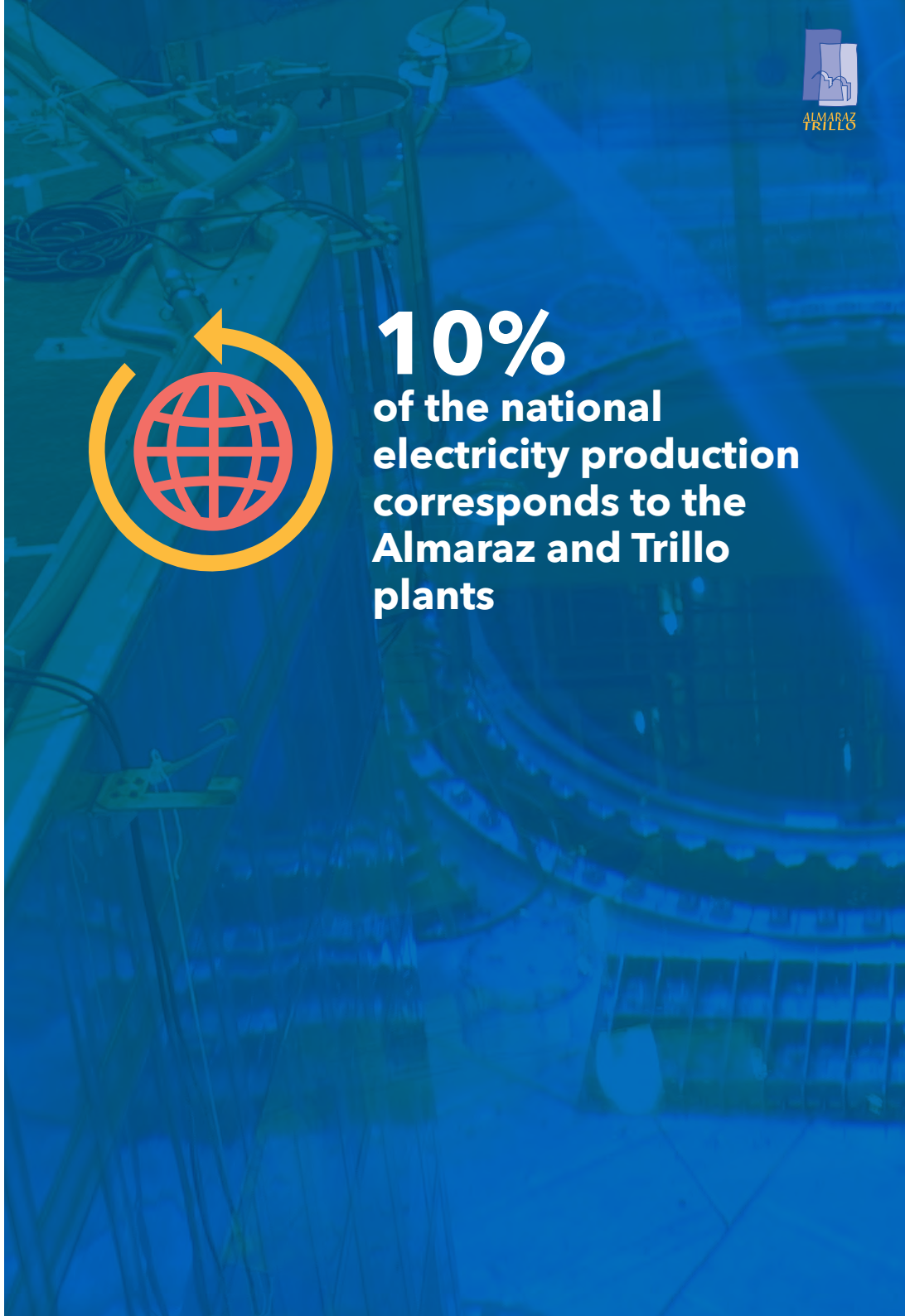
1 September, 1983 (UI) - 1 July, 1984 (U-II)

CURRENT OPERATIONAL AUTHORISATION:

08/06/2010 for a period of 10 years

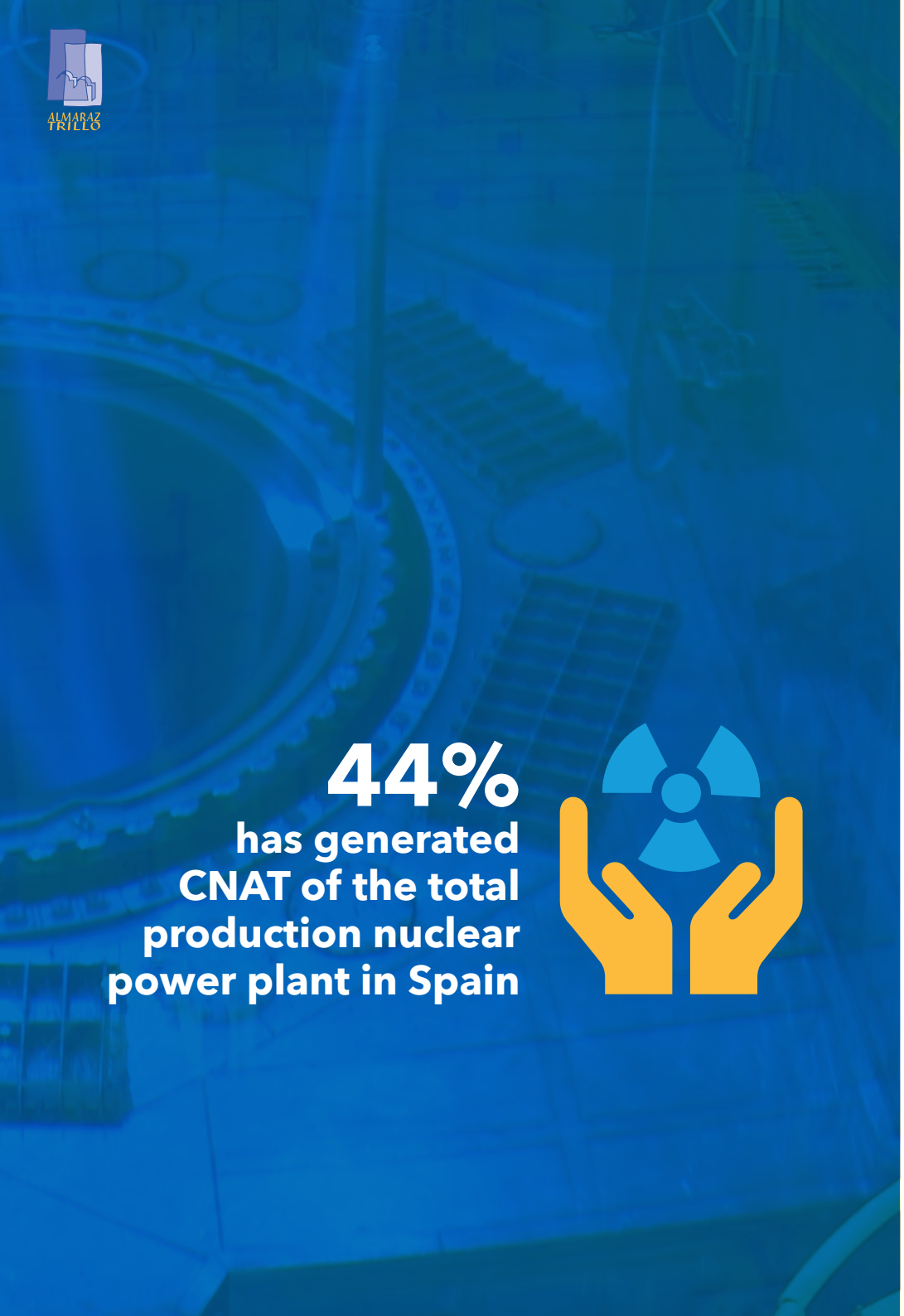
CYCLE DURATION:

18 months both units



10%

of the national electricity production corresponds to the Almaraz and Trillo plants



TRILLO NPP

OWNERS:

Iberdrola Generación Nuclear, S.A.U. (48%)

Naturgy Generación S.L.U. 34.5%

Iberenergía, SAU (15.5%)

Nuclenor (2%).

LOCATION:

Trillo (Guadalajara)

TECHNICAL SPECIFICATION

Reactor Type: Pressurized Water Reactor (PWR)

Supplier: KWU

Thermal Power: 3,010 MWt

Fuel: Enriched Uranium Dioxide (UO2)

No. of fuel elements 177

Gross Electrical Output: 1,066 MWe

Net Electrical Output 1,003 MWe

Cooling: Natural Draft Towers (River Tajo)

COMMENCEMENT OF COMMERCIAL OPERATIONS:

6 August 1988

CURRENT OPERATIONAL AUTHORISATION:

17/11/2014 for a period of 10 years

CYCLE DURATION:

12 months

SUMMARY OF THE YEAR

In 2019, the gross electricity production of Almaraz and Trillo nuclear power plants totalled 25,422 million kilowatt hours (16,966 million kWh at Almaraz and 8,456 million kWh at Trillo), which represents 44% of the energy generated by Spanish nuclear power plants and 10% of the national total.

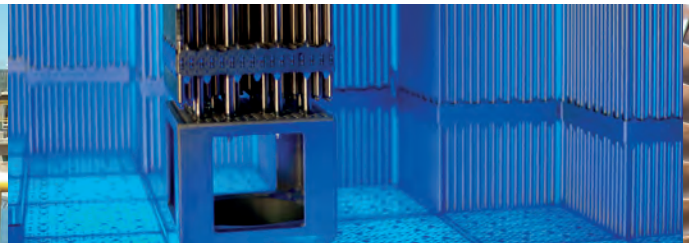
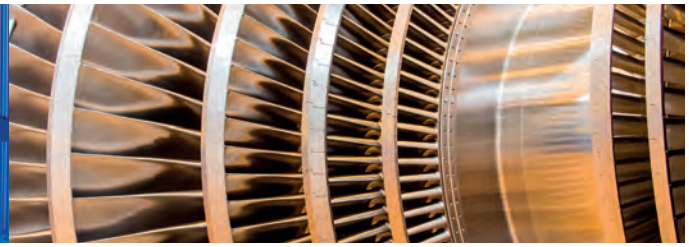
During the year, CNAT submitted to the Ecological Transition Ministry and the Nuclear Safety Council the documentation required to renew the Production Authorisation for the Almaraz Nuclear Power Plant, whose term expires in June 2020.

During May, the Extremadura facility hosted the OSART Follow-up Mission of the International Atomic Energy Agency (IAEA), which very positively assessed the progress made to resolve issues with room for improvement established two years ago.

In addition, the follow-up evaluation of the Peer Review made in 2017 took place at the Trillo plant. During that evaluation, the international delegation verified the progress made in the areas for improvement identified 2 years ago. In addition, Trillo NPP received an exchange visit from a group of specialists from the Olkiluoto Nuclear Power Plant (Finland) accompanied by a WANO Team Leader. This team was looking for examples of correct implementation and consistent use of Human Error Prevention Tools (HEPT).

CNAT received the renewed FRC Certificate (Family Responsible Company) from Fundación Másfamilia, which accredits improvement of the company's qualification to the level of excellence A. This certificate is awarded following an external audit and recognises good practices in organisations that integrate models for reconciling work and family life. CNAT, which has held the FRC certificate since 2010, has implemented different measures focused on reconciling family and work life, promoting flexibility, supporting equal opportunities and promoting diversity. The reconciliation of family and work life is a priority for CNAT, which maintains a commitment to continuous improvement and implementation of new measures in this area.

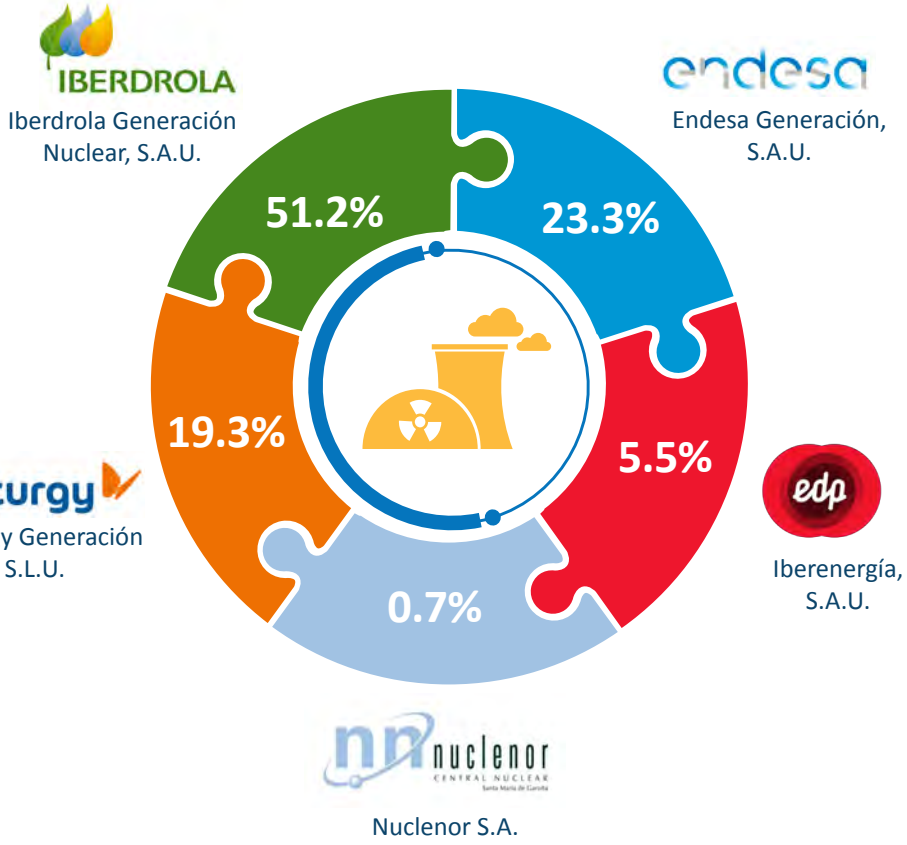
Also, during 2019, the A-ZERO Plan has been consolidated, the objective of which is to achieve Zero Accidents. The overall accident rate at CNAT has been improved, and acceptable results have been recorded for accidents with sick-leave (and of low relevance).
In addition, a distinct organisational effort has been applied, implementing significant actions such as approval of the General Behavioural Expectations, Rules that Save Lives in risky jobs, the launch of a line of work on improving tagouts, the reorientation of training and Preventive Safety Observations as opportunities for the line to Promote Safety.

CNAT PROFILE

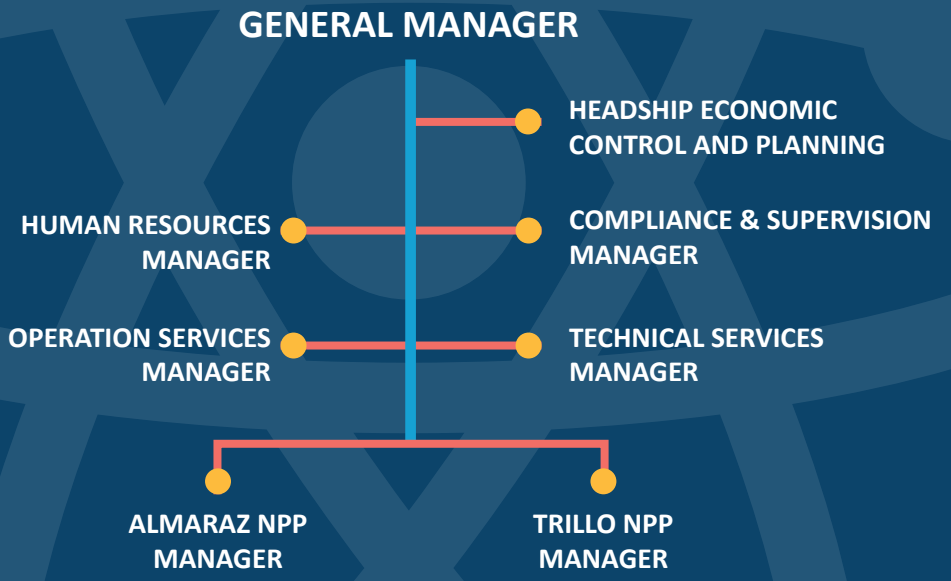
Owner Companies

The shares of the companies that own the Almaraz and Trillo Nuclear Power Plants in terms of the installed capacity of the two plants are as follows:



ORGANISATIONAL STRUCTURE

The chart shows the organisational structure of the A.I.E. Almaraz – Trillo Nuclear Power Plants.



MISSION, VISION, KEY STRATEGIES

The Mission of the Almaraz-Trillo Nuclear Power Plants is to produce electricity in a manner which is safe, economic, respectful to the environment and ensuring long-term production by optimum operation of the Almaraz and Trillo plants.

Our Vision is to position the Almaraz and Trillo Plants amongst the best Plants benchmarked for safety, quality and costs, by employing a management model in which the development and participation of people enable higher levels of safety, productivity and efficiency to be achieved.

To achieve this mission and progress towards the goals established in the Vision, Almaraz-Trillo Nuclear Power Plants develop strategy around the following key elements:

SECURITY

OPERATING EFFICIENCY

RELIABILITY AND LONG TERM OPERATION

ORGANIZATIONAL EXCELLENCE

NUCLEAR PROFESSIONAL

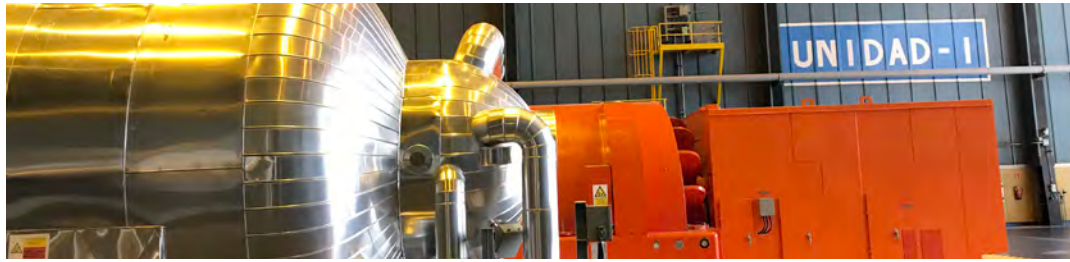
ACTIVITY REPORT

OPERATIONS

Almaraz Plant

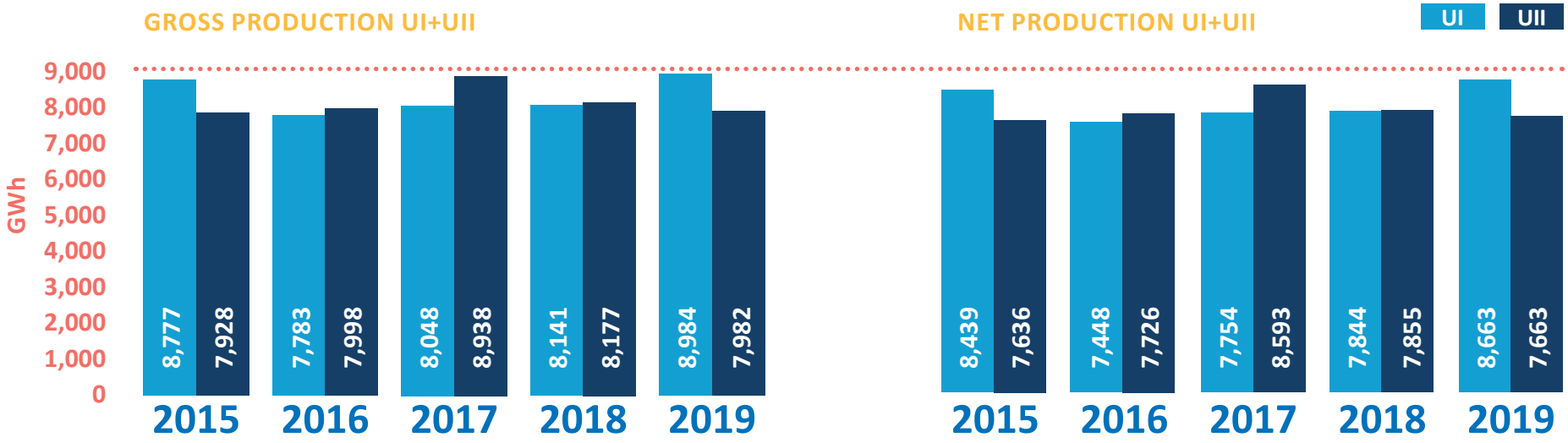
During 2019, gross production of electrical energy generated by the Almaraz nuclear power plant was 16,966.110 GWh, and net production was 16,326 GWh. The gross electricity production for Unit I was 8,983.989 GWh, and 7,982.121 GWh for Unit II. Almaraz Power Plant had a cumulative gross electric power production of 545,637.014 GWh (275,246.513 at UI and 270,390.501 at UII).

Unit I has been operating stably throughout the year, except for three periods of power reduction, one in August to repair the MSR-C expansion joint, another in October to overhaul valve FW1-1PP-01B, and in December at the request of Load Dispatcher for flexible operation. Unit II has also maintained stable operation achieving its best historical record for days coupled to the electricity grid: 512 days and refuelling 25 and general maintenance was performed between 7 October and 13 November.



The Almaraz Nuclear Power Plant held the annual Internal Emergency Plan (IEP) drill on 26 September. During this year the Almaraz Nuclear Power Plant has reported a total of 8 events, none requiring one-hour notification to the Regulatory Body.

ALMARAZ NPP



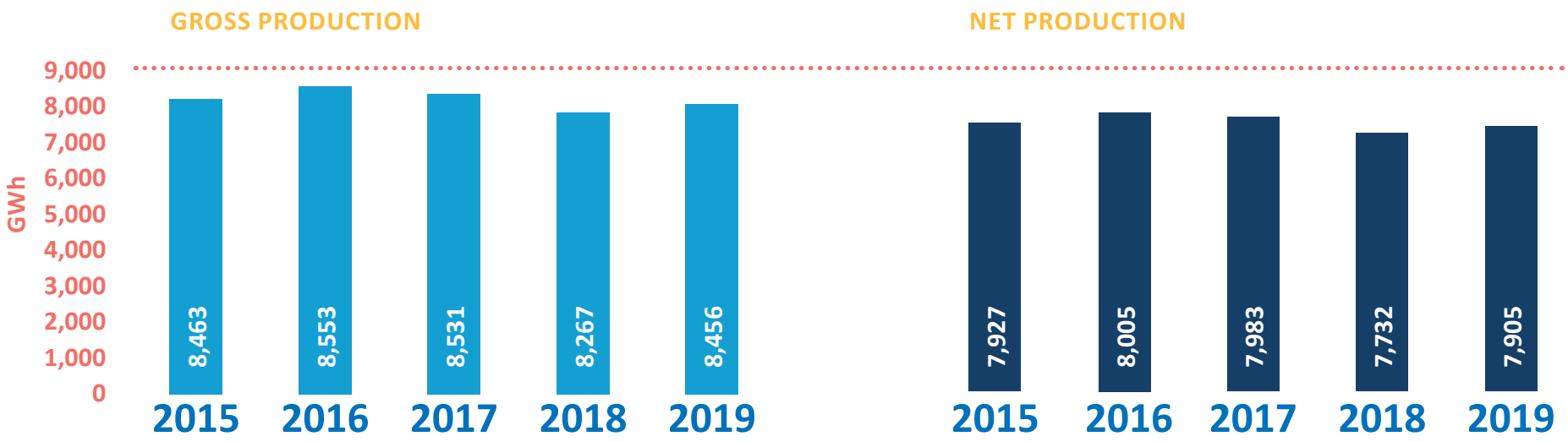
Trillo Plant

During 2019, the Trillo nuclear power plant has generated 8,456,356 GWh gross electrical energy, 2.2% more than the previous period, 7,905,283 net electrical energy. Since start-up, its gross electrical energy production is 255,748,648 GWh and it has accumulated 12 consecutive years without automatic reactor shut-downs.

The Trillo unit has operated stably throughout the year, and the thirty-first annual refuelling and general maintenance took place between 10 May and 9 June. In December, it carried out a power reduction on notification by the Load Dispatcher.

In 2019, the Trillo Nuclear Power Plant reported a total of three Notifiable Events to the NSC. The Trillo Nuclear Power Plant held the annual Internal Emergency Plan (IEP) drill on 27 June.

TRILLO NPP



REFUELLING OUTAGES

Almaraz Plant

Refuelling number 25 of Unit II was performed between 7 October and 13 November, in which 1,200 workers from 70 service companies participated to execute over 10,200 activities and 34 Design Modifications. The most important projects included inspection of cold branch nozzles of the vessel and 33% of the steam generator tubes, replacement of pressure safety valves and the purge heat exchanger of the steam generators. In addition, a major overhaul of the alternator, turbines and water pumps of the auxiliary feed water and main feed water “A” was carried out. An off-site power supply test was carried out from the José María Oriol Hydraulic Power Plant and modification of the closing and opening control circuit of the components cooling system valves through voltage recovery.

Trillo Plant

The thirty-first refuelling and general maintenance of the Trillo Plant began on 10 May and ended on 9 June. During these 30 days, the services of over forty specialised companies were used, employing over a thousand additional people to the usual staff of the installation to carry out the tasks in question. Key activities carried out included replacing 40 fuel elements, inspecting the lower bearing and seals in a main pump, replacing two fingers of internal nuclear instrumentation, capacity test in 3/7 redundancy batteries, electrical and mechanical inspection of redundancy. 2/6 and the cleaning and sanitation of one of the essential services pools.

RADIOLOGICAL SAFETY AND PROTECTION

During 2019 the installations operated completely normally, without producing any significant incidents affecting nuclear safety or radiological protection, neither to employees, nor the environments of the plants.

In the case of Almaraz, the staff collective dose totalled 471.31 mSv per person for the combination of the two units, and at the Trillo Plant, the dose totalled 179.03 mSv per person. The results obtained from the measurements performed show the dose rate for professionally exposed personnel was once again well below legal limits.

TECHNOLOGICAL UPDATING

During 2019, CNAT continued its investment plan to improve safety as part of the process that has been implemented over recent years, as well as maintaining plant availability by renewing obsolescent equipment. The following actions were performed as part of the renovation plan due to obsolescence:

Almaraz Nuclear Power Plant

- During 2019, the modification to increase the availability of the ultrasonic feed water temperature measurement system (UTM) was designed, as a continuation of the renovation of the "Crossflow" system, also facilitating the elimination of continuous noise. As part of the modification, use of the RTD measurement is also validated to perform the thermal power calculation with an uncertainty within 1%.

- Renewal of I&C instruments based on their qualified life,

- Improvements have been started in the chemical product storage systems (hydrazine, ammonia, sulphuric and soda tanks) to adapt them to the regulations. These improvements will continue throughout 2020.

- The activities regarding obsolescence include purchase of SMB actuators to replace the existing SMA actuators. This project, launched in late 2018, is structured in two phases, the first phase with planned implementation during R127 and R226 (2020-2021).

EDI pilot project

• To improve demineralised water production capacities, and as part of a pilot project, a new water treatment system based on EDI (electrodeionization) technology has been acquired to replace the existing physiochemical demineralisation chain (resins recombiners). The commissioning of this system is planned for the 1st half of 2020.

• The project has been initiated to replace the existing filtration units of the controlled area access building, so that they fully comply with current regulations. Implementation is planned for the second half of 2020.

• Implementation and commissioning of the new cooling units in the Switch Room and Control Room, both for U-1 and U-2, has been completed. The new units use a new refrigerant gas which has no adverse effect on the ozone layer.

Trillo Nuclear Power Plant

• The replacement programme for the METRON switches type Novomax G30 and Otomax P2C continued, using ABB EMAX switches, with a programme covering the replacement of 99 actuators during the 2015-2023 period. This programme includes 660V upstream breakers and 660V, 380V, 220Vdc and 48 Vdc consumer breakers.

• Replacement of recorders, cards and programmable controllers employing Siemens S5 technology with the latest Siemens S7 technology.

• Development of the H&B actuators modernisation project, having begun qualification of the Nuclear Safety actuators.

• Increase of the stock of I&C cards.

• Awarded renewal of the decontamination system control for equipment related to the primary TU-50 pumps.

• Renewal of the pressure shower control units.

• As part of the actions for obsolescence and the equipment renewal plan, a project to modernise the voltage regulation and power stabilisation systems of the plant's main generator has been initiated. The main equipment supply has been awarded, and the design will be developed throughout 2020 for implementation during the R433 refuelling (2021).

• Ongoing renovation of the site installations for the 15 kV medium voltage ring.

• initiated to replace the Generation Switch during the R434 refuelling (2022) due to obsolescence of the existing Switch and as part of the Equipment Renewal Plan. The process of evaluating bids for to supply the equipment is in progress.

• The purchase of pumps for the UF, RS, UT and RN systems, affected by obsolescence, has been initiated.

• For reasons of improved reliability, a new TA system changer has been purchased, and its implementation is planned for the 2021 refuelling.

• The strategic plan to renew the Diesel generators (safeguards and emergency motors and alternators) has been initiated, with a view to operating until the end of the plant's life. Scheduled maintenance runs until 2032 and includes the major maintenance to be performed on the equipment, with the necessary spare parts, to requalify them for the new period.

Activities associated with safety improvements include the following:

ALMARAZ NUCLEAR PLANT

• In 2019, preliminary studies were launched to develop the improvement proposals included in the RPS related to Renewal of the Production Authorisation for Almaraz NPP. These include improvements to increase the margin available in the CC system (new changer cleaning system, replacement of coolers for the RH and CS pumps), new passive seals for the primary pumps, a new permanent sealing ring for the cavity and replacement of ventilation unit serpentine coils.

• In 2019 and as part of the actions for the transition to the fire protection regulations (NFPA 805), design modifications were implemented including the following: installation of passive protections in electrical pipes, RF180 separation walls between pumps, installation of RF180 doors, and improvements in the indication of the activation of the of Diesel generator and essential pump extinguishing systems). The remainder of the actions will extend through 2021.

TRILLO NUCLEAR PLANT

• Activities related to the NSC Technical Instruction have continued, following guide NEI 09-10, concerning the prevention and management of gas accumulation in pipelines. Modifications have been made during refuelling, within phase 1 with an implementation period 2019-2021.

• Activities for compliance with ITC-14 for the Production Authorisation, include initiating the design and acquisition of new gates for the TL system, and implementation is planned for the 2020 refuelling.

• At Trillo NPP during 2019 the Containment detection system was optimised, and is the sectorisation of fire areas of the rooftop of the building where the safeguards Diesel is located is planned for 2020, which will finalise the changes required to comply with IS-30 Rev.2 issued by the NSC.

BOTH PLANTS

Related to installation of the new containment filtering and venting system (SVFC) at both plants, that enables containment to be vented in a controlled manner at pressures around the design pressure following an accident beyond the design bases of the plant, all the actions to commission the equipment to take samples during refuelling have been completed.

In compliance with the schedule agreed with the NSC, and after a cycle of supervision, the automatic actions generated by the detection and protection system against an open phase condition (OPC) have been successfully enabled (within Trillo and Almaraz Unit II) for the power transformers of the off-site network. Almaraz Unit I is planned to be enabled during R127 (2020) after a supervision cycle.

With respect to the management and storage of spent fuel and after approval by MINETAD of Rev.4 of the ENSA Safety Study for the new ENUN32P container, authorisation has been received from MINETAD for start-up and fuel loading in both plants. After the first loading in 2018 of one ENUN 32 P container at Almaraz and two ENUN 32P containers at Trillo, this activity continued in 2019, with the additional loading of one ENUN 32P container at Almaraz. In 2020, in accordance with the established schedule, it is planned to continue loading ENUN 32P containers at both plants

Almaraz and Trillo NPP sampling System

QUALITY

Quality is intrinsic to all activities at CNAT and provides the main source of confidence for our owners, the social environment, employees and business partners. Since 1995, CNAT's commitment to quality has been recognised by the Spanish Association for Standardisation (AENOR) by the award of an official certificate, which certifies compliance of our Quality Management System with the UNE EN ISO 9001 standard for the production of electricity from nuclear sources. In 2019 AENOR carried out a certification renewal audit with satisfactory results. In addition, we comply with the reference quality standard in the nuclear sector, UNE 73401 Quality Assurance at nuclear installations, which is the basis of our Quality Assurance Manual, and the requirements are continuously audited by the Nuclear Safety Council (NSC).


AENOR

Certificado del
Sistema de Gestión de la Calidad

CENTRALES NUCLEARES ALMARAZ-TRILLO, A.I.E.

Voluntary international evaluations were also requested to determine the degree of excellence of the organisation. These included the WANO Peer Review (World Association of Nuclear Operators), independent evaluation by a group of international experts, and in November 2019 the Follow-up of the Peer Review performed in 2017 was carried out at Trillo, with very satisfactory overall results.

Also, there was a Follow-up of the 2018 OSART mission by the International Atomic Energy Organisation (IAEA) in November 2019 at Almaraz NPP. During OSART missions, a group of experts from the IAEA carry out in-depth reviews of the performance of the nuclear power plant in terms of safety (Operational Safety Review Teams) and to do so they analyse the factors that affect safety management and staff performance. The results of tracking the recommendations proposed in 2018 have been very positive, with Almaraz NPP being assessed above the international average.

Continuous Improvement is part of CNAT's organisational culture and that is why we manage annually about 5,000 corrective and improvement actions, which originate not only from independent internal evaluations (Quality Assurance audits and inspections and Nuclear Supervision actions), but also from activity and process self-assessments by the units themselves of their activities and processes. In addition, trend analyses of low-level incidents are conducted to enable preventive actions to be identified to avoid incidents of greater severity.

Follow UP Mision OSART 2019

ENVIRONMENT

ENVIRONMENTAL QUALITY MANAGEMENT

AIE.'s commitment to respect the Environment at Almaraz-Trillo NPPs is expressed in the organisation's Environmental Policy. The Environmental Policy drives application of the Environmental Management System and its continuous improvement, reflecting the Board's commitment and constituting the starting principles on which the annual objectives programme is based, and in more general terms, the activities of the company in relation to the Environment.

ENVIRONMENTAL POLICY

CNAT's environmental policy has been defined based on the purpose and context of the organisation, including the nature, magnitude and environmental impacts of its activities, products and services, constituting the reference framework for the Environmental Management System and upon which environmental objectives are established and reviewed. It guarantees the following commitments:

- To fully integrate the environmental dimension in the organisation's strategy, to ensure protection of the environment, the natural environment and pollution prevention.
- To continually improve all processes which could have environmental repercussions.
- To be aware of and evaluate the opportunities and environmental risks in relation to activities performed, to ensure achievement of expected results.
- To comply with the environmental legislation in force and other voluntarily accepted requirements, whilst maintaining an attitude of ongoing adherence.
- To incorporate environmental management in all activities and levels of the organisation, including design, supply, operations and maintenance; identifying, preventing, controlling and minimising as far as possible, resulting environmental impacts:

TO EMPLOY raw materials and energy rationally and minimise the generation of conventional and nuclear waste and effluents.

TO AVOID inadequate waste collection and disposal of effluents, and the use of unauthorised sites

TO TAKE INTO ACCOUNT the development of new technologies to improve the efficiency of the nuclear generation of electrical power, and to research environmental issues and the development of energy savings.

- To motivate and train staff to respect the environment, stimulating development of an environmental culture and communicating the Environmental Policy within and outside the Organisation.
- To report environmental actions and results in a transparent manner, maintaining the appropriate channels to encourage communication with interest groups.
- To introduce and maintain updated a standard Environmental Management System.

ACTION PLANS

Almaraz-Trillo Nuclear Plants have continued to take extensive actions in relation to environmental issues during 2019, which are incorporated in the Environmental Management Programme, the most significant of which are detailed below:

- **Reduction in the production of radioactive waste: optimisation of the design to minimise leakage of chemical products with impact on the generation of radioactive waste, and material declassification methodologies. There are also ongoing actions to reduce high activity radioactive waste, through a new approach to cycle management at Trillo NPP and a reduction in the volume of special waste (heads) placed in the spent fuel pool at Almaraz NPP for subsequent management as low and intermediate activity waste.**

- **Modifications to chillers with a view to completely eliminating the use of fluorinated gases impacting the ozone layer.**

- **Control of environmental impacts in the aquatic environment: implementation of a digital measurement system in the Essentials reservoir.**

- **Improvements to the supervision of discharge conditions: installation of digital temperature recorders, adaptation of discharge parameter equipment alarms, etc.**

- **Improvements in the acquisition of data from the main meteorological tower and connection to the Almaraz NPP SAMO.**

- **Minimisation of the generation of hazardous waste linked to the reduction of the risk of spillages of chemical products: minimisation of leaks and system improvements, work on discharge lines, improvements to FP system Diesel storage tanks, etc.**

- **Awareness campaigns to reduce resources, generate waste and emissions, and promote good environmental practices.**

ENVIRONMENTAL AUDITS

The Environmental Management System at Almaraz Trillo Nuclear Power Plants A.I.E. has been certified by AENOR since 2005, in accordance with the UNE-EN-ISO-1400 international standard. Between 23 and 27 September 2019, a Environmental Management System Monitoring Audit was performed by AENOR INTERNACIONAL SAU. The auditors reviewed the Almaraz and Trillo plants and the activities carried out at the Plant's Offices, declaring the final outcome, "compliant".

The Environmental Management Certificate, after thirteen years of validity, was most recently renewed in 2017, the year in which it was adapted to the updated version of UNE-EN-ISO-14001: 2015, the standard in force until 28/11/2020, recognising the involvement of Management and the collective effort of the entire Organisation over these years. Each milestone of this nature must be understood, however, as a new starting point towards a improved environmental performance by the company.

Previously, in April, there was an internal audit of the System, an obligatory part of the verification process and no non-compliance was discovered.

There were several inspections by the Nuclear Safety Council on subjects related to the environment at both plants.

ENVIRONMENTAL MONITORING PROGRAMMES

Almaraz and Trillo Plants have historically run several environmental monitoring programmes, with the aim of verifying the absence of significant environmental impacts as a consequence of their activities, whether of a radiological or conventional type.

Aquatic ecosystems study

Basically, two environmental studies are carried out in the surroundings of Almaraz NPP, which includes the Arrocampo and Torrejón reservoirs: an ecological study of the aquatic ecosystem and a thermal study of the reservoirs.

These surveillance studies are far-reaching because the Arrocampo must also be considered as another Plant system, as it was built exclusively for industrial use cooling Almaraz NPP and is used for final heat dissipation and therefore it is necessary to have as accurate as possible knowledge of its characteristics in terms of its ability to perform its cooling function, in both the short and long-term. This requires intensive monitoring and surveillance of both physical and chemical parameters, especially temperature, as well as biological factors.

The environmental study which is carried out in the vicinity of the Trillo plant consists currently of monitoring the river Tajo, where the thermal surplus discharge is made, and the Entrepeñas reservoir, located downstream in the proximity of the Plant.

This study included evaluating the water quality from the physico-chemical viewpoint, and its content of metals and other undesirable substances, as well as the characteristics of other elements of the aquatic ecosystem such as sediments, benthic algae, phyto and zoo plankton and ichthyofauna.

Environmental radiological monitoring

The Almaraz and Trillo Plants exercise continuous strict control and monitoring of their own radioactive effluent emissions. Nonetheless, with the objective of verifying experimentally the impact radioactive elements might have on the environment, the plants have implemented an Environmental Radiological Monitoring Programme (ERMP) through direct measurement of radiation levels in the surroundings near to the installations, and of the content of radioactive substances from a series of types of environmental samples which are collected from a set of sampling points.

Comprehensive monitoring is carried out on all abiotic elements and living organisms represented in the ecosystems associated with all the natural resources of the surroundings of the plants (air, land and water).

Both Plants collect a large number of samples annually for different types of analysis (gamma spectrometry, beta activity, environmental dose, strontium, tritium and radioiodines).

The usefulness of the analytical results is assured through parallel implementation of a quality control programme by another, independent laboratory, and by implementing a programme of independent monitoring (PVRAIN) directly by the Nuclear Safety Council.

Also, in the case of the Almaraz Plant, a collaboration agreement is maintained with CEDEX to enable this official body, reporting to the Ministry of Public Works, to carry out independent surveillance of the aquatic resources in the proximity of the Plant. Extremadura Council also carries out independent radiological monitoring, with the help of the University of Extremadura.

Results obtained during 2019 at both plants indicate that the radiological state of the ecosystems of their surroundings have experienced no significant variations during the year, with natural background values remaining unchanged, confirming the absence of environmental effects due to the leakage of radioactive elements, rendering radiologically insignificant any leakages from both plants.

Meteorological studies

Almaraz and Trillo plants employ meteorological stations which are used continuously to measure and record the most significant parameters such as temperature, precipitation, wind direction and speed, humidity and solar radiation. The meteorological information is of particular relevance for various applications related to the environment, providing an excellent description of the climate at the site, after thirty years of monitoring.

The stations provide the required redundancy to ensure continuous availability of meteorological information.

SOCIAL

PEOPLE MANAGEMENT

Our people are our main asset at Almaraz-Trillo Nuclear Power Plants (CNAT). Their collaboration, commitment and identification with the Organisation are the best guarantee for safe operation of the plants and achievement of the business objectives. Therefore, the human resources policy aims to promote a work environment that facilitates professional and personal development, with special attention to the health and safety of employees.

At 31 December 2019, CNAT employed a team of 834 professionals characterised by their experience and high qualifications: 52% have a university degree. The CNAT workforce is concentrated mainly in Extremadura with 393 workers at the Almaraz plant (47%), in Castilla-La Mancha with 342 workers at the Trillo plant (41%) and in Madrid, with 99 workers at the Plant's Offices (12%).

There were 31 new recruits during the year and in all cases prior to recruitment to the work place, they received initial training and coaching about their work place functions. It should be noted that CNAT's staff have the support of approximately 750 employees of specialist contractors during normal operation. During refuellings, between1,000 and 1,200 additional workers are employed.

Since 2017, CNAT has been certified by AENOR INTERNACIONAL SAU in accordance with ISO-10.667-2: 2011 regarding the provision of evaluation services: Procedures and methods for evaluating people in work and organisational environments.

Industrial Risk Prevention

Based on the basic principle that all workplace accidents could and should be avoided, health and safety of people and the integration of prevention at all levels of the Organisation are a priority for CNAT. The commitment to the Health and Safety of people is a hallmark of Almaraz-Trillo Nuclear Power Plants which have as their ultimate goal the achievement and maintenance of ZERO accidents. For this reason, CNAT Management has promoted a project to improve the preventive culture of the organisation, which we have called the A-ZERO plan.

With this objective, during 2019 a series of lines of action have been promoted as part of this 3-year plan that involves all CNAT workers and with a very important focus on the collaborating companies that perform their work in the Power Plants, including the following:

- Standards and Expectations: The development of new fundamental rules (Rules that Save Lives) regarding prevention of new risk activities (confined spaces, chemical products and pressure lines), in addition to those implemented in previous years, has continued, as well as reviewing and consolidating the tagout process and the physical blockage of equipment at the plants.

- Leadership and motivation: LEADERSHIP in personal safety maintained in the command line, and integrated into the organisation, continues with specific actions such as:

  - New process of research, analysis and information about accidents and incidents that enables root causes to be identified, enhancing organisational learning to be enhanced and, from the resulting actions, their repetition avoided.

  - Consolidating Safety Prevention Observation (SPO) strategies in which both CNAT and collaborating companies participate, acts at the base of the accident-rate pyramid, improving fault detection and helping to set the safety expectations we want for the organisation. There were over 800 prevention observations during 2019.

  - Establishment of Leadership Networks with the involvement of a significant number of executors from both CNAT and collaborating companies.

  - Establishment of a recognition and achievement programme both individually and collectively in the field of prevention.

- Communication and Dissemination: With the aim of making the A-ZERO Plan visible and the absolute priority of people's safety in CNAT evident, impactful, effective communication campaigns have been developed, capable of reaching the entire organisation, and traffic lights have been installed and electronic panels that enable the objectives that CNAT has set itself in terms of prevention to be tracked in real-time.

- Training and prevention: An ambitious and wide-ranging programme has been deployed, in which modern training techniques have been introduced (virtual reality, risk simulators, participatory training and training with target groups etc.), which ensure the highest level of prevention training for all workers in the plants.

- Plan Follow-up: By maintaining a structure (Project Group) that enables the achievements of the Plan to be monitored as well as the establishment of new lines or priorities in it, encouraging management bodies, discussion, analysis and dissemination already in existence or newly created, such as Health and Safety and Coordination Committees for business activities, Prevention Committees and specific Work Groups.

CNAT's Prevention Service has two Health Surveillance units that supervise the health of workers at the three work places. The medical examinations conducted there apply the specific health surveillance protocols required for each job, according to the risk assessment carried out by Technical Prevention. This unit also performs functions of health care, provides support in medical emergencies and accidents, and maintains Level I accreditation for caring for irradiated and contaminated casualties.

With the aim of maintaining the health of our workers to the highest quality standards, in the planning of Preventive Activity for 2019, in addition to specific Health Surveillance activities, as part of the CNAT Health Promotion Programme the following workshops were developed. Ergonomics in the workplace, Back School, Sleep Hygiene, Laughter Therapy and Stoke Prevention. Almaraz-Trillo Nuclear Power Plants in 2019 has received the 'Brain Caring People Company' seal from the Stroke Prevention Association.

Throughout the year we continued screening campaigns for colon cancer (occult blood in stool), oral health, melanoma prevention and dermatological and eye health pathology through non-mydriatic retinography, personalised Nutritional Assessment and study of the Footstep Biodynamics study, as well as a quit smoking campaign. Two informative medical articles on "Sleep Hygiene" and "Noise in our daily life" were published in the Mundo CNAT magazine. Workers' reception of the campaigns, workshops, information sessions and medical articles has been very favourable and participatory.

Training

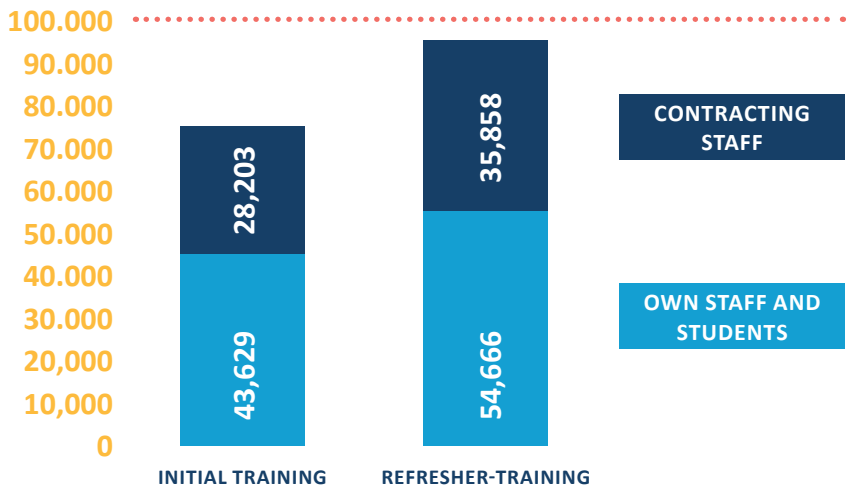
The qualifications of individuals working for Almaraz-Trillo Nuclear Power Plants are one of the priority interest areas, and for that reason CNAT has permanent resources devoted to planning and developing annual training plans for each work site, not only with regard to initial training, but also for refresher-training and management skill training.

In 2019, 546 initial and refresher-training courses were provided, which resulted in 162,356.02 hours of training for 5,5,172 workers, including future plant operators (17 young students in training). The part of the training programme dedicated to refresher-training represented 55.76%, and that corresponding to initial training was 44.24%.

During the year, 819 CNAT employees (99.39% of the total) participated in training activities, totalling 73,986.89 hours of training, and the average training hours per employee was 90.33 hours. Training programmes for future plant operators prior to joining the workforce, resulted in over 26,319 hours training during the year.

With regard to monitoring the qualifications of contracting personnel, CNAT continued to encourage improvements in their training by providing support for planned training activities, and by arranging specific training sessions for these workers. In 2019, 64,062 hours of training were dedicated for 4,336 workers from contracting companies.

OVERALL DISTRIBUTION.
2019 TRAINING PROGRAMME (HOURS)



Internal communications

Internal communication is a key tool at CNAT to transmit the strategic objectives and values promoted by the organisation and CNAT employees use various communication channels provided by the company including the internal magazine “Mundo CNAT” and the monthly newsletter “En 5 minutos”, a system of information screens distributed throughout the three work places, as well as the corporate Intranet.

During 2019, the objective of achieving “ZERO ACCIDENTS” was continued through the campaign “Do not underestimate risk. It could ruin everything”, which added to the campaign started in 2018 with the motto “Safety at work does not only affect you”, highlights the consequences for the worker that recklessness or non-compliance may have in relation to safety and consequently, for the immediate environment. This reinforces the lines of action established in the “Rules that Save Lives” programme associated with work at height, movement of loads, falls at different levels, work with electrical risk, work with chemical products, work with pressure systems and work in confined spaces.

Together with this objective, the “Move Safely” campaign was also developed to raise awareness of Road Safety, and a programme of recognition of good practices or actions, both individual and collective, in terms of personal safety has been launched.

Another campaign developed in 2019 was dedicated to fire protection: “We are all protection against fires (FP). A thousand workers in the plant are a thousand FP wardens” highlighting fire protection messages in situations of exposure to fire risks in our plants, such as storage areas, passive protections, escape routes and door closures.

RELATIONS WITH SOCIETY

CNAT continues to have direct, fluid and stable relationships with institutions in surrounding areas, and in 2019 semi-annual meetings were held, two at each plant, with the mayors of nearby councils and with the media. All information concerning operational results is presented at these meetings together with news about future plans and projects. 180 personalised meetings were also held with mayors of surrounding councils to study on a bilateral basis the relationships of the Plants with each municipality and potential collaboration channels. In addition, this year management from both plants participated in the Information Committees organised by the official bodies responsible for nuclear energy, providing all information required at any time.

The commitment of Almaraz and Trillo NPPs to their neighbouring communities is reflected in the cooperation agreements that have been renewed in the social/economic and environmental fields, and educational development projects. Similarly, CNAT has renewed cooperation agreements with news and press agencies most representative of the Plant environs, and these are used to promote the training and specialisation of Information Science final year students on nuclear sourced electricity production. Also, a course on nuclear technology for media professionals is provided every year at our facilities in Trillo.

The dissemination actions by CNAT on nuclear energy and operation of its plants are evidenced by through its Information Centres which in 2019 received 7,159 visitors (3,462 at Almaraz and 3,697 at Trillo). Between the two Plants, over one million people have visited the Almaraz and Trillo installations since they began operating in 1977 and 1981 respectively. In addition, both the web site (**www.cnat.es**) and the blog **www.energiaymas.es** provide interesting information about plant activities and their environments, and contribute to this effort to expand dissemination of information about the nuclear world.

To ensure continuous improvement of the quality of products and associated services, CNAT ensures that its suppliers are aware of and participate in the company's work processes and protocols. Trading volume in 2019 was € 275.2 M. Of the total number of identified suppliers with contract awards, 90.74% (402 of 441) are domestic suppliers.

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