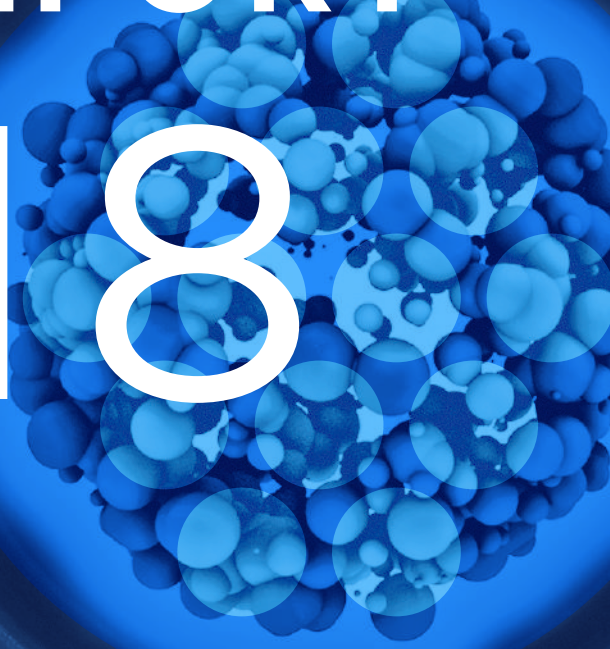
ANNUAL REPORT 2018



CENTRALES NUCLEARES ALMARAZ | TRILLO

ALMARAZ
TRILLO

ANNUAL REPORT

2018

ALMARAZ TRILLO

Edition: © **Centrales Nucleares Almaraz-Trillo June 2019**

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ALMARAZ NPP(UI-UII)

OWNERS:

Iberdrola Generación, S.A. (52.687%)

Endesa Generación, S.A.U. (36.021%)

Gas Natural FenosaGeneración, S.L.U. (11.292%)

LOCATION:

Almaraz (Cáceres)

TECHNICAL SPECIFICATION:

Reactor Type: Pressurised 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

TRILLO NPP.

OWNERS:

Iberdrola Generación, S.A. (48%)
Gas Natural FenosaGeneración, 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 2018, the gross electricity production of Almaraz and Trillo nuclear power plants totalled 24,584,898 million kilowatt hours (16,317.6 million kWh at Almaraz and 8,267.2 million kWh at Trillo), which represents 44% of the energy generated by Spanish nuclear power plants, and 9% of the national total.

In December, the process of loading and transferring the first container with spent fuel from Almaraz NPP Unit I to the Independent Spent Fuel Storage Installation (ISFSI) was completed. This process consisted in loading an ENUN 32P container with capacity for 32 fuel elements, transferring it from the fuel pool and positioning it in the ISFSI. Likewise, during this year the design modifications necessary began at Trillo NPP ISFSI for the change from DPT containers with capacity for 21 spent fuel elements, to ENUN 32P containers with greater capacity.

The International Atomic Energy Agency (IAEA) fulfilled its OSART Mission number 200 at the Almaraz plant. The results of the evaluation carried out by international experts place the Extremadura installation amongst the best evaluated by this type of mission and constitutes international endorsement by the IAEA by explicitly recognising our “commitment” to long-term safety and “the desire for continuous improvement”.

In addition, in 2018, the Trillo NPP Peer Review took place, and an Action Plan has already been prepared to respond to the identified AFIs (Improvement Areas) building on the good results obtained in the WANO Corporate Peer Review Follow-Up.

One of the priority objectives on the path of continuous improvement undertaken by CNAT is the preventive culture improvement programme (Plan A-Cero), intended to raise awareness among staff at CNAT and the collaborating companies in an attempt to reduce work accidents as much as possible.

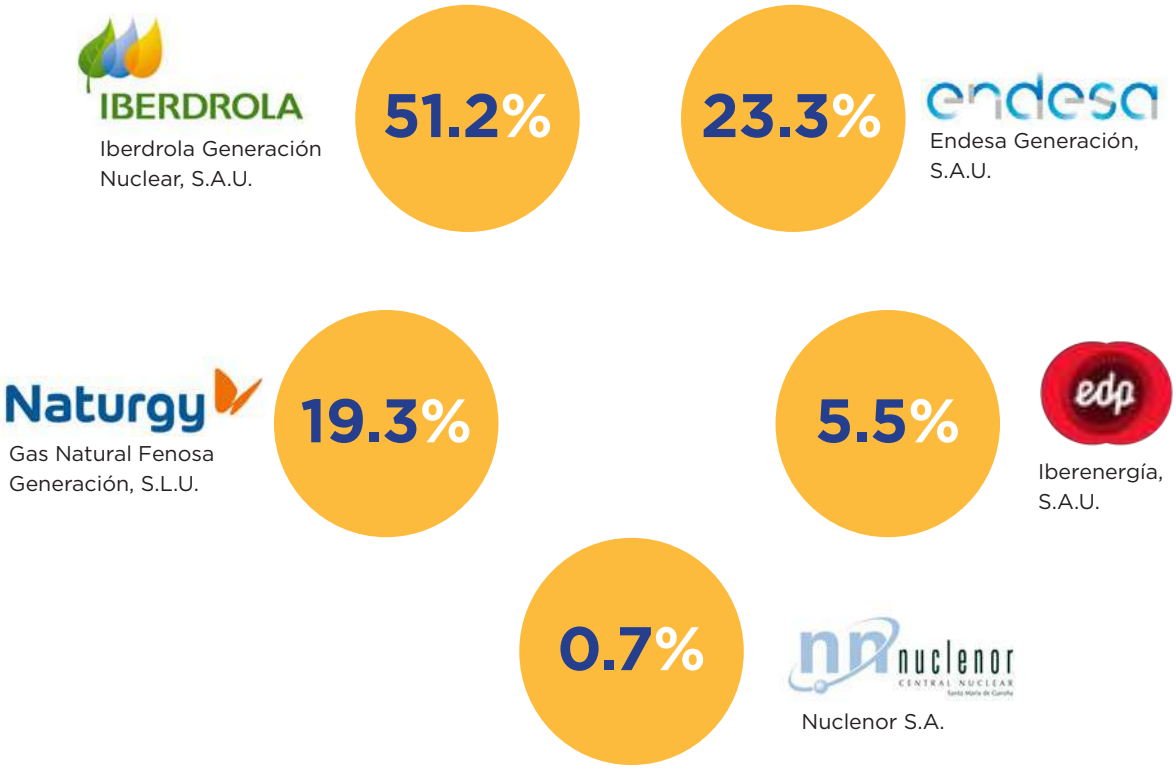
In April, Rafael Campos was officially appointed as the new Director of Almaraz NPP.

Also, on 6 August, Trillo NPP completed 30 years commercial operation, producing 8,000 million kilowatt hours per year. From its origins, Trillo Nuclear Power Plant has been and is an important centre of economic and social development and a focus for the creation and maintenance of jobs in the region. It generates about 1,300 jobs in its area of influence, and during refuelling periods over 1,000 workers from specialised companies are employed in addition to the usual workforce. It is the main industry in Guadalajara.

CNAT PROFILE

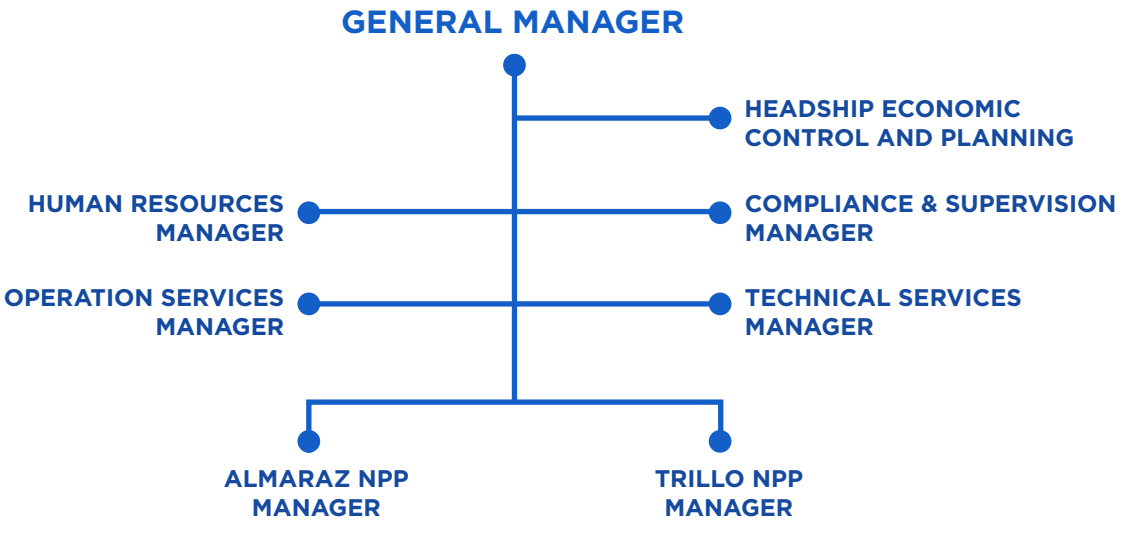
OWNER COMPANIES

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 *Centrales Nucleares Almaraz-Trillo AIE* implemented on 1 January 2017.



MISSION, VISION, KEY STRATEGIES

The Mission of 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

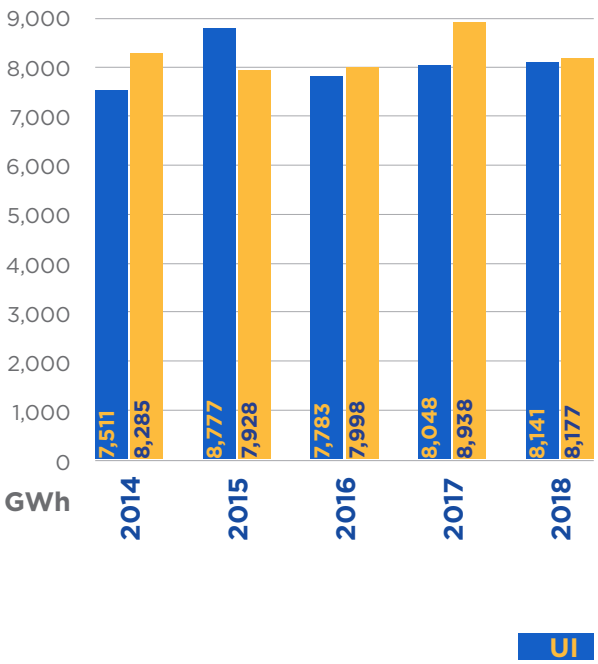
Both Almaraz Nuclear Power Plant units have maintained stable operation in a year in which there have been two refuellings, attaining a joint production of 16,317.6 million kWh, that is 29% of the total generated by the Spanish nuclear plants. Gross electricity production for Unit I was 8,141.1 million kWh, and 8,176.5 million kWh for Unit II. The combined net production of both units was 15,698.8 million kilowatt hours. The cumulative gross electric power production of Almaraz Power Plant was 528,670 million kWh (266,262 at UI and 262,408 at UII).

In May, the Nuclear Safety Council was notified of an event that occurred at Unit II, reporting that when loading emergency diesel generator GD4-4DG for the monthly monitoring test, the fire detection system was activated due to the presence of smoke in the exhaust area of motor B, as a result of oil residues from a small seepage in the connections of the feed pipe to the turbocharger becoming hot.

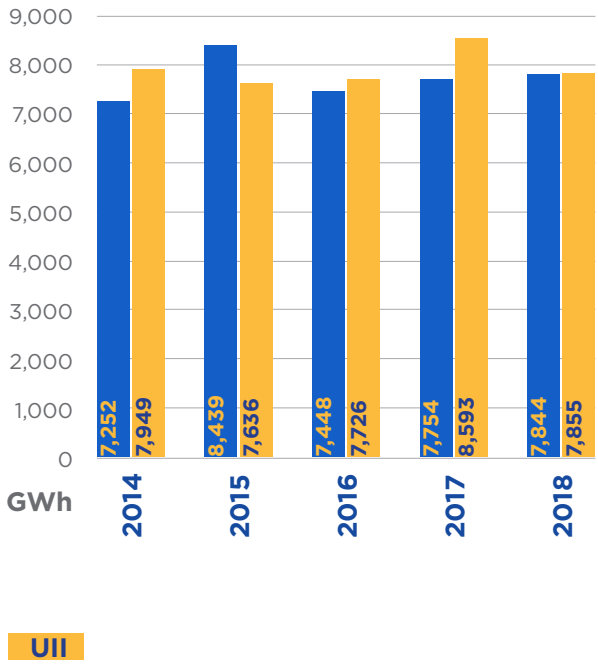
The Annual Internal Emergency Drill was held in June. During the exercise, a series of circumstances were simulated, such as loss of the steam generator water supply and condensate systems, and the loss of two of the three passive physical barriers with severe damage to the core, which required a Category IV declaration (General Emergency), which includes evacuation of non-essential personnel from the installation.

ALMARAZ NPP

GROSS PRODUCTION UI+UII



NET PRODUCTION UI+UII



UI UII

TRILLO PLANT

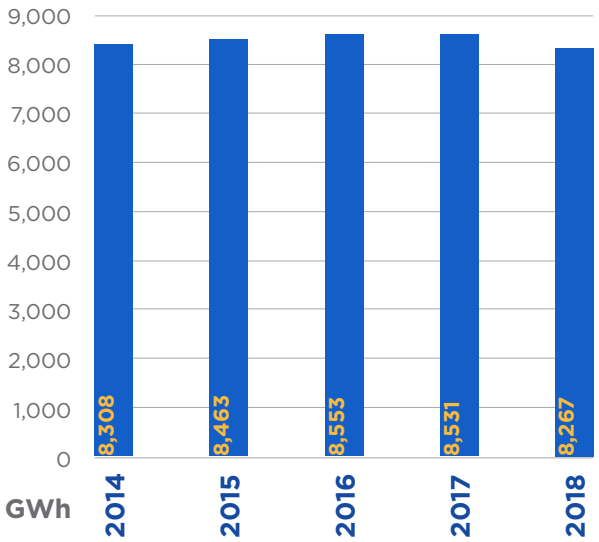
Trillo Nuclear Power Plant also presented excellent annual operating results: 8,267.2 million kWh of gross electricity generated; 7,732 million kWh of net electric power; it has produced 247,292 million kWh since it started up and has accumulated 11 consecutive years without an automatic reactor shutdown.

As an event notifiable to the NSC, on 9 April, start-up of the GY50 Diesel generator was reported due low voltage in the emergency busbar.

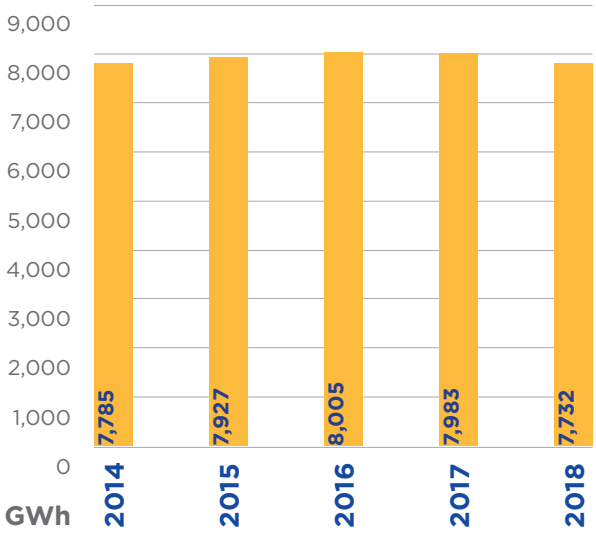
The Annual Internal Emergency Drill was held in October. The scenario proposed initially caused a Category II declaration (Emergency Alert) due to a fire in a transformer and, subsequently, Category IV (General Emergency) with evacuation of non-essential personnel. The Emergency Radiological Monitoring Plan (PVRE) was also activated, as well as the external support organisations required to deal with this emergency situation. This exercise served to verify the readiness of the organisation, the operability of the assigned resources and coordination with the support organisations involved in this type of situation.

TRILLO NPP

GROSS PRODUCTION



NET PRODUCTION



REFUELLING OUTAGES

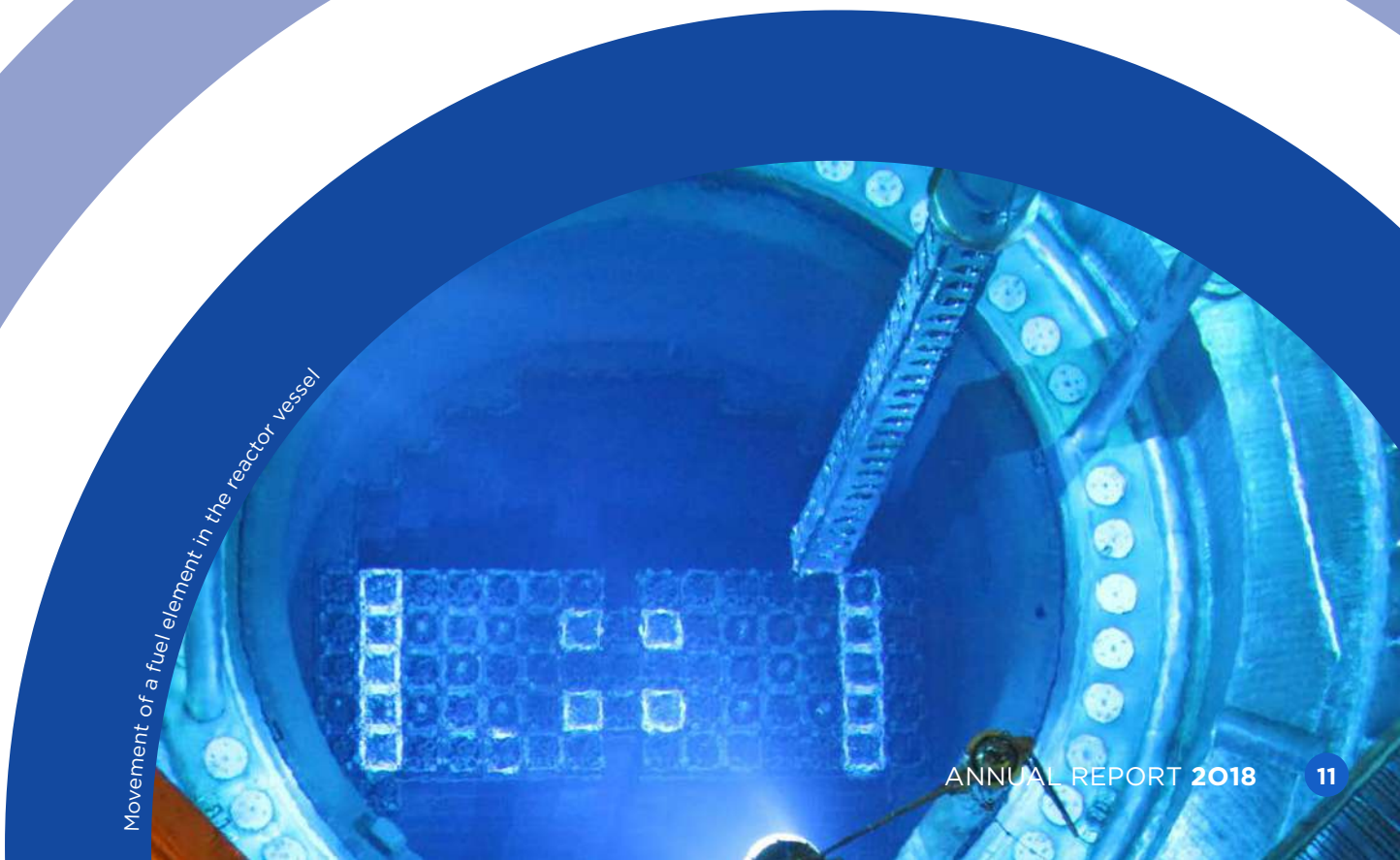
ALMARAZ PLANT

Both units were refuelled in 2018. In the first half of the year Unit II was refuelled for the 24th time, taking 33 days, from 9 April to 11 May, with implementation of 20 design modifications and execution of over 9,700 overhaul and maintenance tasks on equipment and components, including ultrasonic inspection of the vessel nozzles welds, overhaul of one of the low pressure turbine casings, visual inspection of the penetrations of the vessel cover and bottom, as well as testing the power supply from the Valdecañas hydraulic power plant.

The 26th refuelling of Unit I took place during the second half of the year, between 28 October and 2 December, 34 days during which 30 design modifications were implemented and over 9,200 activities were performed, in particular different inspection tasks (vessel nozzles and steam generator tubes), work on the turbogroup and other important tasks such as maintenance of the auxiliary feedwater turbine and the main feedwater pump.

TRILLO PLANT

The twenty-ninth refuelling and general maintenance of the Trillo Plant commenced on 18 May and ended on 26 June. During this refuelling outage, the pins for centring the upper internals of the reactor, the fuel elements and control rods, and the lower bearing in the cooling pump of reactor YD30D001 were all inspected. There was also a mechanised inspection of the reactor pressure vessel and the base material and induced current inspections of 100% of the tubes of the steam generator 20. In addition, pressure tests were performed on the primary circuit, the capacity of the redundancy 2/6 batteries, and checks of the reactor protection system. During this refuelling period, 1/5 redundancy was electrically and mechanically overhauled and the alternator and exciter, and valves of the main steam loop 30 were inspected.



Movement of a fuel element in the reactor vessel

RADIOLOGICAL SAFETY AND PROTECTION

During 2018 the installations operated completely normally, without producing any significant incidents affecting nuclear safety or radiological protection, neither to employees, nor the plant environment.

The results obtained from the measurements performed show the dose rate for professionally exposed personnel was once again well below legal limits. In the case of Almaraz NPP, the staff collective dose totalled 818.10 mSv per person for the combination of the two units, and at the Trillo Plant, the dose totalled 284.48 mSv per person, the lowest collective dose recorded since the plants started operations.

TECHNOLOGICAL UPDATING

Durante During 2018, CNAT continued the 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

- Replacement of power supplies and I&C cards. Foxboro cards have been obtained to increase stock ahead of the termination of production announced by the manufacturer.

- Implementation of the new electric power measurement system (Crossflow) in Unit II saw completion of the renovation and modernisation at both units.

- At the end of 2018, a project was instigated to replace the SMA Actuator with another SMB model. The replacement involves two phases. Implementation of the first phase is planned during R127 and R226 (2020-2021).

- Installation during Unit II refuelling (April 2018) of the new cooling units in the Switch Room on the Electrical Building Terrace, using a new refrigerant gas that does not have adverse effects on the ozone layer.

In addition, during 2018 the Control Room cooling units were placed on the Auxiliary Building terrace for subsequent interconnection with Plant systems. Necessary changes were made to the train busbars during R126 and R224. These new cooling units will be commissioned during the first quarter 2019.

Hoisting manoeuvre of the cooling unit. Terrace Auxiliary

New static converters

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 2015-2022 period. This programme includes 660V circuitbreakers and 660V, 380V, 220Vdc and 48 Vdc consumer switches.

- Replacement of S5 programmable controllers, cards and recorders.

- Automation tests on the main steam relief valves.

- The H&B actuator modernisation project commenced with implementation, as planned, of phase 1 during the R430 refuelling in 2018. Initiated in 2018 the design of the modifications for phase 2 that also include replacing the Nuclear Safety actuators and the programme to qualify and dedicate commercial grade actuators was started.

- In the electrical field, replacement of the old GZ40 rotary converter with two new redundant static inverters equipped with a static bypass for automatic power transfer was completed during R430.

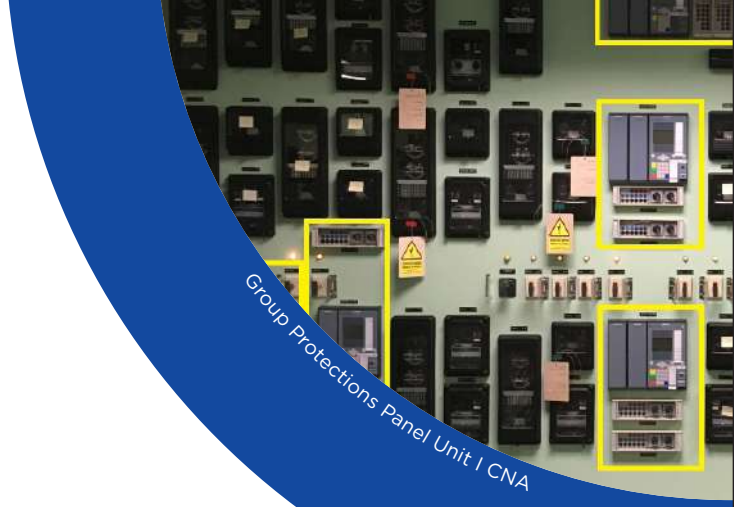
Auxiliary building terrace New Control Room cooling units Room

SAFETY IMPROVEMENT RELATED ACTIVITIES INCLUDE THE FOLLOWING:

- In 2018, the documentation submitted for the transition to fire protection regulations (NFPA 805) continued to be evaluated by the NSC. Based on work on the part already evaluated, modifications have already been carried out in 2018, representing an improvement in plant safety (re-routed hydrogen lines to the TCV, passive protections in electrical conduits with a significant impact on risk), and further modifications are already planned for implementation in 2019 together with other actions that will take place in the period up to 2021.

- The required modifications to channel and collect oil leaks from the motors of the 3 Reactor Cooling Pumps, OSPS project (Oil Spillage Protection System) have been completed. One tank will be available per pump with sufficient capacity for the entire oil inventory (1,000 litres per pump). Activities associated with IS-30 will be terminated with this implementation.

- Implementation of modifications resulting from IS-30 Rev.2 continued at Trillo NPP during 2018, including improvements to the Emergency Building and which consisted of automating the fixed FM-200 gas fire-fighting systems in the cable rooms and installing automatic detection in various fire zones in this building. In addition, in 2018 the design was finalised for optimising the detection system in Containment that will be implemented during the 2019 refuelling.



Group Protections Panel Unit I CNA

- With these modifications and the implementation planned for 2020 to sectorise the roof of the building in fire areas where the safeguard Diesel is located, modifications required to comply with IS-30 Rev.2 issued by the NSC will be finalised. This Project, which has had a major impact on the Plant, will be finally completed within the period 2014-2020.

- Installation of the new Filtered Containment Vent System (SVFC) has been completed at both plants, enabling containment to be vented in a controlled manner at pressures around design pressure following an accident beyond the design bases of the plant, and actions to comply with MINETAD (Ministry of Industry) Conditions are in progress. In accordance with the 2018 plan, the installation of an activity measurement meter in the discharge from the filters of the three filtered containment vent systems (2 at Almaraz NPP and 1 at Trillo NPP) has been completed, and equipment to sample the discharge from each of the filters, the implementation of which is planned in 2019, has been adjudicated.

- Implementation of the modifications required to handle risks resulting from an open phase condition (OPC) in the power transformers from 132 KV (Trillo), 220 kV (Almaraz and Trillo) and 400 kV (Almaraz and Trillo) has been completed at both plants. After implementation and in order to check the correct functioning of the installed protections, as agreed with the NSC, activations have been disabled for one cycle with only one activation alarm available. After one operation cycle and verification of the behaviour, these protections will be enabled in 2019.

- Activities related to the NSC Technical Instruction have continued, following guide NEI 09-10, concerning the prevention and management of gas accumulation in pipelines. At Almaraz NPP, implementation of the planned modifications was completed in 2018,and the designs for phase 1 to be implemented in the 2019-2021 period, and planned activities for phase 2 with a 2021-2022 implementation period were started at Trillo NPP.

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. One ENUN 32 P container was loaded at Almaraz NPP and two ENUN 32P containers at Trillo NPP in 2018, and there are plans to continue in 2019 with the loading of ENUN 32P containers at both plants.

ENUN 32P Containers and DPT in the background in Trillo ISFSI

ENUN 32P Containers in Almaraz ISFSI

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 2018 AENOR carried out an adaptation audit of the new version of the 2015 standard 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).

Voluntary international evaluations were also requested to determine the degree of excellence of the organisation. These included a WANO Peer Review (World Association of Nuclear Operators), independent evaluation by a group of international experts, which in October 2018 carried out at the Corporate Follow-up of the Peer Review carried out in 2015, with very satisfactory overall results.

Also, there was an OSART mission by the International Atomic Energy Organisation (IAEA) in February 2018 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 were very positive, the IAEA explicitly acknowledging Almaraz's commitment to long-term safety, as well as notable achievements in recent years, both in its management system and equipment renewal, with safety as a top priority.

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. In addition, trend analyses of low-level incidents are conducted to enable preventive actions to be identified to avoid incidents of greater severity.

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 founding 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 2018, 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 (assembly heads) placed in the spent fuel pool at Almaraz NPP for subsequent management as RBMA.

- Legionella control in cooling towers has been enhanced through the study and testing of new treatments.

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

- 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 improve the segregation of hazardous and non-hazardous waste.

- Actions to reduce paper and toner consumption throughout the organisation.

- Improvements to the management of environmental incidents and their communication to Senior Management.

With regard to high level waste constituted by spent fuel extracted from the reactor, in 2018 the Independent Spent Fuel Storage Installation (ISFSI) started operations at Almaraz NPP.

ENVIRONMENTAL AUDITS

The Environmental Management System at *Centrales Nucleares Almaraz-Trillo AIE* has been certified by AENOR since 2005, in accordance with the international standard UNE-EN-ISO-14001. Between 24 and 28 September 2018, an 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", without discovering any non-compliances.

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 an improved environmental performance by the company.

Previously, in April, there was an internal audit of the System, an obligatory part of the verification process. 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, the Almaraz Plan maintains a collaboration agreement with CEDEX to enable this official body, reporting to the Ministry of Development, 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 2018 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, 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 2018, CNAT employed a team of 836 professionals characterised by their experience and high qualifications: 49% have a university degree. Out of the total number of employees, 367 people performed their activities at the Almaraz Plant, 345 at Trillo and 97 in the CNAT Plant Offices. With an average age of 49, CNAT staff are concentrated mainly in Extremadura (47%), Castilla-La Mancha (41%) and Madrid (12%).

There were 20 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 approximately750 employees of specialist contractors during normal operation. During refuellings, between 1,000 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 on the provision of evaluation services: Procedures and methods for evaluating people in work and organisational environments.

INDUSTRIAL RISK PREVENTION

All accidents could and should be avoided. Safety and health of people and the integration of prevention at all levels of the Organisation are a priority for CNAT. During 2018 there were 10 accidents at CNAT, 7 of them with sick-leave. The commitment to the Health and Safety of people is a hallmark of Almaraz-Trillo Nuclear Power Plants and has as its 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 organization, which we have called Plan A-> CERO.

With this objective, during 2018, a series of action plans has been promoted as part of a 3-year plan, including the following:

- To define and disseminate key rules on prevention associated with the main risks identified in electrical work, movement of loads and falls from different levels, which will subsequently be followed-up with other significant risks (rules that save lives).
- To review and strengthen Prevention Observation strategies, as a fundamental prevention tool, which 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 500 prevention observations during 2018.

- Implementation of a communication campaign and adherence to the prevention policy, with the aim of achieving a Prevention Management System based on the responsibility, commitment and involvement of all CNAT's employees and with a very clear focus on collaborating companies that perform work at the Power Plants.

- Development of an exhaustive accident and incident investigation methodology that facilitates their classification, reporting, investigation and analysis to prevent their repetition based on identification of the root cause and resulting actions.

- Finally, implementation of a systematic programme of awareness and advanced training in prevention for all levels at CNAT, including collaborating companies.

In addition, CNAT's Prevention Service has two Health Surveillance units that supervise the health of workers at the three work centres. Specific health monitoring protocols required in accordance with the risk assessment performed by Technical Prevention for each job are applied in the medical examinations. 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 with the highest quality standards, in Preventive Activity Planning for 2018, in addition to specific Health Monitoring activities a Health Promotion Programme titled, "Healthy Company Plan 2018" was introduced, and as part of this, a "Nutritional Valuation Workshop" and"Footprint Biodynamic Study" were implemented.

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. An article on "Cancer Decalogue" was also published in the internal magazine, CNAT World. All information sessions and campaigns have been very well received.

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 dedicated to planning and developing annual training plans for each work centre, not only with regard to initial training, but also for refresher-training and management skill training.

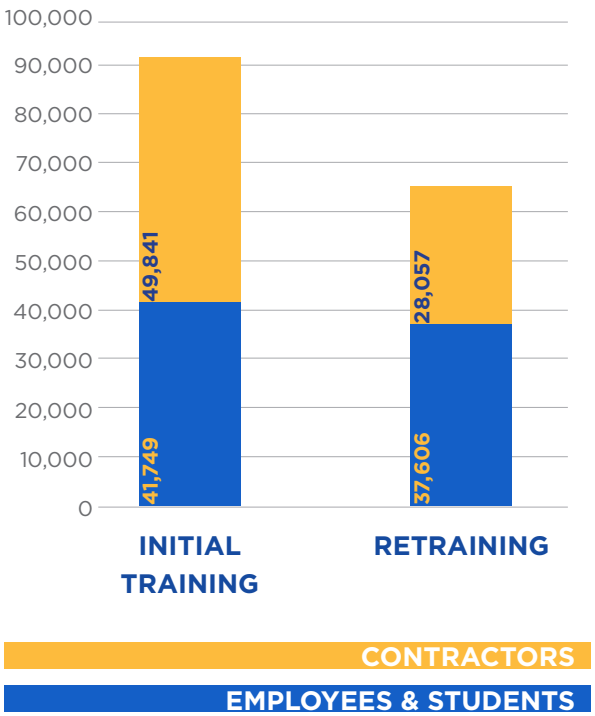
In 2018, 631 initial and refresher-training courses were provided, which resulted in **157,252.52 hours of training** for **5,254 workers**, including future plant operators (17 young students in training). The part of the training programme dedicated to refresher-training represented 51.17%, and that corresponding to initial training was 48.83%.

During the year, **831 CNAT employees** (99.21% of the total) participated in training activities, totalling **64,546.78 hours of training**, and the average training hours per employee was 77.67 hours. Training programmes for future plant operators prior to joining the workforce, resulted in over **14,808 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 2018, **77,897.74 hours of training** were dedicated for **4,406 workers** of contracting companies.

GENERAL BREAKDOWN OF PROGRAM 2018 (hours)



INTERNAL COMMUNICATIONS

Internal communication is a key tool at CNAT to transmit the strategic objectives and values promoted by the organisation. As a result of this commitment, during 2018, particular focus was placed on communicating internally the ZERO ACCIDENTS objective by means of a dissemination campaign of an informative nature that highlighted the consequences that negligence or a breach related to safety could have for the workers immediate surroundings ("Safety at work does not only affect you").

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 centres, and the corporate Intranet.

RELATIONS WITH SOCIETY

CNAT continues to have direct, fluid and stable relationships with institutions in surrounding areas, and in 2018 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. 169 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 the welcoming of 8,684 visitors this year to the Information Centres, (3,748 at Almaraz and 4,036 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 2018 was € 280.1 M. Of the total number of identified suppliers with contract awards, 91.15% (371 out of 407) are domestic suppliers.

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