Summary

- delivers 5 racks for the Olkiluoto Nuclear Power Plant in Finland ..................... 1
- GEH launches the second control bar cutting campaign at the Cofrentes Nuclear Plant ............................................................................................................. 2
- EU-funded program to diversify sourcing of fuel for VVER-440 reactors ............ 3
- manufactures control valves for Trillo Nuclear Power Plant ................................. 4
- supplies to Tianwan Nuclear Power Plant ................................................................ 5
- supplies ASME III N-Stamp Safety Class 2 Swing check valves for Krsko Nuclear Power Plant ...................................................................................... 6
- has been present at NIC ............................................................................................ 7
- intensive participation in nuclear refueling outages .............................................. 8
- will inspect the steam generators at Krsko-Slovenia ............................................ 9
- presents its automatic BWR Nozzle Inspection System .................................... 10

Additional information contacts .................................................................................. 11
Ensa has recently delivered 5 racks to store the spent fuel of the pool of Olkiluoto Nuclear Power Plant in Finland. With a total capacity of 1,470 positions of spent fuel elements, each rack is formed by panels with a design that minimizes the number of welds in the assembly. These components will complete the pool YF-92.08 of the Finnish plant that already had 4 Ensa Interlock® design racks. Currently, they are being transported directly to the plant and their installation in the KPA fuel building is scheduled for this year.

The Spanish company designs fuel racks since 1986 and has 38,941 rack cells distributed around the world that operate reliably and safely in 29 pools of 22 plants in countries such as Spain, Taiwan, Germany, South Korea, France, China, United Kingdom and South Africa. This extensive experience in this field has made that the manufacture of these components has been carried out respecting the established deadline and with the quality expected by the client, TVO.
GEH launches the second control bar cutting campaign at the Cofrentes Nuclear Plant

Ensa has successfully launched the second cutting campaign of the first control rods of the Cofrentes NPP. In this way, both the second package of limiters and the first quivers of Vs have been obtained, which reduce the volume occupied by the bars. The first campaign began on spring 2017 with the set-up of the equipment and the first cuts with control rods.

This cutting technique, designed and developed by Ensa in collaboration with General Electric-Hitachi, is pioneer in Spain and is able to reduce the volume occupied by the control bars in the fuel pools and to segregate the parts of medium or low activity.
EU-funded program to diversify sourcing of fuel for VVER-440 reactors

A consortium led by Westinghouse Electric Company has completed an EU-funded project aimed at diversifying the supply of fuel to Russian-built VVER-440 reactors in Europe.

Westinghouse has been leading the project – known as European Supply of Safe Nuclear Fuel (ESSANUF) since September 2015. Its partners include: ENUSA Industrias Avanzadas of Spain; Slovak nuclear power plant research institute VUJE; NucleoCon of Slovakia; ÚJV Řež of the Czech Republic; Finland’s Lappeenranta University of Technology; National Nuclear Laboratory (NNL) of the UK; Ukraine’s National Science Centre Kharkov Institute of Physics and Technology and the Institute for Transuranium Elements of the Joint Research Centre of the European Commission (JRC-ITU).

Westinghouse, ENUSA and NNL have previously worked together to develop, license and manufacture Westinghouse VVER-440 fuel for the Loviisa nuclear power plant in Finland. Seven complete fuel reloads were manufactured at ENUSA Juzbado fuel factory and delivered to the Finnish plant where the fuel operated successfully.

The ESSANUF project was funded by the European Union’s Euratom Research and Training Programme (2014-2018) and in May 2017, the consortium approved the conceptual fuel design for the VVER-440 assemblies.

The consortium has now determined how the manufacturing and supply chain can be re-established to fabricate and transport VVER-440 fuel assemblies. The consortium has also set up and verified the associated methods and methodology to be applied for the licensing and use of a new fuel design.

Five EU member states, Bulgaria, the Czech Republic, Finland, Hungary and Slovakia, operate Russian reactors – four VVER-1000 and 14 VVER-440 type units – and are currently 100% dependent on a single fuel supplier. These reactors provide up to 52% of the electricity supply in the member states concerned. The new VVER-440 fuel design opens an alternative sourcing of fuel and paves the way for increasing competition and security of supply within the EU.
manufactures control valves for Trillo Nuclear Power Plant

Ringo Válvulas has concluded the assembling process of two (2) Globe Control Valves DN200 PN16 Nuclear Class RC3 to be supplied to Trillo NPP. They have been produced with fully forged body 1.0460 and balance trim to reduce the actuator required thrust. Valves are currently under testing using a Ringo spring return diaphragm type actuator and shall be supplied bare shaft as per contract requirements.
supplies to Tianwan Nuclear Power Plant

Tianwan Nuclear Power Plant has completed a milestone with the power start-up of the Unit 3 that took place on past December 2017. This plant is being built in Jiangsu province (China) and it is going to be the largest nuclear power plant in that country once all the units are completed.

Ringo Válvulas has participated in this project with the supply of several contracts including valves, not only for the unit 3 but also for Unit 4 of Tianwan NPP according to all the Russian specifications applicable for this VVER-1000 plant design. Scope of the supplied valves include:

- Wafer tilting disc check valves DN500 PN10, Nuclear Class 3 and material Super duplex A182 F53. Supplied with counterflanges. Service: Sea water
- Wafer tilting disc check valves DN250 150#, Nuclear Class 3 and material Super duplex A182 F53. Supplied with counterflanges. Service: Sea water
- Butterfly DN250 PN 10, gear operated in super duplex A182 F53. Supplied with counterflanges. Service: Sea water
- Globe Control valve DN80 PN160, Nuclear Class 4 electric operated in material Stainless Steel A351 CF8M Service: Secondary circuit water, steam generator blow-off.

This project is only a sample of the large list of plants constructed by Rosatom where Ringo Válvulas is supplying its nuclear valves: 12 different power plants so far.
supplies ASME III N-Stamp Safety Class 2 Swing check valves for Krsko Nuclear Power Plant

Ringo has recently completed the supply of a contract through Tecnatom for the Krsko Nuclear Power Plant in Slovenia. Scope of the contract included seven (7) Nuclear Safety Class 2 Swing check valves in class 600# and sizes 12”, 8” and 6”. All valves were supplied in stainless steel SA351 CF8M.

Design, manufacturing and testing has been performed according to ASME III N-Stamp and shall be installed in the Alternate Residual Heat Removal System (Alternate RHR).

This supply is one step forward in the consolidation of Ringo Válvulas as a leader in the Nuclear industry, increasing not only their install base but also the level of high demanding products, such as N-Stamped valves.

Currently Ringo is in the manufacturing process of some more ASME III N stamped valves for other nuclear plants such as Pickering NPP (Canada), Angra I (Brazil) and the own Krsko NPP (Slovenia).
SNGC member companies (ENSA, ENUSA, Ringo Válvulas and Tecnatom) have participated actively in the Nuclear Industry Congress 2018 event, which took place from March 28th to 31st in Beijing (China), thereby consolidating a presence that has been continuous for more than 10 years.

Given that the Chinese market is especially significant for SNGC companies, this exhibition makes it possible to showcase the capacities of the Spanish nuclear sector, promoting and intensifying existing commercial relations with Chinese companies, country that is currently building the highest number of nuclear reactors in the world. These Spanish nuclear companies, with nearly 70% of their activities dedicated to exports, have an international presence in over 35 countries, and they cover most of the nuclear value chain: supply of large nuclear valves, heavy equipment (especially steam generators and casks), control rooms and full-scope simulators, inspection services, operator training as well as delivery of equipment for the inspection of irradiated fuel and for assuring quality control in the nuclear fuel manufacturing process. Technology transfer has been a must in all these contracts with Chinese companies.

Additionally, NIC 2018 has been the best context to sign a new cooperation agreement, this time with the China Nuclear Energy Association (CNEA) in order to strengthen the existing cooperation with new activities of mutual interest.
intensive participation in nuclear refueling outages

Over the last few months Tecnatom has participated very intensively in refueling outages at several nuclear power plants around the world.

We have participated recently in scheduled activities during refueling outages at the Ascó 2 and Cofrentes (Spain), Laguna Verde 2 (Mexico) and Angra 1 (Brazil) plants, working simultaneously in the revamping of the Embalse nuclear power plant, in Argentina.

In all these outages, Tecnatom has carried out inspection tasks based on the non-destructive testing of plant safety-critical components, thereby contributing to the safe and efficient operation of the facilities by ensuring the integrity and suitability of the systems inspected for continued operation.

These activities underline Tecnatom’s capacity to undertake this type of work simultaneously on several continents and in relation to various reactor technologies (pressurised water, boiling water and pressurised heavy water).
will inspect the steam generators at Krsko-Slovenia

Nuklearna Elektrarna Krško (NEK), the company that operates Krsko nuclear power plant, in Slovenia, has awarded Tecnatom a contract for the inspection of the plant’s steam generators during the 2018 refueling outage.

In addition to the eddy current inspection of the steam generator tubes, the scope of the inspection includes the visual inspection of 50% of these tubes.

Tecnatom will carry out these services with the support of several international and local partners.

Krsko nuclear power plant is equipped with a two-loop pressurised water reactor with a power output of 696 MWe. The company that operates the plant is co-owned by the Slovenian state utility Gen-Energija and the Croat state company Croacia Elektroprivreda (HEP). This plant provides more than a quarter of the electricity in Slovenia and 15% of that used in Croatia.

This new inspection contract comes in the wake of those granted previously for the inspection of the RCCAs and the supply of the control room and of a large number of valves.

This consolidates Tecnatom as the reference supplier for this plant as regards inspection activities and the supply of critical components.
Technatom presents its new TECTUS system for the automatic inspection of BWR reactor nozzle welds. This equipment will make it possible to reduce both; inspection times and radiation doses. It will also allow the productivity of this type of inspection services to be increased and their quality to be improved.

This new equipment also allows to reduce the number of operators involved in its installation and operation, thanks to its assembly being accomplished rapidly and in an optimised manner from outside the anti-missile shield without the need for tools and minimising the number of connection hoses.

Furthermore, the equipment incorporates technological breakthroughs implying a qualitative leap forward with respect to the state of the art in the inspection of this type of components, applying phased array ultrasonic and ET array inspection techniques without the need to change modules once the system has been installed on the nozzle.

Technically speaking, the system provides axial and circumferential movements, counts also with data acquisition and evaluation equipment developed by Tecnatom. It also includes an operational support video system.

This equipment is the result of Tecnatom’s keen backing for R&D, an area in which every year the company invests approximately 10% of its income, allowing it to continue to create value for its clients while optimising their processes and increasing the safety and efficiency of their plants.
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