VALINOX NUCLEAIRE is a wholly-owned subsidiary of VALLOUREC Group, world leader in premium tubular solutions for industrial applications including for power stations. Since 1974, VALINOX NUCLEAIRE produces U-bent tubes and various specialty tubular products made of stainless steels and nickel alloys for nuclear power stations of all technologies. The concern of electricity producers to extend power stations’ lifetime and to optimize their efficiency translates into increasingly demanding technical specifications for the tubular products. The answer of VALINOX NUCLEAIRE: “state-of-the-art tools and unique know-how”.

The VALLOUREC group confirms once again its commitment to serve the growing demand for nuclear Steam Generator Tubes through major investments in Montbard (Burgundy, France) and in Guangzhou (China).
A BRIEF HISTORY

1974 ● Delivery of the 1st steam generator tube bundle

1978 ● Commissioning of the 2nd hall of Long Length Tubing Shop (TGL 2) and of the vacuum furnace

1983 ● - First delivery for South Korea (Uljin 1 & 2)
- Delivery of the 100th tube bundle

1985 ● Delivery of the 1st tube bundle in Alloy 690 (a world première!)

1988 ● First delivery for China (Daya Bay 1)

1989 ● - First supply of tubes for CRDM in Alloy 690 (control rod drive mechanisms)
- First order for replacement steam generator tubes in USA (Millstone2)

1992 ● First delivery to India of Steam Generator Tubes in Alloy 800 Cold Worked and Shot Peened (Tarapur 3)

2004 ● Delivery of replacement SG tube bundles for the Watts Bar (USA) power station

2005 ● Commissioning of the new 30m-long vacuum furnace

2008 ● Decision to build new shop in Montbard (NARVAL Project)

2009 ● Delivery of EPR Flamanville & Taishan SG tubes bundles
First delivery of C-tubes bundle for AP1000 PRHR
Signature of long term agreements with AREVA (France), SENPEC and DFHM (China)

2010 ● Signature of first Orders for AP 1000 units with HQC & DFHM (China)
Long-term agreement signed with WESTINGHOUSE (USA)
Approval of additional mill in China (Guangzhou)

2011 ● Commissioning of the new workshops (NARVAL: TGL 3, 4 and 5) in Montbard.
Stone laying ceremony of VALINOX NUCLEAIRE TUBES CO. LTD (Guangzhou).

2012 ● Manufacturing of the 400th tube bundle (38 000 km)
OUR BUSINESS:
ADVANCED TECHNOLOGY FOR SAFETY

Key words at VALINOX NUCLEAIRE: care and expertise. In-house mastering of the cold rolling tools, the world’s largest capacity vacuum furnace, digitally controlled roller bending for a perfect reproduction of the radii, concern for cleanliness and sustainable development... at the VALINOX NUCLEAIRE everything is done to ensure that the customer finds the optimal tubular response to his requirements.

SPECIFIC CAPACITIES

• 3 vacuum heat treatment furnaces allowing the stress relief of bent tubes with radii up to 600 mm.

• 1 cold drawing bench and a shot peening machine for the production of cold work hardened and glass beads shot peened Alloy 800 SG tubes.

• 5 bending machines for the production of U-shaped or flat-bottomed bent sections with a radius of between 50mm and 2m.
STEAM GENERATOR TUBES

VALINOX NUCLEAIRE’s flagship product: nickel alloy steam generator tubes are the sole interface between the primary and secondary loop in power stations using pressurized water. Their main characteristics:

• a light wall thickness (approx. 1 millimetre);
• extreme operating conditions involving high pressure (over 250 bars in internal pressure) and temperature (over 200°C);
• an expected life span of several decades;
• 75 to 200 km of tubes per steam generator (according to design).

TECHNICAL CHARACTERISTICS

SAFE HANDLING & EASY TUBING

High Tech Packagings are custom made to ensure safety and integrity of the product. It includes reinforced wooden structures, high density foam between the layers, plastic spacers…

Each assembly is packed in a dry atmosphere in a thermo-welded waterproof envelope, in the case of sea transportation.

Concept of packaging is to ease tubing operation at Customer’s plant.
PRODUCTION FLOW SHEET FOR STEAM

Billet supply
Billet extrusion
Cold pilgering
Degreasing
Heat treatment
Straightening

Transportation
Packing
Control by internal probe
Final indentification
Dimensional control
Visual inspection
GENERATOR TUBES

- OD grinding
- Non-Destructive examination
- Vacuum heat treatment
- OD Buffing
- Checking of the bent sections
- Cutting to length
- Hydraulic test
- Vacuum stress relieving
- Bending
This range of products covers various needs, often in small quantities and with short lead times, requiring the intervention of a wide variety of techniques. The products concerned are customized nickel alloy and stainless steel tubular with particularly demanding specifications and a nuclear quality follow up. They can be divided into 4 different categories:

- tubes for reactor pressure vessel heads;
- sleeves for the repair of steam generator tubes;
- auxiliary heat exchangers;
- piping of the nuclear island (NSSS: nuclear steam supply system).
VALINOX NUCLEAIRE brings into the realisation of these non-standard products the technical know how acquired through its nuclear specificity and a network of specialist exclusive sub-contractors.
Measuring, analyzing, expertizing expertise

At Montbard, VALINOX NUCLEAIRE has a state of the art integrated laboratory equipped with the latest equipment for carrying out both metallurgical and chemical analysis, mechanical tests and water analysis. The level of know-how permits us to be often solicited for external expertises. Our laboratory is ISO 17025 accredited.
Quality - Health - Safety - Environment: OUR SUSTAINABLE COMMITMENT

SOCIAL NETWORKING
(COMMUNITY INTEGRATION)

VALINOX NUCLEAIRE, as a co-founder and President of the Burgundy Nuclear Partnership, is fully involved in the development and promotion of industrial cooperation for the demanding requirements of the worldwide nuclear projects.

VALINOX NUCLEAIRE is a founder member of PFCE, an association of 70 companies approved by EDF on the nuclear sector. The aim is to promote the sustainable engagement of small companies in the Chinese nuclear program. This association is lead by EDF.

VALINOX NUCLEAIRE is part of the China Nuclear Energy Association (CNEA). This nonprofit - nongovernmental organization has the aim to promote industrial independent innovation and technical advance, and support for improving safety, reliability and economics of nuclear energy utilization.

Through Alizé network, VALINOX NUCLEAIRE supports with free of charge time and advices small and medium companies for their development with expert managers.

QUALITY

VALINOX NUCLEAIRE operates in accordance with a strict quality assurance system regularly updated and audited.

VALINOX NUCLEAIRE is the most qualified and experienced specialist of the RCC-M French Building Code and holds the coveted ASME (MM+MS) certifications.

As leading supplier to the Chinese market, VALINOX NUCLEAIRE was the first SG tube maker to obtain the NNSA HAF 604 Approval.

The entire personnel is also permanently trained to meet the ESPN (France) and EPRI (USA) updated guidelines.

SAFETY & ENVIRONMENT: BETTER & LESS

The permanent VALINOX NUCLEAIRE commitment to reduce the footprint of its activities is always driven first by the prevention of risks for people and environment. VALINOX NUCLEAIRE daily improves its Health, Safety & Environment Management System certified by ISO 14001 and OHSAS 18001 certification in 2009.

HUMAN RESOURCES: COMPETENCY & EXPERTISE

VALINOX NUCLEAIRE pursues continuous efforts to staff the right competency for the right job. Aware that the training and expertise development issues are the key to improve an operational excellence for our customer’s satisfaction, VALINOX NUCLEAIRE maintains competencies management programs based on strong relationship with local schools and universities.