



Heat exchangers & coolers  
for nuclear power applications

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**LUVATA**

# Heat exchangers & coolers for nuclear power applications

The nuclear power industry is one of the most complex in terms of the technologies used and the quality and administrative requirements it must meet. For these reasons, choosing the right supplier is just as important.

## Know-how and experience

Luvata has extensive knowledge in delivering heat exchangers and coolers for many different industrial applications. This includes products specifically designed for the nuclear power industry. Nuclear power plant (NPP) deliveries require special care to ensure the product meets necessary quality and administrative requirements that go along with the industry.

As a supplier with nuclear industry know-how and experience, we can create the exact heat exchanger package, including all documentation and corresponding sub-suppliers, to meet even the most unique nuclear application needs.

## Project management

Nuclear deliveries are complex, therefore each Luvata nuclear project has a dedicated project manager. The project manager coordinates the complex details with sales, engineering and purchasing and also works closely with Luvata's quality department to ensure delivery goes as planned.

## Quotation

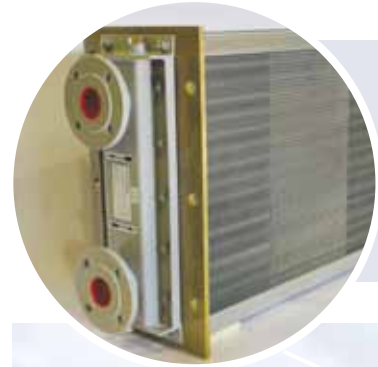
The quotation process for the nuclear industry often involves an extensive review of the requirements and specifications. To facilitate the process, each customer will receive C&Ds, document lists, dimension drawings, data sheets and an inspection and test plan (ITP), so they know exactly what is specified and included in offer.

## Engineering

The product's design is customized according to the site specific requirements and conditions. Luvata, together with its partners, can validate the products strength calculations in accordance with EN and ASME standards, as well as performing shake tests depending on suitability of the product's design. More extensive load evaluations, for example combined load cases of seismic, wind and snow loads, can also be performed. Project specific calculation reports can be issued according to ASME, EN or any country specific norm.

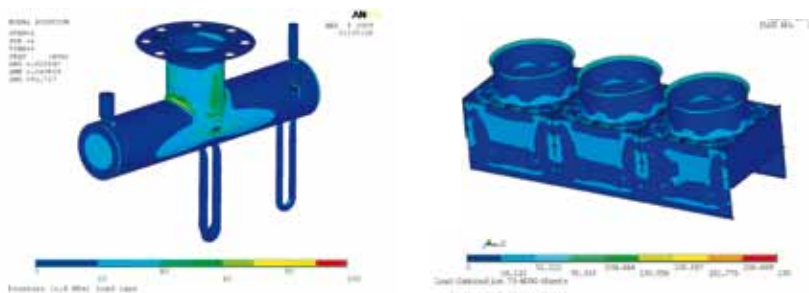
## Quality Assurance

The manufacturing process is monitored according to the project specific inspection and test plan (ITP) with the option for additional witness and hold points. A pneumatic pressure test is performed on all products. A wide range of NDT and functional checks are also available for other specified qualifications.



## Motor/Generator

- Welding according to...
- Coolers can be approved for...
- Case specific withstand...



Advanced FEM-analysis are used for structural verification and risk assessment.

Nuclear power plant overview with examples of Luvata deliveries.

## Process flow:





### Generator coolers

and brazing is certified to EN 3834-2. They can be fitted with gaskets for applicable radiation level. Specific reinforcement to nozzle loads.



### Ventilation applications

- Can be delivered with 3-rd party approved MT, PT, RT, PM testing etc.
- Nitrogen filling for protection prior to commissioning is standard.
- Wide range of material selection.
- Can be equipped with fan units.



### Transformer oil coolers

- Type BETA & CETA are high performance transformer oil coolers with 1 to 4 fan units.
- Vertical/horizontal mounting.
- Several motor options.
- Special corrosion protection options.
- Carefully cleaned from particles on the inside.



### Radiators/ Air blast coolers

- Wide range of standard sizes: 1200x1200 to 2800x1400 mm (width x length).  
Fan: Ø800-Ø1500 mm.  
Motor: 50Hz or 60Hz.
- Casing and structural components are reinforced acc. case specific loads.

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6.

Manufacturing following ITP

7.

Final acceptance test

8.

Final documentation



### About Luvata

Luvata is a world leader in metal solutions manufacturing and related engineering services. Luvata's solutions are used in industries such as renewable energy, power generation, automotive, medicine, air-conditioning, industrial refrigeration, and consumer products. The company's continued success is attributed to its longevity, technological excellence and strategy of building partnerships beyond metals. Employing over 6,500 staff in 17 countries, Luvata works in partnership with customers such as Siemens, Toyota, CERN and DWD International.



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