SES TLMAČE

Partner to Deliver Equipment for NP Engineering

Tlmače, 24.03.2015
Content

1. Introduction of company
2. SES competence
3. Potential of SES = Reliable partner
1. Introduction of Company
SES = producer and supplier

- **boilers** of various technologies (classical steam boilers, fluidized bed boilers, grate type boilers, waste heat boilers) for power plants, heating and power plants, incinerating plants and industrial companies

- **equipment** for power engineering, metallurgical, petrochemical and gas industry including deliveries for nuclear power engineering:
  - mainly from the field of condensation and regeneration (condensers, heat exchangers, high- and low-pressure heaters),
  - As well as separators, pressure vessels, tanks, large-size and heavy components and welded parts.

SES = long-term tradition and considerable experience
SES = with its current global coverage:

- continue in traditional (Czech-Slovak) cooperation with world's wide deliveries of power plant investment units (historically, a part of ŠKODA concern)
- one of largest engineering and manufacturing capacities in Europe
- occupy (along with entities cooperating through shareholder's level) an important role in the central Europe even with regard to location of its production facilities
MARKET ORIENTATION

- Thermal power engineering
  - Classical coal boilers, 100 – 350 MW, Balkan (retrofit), south America
  - Oil – gas boilers – Brazil, Arab states
  - Fluidized bed boilers – Europe, Turkey, – strong position
  - HRSG – Europe, Russia, Belorus

- Waste and biomass energy utilization in combustion - Europe

- Modernization of power engineering sources (reduction of emissions) – Czech Republic, Slovakia

- Nuclear power engineering – utilization of production facilities / strategic partnerships – Europe, Ru

SES intention is to find a strategic partner to develop deliveries into new nuclear sources in Europe as well as third countries...
2. SES Competence

- References
- Experience (engineering, manufacture)
- Production possibilities
In the past SES delivered equipment for nuclear power plant and there is a base that will allow us to continue (established know-how, suitable production halls and technologies)

In SES there is available staff experienced in basic and detailed production engineering of individual parts of equipment for nuclear power plants.

SES is able to implement its experience as it is proved by system and product certificates, e.g. : EN ISO 9001:2008, AD 2000-Merkblatt HP0/TRD 201, EN 729-2, DIN 18 800-7 and STN EN ISO/IEC 17 025, as well as the deliveries of vacuum vessels for CERN project (Switzerland).

Good experience of SES was registered in reference projects in Slovakia, the Czech Republic, Bulgaria, Hungary, Germany and Russia, particularly in case of Temelín and Dukovany Nuclear Power Plants in the Czech Republic and Mochovce and Jaslovské Bohunice Nuclear Power Plants in Slovakia. Additionally, SES delivered also for example coolers for Oskarshamn Nuclear Power Plant in Sweden.
2010 – 2011 manufacture of equipment for primary and secondary circuits of nuclear power plants, VVER 440, Mochovce 3 and 4 (Slovakia)

2000 – 2005 separators for Dukovany (Czech Rep.) and Jaslovské Bohunice (Slovakia)

2002 – 2006 manufacture of vacuum vessels for CERN project in Geneva

1975 – 2005 manufacture of equipment for secondary circuit of nuclear power plants, VVER440 and VVER1000 (130 pcs separators, condensers, high-pressure and low-pressure heaters, piping systems)

1987 – 1990 manufacture of equipment for primary and secondary circuits of nuclear power plants, VVER1000 (28 of 42 complete parts of reactors manufactured in SES Tlmače)

1980 – 1992 manufacture of equipment for primary and secondary circuits of nuclear power plants, VVER 440 (20 of 40 complete parts of reactors manufactured in SES Tlmače)

Since 1975 manufacture of accessory equipment (hermetic bushings, doors, reinforced frame blocks, transporting technologic equipment, welded parts of turbines, spent fuel pools...
Machining of side shell of active zone

Side shell of active zone

Condenser

Separator SPP 220 M

Heat-exchanger cassettes of separator units

Tube bundle (weight 43 t, diameter 2.5 m, length 16.5 m) for Temelín NPP
<table>
<thead>
<tr>
<th>Activity</th>
<th>Equipment</th>
<th>Basic engineering</th>
<th>Detailed engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Thermal calculation</td>
<td>Stress analysis</td>
</tr>
<tr>
<td>High-pressure heaters</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Low-pressure heaters</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Condensers</td>
<td>No</td>
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<tr>
<td>Piping</td>
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<td>Pressure vessels</td>
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<td>Yes</td>
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<td>Feed water tanks</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Deaerators</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Economizers</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Separators – separating part</td>
<td>Nie</td>
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<td>Separators – superheating part</td>
<td>Nie</td>
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Chip machining

- Carousel SKJ 80 / 140: max. diameter of product - 14,000 mm, height of product – 6,300 mm, weight of product - 250 t
- Horizontal boring and drilling machine W 200:
  height of product – 4,200 mm, length of product – 19,000 mm

Handling

- Overhead cranes: maximum loading capacity 200t, maximum lifting height 28 m

Dispatching

- It is possible to dispatch a product:
  - maximum weight 200 t
  - maximum dimensions of product 5,000×9,000×28,000 mm.
Modernization of international nuclear centre of Earth origin research CERN Geneva (Switzerland)

2002 - 2006
Vacuum vessels (968 carbon and stainless steel vacuum vessels)

Oskarshamn, Sweden

1995
Coolers for Oskarsham Nuclear Power Plant, 620 MW

References
(vacuum vessels, coolers)
References
(vacuum vessels for CERN)