BBA Pumps delivers nine mobile disaster relief pumping systems to provide safety in nuclear power plant

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Pump units will be deployed to pump cooling water into the primary circuit of the reactor during total black out

Following the Fukushima nuclear disaster in 2011, safety regulations at many nuclear plants have been considerably tightened; this has led to an increased demand for firefighting pump systems. These systems must comply with extremely strict requirements and regulations. Working closely together with the Belgian distributor Rental Pumps, BBA Pumps has recently completed one of the most demanding projects in its history – the delivery of nine mobile disaster relief pumping systems. These pumps are supplied to provide an extra level of safety in a large nuclear power plant.

Operational capability
The high pressure pump units are not only meant to fight fire – their main goal is to prevent a meltdown in a worst case scenario. In the event of a total black out, the pumps will be deployed to pump cooling water into the primary circuit of the reactor as a last resort. They can even be used to supply a boric acid solution in order to shut down the nuclear reaction completely.

The challenge
Firefighting pump systems are almost always supplied with customised features. In these situations, BBA Pumps uses the standard high heat pumps from the BA series. These pumps are dry self-priming and are available with a maximum pressure of up to 25 bar/360 PSI. The specifications for the engines and total arrangements can vary widely between projects. For this nuclear plant project, the list of demands was exceptionally high:

- No fewer than 132 material and safety certificates were needed for each pump vs. a minimum of primary technical engine safety features;
- Each pumping system had to be supplied with a storage rack, flow meters and other accessories, and be able to operate autonomously at maximum output for 24 hours;
- For logistical purposes, a 3 axle trailer with compressed air brake systems was required;
- The pumping systems had to pass a SQUG test for seismic activities.

Delivery of nine BBA emergency pump units
The delivery consisted of:

- 4 pumping systems, equipped with a high head pump type BA80H D275, powered by a Perkins four cylinder diesel engine, type 404D-22T. This pump supplies a pressure of up to 9 bar / 130 PSI and a flow of 130 m³/h / 572 US GPM.
- 5 larger pumping sets with a high pressure pump, type BA-C150H41, powered by a Volvo Penta, type TAD952VE, with a power output of 234 kW / 318 Hp and an operating point of 20 bar / 290 PSI at 130 m³/h / 572 US GPM.

This is what the Belgian BBA Pumps distributor had to say;
Lieven Vijverman, CEO of Rental Pumps Belgium: “I've never seen such high demands set by any client. Nevertheless, the cooperation with BBA Pumps went off without a hitch and we have learned a lot during this project; we are very proud to be able to add a nuclear power plant to our reference list”.