

Engineers tackle nuclear retirement

The number of nuclear power generation plants currently being decommissioned is running at more than twice that of newbuild projects. *Phil Hastings* highlights some of the challenges facing transport engineers when nuclear plants come to the end of their useful lives.

According to the World Nuclear Industry Status Report 2018, as at the middle of this year, 115 nuclear power generation plants were being decommissioned, compared with just 50 new reactors under

construction. Of the former, only 19 units had so far been fully decommissioned – 13 in the USA, five in Germany, and one in Japan.

The scale of nuclear power plant decommissioning projects is opening up an increasing number of business opportunities

for some leading heavy lift service providers.

Sarens, for example, is currently involved in the full spectrum of nuclear power projects including newbuild construction, maintenance, through to decommissioning.

“The decommissioning work involves lifting very heavy and complex pieces of plant and equipment out of the reactor building. Those operations can be very complex inside the buildings, involving lifting and tilting the pieces and sliding them out through the hatch door and then lowering them,” said Stijn Sarens, the group’s key account manager power plant business.

Israel bets on natural gas

Gas has become an attractive option for fuelling new power generation capacity, particularly as a replacement for oil and coal, in countries that have ready access to reliable supplies of that resource.

One example is Israel which following the start of its own natural gas production in 2005 is now phasing out coal-fired power plants – a move confirmed two years ago when the government declared that it was aiming to make more than 80 percent of the country’s power generation gas-fuelled.

In fact, a report published subsequently by BDO Consulting Group, ‘Israel Natural Gas Demand Forecast 2017-2040’, stated that the share of natural gas in Israel’s electricity generation fuel mix would increase from 60 percent in 2017, to 73 percent in 2020 and 82 percent in 2025.

In line with that predicted trend, Israel has already seen a number of new gas-fired power plants built or announced over the last few years, with more expected in both the short and medium term, creating a substantial new business sector for heavy lift and project forwarding service providers active in that country.

One such beneficiary is Israeli freight forwarder Atlas Logistics, which earlier this year completed a nine-month involvement with the construction of a 140 MW gas-fired power plant project in Hadera, Israel, on behalf of GE.



A gas-fuelled power station supplying Tel Aviv in Israel.

That work included the transport of heavy and out-of-gauge (OOG) components for the plant, with Atlas Logistics being responsible for all the shipments that arrived in Israel by air and sea, including discharging the cargo from chartered vessels, intermediate storage, unstuffing of containers, road transport to the site and the placement of the equipment onto foundations.

The project also included the air transportation of a 90.7-tonne gas turbine from France to Israel on an Antonov AN-124 freighter.

Yoel Gilead, Atlas Logistics’ ceo, said the company

was hopeful of securing more logistics work relating to new gas-fired power plants in Israel over the next few years.

“We are currently participating in several additional bidding processes for new projects,” he told HLPFI.

Expanding on that point, he added: “In our opinion, due to the offshore gas field developments in Israel over the last few years, the market in this country for gas-fired plants will surely increase. We are already aware of several such projects which are due to start in the near future.”



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the components involved but the complexity of the operations, particularly when it comes to environmental issues arising from radiation concerns.

“Heavy nuclear items are contaminated and permanent storage is a big issue. Some plants have temporary storage facilities but for permanent storage they do need to be demolished and that can only be performed in a few specialised plants around the world; then heavy items have to be removed in one piece and transported to such specialised facilities somewhere else, where heavy lift and transportation services are required,” added Martinez.



“Our main focus in that context right now is in Germany because the government has decided the country should step away from nuclear power,” he explained, adding that the nuclear fleet could be shut down entirely by 2020. “We have already done some such work and we are currently talking about business relating to the decommissioning of two more plants.”

Similar positive observations about potential nuclear power plant decommissioning work were voiced by Javier Martinez, executive director for worldwide heavy lifting, transport and installation service provider ALE, which is already involved in the early stages of several such projects in Europe and North America.

“We are helping to plan the design and methodology for the decommissioning of nuclear plants in quite a few locations, although the physical work probably will not start for at least a couple of years,” he reported. “Specifically, we have been awarded contracts for projects in Spain and we are starting to bid on similar projects in Germany, Sweden and the USA.”

Looking further ahead, Martinez said the nuclear power plant decommissioning market is expected to generate significant potential business for specialist heavy lift service providers like ALE over the next 15-20 years, notably in Germany, Sweden, the USA, Japan and South Korea.

The main logistical challenges in that context, he explained, are not so much the weight and size of

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