

## Ringhals 3 Nuclear Power Station, Sweden. Replacement of 3 steam generators.

**Client:** Vatenfall S.A.

**Main Contractor:** Siemens A.G. + Framatome S.A.

**Installation Contractor:** MAN-GHH



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POWER 03



Fagioli PSC's scope of work was to remove and replace the three nuclear steam generators.

Each of the three original generators was lifted from its concrete pod within the reactor containment structure by means of Fagioli PSC strand jacks mounted on gantries placed on top of the facility's polar crane. On one gantry a single Fagioli PSC L600 jack was connected to the head of the generator via a swivel beam. On the other gantry a pair of Fagioli PSC L180 jacks were connected to the tail of the generator. As the generator was lifted vertically from its pod it had to be rotated clockwise and counter clockwise to clear connecting pipe stubs. As it began to clear its pod it was rotated to horizontal by co-ordinated operation of the lifting and tailing jacks. Once the generator was horizontal the polar crane was rotated to align with the exit hole which had been cut in the containment building wall. The generator was then lowered on to skid saddles, supported on tracks which passed to the outside of the containment. The reactor was then skidded longitudinally out through the exit hole onto the waiting external lifting system.

The external lifting system consisted of four Fagioli PSC Towers, 16 metres high, from which four Fagioli PSC L180 strand jacks, connected to lift beams, supported the external skid track. The external lifting system lowered the generator onto multi-wheel trailers.

All three of the original generators, which each weighed 340 tonnes, were removed and then the three replacements, which each weighed 360 tonnes, were installed by an exact reversal of the removal method.