

CASE STUDY

Extended Plant Life Thanks to Sulzer New Primary Pump Assemblies

During the past eight years, Sulzer has supplied several new nuclear reactor coolant “pump top ends”; this means the whole pump except the volute case and motor were replaced. The nuclear plants are located all across the U.S.



This is Sulzer’s version of the primary reactor recirculation pump top end. It is used in several US BWR type nuclear power plants.

The Sulzer difference

Sulzer provides timely and accurate opinions and advice on a 24/7 basis since unplanned plant scrams can cost the electric utility upwards of \$1Mio/day in replacement power costs.

“ *It is less expensive for electric utilities to simply replace the entire “pump top end” than to disassemble the pump and inspect each component of the assembly. The cost of excess additional radiation exposure can exceed the price of the replacement parts.* ”

Quote from the customer

The challenge

The replacement pump components must be carefully selected and 100% interchangeable with the original components while finding opportunities for improved design and materials. This can be challenging since these pumps have been installed in a plant for close to forty years and may have been subject to damage, customer modification, and cumulative assembly damage.

The solution

New “pump top ends” for such nuclear reactor coolant pumps are highly engineered to ensure complete compatibility with the unique system they are integral with. Sulzer manufactured the “pump top ends” in accordance with the applicable rules of ASME Sect. III, Class 1. It was particularly focused on manufacturing the hydraulic portions of the components exactly as the original pumps back in the 1970’s.

Customer benefit

The electric utilities have assigned a monetary cost of personnel radiation exposure (\$/mrem) and concluded it is more economic and involves less risk to install replacement pump components than to try to handle, inspect, and reuse existing parts.

Contact

don.spencer@sulzer.com

Applicable markets

Power generation

Applicable products

RV, RQV, RDV reactor primary coolant pumps