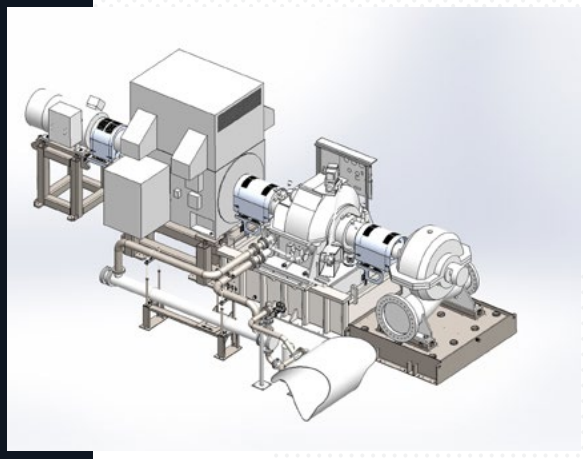
Conhagen®
Rotating Equipment Specialists
AN **OVATION** HOLDINGS COMPANY

CASE STUDY
Industry: Aerospace

NASA - High Pressure Industrial Water Plant Upgrade

Conhagen designed and upgraded the pumping equipment for NASA's testing of the Artemis Space Launch System. Located at Stennis Space Center in Mississippi.



A 3-D view of the High Pressure Industrial Water equipment.

Objective

NASA's High Pressure Industrial Water (HPIW) Plant had to be upgraded to provide additional water to support the hot fire rocket testing for the new Space Launch System (SLS) for its Artemis program. Conhagen was responsible for designing the pumping equipment for the upgrade while staying within the existing pump building and running parallel to the existing HPIW pumps.

Solution

- Designed and manufactured individual baseplates for each of the four major components of the drive train: the pump, the variable speed fluid drive, the 4,500-horsepower synchronous motor, and the 300-horsepower starting motor.
- Selected and procured all of the pump train components and the auxiliaries required for a complete installation.
- After fabrication and precision machining of the baseplates were completed at Conhagen's Kenner, Louisiana facility, the components were mated to each other and a trial installation and alignment was completed.
- Conhagen's field service crews then determined how to get the equipment from Conhagen's shop into the existing HPIW building. Without available lifting capabilities in the building, Conhagen's lift and installation plan utilized specially designed cranes mounted on large forklifts.
- Once the baseplates were in place, Conhagen leveled and aligned each baseplate relative to each other, anchored, and epoxy grouted them in place.
- Lastly, equipment was laser aligned, coupled, auxiliaries installed, commissioned, and eventually test run.

A pump, fluid coupling and motor.

Results

Conhagen successfully completed the HPIW pumping equipment upgrade on time, on budget, and without any commissioning or operational issues.