

CASE STUDY

# SPARE PARTS CAPABILITY SAVES NUCLEAR SECTOR SIGNIFICANT DOWNTIME AND COST

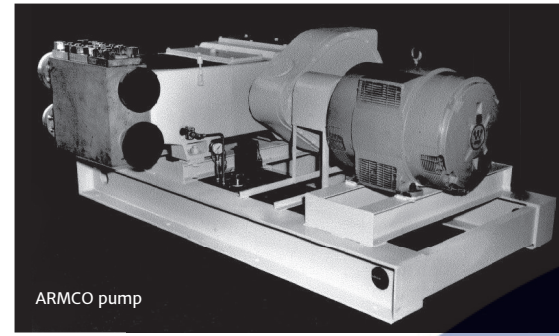
- Replacement of obsolete pumps avoided
- Spare parts availability restored
- Accurate documentation supports safe operation



Nuclear power plant

## CHALLENGE

A major supplier of reciprocating pumps to the US nuclear power industry decided to withdraw from the sector entirely. This left customers with no source of spares or servicing know-how when parts began to fail on their critical equipment.



ARMCO pump

**CLYDEUNION®**  
PUMPS

**Industry:** Power - nuclear

**Region:** Americas

**Category:** Re-engineering

**API Type:** Reciprocating

ClydeUnion Pumps Aftermarket Technical Services team has experience across a range of services on critical rotating and reciprocating equipment to improve operational safety, reliability and efficiency. The logistical support for ARMCO charging pumps for the nuclear market is one of our success stories documented in our library of case studies. These case studies highlight the requirement from the customer, how we achieved the goal and the process we followed to deliver the improvements.

## SOLUTION

One of the nuclear operators experiencing these difficulties approached ClydeUnion Pumps, part of Celeros Flow Technology, about becoming a preferred supplier of replacement parts for their (effectively obsolete) triplex plunger pumps. As an expert in triplex pumps and a continuous holder of nuclear quality certifications, ClydeUnion Pumps was well positioned to step into the breach.

We produced a re-engineering report, project schedule and pump description and cross-referenced all the part numbers. Sectional drawings were also produced. Accurate records are a key part of supporting safety and reliability in the nuclear sector, so samples of our documentation capabilities – including a sample metallurgical report, material code documentation, engineering change records and inspection report – were also supplied.

## OUTCOMES

The US nuclear sector now has the service and spares support it needs for the third party's reciprocating pumps and ClydeUnion parts references are available for incorporation into approved vendor lists. The significant cost and downtime involved in replacing the reciprocating pumps has been avoided.

## BENEFITS

- St. Lucie and other ARMCO charging pump users have a reliable source of logistical support in ClydeUnion Pumps
- ClydeUnion Pumps now has technical information (design reports) to modify the existing ARMCO design for MTBF improvement, hydraulic changes for example per nuclear station present and future situations (i.e. plant re-rates)

- ClydeUnion Pumps stands ready to go through the work scope to provide logistical support for Gaulin pumps

ClydeUnion Pumps now also provides reliable logistical and design support for ARMCO charging pumps and is positioned well to perform the work necessary to become a source of logistical support and design for Gaulin charging pumps.

## APPLICABILITY

- St. Lucie
- Calvert Cliffs 1 & 2
- Millstone 2

The following USA nuclear power plants originally had Gaulin triplex units installed. These will have to go through the same work scope noted above for ClydeUnion Pumps to logistically support them.

- Arkansas Nuclear One 2
- Braidwood 1 & 2
- Byron 1 & 2
- Fort Calhoun 1
- Palisades 1
- Palo Verde 1, 2, 3
- San Onofre 2, 3
- Waterford 2

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