

CASE STUDY: Choosing the right gasket for safety



MATERIAL:
Stainless Steel, 316L

INDUSTRY:
Neutron Research

CUSTOMER:
European Spallation Source

INDUSTRY CHALLENGES

As part of neutron production for research using the spallation process, where high-speed protons strike the target and release neutrons, ionizing radiation is generated. Ionizing radiation causes a high attrition rate in polymeric seals, and having seals that are tight and durable is vital in the safe and efficient running of the key water-cooling system in the target area.

BACKGROUND

The customer has a new research facility that is one of the largest and most advanced technology infrastructure projects being built in the world, and it will enable a more powerful range of experiments using neutrons than previously possible. This facility will run neutron production for about 5,400 hours a year and any unscheduled maintenance will cause significant disruption for researchers. In addition to avoiding costly downtimes, meeting all the requirements of the regulatory authorities and ensuring safety of its employees and researchers are always top priorities for the customer. Part of the confidence is using seals that come verified from DNV GL.

OPERATIONAL CONDITIONS

| | |
|-----------------------------------|---|
| PRESSURE: Between PN10 – PN40 | ATMOSPHERIC CONDITIONS: Ambient inside |
| TEMPERATURE: Room temp. to 60 ° C | MEDIA (PRODUCT): Neutron Cooling system |
| SIZE: DN25 – DN100 | MEDIA (CLEANING): N/A |

SOLUTIONS

The customer chose the DeltaV-Seal™ for the facility's water-cooling system in the target area because the seal can be made in stainless steel technically matching the flanges, which negate the problems of galvanic corrosion in such a sensitive environment. The DeltaV-Seal is also the first leak-proof and patented sealing technology approved by DNV GL making it the right choice for the advanced technology facility.

BENEFITS

As leaks cannot occur in this volatile environment, key factors for the customer fitting the DeltaV-Seal to its water-cooling system include: extreme tightness, reliability and durability. As these seals eliminate leaks, they also reduce operating costs associated with production, maintenance, and product loss. Most importantly, they meet all regulatory requirements and support a safe work environment for its researchers.

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