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Subj: **Anderson Greenwood & Crosby Pressure Relief Valves:
Suitability Statement for Pure and Blended Hydrogen Applications**

Sustainability and decarbonization have become an integral part of the discussions around energy security and long term sustainable economic growth. Many countries have introduced legislation and subsidies, along with private and public investments to encourage the use of renewable energy in place of traditional fossil fuels. The sustainable production, transportation, and use of hydrogen is emerging as a critical component to meeting those goals.

Anderson Greenwood and Crosby pressure relief valve products have been used in a variety of hydrogen applications, gaseous as well as liquid, for over 60 years. Based on our current technical information and knowledge, we want to convey our commitment to supporting customer needs during this energy transition and ensuring the safe and reliable operation of their assets and critical infrastructure.

Our large range of designs, based on available knowledge and Emerson's vast experience with hydrogen, offers many types of pressure relief valves suitable for cryogenic to high temperature hydrogen applications currently up to pressures of 10,000 psig / 690 barg, with higher pressures possible depending on the application. The exact type and configuration can be selected to best match application needs and process conditions.

These product designs include:

Direct Spring Pressure Relief Valves:

- Crosby J-Series, 1"x2" to 12"x16"
- Crosby OMNI, 1/2"x1" to 2"x2"
- Anderson Greenwood 80s Series. 1/2"x3/4" to 2"x3"

Pilot Operated Pressure Relief Valves:

- Anderson Greenwood 200 Series, 1"x2" to 10"x14"
- Anderson Greenwood 400 and 800 Series, 1"x2" to 10"x14"
- Anderson Greenwood 90 and 9000 Series, 2"x3" to 14"x18"

Published product performance does not change when used in hydrogen service and each valve should be sized and specified to meet each application. When selecting pressure relief valves for hydrogen service, additional consideration should be given to the pressure (total and partial), temperature, and percentage of hydrogen blend for material compatibility. Anderson Greenwood and Crosby pressure relief valve products are tested for set pressure, functionality, and seat leakage per industry standards (i.e. API, ISO/EN, etc.) and have also options that meet the material requirements of NACE MR0103/ISO 17945 where process conditions so dictate.

In addition to our industry leading pressure relief valve portfolio, Emerson also provides a full line of regulators and other equipment that has been used in industrial hydrogen and NACE applications.

Technical Support

Our global technical support team (Business Development Managers, Regional Managers, Application Engineers, Product Managers, and Product Engineering) are committed to supporting customers during this transition to sustainable energy. Beyond our years of hydrogen industry experience, we have invested in expert engineering talent, upgraded our testing and research facilities with state-of-the-art equipment, and developed 3D printing capabilities to support rapid prototyping, all to be able to provide customers with accurate, timely, and thoroughly tested recommendations.

Resources

In addition, we want to remind you of some resources readily available to address frequently asked maintenance questions and product training. Please visit Emerson.com for more information.

Best Regards,



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