framatome

Custom Ellis & Watts Chillers

Experienced nuclear vendor with custom solution to reduce overall project cost, risk and maintenance

Challenge

Reliable chillers are critical to maintaining safe and efficient operations. Plant operators must address reliability and operations concerns due to age, durability and obsolescence issues of critical chiller equipment.

Solution

Framatome is now offering Ellis & Watts custom chillers to provide temperature controlled fluid for use in critical environmental and process cooling applications.

With our expertise in your plants, processes and quality requirements, Framatome stands ready to assist you with the right solution to meet your chiller needs while minimizing your installed costs. With more than 60 years of experience, Ellis & Watts is an industry leader in providing new and replacement HVAC systems and specialty components, including the design, qualification, manufacture and testing of custom chillers.

Proven Chiller Performance

Ellis & Watts has successfully met stringent liquid chilling compliance in projects for the global nuclear installed base, new build construction, NASA and the U.S. Navy.

Control Systems
Ellis & Watts offers equipment with a variety of component devices and system controllers. For environments or applications where controls qualification, cyber security or EMI/RFI emittance are areas of concern, Ellis & Watts offers analog, relay-based controls. In fact, Ellis & Watts can provide an entire control system that is free of software that may even be “hidden” within devices like actuators and valves.

Where desired, Ellis & Watts can provide equipment with a variety of direct digital controls for individual components as well as for the complete system.

Customer benefits

You can rely on Framatome to provide you with innovative solutions that:

- Increase safety and efficiency
- Resolve emergent issues quickly
- Reduce plant operating costs
- Address obsolescence and reliability issues

Obsolescence Management
Age, operating conditions and the durability of components can lead to reliability concerns. As components age, Ellis & Watts has maintained the documentation, knowledge and capabilities to provide replacements that are compliant with the original plant design requirements.

Your performance
is **our** everyday **commitment**

Technical Information

Regulatory Compliance

Complete units and components can be provided with compliance to:

- ASME AG-1
- ASME NQA-1
- IEEE 323, IEEE 334 and IEEE 344
- 10CFR50 Appendix B
- Heat Exchangers to ASME Section VIII or ASME Section III
- Compressors to ASME AG-1 Section RA
- Motors to ASME AG-1, IEEE 323, IEEE 334, IEEE 344 and NEMA MG-1
- Motor wiring to IEEE 383
- Motor insulation to IEEE 117
- Instruments to ASME AG-1 Section IA
- Compliance to IEEE 7-4.3.2 Standard Criteria for Digital Computers in Safety Systems of Nuclear Power Generating Stations
- Compliance to IEEE 603 Standard Criteria for Safety Systems for Nuclear Power Generating Systems

Ellis & Watts Liquid Chillers can be designed for:

- Air-cooled or water-cooled condensing
- A wide variety of fluids with supply fluid temperatures down to -100°F
- Analog, relay-based controls to address qualification, cyber security, EMI/RFI concerns or digital control systems
- A variety of compressor technologies to optimize efficiency, reliability and life-cycle cost objectives
- Operation at ambient temperatures from -40°F to +140°F
- Various materials of construction to meet structural integrity, corrosion resistance, weight and cost requirements
- Seismic qualification per IEEE 344
- Environmental qualification per IEEE 323
- Various power supply, controls and piping options
- Hazardous duty applications (explosion proof)
- EMI/RFI suppression with verification testing
- Documented performance and proper operation through factory testing at full and part-load conditions
- Transportation, rigging and installation constraints with modular construction

	Framatome/E&W	Dedicated COTS
Design & Construction		
Customization	Built to specification	Limited configurations
Components	Nuclear qualified	Industrial grade
Controls	Digital, Hybrid, Analog options	Digital Only
Refrigerant	R134A, R513A, or other	R134A, R513A, or other
Capacity	Actual	Nominal
Reliability		
Steady state	Operating conditions	Design conditions
Quality	Built under Appendix B	Commercial grade dedicated
Maintenance		
Accessiblity	Designed for ease of access at customer designated areas	Standard access point
Spares	Commercial off-the-shelf	Comercial off-the-shelf
Obsolescense	Design authority	No design access
Installation		
Interconnections	Match existing	Limited flexibility
Footprint	Designed to accommodate space constraints	
Modularity	Designed to accommodate smallest access points	

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