Moisture Separation Systems for Nuclear Power Plants
Trusted Performance
Advanced Designs for Today and Tomorrow
Proven Technology Used Globally
PEERLESS DESIGNED AND MANUFACTURED PRODUCTS IN NUCLEAR APPLICATIONS

SECONDARY SEPARATORS
Our secondary separators or “steam dryers” are utilized as the final stage of water separation within a Reactor Vessel (BWR plants) or within the Steam Generator Vessel (PWR plants). Peerless secondary separators are established as the standard for the two next generation nuclear power plants: Westinghouse AP1000 and Areva EPR.

MOISTURE SEPARATOR REHEATER: MSR
Moisture separator reheater (MSR) vessels are installed between the high pressure (HP) and the low pressure (LP) steam turbines at a nuclear power plant. MSRs are utilized to remove water condensed from the process steam to maximize thermal efficiency of the LP turbine and minimize erosion/corrosion of steam loop piping. Peerless has supplied high capacity, double-pocket vane systems for new MSRs and for the retrofit of older MSRs. Many power plants today are taking advantage of MSR retrofits to economically extend the life and increase the power output of their facilities as part of their re-licensing process. The complete change-out of the MSR vane system can be achieved in a single plant outage with no need for pressure boundary work or vessel recertification.

DESIGN CONFIRMATION
Peerless utilizes Computational Fluid Dynamics (CFD) analysis to perform steam flow distribution studies of its nuclear separation systems (see illustrations below). These CFD methods have been benchmarked against lab testing at atmospheric (air-water) and high pressure steam facilities and have been proven to be accurate in predicting moisture separation performance. We have access to over 30 years of steam separation test and actual power plant data to use in our design process for any of the above applications. Peerless actively collaborates with today’s nuclear industry leaders to constantly improve system performance and increase power output.

Innovative Designs
Cost Effective Retrofits
Guaranteed Performance

PEERLESS PERFORMANCE GUARANTEE
We are not limited to traditional separation concepts. Our extensive product line, superior research and technology capabilities and multiple fabrication shops set Peerless apart. We guarantee our separators to meet your specifications.
GLOBAL LEADER IN SEPARATOR DESIGN AND SUPPLY FOR COMMERCIAL NUCLEAR POWER PLANTS

QUALITY ASSURANCE
Peerless has an audited quality program to meet the requirements of USNRC 10CFR50, Appendix B. We can also support the needs for 10CFR21 quality reporting. Our manufacturing and inspection processes are carefully controlled and documented, including the management of non-product materials, to ensure that our equipment is provided in compliance with today's stringent nuclear standards.

HISTORY
For over 40 years Peerless has been applying our separation technology to the nuclear power industry. Through direct work with reactor vessel and steam generator designers, Peerless has established the industry standard of performance that is utilized globally today — 99.9% steam quality.

Peerless dryers and MSR separators use high capacity vane profiles, effective distribution manifolds, and efficient water removal systems.

Peerless dryers (or secondary separators) are established as the standard for the two next generation nuclear power plants: Westinghouse AP1000 and Areva EPR.

Peerless Nuclear Customers & End Users:
Westinghouse • Areva • General Electric • Shanghai Electric Nuclear Power Equipment Corporation • Harbin Electric Co. • Dongfang Electric Co. • Equipo Nucleares (ENSAR) • Doosan Heavy Industries • Mitsubishi Heavy Industries • Toshiba • Hitachi • Thermal Engineering International (TEI) • Bharat Heavy Electricals, Ltd. (BHEL) • Larsen and Toubro (L&T) • Ansaldo Nucleare
PEERLESS NUCLEAR SEPARATION SYSTEMS

- Over Forty Years of Supply History and Test Data
- Long-Standing Relationships with Technology Providers
- Optimized Design and Manufacturing Techniques
- Proven Quality System and Control Process
- Burgess Manning brand of separation products is also available

United States
- 8 Facilities
  (Executive Offices, Manufacturing, Admin.
  and Sales)

Canada
- Sales Facility In Canada

Middle East
- Regional Sales Office in Qatar

Western Europe
- Sales, Eng. & Admin. Facility in U.K.
- Licensees in France

Asia
- Manufacturing, Sales, Eng. facility in China
- Sales, Eng. & Admin. facility in Singapore

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