SUPER RADIATOR COILS™

# Nuclear Coils

If it has to be perfect, it has to be

# SUPER

# Overview

Providing components that meet the challenges of nuclear power generation is our passion. We are dedicated to finding solutions that work, that fit, and that deliver effective results. That is why we've built a dedicated manufacturing center solely for nuclear projects. We have engineers with the specialized expertise to lead these projects. Just call Brian or Dave. Check our record for on-time delivery. We are a partner you will want as part of your team.

When it matters to you, **it has to be Super.**

## NUPIC Audited & Approved

SRC's nuclear quality assurance program is NUPIC-audited. Our 100,000 sq. ft. facility in Chaska, MN is fully nuclear qualified and includes segregated & controlled areas for material, production, and inspection.

## Robust Quality & Inspection Program

Our nuclear quality assurance program conforms to the requirements of ASME NQA-1, ASME NCA-4000, & 10CFR50-Appendix B, with 10CFR21 reportability, and satisfies CSA N285.0 as well. We are supported by our own in-house ASNT NDT Level III.

## Quality Standards

ASME Section III, Class 2 & 3: N, NPT & NS
ASME Section VIII, Division 1: U & UM
10CFR50 Appendix B
10CFR21 reportability
ASME NQA-1
ASME NCA-4000
ASME AG-1 CONAGT
LOCA performance validation tested

## Certifications

N NPT NS

U UM CE

## Common Cooling Coil Applications

Super Radiator Coils' engineers are experienced retrofit experts. Here are some of the nuclear cooling coils we manufacture. Don't see what you need here? Check out our website: www.superradiatorcoils.com/products/nuclear-products

- Control Room Evaporators
- Control Rod/Element Drive Mechanism Coolers
- Drywell Coolers
- Fueling Duct Coolers
- Isophase Bus Duct Cooling Coils
- Penetration Coolers
- Pump Room Coolers
- Reactor Building Cooling Units
- Reactor Containment Auxiliary Coolers
- Reactor Containment Fan Coolers
- Reactor Coolant Pump Motor Coolers
- Room Coolers
- Upper & Lower Compartment Cooling Coils
- Vault Coolers

## Our Experts

**Dave Bunce, P.E.**
Office: (952) 556-3314
Cell: (952) 239-8713

Dave has a master's degree in mechanical engineering and has been a licensed professional engineer since 1990. He brings over 15 years of nuclear coil engineering design and manufacturing experience to Super Radiator Coils.

**Brian Elliott, P.E.**
Office: (952) 466-7116
Cell: (434) 942-0706

Brian has a master's degree in applied mechanics and has been a licensed professional engineer since 1985. He brings over 25 years of nuclear coil & component design, manufacturing, and development experience to the Super Radiator Coils team.

# Nuclear Projects

## PWR Containment Cooling Coils

How do you ensure seamless installation and no outage delays? Our shop pre-assembly confirms interface dimensions & assures a Super fit.

## Key Features

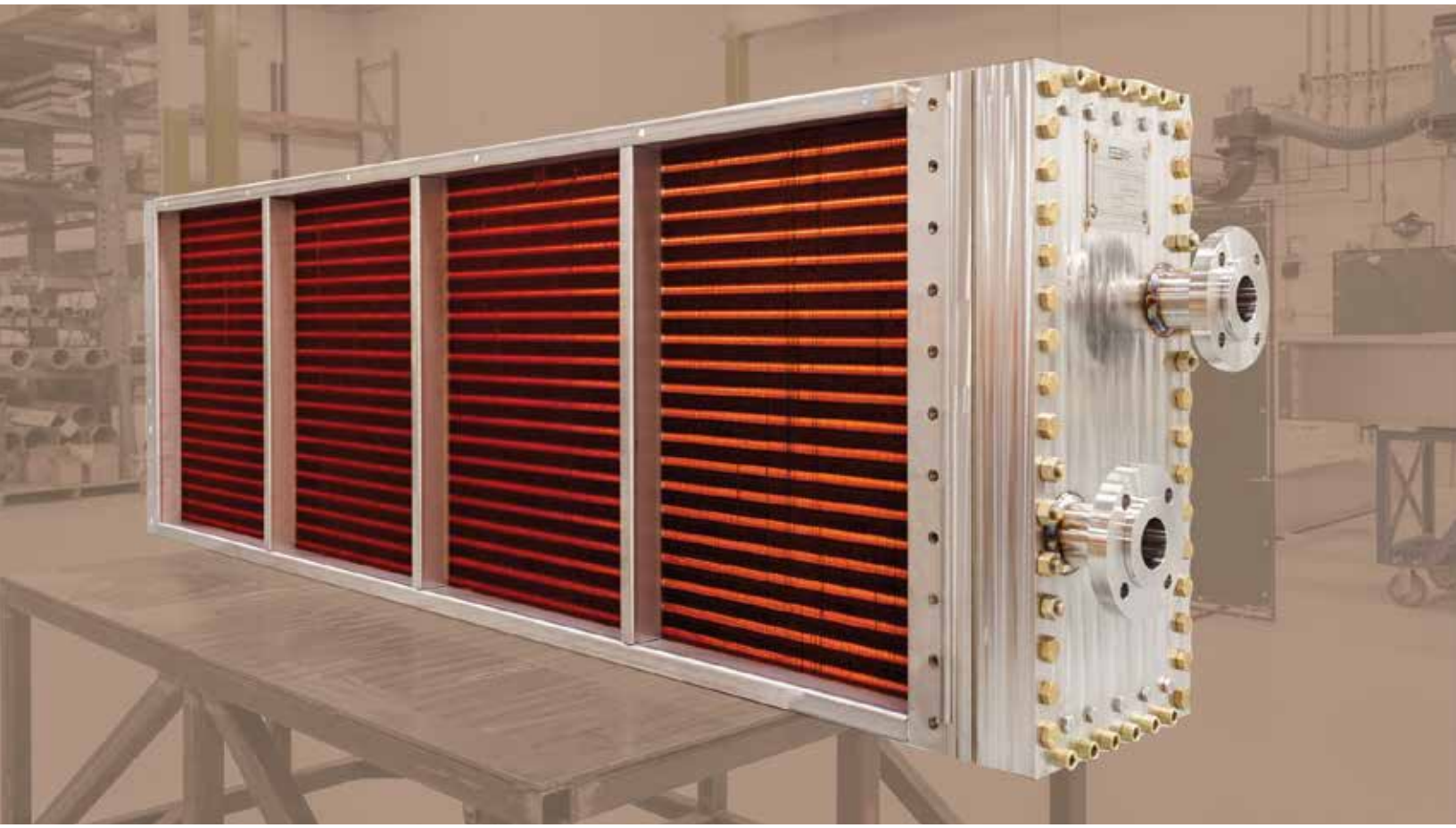
- ASME N-Stamp
- Upgraded from Class 3 to Class 2
- ASME NPT spacer frame support structure
- Redesigned for increased seismic & thermal loads

Upgraded with stainless headers & frames

Close tolerance subpart manufacturing

Additional bracing for higher design loads

# PWR Containment Cooling Coils



Engineering drives Super solutions. A new gasket seal design eliminated leaks that forced power entries for re-torque maintenance.

## Key Features

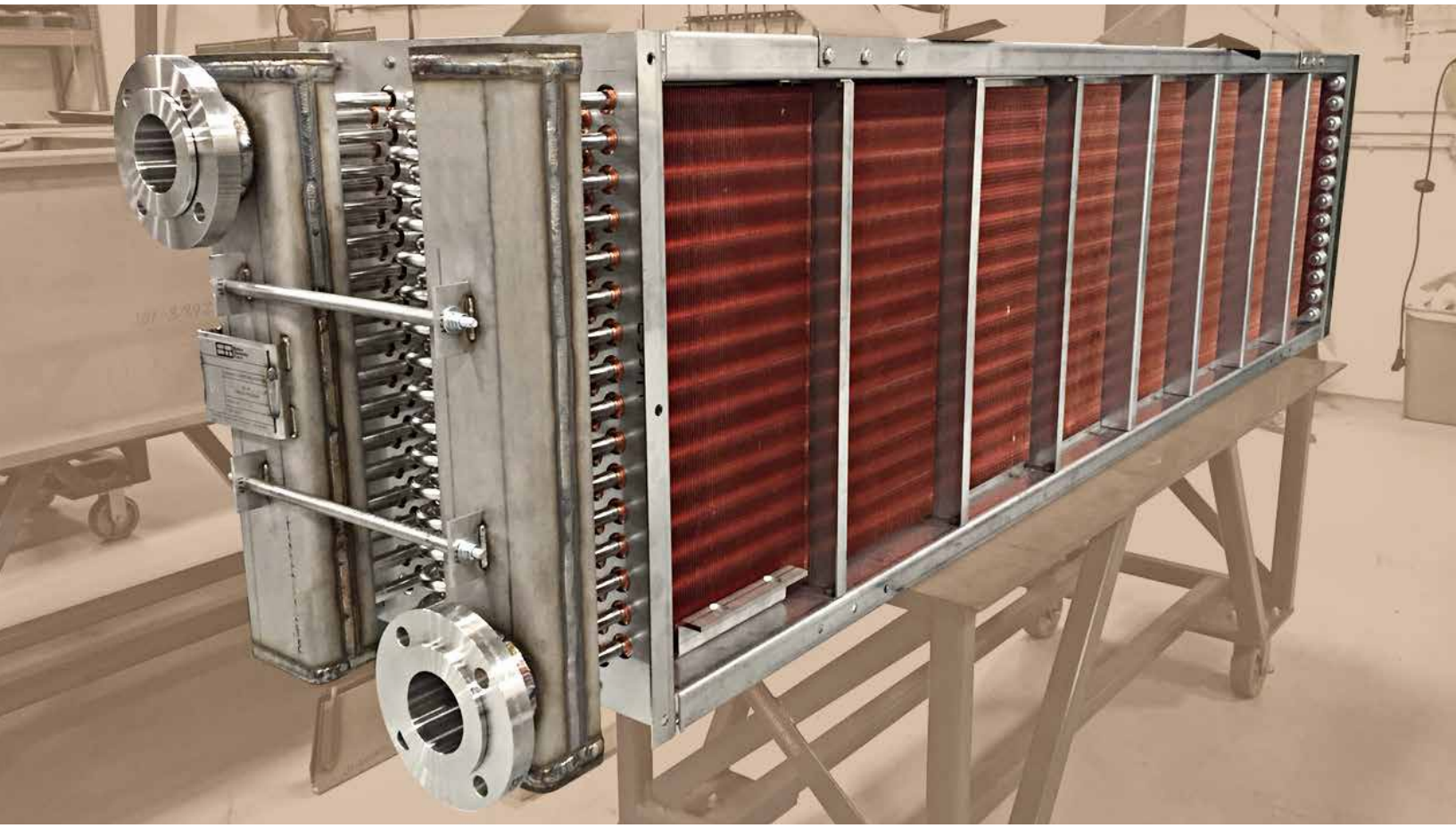
- ASME Section III, Class 2
- Eliminated problematic OEM gasket leaks
- Accelerated delivery to meet critical outage timeline
- Total change-out with 64 new coils

Removable water box for internal inspection & maintenance

New water box seal for leak-free service

Copper fins & upgraded AL6XN® tubes

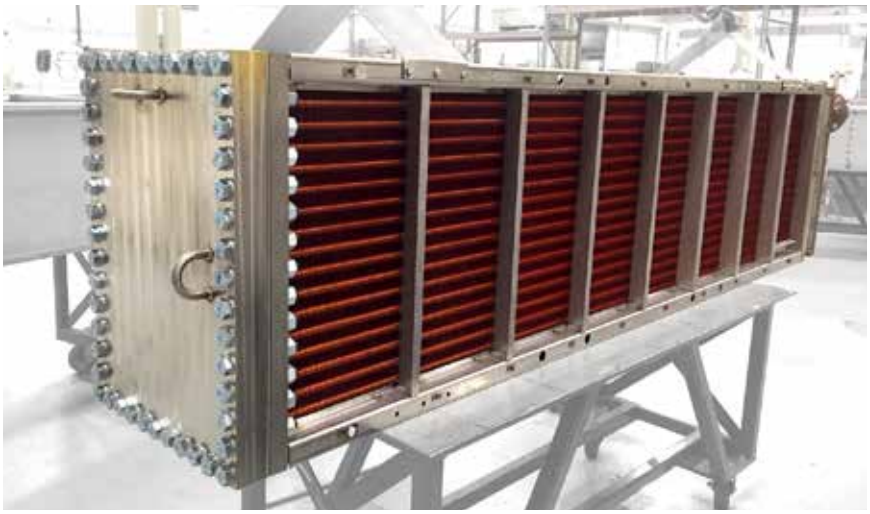
# PWR Containment Cooling Coils



Original equipment was designed for zero nozzle loads. A Super innovation employed flexure in the header/nozzle configuration to resolve very high design loads transmitted to all 48 replacement coils.

## Key Features

- ASME N-Stamp, Class 3
- First-of-a-kind (FOAK) provisions for high nozzle loads
- Added removable water box at back end for internal access
- Upgraded with stainless steel headers and AL6XN® tubes
- Prototype tested to validate accident thermal performance

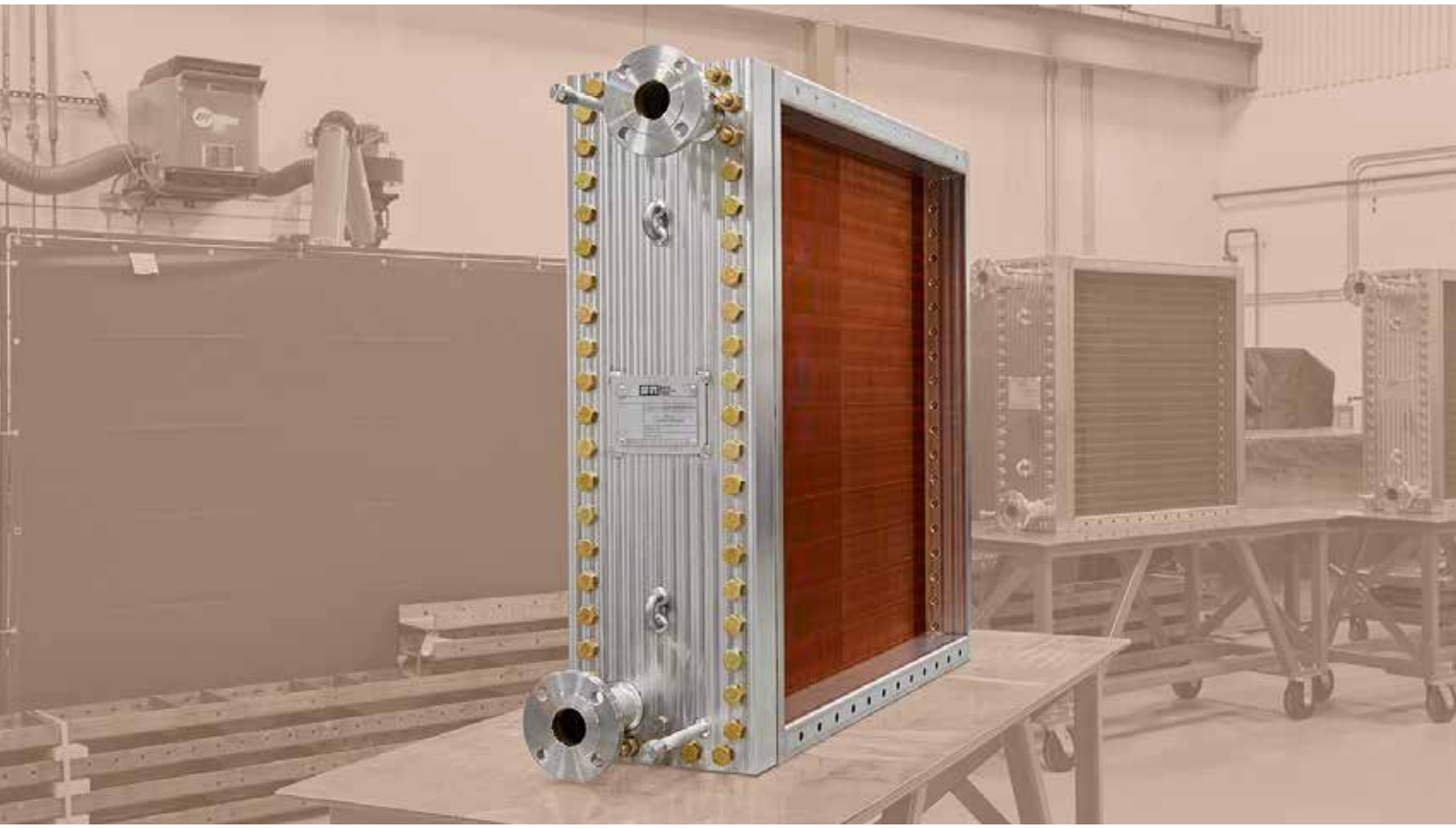


New removable water box at back end

Stainless headers & AL6XN® tubes

FOAK header design for high nozzle forces

# Room Cooler Cooling Coils



Poor-quality cooling water drove the need for new coils with ready access for internal inspection and cleaning. Removable water boxes at both ends of the coils achieved the objective. Stainless steel construction and AL6XN® tubes ensures extended service life.

## Key Features

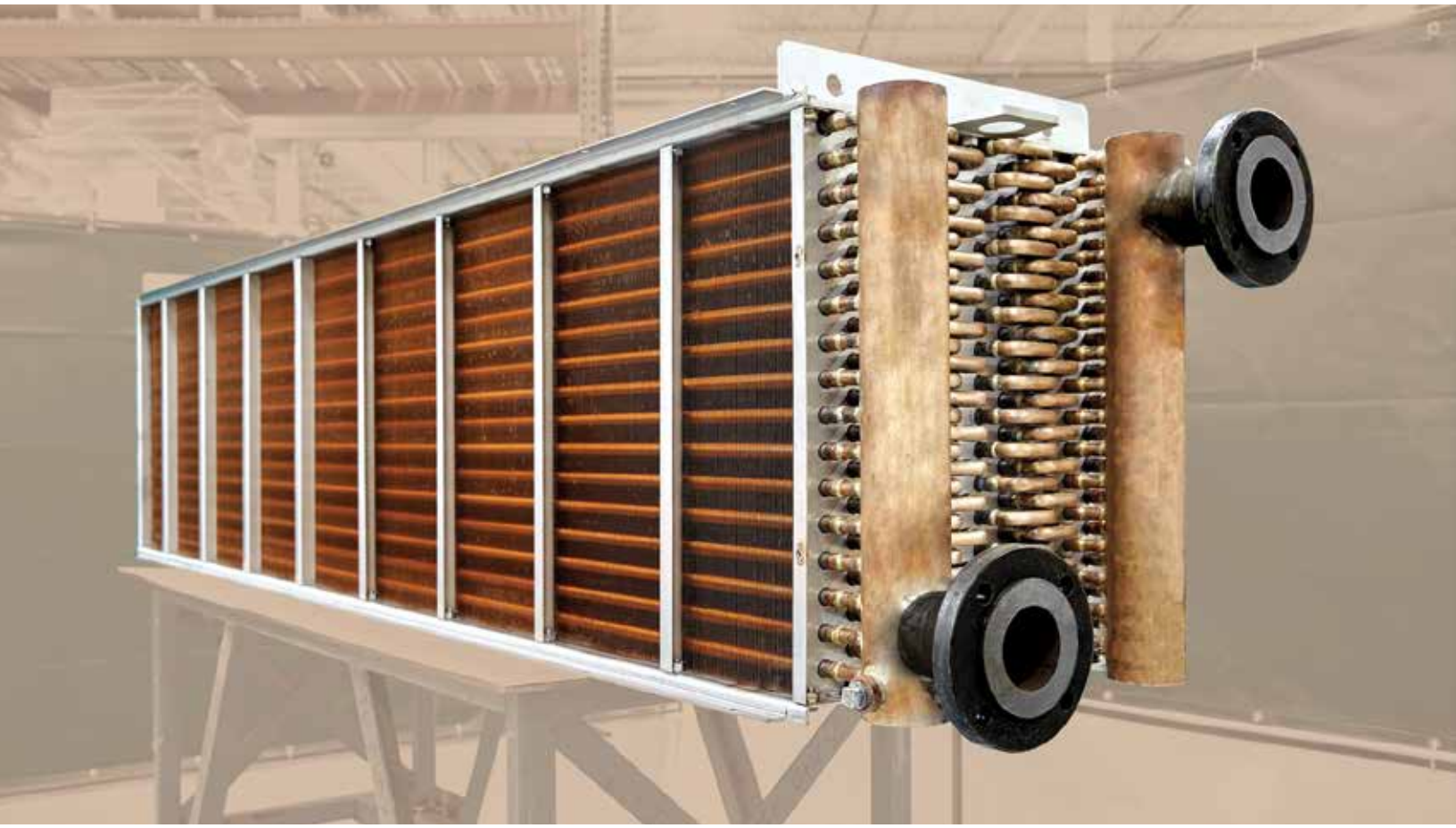
- ASME N-Stamp, Class 3
- Complete internal access with removable water boxes
- Super gasket seal design for leak-free service
- Stainless steel construction for extended service life

Stainless steel construction with AL6XN® tubes

Super seal for machined, removable water box

Back end water box facilitates easier maintenance

# PWR Containment Cooling Coils



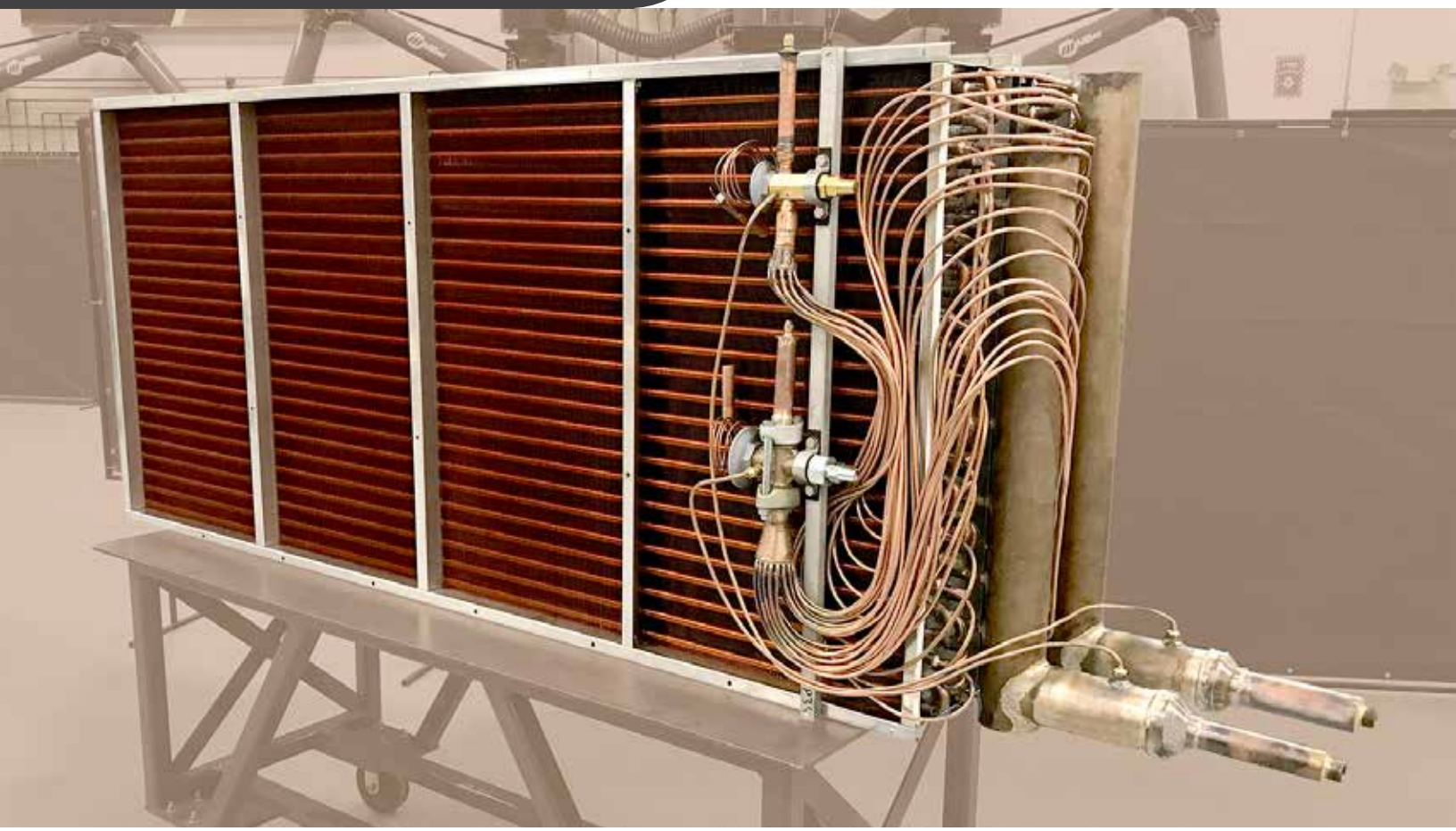
When coil replacements need to match, like-for-like construction eases installation and reduces outage time.

**Back end showing cleanable return bends**

## Key Features

- ASME Section III, Class 3
- Copper-nickel fins, tubes & headers
- Cleanable return bends at back end
- Like-for-like replacements

# Control Room Emergency AHU Evaporators

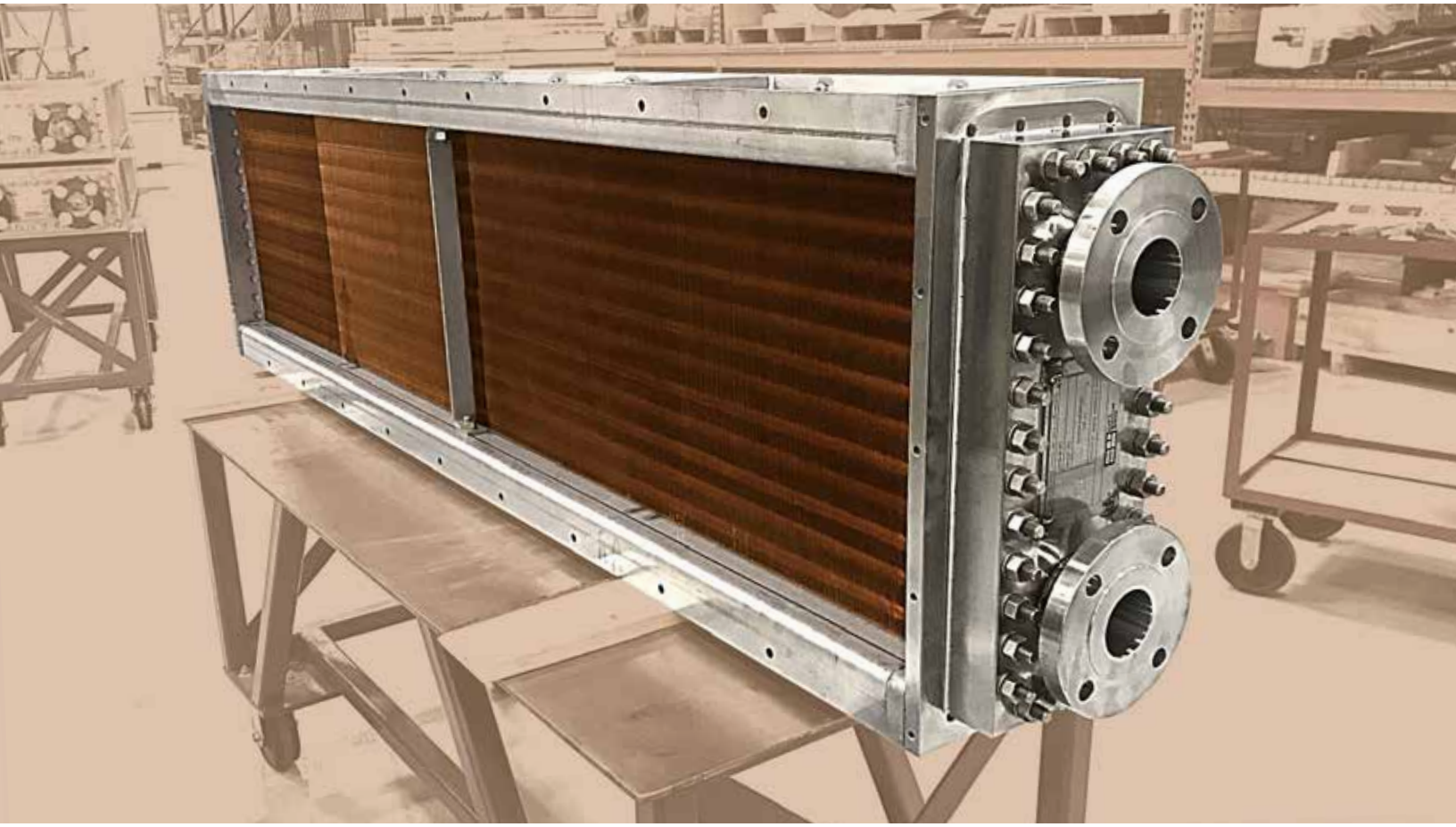


Replacement coils were needed to correct a configuration issue that reduced thermal performance in the original equipment. Restaging new coils resolved the performance shortfall while maintaining the original dimensions and interfaces.

## Key Features

- ASME Section III, Class 3
- Two-stage cooling
- Matched OEM fit & construction
- Resolved longstanding performance shortfall

# RCP Motor Air Coolers

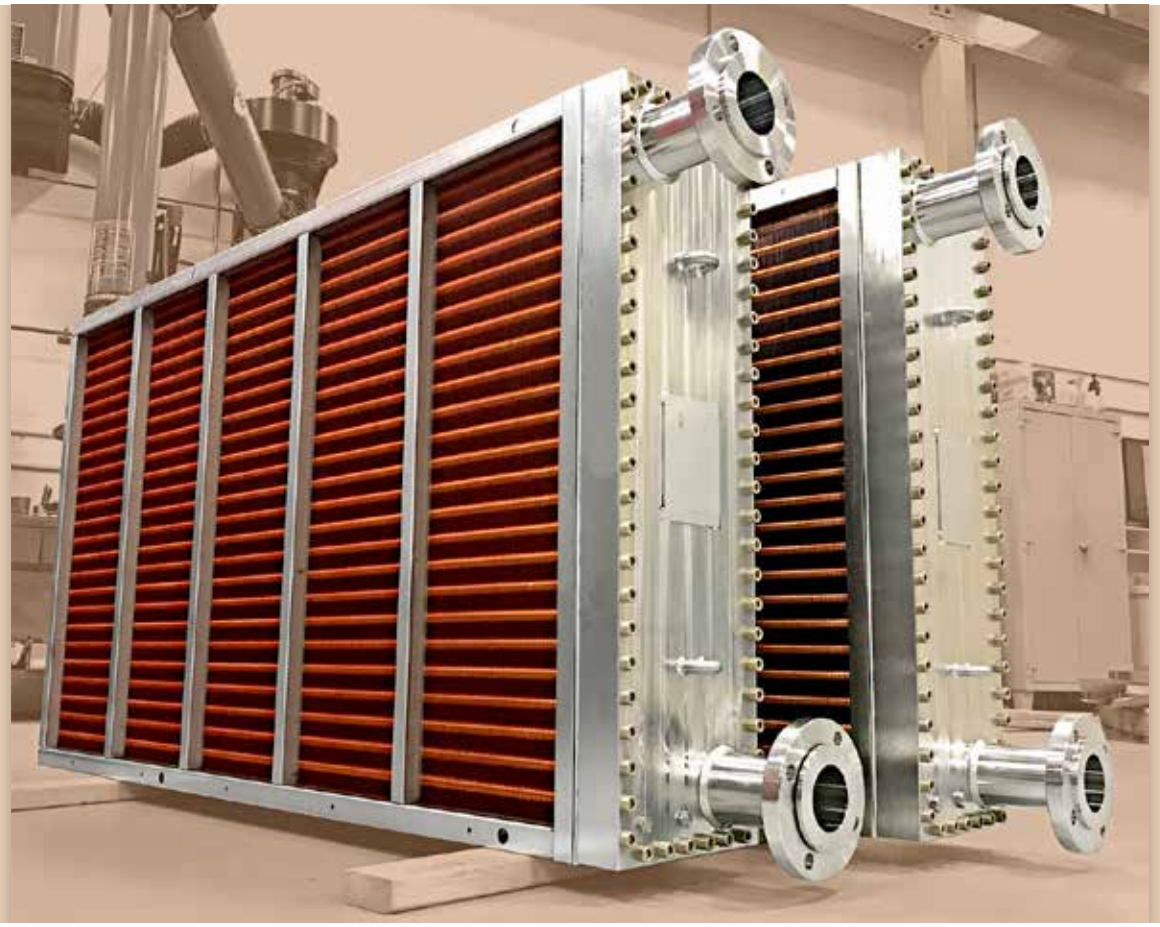


Because no detailed records were available, new replacement coils were reverse-engineered to match the fit, form & function of the original, obsolete reactor coolant pump (RCP) motor coils.

## Key Features

- ASME N-stamp, Class 3
- Reverse-engineered for exact dimensional replacements
- Upgraded stainless steel headers & frames
- Enhanced water box gasket seal for leak-tight service

# Engine Intake Precooler Coils



New replacement coils were upgraded with removable water boxes in lieu of closed pipe headers to address internal fouling issues.

## Key Features

- ASME Section III, Class 3
- Reverse-engineered for exact dimensional replacements
- Upgraded stainless steel headers & frames
- Enhanced water box gasket seal for leak-tight service


104 Peavey Road
Chaska, MN 55318 USA
(800) 394-2645

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superradiatorcoils.com