



## Case Study

### Nuclear Power Station - USA

*HydroFLOW® eliminated chemical usage in a nuclear power station's cooling system, maintaining chiller performance and reducing operational risk across multiple administrative buildings.*

## Overview

A major 3,942-megawatt nuclear power station in the southwestern United States needed a safer, non-chemical solution to manage scaling in its administrative cooling towers. Chemical water treatment posed regulatory delays, as all substances had to be lab-tested before use on site.

To resolve this, *HydroFLOW* was trialled on one of the cooling tower systems to evaluate its ability to maintain chiller performance and prevent scale—without chemicals. Following a successful evaluation, the plant expanded installation across all cooling towers serving the administrative buildings in January 2020.

## Challenge

The plant's maintenance team relied on chemical dosing to manage scaling in cooling towers. However, chemical use at the nuclear facility required lab testing before approval, delaying implementation and complicating operations.

Additional challenges included:

- Regulatory restrictions on chemical introduction
- Risk of scale buildup affecting chiller efficiency
- Desire to simplify water treatment processes
- Pressure to find a safe, proven non-chemical solution

## Solution

Trane Corporation, responsible for servicing the chillers and cooling towers, recommended trialling *HydroFLOW* based on positive prior experience. A *HydroFLOW* Custom unit was installed on the condenser water line feeding the chiller.

To monitor performance, Trane tracked approach temperatures monthly to ensure no scale was forming on the chiller tubes or cooling tower elements. After completing the trial successfully, the plant approved full installation of *HydroFLOW* units across all administrative cooling towers.

## Results

Over the monitored trial period, *HydroFLOW* consistently delivered the desired outcomes:

- **Chemical Elimination** – Cooling system operated without traditional chemical dosing
- **Scale Control** – No scaling observed on chillers or cooling tower surfaces
- **Performance Assurance** – Monthly temperature readings confirmed stable operation
- **Full Implementation** – Units installed across all administrative building cooling towers

The plant's team selected *HydroFLOW* as a long-term, non-chemical solution based on performance, safety, and simplicity.

## HydroFLOW® Installation



Installed *HydroFLOW* Custom unit



## Summary

The benefits of using *HydroFLOW* technology to eliminate chemical water treatment in cooling systems were evaluated at a major nuclear power station in the southwestern United States. Over a monitored trial period, system performance was observed through monthly approach temperature readings to confirm scale prevention without chemical intervention.

All operational goals—including chemical elimination, scale control, and stable chiller performance—were achieved without compromising safety standards.

Most significantly, the use of *HydroFLOW* resulted in clear operational improvements:

- Chemical water treatment fully eliminated
- No scale buildup on chillers or cooling towers
- Chiller approach temperatures remained stable
- Full expansion approved across all administrative cooling towers

The results confirm *HydroFLOW* as a safe, effective, and low-maintenance alternative for cooling water treatment in regulated environments.



*HydroFLOW*® units are working all over the world on multiple applications, treating carbonate and non-carbonate scaling and filtration issues in a wide variety of industries.

- From homes to heavy industry
- From spas to steel mills
- Suitable for any pipe material
- From 15mm to 1500+mm OD pipe diameter

# Would you like a free consultation?

## CONTACT US

✉ [sales@hydropath.com](mailto:sales@hydropath.com)

☎ +44 115 986 99 66

🌐 [www.hydropath.com](http://www.hydropath.com)