GE Hitachi Nuclear Energy

Hydrogen Water Chemistry (HWC)

fact sheet

IGSCC Controls

GE Hitachi Nuclear Energy (GEH) designed and supplied the Hydrogen Water Chemistry systems for the BWR Fleet and has been supporting them since delivery and startup. GEH has also been supporting the BWR Fleet with availability studies, design improvements, evaluation of and addition of time delays to HWC system trips, and replacement of outdated equipment to improve the availability of the Hydrogen Water Systems throughout the BWR fleet.

HWC Skid

GEH's experience in supplying and modifying HWC systems for over 25 years makes GEH well qualified to design modifications for the Fleet HWC systems. GEH has performed low flow and low power evaluations and modifications on numerous HWC systems over the past Ten years. GEH fully understands the HWC system purpose and function and its coordination with the On Line NobleChem™ (OLNC) process and Mitigation Monitoring Systems (MMS).

GEH's HWC system designs have evolved from using Moore flow controllers, in the 1980's to Programmable Logic Controller (PLC) based controls starting in 1995. GEH has also designed, programmed and supplied the PLC controls to replace one of our original Moore controller supplied systems. There were no issues with the change during implementation or during the subsequent 1.5 years of operation.

Features

- Replace existing Moor Flow Controllers and relay logic with a PLC-based control and switch-and-meter operator interface.
- Replace the present hydrogen area monitors sensors and electronics (sensing hydrogen leakage from piping) presently in the R4A panel and incorporate them in the replacement H2J panel.
- The panel design is to replace the present HWC panel with the same foot print (within the limits of the mounting platform and allowing for the same conduit entries and the external wiring connection terminal strips
- will be mounted to use the existing cables and wire lengths. Objective is to minimize site engineering time and panel replacement time.
- Include all of the Upgrades and improvement availability changes to the HWC System panel and its controls.

HWC P500 Panel

Benefits

- To improve HWC availability by operating the system at low plant power, i.e., during startup, shutdown and power reduction periods, where presently the system is taken off line.
- Improve system availability by changing the system to inject air to offgas (replacing oxygen injection) for scavenging the injected hydrogen
- To upgrade the HWC system for operation at low flow rates in conjunction with NobleChem™.

Plant Savings

- Plant Reduction in Hydrogen Injection Supply.

For more information, contact your GE Hitachi Nuclear Energy sales representative or visit us at www.ge-energy.com/nuclear

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