



GE VERNOVA

FACT SHEET

HITACHI

ON-LINE NOBLECHEM[®]

Mitigate Stress Corrosion Cracking with Critical Path Savings

On-Line NobleChem[®] (OLNC) is GE Vernova Hitachi Nuclear Energy's (GVH's) solution for mitigating stress corrosion cracking in Boiling Water Reactor (BWR) nuclear power plants.

The extreme environmental conditions inherent to BWR operations—including high temperatures, high radiation levels, and high oxidant concentrations—can lead to Intergranular Stress Corrosion Cracking (IGSCC) of reactor vessel internal components and piping. The application of OLNC enables IGSCC mitigation at reduced hydrogen injection rates, decreasing worker dose and lowering utility operating cost.

Compared to conventional, aka “classic”, NobleChem[®], which is applied during scheduled BWR refueling outages, “On-Line” NobleChem[®] (OLNC) is applied during BWR operation. By applying NobleChem[®] while the BWR is on-line, an average reduction of 60 hours of refueling outage critical path schedule is achieved, saving expensive replacement power costs.

Available Now

On-Line NobleChem[®] (OLNC) is the BWR Optimum Water Chemistry process technology most rapidly adopted by the GVH BWR fleet.

Mitigation Advantages

Since cracks may be more open during the normal pressure, temperature, and flow conditions of full power plant operation, OLNC facilitates better penetration of noble metal into existing cracks, compared to conventional NobleChem[®]. Furthermore, as OLNC is applied during normal plant operation, plants can perform applications annually, unlike conventional NobleChem[®] which is applied every four to six years. Frequent NobleChem[®] reapplications enabled by OLNC reduce the risk of crack flanking, a condition that can occur when extreme material conditions or low hydrogen availability allow a crack to grow beyond the catalytic effects of the most recent NobleChem[®] application.

Benefits

In addition to reducing worker dose, maximizing BWR asset life via IGSCC mitigation, and reducing hydrogen consumption costs, utilizing OLNC offers IGSCC mitigation and crack flanking advantages, and saves BWR operators precious refueling outage critical path schedule. GVH provides hands-on training to plant personnel, enabling them to perform reapplications. Additionally, GVH offers OLNC reapplication services to supplement plant operators or perform reapplications independently, as desired.



OLNC Injection System

For more information, contact your GE Vernova Hitachi Nuclear Energy sales representative.

Learn more at governova.com/nuclear



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