

Marathon-5S™ Control Rod Blades

product update

Lower-cost Control Rod Based on Proven Technology

To provide power plant operators with an economic, shorter lifetime alternative to our existing Marathon™ control rod, GE Hitachi Nuclear Energy (GEH) is developing the Marathon-5S™ control rod.

The Marathon-5S™ is a revolutionary control rod based on the proven design and world-class manufacturing of the Marathon™ control rod. As a complement to the Marathon™ offering, the Marathon-5S™ design modifications reduce cost—while meeting the same design acceptance criteria as the longer life control rod.

By simplifying the “square tube” design of the Marathon™ control rod, the Marathon-5S™ control rod is less expensive to manufacture, yet is made from the same proprietary “304S Rad Resist” crack-resistant stainless steel.

The increased thickness of the Marathon-5S™ capsule body tube results in less boron carbide per absorber tube. While this reduction in B₄C reduces the nuclear life of the control rod, its nuclear compatibility is still ensured. This eliminates the need for any special nuclear calculations to install the Marathon-5S™ control rod.

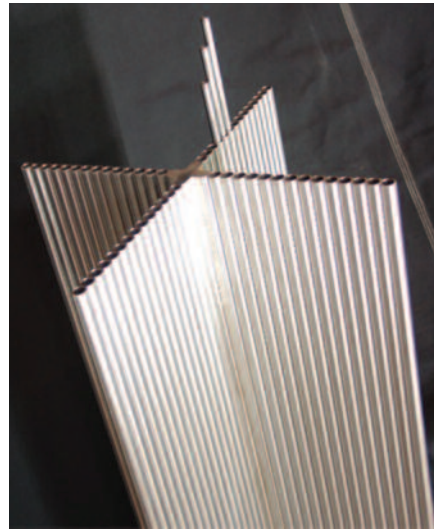
The all-B₄C capsule design includes no hafnium rods, which reduces cost while maintaining the same conservative stress criteria used for the Marathon™ control rod—ensuring that the mechanical lifetime exceeds the nuclear lifetime.

Availability

The Marathon-5S™ control rod blade is anticipated to be available for the Spring 2008 outage season.

Benefits

- Reduced manufacturing and installation costs
 - Simplified absorber tube design
 - Thicker capsule body tube
 - All-B₄C capsule design with no hafnium rods



- Uses proven Irradiated Assisted Stress Corrosion Cracking (IASCC) resistance technology
- Design criteria equivalent to, or more conservative than the existing Marathon™ control rod

Features

Designed to meet the same mechanical requirements as the Marathon™ control rod, the Marathon-5S™ control rod will have the ability to:

- Withstand all scram and seismic bending loads
- Meet or exceed the scram insertability of previous control rod designs
- Provide acceptable control rod drop and “no settle” characteristics
- Accommodate B₄C capsules in high nuclear fluence locations via a larger plenum gap between capsule and tube



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