

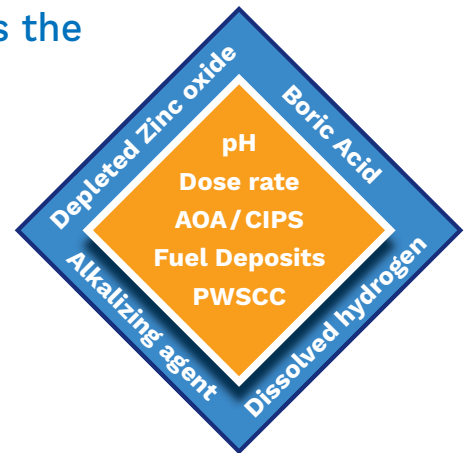
Primary Side Chemistry Consulting

For Pressurized Water Reactor (PWR)

State-of-the-art primary water chemistry ensures the maintaining of system integrity and minimization of dose rate build-up and corrosion

Challenge

The primary coolant serves as moderator for fast neutrons as well as for transporting heat from the reactor core to the steam generators (SGs). A sub-optimal chemistry regime impairs safe and reliable plant operation and fuel elements integrity. The consequences are a build-up of high out-of-core radiation fields and the loss of plant integrity due to corrosion.



Solution

Our primary side chemistry consulting for PWR ensures a reliable, safe and economic plant operation by the best water chemistry regime. Our recommendations take into account the plant design features and material concept, the plant operational history as well as core design and fuel element materials. Optimization of pH and Boron-/Lithium coordination includes the minimization of fuel deposits leading to crud induced power shift and minimization of corrosive degradation modes like primary water stress corrosion cracking (PWSCC). Zinc injection minimizes dose rate build-up and mitigates PWSCC concerns. Application of enriched boric acid supports operation at higher fuel burn-up or for prolonged fuel cycles. Optimized shutdown procedures reduces activity mobilization and build-up.

Customer benefits

- Minimization of corrosion
- Avoidance of build-up of high dose rates / out-of-core radiation fields
- State-of-the-art chemistry measures applied at EPR reactor
- Best plant specific chemistry regime
- Knowledge of manifold chemistry treatments and guidelines
- Tailored plant-specific studies in close cooperation with operators fitting your needs and requirements
- Close cooperation with fuel experts

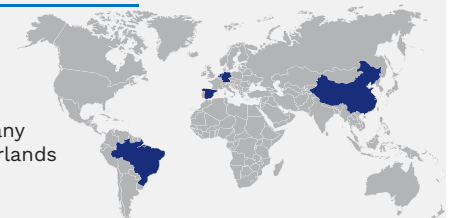
Your performance
is **our everyday commitment**

Consulting Services

- Enriched boric acid (EBA)
- Compatibility check and licensing support in case of modification
- Chemistry guidelines (EPRI, VGB)
- AOA / CIPS fuel risks assessments
- Elevated Lithium operation
- Depleted Zinc Oxide (DZO)
- Chemical counteractions at fuel failures
- Fuel cladding integrity
- Minimization of recontamination
- Dose rate reduction measures
- Reactor core reactivity control

References

- Brazil
- Spain
- Germany
- Netherlands
- China



Contact: chemistry-services@framatome.com
www.framatome.com

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