framatome

Chemistry Consulting

For Boiling Water Reactor (BWR)

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

Challenge

Inefficient corrosion protection measures results in stress corrosion cracking as well as in fuel performance issues. Fuel deposits (CRUD) lead to a release of radioactive materials from defects of the fuel claddings. The release of radioactive materials and a low quality of high purity water results in an unnecessary high occupational radiation exposure. A non-optimized BWR coolant chemistry regime does not meet partially opposite requirements and jeopardizes a safe and reliable operation of nuclear power plants (NPPs).

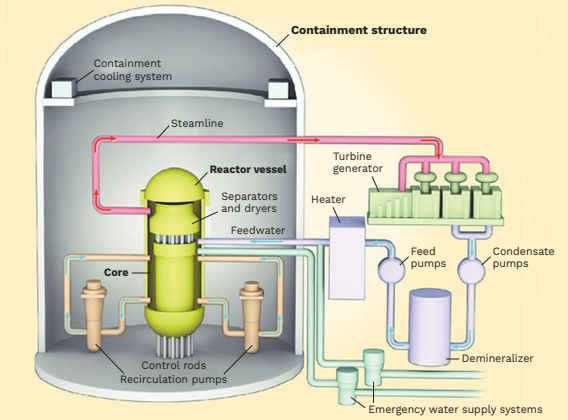
Solution

Our chemistry consulting for BWR ensures a safe, reliable and economic plant operation by the best chemistry treatment. Our root cause analysis focusses on prevention of future failures and continuous improvement, rather than simple immediate corrective actions. Our recommendations following an integrated approach for the plant considers operational conditions, materials concept and core design targeting minimal corrosion and dose rate build-up in out-of-core areas. Reduction in feed water iron ingress combined with adding depleted zinc mitigates fuel crud concerns.

Customer benefits

- Minimization of stress corrosion cracking
- Avoidance of high dose rate build-up
- Improvement of plant reliability
- Best chemistry treatment
- Knowledge of various chemistry regimes 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**



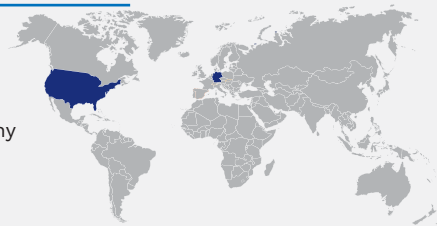
© Short-Term and Long-Term Health Risks of Nuclear-Power-Plant Accidents

Consulting Services

- Normal water chemistry / Hydrogen water chemistry / Online noble chemistry
- Depleted Zinc Oxide (DZO)
- Mitigation approaches for stress corrosion cracking (SCC)
- Water chemistry consulting & optimization in the frame of component replacement and refurbishment
- Fuel-Chemistry interactions
- Passivation mode
- Chemistry guidelines (EPRI, VGB)
- Root cause analyses

References

- USA
- Germany



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