

Studies and evaluations on corrosion phenomena in cooling systems of nuclear power plants and customized solutions in terms of corrosion protection

Challenge

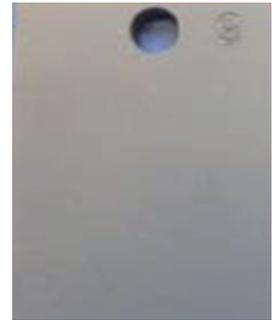
A number of different corrosion mechanisms are degrading the condition of your equipment on a daily basis. Corrosion phenomena affects the performance of the plants and therefore the availability as well as the safe and reliable operation of nuclear power plants (NPPs). Aqueous corrosion-related phenomena can even severely damage your plant.

Solution

Our water chemistry consulting fosters to prevent components against corrosion degradation phenomena. Our experienced and competent professionals assess the current situation and identify the root causes or rather the mechanism of corrosion phenomena. Causes for degradation can be effectively managed after identifying them in terms of our root cause analysis and support you in finding solutions or to mitigate corrosion. Our recommendations based on assessments of the current situation and lead to the best suitable operational conditions.

Customer benefits

- Minimization of corrosion
- State-of-the-art chemistry measures applied at EPR reactor
- Best chemistry treatment
- Tailored plant-specific studies in close cooperation with operators fitting your needs and requirements
- Close cooperation with materials experts
- Our international experience covers plant design of various original equipment manufacturers (OEMs)



Impairment of corrosion: left corroded, right: undamaged

Occurrence of corrosion mechanism

PWR

- Erosion corrosion (43%)
- Corrosion of nickel alloys (18%)
- Stress corrosion cracking (9%)
- Corrosion induced by microbiology (9%)
- Contact Corrosion (3%)
- Other corrosion types (18%)

BWR

- Stress corrosion cracking (56%)
- Erosion corrosion (34%)
- Corrosion induced by microbiology (3%)
- Other corrosion types (7%)

References

- Canada
- Brazil
- Spain
- France
- Netherlands
- Slovenia
- China
- Japan



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