Steam and Condensate Quality Water Process Technology

Publieke samenvatting / Public summary

Aanleiding
Improved insight in distribution and behaviour of conditioning chemicals (and their breakdown products) in steam-water cycles and condensate polishing, coupled with improved treatment of off-spec condensates, is required to achieve better steam/condensate cycle ratios (increased water use efficiency), energy savings and reduction of the thermal load on surface water.

Doelstelling
The project aims are threefold: 1) increased insight in the fate of conditioning chemicals (and the resulting protection) in stream-water cycles; 2) improved steam conditioning and condensate polishing and treatment, so that more condensate can be returned; 3) improved knowledge on harmful effects of different organic carbon (TOC) components, in relation to boiler feed guidelines.

Korte omschrijving
The project has three specific technical work packages. The first work package aims to elucidate the fate of boiler feed water conditioning chemicals after going through the steam cycle, including formation of breakdown products, distribution over the system and corresponding long-term impact on the metallurgy in the system. The second work package aims at improved options of treating “off-spec” condensates, as well as heavily impaired process condensates, to increase water usage efficiency in the plant. The third work package will link the insights of the first work packages to

Projectinformatie / Project information

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Algemene informatie / General information

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Publicaties en materialen / Publications and attachments

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corrosion measurements, to improve insight in required boiler feed water treatment (especially with respect to TOC removal) and conditioning for improved protection of the plant. Scope will be on filming and neutralizing amines and circuits operating at elevated temperature/pressure (350-550 °C, 30-130 bar).

Resultaat

This project will result in a better description and modelling of the be behavior, distribution and effect (in combination with proper monitoring) of different amines and organic pollutants, as well as their respective breakdown products in steam/condensate circuits at elevated temperatures. The project will also deliver improved treatment options for “off-spec” and heavily impaired condensates, and will develop a robust Condensate Quality Assurance system.

De data in deze applicatie is afkomstig van de Rijksdienst voor Ondernemend Nederland (RVO) en wordt in samenwerking met de Topsector Energie ontsloten.
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