CASE STUDY

Condensate Water Treatment Plant Using Activated Carbon Technology

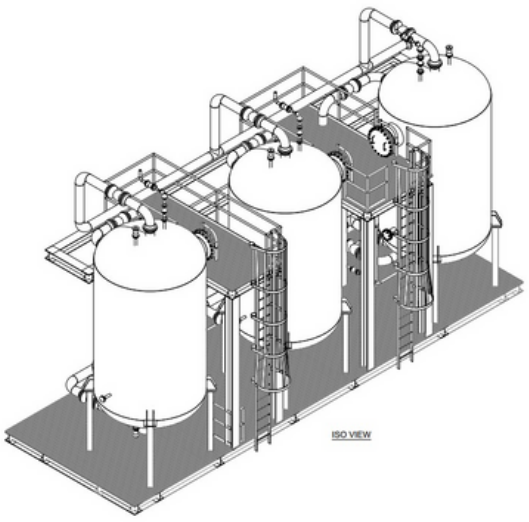
Peerless

END USER: Qatar Energy: Ras Lafan Petrochemical Project (RLPP) Ethylene Plant

PURCHASER: SECL-CTCI Joint Venture (SCJV)

LOCATION: Qatar

PROJECT DESCRIPTION: Skid Mounted Activated Carbon Unit



SITUATION: SECL-CTCI Joint Venture (SCJV) received part of the EPC contract to expand RLPP facility which located in Qatar, as part of the manufacturing and testing process. Demineralized water will be required.

CHALLENGE: Due to the RLPP expansion, it was recognized that more condensate water will be generated. In order to safely utilize the condensate water and reuse it with the steam generation process, the condensate water must be treated to remove TOC to the desired level and ensure the condensate water is suitable for reuse. In addition, at certain conditions the condensate water is expected to be higher than normal operating condition which can reach up to 135°C.

SOLUTION: Peerless provided a Skid Mounted Activated Carbon Unit using a carefully selected activated carbon type which can remove the TOC to the desired level and can handle the extreme operating temp. The selected activated carbon also has a very low silica leachability which will also increase the protection rate of the steam generation process.

PACKAGE: 3 x 50% Activated Carbon Vessels, Local Control Panel equipped with redundant PLC and HMI with ATEX certification

ENVIRONMENTAL BENEFITS:

- Peerless designed the condensate water treatment system to ensure minimum wastewater to be used through the package backwash.
- The activated carbon media is projected to be used for more than two years which reduce the solid waste, taking into consideration the activated carbon media as solid waste is not hazardous for environment.

CECO ADVANTAGE: Peerless optimized the design of the condensate water treatment package using special adsorber with high surface area to meet the limited footprint provided for this package. In addition, the high surface area adsorber will ensure longer service life and minimum downtime.