

Ras Nhache/Batroun - Tripoli, 11th Jan 2015

TEMO-IPP Incineration Demonstration Plant Ras Nhache/Batroun, Lebanon

Vaporizer of TEMO-IPP incineration demonstration plant at Ras Nhache/Batroun





Upscaled vaporizer train element (TEMO-IPP has to be upscaled in such a way) (picture is from Dr.-Ing. M. Franz, "Dampferzeuger", www.axpo-holz.ch/Dampferzeuger.pdf)

Stress distribution (FEM Analysis) at vaporizer

Master Thesis

<u>Mechanical Analysis of an upscaled version of the Vaporizer (pressure</u> vessel and circulation tubes) of the incineration pilot power plant TEMO-IPP

To be able to upscale the TEMO-IPP incineration plant to a commercial incineration plant in Tripoli (about 40 MW) critical components shall be verified by Finite Element Analysis with the tool Abaqus. The main critical component is the pressure vessel with about 100 bar pressure difference. Working packages:

- Upscaling the CAD model of vaporizer with CAD tool ProE (2 weeks)
- Mechanical Behavior (Stress Analysis, Fatigue Analysis, Thermal Strain Analysis) with the tool Abaqus (6 weeks)
- Thermal Loads (Dimensionless Numbers, Overall Heat Transfer, Heat Transfer for Concentric Annular Gaps, Heat Transfer for Free Convection on Vertical Surfaces) with the tool Abaqus (4 weeks)
- Documentation (3 weeks)

Keywords: Alternative Energy, Incineration Power Plant, Mechanical Analysis, Finite Element Analysis (FEA), CAD

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