Hochschule Zittau/Görlitz
UNIVERSITY OF APPLIED SCIENCES

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Expertise

Master Thesis Bc. Michal Jadrný

Master Thesis deals with the development of a simulation model for the thermal energy storage facility "THERESA" located in Zittau and with the extension of thermal energy storage of an existing model of a real power plant.

First an overview of different thermal power plants is given, which are coal-, gas-, nuclear-, geothermal- and solar power plants. After that different types of thermal energy storages are introduced.

In the practical part foundations of thermal cycle processes are shown. Carnot cycle is described and calculations of state variables are derived. Then mathematical model for static behavior for the thermal energy storage facility "THERESA" is presented. This model serves as basis for computer simulation constructed with the simulation program EPSILON.

After simulating different modes for "THERESA" facility, simulation model is extended to a model of the real power plant "Lippendorf Power Station" near Leipzig. Simulation is done with different settings of process parameters like mass flow for instance. Simulation results are discussed at the end of this thesis.

The output obtained during this work is published in a scientific paper. This is remarkable result of a master thesis. Final mark thus is :

mark: 1.0 (very good)

Stefan Bischoff

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