

Steam System Assessment Tool (SSAT) Executive Summary

Overview: The Steam System Assessment Tool (SSAT) is a free on-line tool that allows users the ability to create models of real steam systems. Using these models, one can predict savings from different system modifications. SSAT can quantify the magnitude of energy, cost, and emissions savings for potential steam improvement opportunities. SSAT contains the key features of typical steam systems. SSAT is used to create a model of your steam system as it currently operates. The model can then be modified to reflect potential changes to the steam and cogeneration system. The changes in operating characteristics are then clearly identified allowing the user to understand the true system impacts.

Dow Chemical St. Charles operation applied this tool and was able to identify and save \$1.9 million/yr with a rapid payback of under two months.

Data Collection Requirements: There is a significant amount of data that needs to be collected in order to model a steam system but once the information is entered the software is easy to operate and easy to run “what-if” scenarios. The data needed to appropriately model a steam system are the basic operating parameters of the system like steam pressure and temperature, fuel characteristics, boiler operating parameters, and steam turbine arrangements. Accurate modeling of complex steam systems requires an appropriate reflection of the control philosophy of the major system components. Someone familiar with the system operation will be needed to utilize this software. Accurate models can be developed in less than an hour; however, intimate knowledge of the entire system must be resident to appropriately reflect the true system impacts.

Qualifications: A utilities engineer or someone familiar with the steam and cogeneration system operation will be needed to setup the tool. An engineering degree is not required but helpful.

Usage of the tool: The SSAT tool is an excellent and easy tool to model changes and improvements to your steam system. This tool can be used over the years to continually optimize your steam system. It is a steam system modeling tool that allows for “what-if” scenarios to be evaluated.

Ease of Use/Software Compatibility: This is an excel based software package so anyone familiar with excel will be able to operate this software. It comes with a 41 page operating manual that steps you through the software. In addition, there are web based training classes offered by the DOE, 2 day certification classes available and help desk support.

Computer limitations are as follows:

- 32-bit computer running Windows 2000, Windows Vista, Windows XP, and Windows 7.
- Microsoft Office Suite 2007. **SSAT will NOT work with Office 2010. Please download the required Office 2007 program to run concurrently on your computer.**

Product roll-out roadmap: The upgrade of this tool is scheduled to begin before the end of 2011 with the new tool being released in 2012.