

## Steam Generating System - Treatment, Engineering Design, and Operation.

“Chemical-treatment options for steam generation”, the name of a publication we wrote for “Power Magazine”, should be considered in choosing the most effective chemical treatment program for your plant.

The laws of physics and water chemistry basics remain constant in both evaporative cooling and steam generation. The relationship between heat / degrees F and pressure / P.S.I.G. is represented below:

Gage Pressure, PSIG:	0.0	5.3	20.3	50.3	100.0	150.3
Steam Temperature, Degrees F:	212	227.9	297.97	337.90	365.99	406.11

**Steam is the gaseous phase of water (H<sub>2</sub>O).** Steam leaving the boiler carries energy in the form of heat, through the steam lines, to point(s) of application, including heat exchangers, heating of an industrial bath, drive a mechanism such as a piston, provide a more exact temperature control for a process, provide humidity, used for sterilization, and many other purposes.

**Superheated steam, is steam heated well above the saturation point(s)** noted above, and is completely dry. The completely dry steam (gaseous H<sub>2</sub>O) does not form water deposits on turbine blades which in turn cause an out of balance condition in turbines. **The increased temperature / heat of superheated steam is expressed as kinetic energy**, which drives turbines faster, making it an excellent choice for turbine generated electricity.

**System protection needs to be provided to the pre-boiler section, boiler section and after boiler section(s) of the steam generating system.** We will assess your plant needs for protection and propose options available with a recommendation for the most cost effective program for you, including your input.

**The options available to provide system needs for protection are presented in technical detail, in a paper written for “Power Magazine”** by William H. Yost of Industrial Water Chemists. **This information is especially helpful in choosing from the options available** to formulate the most effective / cost effective program for any operation. The “Power” reprint, “Chemical treatment options for steam generation”, is available as published upon request.

**We provide on-site training, chemical program implementation and oversight and engineering support** including total system / process engineering design and improvement.