Spray Cooling

Bulletin Brief

Many industrial applications generate excess heat during overall processing. This excess heat is a waste product that may be discharged into the effluent from the plant. This waste heat stream must be mitigated and cooled in many applications in order to meet the discharge requirements of the stream or the receiving body of water. Power plants and wet process industries may have substantial heat loads requiring cooling.

Technical Presentation

Traditionally there have been several methods for cooling wastewaters and/or bodies of water. Devices such as heat exchangers, forced and induced draft-cooling towers, and barometric condensers can all be used to effectively transfer heat into the atmosphere from the waste stream. Most of these techniques are suitable for the process requirements; however, they are not particularly economical methods of handling cooling applications in lakes or cooling ponds.

An extension of the spray cooling technology is spray evaporation. Some wastewaters or liquids are treated simply by extended spray cooling to evaporate the liquid and eliminating the need for discharge. A specialized design of the spray cooler is employed to provide full evaporation and utilizes many of the same principals of operation as the spray coolers, with some modification in design and hardware selections.

The EDI Xotherm™ floating evaporative cooler utilizes system design to allow quick and rapid installation into existing basins and provide maximum cooling opportunities with minimum cost. Advanced principals of cooling and simplified procedures for application are the key criteria.

For those systems where cooling or evaporation is desired, please contact EDI for advice on proper application. In order to supply the necessary design criteria on each project, please complete the attached data form and supply this data form with your request for information.

For specific information on aeration system selection considerations, contact Environmental Dynamics at 573-474-9456.