



Thermal Energy Storage Tanks

HT-1148

Planning for a potential loss of cooling system capacity, although rare, is essential in maintaining the integrity of information storage at data centers around the world.

Thermal Energy Storage (TES) is a key element in delaying the effects of cooling failure due to power loss or catastrophic failure. TES systems are engineered process tanks or vessels that add heat or remove heat from a storage medium such as water. TES is a form of storage that can be either a pressurized ASME vessel or atmospheric storage tank.

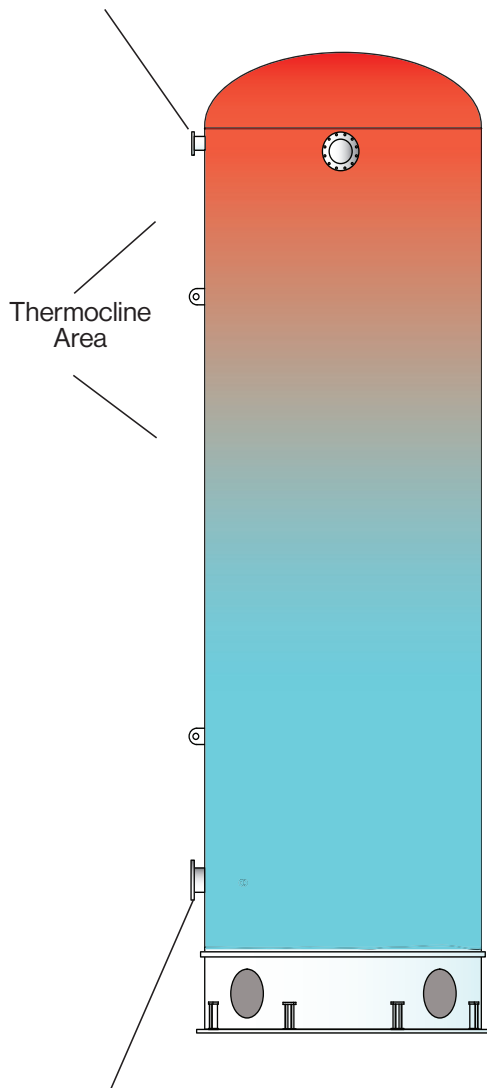
Delay the effects of cooling failure due to power loss or catastrophic failure.

The fundamental process of TES is a basic concept. Water is cooled by chillers during off-peak hours and stored in insulated tanks. This stored, cooled water is then used for space conditioning during times of primary chiller down time due to temporary power loss.

The most common chilled water TES is a cylindrical, vertical pressurized water storage vessel. These rugged steel vessels are protected from corrosion with durable interior and exterior polyurethane coatings.

Operating Details

Warm return water returns to the top of the tank and is distributed by diffuser pipe assembly to minimize mixing with the cold water



Thermocline Area

Cooled water is distributed through distributor piping for chilling of equipment

TES tanks are proven to be an attractive option when new investments in chiller plants are required. The need for back-up or redundant systems in time of need at mission critical facilities makes a chilled water storage tank the most economical investment in cooling system design.

Environmental benefits include reduction of source energy use, decreased refrigerant charge and improved efficiency of the energy supply. Because Highland Tank's TES are made of durable goods like protected steel, non-corrosive PVC diffusers and minimal, if any, VOC coatings, life cycle costs are at a minimum.

TES tanks are most likely to be cost effective in situations where:

- Back-up cooling capacity is needed
- Load shifting is required or loads are cyclical
- Interruption in cooling water cannot be tolerated by a mission critical operation



Highland Tank®



Stoystown, PA

One Highland Rd.
Stoystown, PA 15563
(814) 893-5701

Manheim, PA

4535 Elizabethtown Rd.
Manheim, PA 17545
(717) 664-0600

Watervliet, NY

958 19th St.
Watervliet, NY 12189
(518) 273-0801

Greensboro, NC

2700 Patterson St.
Greensboro, NC 27407
(336) 218-0801

Friedens, PA

1510 Stoystown Rd.
Friedens, PA 15541
(814) 443-6800

Clarkston, MI

4701 White Lake Rd.
Clarkston, MI 48346
(248) 625-8700

Mancelona, MI

9517 Lake St.
Mancelona, MI 49659
(231) 587-8412