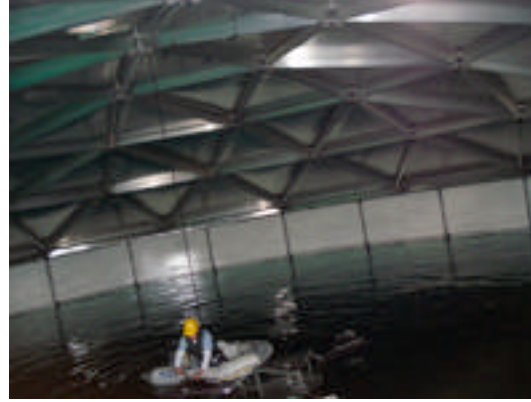


Summarized Case Study (PW)

Key Words: potable, circulation, stagnation, short-circuiting, THM, chlorine, ice



Photos: The first photo shows the entrance and the potable water storage tank/reservoir. The second picture shows the SolarBee Service Crew installing the SB125012PW unit in the tank.

Reservoir Use: This potable water tank/reservoir serves as the source of potable water for the city.

System Overview and Reservoir: This is an elevated, domed roof standpipe tank/reservoir. It is approximately 28 ft in height, with a diameter of 76 ft and a capacity of 0.84 MG. The tank has two entry hatches.

Reported Problem Before SolarBee Installation: Problems prior to SolarBee installation were related to stagnation, poor water circulation, and potential short-circuiting. They had problems reaching the trihalomethane (THM) and haloacetic acid (HAA) levels for compliance with the EPA Stage 2 requirements. It was also difficult to maintain a stable chlorine residual in the tank and an adequate level in the distribution system. Furthermore, ice build up during the winter was a problem.

SolarBee Installation: Date: March 2007, installed one (1) SB1250v12PW unit in the tank.

Results: Since the SolarBee was installed, customer reports 40-50% reductions of both THMs and HAAs, with concentrations dropping to less than 10 µg/L THM and less than 20 µg/L HAA. These reductions have kept levels well below Stage 2 requirements. Preventing stagnation and short-circuiting through enhanced circulation has enabled the water treatment plant to maintain chlorine residuals at 0.4 -0.5 mg/L throughout the distribution system by keeping tank residuals at only 0.6-0.8 mg/L, rather than more than 1 mg/L needed before deploying the SolarBee. In general, the customer is now using less chlorine, complying with EPA requirements, preventing biofilms from forming on the tank walls, and no longer experiencing freezing problems in the winter. The customer is very pleased with the water quality and economic benefits achieved with the SolarBee. As summarized by the Director of Public Works, "SolarBee makes life a lot easier and water a lot better".

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