

CUSTOMER:

IRC Aluminum & Stainless 9038 N. Sever Ct. Portland, OR

FACILITY

IRC is a non-ferrous metal distributor that provides water-jet cutting services to the Northwest. Water-jet cutting is a unique technology that can cut a variety of materials with no mechanical stress or heat effect. From plastics to 6" titanium plate, IRC can make precise cuts including complex designs. Customers from artists to the aeronautics industry use products made from this process.

High pressure pumps used to create the water jets rely on large quantities of continuous "single pass" cooling water that discharges to the sewer after one use. Cooling is typically accomplished using chillers and/or cooling towers but IRC needed a customized system to meet the needs of their unique operation. Water Bureau efficiency staff met with IRC personnel to help this company meet its goals of improving water efficiency and reducing their environmental impact.

IMPROVEMENTS

An innovative design was developed that combined the reuse of pump cooling water together with "free cooling" to the atmosphere using outdoor storage tanks. The system reuses cooling water in various cutting operation areas providing more savings than a chiller system alone. The resulting design is expected to reduce cooling water demand by almost 815,000 gallons per year or 28% of the total use.

Future modifications will take advantage of additional free cooling with a fan and radiator system to transfer heat to the fabrication building and further reduce water consumption.

The high capital cost to install the system was reduced by an incentive from the Water Bureau reducing the simple payback to less than 2 years.

RESULTS

Using gallons consumed per minute of pump operation, a savings of 55% has been realized during the first winter operational period. Savings during the summer are expected to be lower, resulting in an average savings of 28% annually.



**ANNUAL WATER SAVINGS:
815,000 gallons**

January 2013