

Example EMS benefits from Public Organizations

Sacramento Municipal Utility District

The Sacramento Municipal Utility District is currently the nation's sixth largest community-owned electric utility in terms of customers served, serving about 1.2 million residents in its 900 square mile service area. SMUD's EMS fenceline includes discrete operations within the Power Generation Department of the Energy Supply Business Unit. The Energy Supply Business Unit currently has 392 employees and is responsible for providing reliable electrical energy and ancillary service products to its retail and wholesale customers. Over the two-year project period, SMUD committed \$133,020 in direct labor costs encompassing 1,964 hours of labor time. Travel and other costs associated with the implementation totaled an additional \$20,499. However, over the two-year EMS implementation, SMUD has already experienced the following returns on investment:

- Completed repair of a hydroelectric tunnel leak with preliminary estimates of water savings of approximately 800 acre-feet per year, which represents 1,000 to 2,200 MWh of generation valued at \$50,000 to \$110,000
- Conserving approximately 140 million cubic feet of natural gas per year with a value of \$680,000 per year, by implementing a contract change to reduce operation of an auxiliary steam boiler. This also reduces future air emissions by approximately one ton per year of NOx plus VOC (i.e., ozone precursors) and 7,200 metric tons per year of CO₂ greenhouse gases.
- Completed removal of 80,000 gallons of surplus fuel oil from a thermal generation plant, receiving about \$37,000 for its value, and reducing ongoing risks of accidental spills and releases.
- Proceeding with installation of a new diesel emergency standby generator with NOx emissions three times lower than the existing diesel generator; and Proceeding with installation of a new propane emergency standby generator with NOx emissions nearly ten times lower than the existing gasoline generator. Gasoline fuel storage at this site will also be eliminated.

Orange County Convention Center

The Orange County Convention Center in Orlando, FL defined the Building Services and Waste Management Division as their EMS "fenceline". The Division committed \$44,351 in direct labor costs and 1,749 in direct labor hours over the two year EMS implementation period. Within the two-year implementation period, the Convention Center has already achieved significant returns on investment, including:

- 3,100 tons recycled of solid waste recycled in one year – 50% of the 6,200 total tons produced;
- More than 53,000 trees saved through recycling;
- More than 260 tons of cardboard recycled;
- More than 157,000 cubic yards of landfill space preserved; and
- \$31,000 in tipping fees saved, plus \$11,000 in recycle rebates.

Kent County Department of Public Works

The Kent County Department of Public Works in Dover, DE defined the Wastewater Treatment Facilities as their EMS “fenceline”. The fenceline includes a 16 MGD wastewater treatment facility with private sector biosolids treatment and land application of a Class A biosolids, 59 pump and lift stations and over 45 miles of force main and main sewer lines, and 39 staff with an additional 14 engineering staff with some responsibilities related to wastewater operations. The Department committed \$101,691 in direct labor costs and 2,933 in direct labor hours over the two year EMS implementation period. Within the two-year implementation period, Kent County has already achieved significant returns on investment, including:

Potential energy savings of \$200,000-300,000 per year, as a result of serious consideration of installing a renewable wind energy system, an on-site bio-gas station, and/or a generator load sharing agreement;

- Effective employee succession program to contain knowledge especially with a majority of 20+ year operators approaching retirement;
 - Potential reduced air pollution by 5 million pounds of CO2 per year, 20% hydrocarbon emissions, 12% carbon monoxide emissions, and 12% in particulate emissions, as a result of switching to B20 biodiesel as a fuel source;
 - Improved chlorine delivery system whereby personnel on all shifts follow a consistent process;
 - 85% reduction in Sanitary Sewer Overflows; and;
 - Improved public image and award recognition
- 2004 NACo Achievement Award
 - 2004 Clean Water Act Pretreatment Program runner-up
 - Environmental Protection Magazine Facility of the Year
 - Third party certified to ISO 14001 (Environment), ISO 18001 (Safety and Health), and National Biosolids Partnership