

2007

Environmental Objectives and Targets Tracking Form

Date: June 7, 2007

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Significant Aspect: Green House Gas (GHG) emissions resulting from the combustion of fossil fuels used to generate electricity continue to remain a significant environmental aspect of our operations.

Environmental Objective: To reduce GHG emissions through improvements to Heating, Ventilation & Air Conditioning (HVAC) systems and lighting efficiency upgrades over the 2004 baseline year by 2008. A goal of a five (5) per cent reduction over this period, normalized against an appropriate measurement of production is the target. The number of oscillators produced is the normalization factor utilized in the calculation. For 2006, a 6.8 was the normalized reduction.

Legal Requirements: None

Other Requirements: The decrease in GHG emissions as a result of a decrease in total plant energy usage aligns with one of Vectron's commitments made under the EPA Performance Track Program.

Technological Options: Several options are available, and will be combined to yield a reduction in energy consumption in spite of an increased rate of production over the 3 year period of the Performance Track Program

Financial Options/Incentives: During 2007, the replacement in the Lufran water heater serving the HFF area with a more efficient Tytan water heater will result in an energy savings of 149,600 kWh, yielding a cost savings of \$19,598 per year. Using the EPA carbon dioxide conversion factor, it is anticipated that this change will yield a reduction of CO₂ equivalents of 88 metric tons per year.

Operational Requirements: Decreased production in 2007 versus 2006 leads to an elimination of one shift, but a significant change in the normalization factor with the reduction in oscillators produced.

Business Requirements: The business needs to cut operating costs whenever feasible

Views of Interested Parties: A replacement of the Lufran heater (greater than 12 years old) will improve reliability of the processes it supports.

Prime Option: Lighting upgrades in the SAW Chase and HR Offices, combined with motion/light sensors in the cafeteria form the lighting improvement phase of this project. A cut-back in the pressure setting of the main compressor, from 105 psi to 100 psi yielded savings in excess of 38000 kWh/year. The larger energy savings will be realized by building individual water heaters for the Sodium Hydroxide Etch System, and replacing and downsizing the existing 2-column Lufran Heater with more efficient single column heater.

Secondary Option: None considered

Budgetary Cost Prime Option: The cost of replacing the Lufran with a Tytan water heater is \$15,500, including installation. The annualized savings, based on the current delivered cost of electricity of \$0.131 /kWh will be \$19,600. The return on investment for this project will be approximately 9 months. The 2 remaining Lufran heaters that are in service will be examined to determine if similar cost savings yielding a GHQ emission reduction can be achieved.