8. Conclusions and Recommendations

This report includes analysis of eight energy cost saving measures and three packages. SEDAC recommends the implementation of Package 3 which includes upgrading the lights to higher efficiency lamps, installing vending machine controllers, air sealing the facility, installing a building automation system and implementing new thermostat setpoints and setbacks, and replacing the existing boilers with new steam boilers.

Implementation of this package would result in an estimated savings of 2.9% of the energy consumption and save 2.7% of energy costs annually. Though this represents a small percentage of the total energy costs of the facility, this is equivalent to a savings of $50,067 in energy costs annually. SEDAC identified an estimated $17,678 in possible incentives through ComEd.

The implementation of this package also results in a reduction of emissions due to utility consumption. Carbon dioxide emissions would be reduced by approximately 2.7%, nitrogen oxide emissions by 2.5%, and sulfur dioxide emissions by 2.5%.

The savings and life cycle analysis associated with this package are shown in Table 28 and Table 29. Remember that these numbers are estimates intended to identify which measures have the greatest potential for savings, not necessarily to quantify the exact savings for each ECRM. For assistance with implementation of these measures, see Appendix C – Service Providers and Trade Allies.

SEDAC would like to thank J.L. Clark for participating in the Smart Energy Program.

Table 28. Summary of Package 3 Savings

ECRM	Annual Cost Savings	Annual Savings (kWh)	Annual Savings (therms)	Demand Reduction (kW)	Facility Energy Savings
ECRM 1 – Lighting Upgrade	$20,983	258,023	(2,394)	71	0.4%
ECRM 2 – Vending Machine Controllers	$1,083	14,209	-	-	0.03%
ECRM 4 – Air Sealing	$12,250	110,000	6,800	-	0.6%
ECRM 7 – Boiler Replacement	$19,519	-	34,300	-	2.0%
Package 2	**$50,067**	**382,232**	**36,806**	**71**	**2.9%**

Table 29. Summary of Package 3 Life Cycle Analysis

ECRM	Initial Cost	Simple Payback (yrs)	Incentives	Internal Rate of Return	Net Present Value	IRR with Incentives	NPV with Incentives
ECRM 1 – Lighting Upgrade	$46,322	2.2	$16,598	44%	$82,607	70%	$99,205
ECRM 2 – Vending Machine Controllers	$2,280	2.1	$1,080	46%	$6,079	90%	$7,159
ECRM 4 – Air Sealing	$10,000	0.8	-	122%	$95,594	-	-
ECRM 7 – Boiler Replacement	$137,927	7.1	-	13%	$105,320	-	-
Package 2	**$196,529**	**3.9**	**$17,678**	**25%**	**$184,283**	**27%**	**$201,961**

Notes to Table 28 and Table 29:

(1) The life cycles for the analyses of ECRMs 1, 2 and 4, ECRM 7, and Package 2 were performed with values of 10 years, 20 years, and 15 years, respectively.
(2) Incentives are from ComEd's Smart Ideas Program.
(3) IRR and NPV calculations assume a discount rate of 10%
(4) Results are in today's dollars on a pre-tax basis based on $0.08 per kWh and $0.57 per therm.
(5) This analysis does not include a likely increase in energy prices over time.
(6) When multiple ECRMs are implemented together, results vary from application of individual ECRMs.