Project Overview

NIAC Intern: Amy Wolterman
Major: Mechanical Engineering
School: University of Nebraska-Lincoln

Industrial Assessments

- Vishay-Dale in Columbus, NE
  BD in Holdrege NE
- Noah's Ark in Hastings, NE
- Nebraska Nitrogen in Geneva, NE

During the course of the summer, I completed 4 assessments for the University of Nebraska Lincoln's Industrial Assessment Center (NIAC). These trips consisted of traveling to facilities in Columbus, NE; Holdridge, NE; Hastings, IA; and Geneva, NE. I served as analyst, safety manager, equipment coordinator, and lead analyst on these assessments. The goal of each facility assessment was to identify specific assessment recommendations (ARs) that could be implemented to reduce overall operating costs and utility consumption.

Results:
The potential benefits of the recommendations over the summer are summarized in table 1-1 below.

Table 1-1: Overall Summary of Assessment Recommendations

AR Recommendation	Energy Savings	GHG Savings $MTCO_2e$	Annual Savings ($/year)	Implementation Cost ($)	Payback Period (years)	Other Savings
Replace Boiler with Water Heaters	84,000 MMBTU	3,306	280,467	165,000	0.6	
Reduce Compressed Air Leaks	18,855,739 kWh/year	17,988	101,810	900	<0.1	
Compressed Air Management Plan	1,263,789 kWh/year	1,206	56,446	20,000	0.4	
Implement VFDs in BOG Fans	39,858 kWh/year	17.2	12,761	24,000	1.6	
Brine Reclamation	N/A	N/A	10,312	3,180	0.3	55,000 lbs of Salt
Implementing Humidity Controls in the Economizers	144,288 kWh/year	138	6,637	204	<0.1	
Totals	**20,303,674 kWh/year** **84,000 MMBTU**	**22,655.2 MTCO2e**	**$468,433/ year**	**$213,284**	**0.5 years**	**55,000 lbs of Salt**