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CIVE 422
Summer Project Overview

Chapter 1 – Project Overview

As a part of the Nebraska Industrial Assessment Center this summer, I participated in three assessments in various locations in Nebraska. The companies that I visited were Nebraska Plastics in Cozad, Collins Aerospace in York, and ASC Capacitor in Ogallala. At these businesses, the team performed energy assessments that focused on electrical usage and demand, water usage, and natural gas usage. Typical areas that were considered on an assessment include: lighting, compressed air, cogged V-belts, HVLS fans, demand management, and deduct meters among many other recommendations. Based on the findings during the assessments, our team provided technical assistance in the form of a written recommendation report to help the companies implement practices to save energy, resources, and money.

Between the three assessments I wrote 4 formal assessment recommendations and 2 recommendations that were classified as "other measures" since their implementation may be beneficial in some way, but not entirely feasible. Table 1.1 outlines the various savings of each recommendation.

Table 1.1: Summer 2021 Assessment Recommendation Summary

Recommendation	Resource Savings	Annual Cost Savings ($/year)	Implementation Cost ($)	Payback Period (years)	GHG Reduction (MTCO2e)
VFD Installation	2,425,199 kWh/year	$74,696/year	$154,720	2.1	2,416.737
HVLS Fan Installation	6,720 kWh/year	$10,271/year	$16,980	1.7	6.694
Cooling Tower Deduct Meter	786,240 gallons/year	$2,893/year	$1,106	0.4	4.808
Lighting Replacement	133,806 kWh/year 935 kW-month/year	$29,547/year	$51,486	1.7	133.284
Demand Management System*	2,333 kW-month/year	$45,770/year	N/A	N/A	-
Brine Reclamation System**	6,448 pounds of salt/year	$1,569/year	$21,450	13.7	-

*This AR was downgraded into other measures since there was not an implementation cost that was easily available. All quotes that were found required a site visit by a vendor.

**This AR was downgraded into other measures because the payback period was higher than desired. This is because there were unexpected factors that significantly increased the implementation cost.

Another point to note is that the greenhouse gas (GHG) reductions are more of an indirect savings that are not as tangible as other savings. For this reason, they are not reported with the other savings in the formal recommendation report. In addition to GHG reductions, there are several other potential indirect benefits that include: worker productivity/comfortability, safety, and improved relations with local utilities.