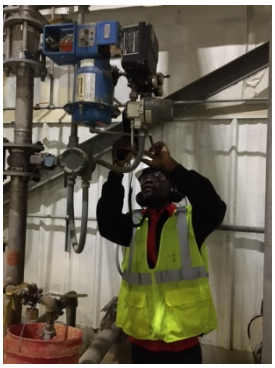
Project Overview



Intern: Yves Cedric Tamwo
Major: Mechanical Engineering

1.1-Assessments

The main goal of Nebraska industrial assessment center (NIAC) is to assess facility plants in order to provide them recommendations that will reduce their energy consumption and waste, as well as save money. During this summer I participated in two assessments which the first one was on May 6, 2021, at McCain a food processing company that make foods such as onion rings. Each NIAC Analyst had to evaluate some equipment and come out with recommendations. For this assessment, I worked on two Assessment recommendations (ARs): Compressed Air system and Lighting. The second Assessment was on May 26, 2021, at Trenton Agri Product an ethanol plant where I had to work on Compressed Air system. Data collected during each assessment helps with the analysis that help come out with the recommendations detailed in chapter 2. **Table 1-1** summarizes the savings from both assessments.

ARs	**Annual Energy Savings (kWh/year)**	**Annual Cost Savings ($/year)**	**Implementation Cost ($)**	**Simple Payback (year)**
compressed air systems	728,840	$33,565	$4,500	0.2
Lighting	0	$60,636	$112,800	2.0
Compressed air system	83,494	9,653	4.500	0.5
Total	**812,334**	**103,854**	**121,800**	

***Table 1- 1*:** Assessments Savings Summary

1.2- Special Project

As an NIAC intern I am required to work on a special project that should help future interns to be more successful when it comes to assessment and recommendations. My special project was on Compressed Air assessment and my goal is to provide a complete guide that will help perform a compressed Air assessment using a step-by-step explanation going from the pre-assessment through the Assessment Day all the way to the Assessment recommendations. Compressors are among the most equipment used in installations since more than 90% of industries use compressed air daily. Compressed air acts as a source of energy for a variety of tools and machines, and it is often an important and well-integrated part of many production processes. Industrial plants use compressed air for a multitude of operations, including supplying pneumatic tools, packaging, automation equipment, conveyors, blowing, vacuuming and much more. Compressed air is also used because it can withstand high loads for long periods without the risk of overheating, it is safe and easy to use. Based on NIAC experience, compressors can use up to 40% of the electricity bill in most installations. This guide will also help the analyst to collect data at the appropriate moment, avoid estimations on the analysis and therefore be more accurate. The guide gives a detailed explanation on how each step of the assessment is perform and how the Analyst will take advantage of knowing them in advance to well assess the system.