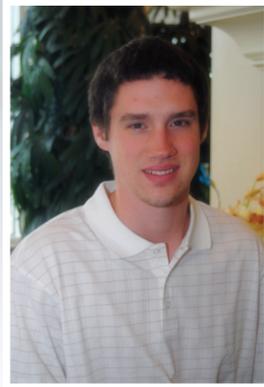


ARMOUR-ECKRICH MEATS LLC



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COMPANY BACKGROUND

Armour-Eckrich Meats LLC is a subsidiary of Smithfield Foods, Inc. The Armour-Eckrich plant is located in Mason City and mainly produces lunch meats and hams. The company has been operating at this location since 1978 and currently employs 250 workers. It is a 195,000-square-foot facility that produces about 70 million pounds of product a year.

PROJECT BACKGROUND

Armour-Eckrich uses nearly 300,000 gallons of water daily and has its own pretreatment wastewater facility. Opportunities for reducing water consumption were explored, as well as updating some wastewater processes to more efficient alternatives. General energy efficiency was also considered as timed light switches were installed.

INCENTIVES TO CHANGE

Smithfield Foods mandates that each of its plants operate at 100-percent compliance with all local, state, and federal environmental regulations at all times and has issued a statement that all plants will reduce energy and utility consumption by 10 percent by the end of 2011. Armour-Eckrich strives to make environmentally friendly decisions at all times and knows that economic benefit usually goes hand in hand with green processes.

RESULTS

Sludge Dewatering Press: Armour-Eckrich currently pumps its sludge into biobags to be sent to the landfill. Each biobag weighs approximately 8 tons and the company uses about one per week. More than 90 percent of what is being sent to the landfill is water. Replacing the biobags with a mechanical dewatering system could cut landfilling costs in half, as well as remove the cost of buying biobags.

Automatic pH Regulation: The Mason City wastewater plant requires that all wastewater from Armour-Eckrich be within a pH range of 5.5 to 9.0. Left alone, the pH would fluctuate outside those boundaries with sugars and seasonings being drained during production and soaps being drained during cleaning. A maintenance worker must be on staff at all times to manage the pH by manually adding acid or base and it is possible to use more chemical than is needed to neutralize the stream. An automatic pump has been installed to add base any time the pH dips to a set level and will only add as much base as is necessary to stay within city requirements.



Sausage Casing Soakers: In sausage production there are casings that must be soaked in warm water before use. Instead of running a hot stream of water over the casings, a tank with an electric heater has been installed to reduce the amount of water required to keep the casings warm.

Spray Nozzles: Third shift sanitizes and cleans the production area. This shift uses more water than either of the other shifts even though there is no production taking place. Replacing the spray nozzles with lower volume nozzles with a cone spray option could reduce water usage by up to 25 percent.

Regulated Warehouse Lights: Two warehouses keep lights on nearly constantly, regardless of how much they are used. Replacing the lights with timed light switches where there is bird activity and motion sensors where there is metalworking being done will reduce electric power usage in those warehouses by nearly 95 percent.

CONVENTIONAL AIR POLLUTANTS AND GREENHOUSE GASES DIVERTED IN STANDARD TONS

Total for all sectors					
CO ₂	SO ₂	CH ₄	N ₂ O	CFC	PM-10
514.96	0.25	190.10	103.88	1.93	0.05



PROJECT	ANNUAL COST SAVINGS	ENVIRONMENTAL RESULTS	STATUS
SLUDGE DEWATERING PRESS	\$38,999	290 TONS	IN PROGRESS
AUTOMATIC PH REGULATION	\$27,230	4,862 GALLONS OF 50% SODIUM HYDROXIDE	IMPLEMENTED
SAUSAGE CASING SOAKERS	\$2,874	499,200 GALLONS OF WATER	IN PROGRESS
SPRAY NOZZLES	\$32,939	6.5 MILLION GALLONS OF WATER	RECOMMENDED
REGULATED WAREHOUSE LIGHTS	\$1,964	27,840 KWH	IMPLEMENTED

