

## **AR No. # - Description**

*Nitrogen Gas Reduction = 19,300,000 SCF/yr*

*Estimated Total Cost Savings = \$100,000/yr*

*Estimated Implementation Cost = None*

*Simple Payback = Instant*

## **Recommended Action**

Eliminate the use of the Nitrogen tunnel when packaging parameters do not call for it's utilization.

## **Background**

In the primary can packaging line, a nitrogen tunnel is used to reduce oxygen levels before final sealing. The nitrogen tunnel was needed for specific products being packaged, as the final nitrogen injection before sealing was not effective. The nitrogen tunnel became a standard line operation for all products. However, The cost of running the nitrogen tunnel may not be worth the added insurance of reduced oxygen levels for all products. The Nitrogen Tunnel is not sealed, and requires a generous amount of Nitrogen to continuously flow.

## **Anticipated Savings**

The anticipated savings are based on the flow rate of Nitrogen into the tunnel, and the number of hours the tunnel is in operation. A minority of packaged products on the line explicitly require the Nitrogen tunnel, and for this calculation the assumption is made that the Nitrogen Tunnel is fully eliminated. On the Can production line, five flow meters reported the flow rate of nitrogen to be 20<sub>SCFM</sub>, 10<sub>SCFM</sub>, 7<sub>SCFM</sub>, 0<sub>SCFM</sub>, and 30<sub>SCFM</sub>, for a total of 67<sub>SCFM</sub>. The Line runs Four days a week under 3 shifts, or 4800 hrs annually with 50 weeks of production.

Nitrogen gas saved annually = (Fr)\*(hrs)

$$\text{Nitrogen gas saved annually} = 19,300,000 \text{ SCF}$$

Where.

Fr = Flowrate, 67<sub>SCFM</sub>, \* 60<sub>Min/Hr</sub> = 4020<sub>SCFH</sub>

Hrs = Annual hrs of operation, 96hrs\*50weeks of production = 4800hrs annually.

$$\text{Cost Savings} = (\text{Ngsa}) * (\text{Nc})$$

$$\text{Cost Savings} = \$100,000$$

Where:

Ngsa = Nitrogen gas saved annually.

Nc = Nitrogen gas cost, \$.517 per 100 SCF

**Implementation Cost**

No cost is associated with this implementation.