

# SMMPA's Compressed Air Leak Correction Program

2013 CERTs Conference – February 20, 2013  
Sharing Best Practices to Meet  
Conservation Goals

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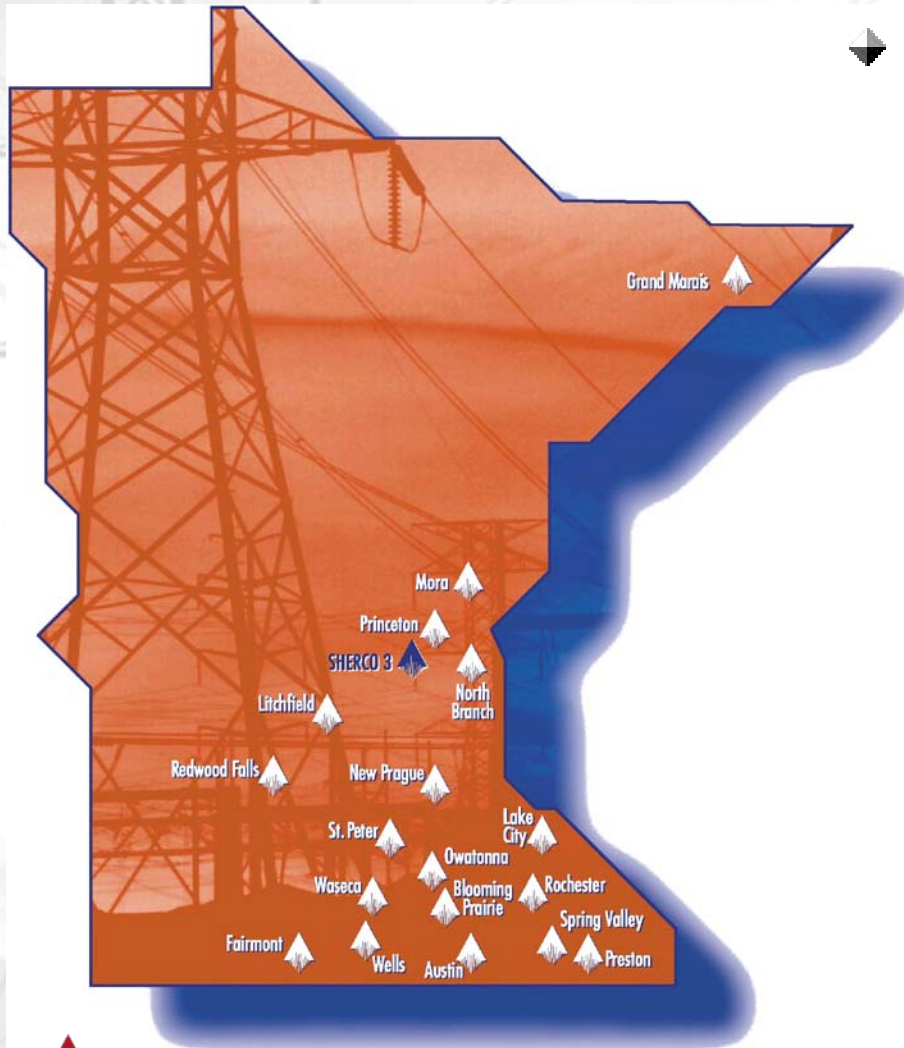


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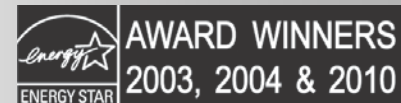


- ◆ SMMPA produces wholesale electricity for 18 non-profit municipal utilities in MN and develops innovative programs and services to help their customers use energy wisely.
  - Formed in 1977
  - Headquartered in Rochester, MN
  - Member utilities serve 110,000 total customers
  - Commercial & Industrial customers account for 70% of sales
  - CIP Goal = 43,000 MWh



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# Quiz: Which of the following statements is false?

1. The coldest windchill temp recorded in MN is  $-71^{\circ}\text{F}$ .
2. The total energy saved by all MN utilities in 2010 was 1,208,365 MWh.
3. Compressed air is free.



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2003, 2004 & 2010

# 1. The coldest windchill temperature recorded in MN is -71°F.

**TRUE** - According to the State Climatology Office, on January 9th and 10th, 1982, temperatures of -30°F and winds of around 40 mph were reported in Northern Minnesota. This translates to a windchill of -71°F!



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2. The total energy saved by MN utilities in 2010 was 1,208,365 MWh.

**TRUE** – According to the Energy Savings Platform, the total energy savings in 2010 was 1,208,364,574 kWh!



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# 3. Compressed air is free.

**FALSE!**

- ◆ Compressed air is the most expensive utility!
- ◆ It takes 7 hp of compressed air to equal the output of a 1 hp electric motor!



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# Compressed Air Is NOT Free!

Compressed air leaks are like leaving your doors and windows open during winter.

<u>Equivalent Orifice Size</u>	<u>Annual Waste</u>
● 1/8"	\$1,400
● 1/4"	\$5,600
● 3/8"	\$12,800

Huge source  
of wasted energy



Great savings  
opportunity!

*Annual Costs were calculated using 100 psig air, an average energy rate of \$0.08/kWh, and assuming 6,000 annual operating hours and 4.0 cfm/bhp.*



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# Great Savings Opportunity

- ▶ Compressed air systems account for 10% of all electricity used in U.S. manufacturing industries.
- ▶ The average facility loses an average of 25% of its compressed air to leaks.
- ▶ Some facilities lose as much as 80%!
- ▶ DOE has also reported that as many as 57% of facilities have taken little to no action to fix their leaks.



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# Why is there a misconception that compressed air is free?

- Customers don't know leak costs.
- Don't receive a monthly bill for compressed air.
- Most leaks are undetectable by ear, touch, or sight.



# Program Goals:

1. Give customers the tools to identify their air leaks.
2. Quantify leak costs/potential savings.
3. Encourage repairs.
4. Perform leak survey at least annually.



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# 1. Tools/Materials:

- Free use of ultrasonic leak detector
  - UE Systems: Ultraprobe 3000
  - Self-survey (additional cost savings)
  - No need to shut down processes
  - Ultraprobe saves leak "measurements"
- Reservation form
- Terms-of-Use Agreement
- Step-by-step instructions
- Leak tracking form
- Leak tags



## 2. Quantify leak costs/potential savings:

- Air leak cost/savings “quick calculator”.
- Ultraprobe software (UE Systems)
- Initial survey and follow-up survey required to verify repairs (within 60 days of initial survey).



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# 3. Encourage Repairs:

- ▶ Potential savings.
- ▶ \$4 rebate per hp of air compressor capacity (excluding backup).
- ▶ At least 50% of leaks must be repaired (many can be fixed during survey).
- ▶ Most customers repair at least 90% of leaks.
- ▶ Minimum of 10 hp of compressors that operate at least 2000 hours/year.



## 4. Perform leak survey at least annually:

- By routinely detecting and fixing air leaks, 5-10% leakage can be maintained.
- Reserve the Ultraprobe for customer annually.
- A rebate will only be paid once per year for repairing the same leak.
- At least four participating customers have purchased their own Ultraprobe.





# Customer Benefits:

- ◆ No cost to customer other than staff time.
- ◆ Almost immediate payback.
- ◆ Reduced electricity costs.
- ◆ Increased equipment life.
- ◆ Delay/remove need for additional air compressor capacity.



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# Utility Benefits:

- Builds/maintains customer and trade ally relationships
- High B/C ratio
- CIP energy savings
- “Foot in the door” - Provides an opportunity to discuss additional energy savings opportunities
- Delays new generation
- Environmental benefits



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# Program Promotion:

- ▶ Utility reps
- ▶ Utility websites
- ▶ Email blasts to customers
- ▶ Partner with trade allies
- ▶ Factsheets
- ▶ Success stories
- ▶ Limited-time bonus rebate



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# Program Impacts (2011-2012):

- 24 completed leak surveys
  - 4 contractor surveys
  - 20 self-surveys
- 3,300 MWh saved
- \$40,000 total incentives paid
- 4 pending leak surveys



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# Lessons Learned:

- Customer priority is running their business – not doing leak surveys. Stress the benefits.
- Must educate customers that compressed air isn't free.
- Show cost (potential savings) of wasted compressed air due to leaks.
- Keep the process simple.
- Minimal rebate needed to encourage leak repairs (but some customers still need an additional push to fix leaks).
- Structure incentive so customers can determine it before performing survey.
- Follow-up with customers annually.
- "Too good to be true" mentality.



For additional information about programs offered by SMMPA Member utilities, visit:

[www.SaveEnergyInMyCommunity.com](http://www.SaveEnergyInMyCommunity.com)

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