Lessons learned along the way in the geothermal business

By Steve Smith, President – Enertech Companies
Welcome

- Geothermal Equipment
  - R22
  - Reciprocating Compressors (Single Speed)
  - PSC Blower Motors
  - Low Efficiencies
  - Many Are Still Running Today
- Many Open Loop (Pump & Dump)
- Closed Loop Utilized Sparadically
  - Remember Square Pipe?
- Geothermal Is An Oddity
- Electric CoOps & Utilities Show Interest
- Geothermal Slides Under Solar Tax Credit (With Solar Panels)
Geothermal Installation Requirements

- Proper Training
- Proper Sizing
- Proper Design / Application
- Proper Installation
- Proper Start-up Procedures
- Proper Servicing

- Some Equipment Improvements
- Applications Steer Towards Closed Loop With Polybutylene Pipe Dominating
- Square Pipe Disappears (Duh!)
- Geothermal Is Still An Oddity
- Electric CoOps & Utilities Embrace & Promote The Technology
Major Equipment Improvements
  ◦ ECM Blower Motors
  ◦ Scroll Compressors
  ◦ Some Two-Speed (Copeland Recip)

Closed Loop Dominates Over Open Loop & The Industry Moves Over To Polyethylene

Non-Pressurized Technology Emerges For Closed Loop

Geothermal Remains An Oddity

Electric CoOps & Utilities Promote Geothermal For The “Natural” DSM

- Equipment Improvements Continue
  - ECM Blower Motors Widely Accepted
  - Scroll Compressors Dominate Single Speed
  - Two-Speed Technology Struggles With Limited Success
  - Two-Circuit / Two-Stage Offers An Option

- Closed Loops Provide More Options
  - Slinky, Directional Bore, Etc.

- Geothermal Still Remains An Oddity

- Electric Utilities Pull Away From DSM Due To Deregulation
Geothermal Systems 2001 – 2005

- Equipment Improvements Continue
  - Can You Say R-410A?
  - Two-Stage Scroll Emerges
  - Two-Speed Recip & Two-Circuit / Two-Stage Are Phased Out

- Yep, You Guessed It! Geothermal Still Remains An Oddity

- Support From Electric Utilities & CoOps Dwindles Compared to 1990 – 2000
Significant Equipment Evolution
- R-410A Begins Domination
- Two-Stage Scroll Widely Accepted

We’re Not Mainstream, But We’re Out Of The Oddity Phase

Some Electric Utilities & CoOps Re-engage In Geothermal Promotion / Marketing

TAX CREDIT Is Here Until 2016!
This Is Now More Important Than Ever...
Geothermal Installation Requirements

- Proper Training
- Proper Sizing
- Proper Design / Application
- Proper Installation
- Proper Start-up Procedures
- Proper Servicing
We’ve Seen It All

- Forced Air
- Radiant
- Zoning
- Residential
- Commercial
- Industrial
- Institutional

It Works Everywhere When Properly Designed, Sized, Installed, & Serviced
Thank You!

Enjoy The Rest Of The Conference!