# Recovery of Flash Gas From Storage Tanks at an Offshore Production Platform Using Scroll Compression Technology

Presented by

G.W. (Bill) Schneider



# Case Study Background

- Major independent offshore GOM platform refurbishment

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# Scroll Compression Technology

- Typical A/C compressor
- Hermetically sealed positive displacement machine using two interleaved scrolls – electric driven
- In VRU applications since 2004

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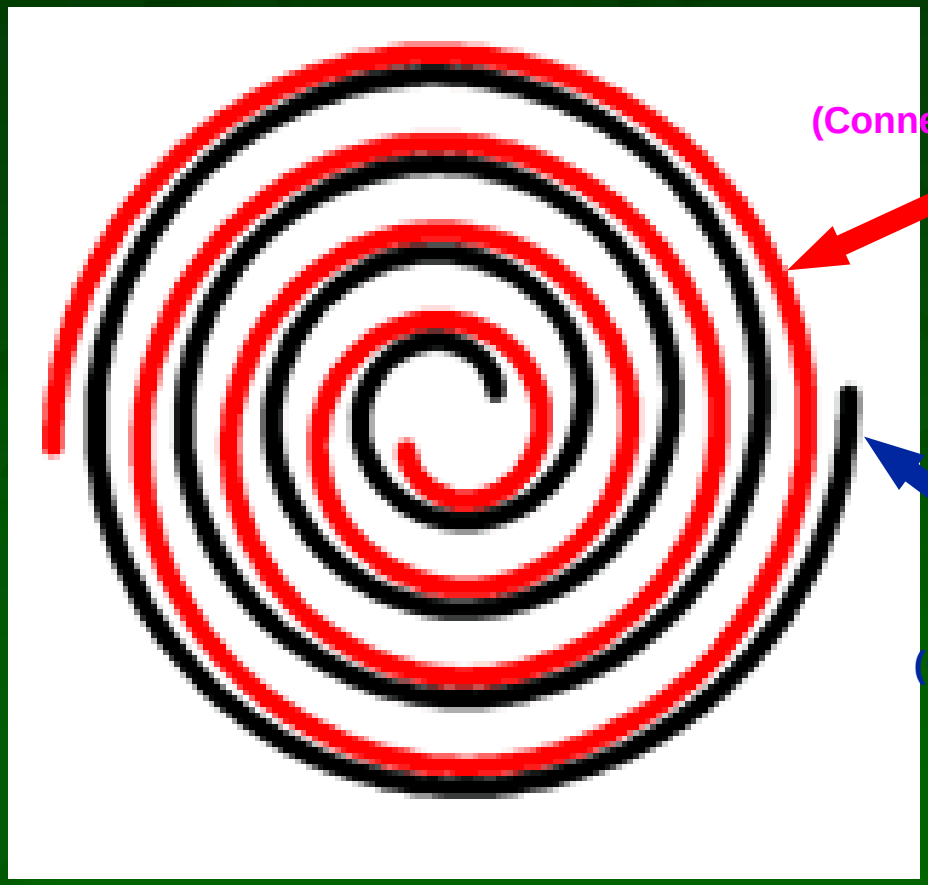
# How does Scroll Compression work?
# …continuous orbiting motion



**“Fixed Scroll”**
(Connected to compressor body)

**“Orbiting Scroll”**
(Connected to crankshaft and orbits rather than rotates)

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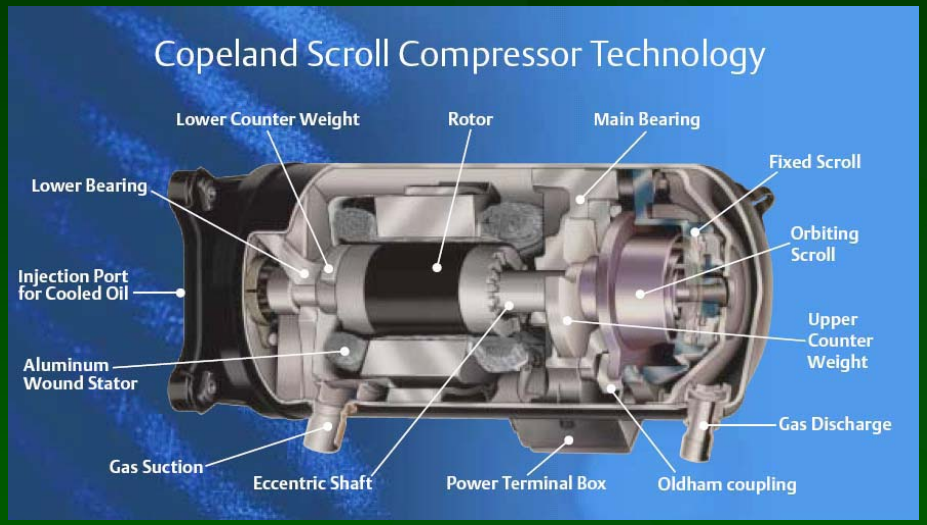
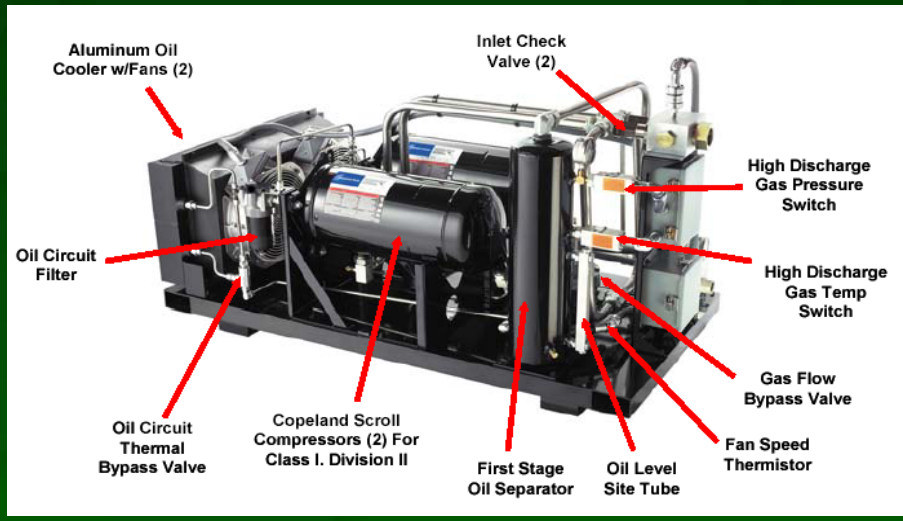
# Copeland Scroll® Compressor

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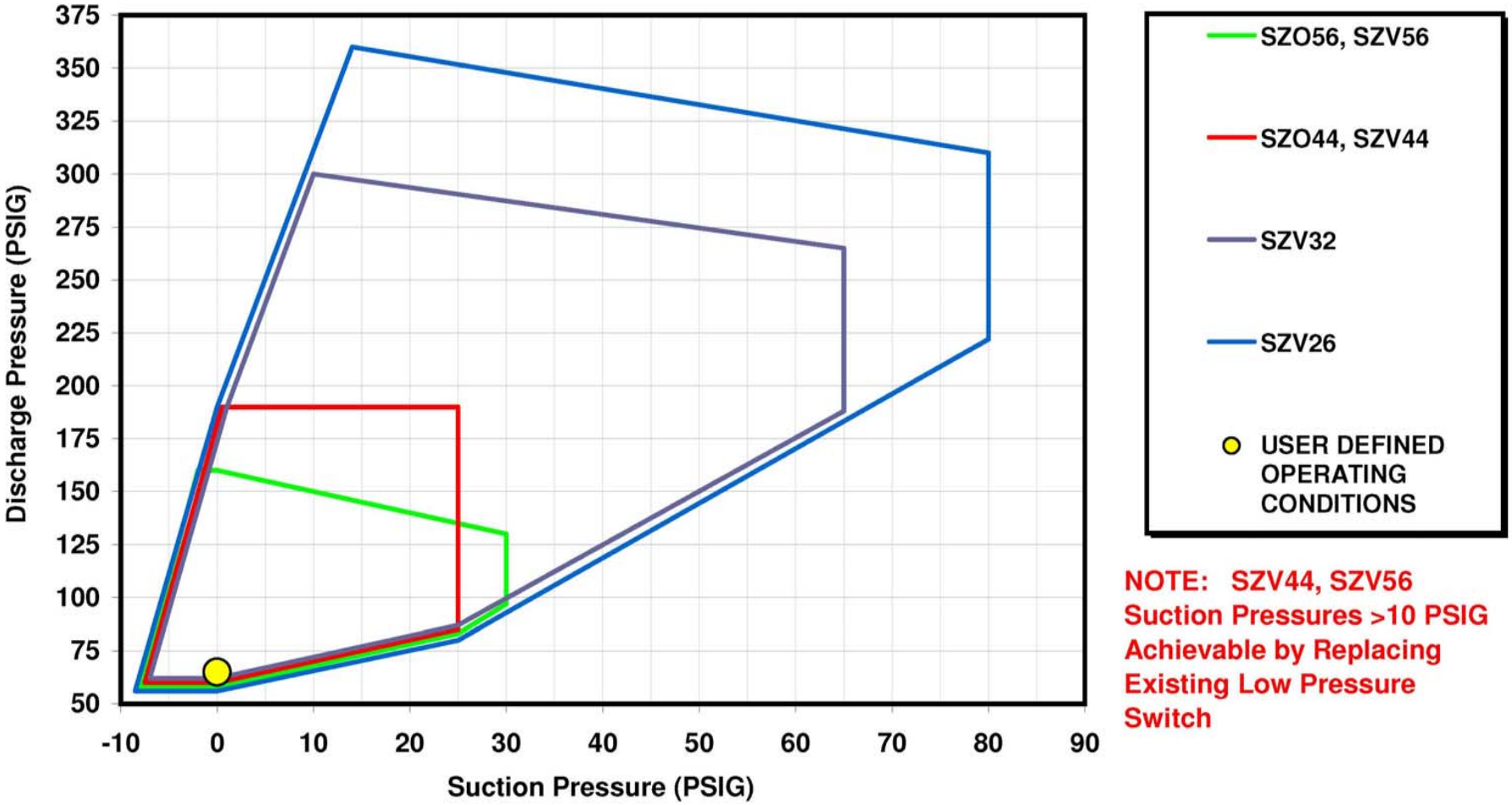
# Operating Map for Dual Copeland Scroll[R] Gas Compression Modules




**NOTE: SZV44, SZV56 Suction Pressures >10 PSIG Achievable by Replacing Existing Low Pressure Switch**



Copeland Scroll

EMERSON Climate Technologies

# Benefits of Scroll Compression for Vapor Recovery

- Hermetically sealed design
- Smaller footprint
- Less maintenance, more run time
- Low noise level
- Lower overall cost than typical VRU

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# Application of Scroll Technology

- Recovering gas from oil storage tanks and heater treater and discharging pressurized gas to larger compressor
- VRU system requires electrical power and purge gas for recycle
- High molecular weight gas recovery

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# COMM Scroll Compressor Package

- 4’ wide x 8’ long skid
- Inlet gas scrubber and aftercoolers
- Control panel with PLC and variable frequency drive (VFD)
- Volume capacity 200,000 scf per day

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# Offshore System Modifications (API RP 14C)

- Three part epoxy coating
- Safety system additions
  - Scrubber high level alarm
  - High discharge pressure alarm
  - Low suction pressure alarm
  - High pressure alarm on tanks
- Located control panels in MCC

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# Scroll Package Pictures


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# Investment Summary

| | |
|---|---|
| Standard VRU package | $135,000 |
| Saltwater modifications | $ 15,000 |
| Safety modifications | $ 5,000 |
| Installation | $ 40,000 |
| Startup/Commissioning | $ 6,000 |
| Total Investment | $201,000 |

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# Results

Average recovery – 58,000 scf per day

Peak recovery rate – 215,000 scf per day

Simple Payout – 15 months

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# Summary

- Lowers emissions of VOCs and GHGs
- Lower maintenance costs
- Requires small footprint
- Cost effective and efficient VRU for offshore environment

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Headquarters in Lafayette, Louisiana  USA