Building the Proper Relationships and Toolset for Efficient SF6 Tracking

Presented by:

Polar Technology

SF6 LIFECYCLE MANAGEMENT

The SF6 Industry's:

Environmental Compliance & Lifecycle Management Solution provider

www.SF6Authority.com

EPA SF6 Mass Balance Approach

(Decrease in SF6 inventory)

+ (Acquisitions of SF6)

– (Disbursements of SF6)

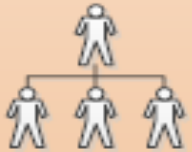
– (Net Increase in Total Nameplate Capacity of Equipment Operated) =

SF6 Emissions

Copyright © 2014, Polar Technology, LLC.,

Managing all Aspects of your Enterprise

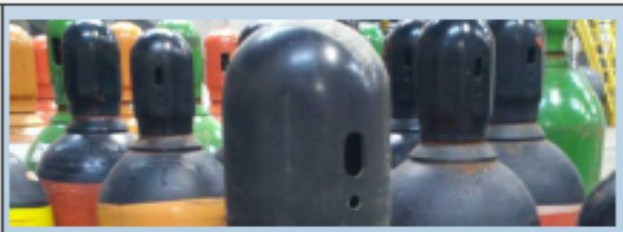
Virgin Gas



Virgin Gas Purchased By Multiple Location
1. Capital Expenditures
2. Maintenance

Virgin Gas Provided by OEM's
1. Bottles Provided with new installs
2. Multiple OEMS
3.Multiple Locations
4.Too much gas

Field Activities



Bottle Inventories
1. Multiple Locations
2. Paper logs
3.Annual Audits Required

Nameplate Capacity of Equipment
1. Multiple Locations
2. Active/In-Active Equipment

Transfers
1. Multiple Locations
2. Different Logging Methods

Recovered SF6

PolarTechnology

Reclaim Material
1. Sent to multiple vendors
2. Multiple shipments
3. Not all vendors provide reliable data

VIRGIN GAS Provider

Heel Reports
1. Multiple Vendors
2. Multiple Dropoff points
3. Not all virgin providers handle heels correctly

Managing Virgin Gas (Purchases)

SF6 DELIVERY CERTIFICATE

Date of shipment:

Gross Weight:

Lab Technician:

Sales Order Number:

Purchase Order:

Serial #	Cylinder ID	Cylinder TW	Cylinder Gross Weight	Gas Weight	Delivery Location	DOT Expiration	SF6 Purity (%)	
	0001							
	0002							
	0003							
	0004							
	0005							

Managing Heels and Recovered SF6

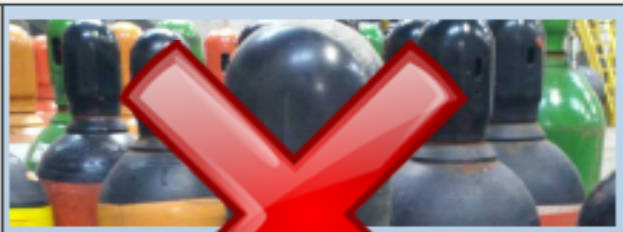
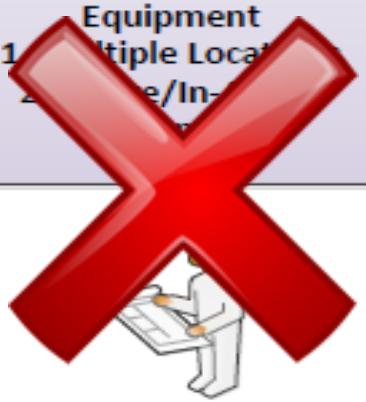
SF6 RETURN CERTIFICATE

Date of shipment:	
Gross Weight:	
Lab Technician:	
Return Order Number:	
Purchase Order:	

Serial #	Cylinder TW	Cylinder ID	Cylinder Gross Weight	Gas Weight	Gas Orgin	DOT Expiration	SF6 Purity (%)
254411	114.6	1158	185.2	70.6	Charlotte	4/12	94.2
331235	116.2	1172	166.1	49.9	Charlotte	6/13	88.75
1236310	115.4	2135	220.2	104.8	Charlotte	4/12	92.1
81235	116.3	1257	198.2	81.9	Hartwell	3/10	89.64

Copyright © 2014, Polar Technology, LLC.,

Managing all Aspects of your Enterprise

Virgin Gas	Field Activities	Recovered SF6
Vi as hased By M ocation 1. Capi Expenditures 2. Maintenance	 Bo ories 1 ple ions Paper 3.A ual Audits uired	Polar Techno y Reclaim M ial 1. o m e vendors 2. ipments 3. Not ndors provide re able data
Virgin Gas Provided M's 1. B Provide new sta 2. MS 3.Mul ations 4.Too ch gas	Nameplate Capacity of Equipment 1 tiple Loca e/In-  Transfers 1. Multiple Locations 2. Different Logging Methods	VIRGIN GAS Provider Heel Repo 1. Multiple s 2 le D points 3. roviders han correctly

Cylinder Inventory Levels

- Status Quo
  - Have end of year inventories executed by each locations
- Problems
  - Lost or unaccounted cylinders can create phantom emissions
  - Labor intensive process
  - Unreliable data
  - No understanding of inventory till EOY

Copyright © 2014, Polar Technology, LLC.,

Cylinder Inventory Solution

Inventory

This page lists all the inventory available in your account. Use the options below to filter the results shown.

Location: --All Locations-- ▾ Category: Bottle ▾

Status: --All Statuses-- ▾ Additional Search: [ ] Search

Name	Type	Location	Current Gas Weight	Gas Capacity
11-99-1	Bottle	Truck 7	30 lbs	30 lbs
11-99-2	Bottle	Switchyard 7	50 lbs	60 lbs
34534	Bottle	Switchyard 99	124 lbs	115 lbs
435634	Bottle	Switchyard 7	17 lbs 3 oz	115 lbs
4554	Bottle	Switchyard 99	64 lbs 11 oz	115 lbs

Nameplate Capacities

- Status Quo
  - Adjust at end of year with new installs / retrofits
  - Rely on legacy software (SAP/Oracle ETC)
- Problems
  - Unlogged equipment can create in-accurate NPC
  - Substantial data collection required at end of year
  - No understanding of inventory till EOY

Copyright © 2014, Polar Technology, LLC.,

Nameplate Solution

Leak Rate:	0.22%
	Notify me when...
System Manager:	(None)
Material Status:	Virgin
Notes:	
Sub-systems:	(None)

Import Sub-Systems

Edit Breaker Details

Service History

Event ID	Component	Location	Service Date	Company/Tech	Installed From	Extracted To	Net Gas Added	System Leak Rate
927		Equipment locaiton 2	3/26/2014	In-House Karan Garg, Sf6 Test	3 lbs 5 oz of SF6 from 4554	2 lbs 3 oz of SF6 to 435634	1 lbs 2 oz	0.22%

Upsides of Digital Tracking

- Dynamic leak rates for breakers
  - Problematic units more easily identified
  - Better decision making on equipment maintenance through clear service history
- Purchases and disbursements for all vendors tracked in one portal
- Eliminate Phantom Emissions
- Can be used/accessed by all stakeholders
- 1-click GHG reporting!

Copyright © 2014, Polar Technology, LLC.,

Managing all Aspects of your Enterprise

Virgin Gas

Vi as hased By
M ocation
1. Capi Expenditures
2. Maintenance

Virgin Gas Provided M's
1. B Provide new
sta
2. MS
3.Mult ations
4.Too ch gas

Field Activities

Bottle Inven s
1. Multiple ions
gs
3.Annua s Required

Nameplate Capa f
Equipme
1. Multiple ions
2. ctive
ent

nsfers
1. Multiple Locations
2. Different Logging
Methods

Recovered SF6

PolarTechno y

Reclaim M ial
1. o m e vendors
2. nipments
3. Not ndors provide
re able data

VIRGIN GAS Provider

Heel Repo
1. Multiple s
2 le D points
3. roviders
han correctly

Questions/Comments

Chase Sanders

VP – TrakRef Software – Polar Technology

Csanders@refrigerantauthority.com

www.SF6Authority.com

615-686-5414

Polar Technology

SF6 LIFECYCLE MANAGEMENT

Copyright © 2014, Polar Technology, LLC.,