Refrigerant Risk Management

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Overview

- Background
- Issue
- Solution
- Centralized Management
- Lessons Learned
- Summary
Background: Hill AFB

Hill AFB—a large facility:

- Main Base: 6,600 acres
- UTTR: 1,000,000 acres
  (11,000,000 acres of military operating space)
Background: Hill AFB ODS

- Appliances subject to 40 CFR 82
  - Over 300 appliances > 50 lbs
  - Over 1000 appliances < 50 lbs
  - 16 refrigerant recycling processes

- Largest units:
  - Two 1,200 lb units supporting mission-critical applications

Hill AFB-owned refrigerant recycling unit
Background: Regulatory Drivers

  - Addresses the handling, recycling and disposal of ODS-containing appliances
- Hill AFB Title V Air Quality Operating Permit:
  - Requires Hill AFB to adhere to 40 CFR 82 requirements
- Amendments to Title 40, Part 82 Proposed on 15 Dec 2010
  - EPA is revising the rule to ensure that facilities repair appliances and don’t just keep adding refrigerant for the same issue repeatedly
**Issue**

- Managing ODS-possessing organizations dispersed throughout the base
- Disconnected data systems used by these various organizations to capture ODS data
- Managing the activities of off-base ODS maintenance contractors

**Common ODS violations:**
- Inadequate recordkeeping associated with equipment/technician certifications
- Inadequate recordkeeping involving servicing details, leak checks, and leak rates
Solution

- Improve compliance monitoring, record keeping, and reporting of Ozone Depleting Substances (ODS) at Hill AFB by:
  - Add language to contracts regarding compliance with ODS requirements
  - Implementing centralized refrigerant management application
    - Reducing the risk of non-compliance involving recordkeeping for ODS
    - Meet software certification and accreditation requirements
    - Ensure fast records availability for regulators
  - Conduct periodic audits of ODS equipment
Centralized Management: Selection of Data System

Application of APIMS:

- The logical choice for comprehensive ODS management
- Database infrastructure already in place—just needed modifications for ODS
- The official air quality data system for the Air Force
  - In use at over 60 U.S. military installations
- Managed by the Department of Defense Information System Agency
Centralized Management: APIMS Enhancements

- APIMS will house:
  - Equipment model numbers and serial numbers
  - Charge capacities
  - Service dates
  - Net refrigerant loss
  - Annualized leak rates
  - Amounts of refrigerant recovered and added
  - Types of refrigerants used
  - Technicians’ names

Create ODC Usage Record

- Equipment:
- Model #:
- Serial #:
- Capacity:
- Last Service Date:
- Technician:
- Refrigerant:
- Recovered:
  - (in lbs)
- Added:
  - (in lbs)
- Net Loss:
  - (in lbs)
- Service Date:
  - yyyy/mm/dd
- Repair Description:
- Validate Net Loss?
  - Yes
  - No

Save | Cancel
Centralized Management: Implementation

- Hill AFB data collection and management efforts include:
  - Inventorying equipment subject to Title VI requirements
  - Archiving refrigeration compliance information
    - Technician certification
    - Maintenance information

- Data collection methods:
  - Using existing appliance information mined from disconnected systems
  - Conducting inspections and research to fill in gaps
Centralized Management: Implementation

- Inventory results:
  - 1,350 refrigerant-containing appliances identified

- Greatest benefit of inventory:
  - Identifying appliances with multiple circuits and the refrigerant charge of each circuit:
    - Enables Hill to identify circuits > 50 lbs. charge subject to leak rate requirements
Centralized Management: Inspections

Hill AFB improvements to APIMS for ODS management include:

- Increased inspection frequency for refrigerant recovery equipment from annually to semi-annually
- Improved checklists for ODS source inspections
- Identification of refrigerant-containing equipment maintenance contractors to ensure compliance with 40 CFR 82
- Identification of construction projects with new equipment subject to 40 CFR 82
Lessons Learned--Risk Reduction

- ODS compliance risks:
  - Maintenance and repair contractors
  - Leak rate calculation and reporting
  - New/Modified appliances

- By improving ODS recordkeeping, the AF-approved air quality data management system will reduce risk

Convenience Store Cooler
Benefits and Results

The improvements will support:

- Leak rate recordkeeping and reporting
- 5-year records archive:
  - Technician credentials
  - Equipment certifications
  - Equipment maintenance logs
  - Repair reports
Summary

- EPA is cracking down on ODS non-compliance
- There are many compliance risks associated with ODS
- To improve ODS data management, Hill AFB is improving their air data management system
- The AF-approved air quality data management system will improve recordkeeping and ease reporting for ODS
Questions?
Background: Regulatory Drivers

- Montreal Protocol of 1987:
  - Intent to cease production of ODS
  - Incorporated into Clean Air Act (CAA)

- Title VI of the CAA 1990 amendments, “Stratospheric Ozone Protection”:
  - Encourages using safer chemicals
  - Requirements incorporated into 40 CFR 82
Hill AFB ODS Background

- ODS Compliance Drivers, cont’d:
  - AFD-070613-041, *Air Force Refrigerant Management Handbook* does NOT address:
    - Recent Green House Gas (GHG) inventory regulations
    - EPA’s Significant New Alternatives Policy (SNAP) covering phase-out and alternative products
Hill AFB ODS Background

- Nation-wide increased focus on ODS compliance during EPA multi-media inspections

- Common ODS violations:
  - Inadequate recordkeeping associated with equipment/technician certifications
  - Inadequate recordkeeping involving servicing details, leak checks, and leak rates

- Air Force Material Command initiated Notice to Airmen (NOTAM):
  - Prompted facilities to proactively gather data to illustrate ODS compliance in case of inspection
Improving ODS Procedures

Partially in response to the NOTAM, Hill AFB data collection and management efforts include:

- Inventorying certain equipment subject to Title VI requirements
- Creating a refrigerant leak rate calculation algorithm, and archiving refrigeration technician certification documents in the AF-approved air quality data management system

Data collection methods:

- Using existing appliance information
- Conducting inspections and research