EG 3-1: Ozone Depleting Compound Management	
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I. Activity Description

Activities involving the storage, use, release and disposal of Ozone Depleting Compounds (ODCs) including chlorofluorocarbons (CFCs) and hydro chlorofluorocarbons (HCFCs or HFCs) associated with:

1. Centralized and point-of-use heating, ventilation and air conditioning (HVAC) systems and equipment
2. Commercial refrigeration equipment
3. Mobile vehicle air conditioning ("MVAC") equipment
4. Halon-based fire suppression systems

Section 608 of the Clean Air Act prohibits the intentional release of CFC-12 (a.k.a. R12) or HCFCs such as, R-22 (a.k.a. HCFC-22), R-142b and R-124 into the atmosphere. R-12 is a Class II controlled substance per 40 CFR, Part 82, Subpart A, Appendix B. Section 609 of the CAA, establishes standards for recovering and recycling CFC-12 refrigerant from motor vehicle air conditioners (MVAC), training and certification requirements for technicians to handle this equipment and recordkeeping and notification requirements for service facilities

II. Potential Environmental Risks

A. The Clark County Department of Aviation (CCDOA) - Environmental, Health & Safety (EHS) office has identified the following environmental concerns associated with these activities:

1. Air pollution
2. Improper management of refrigerant

B. Potential consequences from performing the activity incorrectly:

1. Intentional and unintentional releases of ODCs into the environment
2. Property damage
3. Personal injury damage to the environment
4. Citations, Notices of Violation and related (financial & non-financial)

III. Critical Operating Requirements

A. Prohibited Activities

1. Intentional venting of ODC-containing refrigerants or other ODCs into the atmosphere
2. Failure to comply with technician training requirements

3. Failure to comply with ODC leak rate calculation and recordkeeping requirements
5. Failure to perform and record a leak rate calculation for equipment with over 50 pounds of ODC charge
6. Improper disposal of appliances containing regulated ODC refrigerant charge

B. Required Activities

1. ODC containing equipment must have the compounds recovered and the amounts documented prior to disposal
2. A label must be affixed to the appliance documenting the removal of all oil and ODC prior to disposal

C. General Considerations

1. Each contractor, operator or tenant that owns, maintains, services or repairs stationary or mobile equipment containing regulated charges of ODC refrigerants, is responsible for understanding the applicable regulations and managing their activities accordingly. This Environmental Guideline is intended as guidance only and does not supersede any state or federal regulations
2. Technicians that install or remove refrigerants, or that maintain or repair stationary or mobile air conditioning or refrigeration equipment. must have the proper training certification from an EPA-approved training provider
3. Records must be kept for maintenance activities on regulated equipment and ODC refrigerant consumption. Records must be kept on-site at the facility for a minimum of three (3) years
4. For any equipment with more than 50 pounds of ODC capacity, leak rate calculations must be performed for regulated equipment each time ODCs are added to the equipment charge. Leak rate records must be kept and used as a maintenance decision factor
5. Equipment losses of ODCs above regulatory thresholds trigger leak repairs which must be performed within the applicable regulatory timetable, 30 days, or the equipment must be drained of ODCs and mothballed until repair is completed. Additional time for repairs may be made available under certain circumstances. See " Compliance Guidance for Industrial Process Refrigeration Leak Repair Regulations Under Section 608 of The Clean Air Act," CMA/EPA October, 1995

D. Training Requirements

1. Technicians who repair or service ODCs on HVAC and motor vehicle air conditioners (CFC-12 and HFC 134a) must be trained and certified by an EPA-approved organization. Training programs must include information on the proper use of equipment, the regulatory requirements, the importance of refrigerant recovery and the effects of ozone depletion

E. Storage and Materials Management Requirements
   1. HVAC owners and operators should evaluate their systems emissions for regulation under the Clean Air Act
   2. HVAC refrigerants should be stored so as to prevent releases and emissions
   3. HVAC owners and operators should manage used oil in accordance with Federal and State used oil regulations
   4. HVAC operators should manage new and used refrigerant in accordance with federal and state ODC regulations

IV. Planning Requirements

A. Properly select equipment and systems that will utilize lower impact HCFCs and that will reduce leakage by design. Equipment and systems should allow addition and removal of refrigerant while minimizing loss

B. Emphasize the recovery, recycling and reuse of CFC/HCFC refrigerants. The operator should institute management systems that will emphasize recovery of refrigeration fluids that become contaminated. This includes using agents who in turn use self-certified equipment for refrigerant recovery that comply with USEPA standards pursuant to 40CFR, Part 82

C. Provide capability to measure CFC/HCFC refrigerant weights as added and removed from refrigeration systems. Perform leak rate calculations as required

   Record EPA Certification certificates for each technician and institute measures to assure these are the only personnel that work on applicable systems, i.e., stationary and MVAC and MVAC-like systems

D. A recordkeeping system should be instituted to organize and maintain applicable documents

E. Utilize climate-friendly refrigerant alternatives, whenever possible

V. Critical Tasks

A. Demonstrate compliance with technician certification requirements prior to conducting maintenance or repair activities on stationary or mobile equipment containing regulated ODC charges.

B. Demonstrate compliance with leak rate calculation requirements each time ODCs are added to regulated stationary equipment or systems with over 50 pound of refrigerant capacity.

C. Demonstrate compliance with leak rate calculation requirements prior to conducting maintenance or repair activities on stationary or mobile equipment containing regulated ODC charges

D. Demonstrate compliance with pre-disposal ODC removal/recovery and related documentation requirements prior to disposal of regulated ODC-containing equipment

E. Store refrigeration fluid containers in such a manner to prevent or minimize the possibility of leaks (i.e., cylinders should have plugs in their outlets to back-up valves)

VI. Emergency Response

A. There are no specific emergency response requirements associated with the release of ODCs. However, there is a requirement to repair systems with more than 50 pounds of ODC refrigerant capacity that have lost a significant percentage of their charge (15% for comfort cooling and 35% for industrial applications) prorated per a one year period since the last addition of ODC to the equipment OR one year, whichever is shorter. Leaking equipment should be shut down for repairs or maintenance to reduce the leakage rate below the applicable threshold level. If the leak rate cannot be repaired within the 30day time frame, the equipment should be removed from service until the equipment can be replaced

B. There is the possibility that the release of ODC materials in a closed area can reduce oxygen levels. This is a safety issue that needs to be reported to the Airport Control Center (702-261-5125) or the appropriate Customer Service Desk for the area (see phone numbers in Section IX below)

C. R-12 (CAS No. 75-71-8) and R-22 (CAS No. 75-45-6) releases at certain thresholds are reportable pursuant to the EPA List of Lists. There are no reportable quantities for R-414 or R-134a

VII. Inspection and Maintenance Requirements

A. Weigh and record amounts of ODCs added to systems or equipment during maintenance or as “trim” charges. Perform leak rate calculations every time ODCs are added to systems or equipment

B. Monitor and inspect regulated equipment performance problems that could lead to releases. The use of automated release detection equipment could assist in identifying releases during periods between leak rate calculations

C. Document all maintenance activities including leak rate calculations and weights of ODCs sent for disposal, recycle or reclamation

VIII. Expected Records and Outputs

A. Maintenance Records with Leak Rate Calculations for equipment with over 50 pounds ODC refrigerant capacity
   1. Operator to maintain records - minimum of three (3) years

B. Technician Training Records
   1. Stationary Systems and *MVAC or MVAC-like Systems* - minimum of three (3) years

C. Records documenting the full charge of appliances

D. Records, such as invoices, showing when service or maintenance is performed, when refrigerant is added to an appliance (or removed, in the case of disposal), when a leak inspection is performed, and when a verification test is conducted

E. If using an automatic leak detection system, documentation that the system is installed and calibrated annually and records of when the monitoring system identifies a leak and the location of the leak

F. Retrofit and/or retirement plans

G. Requests submitted to the EPA to extend the repair or retrofit deadlines

H. If a system is mothballed to suspend a deadline, maintain records documenting when the system was postponed and when it was brought back on-line (i.e., when refrigerant was added back into the appliance)

I. Records to demonstrate a seasonal variance

J. Reports on appliances that leak 125% or more of the full charge in a calendar year

IX. References

A. Phone Numbers
   1. CCDOA (Airport) Control Center (spill and release reporting)…….(702) 261-5125
   2. Henderson Executive Airport Customer Service Desk……(702) 261-4800
   3. North Las Vegas Airport Customer Service Desk……(702) 261-3806
   4. CCDOA Environmental, Health & Safety (EHS)……..…(702) 261-5692

B. Guidance Materials (list is not limited to the following)
   1. EPA Compliance Guidance for Industrial Process Refrigeration Leak Repair Regulations Under Section 608 of the Clean Air Act, October, 1995
   2. U.S. EPA Fact Sheets on Stationary Air Conditioning
   3. U.S. EPA Fact Sheets on Motor Vehicle Air Conditioning

C. Training Materials (list is not limited to the following)
    1. For Mobile Vehicle Air Conditioning Service technicians
    2. For Stationary ODC-Containing Refrigeration and Air-Conditioning Equipment Technicians

D. Related Environmental Documents (list is not limited to the following)
    1. Environmental Guideline EG 1-3, Cargo Loading and Offloading
    2. Environmental Guideline EG 1-4, Management of Aircraft Lavatory Water and Waste
    3.
    4. Environmental Guideline EG 1-7, Storage of Vehicles and Equipment Containing Chemicals
    5. Environmental Guideline EG 2-1, Painting and Paint Removal
    6. Environmental Guideline EG 2-2, Cleaning Washing - Indoor Industrial Surfaces
    7. Environmental Guideline EG 2-4, Janitorial Activities
    8. Environmental Guideline EG 3-1, Ozone Depleting Compound Management
    9. Environmental Guideline EG 3-2, Heating, Ventilation, and Air Conditioning (HVAC) Operations
    10. Environmental Guideline EG 3-4, Metal Finishing, Coating, Machining, and Cooling
    11. Environmental Guideline EG 3-5, Parts Washing
    12. Environmental Guideline EG 4-3, Procurement
    13. Environmental Guideline EG 4-4, Tenant Operating Guidance
    14. Environmental Guideline EG 4-5, Tenant Relocation or Closeout
    15. Environmental Guideline EG 5-2, Management of Petroleum Products (SPCC Plan)
    16. Environmental Guideline EG 5-3, Storage, Handling and Management of Hazardous Materials
    17. Environmental Guideline EG 6-1, Spill Response
    18. Environmental Guideline EG 6-2, Abandoned Material Response
    19. Environmental Guideline EG 7-1, General Waste Management
    20. Environmental Guideline EG 7-2, Management of Recyclable and Reusable Materials
    21. Environmental Guideline EG 7-3, Management of Hazardous Wastes
    22. Environmental Guideline EG 7-4, Management of Universal Wastes
    23. Environmental Guideline EG 7-5, Management of Special Wastes

E. Applicable Regulations (list is not limited to the following)
    1. NAC 444/NRS 444 Sanitation
    2. NAC 444A.005-444A.470/NRS 444A.010-444A.080 Recycling Programs
    3. NAC 445B Air Controls
    4. 29 CFR 1910 Occupational Safety and Health Standards
    5. 29 CFR 1926 Safety and Health Regulations for Construction
    6. 40 CFR Protection of the Environment
    7. Uniform Fire Code/NFPA
    8. Local Air Quality Regulations (Clark County Department of Air Quality)

F. Other Documents (list is not limited to the following)
    1. Air Conditioning and Refrigeration Institute, ARI 700-2006 or most recent issue
    2. Air Conditioning and Refrigeration Institute, ARI 740-2015 or most recent issue