REFRIGERANT USE PROCEDURE:

STATEMENT:

“It is the intent of the Medical University of South Carolina to comply in full with all Federal, State and Local regulations regarding the use, recovery and recycling of regulated refrigerants. It is also the intent of the University to be proactive in the prevention of any release of these substances into the environment.”

1. REFRIGERANT MANAGER:

The designated Refrigerant Manager shall oversee all procedures and guidelines hereto established. The Refrigerant Manager shall be responsible for ensuring that all procedures in regards to refrigerant handling are followed and the proper recording of refrigerant usage is maintained in accordance with the requirements of Section 114 (a) of the Federal Clean Air Act. It is the responsibility of the Refrigerant Manager to report any violation of these established procedures to the Director of Facilities Operations for appropriate action.

2. CERTIFICATION:

A. All technicians that service or repair air conditioning or refrigeration systems are required to have a Universal Level Federal Certification of Refrigerant Handling as required by 40 CFR part 82 subpart F. The Refrigerant Manager shall maintain a copy of all Technician certifications. No employee shall be issued nor use nor make any repairs to air conditioning and/or refrigeration equipment unless they possess Universal Level Certification.

B. All Technicians shall have in their possessions their Certification Card while performing repairs on air conditioning and refrigeration equipment.

C. The Refrigerant Manager shall be certified at the Universal Level.

3. REFRIGERANT PURCHASING AND ISSUANCE:

A. Only the Refrigerant Manager or his designee (designated in writing) will perform the purchasing of any refrigerant. No employee other than the Refrigerant Manager or his designee may request the purchase of any refrigerant.

B. Upon delivery of the refrigerant all drums and or tanks shall be tagged with a control number tag and the cylinder recorded into the refrigerant inventory. This inventory shall reflect the refrigerant type, amount and tag number. Refrigerant shall be stored in a secure area with access restricted to the Refrigerant Manager and/or his/her designee.

C. A monthly inventory of refrigerant shall be conducted to verify inventory levels. Discrepancies shall be reported to the MUSC Maintenance Manager immediately.
D. The Refrigerant Manager or designee only will issue refrigerant.

E. Refrigerant will only be issued to technicians having a Universal Level Refrigerant Certification.

F. Upon issuance, the tank or drum shall be weighed to determine the net contents of refrigerant. The drum contents shall be verified in the refrigerant inventory. An issuance entry shall be made in the inventory log indicating the Technician number, date, type and drum tag number that was issued.

G. At the end of the shift all drums issued shall be returned to the Refrigerant Manager or in the absence of the Refrigerant Manager, his designee, for check in. The drums shall be weighed and the net usage recorded. The technician will be required to complete a refrigerant usage report at the time the drum is returned. All drums are to be returned even if they are empty. Failure to return drums or properly complete the refrigerant usage sheet to the Refrigerant Manager or his designee may result in disciplinary action. Technicians may not keep drums in their possessions past their work shift assignment unless approved in advance by the Refrigerant Manager. No Technician may give a drum of refrigerant to another employee to keep or use.

4. **LEAK DETECTION:**

   A. Any equipment determined to be low in refrigerant charge **MUST** be leak detected with an approved form of leak detection, PRIOR to the addition of any refrigerant.

   B. If the refrigerant loss is significant (50% of total charge or more) the remaining refrigerant **MUST** be recovered and the unit pressurized with dry nitrogen to determine the source of the leak.

   C. If the refrigerant loss is less than 50%, an electronic leak detector, or soap bubbles may be used to determine the leak source.

   D. The leak source of any piece of equipment that is to remain in service must be determined prior to any additional refrigerant being added.

   E. The refrigerant manager has the right to place out of service any equipment when the leakage of refrigerant cannot be repaired.

5. **CONTRACTORS:**

   A. Any contractor or supplier wishing to do work for the Medical University that involves refrigerants or refrigerant-containing devices will be required to meet or exceed all EPA requirements. Copies of all contractors’ employee’s certificates and company policies and procedures relating to refrigerant recovery and control shall be provided to the MUSC Maintenance Manager prior to work being performed. Any firm wishing to do business with the Medical University will be required to be in full compliance with the EPA regulations and to use approved equipment and procedure when dealing with refrigerant using equipment and
devices. Failure to comply with the EPA requirements may result in removal from the job site.

6. **EQUIPMENT DISPOSAL:**
   
   A. All equipment that contains a registered CFC or HCFC scheduled to be disposed of by the Air Conditioning Shop must be sent to the A/C shop prior to its disposal.
   
   B. The refrigerant shall be recovered using approved recovery methods and refrigerant shall be stored in approved recovery cylinders.
   
   C. Equipment shall be evacuated to 2mm Hg.
   
   D. Compressor units shall be removed from equipment and the refrigerant connection shall be pinched or plugged in such fashion that oil cannot be released.
   
   E. Equipment shall be disposed of property and in compliance with EPA guidelines.
   
   F. The Air Conditioning Shop foreman or his designee will notify the MUSC Planned Renewal Program Manager of the removal and disposal of the equipment.

8. **RECOVERY OF REFRIGERANT GAS:**
   
   A. Recovered gas shall be weighed and logged prior to being transferred to bulk storage recovery cylinders.
   
   B. Recovered gas shall be placed in cylinders marked for the type recovered. Gas shall not be co-mingled.
   
   C. Gas, determined to be contaminated, shall be pumped to a bulk cylinder labeled contaminated gas.
   
   D. Once bulk recovery cylinders have been filled to nominal capacity they shall be sent to an approved EPA refrigerant recovery company for transfer.
   
   E. The disposal or sale of recovered gas shall be logged and a copy of the transaction kept with the recovery cylinder log.
   
   F. Payment for sale of recovered gas should be by check made payable and given to the Department of Engineering and Facilities Business Manager.
   
   G. Recovery of refrigerant includes residual refrigerant of used refrigerant cylinders.
   
   H. FREE VENTING ANY CFC OR HCFC FROM EQUIPMENT AND OR CYLINDERS IS PROHIBITED AND MAY RESULT IN DISCIPLINARY ACTION.

9. **CYLINDER DISPOSAL:**
A. Refrigerant cylinders, having all usable refrigerant used, shall be returned to the refrigerant manager. Refrigerant tags will be removed and used refrigerant shall be logged.

B. The cylinder shall have all residual contents recovered in an approved recovery cylinder.

C. The cylinder shall have a hole cut in it to prevent any reuse.

D. Cylinders shall be disposed of in a scrap metal collection dumpster.

10. RESPONSIBILITY AND ACCOUNTABILITY:

A. It is the responsibility of the Refrigerant Manager or in his absence his designated to ensure all procedures in this guideline are followed or modify if necessary to ensure compliance with the Federal Clean Air Act. Failure to comply with these guidelines may result in disciplinary action.

B. It is the responsibility of the Technicians and subcontractors to follow these guidelines and obey the current laws set forth in the Federal Clean Air Act. Failure to comply with these guidelines may result in disciplinary action up to and including termination.

C. All employees and contractors of the Medical University are required to report any unauthorized release of CFC or HCFC gases to the refrigerant manager for immediate action.

Refer to the Control of Hazardous Energy Sources found in the Occupational and Health Manual under Lockout/Tag out Policy.

This policy establishes the minimum requirements for the lockout/tag out of energy sources. Energy sources are defined as any electrical, mechanical, hydraulic, pneumatic, chemical, thermal or any other energy source.

These procedures govern those activities where the unexpected energizing, start-up or release of stored energy could occur and cause injury to an employee.
### Refrigerant Use Procedure

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| John C. Malmrose  
Chief Facilities Officer  
Engineering & Facilities | January 1, 2006 |
| John Wilson  
Facilities Operations Director  
Engineering and Facilities |