

COPY

Title: Refrigerant Management Program

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Effective Date	EN Common	<input checked="" type="checkbox"/>	07/01/05	Effective Date Exception	ANO		PNPS	
	ENN	<input type="checkbox"/>			ECH		RBS	
	ENS	<input type="checkbox"/>			GGNS		VY	
					IPEC		W3	
					JAF		WPO	

Basis Statement
Rev. 2
 This revision is an editorial change only to remove the "Clean Air Act" from the Obligation and Regulatory Commitment Cross-References section since there are no site-specific commitments as it relates to this procedure and to clarify that the 2nd & 3rd bullets under Section 5.2 are referring to units containing 50 pounds or greater of freon.

Procedures Affected By This Revision
 None

Process Applicability Exclusion (ENN-LI-100) / Programmatic Exclusion (ENS-LI-101)
 All Sites: Specific Sites: ANO GGNS IPEC JAF PNPS RBS VY W3

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1.0 PURPOSE

- [1] The purpose of this procedure is to ensure that Entergy Nuclear employees who purchase or handle refrigerants, as well as all employees and contractors who work on equipment containing refrigerant or halon, comply with EPA regulations for management of refrigerant and halon.

2.0 REFERENCES

- [1] 40CFR82, Subpart A, Appendix A, Class I Controlled Substances
- [2] 40CFR82, Subpart A, Appendix B, Class II Controlled Substances
- [3] 40CFR82, Subpart B, Servicing of Motor Vehicle Air Conditioners
- [4] 40CFR82, Subpart F, Recycling and Emissions Reduction
- [5] ARI Directory of Certified Refrigerant Recovery/Recycling Equipment
- [6] EPA-300-B-95-010 (October 1995), Compliance Guidance for Industrial Process Refrigeration Leak Repair Regulations Under Section 608 of the Clean Air Act (<http://www.epa.gov/ozone/title6/608/compguid/guidance.pdf>)
- [7] EPA-430-F-93-010 (June 1993), Stratospheric Ozone Protection Final Rule Summary - Complying With the Section 608 Refrigerant Recycling Rule (<http://www.epa.gov/ozone/title6/608/608fact.html#overview>)

3.0 DEFINITIONS

- [1] Accidental Release – the accidental release of a refrigerant to the environment. This does not include “de minimis” releases or releases caused by equipment failures such as failed seals, tubing failure or gasket failure.
- [2] Annual Leak Rate – the percentage of the total charge of a circuit leaking over a one-year period. The annual leak rate is determined based on the amount of refrigerant added to the circuit.
- [3] Appliance – any type of cooling equipment that uses a Class I or II substance as a refrigerant. Small appliances include water coolers, small refrigeration equipment and window AC units.

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- [4] Circuit – a discrete refrigeration system typically consisting of a compressor, evaporator, condenser and associated sub-components. Some appliances contain more than one circuit.
- [5] Class I Refrigerant - substances which are usually chlorofluorocarbons (CFCs).
- [6] Class II Refrigerant - substances which are hydrochlorofluorocarbons (HCFCs).
- [7] Critical Component - a component without which industrial process refrigeration equipment will not function, will be unsafe in its intended environment, and/or will be subject to failures that would cause the industrial process served by the equipment to be unsafe.
- [8] De Minimis Release – small refrigerant releases made in the course of servicing appliances and making good faith attempts to capture or reclaim refrigerant.
- [9] EPA – Environmental Protection Agency.
- [10] EPA Certified Technician – an individual who has taken and passed an EPA approved training course and test and holds a certification to one of the levels listed below.

NOTE

Personnel who service motor vehicle air conditioners are required to obtain an additional certification other than those listed below

- Type I - servicing of small refrigeration equipment.
 - Type II - servicing or disposing of high-pressure or very high-pressure refrigeration equipment.
 - Type III - servicing or disposing of low-pressure refrigeration equipment.
 - Type IV (Universal) - Servicing of all refrigeration equipment types.
- [11] Evacuate – to remove gas from a refrigeration circuit or a portion of a refrigeration circuit to a pressure below atmospheric pressure. Typically done utilizing recovery equipment or a vacuum pump.
- [12] Full Charge - the amount of refrigerant in a circuit required for normal operating conditions.

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- [13] High-Pressure Refrigeration Equipment - uses a refrigerant with a boiling point between -50 and 10 degrees centigrade at atmospheric pressure. It includes, but is not limited to, refrigerants 12, 22, 114, 500 or 502.
- [14] Industrial Process Refrigeration - refrigeration systems that are directly linked to an industrial process. An example would be a process chiller where the cooled medium is used to condense water from a process gas stream.
- [15] Industrial Process Shutdown - an industrial process or facility temporarily ceases to operate or manufacture whatever is being produced at the facility.
- [16] Low Pressure Refrigeration - uses a refrigerant with a boiling point above 10 degrees centigrade at atmospheric pressure. It includes, but is not limited to, refrigerants 11, 113 or 123.
- [17] Major Maintenance, Service or Repair - involves removal of compressor, condenser, evaporator or auxiliary heat exchanger coil.
- [18] Opening - any service, maintenance or repair on an appliance that would release Class I or II refrigerants from the appliance to the atmosphere unless the refrigerants were previously recovered from the appliance.

NOTE

Connecting and disconnecting hoses and gauges to measure pressures, add refrigerants or recover refrigerants is not considered "Opening"

- [19] Reclaim Refrigerant – the process of restoring refrigerant to the purity specified in ARI Standard 700-1993.
- [20] Recover Refrigerant – removal of refrigerant from an appliance and to store it in an external container.
- [21] System Mothballing - intentional shutdown of a refrigeration system undertaken for an extended period of time, where the refrigerant has been evacuated from the appliance or the affected isolated section of the appliance, to at least atmospheric pressure.
- [22] Test - a method of confirming that a leak has been repaired. EPA regulations require two types of tests, referred to as "verification tests" for equipment containing more than 50 pounds of Class I or II refrigerant. There are many methods to perform these tests. The method used shall be based on sound professional judgment.

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- Initial Verification Test - those leak tests conducted as soon as practicable after the repair is completed.
- Follow-up Verification Test - tests that involve checking repairs within 30 days of returning the system to normal operating characteristics or conditions.

[23] Virgin Refrigerant - refrigerant that has not been used since purchased and is usually contained in a disposable cylinder.

4.0 **RESPONSIBILITIES**

- [1] Contractors – are responsible for complying with the requirements of this procedure or equivalent requirements.
- [2] Maintenance Peer Group - is responsible for the maintenance and interpretation of this procedure.
- [3] Site Environmental Personnel – are responsible for evaluating releases of refrigerant to the environment for CERCLA and State reportability.
- [4] Site Maintenance Departments – are responsible for:
- (a) Complying with the requirements described in Section 5.0 of this procedure.
 - (b) Designating a lead person within the department to coordinate refrigerant management practices at the site.
 - (c) Ensuring refrigerant is purchased per EPA requirements and the requirements of this procedure.
 - (d) Ensuring that only certified technicians perform work activities on stationary refrigeration equipment.
 - (e) Ensuring that contractors under their responsibility comply with the requirements of this procedure or equivalent requirements.
 - (f) Notifying the appropriate site environmental representative of refrigerant releases to the environment unless otherwise exempted in Sections 3.8 and 5.2.4 of this procedure.

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NOTE

For refrigerant releases associated with the New York plants only, immediately report the release to site environmental personnel since there is a one pound reporting limit associated with the state regulations

- [5] Site Materials, Procurement & Contract Personnel – are responsible for:
 - (a) Issuing refrigerants only to EPA certified technicians or personnel working under the direction of EPA certified technicians.
 - (b) Ensuring purchase orders for EPA certified contractors contain a requirement to comply with the refrigerant regulations.
- [6] Site Planning, Scheduling & Outage Personnel – are responsible for:
 - (a) Including the appropriate instruction in pre-planned work orders for work on equipment containing refrigerant to ensure that the requirements of this procedure are met.
 - (b) Scheduling repair work and follow-up verification testing within the time period allowed by EPA regulations and this procedure.
- [7] Site Training Departments – are responsible for providing training of key management personnel on the requirements of 40CFR82, if requested by the Maintenance Department.

5.0 DETAILS

5.1 PRECAUTIONS AND LIMITATION

None

NOTE

Personnel working on refrigerant containing equipment are subject to fines and penalties for violating EPA rules and regulations

5.2 COORDINATION OF SITE REFRIGERANT MAINTENANCE ACTIVITIES

- [1] Maintenance lead responsible for coordinating refrigerant management practices at the site shall ensure that:

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- Records for all refrigeration circuits containing 50 pounds or more of a Class I or II substance per the requirements of Attachment 9.1 are maintained.
- Full charges of refrigeration circuits per the requirements of Attachment 9.1 are determined for units containing 50 pounds or greater of freon.
- Leakage rates per the requirements of Attachment 9.1 are determined for units containing 50 pounds or greater of freon.
- A log of virgin refrigerant usage in all appliances is maintained.
- Certified technicians adhere to the repair management practices described in Sections 5.3 and 5.4 of this procedure.
- Copies of EPA certifications for all certified technicians including contractors who work on Entergy Nuclear equipment are maintained and available for inspection.
- Records associated with refrigerant management are maintained for a minimum of three years.

5.3 CERTIFIED TECHNICIAN PREREQUISITE WORK PRACTICES

- [1] Certified technicians are to verify that the recovery or recycling equipment is appropriately labeled as follows:
- This equipment has been certified by [Approved Equipment Testing Organization] to meet EPA's minimum requirements for recycling or recovery equipment intended for use with [Appropriate Category of Appliance].
 - Label should also show the date of manufacture and the serial number (if applicable) of the equipment.
- [2] When certified technicians conduct work activities on refrigerant containing equipment and refrigerant is recovered, recycled or added to the equipment, perform one of the following.

NOTE

Refrigerant use should be reported to the refrigerant maintenance lead promptly, preferably on the same day the refrigerant was used.

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- Complete Attachment 9.2 and forward to the designated Maintenance lead responsible for refrigerant management at the site.
- Use an alternate form that includes the required information on Attachment 9.2.
- Enter the required information directly into the Refrigerant Compliance Manager (RCM) electronic database or equivalent.

[3] If the work is performed solely by a contractor, the invoice **should** be forwarded to the Maintenance lead in lieu of Attachment 9.2.

NOTE

See Attachment 9.3 for additional information and examples of what tasks non-certified individuals can perform

[4] Only certified technicians shall perform work on refrigerant containing equipment that involves opening the system or that may reasonably lead to venting or other loss of refrigerant. This includes but is not limited to:

- Adding and Recovering refrigerant.
- Evacuating a circuit or a portion of a circuit.
- Taking an oil sample, or adding or removing oil.
- Dismantle a system for disposal, if the work may reasonably result in a release of refrigerant.

[5] Refrigerant **shall** only be vented under the following situations:

- “De minimis” quantities released while making good faith efforts to recapture and recycle or safely dispose of refrigerant.
- Nitrogen and refrigerant mixture used as holding charges or leak tests, provided that prior to adding nitrogen, the system is evacuated to the appropriate levels specified in Attachment 9.4. When R-22 is to be used as a tracer gas for the plants in New York, usage shall be limited to less than one pound since the State of New York has a reportable quantity of one pound for R-22.
- Small releases of refrigerant resulting from purging of hoses or from connecting or disconnecting hoses to charge or service systems.

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- [6] Releases other than those identified in Section 5.2.5 above shall be reported to the appropriate site environmental representative. For plants in New York, refer to Attachment 9.5 for additional release reporting requirements.
- [7] Certified technicians, prior to opening a refrigeration system for maintenance, service or repair, but not including oil changes are required to:
- Recover the refrigerant in either the entire circuit or the part to be serviced to a system receiver or certified container using certified recovery/recycling equipment.
 - Verify that the appropriate evacuation level has been obtained per Attachment 9.4 unless:
 - (1) Evacuation of refrigerant to the atmosphere is not to be performed after work completion and the work is not considered major.
 - (2) Due to leaks, evacuation levels are not attainable, or would contaminate refrigerant being recovered.
 - Perform the following if evacuation of refrigeration equipment to the atmosphere is not to be performed after work completion and the work is not considered major:
 - (1) Recover to a pressure of no higher than 0 psig prior to opening if it is considered high-pressure or very high-pressure equipment.
 - (2) Pressurize to 0 psig prior to opening if it is considered low-pressure equipment.
 - Perform the following when opening small refrigeration equipment for maintenance, service or repair:
 - (1) Recover 80% of refrigerant when using equipment manufactured prior to November 15, 1993.

NOTE

Recovery to four inches of mercury satisfies the 90% recovery requirement

- (2) Recover 90% of refrigerant when using equipment manufactured after November 15, 1993 while the compressor is operating, or 80% when it is not.

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5.4 INDUSTRIAL PROCESS REFRIGERATION EQUIPMENT REPAIRS

- [1] If after evaluating leakage rate for industrial process refrigeration equipment it is determined the trigger rate has been reached, the certified technician must initiate a Condition Report and perform one or more of the following:

NOTE

Process System Shutdown means the industrial process equipment or system is shutdown, not just the refrigeration equipment.

- Initiate the necessary actions to repair the system within 30 days of adding refrigerant or 120 days if a process system shutdown is required, and track the repair work to ensure:
 - (1) Repair will be completed within the 30-day allowable period.
 - (2) Repair plan includes an initial verification test.
 - (3) A follow-up verification test is scheduled within 30 days of the repair.
 - Develop Retrofit/Retirement plan per Attachment 9.6.
 - Mothball the equipment per Attachment 9.6.
- [2] If the repair effort is unsuccessful, initiate an EPA report per the requirements of Attachment 9.7. Contact site environmental personnel for additional guidance if needed.

5.5 COMFORT COOLING & COMMERCIAL REFRIGERATION EQUIPMENT REPAIRS

- [1] If after evaluating leakage rate for comfort cooling or commercial refrigeration equipment it is determined the trigger rate has been reached, the certified technician must initiate a Condition Report and perform one or more of the following:
- Initiate the necessary actions to repair the system within 30 days of adding refrigerant and track the repair work to ensure:
 - (1) Repair will be completed within the 30-day allowable period.
 - (2) Repair plan includes an initial verification test.

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- Develop Retrofit/Retirement plan per Attachment 9.6.
- Mothball the equipment per Attachment 9.6.

[2] If the repair effort is unsuccessful, initiate an EPA report per the requirements of Attachment 9.7. Contact site environmental personnel for additional guidance if needed.

5.6 SYSTEM OIL CHANGES

[1] Unless the circuit or isolated portion has been reclaimed to the evacuation levels in Attachment 9.4, certified technicians performing refrigeration system oil changes are to:

- Evacuate or pressurize the circuit or isolated portion to a pressure no higher than 5 psig and then remove oil, or drain the oil into a system receiver to be evacuated or pressurized to a pressure no higher than 5 psig.
- Not change oil on a system where pressure is higher than 5 psig.
- Only apply a slight positive pressure to help expel the oil, if needed.
- Not use nitrogen to pressurize low-pressure systems or receivers.

5.7 DISPOSAL OF REFRIGERANT CONTAINING EQUIPMENT

[1] Prior to disposal, recover refrigerant to the levels specified in Attachment 9.4 unless leaks prevent it or the refrigerant would become contaminated.

[2] If leaks exist or the refrigerant has the potential to become contaminated, perform the following:

- Isolate leaking from non-leaking components, where possible.
- Recover non-leaking components to levels specified in Attachment 9.4.
- Recover leaking components to lowest level attainable without contaminating the refrigerant, but in no case exceed 0 psig.

5.8 DISPOSITION OF RECOVERED REFRIGERANT

[1] Recovered refrigerant shall be reused in the same circuit if possible.

[2] If recovered refrigerant cannot be reused in the same circuit and the refrigerant is clean and free of contaminants, it may be reused in another circuit.

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- [3] If the refrigerant is not to be reused on-site, it shall be delivered to a refrigerant reclaimer.

5.9 TRANSFER OF REFRIGERANT

CAUTION

Handle all compressed gas bottles and cylinders in compliance with safety standards and procedures

- [1] Transferring refrigerant liquid or vapor into disposable type cylinders is prohibited.
- [2] Recovered refrigerant may only be transferred and stored in approved containers.
- [3] Approved containers are to be labeled in accordance with the following requirements:
- Label all containers per chemical control program labeling requirements (i.e. chemical type hazards etc.).
 - If the container is clean and empty, label clean/empty.
 - If the container is empty but has been used for a specific refrigerant, label empty and identify the refrigerant.
 - If the container contains contaminated refrigerant, label contaminated refrigerant and identify the refrigerant.
 - If the container contains clean refrigerant, label clean and identify the type of refrigerant.
- [4] When refrigerant is to be transported over public roads, the Department of Transportation (DOT) regulations for transport of hazardous materials apply. Contact site environmental personnel for additional guidance.

5.10 HALON EMISSION REQUIREMENTS

- [1] Each Entergy Nuclear site must comply with the halon emission requirements outlined in Attachment 9.8 to this procedure.

6.0 INTERFACES

None

7.0 RECORDS

None

8.0 OBLIGATIONS AND REGULATORY COMMITMENT CROSS REFERENCE

Document	Document Section	NMM Procedure Section	Site Applicability
None			

9.0 ATTACHMENTS

- 9.1 Refrigerant Management Guidance
- 9.2 Refrigerant Use Form (Typical)
- 9.3 Technician Work Practices
- 9.4 Recovery Evacuation Levels
- 9.5 New York State Refrigerant Reportability Requirements
- 9.6 Retrofit Retirement and Mothballing Requirements
- 9.7 Reporting Requirements
- 9.8 Halon Emission Requirements

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A. Method for Determining Circuit Total Charge

1. Measure the refrigerant such as drawing the refrigerant from the system and weighing it.
2. Measure how much refrigerant was put into an empty system to fully charge it.
3. Calculate the weight of the refrigerant charge in the system.
4. Utilize the manufacturer's nameplate information.
5. Establish a range (i.e., if you know the system functions properly within a range of refrigerant amounts, use the midpoint of that range).
6. Utilize a combination of the above.

Only change values obtained for full charges when new and better information becomes available.

B. Annual Leak Rate Calculation

1. Divide pounds of refrigerant added by pounds of refrigerant contained in a normal full charge.
2. Divide number of days since refrigerant was last added by 365 days.
3. Divide value obtained in Step 1 by value obtained in Step 2 and multiply by 100.

$$\frac{\text{lbs of refrigerant added}}{\text{lbs of refrigerant in normal full charge}} \div \frac{\text{No. of days since refrigerant last added}}{365 \text{ Days}} \times 100$$

Leakage trigger rates are as follows:

- > 35% for industrial process refrigeration.
- > 35% for commercial refrigeration.
- > 15% for comfort cooling.
- > 15% for all other refrigeration.

C. Required Recordkeeping

1. Equipment and circuit identification number.
2. Equipment location.
3. Refrigerant type.
4. Method of determining system charge (i.e., how charge was determined, revisions to the full charge including previously determined charges, and dates the revisions occurred.)
5. Services and repair information required when refrigerant was added or removed from the circuit.
 - > Date of the service or repair.
 - > Brief description of the repair.
 - > Amount of refrigerant recovered.
 - > Amount of recovered refrigerant re-installed in the circuit.
 - > Amount of refrigerant sent off-site for recycling.
 - > Amount of virgin refrigerant added.
 - > Total amount of refrigerant added and/or returned minus amount recovered. This is an estimate of the amount of refrigerant that has leaked out of the circuit since the last time refrigerant was added.

ATTACHMENT 9.2

REFRIGERANT USE FORM (TYPICAL)

Sheet 1 of 1

Instructions:

1. Anytime refrigerant is recovered, recycled or virgin refrigerant is added to any refrigerant containing appliance, complete the applicable sections of this form and forward to the refrigerant maintenance lead. When work is performed solely by an EPA certified contractor, the contractor's invoice or a copy of that invoice may be substituted.
2. If the contractor's invoice is used for work on any circuit, system or equipment that contains over 50 pounds of refrigerant, the invoice must contain at a minimum the information in bold.
3. For any spaces that do not apply, mark N/A.

Location Check one	Protected Area (PA)	Owner Controlled Area (non PA)	Corporate	
EPA Certified Technician Name		Company		
EPA Certification Number				
Equipment # (Asset #)		Circuit #		
Work Order #				
Date of Work:				
Refrigerant Type		Full charge determined by, check one		
Circuit Full Charge		Nameplate	Estimate	
Work Description				
Refrigerant Recovered				Pounds
Refrigerant Recycled (sent off site)				Pounds
Virgin Refrigerant Added				Pounds
Source of Virgin Refrigerant, check one	Contractor		Stores	
Comments				

- **Work Required to be Performed by an EPA Certified Technician**
 - Any work on refrigerant containing equipment that has the potential to vent refrigerant to the atmosphere.
- **Work That Can Be Performed By EPA Non-Certified Personnel**
 - Any work on refrigerant containing equipment that does not have a reasonable probability to vent refrigerant to the atmosphere.
 - Any work on refrigerant containing equipment, if the refrigerant has been recovered and evacuated to the level required by this procedure.

Item	Activity Description	Certification Required	
		Yes	No
1	Evacuating the refrigerant	√	
2	Adding refrigerant	√	
3	Changing the oil	√	
4	Adding oil	√	
5	Replacing a gauge	√	
6	Changing or calibrating a DP cell	√	
7	Changing a pressure-relief valve	√	
8	Drawing a sample of refrigerant or oil	√	
9	Helping dismantle a system for disposal, if that person's work may reasonably result in a release of refrigerant	√	
10	Any of the tasks listed above, performed under the direct supervision of a certified technician	√	
11	Maintenance that would not reasonably release refrigerant (such as painting; leak-checking; some electrical work; and some insulation work)		√
12	Fixing leaks by tightening nuts or bolts, if no specific reason to think the activity may go wrong and increase the rate of release		√
13	Any work on the system after the refrigerant has been evacuated to the extent required by 40CFR82.156		√



ATTACHMENT 9.4

RECOVERY EVACUATION LEVELS

Sheet 1 of 1

• Evacuation Levels Required for Opening Equipment for Major Work

Refrigeration Equipment Type	Inches of Hg vacuum	
	Recovery/Recycling Equipment (Prior November 15, 1993)	Recovery/Recycling Equipment (After November 15, 1993)
HCFC-22 equipment, or isolated component of such equipment, normally containing <200 pounds of refrigerant	0	0
HCFC-22 equipment, or isolated component of such equipment, normally containing ≥200 pounds of refrigerant	4	10
Other high-pressure equipment, or isolated component of such equipment, normally containing <200 pounds of refrigerant	4	10
Other high-pressure equipment, or isolated component of such equipment, normally containing ≥200 pounds of refrigerant	4	15
Very high-pressure equipment	0	0
Low-pressure equipment	25	25 mm Hg absolute

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ATTACHMENT 9.5

NEW YORK STATE REFRIGERANT REPORTABILITY REQUIREMENTS

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NOTE

This attachment applies to New York State plants only.

In New York State, plants are subject to state specific hazardous substance reportable quantities (RQ) per 6 NYCRR Part 597. The NYS RQs are at least as stringent as the EPA RQs but in many cases may be more stringent.

When any amount of refrigerant is released from any size unit, either the refrigerant maintenance lead or the EPA Certified Personnel performing the work shall initiate a condition report and immediately provide site environmental personnel with the following information:

- System or component affected.
- Time of refrigerant release.
- Circumstances and description of release.
- Type and quantity of refrigerant released.
- Total charge of the unit in question.
- Last date the unit was worked.

Site environmental personnel will then perform a NYS reportability determination based on the information provided above.

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ATTACHMENT 9.6

RETROFIT RETIREMENT AND MOTHBALLING REQUIREMENTS

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Retrofit and Retirement Plan Requirements

1. Retrofit and Retirement plans can be prepared as an alternative to repairing leaks.
2. A Retrofit or Retirement plan must be prepared if a repair fails to bring the annual leakage rate below the trigger rate.
3. Retrofit and Retirement plans must be completed within 30 days of the identification of the leak or the failure of the follow up verification test for a repaired leak.
4. The original Retrofit or Retirement plan shall be maintained on-site and must be dated.
5. The retrofit or retirement must be completed within 12 months of the Retrofit or Retirement plan date unless and extension is granted.
6. A request for additional time to complete a retrofit or retirement may be requested from the EPA for the following reasons:
 - The delay is caused by the requirements of other federal, state or local regulations.
 - A suitable refrigerant replacement is not available. The unit is custom-built and the supplier of the system or a critical component has quoted a delivery time of more than 30 weeks from when the order is placed.
 - A request has been made to EPA within six months of the 30-day expiration repair period in those instances where the delay is due to the delivery of a system or critical component.
7. In the event a leak is successfully repaired within 30 days of a failed verification test or 120 days if the repair if an industrial process shutdown is required the EPA will be notified of the repair within 30 days.

System Mothballing Requirements

1. Mothballed refrigerant equipment systems are:
 - Exempt from the time-related requirements for repairing, retrofitting or retiring a leaking system.
 - Under the time-related requirements on the day the system is brought back on-line and is no longer considered mothballed.
 - Allowed time suspensions for all types of systems containing more than 50 pounds of refrigerant.

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A.A1 I notifications, reports and requests to the EPA are to be sent to the following address:

608 Recycling Program Manager
 Stratospheric Protection Division
 6205J
 U. S. Environmental Protection Agency
 401 M Street, SW
 Washington, DC 20460

B.Com munication with the EPA will contain the information below:

- Facility identification.
- Description of the affected system or equipment.
- Leak rate.
- Method used to determine leak rate and full charge.
- Date of discovery that the leak rate was above trigger rate.
- Location of leaks to the extent determined to date.
- Any repair work already completed and completion date.
- Description of and date of any previous communications with EPA regarding this specific leak evolution.

C.Ma intenance, with assistance from site environmental personnel as needed, is responsible for preparing and submitting notifications and requests to the EPA or other regulatory agencies for the following reasons, within the described time frame and with the described additional information:

1. Notification of a release of refrigerant in excess of the CERCLA reportable quantity (RQ).
2. Notification of the failure of a follow-up verification test.
 - Notification to be forwarded within 30 days of the failed test and include Date(s), type(s) and result(s) of failed follow-up test(s).
3. Notification of success of a second repair effort when the first effort has failed and a retrofit retirement plan will not be completed.
 - Notification to be forwarded within 30 days after successful repair and include the following information:
 - Date of original notification to the EPA.
 - Date the successful repair was completed.
 - The method used to determine the leakage rate was below the annual trigger level.
 - Description of any additional leaks, plan and estimated completion dates for repair.

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4. Notification of delay of a leak repair.
 - Notification to be forwarded within 30 days of identification of the cause for the delay and include the following information:
 - Describe the reason for the delay.
 - Describe the location of leaks and the extent determined to date.
 - The estimated repair date.
5. Request for a delay of a retrofit or retirement plan due to regulatory burden, parts unavailability, no suitable replacement refrigerant available or delivery of parts.
 - Notification to be forwarded within 30 days of the identification of the cause for the delay and include the following information:
 - Describe the reason for the delay.
 - Describe the location of leaks and the extent determined to date.
 - Include a copy of the retrofit retirement plan.
 - The estimated completion date.
6. Request for extension for a leak repair of industrial process system.
 - Notification to be forwarded within 30 days of identification of the reason for the delay and include the following information:
 - Describe the reason for the delay.
 - Describe any repairs that have been implemented and completion date.
 - The estimated completion date.
7. Request for extension for a retrofit and retirement plan past the 12-month allowable period.
 - Notification to be forwarded within 30 days of the identification of the cause for the delay and include the following information:
 - The cause of the delay.
 - A copy of the retrofit retirement plan.
 - The estimated completion date.
8. Request for extension or additional time for work previously reported.
 - Notification to be forwarded within 30 days of the identification of the cause for the delay and include the reason for the additional delays.

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A. Halon - any of the Class I or Group I1 substances listed in Appendix A of 40CFR82 (Subpart A). These consist of three halogenated hydrocarbons known as Halon 1211, Halon 1301 and Halon 2402, and all isomers of these chemicals. These are typically encountered in halon fire suppression systems and hand-held fire extinguishers.

B. Applicability - Applies to anyone who tests, services, maintains, repairs or disposes of equipment that contains halons or uses halon equipment during technician training. This includes installers, contractor employees and in-house service personnel.

C. Restrictions - Personnel who test, maintain, service, repair or dispose of halon-containing equipment or use equipment for technician training cannot knowingly vent or release into the environment any halons used in the equipment.

D. Allowed Halon Releases

1. De minimis releases associated with good faith attempts to recycle or recover halon is allowed, and small releases of halons during testing of fire extinguishing systems are allowed if the following four conditions are met:
 - Systems or equipment employing suitable alternative fire extinguishing agents are not available.
 - Systems or equipment testing requiring release of extinguishing agent [Halon] is essential to demonstrate system or equipment functionality.
 - Failure of the system or equipment would pose great risk to human safety or the environment.
 - A simulant agent cannot be used in place of the halon during system or equipment testing for technical reasons.
2. During the qualification and development testing and during the design and development phases of a new system, small amounts may be released to demonstrate system or equipment functionality and when a suitable simulant agent cannot be used in place of the halon for technical reasons.
3. Emergency release of halons for the legitimate purpose of fire extinguishing, explosion inertion or other emergency applications for which the equipment or systems were designed is allowed.

E. Required Training - Personnel who test, maintain, service, repair or dispose of halon-containing equipment must be trained regarding halon emissions reductions. Areas that should be covered include:

- Explanation of why the training is required.
- Overview of halons and environmental concerns related to them.
- Review of relevant regulations concerning halons.
- Any specific technical instruction related to maintaining, servicing, repairing and disposing of halon containing articles and equipment.

F. Halon Equipment Disposal - Halon-containing equipment cannot be disposed except by sending it for halon recovery to a manufacturer operating in accordance with NFPA 10 and NFPA 12A standards, a fire equipment dealer operating in accordance with NFPA 10 and NFPA 12A standards, or a recycler operating in accordance with NFPA 10 and NFPA 12A standards. This does not apply to equipment containing only de minimis quantities of halons.