

3. Preventive Maintenance of Equipment

Mindset: Proactive vs. Reactive.

OBJECTIVES

- Understanding refrigerants are an asset and not a consumable.
- Protect environment, worker, and community safety in compliance with local requirements.
- Educate maintenance technicians on components that require service, repair, and/or replacement by using PM work orders and continuously improving these documents.
- Maximize equipment's useful service life by using PM work orders that set recommended equipment maintenance timelines to enhance both equipment and system efficiency.

DIRECT EQUIPMENT

Perform and properly document the following required maintenance tasks.

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| ☐ | Perform weekly leak checks. |
| ☐ | Properly document leaks in daily maintenance log. |
| ☐ | Properly repair leaks and document refrigerant used. |
| ☐ | Report leaks as required by regulations. |
| ☐ | Install leak detection sensors installed in appropriate locations. |
| ☐ | Follow protocols for the detection of flammable and/or toxic refrigerant leaks. |

MEASURES OF SUCCESS

- ✓ Increased equipment uptime
- ✓ Maintained energy efficiency
- ✓ Elimination of unplanned outages
- ✓ Overall O&M cost reductions
- ✓ Reduction in refrigerant loss
- ✓ Assembly of comprehensive log of system performance, refrigerant loss, maintenance operations, etc., over time.

INDIRECT EQUIPMENT

Perform the following maintenance tasks.

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| ☐ | Meet all requirements for direct systems. |
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Monthly

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| ☐ | Check anticorrosion additive. |
| ☐ | Check sacrificial anodes for wear. |

Every Three Months

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| ☐ | Analyze lithium bromide (LiBr) solution for steel or copper deposits. |
| ☐ | Check heat recovery heat exchanger for corrosion. |

Every Five Years

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| ☐ | Check heat exchanger tubes for leaks every five years. |
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VRF

Follow all OEM instructions and safety requirements while performing maintenance tasks.

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| ☐ | Inspect and clean filter weekly. |
| ☐ | Perform general heat exchanger cleaning quarterly and semiannually. |
| ☐ | Inspect and tighten wires, bolts, etc., semiannually. |
| ☐ | Check parameter against startup data sheet and note variances. |
| ☐ | Manually check flow annually. |

For additional guidance and resources, see *Assessing RAC Plant Sustainability*.

