



Rick Scott
Governor

John H. Armstrong, M.D.
State Surgeon General

NOVEMBER 1, 2012
Electronic Correspondence
michael.oneill@pw.utc.com

NOTICE OF PERMIT

United Technologies Corporation
17900 Beeline Highway (SR-710)
Jupiter, FL 33478

Air Permit No.: 0990021-030-AC
Project: Construction Permit
PALM BEACH COUNTY, FLORIDA

Authorized Representative:

Michael O'Neill, Manager
Manager, Assembly, Instrumentation, & Test Operations (CT & FL)
Systems Engineering & Validation

Dear Mr. O'Neill:

Enclosed is the above referenced air pollution construction permit to perform the proposed work on a source of air pollution located in Palm Beach County. This permit is issued pursuant to Chapter 403.087 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code.

Any party to this order (permit) has the right to seek judicial review of it pursuant to Section 120.68, F.S., by filing a notice of appeal pursuant to Rule 9.110 of the Florida Rules of Appellate Procedure with: the legal office of the Palm Beach County Health Department at P.O. Box 29 (800 Clematis Street), West Palm Beach, Florida 33402-0029; and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within 30 days after this order (permit) is filed with the clerk of the Health Department.

Executed in West Palm Beach, Florida
PALM BEACH COUNTY HEALTH DEPARTMENT

A handwritten signature in blue ink, appearing to read "James E. Stormer".

James E. Stormer, QEP, Environmental Administrator
Air & Waste Section
Division of Environmental Public Health



Palm Beach County Health Department
Division of Environmental Public Health-800 Clematis Street, P.O. Box 29, West Palm Beach, FL 33402-0029
Phone: (561) 837-5900 Fax: (561) 837-5295 – www.pbchd.com

FINAL DETERMINATION

United Technologies Corporation Air Permit No. 0990021-030-AC

PERMITTEE:

United Technologies Corporation
17900 Beeline Highway (SR-710)
Jupiter, FL 33478

Authorized Representative: Michael O'Neill, Manager
Manager, Assembly, Instrumentation, & Test Operations (CT & FL)
Systems Engineering & Validation

PROJECT: The FIT center began operations on February 15, 2012. During this period of operation, the facility realized that the current construction permit does not provide the necessary flexibility to meet the customers' needs, because the permit allows only heptane, but not other hydrocarbons. Hence, the facility submitted an application for both Title V permit revision and construction permit modification, so that additional test fuels such as methane, propane and other hydrocarbons fuels can be added in the permit. This addition of new hydrocarbon fuels does not increase air emissions limits of the current permit.

This permit also revises the percentage of the burning of test fuel packages such as heptane and other hydrocarbons, pursuant to the applicant's request. Previously, 0% of burning and 100% of evaporation was assumed for all hydrocarbons. These estimates are revised to 90% burning and 10% evaporation, based on the tests conducted and the engineering judgment.

This revision also clarifies that the Emissions Unit 084 – Alodine Tank located at Sikorsky – is not subject to 40 CFR part 63 Subpart WWWW, pursuant to the amendments issued by the EPA on September 19, 2011.

FACILITY LOCATION: 17900 Beeline Highway (SR 710), Jupiter, FL 33478

UTM: Zone 17; 564.9 km E; 2977.3 km N; Latitude: 26° 54' 59" North / **Longitude:** 80° 20' 47" West

COMMENTS AND REVISIONS

The Health Department received proof of publication on October 29, 2012 that the required PUBLIC NOTICE was published in the October 16, 2012 issue of The Palm Beach Post Newspaper. No comments were received.

FINAL ACTION

The final action of the Health Department is to issue the air pollution construction permit, as proposed, with the above noted corrections.



Rick Scott
Governor

John H. Armstrong, M.D.
State Surgeon General

NOVEMBER 1, 2012
Electronic Correspondence
michael.oneill@pw.utc.com

ISSUED TO (PERMITTEE):

United Technologies Corporation
17900 Beeline Highway (SR-710)
Jupiter, FL 33478

Authorized Representative:

Michael O'Neill
Manager, Assembly, Instrumentation, & Test Operations (CT & FL)
Systems Engineering & Validation

ARMS No.	0990021
Air Permit No.	0990021-030-AC
Issued:	November 1, 2012
Expires:	October 31, 2013

LOCATED AT:

Project Name: The permittee requested a modification to the permit no. 0990021-027-AC (issued on December 02, 2011) to add additional hydrocarbon test fuels such as propane, methane and others, in addition to the currently permitted heptane and isopropyl alcohol. This permit also revises the percentage of the burning of test fuel packages such as heptane and other hydrocarbons, pursuant to the applicant's request. Previously, 0% of burning and 100% of evaporation was assumed for hydrocarbons. This addition of new hydrocarbon fuels does not increase air emissions limits of the current permit.

Project Location: 17900 Beeline Highway (SR 710), Jupiter, FL 33478

UTM Coordinates: Zone 17; 564.9 km E; 2977.3 km N; **Latitude:** 26° 54' 59" North / **Longitude:** 80° 20' 47" West

STATEMENT OF BASIS:

The Florida Department of Environmental Protection (DEP) has permitting jurisdiction for this project pursuant to Section 403.087 of the Florida Statutes (F.S.). However, in accordance with Section 403.182, F.S., the DEP recognizes the Palm Beach County Health Department (Health Department) as the approved local air pollution control program in Palm Beach County. As such, the DEP and the Health Department have entered into a Specific Operating Agreement that authorizes the Health Department to issue or deny permits to for this type of air pollution source located in Palm Beach County. Accordingly, the Health Department issues this permit under the provisions of Chapter 403, F.S. and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The permittee is authorized to perform the work for the proposed project in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Health Department.

ISSUED BY:

Executed in West Palm Beach, Florida
PALM BEACH COUNTY HEALTH DEPARTMENT

James E. Stormer, Q.E.P., Environmental Administrator
Air & Waste Section
Division of Environmental Public Health

PALM BEACH COUNTY HEALTH DEPARTMENT

Division of Environmental Public Health – West Palm Beach
800 Clematis Street • P.O. Box 29, West Palm Beach, FL 33402-0029
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SECTION II. FACILITY-WIDE GENERAL CONDITIONS

PERMIT HISTORY

10/16/2012:	Public notice is published
10/03/2012:	Intent to Issue and the Draft permit issued
08/10/2012:	Application for concurrent processing of construction permit and Title V permit revision received
12/02/2011:	Final permit issued (0990021-027-AC)
12/27/2010:	Health Department issued final permit for FIT center (0990021-023-AC)

PROJECT DESCRIPTION

The Fire, Innovation & Testing (FIT) center began operations on February 15, 2012. During this period of operation, the facility realized that the current construction permit does not provide the necessary flexibility to meet the customers' needs, because the permit allows only heptane, but not various other hydrocarbons. Hence, the facility submitted an application for both Title V permit revision and construction permit modification, so that additional test fuels such as methane, propane and other hydrocarbons fuels can be added in the permit. This addition of new hydrocarbon fuels does not increase air emissions limits of the current permit.

This permit also revises the percentage of the burning of test fuel packages such as heptane and other hydrocarbons, pursuant to the applicant's request. Previously, 0% of burning and 100% of evaporation was assumed for hydrocarbons. These estimates are revised to 90% burning and 10% evaporation based on the tests conducted and the engineering judgment.

This revision also clarifies that the Emissions Unit 084 – Alodine Tank located at Sikorsky – is not subject to 40 CFR part 63 Subpart WWWW, pursuant to the amendments issued by the EPA on September 19, 2011.

FACILITY DESCRIPTION

Pratt & Whitney Rocketdyne (P&W) and Sikorsky Aircraft Corporation (SAC), divisions of United Technologies Corporation (UTC), operate adjacent facilities including an aerospace manufacturing, research and development facility located on a combined 7,000-acre site in rural northwest Palm Beach County, Florida.

The Health Department issued a Title V air operation permit renewal to the UTC on February 03, 2011 (Permit No. 0990021-013-AV).

The FIT center is intended to provide UTC Fire & Security (UTCFS) the ability to test current and future fire suppression products. The Health Department issued an air construction permit no. 0990021-027-AC in December 2010 for this project. Indoor fire testing is performed in an approximately 70 ft x 70 ft enclosed building with a 50 ft high ceiling. The test fuel packages will consist of variety of materials such as wood, plastics, heptane, fuel oil (Number 2), vegetable oil, isopropyl alcohol, and acetone.

The previously issued permit for this project limits the emissions of particulate matter (PM) to 3.45 tons per year; nitrogen oxides to 15 tons per year; carbon monoxide to 14.8 tons per year; volatile organic compounds to 39.26 tons per year, and sulfur dioxide to 2.5 tons per year. The potential emissions from this project are below significant emissions rates as defined in Rule 62-210.200, F.A.C.

The air emissions from indoor testing at the FIT center will be controlled by two parallel Ultra High Efficiency Filter (UHF®) trains. Exhaust gases from test fires shall be transferred via two ducts which contain water spray nozzles to cool the gases in two parallel trains. Each train includes two UHF units in series where the contaminants are removed from the exhaust gas stream by the filter media. The maximum anticipated flow rate is 100,000 ACFM from the test hall. This scrubber is used to reduce smoke and other air pollutants. Emission calculations conservatively assume no removal efficiency for pollutants – other than for particulate matter – emitted from the test hall

The facility also performs limited outdoor burning to test and quality the fire suppression products including fire fighting foams and portable fire extinguishers. The outdoor burning is regulated according to Rules 62-296.320(3), 62-256.300, F.A.C.

SECTION II. FACILITY-WIDE GENERAL CONDITIONS

FOLLOWING IS THE LIST OF EMISSION UNITS AT THE FACILITY.

EU No.	R / U*	Brief Description
Following emission units are located at Pratt & Whitney Rocketdyne		
009	U	Diesel storage tanks
010	U	Jet fuel storage tanks
012	R	Jet fuel storage tank (F-8-CFF)
014	R	Paint spray booth (PS-1-TMC) used for refinishing support equipment
015	U	Closed-loop flush cleaning (BF-1-RL-10) using Vertrel MCA
016	R	Boiler (BO-12-E6) fired by natural gas – 42 MMBTU/hr Heat Input
018	U	Acid gas scrubbing system (AS-2-MPL) for plating operations
022	R	Boilers (BO-1-MBH, BO-2-MBH) fired by natural gas – 54 MMBTU/hr Heat Input per Boiler
031	U	Diesel storage tanks (DL-19-SEGF and DL-20-SEGF)
037	U	AST Gasoline storage tanks
040	U	Heat treatment furnaces (FU-3-MHT and FU-4-MHT) fired by natural gas
045	U	Water evaporator (EV-1-MW)
049	U	Plasma spray booths
059	U	Air and fuel heaters fired with natural gas
064	R	Paint spray booth (PSB-1-RTF)
065	U	Diesel engines powering fire protection pumps and cooling water pumps during rocket engine testing and emergency electrical generators
066	R	Boiler (BO-14-E8) fired by propane subject – 6.7 MMBTU/Hr Heat Input
068	R	Emergency electrical generating facility
069	U	JP-8 Fueled Jet engine test stands – Test Area A/C
070	U	Aerospace hand-wiping operations
071	U	Aerospace spray gun cleaning operations
072	U	Aerospace flush cleaning operations
073	U	Aerospace primer and topcoat application operations
074	U	Aerospace waste storage and handling operations
077	R	Combustion turbine test stands – Fired by Natural Gas
078	R	Vertrel Vapor Degreaser
079	R	Two JP8 fired Turbine Engines powering air compressors used for jet engine tests (also known as RAM Test Facility)
080	R	E-8 Rocket Engine Test Stand – Methane Fuel Operations
088	R	Jet Engines Parts Coating Process
Following emission units are located at Sikorsky Aircraft Corporation		
081	R	SIK - Spray Booth (PS-14-SIK) for aerospace coating operations [Previously EU 006 in Sikorsky permit]
082	R	SIK - Spray Booth (PS-16-SIK) for aerospace coating operations [Previously EU 008 in Sikorsky permit]
083	R	SIK - Boiler (BO-4-SIK) fired by natural gas– 2.93 MMBTU/Hr Heat Input [Previously EU 009 in Sikorsky permit]
084	U	<p>SIK - Alodine tank – about 10 gallon capacity</p> <p>The tank is used to apply alodine, a chromate conversion process, to production parts. Other parts are immersed. Other parts have the alodine brush applied. This process uses hexavalent chromium.</p> <p>In the previous permits – 0990021-013-AV & 0990021-020-AC, this EU was identified as an activity subject to 40 CFR Part 63 Subpart WWWW. On September 19, 2011, the EPA issued amendments to clarify that the plating and polishing area source rule does not apply to any bench-scale activities. Bench-scale is defined as any operation that is small enough to be performed on a bench or similar structure (25 gallons) so that the</p>

SECTION II. FACILITY-WIDE GENERAL CONDITIONS

EU No.	R / U*	Brief Description
		equipment does not directly contact the floor. The tank at the facility is a 10-gallon tank, is covered and is mounted on a bench, and hence it is not subject to 40 CFR 63 Subpart WWWW. The status of this EU is changed from 'regulated' to 'unregulated.'
Following emission unit is used to track VOC emissions from miscellaneous activities at P&W and Sikorsky		
085	U	Miscellaneous VOC/HAP Emissions Sources
Following emission units are located at the FIT Center		
086	R	Fire Innovation and Test Center
087	Exempt	810 KW Diesel Generator

* (R)egulated and (U)nregulated: An unregulated emissions unit is an emissions unit which emits no “emissions-limited pollutant” and which is subject to no unit-specific work practice standard, though it may be subject to regulations applied on a facility-wide basis (e.g., unconfined emissions, odor, general opacity) or to regulations that require only that it be able to prove exemption from unit-specific emissions or work practice standards. Such emissions units and/or activities are neither “regulated” nor “exempt.”

SECTION II. FACILITY-WIDE GENERAL CONDITIONS

REGULATORY CLASSIFICATION

- Title III: The facility is not a major source of hazardous air pollutants (HAPs).
- Title IV: The facility will not operate units subject to the acid rain provisions of the Clean Air Act.
- Title V: The facility is a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C.
- PSD: The permittee is a PSD facility in accordance with Rule 62-212.400, F.A.C.
- RACT: Some of the emission units at the facility are subject to the RACT Rules.
- NSPS: This facility is not subject to 40 CFR 60 requirements. Some of the emergency generators at the facility are subject to **40 CFR 60, Subpart IIII**—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.
- NESHAP: The facility is subject to the requirements of 40 CFR 61, Subpart M, Asbestos. In addition, the emergency generators are subject to **40 CFR Part 63 Subpart ZZZZ** “National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.” The painting and stripping operations are subject to the requirements of **40 CFR Part 63 Subpart HHHHHH**, “National Emission Standards for Hazardous Air Pollutants for Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources.” The alodine tank is subject to the requirements of **40 CFR Part 63 Subpart WWWW**, “National Emission Standards for Hazardous Air Pollutants for Plating and Polishing Operations at Area Sources.” Previously, Pratt & Whitney (P&W) was subject to the regulations of 40 CFR Part 63- Subpart GG (Aerospace MACT). Emission units that were subject to Subpart GG have been removed from the facility or transferred to other locations outside the West Palm Beach facility.

PERMIT CONTENT

- Section I: Summary Information
- Section II: Facility-Wide Specific Conditions
- Section III: Emissions Unit Specific Conditions

Appendices

- Appendix A:* General Permit Conditions
- Appendix B:* Abbreviations, Acronyms, Citations, and Identification Numbers (Version dated 02/05/97)
- Appendix C:* Summary of Testing Requirements
- Appendix D:* Air Pollutant Emission Factors
- Appendix E:* Compliance Procedures

SECTION II. FACILITY-WIDE GENERAL CONDITIONS

1.0 ADMINISTRATIVE REQUIREMENTS

- 1.1 Regulating Agencies: All applications, reports, tests, and notifications shall be submitted to the Air Pollution Control Section of the Palm Beach County Health Department (Health Department) at P.O. Box 29 (800 Clematis Street), West Palm Beach, Florida, 33402-0029, and telephone number (561) 837-5900. In addition, *copies* shall be submitted to the Air Program, Southeast District Office, Florida Department of Environmental Protection (DEP) at 400 North Congress Avenue, Suite 200, West Palm Beach, Florida, 33401. **[Specific Operating Agreement]**
- 1.2 General Conditions: The permittee shall be aware of, and operate under the attached General Conditions listed in *Appendix A* of this permit. General Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. **[Rule 62-4.160, F.A.C.]**
- 1.3 Citation Format: *Appendix B* of this permit provides the format for citing applicable regulations.
- 1.4 Application for a Title V Operation Permit: A facility that commences operations as a Title V source after October 25, 1995, or that otherwise becomes subject to the permitting requirements of Chapter 62-213, F.A.C., after October 25, 1995, must file an application for an operations permit at least ninety days before the expiration of the source's air construction permit, but no later than 180 days after commencing operation, unless a different application due date is provided at Rule 62-204.800, F.A.C., or an earlier date is provided in the air construction permit. **[Rule 62-213.420(1)(a) 2, F.A.C.]**

Any applicant for a Title V permit, permit revision or permit renewal must submit an application form number 62-210.900(1), which must include all the information specified by subsection 62-213.420 (3) F.A.C., except that an application for permit revision must contain only the information related to the proposed change(s) from the currently effective Title V permit and any other requirements that become applicable at the time of the application. The applicant shall include information concerning fugitive emissions and stack emissions in the application. Each application for permit, permit revision, or permit renewal shall be certified by the responsible official in accordance with subsection 62-213.420(4), F.A.C. **[Rule 62-213.420(1)(b) 1, F.A.C.]**

{Permitting Note: The permittee submitted a combined application for construction permit modification and the Title V permit revision for concurrent processing.}

- 1.5 Applicable Regulations: This facility is subject to the following regulations: Florida Administrative Code Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting requirements or regulations. **[Rule 62-210.300, F.A.C. and the SOA]**
- 1.6 Source Obligation:
- (a) Authorization to construct shall expire if construction is not commenced within 18 months after receipt of the permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. This provision does not apply to the time period between construction of the approved phases of a phased construction project except that each phase must commence construction within 18 months of the commencement date established by the PBCHD in the permit.
 - (b) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of Rules 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification. **[Rule 62-212.400(12), F.A.C.]**

SECTION II. FACILITY-WIDE GENERAL CONDITIONS

2.0 EMISSION LIMITING STANDARDS

2.1 **Emissions of Hazardous Air Pollutants (HAPs):** The facility-wide emissions of a single HAP are limited to 9.9 tons in any consecutive 365-day period (rolling total). The facility-wide emissions of total HAPs are limited to 24.9 tons in any consecutive 365-day period (rolling total). The permittee shall monitor the emissions of HAPs pursuant to the condition 6.1 of this Section.

[Permit No. 0990021-023-AC]

2.2 **General Particulate Emission Limiting Standards:** General Visible Emissions Standard. Except for emissions units that are subject to a particulate matter or opacity limit set forth or established by rule and reflected by conditions in this permit, the permittee shall not:

(a) Cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity, the density of which is equal to or greater than that designated as No. 1 on the Ringelmann Chart (20 percent opacity). [Rule 62-296.320(4)(b)1., F.A.C.]

(b) If the presence of uncombined water is the only reason for failure to meet the visible emissions standards given in Rule 62-296.320(4)1, F.A.C., such failure shall not be a violation of the rule. [Rule 62-296.320(4)(b)3, F.A.C.]

(c) All visible emissions test performed pursuant to the requirements of Rule 62-296.320(b)(4)1, F.A.C. shall use EPA Reference Method 9, and shall meet all applicable requirements of Chapter 62-297, F.A.C. [Rule 62-296.320(4)(b)1, F.A.C.]

2.3 **Prevention of Accidental Releases (Section 112(r) of CAA):** At such time as the requirements of 40 CFR Part 68 are applicable to this source, the permittee shall: [Section 112(r)(7)(B)(iii) of the CAA, 40 CFR Part 68, Section 252.941(1)(c), F.S.]

(a) Submit a Risk Management Plan (RMP) to the Chemical Emergency Preparedness and Prevention Office RMP Reporting Center.

(b) Report to the appropriate representative of the Department of Community Affairs, as established by department rule, within one working day of discovery of an accidental release of a regulated substance from the stationary source, if the permittee is required to report the release to the United States Environmental Protection Agency under Section 112(r)(6) of the Clean Air Act (CAA).

(c) Submit the required annual registration fee to the DCA on or before April 1, in accordance with Part IV, Chapter 252, F.S. and Rule 9G-21, F.A.C.

Note: Currently the only substance stored at this facility in substantial quantities is distillate fuel and hydrogen fuel. However, neither distillate fuel nor its components are among the regulated substances listed in Section (r)(b) of CAA (40 CFR 68.130). Hydrogen when used as a fuel is also not among regulated substances. Based on this information provided by the permittee, the requirements of 40 CFR Part 68 are not applicable to this facility.

2.4 **Objectionable Odors:** Objectionable Odor Prohibited: The permittee shall not cause, suffer, allow, or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. [Rule 62-296.320(2), F.A.C.]

Note: An objectionable odor is defined as any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rule 62-210.200(187), F.A.C.]

2.5 **General VOC Standards.** Volatile Organic Compounds Emissions or Organic Solvents Emissions: The permittee shall allow no person to store, pump, handle, process, load, unload, or use in any process or installation, volatile organic compounds (VOC) or organic solvents (OS) without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1)(a), F.A.C.]

SECTION II. FACILITY-WIDE GENERAL CONDITIONS

2.6 Unconfined Particulate Emission Limiting Standards: Unconfined Emissions of Particulate Matter: The permittee shall not cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any activity, including vehicular movement; transportation of materials; construction, alteration, demolition or wrecking; or industrially related activities such as loading, unloading, storing or handling; without taking reasonable precautions to prevent such emissions. Reasonable precautions shall include the following:

- (a) Paving and maintenance of roads, parking areas and yards.
- (b) Application of water or chemicals to control emissions from such activities as demolition of buildings, grading roads, construction, and land clearing.
- (c) Application of asphalt, water, oil, chemicals or other dust suppressants to unpaved roads, yards, open stock piles and similar activities.
- (d) Removal of particulate matter from roads and other paved areas under the control of the owner or operator of the facility to prevent reentrainment, and from buildings or work areas to prevent particulate from becoming airborne.
- (e) Landscaping or planting of vegetation.
- (f) Use of hoods, fans, filters, and similar equipment to contain, capture and/or vent particulate matter.
- (g) Confining abrasive blasting where possible.
- (h) Enclosure or covering of conveyor systems.

[Rule 62-296.320(4)(c), F.A.C.]

3.0 PERFORMANCE STANDARDS

3.1 Circumvention: The permittee shall not circumvent air pollution control equipment/methods or allow the emission of air pollutants without the equipment/methods operating properly. **[Rule 62-210.650, F.A.C.]**

3.2 Excess Emissions Requirements:

- (a) Excess emissions resulting from start-up, shutdown or malfunction of these emissions units shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized, but in no case exceed two hours in any 24 hour period unless specifically authorized by the Health Department for longer duration. **[Rule 62-210.700(1), F.A.C.]**
- (b) Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during start-up, shutdown, or malfunction are prohibited. **[Rule 62-210.700(4), F.A.C.]**
- (c) In case of excess emissions resulting from malfunctions, the permittee shall notify the Air Pollution Control Section of the Palm Beach County Health Department within one working day of: the nature, extent, and duration of the excess emissions; the cause of the problem; and the corrective actions being taken to prevent recurrence. **[Rule 62-210.700(6), F.A.C.]**
- (d) Considering operational variations in types of industrial equipment operations affected by this rule, the Department may adjust the maximum and minimum factors to provide reasonable and practical regulatory controls consistent with the public interest. **[Rule 62-210.700(5), F.A.C.]**

4.0 COMPLIANCE MONITORING REQUIREMENTS

4.1 Duration: Unless otherwise specified in this permit, all records and reports required by this permit shall be kept for at least 3 years from the date the information was recorded. **[Rule 62-4.160(14)(b), F.A.C.]**

4.2 Test Procedures: All test methods and procedures shall be performed in accordance with the applicable requirements of Chapter 62-297, F.A.C., summarized in *Appendix C* of this permit. **[Rule 62-297.100, F.A.C.]**

4.3 Operational Rate During Testing: Unless otherwise stated in the applicable emission limiting standard for a rule, testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Permitted

SECTION II. FACILITY-WIDE GENERAL CONDITIONS

capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impracticable to test at permitted capacity, an emissions unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. **[Rule 62-297.310(2), F.A.C.]**

- 4.4 **Stack Testing Facilities:** The permittee shall install and maintain permanent / temporary stack testing facilities in accordance with the requirements provided in *Appendix C* of this permit. **[Rule 62-297.310(6), F.A.C.]**
- 4.5 **Test Notification:** At least 15 days prior to the date on which each formal compliance test is to begin, the permittee shall notify the Health Department in writing of: the test date; the expected test time; the location of the test; the facility contact person responsible for coordinating the test; and the person or company conducting test. The 15 day notification requirement may be waived at the discretion of the Health Department. Likewise, if circumstances prevent testing during the 60-day test window specified for the emissions unit, the owner or operator may request an alternate test date before the expiration of this window. **[Rule 62-297.310(7)(a)9., F.A.C.]**
- 4.6 **Special Compliance Tests:** When the Health Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a DEP rule or permit is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Health Department. **[Rule 62-297.310(7)(b), F.A.C.]**

5.0 REPORTS REQUIRED

- 5.1 **Annual Operations Report:** The annual operating report [*DEP Form No. 62-210.900(5)*] shall be submitted to the Palm Beach County Health Department by April 1. If the report is submitted, using the Department's electronic annual operating report software (EAOR), there is no requirement to submit a copy to DEP or the Palm Beach County Health Department. **[Rule 62-210.370(3)(c), F.A.C.]**
- 5.2 **Excess Emissions Report:** If excess emissions occur, the Health Department may request a written summary report of the incident. **[Rules 62-4.130 and 62-210.700(6), F.A.C.]**
- 5.3 **Emission Compliance Stack Test Reports:** For each required emissions compliance test, a report indicating the results of the test shall be filed with the Health Department as soon as practical, but no later than 45 days after the last sampling run is completed. The report shall provide sufficient detail on the tested emissions unit and the procedures used to allow the Health Department to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in **Rule 62-297.310(8)(c), F.A.C.** and summarized in *Appendix C* of this permit. Additional report information may be specified for a given group of emissions units in this permit. **[Rule 62-297.310(8), F.A.C.]**

6.0 EMISSIONS MONITORING REQUIREMENTS FOR HAPS EMISSIONS

- 6.1 **Annual HAP Emissions – Recordkeeping:** The permittee shall monitor compliance with the HAPs emissions limits, specified in condition 2.1 of this section, on a monthly basis. If the facility-wide rolling 12-month total emissions do not exceed 80% of the HAPs emission limits as specified, the permittee shall continue to monitor facility-wide HAPs emissions on a monthly basis (rolling 12-month total). If the facility-wide rolling 12-month total emissions of HAPS exceed 80% of the HAPs emissions limits as specified, the permittee shall monitor facility-wide HAPs emissions on a daily basis (rolling 365-day total). When the facility-wide rolling 365-day total emissions of HAPs do not exceed 80% of the specified HAPS emissions limits for 30 consecutive days, then monthly monitoring of HAPs emissions can be resumed.
The permittee shall maintain and record the following information.

SECTION II. FACILITY-WIDE GENERAL CONDITIONS

- (a) **The individual and total HAP fraction for each solvent/coating material that contains or emits HAPs. If the HAP content is provided by the material supplier or manufacturer as a range, then the permittee must use the upper limit of the range for determining compliance.**
- (b) **The solvent utilization on a monthly basis for all solvents that contain or emit HAPs.**
- (c) **The individual and total monthly HAP emissions for each material, calculated from the monthly material utilization and the individual and total HAP fraction, calculated for the preceding month no later than 20 days after the end of that month.**
- (d) **For fuel burning units, the monthly emissions of individual HAP and total HAPs shall be estimated based on the monthly fuel usage; and the emissions factor provided by the manufacturer or AP-42 *"Compilation of Air Pollutant Emission Factors."***
- (e) **Using the monthly totals computed in subsection (d) above, rolling consecutive 12-month total emissions for individual and total HAPs for the entire facility shall be calculated for the previous twelve calendar months.**

[Permit No. 0990021-023-AC]

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

SUBSECTION A: *This subsection addresses the following emissions unit:*

EU No.	BRIEF DESCRIPTION
086	<p>Fire Innovation and Test (FIT) Center.</p> <p>The air emissions from indoor testing at the FIT center will be controlled by two parallel ultra high-efficiency filters (UHF) manufactured by APC Technologies, Inc. Each train includes two UHF units in series. The primary-stage UHF removes the coarser particulate and the second-stage unit removes very fine particulate and condensed organics. The estimated flow rate at each train is 50,000 cfm. The facility also added a water spray system which will cool gas before entering the UHF unit. The UHF filter achieves 90% control efficiency for particulate matter.</p> <p><u>Stack parameters:</u> Emissions from both the trains are vented to a single stack with height ~ 72 ft, exit diameter 6.5 ft, exit temperature 400°F, actual volumetric flow rate 100,000 acfm.</p> <p><u>SCC # 10300908:</u> Tons burned (engineered wood, waste wood, untreated wood products)</p> <p><u>SCC # 21004004:</u> 1000 gallons burned (No 2 fuel oil, vegetable oil)</p> <p><u>SCC # 50200203:</u> tons burned (plastic)</p>

AIR POLLUTION CONTROL EQUIPMENT AND METHODS

A.1 Ultra High-Efficiency Filters (UHF) Units: Air pollutant emissions from the test hall shall be controlled by two trains of UHF filters with 50,000 acfm flow rate at each train. Each train shall consist of two UHF units in series as specified in the permit application.

The UHF units shall be maintained and operated according the manufacturer’s specifications. The operators shall be trained in the operation and maintenance procedures.

[Permit No. 0990021-023-AC]

EMISSION LIMITING AND PERFORMANCE STANDARDS

A.2 Operating hours: The hours of operation for these emissions units are not limited (8760 hours per year).
[Rule 62-210.200 (PTE), F.A.C.]

A.3 Indoor Burning: Test fuel packages shall contain only the following materials. The permitted shall receive approval from the Health Department to include other materials in the test fuel packages.

- Wood (engineered wood, waste wood and untreated wood)
- Plastics
- Heptane
- No 2 Fuel Oil
- Vegetable Oil
- Isopropyl Alcohol
- Acetone
- Propane
- Methane
- Other light hydrocarbons

[Permit Nos. 0990021-023-AC & 0990021-030-AC]

A.4 Outdoor Burning: No person shall ignite, cause to be ignited, or permit to be ignited, any material which will result in any prohibited open burning as regulated by Chapter 62-256, F.A.C.; nor shall any person suffer, allow, conduct, or maintain any prohibited open burning.

[Rule 62-250.300(1), F.A.C.]

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

Open burning of test package material is allowed only as provided in Chapter 62-256, F.A.C. Open burning shall not involve any material prohibited from being burned at Rule 62-256.300, F.A.C. Open burning of biological waste, hazardous waste, asbestos-containing materials, mercury-containing devices, pharmaceuticals, tires, rubber material, residual oil, used oil, asphalt, roofing material, tar, treated wood, plastics, garbage, or trash is prohibited. **[Rules 62-296.320(3)(a) and 62-256.300(2)(a), F.A.C.]**

The permittee shall use only virgin diesel fuel oil, untreated wood, heptane, propane, methane, other light hydrocarbons, and isopropyl alcohol in test packages that are used in outdoor burning. **[Permit Nos. 0990021-023-AC & 0990021-030-AC, Rule 62-296.320(3), F.A.C.]**

A.5 Air Pollutant Emissions Limits: The permittee shall not allow the emissions of air pollutants from this emission unit to exceed the limits specified below:

Pollutant	Permissible Limits (tons per any consecutive 12-month period)
PM	3.45
PM ₁₀	3.13
NO _x	15
CO	14.8
VOC	39.26
Lead	0.00009
SO ₂	2.5

[Permit Nos. 0990021-023-AC & 0990021-030-AC]

A.6 HAP Emissions: Emissions of Hazardous Air Pollutants (HAPs) are subject to the Facility-wide condition no. **2.1**. **[Applicant’s Request, Rule 62-210.200(PTE), F.A.C.]**

A.7 Fire Suppressants: The fire suppressants shall not contain any CFCs. **[Permit No. 0990021-023-AC]**

COMPLIANCE MONITORING REQUIREMENTS

A.8 Daily Log: For each day of operation either indoor testing or outdoor testing, the permittee shall record the following information in a written log, or an equivalent electronic recordkeeping system, provided records can be generated when requested by the Health Department:

- (a) Date of operation and type of testing (indoor or outdoor)
- (b) Identification of each material in each test fuel package.
- (c) Identification of fire suppressant
- (d) Quantity of each material used in each test fuel package in pounds. The permittee may use 100% of the material used in estimating the emissions, or may follow the procedure specified in **Appendix E** to estimate the amount of each material burned.
- (e) Quantity of fire suppressant used
- (f) If the UHF unit was operational and the details any maintenance performed at the UHF unit.

[Permit Nos. 0990021-023-AC & 0990021-030-AC]

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

A.9 Monthly Operations Log: The permittee shall demonstrate compliance with the emission limits specified in conditions **A.5** and **A.6** of this section on a monthly basis by keeping a written log, or an equivalent electronic recordkeeping system, provided records can be generated when requested by the Health Department, of the operations. On or before the 20th calendar day of each month, the permittee shall calculate and record the following information for the previous month of indoor & outdoor testing operations:

- (a) Month of operation.
- (b) Type and quantity of each material used in test fuel packages during the previous month.
- (c) Calculate air emissions from each material for the previous month and for the previous consecutive 12 months, rolling total. Permittee shall use the emission factors shown in **Appendix D** in estimating the air emissions. Individual HAP emissions shall be estimated using AP-42 or the industry specific publications. The Health Department may revise the emission factors when the Environmental Protection Agency revises the emission factors in AP-42 publication.
- (d) Calculations shall assume that 100% of heptane and alcohols used will evaporate into the atmosphere.

[Permit Nos. 0990021-023-AC & 0990021-030-AC]

A.10 Monthly Emissions Calculations: The emissions calculation shall be consistent with the following generic equation:

$$E_M = \sum (U_M \times EF_M)$$

Where:

- E_M = Calculated air emissions for a given month reported to the nearest hundredth of a ton for a give pollutant M
- \sum = Sum of the emissions from different materials (wood, plastics, Heptane, no 2 fuel oil, vegetable oil, and alcohol.)
- U_M = Usage of each material for a given month reported from the daily log
- EF_M = Emission factor for pollutant M from each material

The actual equations and calculations are left to the discretion of the permittee, but they must meet the basic intent of the calculation described above. For example, calculation and summary by a computer spreadsheet or database is acceptable as long as the calculations are consistent with the methodology specified in this section.

[Permit No. 0990021-023-AC]

REPORTING REQUIREMENTS

A.11 The permittee shall submit semi-annual reports that summarize the details of materials usage (both indoor and outdoor operations) and the air emissions calculations for indoor & outdoor operations. Each report covers a period of six months (January – June & July-December) and these reports shall be submitted to the Health Department by July 31st and January 31st respectively.

These reports shall contain a statement regarding CFC content in the fire suppressants used during the reporting period.

[Permit No. 0990021-023-AC]

A.12 The permittee shall provide a written notification (by email, fax, or letter) to the permitting authority at least 48 hours prior to burning any additional light hydrocarbons. The notification shall include name of the hydrocarbon, whether burning is indoor or outdoor, if it is classified as a HAP, and emission factors for estimating the air emissions.

[Permit No 0990021-030-AC]

SECTION III. EMISSION-UNIT SPECIFIC CONDITIONS

Subsection B: *This subsection addresses the following equipment as a single emissions unit:*

EU No.	STATUS	BRIEF DESCRIPTION
087	Exempt	<p>One 810 KW emergency electrical generator</p> <p>Kohler, 810 KW, Model Number 800REOZMB, Serial number 2342382, consumes ~58 – 67 gallons of distillate fuel per hour at 100% load.</p> <p><u>SCC #2-03-001-01</u>: Internal combustion, diesel fuel</p>

[This emergency generator is used for emergency power in support of life safety and safe shutdown of testing operations in the event of a power loss event. The permittee stated that this generator is categorically exempt pursuant to Rule 62-210.300(3)(a)35, F.A.C.]

EMISSION LIMITING AND PERFORMANCE STANDARDS

- B.1** 40 CFR 63 Subpart ZZZZ & 40 CFR 60 Subpart IIII: This emission unit is subject to the regulations of 40 CFR Part 63 Subpart ZZZZ “National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)”; and the regulations of 40 CFR 60 Subpart IIII “Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE).”
[40 CFR 63 Subpart ZZZZ & 40 CFR 60 Subpart IIII]
- B.2** Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in 40 CFR 60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.
[40 CFR 60. 4205(b)]
- B.3** Allowable Fuel: Fuel shall be limited to No. 2 diesel fuel oil. The permittee shall use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel.
[Rules 62-4.160(2) and 62-210.200 (Def. of PTE), F.A.C.]
- B.4** Hours of Operation: Operating hours of this emission unit for emergency operations are not restricted
[Rules 62-4.160(2) and 62-210.200 (Def. of PTE), F.A.C.]

RECORDS

- B.5** Fuel Records: The permittee shall record the actual amount of fuel throughput for this emission unit. All records shall be maintained on site at the facility. **The permittee shall maintain records of combined fuel consumption for ALL emergency generators at the facility that are exempt under Rule 62-210.300(3)(a), F.A.C.**
[Rule 62-4-070(3), F.A.C.]

APPENDIX	DESCRIPTION
A	General Permit Conditions
B	Abbreviations, Acronyms, Citations, and Identification Numbers (version dated 02/05/97)
C	Test Procedures – Rule 62-297.310, F.A.C.
D	Air Pollutant Emission Factors
E	Compliance Procedures

- G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
- G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
- G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
- G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
- G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
- G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
- (a) Have access to and copy and records that must be kept under the conditions of the permit;
 - (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
 - (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

- G.8 If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
- (a) A description of and cause of non-compliance; and
 - (b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

- G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

- G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
- G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.13 This permit also constitutes:
- (a) Determination of Best Available Control Technology, (BACT does apply)
 - (b) Determination of Prevention of Significant Deterioration; (PSD does not apply) and
 - (c) Compliance with New Source Performance Standards (NSPS does not apply).
- G.14 The permittee shall comply with the following:
- (a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
 - (b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
 - (c) Records of monitoring information shall include:
 - 1. The date, exact place, and time of sampling or measurements;
 - 2. The person responsible for performing the sampling or measurements;
 - 3. The dates analyses were performed;
 - 4. The person responsible for performing the analyses;
 - 5. The analytical techniques or methods used; and
 - 6. The results of such analyses.
- G.15 When requested by the Department, the permittee shall within a reasonable time furnish any information required by law, which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

APPENDIX B.
Abbreviations, Acronyms, Citations, and Identification Numbers
(Version dated 02/05/97)

Abbreviations and Acronyms:

°F: Degrees Fahrenheit	F.S.: Florida Statute
BACT: Best Available Control Technology	ISO: International Standards Organization
CFR: Code of Federal Regulations	LAT: Latitude
DEP: State of Florida, Department of Environmental Protection	LONG: Longitude
DARM: Division of Air Resource Management	MMBtu: million British thermal units
EPA: United States Environmental Protection Agency	MW: Megawatt
F.A.C.: Florida Administrative Code	ORIS: Office of Regulatory Information Systems
CFS: Chlorofluorocarbons	SOA: Specific Operating Agreement
	UTM: Universal Transverse Mercator

Citations:

The following examples illustrate the methods used in this permit to abbreviate and cite the references of rules, regulations, guidance memorandums, permit numbers, and ID numbers.

Code of Federal Regulations:

Example: **[40 CFR 60.334]**

Where:	40	reference to	Title 40
	CFR	reference to	Code of Federal Regulations
	60	reference to	Part 60
	60.334	reference to	Regulation 60.334

Florida Administrative Code (F.A.C.) Rules:

Example: **[Rule 62-213, F.A.C.]**

Where:	62	reference to	Title 62
	62-213	reference to	Chapter 62-213
	62-213.205	reference to	Rule 62-213.205, F.A.C.

ISO: International Standards Organization refers to those conditions at 288 degrees K, 60 percent relative humidity, and 101.3 kilopascals pressure.

APPENDIX B.
Abbreviations, Acronyms, Citations, and Identification Numbers
(Version dated 02/05/97)

Identification Numbers:

Facility Identification (ID) Number:

Example: Facility ID No.: 1050221

Where:

105 = 3-digit number code identifying the facility is located in Polk County
0221 = 4-digit number assigned by state database.

Permit Numbers:

Example: 1050221-002-AV, or
1050221-001-AC

Where:

AC = Air Construction Permit
AV = Air Operation Permit (Title V Source)
105 = 3-digit number code identifying the facility is located in Polk County
0221 = 4-digit number assigned by permit tracking database
001 or 002 = 3-digit sequential project number assigned by permit tracking database

Example: PSD-FL-185
PA95-01
AC53-208321

Where:

PSD = Prevention of Significant Deterioration Permit
PA = Power Plant Siting Act Permit
AC = Old Air Construction Permit numbering

APPENDIX C
TEST PROCEDURES - Rule 62-297.310, F.A.C.

- C.1 Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. **[Rule 62-297.310(1), F.A.C.]**
- C.2 Operating Rate During Testing: Unless otherwise stated in the applicable emission limiting standard rule, testing of emissions shall be conducted with the emissions unit operating at permitted capacity as defined below. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. **[Rule 62-297.301(2), F.A.C.]**
- C.3 Permitted Capacity: Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. **[Rule 62-297.310(2)(b), F.A.C.]**
- C.4 Calculation of Emission Rate: The indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. **[Rule 62-297.310(3), F.A.C.]**
- C.5 Required Sampling Time: Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes. **[Rule 62-297.310(4)(a)1, F.A.C.]**
- C.6 Opacity Compliance Tests: When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:
- (a) For batch, cyclical processes, or other operations, which are normally completed within less than the minimum observation period and do not recur within that time, the period of observation shall be equal to the duration of the batch cycle or operation completion time.
 - (b) The observation period for special opacity tests that are conducted to provide data to establish a surrogate standard pursuant to Rule 62-297.310(5)(k), F.A.C., Waiver of Compliance Test Requirements, shall be established as necessary to properly establish the relationship between a proposed surrogate standard and an existing mass emission limiting standard. **[Rule 62-297.310(4)(a)2, F.A.C.]**
- C.7 Minimum Sample Volume: Unless otherwise specified in the applicable rule, the minimum sample volume per run shall be 25 dry standard cubic feet. **[Rule 62-297.310(4)(b), F.A.C.]**

**APPENDIX C
 TEST PROCEDURES - Rule 62-297.310, F.A.C.**

- C.8 **Required Flow Rate Range:** For EPA Method 5 particulate sampling, acid mist/sulfur dioxide, and fluoride sampling which uses Greenburg Smith type impingers, the sampling nozzle and sampling time shall be selected such that the average sampling rate will be between 0.5 and 1.0 actual cubic feet per minute, and the required minimum sampling volume will be obtained. **[Rule 62-297.310(4)(c), F.A.C.]**
- C.9 **Allowed Modification to EPA Method 5:** When EPA Method 5 is required, the following modification is allowed: the heated filter may be separated from the impingers by a flexible tube. **[Rule 62-297.310(4)(e), F.A.C.]**
- C.10 **Required Equipment:** The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards. **[Rule 62-297.310(5)(a), F.A.C.]**
- C.11 **Calibration of Sampling Equipment:** Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1. **[Rule 62-297.310(4)(d), F.A.C.]**

Table 62-297.310-1 Calibration Schedule			
Item	Minimum Calibration Frequency	Reference Instrument	Tolerance
Liquid in glass thermometer	Annually	ASTM Hg in glass ref. Thermometer or equivalent, or thermometric points	+/-2%
Bimetallic thermometer	Quarterly	Calib. liq. in glass thermometer	5 degrees F
Thermocouple	Annually	ASTM Hg in glass ref. thermometer, NBS calibrated reference and potentiometer	5 degrees F
Barometer	Monthly	Hg barometer or NOAA station	+/-1% scale
Pitot Tube	When required or when damaged	By construction or measurements in wind tunnel D greater than 16" and standard pitot tube	See EPA Method 2, Fig. 2-2 & 2-3
Probe Nozzles	Before each test or when nicked, dented, or corroded Max. deviation between readings	Micrometer	+/-0.001" mean of at least three readings .004"
Dry Gas Meter and Orifice Meter	Full Scale: When received, When 5% change observed, Annually 1. One Point: Semiannually 2. Check after each test series	Spirometer or calibrated wet test or dry gas test meter Comparison check	2% 5%

- C.12 **Accuracy of Equipment:** Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value. **[Rule 62-297.310(5)(b), F.A.C.]**
- C.13 **Required Stack Sampling Facilities.** Sampling facilities include sampling ports, work platforms, access to work platforms, electrical power, and sampling equipment support. All stack sampling facilities must meet any

APPENDIX C
TEST PROCEDURES - Rule 62-297.310, F.A.C.

Occupational Safety and Health Administration (OSHA) Safety and Health Standards described in 29 CFR Part 1910, Subparts D and E.

- (a) Permanent Test Facilities. The owner or operator of an emissions unit for which a compliance test, other than a visible emissions test, is required on at least an annual basis, shall install and maintain permanent stack sampling facilities.
- (b) Temporary Test Facilities. The owner or operator of an emissions unit that is not required to conduct compliance test on at least an annual basis may use permanent or temporary stack sampling facilities. If the owner chooses to use temporary sampling facilities on an emissions unit, and the Department elects to test the unit, such temporary facilities shall be installed on the emissions unit within 5 days of a request by the Department and remain on the emissions unit until the test is completed.
- (c) Sampling Ports.
 - 1. All sampling ports shall have a minimum inside diameter of 3 inches.
 - I. The ports shall be capable of being sealed when not in use.
 - II. The sampling ports shall be located in the stack at least 2 stack diameters or equivalent diameters downstream and at least 0.5 stack diameter or equivalent diameter upstream from any fan, bend, constriction or other flow disturbance. 4. For emissions units for which a complete application to construct has been filed prior to December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 15 feet or less. For stacks with a larger diameter, four sampling ports, each 90 degrees apart, shall be installed. For emissions units for which a complete application to construct is filed on or after December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 10 feet or less. For stacks with larger diameters, four sampling ports, each 90 degrees apart, shall be installed. On horizontal circular ducts, the ports shall be located so that the probe can enter the stack vertically, horizontally or at a 45 degree angle.
 - III. On rectangular ducts, the cross sectional area shall be divided into the number of equal areas in accordance with EPA Method 1. Sampling ports shall be provided which allow access to each sampling point. The ports shall be located so that the probe can be inserted perpendicular to the gas flow.
- (d) Work Platforms.
 - I. Minimum size of the working platform shall be 24 square feet in area. Platforms shall be at least 3 feet wide.
 - II. On circular stacks with two sampling ports, the platform shall extend at least 110 degrees around the stack.
 - III. On circular stacks with more than two sampling ports, the work platform shall extend 360 degrees around the stack.
 - IV. All platforms shall be equipped with an adequate safety rail (ropes are not acceptable), toeboard, and hinged floor-opening cover if ladder access is used to reach the platform. The safety rail directly in line with the sampling ports shall be removable so that no obstruction exists in an area 14 inches below each sample port and 6 inches on either side of the sampling port.
- (e) Access to Work Platform.
 - I. Ladders to the work platform exceeding 15 feet in length shall have safety cages or fall arresters with a minimum of 3 compatible safety belts available for use by sampling personnel.
 - II. Walkways over free-fall areas shall be equipped with safety rails and toeboards.
- (f) Electrical Power.
 - I. A minimum of two 120-volt AC, 20-amp outlets shall be provided at the sampling platform within 20 feet of each sampling port.
 - II. If extension cords are used to provide the electrical power, they shall be kept on the plant's property and be available immediately upon request by sampling personnel.

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(g) Sampling Equipment Support.

- I. A three-quarter inch eyebolt and an angle bracket shall be attached directly above each port on vertical stacks and above each row of sampling ports on the sides of horizontal ducts.
 - a. The bracket shall be a standard 3 inch × 3 inch × one-quarter inch equal-legs bracket, which is one and one-half inches wide. A hole that is one-half inch in diameter shall be drilled through the exact center of the horizontal portion of the bracket. The horizontal portion of the bracket shall be located 14 inches above the centerline of the sampling port.
 - b. A three-eighth inch bolt, which protrudes 2 inches from the stack, may be substituted for the required bracket. The bolt shall be located 15 and one-half inches above the centerline of the sampling port.
 - c. The three-quarter inch eyebolt shall be capable of supporting a 500 pound working load. For stacks that are less than 12 feet in diameter, the eyebolt shall be located 48 inches above the horizontal portion of the angle bracket. For stacks that are greater than or equal to 12 feet in diameter, the eyebolt shall be located 60 inches above the horizontal portion of the angle bracket. If the eyebolt is more than 120 inches above the platform, a length of chain shall be attached to it to bring the free end of the chain to within safe reach from the platform.
- II. A complete monorail or dual rail arrangement may be substituted for the eyebolt and bracket.
- III. When the sample ports are located in the top of a horizontal duct, a frame shall be provided above the port to allow the sample probe to be secured during the test.

C.14 Frequency of Compliance Tests. The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required.

(a) General Compliance Testing.

1. The owner or operator of a new or modified emissions unit that is subject to an emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining an operation permit for such emissions unit.
2. For excess emission limitations for particulate matter specified in Rule 62-210.700, F.A.C., a compliance test shall be conducted annually while the emissions unit is operating under soot blowing conditions in each federal fiscal year during which soot blowing is part of normal emissions unit operation, except that such test shall not be required in any federal fiscal year in which a fossil fuel steam generator does not burn liquid and/or solid fuel for more than 400 hours other than during startup.
3. The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing an air operation permit pursuant to sub-paragraph 62-210.300(2)(a)3.b., c., or d., F.A.C., the Department shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:
 - a. Did not operate; or
 - b. In the case of a fuel burning emissions unit, burned liquid and/or solid fuel for a total of no more than 400 hours,
4. During each federal fiscal year (October 1 – September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for:
 - a. Visible emissions, if there is an applicable standard;
 - b. Each of the following pollutants, if there is an applicable standard, and if the emissions unit emits or has the potential to emit: 5 tons per year or more of lead or lead

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compounds measured as elemental lead; 30 tons per year or more of acrylonitrile; or 100 tons per year or more of any other regulated air pollutant; and

c. Each NESHAP pollutant, if there is an applicable emission standard.

5. An annual compliance test for particulate matter emissions shall not be required for any fuel burning emissions unit that, in a federal fiscal year, does not burn liquid and/or solid fuel, other than during startup, for a total of more than 400 hours.
6. For fossil fuel steam generators on a semi-annual particulate matter emission compliance testing schedule, a compliance test shall not be required for any six-month period in which liquid and/or solid fuel is not burned for more than 200 hours other than during startup.
7. For emissions units electing to conduct particulate matter emission compliance testing quarterly pursuant to paragraph 62-296.405(2)(a), F.A.C., a compliance test shall not be required for any quarter in which liquid and/or solid fuel is not burned for more than 100 hours other than during startup.
8. Any combustion turbine that does not operate for more than 400 hours per year shall conduct a visible emissions compliance test once per each five-year period, coinciding with the term of its air operation permit.
9. The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.
10. An annual compliance test conducted for visible emissions shall not be required for units exempted from air permitting pursuant to subsection 62-210.300(3), F.A.C.; units determined to be insignificant pursuant to subparagraph 62-213.300(2)(a)1., F.A.C., or paragraph 62-213.430(6)(b), F.A.C.; or units permitted under the General Permit provisions in paragraph 62-210.300(4)(a) or Rule 62-213.300, F.A.C., unless the general permit specifically requires such testing.

C.15 Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct a special compliance test. The special compliance test shall be conducted within 15 days of operation of the E.U. outside the design criteria of the AQCS (air quality control system). The special compliance test shall be conducted to document compliance with the emission limitations and to establish a normal range of operation. **[Rule 62-297.310(7)(b), F.A.C.]**

C.16 Waiver of Compliance Test Requirements: If the owner or operator of an emissions unit that is subject to a compliance test requirement demonstrates to the Department, pursuant to the procedure established in Rule 62-297.620, F.A.C., that the compliance of the emissions unit with an applicable weight emission limiting standard can be adequately determined by means other than the designated test procedure, such as specifying a surrogate standard of no visible emissions for particulate matter sources equipped with a bag house or specifying a fuel analysis for sulfur dioxide emissions, the Department shall waive the compliance test requirements for such emissions units and order that the alternate means of determining compliance be used, provided, however, the provisions of Rule 62-297.310(7)(b), F.A.C., shall apply. **[Rule 62-297.310(7)(c), F.A.C.]**

C.17 Compliance Test Notification: The permittee shall notify the Compliance Authority fifteen (15) days prior to Emission Unit (E.U.) testing. **[Rule 62-297.310(7)(a)(9), F.A.C.]**

C.18 Compliance Test Submittal: Copies of the test report(s) shall be submitted to the Permitting Authority and the Compliance Authority within forty-five (45) days of completion of testing. **[Rule 62-297.310(8)(b), F.A.C.]**

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- C.19 Test Reports: The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information: **[Rule 62-297.310(8)(c), F.A.C.]**
- (a) The type, location, and designation of the emissions unit tested.
 - (b) The facility at which the emissions unit is located.
 - (c) The owner or operator of the emissions unit.
 - (d) The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
 - (e) The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission-limiting standard.
 - (f) The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
 - (g) A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
 - (h) The date, starting time, and duration of each sampling run.
 - (i) The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
 - (j) The number of points sampled and configuration and location of the sampling plane.
 - (k) For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
 - (l) The type, manufacturer, and configuration of the sampling equipment used.
 - (m) Data related to the required calibration of the test equipment.
 - (n) Data on the identification, processing, and weights of all filters used.
 - (o) Data on the types and amounts of any chemical solutions used.
 - (p) Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
 - (q) The names of individuals, who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
 - (r) All measured and calculated data required to be determined by each applicable test procedure for each run.
 - (s) The detailed calculations for one run that relate the collected data to the calculated emission rate.
 - (t) The applicable emission standard, the resulting maximum allowable emission rate for the emissions unit, plus the test results in the same form and unit of measure.
 - (u) A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.
- C.20 Recordkeeping: The permittee shall ensure that all records of monitoring information shall specify the date, place, and time of sampling or measurement and the operating conditions at the time of sampling or measurement, the date(s) analyses were performed, the company or entity that performed the analyses, the analytical techniques or methods used, and the results of such analyses. **[Rule 62-213.440(1)(b)2.a., F.A.C.]**
- C.21 Record Retention: The permittee shall retain records of all monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information shall include all calibration and maintenance records and all original strip-chart recordings for

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continuous monitoring instrumentation, and copies of all reports required by the permit. **[Rule 62-213.440(1)(b)2.b., F.A.C.]**

- C.22 Alternate Sampling Procedure: The owner or operator of any emissions unit subject to the provisions of this chapter may request in writing a determination by the Secretary or his/her designee that any requirement of this chapter (except for any continuous monitoring requirements) relating to emissions test procedures, methodology, equipment, or test facilities shall not apply to such emissions unit and shall request approval of an alternate procedures or requirements. The request shall set forth the following information, at a minimum:
- (a) Specific emissions unit and permit number, if any, for which exception is requested.
 - (b) The specific provision(s) of this chapter from which an exception is sought.
 - (c) The basis for the exception, including but not limited to any hardship which would result from compliance with the provisions of this chapter.
 - (d) The alternate procedure(s) or requirement(s) for which approval is sought and a demonstration that such alternate procedure(s) or requirement(s) shall be adequate to demonstrate compliance with applicable emission limiting standards contained in the rules of the Department or any permit issued pursuant to those rules.

The Secretary or his/her designee shall specify by order each alternate procedure or requirement approved for an individual emissions unit source in accordance with this section or shall issue an order denying the request for such approval. The Department's order shall be final agency action, reviewable in accordance with Section 120.57, Florida Statutes. **[Rule 62-297.620, F.A.C.]**

APPENDIX D

AIR POLLUTANT EMISSIONS FACTORS FOR DIFFERENT MATERIALS

Pollutant	Engineered Wood Products		Wood Waste Products		Untreated Wood Products		Fuel Oil		Methane	
	Emission Factor	Unit	Emission Factor	Unit	Emission Factor	Unit	Emission Factor	Unit	Emission Factor	Unit
PM ^[1]	0.41	lb/MM Btu	0.42	lb/MM Btu	0.42	lb/MM Btu	1.70	lb/1000 gals	7.60	lb/MMCF
PM-10 ¹	0.35	lb/MM Btu	0.38	lb/MM Btu	0.38	lb/MM Btu	1.70	lb/1000 gals	7.60	lb/MMCF
NOX	1.29	lb/MM Btu	0.49	lb/MM Btu	0.49	lb/MM Btu	18.00	lb/1000 gals	100.00	lb/MMCF
VOC	0.03	lb/MM Btu	0.02	lb/MM Btu	0.02	lb/MM Btu	2.49	lb/1000 gals	5.50	lb/MMCF
CO	0.61	lb/MM Btu	0.60	lb/MM Btu	0.60	lb/MM Btu	5.00	lb/1000 gals	84.00	lb/MMCF
SO2	0.00	lb/MM Btu	0.03	lb/MM Btu	0.03	lb/MM Btu	100.00	lb/1000 gals	0.60	lb/MMCF
Lead			0.00	lb/MM Btu	0.00	lb/MM Btu				
Total HAPs	0.05	lb/MM Btu	0.04	lb/MM Btu	0.04	lb/MM Btu	0.04	lb/1000 gals	0.00	
Pollutant	Vegetable Oil		Heptane		Plastic		Isopropyl Alcohol		Propane	
	Emission Factor	Unit	Emission Factor	Unit	Emission Factor	Unit	Emission Factor	Unit	Emission Factor	Unit
PM	1.70	lb/1000 gals	0.70	lb/1000 gals	100.00	lb/ton	0.70	lb/1000 gals	0.70	lb/1000 gals
PM-10	1.70	lb/1000 gals	0.70	lb/1000 gals	100.00	lb/ton	0.70	lb/1000 gals	0.70	lb/1000 gals
NOX	18.00	lb/1000 gals	13	lb/1000 gals	4.00	lb/ton	13	lb/1000 gals	13	lb/1000 gals
VOC	2.49	lb/1000 gals	1.0	lb/1000 gals	32.00	lb/ton	1.0	lb/1000 gals	1.0	lb/1000 gals
CO	5.00	lb/1000 gals	8	lb/1000 gals	125.00	lb/ton	8	lb/1000 gals	8	lb/1000 gals
SO2	100.00	lb/1000 gals	0.016	lb/1000 gals	0.00	lb/ton	0.016	lb/1000 gals	0.016	lb/1000 gals
Lead	0.00	lb/1000 gals			0.00	lb/ton				
Total HAPs	4.09E-02	lb/1000 gals			0.04	lb/ton				

Note: Heat input of wood products is 16 MMBtu/ton; heat input of No.2 fuel oil is 138.5 MMBtu/1000 gallons; heat input of vegetable oil is 136 MMBtu/1000 gallons.

^[1] Scrubber's control efficiency is assumed at 90%. For other pollutants, the control efficiency is assumed zero.

APPENDIX E

Compliance Procedures for FIT Center

APPENDIX E

Compliance Procedures¹

Compliance will be demonstrated by using the amount of each fuel burned multiplied by the appropriate emission factors included in Appendix B. The amount of each fuel burned will be determined by using both mass balance and engineering judgment.

For heptane, alcohols and fuel oil

The emissions will be calculated by using mass balance. The amount of each fuel added to a test will be weighed and the amount of each fuel sent out as liquid waste will be subtracted off from the amount used and it will be assumed that the difference was emitted

a. Fuel burned = (weight of initial fuel used)- (weight of fuel sent out as waste)

For test involving just one type of solid fuel

The emissions will be calculated by using mass balance. The amount of each fuel added to a test will be weighed. The facility will then either

2 Assume that all of the material was burned

a. Fuel burned = weight of initial fuel used

3 Use engineering judgment to estimate the amount of the product was burned and then subtract that from the initial material in the test;

a. Fuel burned = (weight of fuel used) – (estimate of fuel burned based on engineering judgment); or

4 Weigh the material after the test, assume all of the suppressant that was used remains on the material burned and subtract the final weight from the initial weight. This will require measuring the amount of suppressant that was used.

a. Fuel burned = (weight of fuel used) – (weight of material after burn complete) – (weight of suppressant used)

For tests involving multiple fuels

Some of the test will require evaluating how a suppressant works in an office or home setting. These types of tests may include office chairs, tables, rugs, drapes, mattresses or other material that contains multiple fuel types and non flammable items such as metals. It will be necessary to determine how much of each type of fuel is included in each test, and then use the methodologies above to determine how

¹ As the facility gains experience with operations and fuel mixes, these procedures may be revised with Palm Beach County Health Department approval.

much of each fuel was actually consumed. The facility believes there are two ways to determine the amount of each fuel in the test.

1. The first way would be to estimate the amount of each fuel using engineering judgment.
2. The second way would be to take apart items such as a mattress or a chair being used and weigh the amount of each fuel and non combustible included in the product.
3. The facility plans to evaluate both methods initially and develop a library of fuel mixes based on the product and compare the actual weights to the estimated weights of each product. Over time, the facility hopes to use the library along with engineering judgment to calculate the weight percentage of each fuel in the test.