TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

Hillsborough County Public Utilities Department

925 Twiggs Street
Tampa, Florida 33602

Hillsborough County Resource Recovery Facility
Facility ID No. 0570261

PROJECT

Draft Permit No. 0570261-016-AC / PSD-FL-121E and PSD-FL-369D
Application for Minor Source Air Construction Permit Modification

COUNTY

Hillsborough County, Florida

PERMITTING AUTHORITY

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1. GENERAL PROJECT INFORMATION

1.1. Facility Description and Location

This existing facility consists of: four municipal solid waste combustors Unit Nos. 1, 2, 3 and 4 with auxiliary burners; lime storage and processing facilities; ash storage and processing facilities; cooling towers; and, ancillary support equipment. The nominal capacity of the Hillsborough County Resource Recovery Facility (RRF) is 1,800 tons/day of municipal solid waste (MSW) fuel. The gross nominal electric generating capacity of the facility is 47 megawatts (MW). The facility is owned by Hillsborough County and is currently operated by Covanta Hillsborough, Inc. a subsidiary of Covanta Energy Corporation.

Also located at the facility are miscellaneous unregulated/insignificant emissions units and/or activities.

This existing plant is a mass-burn municipal waste combustor (MWC) plant categorized under Standard Industrial Classification No. 4953. This existing plant is located in Hillsborough County at 350 North Falkenburg Road in Tampa, Florida 33619. The UTM Coordinates are: Zone 17, 268.2 km East and 3092.7 km North; Latitude: 27° 57' 14" North and Longitude: 82° 20' 22" West. This site is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to state and federal Ambient Air Quality Standards (AAQS).

The Hillsborough County RRF (HCRRF) shown on the left-hand side of Figure 1 is very similar to the standard, mass-burn Covanta/Martin GmbH arrangement on the right. The adjacent Hillsborough County Falkenburg Advanced Wastewater Treatment Plant (WWTP) is visible in the photograph and is immediately South of the HCRRF.

1. Tipping Floor 2. Refuse Holding Pit 3. Grapple 4. Feed Chute 5. Martin Stoker Grate 6. Combustion Air Fan	7. Martin Ash Discharger 8. Combustion Chamber 9. Radiant Zone (furnace) 10. Convection Zone 11. Superheater 12. Economizer	13. Spray Dryer Absorber 14. Fabric Filter Baghouse 15. Fly Ash Handling System 16. Induced Draft Air Fan 17. Multi-flue Stack

Figure 1 – Aerial Photograph of Hillsborough County RRF and Covanta/Martin, GmbH Mass Burn Process

1.2. Waste-to-Energy Process Description

A waste-to-energy (WTE) facility is a complete industrial installation containing most or all of the following features:

- Waste receiving and separation;
- Waste storage and handling;
- Waste feeding;
- Furnace for combustion;
- Heat recovery equipment followed by steam and electricity generation;

- Air pollution control devices (flue gas treatment); and
- Residue (ash and wastewater) handling installations.

A schematic of a mass-burn MWC with steam electrical power production is shown in Figure 2. Some of the points where pollutants (defined further below) can be removed or formation prevented are shown.

Figure 2. Pollutant Generation/Control Points **Figure 3. Refuse pit at Hillsborough County RRF**

Waste is delivered, weighed, sorted/separated if necessary, and tipped into the refuse pit shown in Figure 3, where it is temporarily stored. The tipping hall and refuse pit are closed buildings to minimize dust and odor releases. The waste is mixed in the refuse pit which is designed to hold sufficient fuel for several days of combustion as waste is typically delivered during normal working hours while the plant operates "24/7". Air is continually extracted from the pit to maintain a negative pressure and serves as combustion air for the furnace.

A crane system lifts the waste from the refuse pit using the grapples shown in Figure 3 and transports it to the feed chute, which consists of a hopper and chute. Hydraulic-driven feed rams push the waste onto the reciprocating combustion grate where is turned and burned. Air is supplied below (underfire air) and above the grate (overfire air).

Heat from the combustion process is used to turn water into steam (or to heat incoming air and water) through heat transfer via the furnace waterwall, superheater, economizer and air preheater. The steam then routed to a steam turbine-generator for power generation. The steam is then condensed via a wet cooling tower and routed back to the boiler. Residues produced include bottom ash (which falls to the bottom of the combustion chamber), fly ash (which exits the combustion chamber with the flue gas), and residue (including fly ash) from the flue gas cleaning system.

After heat recovery for electrical energy production, the exhaust gas from each furnace is further cooled by injection of water. The exhaust stream is cleaned in the air pollution control equipment described below. The cleaned exhaust gas exits via a single 220-foot stack that contains a separate flue from each unit.

1.3. Summary of Air Pollution Control Equipment

When originally constructed, the air pollution control measures and controls on Units 1, 2 and 3 consisted of good combustion practices (GCP) for burning waste on the Martin GmbH grates and electrostatic precipitators (ESP) to control particulate matter (PM). In 1998, the Department issued an air construction permit to the County to replace or add modern air pollution control equipment. Link to Units 1, 2, 3 Pollution Control Permit

The purpose air pollution control project was to comply with Department Rule 62-204.800(9)(b), Florida Administrative Code (F.A.C.) - the Department's MWC Rule, which is based on Title 40, Code of Federal Regulations, Part 60 (40 CFR 60), Subpart Cb - Emissions Guidelines and Compliance Times for Large MWC That are Constructed on or Before September 20, 1994. Link to Subpart Cb

The project replaced the original ESP on each unit with an emissions control system consisting of:

- Improved GCP features on the grate and furnace to minimize formation of nitrogen oxides (NO_X) and promote burnout/destruction of carbon monoxide (CO) and organic hazardous air pollutants (HAP) such as dioxin and furan;
- A Spray Dry Absorber (SDA) based on lime slurry injection wherein acid gases in the furnace exhaust such as hydrogen chloride (HCl) and sulfur dioxide (SO_2) are neutralized and captured as PM;
- Activated Carbon Injection (ACI) to capture (adsorb) certain metals such as mercury (Hg) and organic HAP and then remove them in the PM control device;
- A Fabric filter (FF - baghouse) to capture PM originating from combustion [including PM metals such as cadmium (Cd) and lead (Pb)], products of the acid gas reactions, and spent activated carbon; and
- A Selective Non-Catalytic Reduction (SNCR) system based on ammonia (NH_3) or urea injection into each furnace to further control nitrogen oxides (NO_X) emissions.

Figure 4 is a diagram of the typical Martin GmbH mass burn grate stoker MWC with the air pollution control equipment configuration of GCP/SDA/FF/ACI/SNCR (typical industry shorthand for this configuration). The air pollution control project resulted in significant reductions from Units 1, 2 and 3 of all pollutants mentioned in the foregoing discussion.

Figure 4. Process Diagram Martin GmbH Mass Burn MWC with GCP/SDA/FF/ACI/SNCR Configuration

Unit 4 was permitted in 2006 with the same basic control equipment configuration as Units 1, 2 and 3 but with the more stringent emission standards of a modern best available control technology (BACT) determination. Link to Unit 4 Permit It was also subject to very stringent requirements of 40 CFR 60, Subpart Eb - Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994. Link to Subpart Eb The four units are equipped with continuous emission and opacity monitoring systems (CEMS and COMS) for CO, SO_2, NO_X, and visible emissions. Annual stack testing is required for PM, HCl, mercury, dioxin/furan, cadmium and lead.

1.4. Process Limits and Waste Characteristics

The 1998 permit (PSD-FL-121B) replaced two key permits issued in 1986 and 1987 for Units 1, 2 and 3 that were issued pursuant to the rules for the Prevention of Significant Deterioration (PSD) at 40 CFR 52.21 and Rule 62-212.400, F.A.C. (PSD-FL-104 and PSD-FL-121). The three MWC's were described in the following table reproduced from that permit:

EMISSIONS UNIT No.	EMISSIONS UNITS DESCRIPTION
001	150 MMBtu/hr (nominal) Municipal Waste Combustor & Auxiliary Burners–Unit No. 1
002	150 MMBtu/hr (nominal) Municipal Waste Combustor & Auxiliary Burners–Unit No. 2
003	150 MMBtu/hr (nominal) Municipal Waste Combustor & Auxiliary Burners–Unit No. 3

The 1998 permit included enforceable conditions for process rate limits and fuels . The relevant conditions as given in Section III is reproduced as follows:

B.2. Process Operating Rates

The maximum individual MWC throughput shall not exceed 460 tons MSW per day (1,380 tons per day entire facility), 172.5 MMBtu per hour, ***102,000 pounds steam per hour*** (on a 4-hour block arithmetic average). The incinerators/boilers shall not be loaded in excess of their maximum operating capacity, equivalent to 1,380 tons MSW per day total, but no more than 1,200 tons MSW on an annual (52 week rolling average) average basis for the entire facility. (Compliance per Specific Conditions B.13 and B.14) [Rule 62-204.800(8), F.A.C., 40 CFR 60.31b; 60.38b; 60.51b, and 60.58b(j); PSD-FL-121(A)/PA 83-19 and Rule 62-4.030(3), F.A.C.]

B.6. Fuels

The primary fuel for the facility is municipal solid waste (MSW), including the items and materials that fit within the definition of MSW contained in either 40 CFR 60.51b or Section 403.706(5), Florida Statutes (1995).

B.6.1 Subject to the limitations contained in this permit, the authorized fuels for the facility also include the other solid wastes that are not MSW, which are described in d. - f., below. However, the facility **shall not burn**:

(i) those materials that are prohibited by state or federal law;
(ii) those materials that are prohibited by this permit;
(iii) lead acid batteries;
(iv) hazardous waste;
(v) nuclear waste;
(vi) radioactive waste;
(vii) ***sewage sludge***;
(viii) explosives.

B.6.2 The fuel may be received either as a mixture or as a single-item stream (segregated load) of discarded materials. If the facility intends to use an authorized fuel that is segregated non-MSW material, the fuel shall be either:

(a) well mixed with MSW in the refuse pit; or
(b) alternately charged with MSW in the hopper.

Further details regarding permitted and prohibited fuels were provided in conditions B.6.3 through B.6.7. Of particular interest in this review is the prohibition on burning sewage sludge given in Condition B.6.1(g) that originated in the original PSD permits and was subsequently carried forward into the 1998 permit and the subsequent facility Title V Air Operation Permits. Also of interest is the stated steam process rate.

The original air construction permit for Unit 4 that was issued in 2006 (0570261-007-AC/PSD-FL-369) also included a prohibition on sewage sludge as a fuel. Link to Unit 4 PSD Permit In contrast to Units 1, 2 and 3 only a single enforceable steam process limitation was included in the Unit 4 permit, Section III.B as follows:

2. Permitted Capacity. The maximum steam production rate shall not exceed 200,000 pounds steam per hour (on a 4-hour block arithmetic average).

{Permitting Note: The nominal capacity of Unit 4 is 600 tons per day and has been determined to be greater than 250 tons per day, thus classifying the unit as a "large MWC unit" under NSPS - 40 CFR 60, Subpart Eb.}

[Rules 62-4.160(2) and 62-210.200(PTE), F.A.C., 40 CFR 60, Subpart Eb, and Design]

For reference, the permit also contains a reference to a "nominal steam production rate" of 163,780 pounds per hour (lb/hour) and a "nominal heat input" of approximately 288 MMBtu/hour. The enforceable limit of 190,000 lb/hour of steam was revised to 200,000 lb/hour of steam in a subsequent permit modification issued in 2007 when the unit was under construction (0570261-009-AC/PSD-FL-369B). Link to Unit 4 PSD Permit Revision

1.5. Proposed Project

The applicant requests that the Department remove the design capacity-based waste and heat input operational limitations applicable to Units 1, 2 and 3. This would leave the four-hour block steam rate of 102,000 lb/hour pounds as the permanently enforceable limit. The units would also be limited to 110% of the four-hour block steam rate achieved during the most recent dioxin/furan test as required by the Department's MWC Rule and 40 CFR 60, Subpart Eb (not to exceed 102,000 lb/hour.

The applicant requests removal of the prohibition against "sewage sludge" use as a fuel in Units 1-4 and requests to use approximately 5% biosolids, by weight, as received (treated, dewatered sewage sludge) as an acceptable fuel. The biosolids would have a solids content of at least 12%. The material would be trucked in from the Hillsborough County Falkenburg Advanced WWTP and the Valrico and South County Advanced WWTP's. In the future similar biosolids may be obtained from other County-owned treatment plants and water reclamation facilities after installation of dewatering facilities.

Refer to Figure 3 above. The biosolids will be directly dumped into the main refuse storage bunker along with MSW. The crane operators will mix the WWTP biosolids and MSW to achieve a more homogenous fuel. Once the mixing is complete, the crane operators will pick up the mixed fuel and feed it directly into the boiler hopper. Hillsborough County proposes to combust up to 90 wet tons/day (as received) biosolids. This is 5% of the facility nominal design feed rate of 1,800 tons/day of MSW. The objective is to achieve 5% biosolids (after mixing) in each batch fed to each combustor.

The waste bunker is enclosed inside the tipping building. The tipping building is kept at a slight negative pressure by draft fans that provide combustion air to the four MWC. This minimizes escape of objectionable odors. The malodorous compounds are subsequently destroyed inside the furnace.

2. AIR POLLUTION REGULATIONS AND APPLICABILITY DETERMINATIONS

2.1. Department Regulations

Projects at stationary sources with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following applicable chapters:

Table 1. Applicable Air-Related Rules from the Florida Administrative Code

Chapter	Description
62-4	Permits
62-17	Power Plant Siting
62-204	Air Pollution Control – General Provisions
62-210	Stationary Sources of Air Pollution – General Requirements
62-212	Stationary Sources – Preconstruction Review
62-213	Operation Permits for Major Sources (Title V) of Air Pollution
62-296	Stationary Sources – Emission Standards
62-297	Stationary Sources – Emissions Monitoring

2.2. Federal Regulations

The U.S. Environmental Protection Agency (EPA) establishes air quality regulations in 40 CFR 60 that identify New Source Performance Standards (NSPS) for a variety of industrial activities. EPA also establishes the minimum emission guidelines and compliance schedules for existing facilities of certain industries in 40 CFR 60. 40 CFR 61 generally specifies National Emission Standards for Hazardous Air Pollutants (NESHAP). 40 CFR 63 generally specifies NESHAP provisions based on the Maximum Achievable Control Technology

(MACT) for given source categories. Federal regulations adopted by reference are given in Rule 62-204.800, F.A.C. State regulations approved by EPA are given in 40 CFR 52, Subpart K – Florida; also known as the State Implementation Plan (SIP) for Florida. Link to 40 CFR 52, Subpart K

As previously mentioned, the Department's MWC Rule (applicable to Units 1, 2 and 3) is based on 40 CFR 60, Subpart Cb - Emissions Guidelines was promulgated by EPA in accordance with section 111(d) and section 129 of the CAA and 40 CFR 60, Subpart B. Link to Subpart Cb Many of the definitions and terms used in Subpart Cb are referenced to 40 CFR 60, Subpart Eb, which applies to Unit 4. Link to Subpart Eb

The Department's MWC rule (effective May 31, 2007) was approved by EPA. It is listed in 40 CFR 62, Subpart K-Approval and Promulgation of State Plans for Designated Facilities and Pollutants – Florida; specifically Section 40 CFR 62.2355 (adopted by EPA December 30, 2010, amended February 9, 2012), available at the following link: Department's MWC Rule Approval

2.3. General PSD Major Stationary Source Applicability

The Department regulates major stationary sources in accordance with Florida's PSD program pursuant to Rule 62-212.400, F.A.C. PSD preconstruction review is required in areas that are currently in attainment with the state and federal ambient air quality standards (AAQS) or areas designated as "unclassifiable" for these regulated pollutants.

Commonly addressed PSD pollutants include: CO, NO_X, PM, PM smaller than 10 micrometers (µm) (PM_{10}), PM smaller than 2.5 µm ($PM_{2.5}$), SO_2, VOC, SAM, lead (Pb), fluorides (F), and mercury (Hg).

Additional PSD pollutants that are common to facilities with MWC include: MWC organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans (dioxin/furan), MWC metals measured as PM, and MWC acid gases measured as SO_2 and hydrogen chloride (HCl).

Other PSD pollutants are: hydrogen sulfide (H_2S), total reduced sulfide (TRS including H_2S), reduced sulfur compounds (RSC including H_2S), and MSW landfill emissions as non-methane organic compounds (NMOC).

As defined in Rule 62-210.200(Definitions), F.A.C., a stationary source is a "major stationary source" (major PSD source) if it emits or has the potential to emit (PTE):

- 250 tons per year (tons/year) or more of any PSD pollutant; <u>or</u>
- 100 tons/year or more of any PSD pollutant <u>and</u> the facility belongs to one of the 28 listed PSD major facility categories.

The list given in the citation includes the category of "municipal incinerators capable of charging more than 250 tons/day of refuse". The Hillsborough County Resource Recovery Facility is a major stationary source based on actual emissions of and potential to emit 100 tons/year or more of several individual PSD pollutants.

For major stationary sources such as the Hillsborough County RRF, PSD applicability for modification projects is based on thresholds known as the significant emission rates (SER) as defined in Rule 62-210.200(Definitions), F.A.C. Any "net emissions increase" as defined in Rule 62-210.200(Definitions), F.A.C. of a PSD pollutant from the project that equals or exceeds the respective SER is considered "significant". SER also means any emissions rate or any net emissions increase of a PSD pollutant associated with a major stationary source or major modification which would construct within 10 km of a Class I area and have an impact on such area equal to or greater than 1 gram per cubic meter, 24-hour average.

Although a facility may be "major" (i.e. emits or has the potential to emit 100 or 250 TPY as applicable) for only one PSD pollutant, a project must include BACT controls for any PSD pollutant that exceeds the corresponding significant emission rates given in Table 4.

According to 40 CFR 52.21, six greenhouse gases (GHG), are also be subject to regulation at new stationary sources that will emit or have the potential to emit 100,000 tons/year (SER equal to 75,000 tons/year) expressed as the carbon dioxide equivalent emissions (CO_2e). This requirement has not been incorporated into Department rules but is a separate requirement of the EPA. Federal PSD applicability to the CO_2 contribution to GHG emissions from bioenergy and biogenic stationary sources was recently deferred by EPA until the second half of 2014. Refer to: Link to Final CO2 PSD Deferral

Table 4. List of Significant Emission Rates by PSD-Pollutant Relevant to the Facility [2]

Pollutant	SER (tons/year)	Pollutant	SER (tons/year)
PM	25	PM_{10}	15
$PM_{2.5}$	10	MWC metals as PM	15
$PM_{2.5}$ (NO_X)	40	$PM_{2.5}$ (SO_2)	40
CO	100	NO_X	40
Ozone (NO_X) [1]	40	Ozone (VOC) [1]	40
SO_2	40	MWC acid gases as HCl and SO_2	40
fluoride	3	lead	0.6
mercury	0.1	Sulfuric acid mist (SAM)	7
MWC organics as dioxin/furan	3.5×10^{-6}	MSW Landfill Emissions as NMOC	50

1. $PM_{2.5}$ is also regulated through precursors (NO_X and SO_2); Ozone (O_3) is regulated through precursors (VOC and NO_X).
2. There is federal SER of 75,000 tons/year for Greenhouse Gases (GHG) as carbon dioxide equivalent (CO_2e) that has not been incorporated into Department rules.

In addition to triggering the PSD rules by physical or operational changes, it is also possible to do so as a result of relaxation of enforceable conditions such as emissions, hours of operation and process rates or by exceeding projected actual emissions (designed to avoid PSD). These situations are addressed by the "Source Obligation" provisions in Rule 62-212.400(12), F.A.C. which states:

(a) 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 subsections 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.

(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 exceeding its projected actual emissions, then the requirements of subsections 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.

The reason paragraph (a) is relevant in the present analysis is because the County requested that the Units 1, 2 and 3 capacities be based only on the monitored steam flow (4-hour block) and not also on the heat input and solid waste throughput. The present steam limitation must be evaluated to determine how strict and stringent it is compared with the waste and heat input limitations that will be removed.

2.4. PSD Applicability for the Project

The project is located in Hillsborough County, which is in an area that is currently in attainment with the state and federal AAQS or otherwise designated as unclassifiable. A small area near a lead acid battery recycling facility is not in attainment

Methodology for Calculations of Baseline Actual Emissions and Projected Actual Emissions

To determine whether the project causes net emissions increases equal to or greater than the respective SER (triggering PSD) requires a comparison of recent "baseline actual emissions" with future "projected actual emissions". According to Rule 62-210.200(Definitions), F.A.C., for an existing unit (other than an electric steam generating unit):

"Baseline Actual Emissions" means the rate of emissions, in tons/year of a PSD pollutant, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 10-year period immediately preceding the date a complete permit application is received by the Department.

"Projected Actual Emissions" means the maximum annual rate, in tons/year, at which an existing emissions unit is projected to emit a PSD pollutant in ***any one*** *of the 5 years following the date the unit resumes regular operation after the project, or in* ***any one*** *of the 10 years following that date, if the project involves increasing the emissions unit's design capacity or its potential to emit that PSD pollutant and full utilization of the unit would result in a significant emissions increase or a significant net emissions increase at the major stationary source. One year is one 12-month period. In determining the projected actual emissions, the Department:*

(a) Shall consider all relevant information, including historical operational data, the company's own representations, the company's expected business activity and the company's highest projections of business activity, the company's filings with the State or Federal regulatory authorities, and compliance plans or orders, including consent orders; and
(b) Shall include fugitive emissions to the extent quantifiable and emissions associated with startups and shutdowns; and
(c) Shall exclude that portion of the unit's emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions and that are also unrelated to the particular project including any increased utilization due to product demand growth; or
(d) In lieu of using the method set out in paragraphs (a) through (c) above, may be directed by the owner or operator to use the emissions unit's potential to emit, in tons per year.

Historical Operational Data from the Hillsborough County Resource Recovery Facility

Figure 5. Monthly Steam Production from the Hillsborough County Resource Recovery Facility

Figure 5 contains the month-by-month steam production data for Units 1, 2 and 3 combined and separately for Unit 4, which started up in the second half of 2009. The 24-month running monthly averages are also included as a more stable long term production indicators. On a long-term basis the time smoothed steam production data from Units 1, 2 and 3, combined, averaged varied from about 181 to 192 million pounds/month (lb/month). Steam production for individual months ranged from about 133 to 215 million lb/month.

For reference at the presently permitted maximum steam production rate (102,000 lb/hour/unit), the maximum permitted monthly production (during a 31 day month) is 227.7 million lb/month. Thus, on a long-term basis, Units 1-3 operate at approximately 80 to 85 percent of the permitted maximum steam production limits. According to the applicant the maximum capacity rating (MCR) of Units 1-3 is 94,270 lb/hour/unit. At that rate, the equivalent monthly steam production would be 210.4 million lb/month. Thus, on a long-term basis Units 1-3 operate at approximately 86 to 91% of the MCR.

Since startup in the second half of 2009, Unit 4 has operated at a long-term rate of approximately 115 million pounds/month compared with 124.4 million lb/month (at the MCR of 167,220 lb/hour). Unit 4 has on-average operated at approximately 93% of the MCR. When compared with 148.8 million lb/month (at the maximum permitted steam limit of 200,000 lb/hour), the long-term rate of 115 million pounds/month equals approximately 77% of the maximum permitted steam limit.

Figure 6 contains the month-by-month actual waste throughput data for the entire facility (Units 1-4). Monthly waste fuel heating values are also shown indicating a range of roughly 4,700 to 5,600 Btu/lb. The 24-month running monthly average waste throughput data are also included and are corrected so they represent waste at a referenced heating value of 4,500 Btu/lb.

Figure 6. Monthly Waste Fuel Heat Content and Waste Throughput from the Hillsborough County RRF

Generally the actual heating value is greater than the referenced value. Therefore the time-smoothed and corrected waste throughput tends to be greater than the actual waste throughput. The permitted long-term waste throughput limit is 1,200 tons/day for Units 1-3 or equal to 37,200 tons/month. Both the actual monthly waste throughput and the monthly time-smoothed waste throughput are less than this value (until Unit 4 commenced operation). There is no waste throughput limitation on Unit 4, which is limited by maximum steam production.

The foregoing suggests that the present steam limitations on Units 1-3 are sufficient to limit production from Units 1-3 without the need to maintain the essentially redundant waste throughput limits of 1,380 tons/day and 1,200 tons/day (annually averaged).

For the purposes of estimating baseline actual emissions from Units 1-3, the highest 24-month steam production rate from Unit 3 occurred during the period March 2005-February 2007, inclusive. During that time the time-smoothed steam production rate from units 1-3 combined was approximately 192.1 million lb/month (2.31 billion lb/year) steam. The waste throughput rate (referenced to 4,500 Btu/lb) was 847,884 tons during the referenced 24-month period (or equivalent to 423,942 tons/year).

For the purposes of estimating baseline actual emissions from Unit 4, the highest 24-month steam production rate from Unit 4 occurred during the period July 2010-June 2012, inclusive. During that time the time-smoothed steam production rate was approximately 115,201 million lb/month (1.38 billion lb/year). The total of the two maxima (steam production from Units 1-3 and Unit 4) is 3.69 billion lb/year. When considered together, the highest 24-month maximum steam production from Units 1-4 occurred during the period September 2010-August 2012. The annualized steam production rate was 3.66 billion lb/year. It makes no practical difference whether the maximum production periods from Units 1-3 and Unit 4 are considered separately or concurrently when determining the maximum historical operating rates.

Baseline Actual Emissions

Table 5 is a summary of annual emissions as reported by the application via annual operating reports (AOR) as required by Department rules and permit conditions. Consistent with the definition of "baseline actual emissions" the Department identified the two consecutive years (within the past ten years) during which Units 1-3 and Unit 4 exhibited the highest emission rate of each PSD pollutant in tons/year. Selection of 24-month periods rather than two years would not result in meaningfully different estimates.

Table 5. Annual and Calculated Baseline Actual Emissions for Hillsborough County RRF (tons/year)

Units 1-3	CO	NO_X	PM/PM_{10}	SO_2	HCl	Pb	Hg
2002	28.0	586.7	2.20	0.0	32.6	0.011	0.011
2003	25.6	533.4	1.53	2.4	41.2	0.011	0.022
2004	28.2	597.0	5.86	5.6	35.5	0.013	0.029
2005	24.7	598.4	2.90	3.2	51.5	0.005	0.029
2006	22.7	580.0	1.18	0.8	36.2	0.004	0.019
2007	58.8	581.1	2.63	8.1	40.1	0.013	0.033
2008	74.9	620.7	3.33	7.6	57.9	0.011	0.039
2009	35.1	703.9	2.25	5.3	59.4	0.008	0.037
2010	32.5	717.4	1.41	5.6	51.3	0.007	0.030
2011	30.3	679.4	1.47	9.3	53.9	0.007	0.031
Baseline [1]	66.8	710.6	4.38	7.9	58.6	0.012	0.038
PTE [2]	228.8	768.0	49.9	431.7	223.3	0.785	0.186
Unit 4	**CO**	**NO_X**	**PM/PM_{10}**	**SO_2**	**HCl**	**Pb**	**Hg**
2009	16.8	73.6	0.59	1.5	9.6	0.001	0.001
2010	35.2	147.8	0.67	1.9	17.8	0.002	0.025
2011	37.1	195.6	0.68	6.9	17.8	0.002	0.025
Baseline [1]	36.2	171.7	0.68	4.4	17.8	0.002	0.025
PTE [2]	113.4	209.8	14.5	84.1	111.3	0.170	0.100

1. Baseline actual emissions were calculated as the average emissions of the two highest consecutive years (shaded).
2. Potential-to-emit estimates are not limits and are contained in Table 1 of the Facility Title V Air Permit No. 0570261-014-AV.

Biosolids Test Burn Results from Lee County

In May 2012, emission testing was conducted at the Lee County RRF when combusting approximately 5% biosolids. The facility is of similar size to the Hillsborough County RRF. The testing was a requirement of a permit (0710119-009-AC) that allowed use of what the Department considered to be a deminimus amount of biosolids with respect to the overall characteristics of the MSW used at the facility or the heating value of the MSW used at the facility (approximately a 4% impact on heating value).

Using the existing air pollution control equipment (GCP/SDA/FF/ACI/SNCR), it was possible to burn 5% biosolids over a period of 13 hours without appreciable changes in the key pollutants compared with the required annual emission testing conducted earlier in the year (January 2012). The results are summarized in Table 6.

Table 6 - Test Burn Analysis at Lee County RRF compared with Annual Testing

Parameter	Units [1, 2]	January 2012 Annual Stack Tests	March 2012 Test 5% Biosolids	Comparison increase (decrease)
Mercury (Hg)	µg/dscm @7% O_2	0.72	0.26	(0.464)
Cadmium (Cd)	µg/dscm @7% O_2	<0.117	<0.130	0.013
Lead (Pb)	µg/dscm @7% O_2	1.33	1.33	0
Opacity	%	0	0	0
CO	ppm@7% O_2	12	11	(1)
SO_X	ppm@7% O_2	8	11	3
NO_X	ppm@7% O_2	145	151	6

1. µg/dscm @7% O_2 means micrograms per cubic meter corrected to 7 percent oxygen.
2. ppm @7% O_2 means parts per million by volume, dry, corrected to 7% O_2.

The test burn indicates that the co-firing 5% biosolids does not have a much effect on key exhaust gas stack concentrations of air pollutants emission rates. However, even the seemingly small effect on NO_X (4% increase) can be significant with respect to PSD. For example, NO_X emissions from the Hillsborough County RRF were approximately 900 tons/year during recent years. If not abated by addition reagent injection, an increase of just 6 ppm @7% O_2 (such as observed at Lee County RRF during the relatively short test) would result in an annualized increase of approximately 36 tons/year of NO_X. This value is close to the SER of 40 tons/year if the cause of the increase was biosolids use (and not just normal variability).

An increase in CO was not observed at Lee County during the test period although a small increase would be expected. The applicant's consultant for the present project advised:

> "*In order to address your concern about possible slugs of moist material affecting continuous CO compliance, the Facility operators will use Good Combustion Practices (GCP), good mixing practices, and control of air pollution control equipment reagent injection rates to manage all regulated pollutants in compliance with permitted concentrations.*"

The Department concludes, based upon results from the Lee County RRF, its own review of the proposed project, control equipment and monitoring requirements, that increases in PSD-pollutants are readily abated or manageable at 5% biosolids use and will be less than the respective SER. Therefore a more detailed assessment of PSD applicability based upon comparisons of future actual emissions to baseline actual emissions is not required to conclude that PSD will not be triggered by this project.

The information in Table 6 above from the Lee County test is sufficient to conclude that any changes in the exhaust gas concentrations of key metals (Pb, Hg and Cd) caused by utilization of biosolids will not be of concern. The apparent reduction in Hg emissions when burning biosolids is actually due to normal variations from test to test. Even if the biosolids contained no Hg, such utilization could not cause a reduction greater than a few percent in Hg.

Table 7 is a summary of the applicant's assessment for the present project assuming 10% instead of 5% biosolids utilization. The results of 2011 stack tests indicate that emission concentrations of Hg, Pb and Cd are presently 1 to 3 orders of magnitude less than the respective emission standards. Based on the applicant's conservative assumption that the control equipment will remove 85% of these species, future concentrations will continue to be much less than the respective applicable emission standards.

Table 7. Applicant's Assessment of 10% Biosolids Combustion on Exhaust Gas Hg, Cd and Pb Concentrations.

Units 1-3	Concentration in Biosolids [1] (mg/kg)	Emission Standard (µg/dscm @7% O_2)	2011 Stack Test Highest Result [2] (µg/dscm @7% O_2)	Addition from 10% Biosolids [3] (µg/dscm @ 7% O_2)	Future Concentration (µg/dscm @ 7% O_2)
Hg	0.4	50	10.3	1.2	11.5
Cd	2.4	35	0.34	6.9	7.2
Pb	12.8	400	6.9	36.4	43.3
Unit 4	Concentration in Biosolids [1] (mg/kg)	Emission Standard (µg/dscm @7% O_2)	2011 Stack Test Highest Result [2] (µg/dscm @7% O_2)	Addition from 10% Biosolids [3] (µg/dscm @7% O_2)	Future Concentration (µg/dscm @ 7% O_2)
Hg	0.4	28	1.4	1.2	2.6
Cd	2.4	10	0.39	6.9	7.3
Pb	12.8	140	4.6	36.4	41.0

(1) Milligrams per kilograms (mg/kg) equals ppm by weight. These are values averaged over samples taken from the Falkenburg, Valrico, South County and Northwest
(2) 10% biosolids equals approximately 180 tons/day. Only 5% biosolids and 90 tons/day will actually be combusted.
(3) The applicant assumed that all Hg, Cd and Pb contained in the biosolids will be volatilized and that the existing air pollution control equipment will remove 85% of each metal from the exhaust gas stream. This is a conservative assumption and makes it appear as if biosolids will increase Cd and Pb exhaust gas concentrations by an order of magnitude but still well within the emission standards.

The Department concludes that use of 5% biosolids by weight will not trigger PSD and will not cause emission concentrations in the exhaust gases equal to or greater than the applicable limits contained in the Department's MWC Rule, 40 CFR 60, Subpart Eb and the BACT emission standards as applicable to each unit.

2.5. Additional Rule Review

The applicant plans to mix in up to 5% biosolids, by weight, within the solid waste burned in the Hillsborough County RRF. Biosolids are regulated by the Department Rule 62-640, F.A.C. Link to Biosolids Rule According to Paragraph 62-640.100, F.A.C. - Scope, Intent, Purpose, and Applicability:

(1)(a) It is the intent of the Department in this chapter to regulate the management, use, and land application of biosolids so as to ensure protection of the environment and public health.

(b) The Department encourages the highest levels of treatment, quality, and use for biosolids.

(c) The Department further encourages the beneficial use of biosolids in a manner which will foster public acceptance, as well as innovative and ***alternative uses for biosolids such as bioenergy-related uses****.*

The Department's definition of biosolids is contained in Paragraph 62-640.200(Definitions), F.A.C. as follows:

"Biosolids means the solid, semisolid, or liquid residue generated during the treatment of domestic wastewater in a domestic wastewater treatment facility, formerly known as "domestic wastewater residuals" or "residuals." Not included is the treated effluent or reclaimed water from a domestic wastewater treatment plant. Also not included are solids removed from pump stations and lift stations, screenings and grit removed from the preliminary treatment components of domestic wastewater treatment facilities, other solids as defined in subsection 62-640.200(31), F.A.C., and ash generated during the incineration of biosolids. Biosolids include products and treated material from biosolids treatment facilities and septage management facilities regulated by the Department."

The definition of MSW in the Department's MWC Rule (pursuant to 40 CFR 60, Subpart Cb) and 40 CFR 60, Subpart Eb excludes "sewage sludge". The definition of MSW from 40 CFR 60, Subpart Eb is partially given as follows:

> *"MSW means household, commercial/retail, and/or institutional waste…Household, commercial/retail, and institutional waste* ***does not include*** *used oil;* ***sewage sludge****; wood pallets; construction, renovation, and demolition wastes (which includes but is not limited to railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff)……..."*

Although biosolids (treated sewage sludge) are not defined as MSW, the Department's MWC Rule and 40 CFR 60, Subparts Eb do not prohibit its disposal or use as a fuel in a MWC.

40 CFR Part 241-Solid Wastes used as Fuels or Ingredients in Combustion Units

Refer to 40 CFR Part 241, Subpart B - Identification of Non-Hazardous Secondary Materials That Are Solid Wastes When Used as Fuels or Ingredients in Combustion Units. Link to 40 CFR 241, Subpart B One "legitimacy criterion" contained in the mentioned rule is at §241.3(d)(1):

> *(ii) The non-hazardous secondary material must have a meaningful heating value and be used as a fuel in a combustion unit that recovers energy.*

Dewatered and subsequently dried sewage sludge can have significant heating value; on the order of 5,000 to 9,000 Btu/lb. According to the application, dewatered sewage sludge with 12% solids, as received (as proposed to be combusted at the four MWC's), has heating value less than 1,000 Btu/lb. Even the regular MSW (solid waste) already burned at the same units has a heating value between 4,700 and 5,600 Btu/lb. The dewatered biosolids appear to constitute solid waste (not fuel) in accordance with the legitimacy criterion given above.

The preamble to the same rule all but slams the door on the possibility that sewage sludge (without substantial further upgrade) can be considered a fuel. Link to 40 CFR Part 241, Notice A small possibility exists based on the comments in the preamble that states:

> *Unlike boilers, which are specifically designed to recover the maximum amount of heat from a material's combustion, waste heat recovery units are designed to cool the exhaust gas stream, and/or to recover, indirectly, the useful heat remaining in the exhaust gas from a combustion unit that has some other primary purpose (such as an institutional waste incinerator). Thus, we continue to consider that sewage sludge is primarily burned for destruction and the presence of a waste heat recovery unit would not, by itself, satisfy the meaningful heating value legitimacy criterion.*

Although the MWC's burning medium Btu MSW are actually boilers, on balance the co-fired low Btu biosolids are appropriately classified as solid waste.

40 CFR 60, Subpart LLLL-Standards of Performance for New Sewage Sludge Incineration (SSI) Units and

40 CFR 60, Subpart MMMM-Emission Guidelines and Compliance Times for Existing SSI Units

Subparts LLLL and MMMM were promulgated by EPA on March 21, 2011. Subpart LLLL has since been adopted by the Department at Rule 62-204.800(8)(b)82., F.A.C. Link to Subpart LLLL According to Subpart LLLL, §60.4775 a new SSI unit is defined as follows:

> *(a) A new SSI unit is a SSI unit that meets either of the two criteria specified in paragraph (a)(1) or (a)(2) of this section.*
>
> *(1) Commenced construction after October 14, 2010.*
>
> *(2) Commenced modification after September 21, 2011.*

According to the application, the four MWC were constructed before October 14, 2010. This leaves open at least the *possibility* that the four MWC could be SSI units if modified after September 21, 2011. This matter is evaluated further below.

According to Subpart LLLL, §60.4930, a "sewage sludge incineration (SSI) unit" means:

> *"An incineration unit combusting sewage sludge for the purpose of reducing the volume of the sewage sludge by removing combustible matter. Sewage sludge incineration unit designs* ***include fluidized bed and multiple hearth****. A SSI unit also includes, but is not limited to, the sewage sludge feed system, auxiliary fuel feed system, grate system, flue gas system, waste heat recovery equipment, if any, and bottom ash system. The SSI unit includes all ash handling systems connected to the bottom ash handling system. The combustion unit bottom ash system ends at the truck loading station or similar equipment that transfers the ash to final disposal. The SSI unit does not include air pollution control equipment or the stack."*

While the definition includes fluidized bed and multiple hearth designs, it does not explicitly state that other designs are excluded from the definition. Tables 1 and 2 to Subpart LLLL specify emission limits and standards for new FB and MH SSI units only. The common language Fact Sheet accompanying the Final Rule and the Emission Guideline is very clear on this point. Link to Subpart LLLL and MMMM fact Sheet . The Fact Sheet states:

- *The final rules cover two SSI subcategories based on the type of incinerator: multiple hearth (MH) and fluidized bed (FB).*
- *Units incinerating sewage sludge at other types of facilities (e.g., commercial, industrial, and institutional) will be covered under different air pollution incineration standards.*

Subpart LLLL, §60.4780 and Subpart MMMM, §60.5065 specify SSI units that are exempt from this subpart as follows:

> *This subpart exempts combustion units that incinerate sewage sludge and are not located at a wastewater treatment facility designed to treat domestic sewage sludge. These units may be subject to another subpart of this part (e.g., subpart CCCC of this part).* ***The owner or operator of such a combustion unit must notify the Administrator of an exemption claim under this section.***

The grater stoker furnace/boiler design of the four MWC's at the Hillsborough County RRF is not that of a FB or MH. Therefore, at the very least, it can be concluded that the four MWC are not or will not be governed by the limits in Subparts LLLL and MMMM. The four MWC's are indeed already subject to "another subpart of this part (e.g. subpart CCCC of this part)". The reference is to subparts within 40 CFR 60 and specifically to those subpart promulgated pursuant to CAA Section 129 to address solid waste, such as 40 CFR 60, Subpart CCCC-Standards of Performance for Commercial and Industrial Solid Waste Incineration (CISWI) Units. Link to Subpart CCCC

Specifically, the four MWC are subject to 40 CFR 60, Subpart Eb or to the Department's MWC Rule (pursuant to 40 CFR 60, Subpart Cb). In this respect, the four MWC are regulated by "subparts of this part" and are much like Subpart CCCC in their regulation of solid waste and actually limit the same pollutants (e.g., NO_X, CO, dioxin/furan, mercury, MWC metals, etc.

The application included the following rationale with respect to Subpart MMMM:

> *"Since the Hillsborough RRF is not located at a wastewater treatment facility, it is exempt from Subpart MMMM, and Subparts Cb and Eb apply.* ***With this application, Hillsborough County is notifying FDEP of this exemption****."*

As shown in Figure 1 above, the Falkenburg Advanced WWTP (one of several WWTP that will supply biosolids) lies on property contiguous to the property upon which the four MWC's (i.e. waste-to-energy plant) are located. The Falkenburg Advanced WWPT is listed as an unregulated unit within the Hillsborough County RRF. The Falkenburg Advanced WWPT is designed to dewater sewage sludge but not designed to further dry, pelletize or incinerate sewage sludge.

Although the WWTP and the WTE plant are part of the same facility per the Title V operating permit, they were not located on the contiguous properties to provide services or materials to each other. In fact, the operator is prohibited and has been prohibited from taking sewage sludge for the 25 years that MWC's have operated at the facility. While it may appear to be a fine point, the Department concludes that the four MWC's are **not** actually located at the WWTP within the context and intent of the described exemption.

The exemption is acknowledged due to the applicability of Subparts Eb and the Department's MWC Rule (pursuant to Subpart Cb) and the matter of location is not controlling with respect to regulation pursuant to Subpart LLLL or MMMM or "another subpart (e.g. subpart CCCC of this part)". It is not necessary to prove or disprove the location of the four MWC's at the Hillsborough County RRF vis-à-vis the WWTP's to be exempt from the emission standards and guidelines contained in Subparts LLLL and MMMM.

Subpart MMMM (Emission Guidelines and Compliance Times) require submittal of plans by states in accordance of CAA Section 111(d). The Department submitted its plan pursuant to CAA Sections 111 and 129 on April 16, 2012 for incorporation by EPA into 40 CFR 62, Subpart K. The details are available at the Department regulatory webpage for this effort available at: Link to Department's Sewage Sludge Incinerator Plan

The proposed Plan includes an issued air construction permit for Florida's only identified existing SSI unit subject to Subpart MMMM. The unit is a biosolids gasification facility with a capacity of 80 wet tons/day. It is operated by Maxwest and is located at the Sanford South Water Resources Center in Sanford, Florida. The construction permit comprises Florida's Plan as it incorporates as permit conditions all of the Emission Guidelines in Subpart MMMM.

The Hillsborough County RRF and other RRF's capable of co-firing at the least some small amounts of sewage sludge were not identified in the Plan and at first impression are not subject to Subpart MMMM. For example, (prior to issuance of this draft permit) the four units are specifically prohibited from burning sewage sludge and are designed for the purpose of burning MSW with energy recovery and power generation. However, if they do co-fire sewage sludge and function to some extent as SSI units, they are properly covered under Subpart EB or the Department MWC Rule (pursuant to Subpart Cb).

The definition of modification as applicable to regulations developed under the CAA Section 111 is provided at 40 CFR 60, §60.2 as follows:

> *"Modification means any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted".*

The Department notes that no physical or operational changes (other than removal of a permit prohibition and receipt of the material) are required to co-fire 5% biosolids (dewatered sewage sludge).

40 CFR 60, §60.14 further defines the meaning of modification as follows:

> *(b) Emission rate shall be expressed as kilograms per hour (kg/hour) of any pollutant discharged into the atmosphere for which a standard is applicable.*

The kg/hour emission rate basis for determining a modification under the NSPS regulations is in contrast to the tons/year emission rate basis for determining a modification under the PSD regulations. It is plausible that there would be no short term emission increase even if there is a long term increase. Basically the condition is that occasionally a given unit could emit at its short-term emission limit under one condition and (after the change) emit at the emission limit more often. The applicant did not attempt to show that short-term emission do not increase.

According to 40 CFR 60, §60.14(e) the following shall not be considered a modification:

> *(4) Use of an alternative fuel or raw material if, prior to the date any standard under this part becomes applicable to that source type, as provided by § 60.1, the existing facility was designed to accommodate that alternative use. A facility shall be considered to be designed to accommodate an alternative fuel or raw material* ***if that use could be accomplished under the facility's construction specifications*** *as amended prior to the change.*

The project meets the test in that mixing and co-firing 5% biosolids with the rest of the allowable wastes and fuels can be accomplished now and could have been accomplished under the original construction specifications (but for the prohibition on use of sewage sludge). Therefore, even if the four MWC's were SSI units (which the Department concludes they are not), the project would not be considered a modification such that the units would be subject to 40 CFR 60, Subpart LLLL.

40 CFR 60, Subpart Eb and The Department's MWC Rule (pursuant to 40 CFR 60, Subpart Cb)

The combustion of biosolids (treated sewage sludge) in Hillsborough County RRF will not affect the applicability of the Department MWC Rule (pursuant to 40 CFR 60, Subpart Cb) for Units 1, 2 and 3 and the applicability of 40 CFR 60, Subpart Eb for Unit 4. There will be no physical modification to the Hillsborough County RRF. Burning of MSW makes these units subject to the two regulations. While sewage sludge is not MSW according to the definitions in Subpart Eb, combustion of such material at the level proposed by the applicant is not prohibited by the rule and would not change the fact that these rules will continue to apply.

40 CFR 61, Subpart E-National Emission Standard for Mercury

According to 40 CFR 61, Subpart E, §61.50, Applicability:

> *The provisions of this subpart are applicable to those stationary sources which process mercury ore to recover mercury, use mercury chlor-alkali cells to produce chlorine gas and alkali metal hydroxide, and* ***incinerate or dry wastewater treatment plant sludge****.* Link to 40 CFR 61, Subpart E

Upon commencement of biosolids waste use, the four MWC's will be subject to the following Subpart E, §61.52(b), Emission Standard:

> *Emissions to the atmosphere from sludge incineration plants, sludge drying plants, or a combination of these that process wastewater treatment plant sludges* ***shall not exceed 3.2 kg (7.1 lb) of mercury per 24-hour period****.*

Compliance is described in §61.53, Stack Sampling as follows:

(d) Sludge incineration and drying plants.

(2) Unless a waiver of emission testing is obtained under §61.13, each owner or operator of a source subject to the standard in §61.52(b) shall test emissions from that source. Such tests shall be conducted in accordance with the procedures set forth either in paragraph (d) of this section or in §61.54.

(3) Method 101A in appendix B to this part shall be used to test emissions as follows:

(i) The test shall be performed within 90 days of the effective date of these regulations in the case of an existing source or a new source which has an initial startup date preceding the effective date.

(ii) The test shall be performed within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

(4) The Administrator shall be notified at least 30 days prior to an emission test, so that he may at his option observe the test.

(5) ***Samples shall be taken over such a period or periods as are necessary to determine accurately the maximum emissions which will occur in a 24-hour period.*** *No changes shall be made in the operation which would potentially increase emissions above the level determined by the most recent stack test, until the new emission level has been estimated by calculation and the results reported to the Administrator.*

The County requested a waiver of emission testing under 40 CFR §**60**.13(h)(1)(**m**). Presumably, the applicant means 40 CFR 61, Subpart A, §**61**.13(h)(1)(**iii**), which states:

(h)(1) Emission tests shall be conducted as set forth in this section, the applicable subpart and appendix B unless the Administrator:

(i) Specifies or approves the use of a reference method with minor changes in methodology; or

(ii) Approves the use of an alternative method; or

(iii) Waives the requirement for emission testing because the owner or operator of a source has demonstrated by other means to the Administrator's satisfaction that the source is in compliance with the standard.

According to the applicant:

> *"Upper-bound mercury loadings for sewage sludge addition of up to 10 percent of the total waste feed rate by mass would not cause any of the MWC units to approach or exceed their permitted mercury emission limit. Hillsborough County requests, therefore, that compliance with 40 CFR Subpart E be based on the annual mercury compliance stack testing already required by the current Title V Permit. In addition, Unit 4 is testing a mercury CEM that gives real time emissions readings".*

The Department reviewed the respective mercury standards contained in 40 CFR 61, Subpart E, 40 CFR 60, Subpart Eb and the Department's MWC Rule and concludes that compliance with the methods and emissions standards given in the two latter rules insure compliance with the requirements of Subpart E. The Department approves the County's request as an alternative test method in accordance with Subpart A, §61.13(h)(1) paragraph (ii) rather than as a waiver per paragraph (iii).

40 CFR Part 503-Standards for the Use or Disposal of Sewage Sludge

Refer to 40 CFR 503. Link to 40 CFR Part 503 The regulation specifies requirements related to land application, surface disposal, pathogens/vectors, and incineration related to final use and disposal of sewage sludge. According to 40 CFR Part 503, §503.6, Exclusions:

> *(a) Co-firing of sewage sludge. This part does not establish requirements for* ***sewage sludge co-fired in an incinerator with other wastes*** *or for the incinerator in which sewage sludge and other wastes are co-fired. Other wastes do not include auxiliary fuel, as defined in 40 CFR 503.41(b), fired in a sewage sludge incinerator.*

Because the four MWC's will continue to burn 95% MSW or similar wastes and co-fire only 5% sewage sludge, 40 CFR Part 503 does not apply to this project.

3. DESCRIPTION OF PERMITTING REQUIREMENTS IN THE DRAFT PERMIT

The Department prepared the enclosed draft permit that:

- Describes the waste throughput parameters as design characteristics;
- Specifies maximum steam production limits for Units 1-3 on a 4-hour basis similar to the steam production limit contained in the PSD permit for Unit 4;
- Removes the prohibition against burning sewage sludge in the four MWC's and provides for co-firing 5% biosolids (dewatered sewage sludge) by weight;
- Requires the permittee to compare CO, SO_2, NO_X and Hg concentrations and mass emissions measured with the installed continuous emission monitoring systems (CEMS) for 30 operating days from Unit 4 with the first 30 operating days after initiating biosolids utilization at Unit 4.
- Requires the permittee to submit a letter report to the Department including a summary of measures taken to insure emission increases caused by biosolids utilization are minimized.

4. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state rules and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. No air quality modeling analysis is required because the project does not result in a significant increase in emissions.

Yousry (Joe) Attalla is the project engineer responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting Mr. Attalla at yousry.attalla@dep.state.fl.us or 850-717-9078 or at the Department's Office of Permitting and Compliance at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.