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Date: March 11, 2010

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From: Dave Buff

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RE: NEW HOPE POWER COMPANY – OKEELANTA COGENERATION PLANT

Project No.: 09387600-0100/DB/tlc

BUREAU OF AIR REGULATION

Company: FDEP

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Tallahassee, FL 32399

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4	Bound Copies	Supplemental Information for Title V renewal

cc: Matt Capone, Okeelanta Corporation
Bill Tarr, Florida Crystals

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MAR 12 2010

BUREAU OF AIR REGULATION

**SUPPLEMENTAL INFORMATION
FOR TITLE V AIR OPERATION
PERMIT RENEWAL
APPLICATION**

New Hope Power Company

Prepared For: New Hope Power Company
21250 U.S. Highway 27 South
South Bay, FL 33493 USA

Submitted By: Golder Associates Inc.
6026 NW 1st Place
Gainesville, FL 32607 USA

March 2010

093-87600



Application

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1.0 INTRODUCTION

The New Hope Power Company (NHPC) owns and operates a biomass-fired cogeneration facility located south of South Bay, Palm Beach County, Florida. Okeelanta Corporation operates an adjacent sugar mill and refinery. Supplemental information for the previously submitted renewal application for the Title V air operation permit is included in this submission. Also included are requests for minor modifications to Air Construction Permit No. 0990332-017-AC/PSD-FL-196(P).

Required application form pages and an updated compliance plan for NHPC and Okeelanta Corporation are included in Attachment A. Requested changes to the pre-draft Title V operating permit 0990005-017-AV are presented in Attachment B. A revised Compliance Assurance Monitoring (CAM) plan is included in Attachment C. Updated fuel and ash management plans are included in Attachment D.

2.0 SUPPLEMENTAL INFORMATION FOR TITLE V PERMIT RENEWAL

2.1 *Requested Changes to Pre-Draft TV Permit*

NHPC/Okeelanta is requesting several changes to the pre-draft TV permit (refer to Attachment B). Most of these changes are of an editorial nature, although some of these could require revisions to the underlying air construction permits. These changes include updates to the fuel and ash management plans, which are included in Attachment D for convenience.

2.2 *CAM Plan*

The Florida Department of Environmental Protection (FDEP) has issued a draft CAM plan contained in Section 4, Appendix CM of Draft Title V Operating Permit No. 0990005-017-AV. The draft CAM plan indicator parameter is based on power input to the electrostatic precipitator (ESP). The minimum parameter value is 23 kilowatts (kW) input power, as a 3-hour block average, based on the lowest power input during historical particulate matter (PM) compliance testing.

NHPC has reviewed historic ESP power input data for the boilers. The data do not show a significant correlation between ESP power input and PM emissions. NHPC believes that the heterogeneous fuel supply burned at the facility places different loads and demands on the ESPs due to factors such as varying boiler load, ash content, moisture content, ash resistivity, and flue gas temperatures. Therefore, NHPC believes that power input to the ESPs is not an accurate indicator of PM emissions.

In the application for Air Operation Permit submitted in 2005, NHPC requested that opacity be used as a representative indicator of compliance with the PM standard in the CAM plan. A plot of opacity versus PM emissions is presented in the revised CAM plan (see Attachment C). NHPC believes that opacity is a better indicator of PM emissions from the boilers. In addition, NHPC boiler operations have focused on

opacity as the indicator of proper boiler/ESP operation for many years because of the opacity limits imposed on the boilers. This focus has included boiler operator training, improved wood storage pile management, and other measures to improve opacity levels. Thus, NHPC requests that opacity be retained as the CAM indicator parameter for PM emissions. Use of opacity as the indicator of PM emissions is also consistent with several other power plants in Florida, which burn solid fuel.

The previously submitted CAM plan, based on monitoring the opacity of each boiler stack, has been updated with opacity measurements corresponding to PM compliance test data from 2006 through 2009. The updated CAM plan is presented in Attachment C. The updated CAM plan is similar to other power plants in Florida that have received opacity limits as the CAM indicator parameter for PM.

2.3 Fuel and Ash Management Plans

NHPC is proposing to revise the fuel and ash management plans in order to bring the plans up to date to reflect current operation and to clarify sampling procedures used. The fuel and ash management plans contained in the current permit were developed many years ago. A revised fuel management plan was submitted in conjunction with the Title V renewal application. The plan has now been revised based on a review of facility operations, and review of the plan for clarity. Markups of the pre-draft fuel and ash management plan are presented in Attachment D.

3.0 Requested Air Construction Permit Revisions

3.1 Auxiliary Fuel

The cogeneration boilers are permitted to fire only distillate oil and pipeline natural gas as auxiliary fuels. Section III, Specific Condition 12 of Air Construction Permit No. 0990332-017-AC states the following:

"Each boiler may startup solely on pipeline natural gas or distillate oil."

However, the startup process for the cogeneration boilers includes the use of biomass. The startup process begins with the firing of either natural gas or distillate fuel oil; however, biomass is introduced and fired later in the startup process. It is therefore requested that this last sentence of Specific Condition 12 be deleted.

3.2 Startup Procedures

Section III, Specific Condition 18.c.1 of Air Construction Permit No. 0990332-017-AC states the following:

"Natural gas or distillate oil shall be fired during startup prior to energizing the electrostatic precipitator (ESP). Once the operating temperature recommended by the ESP manufacturer is maintained (approximately 340° F to 350° F), it shall be placed on

line and the boiler shall comply with the opacity standard specified in Condition No. 16. The ESP shall be on line and functioning properly before firing any biomass..."

NHPC requests that the requirement for maintaining a minimum ESP operating temperature prior to placing the ESP on line be deleted. NHPC typically energizes the ESP prior to reaching an operating temperature of 340°F. NHPC will continue to comply with the requirement to place the ESP on line and functioning properly prior to firing any biomass. NHPC will also comply with the opacity standard specified in Condition No. 16 once the ESP is brought on line. Suggested revised wording for Condition 18.c.1 is as follows:

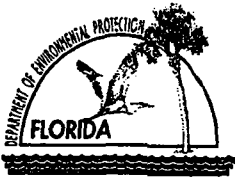
"Natural gas or distillate oil shall be fired during startup prior to energizing the electrostatic precipitator (ESP). The ESP shall be placed on line at the earliest possible time during the startup period, consistent with manufacturer's recommendations, operating experience, and safety practices. Once the ESP is placed on-line, the boiler shall comply with the opacity standard specified in Condition No. 1. The ESP shall be on line and functioning properly before firing any biomass. The opacity limit does not apply when the ESP is offline due to warm startup, cold startup, or shutdown. No more than twenty 6-minute block averages of opacity monitoring data shall be excluded in a 24-hour period due to documented malfunctions."

3.3 Continuous Monitor Requirements

Section IV, Appendix E of Air Construction Permit No. 0990332-017-AC contains continuous monitor requirements for the cogeneration boilers. Specific Condition 2.a(3) provides requirements for oxygen (O₂) Continuous emissions monitoring system (CEMS), including performance specifications and the method for performing the annual relative accuracy test audit (RATA). However, NHPC uses carbon dioxide (CO₂) as the diluent gas for conversion calculations. Therefore, NHPC requests that Specific Condition 2.a(3) in Appendix E of Section IV be revised to read as follows:

CO₂ CEMS shall comply with Performance Specification 3 in Appendix B of 40 CFR 60. The CO₂ reference method for the annual RATA shall be EPA Method 3A Appendix A of 40 CFR 60.

ATTACHMENT A
FDEP APPLICATION FORMS



Department of Environmental Protection

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MAR 12 2010

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM BUREAU OF AIR REGULATION

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit:

- For any required purpose at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air operation permit;
- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment new source review, or maximum achievable control technology (MACT);
- To assume a restriction on the potential emissions of one or more pollutants to escape a requirement such as PSD review, nonattainment new source review, MACT, or Title V; or
- To establish, revise, or renew a plantwide applicability limit (PAL).

Air Operation Permit – Use this form to apply for:

- An initial federally enforceable state air operation permit (FESOP); or
- An initial, revised, or renewal Title V air operation permit.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: New Hope Power Company	
2. Site Name: Okeelanta Cogeneration Plant	
3. Facility Identification Number: 0990332	
4. Facility Location... Street Address or Other Locator: 21250 Hwy 27 South City: South Bay County: Palm Beach Zip Code: 33493	
5. Relocatable Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. Existing Title V Permitted Facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Application Contact

1. Application Contact Name: Matthew Capone, Environmental Manager	
2. Application Contact Mailing Address... Organization/Firm: New Hope Power Company Street Address: 21250 Hwy 27 South City: South Bay State: FL Zip Code: 33493	
3. Application Contact Telephone Numbers... Telephone: (561) 993-1658 ext. Fax: (561) 992-7326	
4. Application Contact E-mail Address: Matthew_Capone@floridacrystals.com	

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	3. PSD Number (if applicable):
2. Project Number(s):	4. Siting Number (if applicable):

Purpose of Application

This application for air permit is being submitted to obtain: (Check one)

Air Construction Permit

- Air construction permit.
- Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).
- Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

Air Operation Permit

- Initial Title V air operation permit.
- Title V air operation permit revision.
- Title V air operation permit renewal.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

**Air Construction Permit and Revised/Renewal Title V Air Operation Permit
(Concurrent Processing)**

- Air construction permit and Title V permit revision, incorporating the proposed project.
- Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

- I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

This additional information is being submitted to provide supplemental information to the applicant's previously submitted renewal application for a Title V Air Operating Permit. This application is also being submitted to request minor modifications to Air Construction Permit No. 0990332-017-AC/PSD-FL-196(P). Refer to Attachment A.

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Processing Fee
001	New Hope Power Cogen Boiler A		
002	New Hope Power Cogen Boiler B		
003	New Hope Power Cogen Boiler C		

Application Processing Fee

Check one: Attached - Amount: \$ _____ Not Applicable

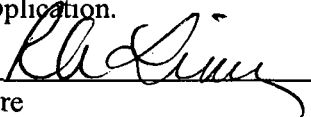
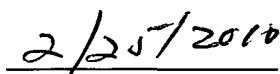
Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :
2. Owner/Authorized Representative Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Owner/Authorized Representative Telephone Numbers... Telephone: () ext. Fax: ()
4. Owner/Authorized Representative E-mail Address:
5. Owner/Authorized Representative Statement: <i>I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.</i> _____ Signature Date

Application Responsible Official Certification

Complete if applying for an initial, revised, or renewal Title V air operation permit or concurrent processing of an air construction permit and revised or renewal Title V air operation permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name: Ricardo A. Lima, Vice President and General Manager
2. Application Responsible Official Qualification (Check one or more of the following options, as applicable): <input checked="" type="checkbox"/> For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C. <input type="checkbox"/> For a partnership or sole proprietorship, a general partner or the proprietor, respectively. <input type="checkbox"/> For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official. <input type="checkbox"/> The designated representative at an Acid Rain source, CAIR source, or Hg Budget source.
3. Application Responsible Official Mailing Address... Organization/Firm: New Hope Power Company Street Address: 21250 Hwy 27 South City: South Bay State: FL Zip Code: 33493
4. Application Responsible Official Telephone Numbers... Telephone: (561) 993-1600 ext. Fax: (561) 992-7326
5. Application Responsible Official E-mail Address:
6. Application Responsible Official Certification: I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.  Signature  Date

Professional Engineer Certification

1. Professional Engineer Name: David A. Buff Registration Number: 19011
2. Professional Engineer Mailing Address... Organization/Firm: Golder Associates Inc.** Street Address: 6026 NW 1st Place City: Gainesville State: FL Zip Code: 32607
3. Professional Engineer Telephone Numbers... Telephone: (352) 336-5600 ext. 21145 Fax: (352) 336-6603
4. Professional Engineer E-mail Address: dbuff@golder.com
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <i>(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i> <i>(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i> <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/> , if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i> <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input type="checkbox"/> , if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input checked="" type="checkbox"/> , if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i> <i>(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input type="checkbox"/> , if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i> Signature <u>David A. Buff</u> Date <u>3/11/10</u> (seal)

* Attach any exception to certification statement.

**Board of Professional Engineers Certificate of Authorization #00001670.

REVISED COMPLIANCE PLAN

**ATTACHMENT D
COMPLIANCE REPORT**

Okeelanta Corporation certifies that the Okeelanta sugar mill, refinery, and trans-shipment facilities, and the New Hope Power Company cogeneration facility, as of the date of this Title V renewal application, are in compliance with each applicable requirement addressed in this Title V air permit renewal application, except those items identified in the attached compliance plan.

I, the undersigned, am the responsible official as defined in Chapter 62-213, F.A.C., of the Title V source for which this report is being submitted. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made and data contained in this report are true, accurate, and complete.

Compliance statements for this facility will be submitted on an annual basis to FDEP, before March 1 of each year.

R. Quinn

Signature, Responsible Official

2/25/2010

Date

COMPLIANCE REPORT AND PLAN FOR OKEELANTA CORPORATION

A. MILL BOILER NO. 16 - INITIAL NO_x AND OPACITY TESTING

Deviations from Applicable Requirements

A construction permit was issued on April 12, 2006 that reduced the annual operation of Boiler No. 16 to no more than 10 percent annual capacity, thereby eliminating the need for a continuous emissions monitoring system (CEMS) for NO_x (Permit No. 0990005-018-AC). Specific Condition No. III.A.9 of this permit requires that initial NO_x emissions and opacity compliance testing be conducted while burning natural gas and while burning distillate fuel oil. Testing is required to be conducted within 12 months of issuance of the permit (i.e., by April 12, 2007).

Okeelanta Corporation (Okeelanta) has not operated Boiler No. 16 since the permit was issued on April 12, 2006. Therefore, NO_x emissions and opacity testing has not been conducted on the boiler.

Compliance Plan

Okeelanta has no immediate plans to operate Boiler No. 16. However, if and when Okeelanta does operate the boiler, Okeelanta will conduct initial compliance testing within 60 days of initially operating the boiler on a particular fuel type. Okeelanta requests that Specific Condition III.A.9 of the construction permit be revised to require that initial NO_x and opacity testing on natural gas be required within 60 days of first operating the boiler on natural gas, and initial NO_x and opacity testing on distillate oil be required within 60 days of first operating the boiler on distillate fuel oil.

We also request that Boiler No. 16 be specified in the Title V permit as being on cold shutdown, pursuant to the provisions of Rules 62-210.300(2)(a)3.b and c, F.A.C. The unit has not operated since March 16, 2004. Rule 62-210.300(2)(a)3.b and c, F.A.C., provides as follows:

b. Except as provided in sub-subparagraph 62-210.300(2)(a)3.d., F.A.C., the operation permit for an emissions unit which has been shut down for six months or more prior to the expiration date of the current operation permit, shall be renewed for a period not to exceed five years from the date of shutdown, even if the emissions unit is not maintained in operational condition, provided:

(I) The owner or operator of the emissions unit demonstrates to the Department that the emissions unit may need to be reactivated and used, or that it is the owner's or operator's intent to apply to the Department for a permit to construct a new emissions unit at the facility before the end of the extension period; and

(II) The owner or operator of the emissions unit agrees to and is legally prohibited from providing the allowable emission permitted by the renewed permit as an emissions offset to any other person under Rule 62-212.500, F.A.C.; and

(III) The emissions unit was operating in compliance with all applicable rules as of the time the source was shut down.

c. Except as provided in sub-subparagraph 62-210.300(2)(a)3.d., F.A.C., the operation permit for an emissions unit which has been shut down for five years or more prior to the expiration date of the current operation permit shall be renewed for a maximum period not to exceed ten years from

the date of shutdown, even if the emissions unit is not maintained in operational condition, provided the conditions given in sub-subparagraph 62-210.300(2)(a)3.b., F.A.C., are met and the owner or operator demonstrates to the Department that failure to renew the permit would constitute a hardship, which may include economic hardship.

At this time, Okeelanta has no intention of permanently shutting down Boiler No. 16 and Okeelanta may operate the boiler in the future if necessary to meet steam demands. Okeelanta is not requesting any credit for emissions reductions from the unit. Okeelanta has not operated the boiler since the most recent construction permit was issued on April 12, 2006, and therefore, NO_x emissions and opacity testing has not been conducted on the boiler.

B. MILL BOILER NO. 16 - FUEL OIL SAMPLING

Deviations from Applicable Requirements

Specific Condition No. III.A.10 of permit No. 0990005-018-AC requires that an initial fuel oil sample be taken from the fuel oil storage tanks serving Boiler No. 16. The sample is to be analyzed for fuel sulfur and the results are to be submitted to the Department with the initial emissions compliance test report. Okeelanta has not performed the required sampling and analysis because there have been no fuel oil deliveries of No. 2 oil since the construction permit was issued on April 12, 2006, and no fuel oil has been fired in the boiler since that time. Currently no distillate oil remains in the tanks from previous operation of the boiler.

Compliance Plan

In order to comply with the permit requirement for testing of the fuel oil, Okeelanta will perform the required sampling prior to burning any fuel oil in Boiler No. 16. The analysis results will be submitted to the Department no later than 30 days after commencing operation of Boiler No. 16 on oil.

C. MILL BOILER NO. 16 – REPORTING AND RECORDKEEPING REQUIREMENTS

Deviations from Applicable Requirements

Revised air construction permit No. 0990005-018-AC restricts operation of Boiler No. 16 to 10% of the annual capacity factor and removes the requirement for continuous emission monitoring systems. The NO_x CEMS and opacity monitor are no longer required. Okeelanta Corporation has applied for a revision of the Title V operation permit to incorporate the provisions of the air construction permit issued April 12, 2006.

40 CFR 60.49b(q), restated in Appendix Db in Section IV of the construction permit, requires quarterly reporting of the annual capacity factor over the previous 12 months and the hours of operation during the quarter. However, at the time the revised air construction permit was issued, this unit had been shut

down for more than one year. Therefore, Boiler No. 16 was already subject to the 60 day advance notification of startup required by Rule 62-210.300(5), F.A.C.

This unit has not operated since the revised construction permit was issued. The last day of operation was March 16, 2004. The annual capacity factor has therefore remained at zero during each quarter since the permit was issued. The compliance status relating to this permit condition was reported previously with the annual Statement of Compliance on March 1, 2008 and 2009.

Compliance Plan

Okeelanta will provide written notification of intent to startup Boiler No. 16 at least 60 days in advance of the intended startup date as required by Rule 62-210.300(5), F.A.C. Okeelanta will begin quarterly reporting of the annual capacity factor and hours of operation in accordance with 40 CFR 60.49b(q) for the first quarter in which Boiler No. 16 operates.

D. TRANSSHIPMENT FACILITY – ANNUAL VE TESTING – Railcar Receiver No. 2 (EU 032)

Deviations from Applicable Requirements

Specific Condition III.C.9 of the Title V permit requires that a formal compliance test be conducted annually for visible emissions (VE) from the baghouse serving this unit. However, recent VE tests have not been conducted on this emissions unit due to lack of operation. Unit 032 did not operate during the previous federal fiscal year, nor during calendar year 2009. The last VE compliance test for EU 032 (Railcar Receiver No. 2) was performed on September 8, 2006.

Compliance Plan

FDEP will be notified at least 60 days prior to the intended restart date of emissions unit 032, in accordance with Permit Condition 19 of Appendix TV. Okeelanta proposes to conduct a VE compliance test within 30 days of restarting operation of this emissions unit.

E. SUGAR REFINERY – ANNUAL VE TESTING – Rotary Dryer with Rotoclone No. 1 (EU 021)

Deviations from Applicable Requirements

Specific Condition 10 of permit no. 0990005-021-AC requires that a formal compliance test be conducted annually for visible emissions (VE). Specific Condition 22 of this permit requires that a VE compliance test be conducted prior to obtaining an operation permit for the Rotoclone No. 1 exhaust (EU 021). The initial testing of the other refinery emissions units listed in permit no. 0990005-021-AC was performed on March 27, 2008, after completing the construction permit modifications. However, the rotary dryer with

Rotoclone No. 1 was not in operation at the time and, therefore, EU 021 was not tested. The rotary dryer and Rotoclone No. 1 (EU 021) were not operated during the previous two federal fiscal years and have not operated during the current federal fiscal year.

Compliance Plan

There currently is no schedule for starting production with EU 021. Okeelanta proposes to conduct a VE compliance test within 30 days of restarting operation of the emissions unit. Rotoclone No. 1 and the associated rotary dryer is needed as a backup refined sugar production unit for the main production equipment (fluidized bed dryer/cooler and baghouse – EU 025). Since EU 021 has been shutdown more than one year, FDEP will be notified prior to the intended restart date in accordance with Permit Condition 19 of Appendix TV.

F. TRANSSHIPMENT FACILITY – UNIT OPERATING RATES

– Sugar Packaging Lines 0 - 9 (EU 019)

Deviations from Applicable Requirements

Title V Permit Condition III. H.2. imposes the following limits on the operating rate of emissions units when the unit's compliance tests are performed at levels that are below the unit's permitted capacity:

"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."

The visible emissions compliance test on September 30, 2009 for Emissions Unit 019 was performed at a total sugar packaging rate that was significantly below the unit's design capacity. After the compliance test, the permitted operating rate, based on 110 percent of the test rate, was 608 tons per day. This restricted capacity was exceeded on sixty-one days during the fourth quarter of 2009. The daily average production during the period was 616 tons per day for EU 019 and the highest daily production was just under 1,009 tons per day on October 1, 2009.

Compliance Plan

Okeelanta Corporation performed another visible emissions compliance test on Emissions Unit 019 on February 15th, 2010, for the purpose of raising the unit's permitted capacity, based on 110 percent of the operating rate during testing. The new limitation for refined sugar packaging based on the VE testing completed on February 15th, 2010, is 904.57 tons per day. Okeelanta Corporation will continue to evaluate the combined sugar packaging rate from lines 0 through 9 to determine if additional VE tests need to be completed to raise the restricted capacity, based on 110 percent of the operating rate during testing.

ATTACHMENT OK-FI-CV3b**COMPLIANCE REPORT AND PLAN FOR
NEW HOPE POWER COMPANY****Cogeneration Boilers A, B and C
(EU 001, 002, 003)****A. CARBON MONOXIDE, NITROGEN OXIDES, AND VISIBLE EMISSIONS****Deviations from Applicable Requirements**

Permit No. 0990332-017-AC/PSD-FL-196(P) was issued for the three cogeneration boilers on June 6, 2005. Specific Condition 16 of this permit limits carbon monoxide (CO) emissions from each boiler to 0.35 pounds per million British thermal units (lb/MMBtu) on a 12-month rolling average basis. The permit also limits CO emissions to 0.50 lb/MMBtu on a 30-day rolling average. Nitrogen oxides (NO_x) emissions are limited to 0.15 lb/MMBtu on a 30-day rolling average. CO and NO_x must be monitored continuously on each boiler by the use of a continuous emissions monitoring system (CEMS). Over the last two years, the following exceedances of the CO, NO_x, and opacity limits were experienced:

- Boiler A- exceeded the 12-month rolling CO limit during August 2008 through August 2009.
- Boiler B- exceeded the 30-day rolling average CO limit from August 24 to September 29, 2008 and from October 8 to October 29, 2008.
- Boiler C- exceeded the 12-month rolling average CO limit during the period of March 2008 through April 2009.
- Boiler B- exceeded the 30-day rolling average NO_x limit From August 25 to September 17, 2008.
- On various occasions between April 10, 2008 and March 12, 2009, the boiler emissions exceeded the limits for visible emissions (opacity) that are set forth in the PSD permit.

Compliance Plan

A Consent Order (OGC File No. 09-0012) was issued by the FDEP on June 11, 2009 to address the VE, CO and NO_x exceedances that occurred during the period April 2008 through May 2009. The activities NHPC must complete to satisfy the second Consent Order, and the status of each item, are summarized below.

A. Before June 1, 2009, NHPC shall blend the oldest biomass fuel in the stockpiles with other fuel, as follows:

1. To the extent that NHPC has not already done so, NHPC shall move and process the wettest and oldest (i.e., pre-June 1, 2008) portions of its fuel inventory ("low quality fuel").

Status: Completed

2. NHPC shall spread out the low quality fuel on the stockpiles of newer and drier fuel ("high quality fuel"), which will expose the low quality fuel to drier conditions.

Status: Completed

3. While spreading the low quality fuel, NHPC shall build the blended stockpiles steeper and more compacted than they previously were (i.e., pre-2008) to ensure that the stockpiles shed rainfall to the greatest extent practicable.

Status: Completed

B. All of the low quality fuel that was collected and blended pursuant to subparagraph A shall be processed and burnt by June 1, 2009.

Status: Completed

C. Beginning June 1, 2009, NHPC shall evaluate the effectiveness of its fuel blending operations by monitoring the heating value of its as-fired fuel (i.e., the mixture of wood waste and yard trash that is ready to be used in the Facility) on a twice-a-month basis. The heating value of the fuel shall be determined through laboratory testing of composite samples taken from the as-fired fuel. The first composite sample shall be collected by NHPC between the 1st and 7th day of every month. The laboratory testing of that sample shall be completed no later than the 14th day of the same month. The second composite sample shall be collected by the NHPC between the 14th and 21st day of the month. The laboratory testing of that sample shall be completed no later than 28th of the month. The deadlines for the laboratory testing shall be extended until the next business day if the 14th or the 28th fall on a weekend or holiday. If the heating value of any composite sample is ever less than 6,520 Btu per pound (dry basis), NHPC shall:

- (1) notify the Department in writing within 5 days of receiving the test results;
- (2) immediately adjust its fuel blending procedures to improve the quality of the as-fired fuel; and
- (3) conduct weekly sampling and testing until the heating value of the as-fired fuel exceeds 6,520 Btu per pound (dry basis). Under such circumstances, NHPC shall terminate weekly testing and shall resume its normal twice-a-month monitoring program on the 1st day of the month following the month when NHPC collects a weekly sample demonstrating that the heating value of the fuel exceeds 6,520 Btu per pound (dry basis).

Status: Completed

D. If, after taking the measures required in subparagraphs 13.A and 13.B, Respondent discovers that any of its fuel supply is excessively wet or less than 6,520 Btu per pound in heat value (dry basis), NHPC shall

blend its fuel supply with drier fuel or adjust its fuel blending operations to improve the quality of the as-fired fuel.

Status: Not Applicable. After completing the measures in the compliance plan and consent order, NHPC did not find any of the fuel supply to be excessively wet or less than 6,520 Btu/pound, based on the required lab analysis.

E. NHPC completed surveys of the Facility's dust collectors and ESPs prior to the start of the maintenance outage scheduled for April 2009 for the purpose of identifying any locations where air or water may enter into the Facility's combustion system. Any leaks detected in these surveys must be repaired by June 1, 2009. Respondent shall submit these surveys to the Department, along with a list of the repairs made and actions taken as a result of these surveys, by June 15, 2009.

Status: Completed

F. NHPC shall complete the improvements to the Facility's dust collector and ash removal system for Boiler A, pursuant to the requirements in Department's Consent Order No. OGC 07-2645.

Status: Completed

G. NHPC shall conduct a preliminary study that identifies the minimum size requirements and the estimated cost of constructing a covered shed or warehouse for storing biomass fuel during wet weather conditions. Respondent shall complete its study and provide a summary report to the Department by July 31, 2009.

Status: The Department extended the due date to August 14, 2009. Completed

H. Beginning June 1, 2009, NHPC shall limit the monthly average CO emissions from Boiler A to 0.35 lb/MMBtu or less until the 12-month rolling average for the CO emissions from the boiler is less than or equal to 0.35 lb/MMBtu, as required by the PSD Permit. The 0.35 lb/MMBtu monthly CO limit will automatically expire when the boiler achieves the 12-month rolling average limit of 0.35 lb/MMBtu. Upon the expiration of the 0.35 lb/MMBtu limit, NHPC will again be subject to the 0.50 lb/MMBtu monthly CO limit in the PSD Permit. In the event the Facility is impacted by a tropical cyclone weather event, the monthly limit of 0.35 lb/MMBtu for CO emissions from Boiler A will not apply to that month; instead, the 30-day rolling average limit of 0.50 lb/MMBtu for CO emissions will be in effect.

Status: Boiler A maintained the monthly average CO emissions below 0.35 lb/MMBtu until the 12-month rolling average CO emission rate of less than 0.35 lb/MMBtu was attained. Completed

I. The 12-month rolling average for the CO emissions from Boiler A must be less than or equal to 0.35 lb/MMBtu (and thereby in compliance with the PSD Permit) no later than November 1, 2009. If the Facility is impacted by a tropical cyclone weather event, this deadline is hereby extended by one month.

Status: Completed

J. Respondent's CO emission records shall be made available to the Department upon request.

Status: Completed

K. The requirements in subparagraphs C and D, above, shall automatically expire when: (a) the 12-month rolling average for each of the Facility's three boilers (Boilers A, B, and C) is equal to or less than the CO emission limit of 0.35 lb/MMBtu; and (b) NHPC has complied with each of the other requirements in subparagraphs A through J. However, the requirements in the PSD Permit and Title V Permit concerning the sampling, analysis, and management of the Facility's fuel shall remain in effect.

Status: Completed

ATTACHMENT B
COMMENTS ON TITLE V DRAFT
OKEELANTA CORPORATION AND NEW HOPE POWER COMPANY

**COMMENTS ON TITLE V DRAFT
OKEELANTA CORPORATION AND
NEW HOPE POWER COMPANY**

Golder and the Permittee have the following comments on the Department's pre-draft Title V Operation Permit No. 0990005-017-AV:

SECTION 1. FACILITY INFORMATION

Regulatory Categories (page 2) –

- Include Subpart Da in NSPS requirements
- Delete Subpart Dc

Summary of Regulated Emissions Units (page 4) – NHPC ARMS 0990332- EU 005 and 006

Note that in the current Title V permit no. 0990332-012-AV, EU 005 is designated as "Cogeneration Facility NSPS Storage Tank". However, permit no. 0990332-017-AC/PSD-FL-196(P) re-designated this EU as "Miscellaneous Support Equipment (steam turbine electrical generators, condensers, cooling towers, etc.). The Distillate Oil Storage Tank is no longer regulated under the NSPS Subpart Kb provisions in 40 CFR 60.

In the pre-draft -017-AV permit, EU 005 on page 4 is listed as "Cogeneration Plant – Fuel Storage Tank". On page 35 of 48, EU 005 is titled "Distillate Oil Storage Tank (50,000 gallons)". However, in Appendix UI of the pre-draft, EU 005 is titled "Cogeneration Plant Misc. Activities", and EU 006 is named "Cogeneration Plant Miscellaneous Support Equipment".

Therefore, EU designations and titles should probably be:

- EU 005- Distillate Oil Storage Tank (50,000 gallons)
- EU 006-Cogeneration Plant Miscellaneous Support Equipment
- EU 007-Cogeneration Plant Misc. Activities

These EU designations should be changed wherever referenced throughout the permit (e.g. Section 3.F.) and in Appendix UI.

SECTION 2. FACILITY-WIDE CONDITIONS

Condition 2 Compliance Authority (page 5) - Palm Beach County Health Department Telephone No. should be (561) 837-5900, and the fax number should be (561)837-5295.

Condition 4 Annual Operating Report; - AOR due date should be April 1st of each year and May 1st when HAP emissions are required to be reported

SECTION 3. EMISSION UNIT SPECIFIC CONDITIONS

Primary Applicable Requirements (page 9) - Compliance Assurance Monitoring (CAM):

reads "...applies to particulate matter for the electrostatic precipitator."

Request change to "...applies to the particulate matter for the cogeneration boilers."

Condition A.5.e. (page 10) – Request language stating that the activated carbon injection system is inactive at this time. Revise the last paragraph as follows:

The permittee shall abide by the O&M plans for the cogeneration plant control equipment specified in Appendix OM of this permit. [Permit No. PSD-FL-196P; Rules 62-4.070(3) and 62-212.400 (BACT), F.A.C.] The carbon injection system is currently inactive. If two or more cogeneration boilers exceed the annual mercury emission limit, the carbon injection system shall be reactivated for all three units within 30 days of the stack test report due date.

Condition A.7. Continuous Monitors (page 10) – Request O₂ be replaced with CO₂. Request concurrent revision for Specific Condition No. 6 in Section III of Permit No. 0990332-017-AC/PSD-FL-196(P).

Condition A.10. Primary Fuel (page 11) – Last sentence should read "The Permittee shall abide by the Ash and Fuel Management Plans Specified in Appendices AM and FM of this permit.

Condition A.11. Auxiliary Fuel (page 11)- Last sentence should read "The Permittee shall abide by the Ash and Fuel Management Plans Specified in Appendices AM and FM of this permit.

Condition A.12. Fuel Management Plan (page 11) - Remove reference to ash. Sentence should read "The permittee shall abide by the Fuel Management Plan specified in Appendix FM.

Condition A.19.e (page 10) – Add 40 CFR Part 61 test methods as allowable methods for emission limit compliance demonstration. Add EPA Method 30B "Determination of Total Vapor Phase Mercury" as an allowable method in addition to EPA method 101A for compliance demonstration for the mercury emission limit.

Condition C.16. NESHAP Provisions (page 25) – Delete Subpart A and DDDDD applicability

D. Sugar Refinery - Miscellaneous Process Description (page 26 of 38) –

In the applications for Air Construction Permit No. 0990005-020-AC and the Title V permit revision it was indicated that the maximum design capacity of Emissions Unit Nos. 23 and 24 is 1,350 TPD. The Air Construction Permit No. 0990005-020-AC indicates approximately 1,000 TPD maximum capacity. We request that the descriptions in the Title V permit indicate the maximum design capacity as 1,350 TPD as described in the application. Revise third paragraph as follows:

A Rotary Dryer (EU-021) is used for specialty sugars and when the fluidized bed dryer is off line for repairs. Steam is used for the necessary heat and no fuels are fired in the dryer. Dust emissions from the rotary dryer are controlled with the use of a skimmer followed by wet

Rotoclone No. 1, which exhausts 89 feet above grade. Wet Rotoclone No. 1 also controls dust from two specialty sugar conveyors that transfer sugar products during production with the rotary dryer and coolers. Sugar from the rotary dryer is directed to two coolers (EU-023 and EU-024), each with a design capacity of ~~1000-1350~~ tons per day. The exhaust from Cooler No. 1 is controlled by Rotoclone No. 3 vented 80 feet above grade. The exhaust from Cooler No. 2 is controlled by Rotoclone No. 4 vented 80 feet above grade. ~~When operating in~~ The 3-stage high-production mode (rotary dryer followed by two coolers operating in series) is needed when producing, the design equipment capacity is approximately 1000 tons per day of refined white sugar and 600 tons per day of specialty sugars. When operating the rotary system in the low-production mode (<1000 TPD white sugar or >600 TPD specialty sugar). Cooler No. 1 (EU 023) functions as the dryer followed ~~in series by~~ in series with Cooler No. 2 (EU-024), ~~in series with and the rotary dryer remains shutdown), the design equipment capacity is approximately 500 tons per day of specialty sugars.~~ The Rotary Dryer System may operate simultaneously with the Fluidized Bed Dryer/Cooler.

Condition D.3. Permitted Capacities (page 28) Include Cooler No. 2 (EU 024) in the sugar production limit of 490,000 tons per consecutive 52-week period. Revise as follows:

3. Permitted Capacities: Total refined sugar production (Fluidized Bed Dryer (EU-025), Rotary Dryer (EU-021) and Coolers ~~No. 1 (EU-024)~~ 023 and EU-024) shall not exceed 490,000 tons during any consecutive 52-week period, and:

Condition D.3.a (page 28) - Include Cooler Nos. 1 and 2 (EU-023 and EU 024) as part of the "Rotary System." Revise "Rotary Dryer" to "Rotary System" Revise as follows:

a. The Rotary Dryer System (EU-021, EU-023, and EU-024) and Cooler No. 1 shall not process more than 130,000 tons during any consecutive 52-week period.

Condition D5.b.2) (page 28) - "2-stage" misspelled

Condition D.5.c. (page 28) - Revise "Rotary Dryer" to "Rotary System" and include EU-023 and EU-024 in simultaneous operation. Revise as follows:

c. The Fluidized Bed Dryer (EU-025) and Rotary Dryer System (EU-021, EU-023, and EU-024) are operated simultaneously. The dryers and sugar refinery are subject to the production and processing limitations specified in Specific Condition No. 3 of this subsection. [Permit No. 0990005-021-AC]

E. Transshipment Facility - Process Description (page 32) - 3rd paragraph reads: "Sugar is packaged in one of 13 packaging lines..." Should read "Sugar is packaged in one of 14 packaging lines..." representing packaging lines 1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 11, 12, 13, and 14.

G.1. Paint Booth (page 36) - Revise to reflect changes contained in 0990005-16-AC

SECTION 4. APPENDIX AM and FM Refer to markup of fuel and ash management plans in Attachment C.

SECTION 4 APPENDIX CP

- Delete sentence "There currently remains only about 200 gallons of distillate oil in the tanks from previous operation of the boiler."
- Add the following sentence to the end of the first paragraph: "The distillate oil storage tank system is empty and there is no fuel oil inventory kept onsite."
- Compliance Plan Condition 2 –
 - Specify "...the permittee shall demonstrate compliance with the distillate oil fuel sulfur limit by taking an initial sample during the NO_x compliance tests while firing fuel oil and having it analyzed for sulfur in accordance with ASTM D4057-88..."
 - Modify last sentence: "The results shall be reported with the initial opacity and NO_x emissions compliance test report for operation with distillate oil."

SECTION 4. APPENDIX OMPage OM-1

- Air Pollution Controls - Revise NO_x control description as follows: Nitrogen oxide emissions are controlled by the injection of ~~ammønia-urea~~ in a selective non-catalytic reduction system.
- Mechanical Dust Collectors - Design Efficiency – Revise as follows: The mechanical dust collectors are designed for a control efficiency of ~~80~~50% or greater for particulate matter greater than 10 microns.
- Mechanical Dust Collectors – Key Design and Operating Parameters and Good Operating Practices: Remove "Pressure drop across collector: normal range is 4 to 5 inches of water." This statement is not accurate under normal operating conditions as the pressure drop fluctuates significantly.

Page OM-2 – ESP Key Design Operating Parameters – Design Control Efficiency: ~~99.298~~% or greater for particulate matter.

Page OM-5 – Activated Carbon Injection – Mercury Control System: State that the system is currently inactive since it is not needed to meet the Hg limits due to low Hg content of Bagasse.

SECTION 4. APPENDIX SSCogeneration Plant (page SS-1)

- Process Monitors – Specify activated carbon injection rate monitor will be maintained "if needed."
- Emissions Standards Summary– Include EPA Method 30B as an allowable compliance method.

Material Handling & Storage Operations, Cogeneration Plant (page SS-3)

- Opacity Standard – Visible emissions ≤ 5% opacity based on a 6-minute block average
- Compliance Tests – Conduct EPA Method 9 for opacity annually for each silo that is loaded with ash or carbon.

Sugar Refinery (page SS-5)

- *Permitted Capacities*– Revise 12-month rolling limit: Refined sugar production shall not exceed 1,500 tons/day and 490,000 tons/consecutive 12 months.

Transshipment Facility (page SS-6)

- Revise EU 019 to: “Sugar packaging lines (0-9), including 8A & 8B”
- Revise EU 045 to “Packaging lines 8A & 8B, Powdered sugar dryer/cooler”
- Add EU 049 “Packaging line 14”
- *Controls*: ≤0.02 grains per acfm for baghouses controlling EU-030, 031, 032, and 049

Paint Spray Booth, Farm Operations (page SS-8) – remove “for Okeelanta Shop” from description

SECTION 4. APPENDIX UIPage UI-2 –

- Revise process water canal description to: “Membrane Cleaning Chemicals and Process Water Discharge Canal”
- Add “Collection and Distribution Lift Station” to Activities/Equipment list for Sugar Mill Sewer Plant (EU 042).
- Revise EU 043 to EU 044
- EU ID 043 Sugar Refinery should be EU 044. Alcohol usage in Refinery is EU 043.

Page UI-3 – EU ID's not consistent with Section 1.

- Revise EU 044 to: “EU 045 - Transshipment Facility” and add the following activities/equipment:
 - Propane fired water heaters for disinfection process vessels
 - Steam Clean Station
 - Cold Cleaning Devices (parts washer)
- Revise EU 050 to “EU 050 – Okeelanta Facility” and add “Forklift and Crane operations” to activity/equipment list
- Revise EU 005 to “EU 007 – Cogeneration Plant Misc. Activities” and add the following activities/equipment:
 - Painting operations
 - Portable Diesel Air Compressors
 - Portable Electric Generators
 - Portable Welders
 - Pressurized LPG tanks
 - Portable Pumps
 - Forklift, Loader, and Crane Operations
- Revise EU 006 to “EU 006 – Cogeneration Plant Miscellaneous Support Equipment”

ATTACHMENT C
COMPLIANCE ASSURANCE MONITORING PLAN

**COMPLIANCE ASSURANCE MONITORING (CAM) PLAN
NEW HOPE POWER COMPANY, SOUTH BAY, FLORIDA
REVISED FEBRUARY 2010**

1.0 PM EMISSIONS FROM COGENERATION BOILERS A, B, AND C

1.1 Emissions Unit Identification

New Hope Power Company (NHPC) cogeneration Boilers A, B, and C.

1.2 Applicable Regulations, Emissions Limits, and Monitoring Requirements

Cogeneration Boilers A, B, and C at the NHPC cogeneration facility are biomass-fired spreader stoker steam boilers manufactured by Zurn and designed to produce approximately 506,100 pounds per hour (lb/hr) of steam each. Each boiler has a particulate matter (PM) emission limit of 0.026 pound per million British thermal units (lb/MMBtu) or 19.8 lb/hr, and a nitrogen oxides (NO_x) emission limit of 0.15 lb/MMBtu or 114.0 lb/hr.

Compliance with the NO_x emission standard is determined by data collected by the NO_x continuous emissions monitoring system (CEMS) in terms of "lb/MMBtu of heat input". Compliance with the PM standard is determined by the average of three test runs conducted annually in accordance with U.S. Environmental Protection Agency (EPA) Method 5. Each boiler also has a stack opacity limit of 20-percent as a 6-minute block average, except for one 6-minute block per hour that is less than or equal to 27-percent opacity. Compliance with the opacity standard is determined by a continuous opacity monitoring system (COMS), which measures opacity continuously based on 1-minute averages.

1.3 Control Technology Description

PM emissions from each of the Boilers A, B, and C are controlled by mechanical dust collectors and an electrostatic precipitator (ESP). NO_x emissions are controlled by a selective non-catalytic reduction (SNCR) system. A detailed description of the control equipment is included in the 2005 Title V renewal application, Attachment OC-EU5-I3.

1.4 Monitoring Approach

The monitoring approach is based on monitoring opacity of each boiler stack through the existing COMS on each stack. The monitoring approach is summarized in the table below.

Indicator No. 1	
Indicator	Opacity
Measurement Approach	Continuous opacity monitoring system (COMS).
Indicator Range	An excursion is defined as any 1-hour block average opacity greater than 18%, excluding periods of start-up, shutdown and malfunction pursuant to Rule 62-210.700, F.A.C. An excursion will trigger an evaluation of operation of the boiler and ESP. Corrective action will be taken as necessary. Excursions trigger recordkeeping and reporting requirements (see attached CAM Plan Excursion Checklist).
Data Representativeness	Opacity measurements are made in the stack.
Verification of Operational Status	N/A
QA/QC Practices and Criteria	Install and operate COMS according to 40 CFR Part 60 Appendix B, Performance Specification 1 and general provisions 60.13.
Monitoring Frequency	Opacity is monitored continuously.
Data Collection Procedures	One-minute averages are recorded through the DAS. Daily reports with all hourly averages are generated. One-hour block averages are determined from the average of all the valid 1-minute averages during a 60-minute period.
Averaging Period	The averaging period for opacity observations is a 1-hour block average.

F.A.C. = Florida Administrative Code
 CFR = Code of Federal Regulations
 DAS = Data Acquisition System

1.5 Justification

The CAM rule, in 40 CFR 64.3(d)(1), states that if a COMS is required pursuant to other authority under the Clean Air Act (CAA), or state or local law, the owner or operator shall use such system to satisfy the requirements of this part. NHPC is proposing to use data from the COMS on each of the Boiler A, B, and C stacks and monitor the 1-hour block average opacity measurements to assure compliance with the PM emission standard.

The NHPC boilers are subject to CAM for PM emissions, not visible emissions. Annual compliance tests for PM are performed via EPA Method 5 and consist of three test runs, each typically approximately 1 hour in duration. The opacity data NHPC has used to correlate with PM emissions are based on the average opacity for the duration of the test run (approx. 60 minutes) (see discussion below). Therefore, a 1-hour block average (60 minutes total) for the CAM opacity indicator is appropriate for compliance assurance of PM emissions. As described below, the Florida Department of Environmental Protection (FDEP) has approved CAM Plans for PM based on monitoring opacity for at least three other power plants in Florida.

NHPP has researched other CAM Plans for PM for coal-fired power plants, which also use opacity as the CAM parameter. For Cedar Bay Generating Company, the Department issued the CAM Plan based on a 10-percent opacity reading as the level defining an excursion. This level of opacity would have to be exceeded for five consecutive 6-minute averages in order to define an excursion. The rationale stated in the CAM Plan was as follows:



"Based on available data under normal operation, the representative stack opacity of each unit is in the range of 3% to 7%. A 50% average opacity above 7% during non-startup or shutdown periods is atypical and may indicate a potential problem with the baghouse."

St. Johns River Power Park received an 18-percent opacity level as the CAM indicator, based on a 1-hour block average. The rationale stated in the CAM Plan was as follows:

"Based on available data under normal operation, the representative stack opacity of each unit is in the range of 5% to 15%. In addition, the COMS are located upstream of the scrubber and as such, the opacity at the stack exit is lower than the value indicated by the COMS. Therefore, 18% opacity during non-startup or shutdown periods is atypical and may indicate a potential problem with the ESP."

Lakeland McIntosh received a 12-percent opacity level as the CAM indicator, based on a 1-hour average, excluding periods of startup, shutdown and malfunction. Indiantown Cogeneration received a 6-percent opacity level as the CAM indicator, based on a 1-hour block average, excluding startup and shutdown.

For the NHPC boilers, compliance with the PM standard is determined by the average of three test runs conducted in accordance with EPA Method 5. Data for the test runs from 2002 to the 2009 were collected and are summarized in Table 1-1. Based on the opacity data from the COMS collected during the test runs, plots of PM emissions versus opacity were generated, and are presented in Figures 1-1 through 1-4. The plots indicate a general increase in PM emission rate as the opacity increases.

The variability in opacity versus load or opacity versus PM emission rate is typical for the NHPC boilers, with occasional sudden spikes and dips. A sudden and sustained step-increase in opacity may indicate a potential problem with the ESP.

As shown in Figures 1-1 through 1-4, the maximum average opacity experienced during the PM compliance tests is approximately 12 percent. Using similar rationale as for St. Johns River Park, the indicator range for the NHPC Boilers A, B, and C should be set at 50 percent greater than 12 percent, i.e., at 18-percent opacity. A 50 percent average opacity above the normal range is atypical, and setting the indicator range at 50 percent greater than 12-percent opacity, i.e., at 18-percent opacity, is an appropriate range of opacity, above which may indicate potential problems with the ESP. The proposed averaging time is 1-hour. Therefore, the indicator range is set at a 18-percent for opacity or more as a 1-hour block average, during non-startup, shutdown, and malfunction conditions.

When an excursion occurs, an investigation will be initiated, beginning with an evaluation of the occurrence, to determine the action required (if any) to correct the situation. A list of equipment that will be evaluated whenever an excursion occurs is presented in Appendix A. All excursions will be documented and reported.

**TABLE 1-1
STACK TEST OPACITY DATA
BOILERS A, B, AND C
NEW HOPE POWER COMPANY**

Run	Period Start	Period End	Average Opacity (%)	Average PM Emissions	
				lb/MMBtu	lb/hr
Boiler A					
Run 1	03/18/2009 09:05	03/18/2009 10:14	5.2	0.0230	13.70
Run 2	03/18/2009 11:50	03/18/2009 12:58	6.4	0.0272	14.80
Run 3	03/20/2009 13:44	03/20/2009 14:49	4.9	0.0119	6.90
Run 1	02/08/2008 09:29	02/08/2008 10:31	4.98	0.0132	8.63
Run 2	02/08/2008 11:22	02/08/2008 12:25	4.7	0.0129	8.46
Run 3	02/08/2008 14:15	02/08/2008 15:17	6.1	0.0127	8.32
Run 1	02/15/2007 09:24	02/15/2007 10:26	3.2	0.0133	8.07
Run 2	02/15/2007 10:56	02/15/2007 11:58	3.3	0.0109	6.56
Run 3	02/15/2007 12:29	02/15/2007 13:30	6.9	0.0141	8.15
Run 1	02/14/2006 10:50	02/14/2006 11:51	1.2	0.0133	8.07
Run 2	02/14/2006 12:22	02/14/2006 13:24	2.2	0.0109	6.56
Run 3	02/14/2006 13:45	02/14/2006 14:49	1.1	0.0141	8.15
Run 1	02/24/2005 13:31	02/24/2005 14:38	9.7	0.0138	10.49
Run 2	02/24/2005 15:08	02/24/2005 16:11	10.1	0.0177	13.45
Run 3	02/24/2005 16:47	02/24/2005 17:45	10.5	0.0172	13.07
Run 1	02/16/2004 09:15	02/16/2004 10:21	3.4	0.0052	3.95
Run 2	02/16/2004 11:01	02/16/2004 12:05	2.6	0.0080	6.08
Run 3	02/16/2004 12:47	02/16/2004 13:49	2.5	0.0072	5.47
Run 1	01/22/2003 09:43	01/22/2003 11:42	3.4	0.0085	6.46
Run 2	01/22/2003 12:17	01/22/2003 13:20	2.4	0.0090	6.84
Run 3	01/22/2003 14:03	01/22/2003 15:06	2.2	0.0093	7.07
Run 1	02/13/2002 10:16	02/13/2002 11:19	5.5	0.0110	8.36
Run 2	02/13/2002 12:09	02/13/2002 13:13	4.7	0.0070	5.32
Run 3	02/13/2002 13:44	02/13/2002 14:48	4.2	0.0050	3.80
Boiler B					
Run 1	03/19/2009 09:25	03/19/2009 10:32	1.7	0.0048	2.80
Run 2	03/19/2009 11:44	03/19/2009 12:50	1.8	0.0078	4.80
Run 3	03/19/2009 15:00	03/19/2009 16:33	1.6	0.0069	4.10
Run 1	10/14/2008 10:31	10/14/2008 11:38	5.96	0.0295	20.00
Run 2	10/15/2008 09:37	10/15/2008 10:42	3.75	0.0279	16.69
Run 3	10/15/2008 13:20	10/15/2008 14:28	2.7	0.0176	10.80
Run 1	02/07/2008 09:47	02/07/2008 10:49	8.9	0.0134	8.90
Run 2	02/07/2008 11:18	02/07/2008 12:21	7.8	0.0131	8.52
Run 3	02/07/2008 12:48	02/07/2008 13:50	7.8	0.0125	8.17
Run 1	02/14/2007 09:55	02/14/2007 10:58	3.2	0.0136	7.91
Run 2	02/14/2007 12:30	02/14/2007 13:32	2.6	0.0143	7.99
Run 3	02/14/2007 14:03	02/14/2007 15:05	3.2	0.0133	7.75
Run 1	02/15/2006 10:11	02/15/2006 11:15	2.2	0.0091	5.59
Run 2	02/15/2006 11:58	02/15/2006 13:01	2.2	0.0097	6.53
Run 3	02/15/2006 13:40	02/15/2006 14:50	2.7	0.0112	7.50
Run 1	02/23/2005 13:55	02/23/2005 15:01	14.2	0.0143	10.87
Run 2	02/23/2005 15:46	02/23/2005 16:49	13.7	0.0174	13.22
Run 3	02/24/2005 09:23	02/24/2005 10:27	7.8	0.0117	8.89
Run 1	02/13/2004 08:52	02/13/2004 09:54	7.3	0.0101	7.68
Run 2	02/13/2004 12:40	02/13/2004 13:44	5.5	0.0077	5.85
Run 3	02/13/2004 14:27	02/13/2004 15:32	6.5	0.0115	8.74
Run 1	01/23/2003 10:58	01/23/2003 12:01	3.7	0.0088	6.69
Run 2	01/23/2003 12:31	01/23/2003 13:34	3.8	0.0082	6.23
Run 3	01/23/2003 14:01	01/23/2003 15:04	3.5	0.0067	5.09
Run 1	02/14/2002 09:35	02/14/2002 10:39	5.1	0.0110	8.36
Run 2	02/14/2002 11:10	02/14/2002 12:15	4.3	0.0090	6.84
Run 3	02/14/2002 12:49	02/14/2002 13:54	3.8	0.0080	6.08
Boiler C					
Run 1	10/15/2008 18:07	10/15/2008 19:18	8.6	0.0163	10.48
Run 2	10/16/2008 09:38	10/16/2008 10:45	6.1	0.0223	14.36
Run 3	10/16/2008 11:34	10/16/2008 12:41	6.4	0.0215	12.73
Run 1	02/06/2008 10:18	02/06/2008 11:22	6.5	0.0154	9.74
Run 2	02/06/2008 11:56	02/06/2008 12:59	4.1	0.0144	9.48
Run 3	02/06/2008 13:26	02/06/2008 14:29	4.2	0.0157	10.12
Run 1	02/13/2007 12:11	02/13/2007 14:05	4.8	0.0151	8.68
Run 2	02/13/2007 14:37	02/13/2007 15:41	4.7	0.0133	8.02
Run 3	02/13/2007 16:20	02/13/2007 17:22	5.3	0.0159	9.09
Run 1	02/16/2006 11:15	02/16/2006 12:20	10.4	0.0191	13.44
Run 2	02/16/2006 12:52	02/16/2006 13:55	10.6	0.0203	13.02
Run 3	02/16/2006 14:30	02/16/2006 15:32	9.3	0.0194	12.14
Run 1	02/22/2005 14:15	02/22/2005 15:19	6.5	0.0132	10.03
Run 3	02/23/2005 08:53	02/23/2005 09:56	6	0.0060	4.56
Run 1	02/11/2004 09:50	02/11/2004 10:54	6.1	0.0072	5.47
Run 2	02/11/2004 11:36	02/11/2004 12:42	5.7	0.0080	6.08
Run 3	02/11/2004 13:20	02/11/2004 14:25	5.7	0.0062	4.71
Run 1	01/21/2003 12:16	01/21/2003 13:21	0	0.0074	5.62
Run 2	01/21/2003 14:07	01/21/2003 15:10	0	0.0072	5.47
Run 3	01/21/2003 16:13	01/21/2003 17:24	0.2	0.0096	7.30
Run 1	02/12/2002 10:14	02/12/2002 11:19	5.1	0.0190	14.44
Run 2	02/12/2002 12:35	02/12/2002 13:39	3.1	0.0070	5.32
Run 3	02/12/2002 14:11	02/12/2002 15:15	3.4	0.0060	4.56

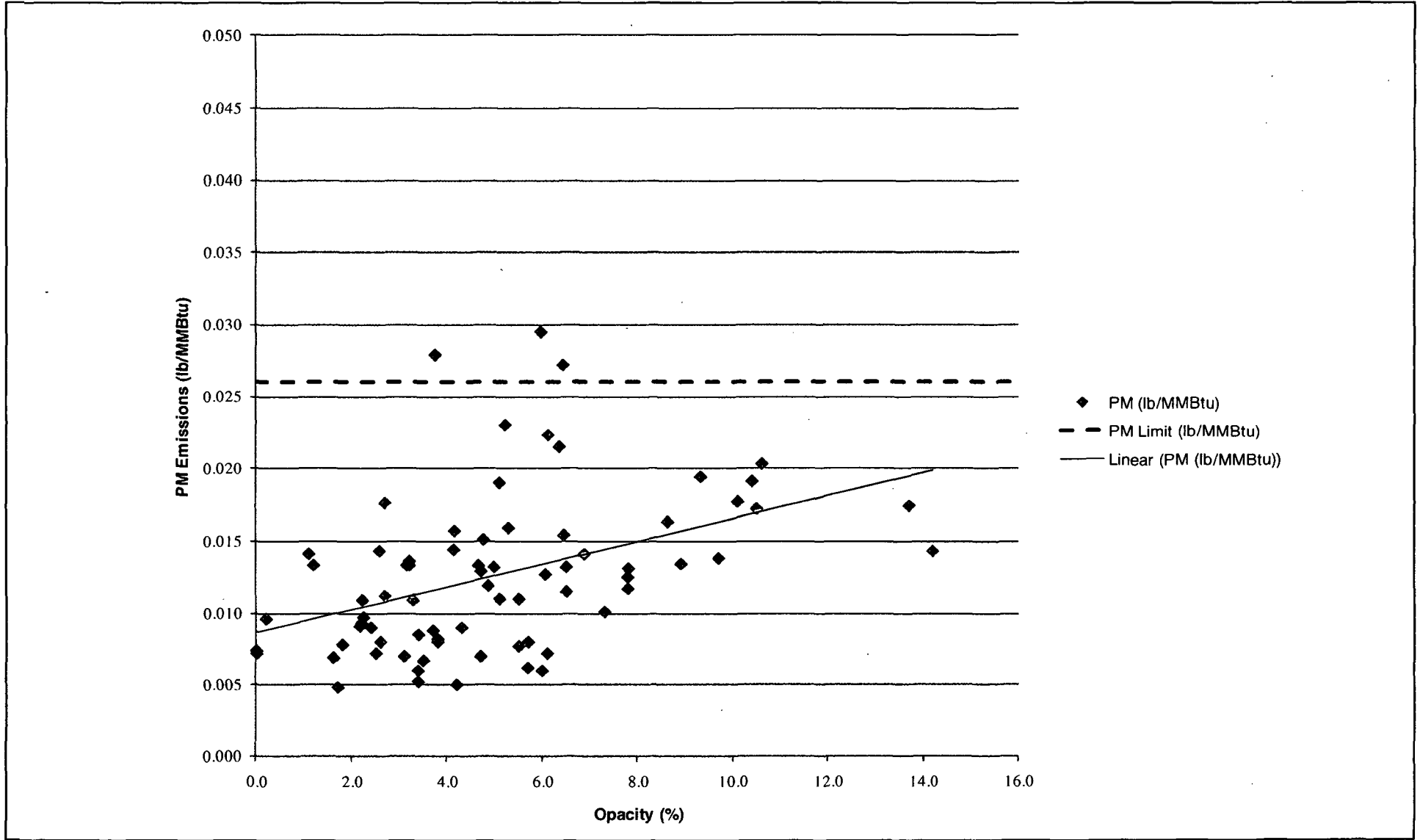


Figure 1-1
PM vs. Opacity, Boilers A, B, and C, NHPC

Source: Golder, 2009.

Checked by: DB
Reviewed by: DB



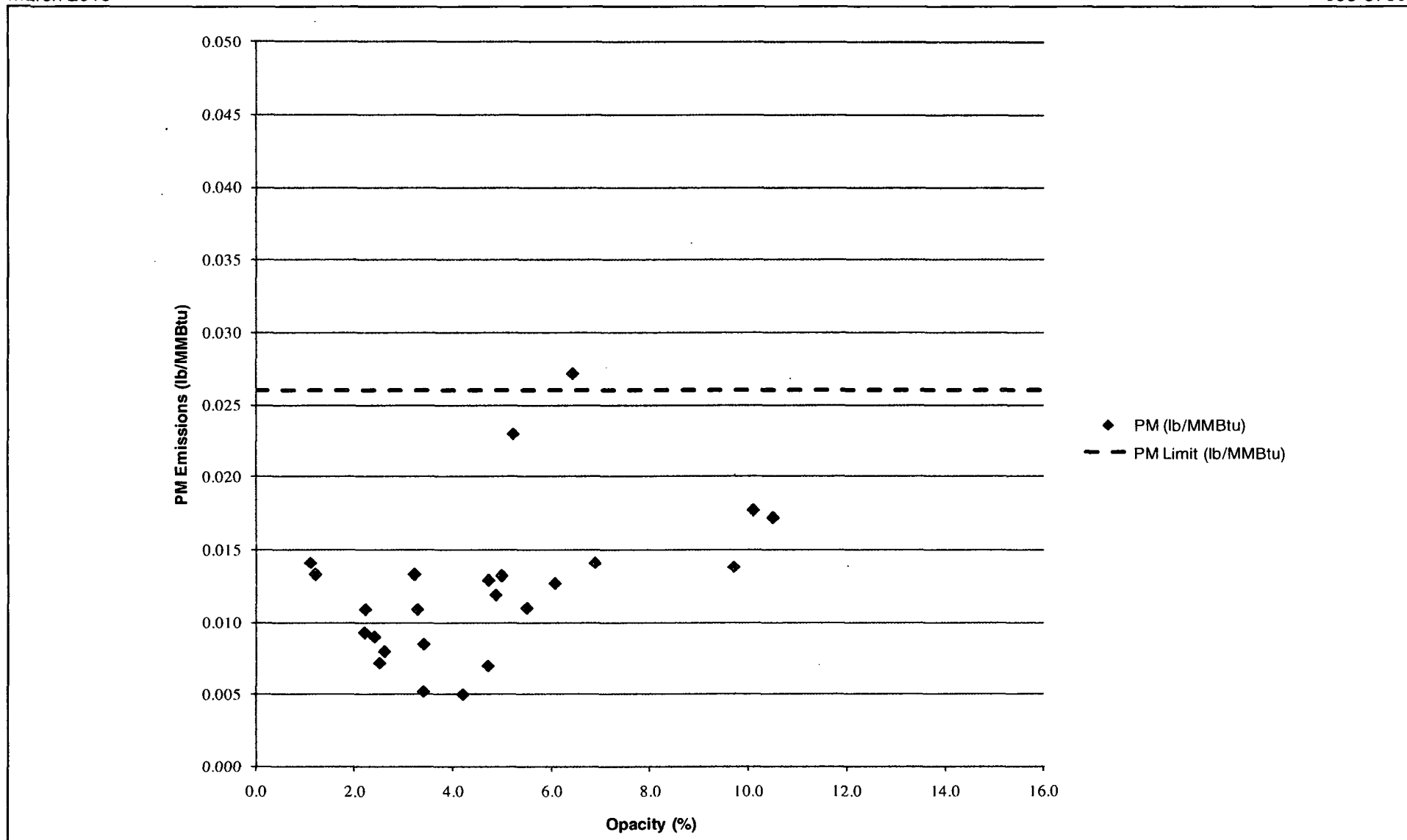


Figure 1-2
PM vs. Opacity, Boiler A, NHPC

Source: Golder, 2009.

Checked by: DB
Reviewed by: DB



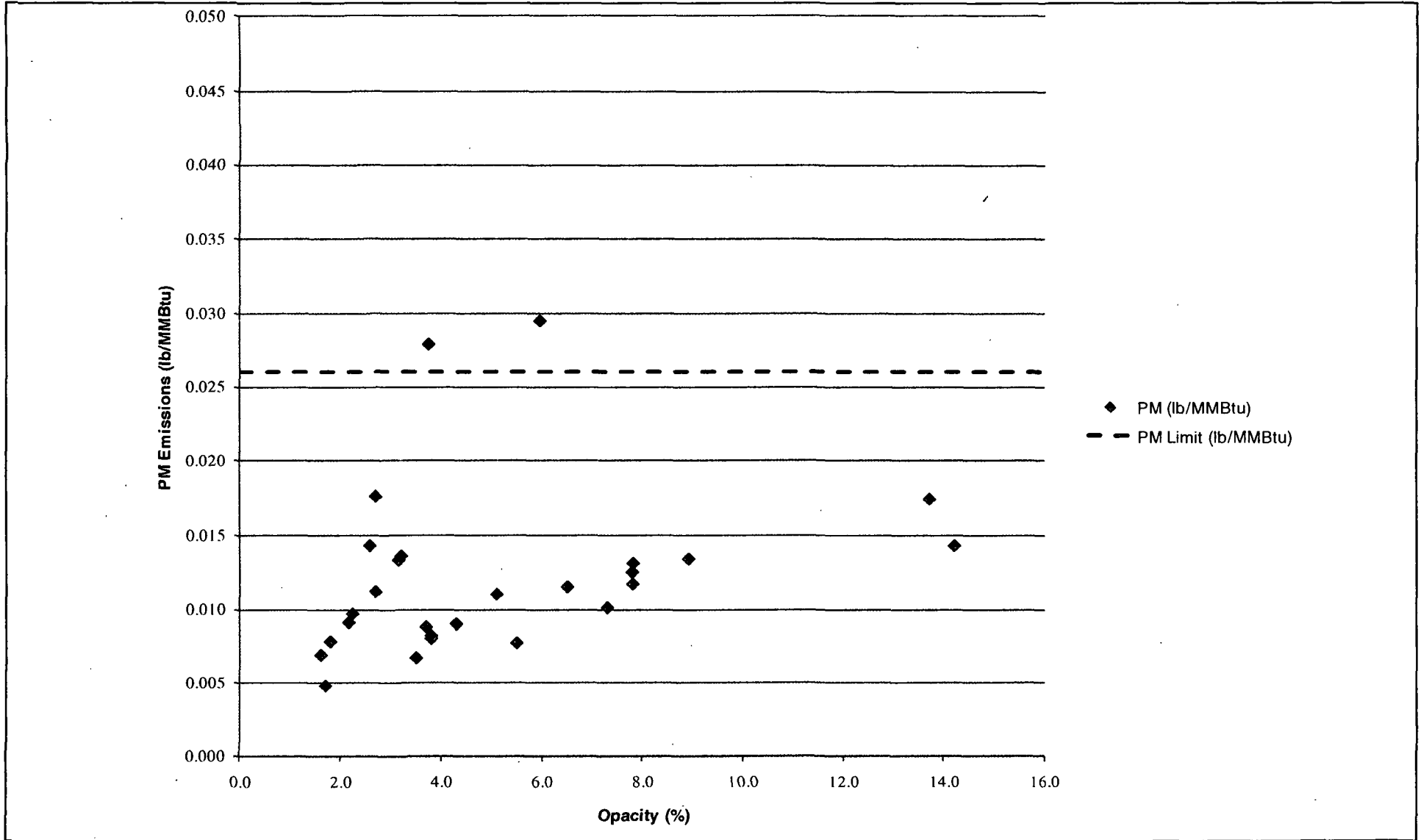


Figure 1-3
PM vs. Opacity, Boiler B, NHPC

Source: Golder, 2009.

Checked by: DB
Reviewed by: RB



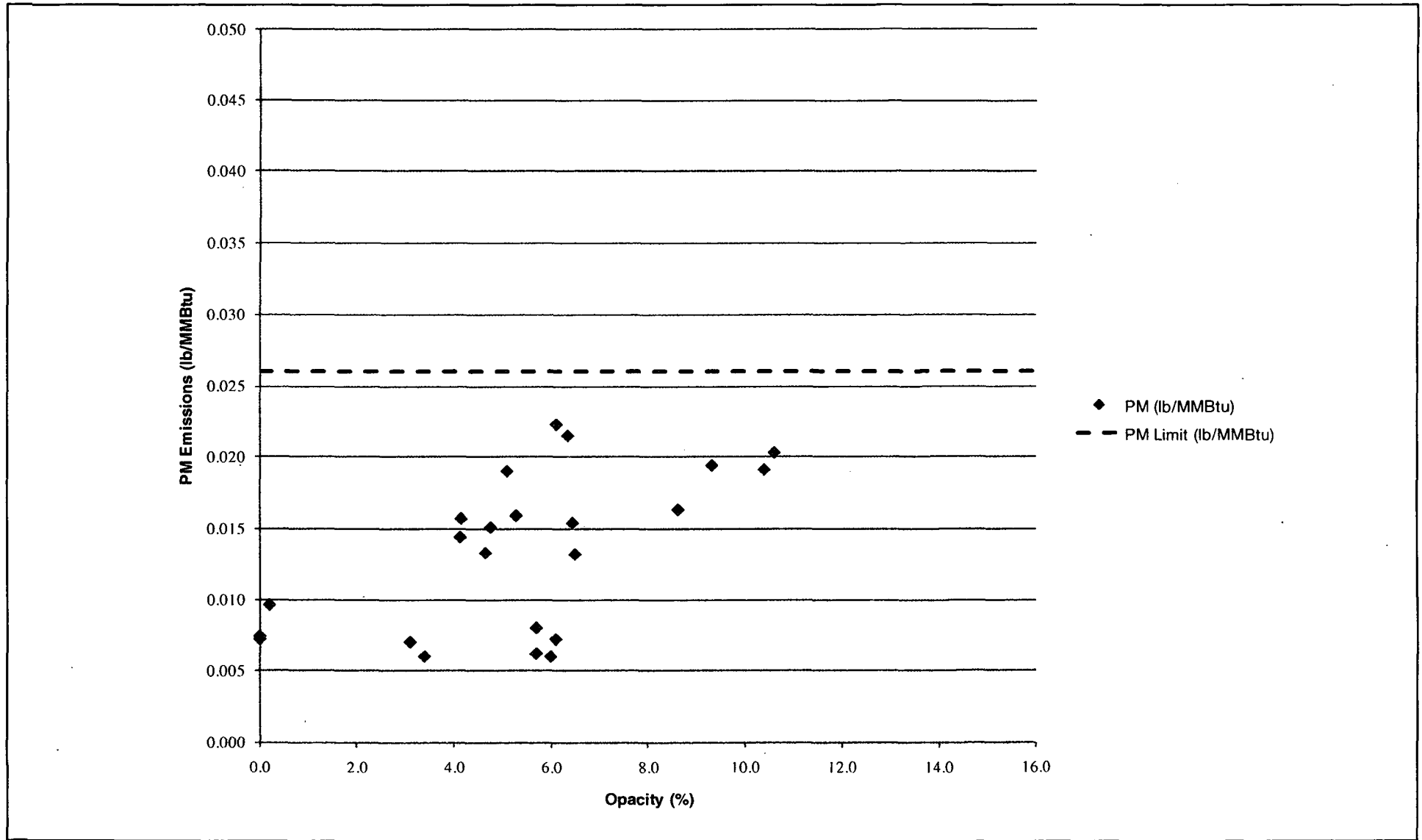


Figure 1-4
PM vs. Opacity, Boiler C, NHPC

Source: Golder, 2009.

Checked by: DB
Reviewed by: DB



APPENDIX A
CAM PLAN EXCURSION CHECKLIST

APPENDIX A

CAM PLAN EXCURSION EVENT CHECKLIST

An excursion is defined as any 1-hour block average opacity greater than 18 percent, excluding periods of start-up, shutdown, and malfunction. All excursions will be documented in the operator log book. The following evaluations will be performed to determine the action required (if any) to correct the situation.

Control room personnel will review the status of the following:

- ESP operations
 - Power to each field, rapper operation, etc.
- Fuel feed rate and conditions in the furnace
- Bagasse and wood conveyor operation
- Fuel oil and natural gas system

The Plant Operator will review the following:

- Visually inspect the feeders to identify plugs or free flowing malfunction
- Grate bed thickness
- Submerged ash system water level
- Damper operations
- Inspect ESP access doors for potential leaks

I&E Technicians will investigate the following:

- CEMS accuracy
- Opacity probe lens fouling

Inspection should follow lines of logic based on events leading up to the excursion. For safety reasons, inspection of the opacity probe lens should be done only when there is reason to believe that the lens has become fouled.

When the source of the excursion is identified no further investigation is required.

An explanation of the investigation and the findings must be documented. The excursion and corrective action will be recorded on the appropriate forms with the results of the investigation and kept in a binder for review.

The CAM Plan Excursion Checklist will be periodically updated as necessary.

ATTACHMENT D
REVISED FUEL MANAGEMENT PLAN

SECTION 4. APPENDIX AM
Ash Management Plan

ASH MANAGEMENT PLAN

This Appendix identifies and describes the practices for managing, sampling, and analyzing ash generated from the boilers operating at this plant. "Permit Conditions" are specified at the end of this Appendix.

Ash from Bagasse and Wood Combustion

Bottom Ash

Bottom ash is discharged continuously from each boiler into three, water-submerged drag chain conveyors. Each conveyor consists of a wet upper compartment and a dry lower compartment. The upper compartment has a water-tight steel trough designed to contain the water required for quenching and cooling the bottom ash to 140° F and is sized to accommodate and store up to 2 hours of bottom ash generated from the wood or bagasse.

The submerged chain conveyor has a removal rate of 8 TONS/HOUR (TPH). An integrated water supply and recirculation system is used. Over flow water from the submerged dry chain conveyor trough, hopper seal trough, and dewatered ash storage pile is piped back to a recirculation sump equipped with an overflow weir and a return sump pump. Make-up water is added to the recirculation sump to replace water lost in the dewatered ash and through evaporation. The bottom ash is then transferred to an enclosed mixed ash belt conveyor for transfer to the mixed ash bunker.

Fly Ash

Fly ash consists of ash collected in air heater hoppers, dust collector hoppers, and from ESP hoppers. Fly ash is transferred by screw conveyors from each system and is wetted prior to transfer to the enclosed mixed ash belt conveyor that transfers it to the mixed ash bunker. All of the fly ash and dust collector ash conveyors are enclosed.

Mixed Ash Bunker

The mixed ash bunker is a 3-sided bunker sized to accommodate about a 7-day ash capacity. At this point the ash is extremely wet. Under normal operating procedures, the ash is removed from the bunker in a wetted condition. If it is determined that the bottom ash in storage has become dry, it will be sprayed with water. A front-end loader is used to reclaim and load the stored ash into trucks.

Ash Disposal

All ash generated by the facility is taken to a Class I landfill for disposal.

Quality Control Measures

Analysis of a mixed ash sample generated at the plant is conducted on a monthly basis. Results from the analyses shall be used in conjunction with those from the as-fired wood samples to evaluate the effectiveness of the air permit limits on the concentrations of copper, chromium and arsenic in the biomass combusted at the plant are being met of the fuel management program in removing chemically treated wood from the biomass fuel.

Samples of mixed bottom and fly ash are obtained from the storage bunker weekly for four weeks. Each weekly sample is a composite of mixed ash grab samples from three to five locations of the ash pile(s) in the storage bunker. After collection of the composite sample in the fourth week, the monthly sample for analysis is produced by mixing equal portions of the four weekly mixed ash samples. A portion of the monthly composite mixed ash sample is retained as a control sample for verification of the lab test results, if necessary.

If the fly ash is being collected in the silo, weekly grab samples of the bottom ash are obtained weekly by the Chemical Technician as material is loaded from the storage bunker to trucks for off-site disposal. Fly ash grab samples are obtained (also by the Chemical Technician) weekly from the transfer point between the collecting fly ash chain conveyor and the bucket elevator conveyor, as ash is loaded into the silo. Additionally, grab samples of the bottom ash are obtained weekly from bottom ash piles in the storage bunker. The individual sample size for the bottom ash and fly ash grab samples is approximately one pound each.

Prior to releasing the ash samples for outside lab analysis, a "combined ash sample" for the facility is also produced by blending a portion of the individual weekly bottom and fly ash samples (approximately 8, 1 lb samples per month) into a homogeneous composite (fly and bottom ash) ash sample. A portion of the remaining individual fly ash, bottom ash, and combined ash samples is retained on site as control samples for verification of lab test results, if necessary.

The monthly ash samples are analyzed for copper, chromium, and arsenic in accordance with appropriate analytical procedures per 40 CFR 261, Appendix III, described in SW-846, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*. Laboratory results on the sample are typically be available to the plant Environmental

SECTION 4. APPENDIX AM

Ash Management Plan

Coordinator or Fuels Manager within ~~2-3 days~~ 1 week after receipt of the sample at the lab. Any results on the representative monthly composite ash sample which indicate the burning of wood material with concentrations of copper, chromium and/or arsenic above of the air permit limits are investigated by the Environmental Coordinator or Fuels Manager ~~by the EH&S Representative~~. Retesting of the control ash sample will be performed to verify the original lab test results. Comparison of the ash sample results with the corresponding fuel test results will also be performed to ensure that existing material segregation and sampling procedures for the wood material provide for an accurate representation of the composition of the wood material burned at the facility.

Correlation of Wood/Ash Analysis Results

Results from the wood material, bottom ash, fly ash, and combined fly/bottom ash product sampling and analysis are correlated so that a comparison of the analyzed metals content in the feedstock (wood material) with that of the ash products can be made. This information is used to assess the adequacy of the wood material sampling procedures and for determining the distribution of the initial wood material metals content in the fly and bottom ash products.

Air Permit Conditions

1. **Ash - Sampling and Analysis:** At least once each month, the permittee shall have an analysis conducted on a composite sample of fly ash and bottom ash (mixed ash) for arsenic, copper, and chromium in accordance with the procedures described in EPA Method SW-846, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (40 CFR 261, Appendix III). The analytical results from ash testing shall be used in conjunction with those from the as-fired wood samples to evaluate the effectiveness of the fuel management program in removing chemically treated wood from the biomass fuel. The permittee shall dispose of all ash generated on site in accordance with the applicable state and federal regulations. [Permit No. PSD-FL-196(P); Rule 62-4.070(3), F.A.C.]
2. **Ash - Quarterly Reports:** Within 30 days following each calendar quarter, the permittee shall submit to the Compliance Authority a summary of the monthly mixed ash analyses and a summary of the ultimate disposal of any off-specification material. [Rule 62-4.070(3), F.A.C.]

Palm Beach County Zoning Requirements for Ash Management

3. The Zoning Plan approved by Palm Beach County requires that New Hope Power Company revise the ash management plan to incorporate the revised testing procedures for the ash as submitted to the Palm Beach County Health Department. The New Hope Power Company must also request that the revised ash management plan be included in the Title V operating permit (Petition DOA 1992-014B and Condition 11 of Resolution R-2004-1372). This Appendix AM of the Title V permit satisfies the County requirement.

FOR DISCUSSION ONLY

SECTION 4. APPENDIX FM
Fuel Management Plan

BAGASSE

Description

Bagasse is the fibrous vegetative residue remaining after the sugarcane milling process. It is collected and transported by conveyor to the cogeneration plant for use as a fuel in a process which generates both steam and electricity. The mill will supply bagasse to the cogeneration project during the grinding or "crop" season, which is normally from mid-October to ~~April~~ ~~mid-March~~ the following year.

During grinding season, the sugar mill will provide the cogeneration facility with bagasse at an average daily rate that will be of approximately 65,5700 tons per day (TPD) and a maximum hourly rate of 270 tons per hour (TPH). The bagasse will be transferred from the mill to the cogeneration facility via the Bagasse Transfer Conveyor, at the design rate of 270 TPH. The Bagasse Transfer Conveyor is equipped with a belt scale designed to monitor and record the rate and quantity of bagasse flowing to the facility. Approximately 50% of the bagasse generated during the grinding season will be fired directly in the cogeneration boilers, while the remaining portion will be stockpiled for utilization during the off-season.

A system of Chain Distribution Conveyors receive the bagasse at the boiler area and transfer the material to the boiler feeders or to the bagasse bypass and recycle subsystem which conveys the bagasse to a storage area on the site. The fuel from the Chain Distribution Conveyors will be bottom discharged into the boiler feed system via discharge chutes. Each chute is provided with shut off gates which are manually operated.

In the bagasse storage area, front-end loaders are used to reclaim the bagasse fuel and to perform pile maintenance. Bagasse fuel is reclaimed from the bagasse storage area by front-end loader at a design rate of up to 175 TPH through the use of one under-pile chain reclaimer. The reclaim conveyor transfers the bagasse to the bagasse Boiler Feed Conveyor that deposits the fuel onto one of two chain distribution conveyors for delivery into the boilers.

The entire fuel conveying system is provided with the necessary controls and fire protection systems.

The maximum height of the bagasse pile will be 50 feet and its maximum size will be about 500 feet by 600 feet and will be in the location noted on the site plan as fuel storage area. The bagasse will contain moisture in excess of 50%, minimizing the incidence of fugitive emissions. During periods when the pile surface dries out, the pile will be sprayed with water.

The facility fire hydrant loop is located on the north side of the bagasse fuel storage area. We also have an auxiliary fire water tank, diesel powered fire water pump and fire hydrant located on the northwest corner of the bagasse fuel storage areas. Water wagons from the sugar mill supplement fire protection on the south side of the bagasse fuel storage area. New Hope Power Company also utilizes a mobile diesel powered irrigation pump which is used for fire protection in the bagasse fuel storage area.

The pile will be spread, compacted and rotated to minimize the number of air pockets in the pile and the risk of fire. Also, as explained above, the pile will be dampened when viewed to be dry. During operation of the plant, fuel pile management personnel will be on site 24 hours a day. Telephone communication will be used to contact the local fire department upon the occurrence of a fire incident. The plant operation maintenance manual will incorporate instructions on fire protection and fighting procedure and personnel will be given classroom instructions.

Permit Conditions

1. **Bagasse - Sampling and Analysis:** At least twice each month, the permittee shall have an analysis conducted on a representative "as-fired" bagasse sample for the following: heating value (modified ASTM D3286, Btu/lb, dry), carbon and ash content (modified ASTM D5373, percent by weight, dry), sulfur content (modified ASTM D4239 Method C, percent by weight, dry), and moisture content (modified ASTM D3173, percent by weight). Samples shall be taken at least two weeks apart. Records of the results of these analyses shall be maintained on site and made available upon request. [Permit No. PSD-FL-196(P); Rule 62-4.070(3), F.A.C.]
2. **Bagasse - Quarterly Report:** Within 30 days following each calendar quarter, the permittee shall submit to the Compliance Authority a summary of the analytical results for the "as-fired" bagasse samples taken during the calendar quarter. [Permit No. PSD-FL-196(P); Rule 62-4.070(3), F.A.C.]
3. **Bagasse - Firing Records:** For the Annual Operating Report, the permittee shall calculate the annual bagasse firing rate based on the following: the measured heating values for bagasse from sampling and analyses conducted throughout the year; and the difference between the total calculated annual heat input rate from steam and the total calculated heat input from wood chips and distillate oil, the summation of bagasse delivered from the mill to the cogeneration facility plus bagasse delivered by the bagasse reclaimer scales, minus bagasse measured on the bagasse recycle conveyor to the

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Fuel Management Plan

storage pile. Each value shall be based on the records derived from in-line belt scale measurements. The total annual heat input rate from steam shall be based on steam production records, the net enthalpy from the steam characteristics, and the boiler thermal efficiencies. The annual heat input from distillate oil shall be based on the gallons of distillate oil fired and the fuel heating values from vendor fuel certifications and sampling/analyses conducted throughout the year. The annual heat input rate from wood shall be determined as described in the next section. [Rules 62-4.070(3) and 62-213.440(1)(b)1.b, F.A.C.]

FOR DISCUSSION PURPOSES ONLY

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Fuel Management Plan

WOOD MATERIAL

Description

During the non-grinding season, normally from ~~mid-March~~ April to mid October, the bagasse is no longer available produced as a fuel and clean wood material is used ~~instead~~ as the primary biomass fuel. During the non-grinding season, bagasse is reclaimed from the bagasse storage pile and fed to the boilers to ensure consistent operations. Wood waste will be delivered to the facility by trucks at an approximate design rate of 3,600 tons per day. The anticipated deliveries are 6 days per week, 12 hours per day. Each truck is anticipated to have a capacity of 25 tons of wood material.

Authorized wood material is clean construction and demolition wood debris, yard trash, land clearing debris, and other clean cellulose and vegetative matter. Each cogeneration boiler shall combust no more than 30% by weight yardwaste (yard trash) on a calendar quarter basis that is defined as a municipal solid waste (MSW) in 40 CFR 60.51a. The biomass fuel used at the cogeneration plant shall not contain hazardous substances, hazardous wastes, biomedical wastes, or garbage. The fuel used at the cogeneration plant shall not contain special wastes, except wood, lumber, trees, tree remains, bagasse, cane tops and leaves, and other clean vegetative and cellulose matter. The permittee shall perform a daily visual inspection of any wood material or similar vegetative matter that has been delivered to the plant for use as fuel. Any shipment observed to contain prohibited materials shall not be used as fuel, unless such materials can be readily segregated and removed from the wood material and vegetative matter.

The permittee is required to design and implement a management and testing program for the wood material and other materials delivered to the plant for fuel. The program shall be designed to keep painted and chemically treated wood, household garbage, toxic or hazardous non-biomass and non-combustible waste material, from being burned at this plant. The program shall provide for the routine inspection and/or testing of the fuel at the originating wood yard sites as well as at the cogeneration site, to ensure that the quantities of painted or chemically treated wood in the fuel are minimized. Based on the analysis of a composite sample, wood material containing more than 70.7 ppm arsenic or 83.3 ppm chromium or 62.8 ppm copper shall not be burned. Fuel scheduled for burning shall be inspected daily.

The trucks will be unloaded ~~either by utilizing two hydraulically operated truck dumpers, or by means of an unloading bay area~~ is provided to accommodate self-unloading trucks. When utilizing the truck dumpers, the wood material will be discharged into three receiving hoppers equipped with chain conveyors which will transfer the wood to the unloading conveyor. The unloading conveyor, which is equipped with a belt scale and a magnetic separator, will convey the wood material to the screen and hog tower at a ~~rate up to the~~ design rate of 300 TPH.

The screen and hog tower is an open facility at which the wood material is discharged onto a disc screen which will separate the material sized less than 3" from the oversized material. The oversized material will be discharged to the hog, which is a motor driven, size reducing piece of equipment which reduces the oversized wood to less than 3", suitable to feed into the boiler.

The sized wood material is then transferred from the screen and hog tower by a radial stacker to a wood storage area (wood yard) on the site or directed to the boilers via plant feed conveyor, which is equipped with a belt scale for monitoring and recording the quantity of fuel delivered directly to the boilers. The wood is reclaimed continuously at a ~~rate up to the~~ design rates of 175 TPH of wood chips or 87.5 TPH of wood chips combined with 1.35 TPH of bagasse by two under pile chain reclaimers. The reclaimed fuel is transferred to the cogeneration facility via the ~~wood Boiler Plant Feed Conveyor~~ and to the boiler feeders by the Chain Distribution Conveyors.

A radial stacker will form a circular pile approximately 50 feet in height which forms the base configuration of the entire storage pile. The pile shape and ultimate configuration is developed by the use of plant mobile equipment which spreads, compacts, and shapes the pile. The maximum height of the wood pile will be 50 feet and its maximum size will be 600 feet by 900 feet. The wood delivered will have a relatively high moisture content and, as noted below, only 15% will be less than 1/4" in size. Fugitive emissions will be controlled by water spraying as necessary.

The design of the fire protection system for the plant includes a fire water distribution system, designed in accordance with appropriate NFPA standards, including piping, valves and yard hydrants. Hydrants will be located in strategic areas around the fuel storage area at a spacing of approximately 250 feet along the buried yard loop or branch line piping. Hydrants will be suitable for attaching hoses for manually fire fighting. Deluge water spray systems will be used for protection of the fuel handling equipment and the conveyors.

The facility fire hydrant loop is located on the north side of the fuel storage area. The facility also has an auxiliary fire water tank, diesel powered fire water pump and fire hydrant located on the northwest corner of the bagasse fuel storage areas. Water wagons from the sugar mill supplement fire protection on the south side of the bagasse fuel storage area.

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Fuel Management Plan

New Hope Power Company also utilizes a mobile diesel powered irrigation pump which is used for fire protection in the bagasse fuel storage area.

Quality Control Procedures

The management program for wood material shall be revised as necessary to keep painted and chemically treated wood, household garbage, toxic or hazardous non-biomass and non-combustible waste material, from being burned at this plant. The program provides for the routine inspection and/or testing of the fuel at the originating wood yard sites, as well as at the cogeneration site, to ensure that the quantities of painted or chemically treated wood in the fuel are minimized.

Wood waste will be supplied to the Project under long-term contracts which include quality requirements reflecting the conditions of the air permit. In addition to quality tests at the supplier's facility, additional quality tests will be conducted at the Project on a regular basis. The wood material suppliers will collect and test a representative sample from each load of wood. One third of the sample will be available to Okeelanta for confirmation test. Tests will be conducted in accordance with ASTM E870-82 or successor standard. If the supplier's and Okeelanta's test results differ by more than 5% then a third sample will be submitted to an independent laboratory.

In accordance with the air permit, tests will be conducted on a monthly basis. Upon delivery to the site, the wood material will be stored in separate weekly piles, such that in the event the wood material is determined not to be in accordance with the supplier's specification it can be readily identified and removed by the supplier.

The wood material specification imposed on the supplier will be:

- Less than 1% by volume or weight shall be plastics, rubber, glass and painted wood.
- Free from chemically treated wood (e.g. chromium, copper and arsenic, creosote; or pentachlorophenol) except for incidental amounts, not to exceed 1% by volume or weight.
- Less than 5% shall be sand, soil or other organic material
- Moisture content shall be between 20% and 50% with a quarterly average of less than 40%.
- 95% shall be less than 4" in size. 15% (on an individual load) will be less than 1/4" in size.

Okeelanta has the right to reject any load which does not meet any one of the above requirements, and the supplier will be required to remove the delivered amount from the site. However, if the wood material exceeds the specification limits for sand, soil, inorganic material or moisture content, Okeelanta may accept the material provided that the supplier reduces its handling and processing costs by a predetermined rate.

Supply Sites

As stipulated in the fuel supply contracts with the wood material suppliers, the delivered wood material must be substantially free of plastics, rubber, glass, and painted wood and contain only incidental amounts of chemically treated wood (e.g., chromium, copper, arsenic, creosote, pentachlorophenol). To help ensure that wood material delivered to the plant meets the provisions of the air permit, as well as other fuel quality specifications, the wood material suppliers will perform inspection and material segregation operations on each load of feedstock received at their facilities. Although the plant will obtain wood material fuel from several different suppliers with a variety of sources for their unprocessed feedstock, the following description of the inspection and material segregation operations are typical of those operations performed at wood yards supplying the plant.

The bulk material feedstock at the originating wood yards will first undergo a "gross" material separation by removing the bulk wood material from other mixed wastes (e.g., plastics, non-wood debris, scrap metal, concrete/soils) through the use of heavy equipment, magnetic separation, and mechanical screening. Trained personnel will be involved in oversight at this level of material segregation such that the majority of prohibited wastes are removed from the bulk wood material. After this operation, the wood material will be further visually inspected and manually sorted (when applicable) to remove chemically treated and painted wood, smaller mixed wastes, and other non-combustible unauthorized materials. The "sorted" wood material is then mechanically sized and screened (to actual contract specifications) prior to delivery to the cogeneration plant.

As a quality assurance measure, each fuel supplier's operations will be periodically reviewed by cogeneration plant personnel during unannounced site inspections. These visits will allow the cogeneration plant to ensure that the supplier's inspection and segregation efforts remain at acceptable levels.

Wood Fuel Storage Yard Area

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Fuel Management Plan

In accordance with air permit, analysis of wood material to be burned at the plant will be conducted on a weekly bi-monthly basis for the first year of operation at the plant. Thereafter, upon approval of FDEP, sampling and analysis may be reduced to a monthly basis. Upon delivery of the wood material to the plant, each load will be visually inspected by the Fuel/Ash Handler stationed at the truck receiving dumping area. Loads which contain unacceptable, visible amounts (i.e., greater than fuel contract specified limits) of chemically treated and/or painted wood and other prohibited mixed wastes will be rejected by the inspector and prevented from discharging at the plant wood fuel storage area. If the delivered load is acceptable based on the visual inspection, the truck will be staged for unloading.

Sampling of the wood material will occur at the wood plant fuel storage yard. Representative samples will be taken from specified sections of the wood material fuel pile which represent and include the fuel to be reclaimed and burned during the following week of plant operation. These "weekly" sections and their schedule for reclamation and burning will be identified and approved by the Plant Manager (or designee) prior to samples being taken.

The NHPC wood fuel sampling plan is modeled after those procedures specified in 40 CFR 63, Subpart DDDDD, which are the NESHAPs for Industrial Boilers (now vacated). Subpart DDDDD requires that fuel sampling be conducted during performance testing for metals emissions, and requires the following steps for fuel analysis (40 CFR 63.7521):

1. Following a specific procedure to obtain five grab samples from the fuel pile for the representative composite sample;
2. Prepare each composite sample according to specific procedures; and
3. Determine pollutant concentrations in the fuel for each composite sample.

Fuel sampling procedures for fuel pile sampling are specified in §63.5721(c)(2). For each composite sample, a minimum of five (5) sampling locations uniformly spaced over the surface of the pile must be selected. At each sampling site, a sample must be taken at a depth of approximately 18 inches. A clean flat square shovel must be inserted into the hole to withdraw a sample, making sure the large pieces do not fall off during sampling. All the samples are transferred to clean plastic bags.

At NHPC, five (5) sampling sites will be used, uniformly spaced over the extent of the wood fuel storage pile. Each grab sample will be collected by digging into the pile to a depth of between 12 and 18 inches, inserting a clean, flat, square shovel into the hole, and withdrawing a sample. Each grab sample will consist of approximately 1 gallon of wood chips, or about 1.5 lbs of wood chips. Each grab sample will be transferred to a clean plastic bag.

All of the individual samples will be used to form a single composite sample according to the Subpart DDDDD requirements. Each composite sample will be prepared according to the procedures in Subpart DDDDD, as follows:

- (1) Thoroughly mix all of the individual grab samples and pour the entire composite sample over a clean plastic sheet.
- (2) Break sample pieces larger than 3 inches into smaller sizes.
- (3) Make a pie shape with the entire composite sample and subdivide it into four equal parts.
- (4) Separate one of the quarter samples as the first subset. If a duplicate sample is to be obtained for analysis, separate a second quarter sample as the second subset.
- (5) Do not grind the sample subsets in a mill, as this may contaminate the sample with metals.
- (6) If the quarter sample is too large, subdivide it further using the same procedure as in (3) above.
- (7) Transfer each sample subset into a clean, plastic Ziploc bag. Document and label each sample appropriately.

A total of three grab samples will be taken from different areas and depths at the specified "weekly" section of the fuel pile. Each grab sample will be approximately one pound and will be stored in sealable plastic (ziplock type) bags. Prior to releasing the samples for outside lab analysis, a "composite sample" will be produced by combining the three individual grab samples into a homogeneous mixture and cutting out a single sample from the mixture as specified by the lab performing the analyses. This "composite sample" will represent the composition of the wood material to be burned during the following week of plant operations. At least one sample The remaining portion of from the homogenous mixture will be retained onsite for use as a control sample to the verify lab test results, if necessary.

Analysis is conducted on the as-fired wood sample for the following:

- Heating value (modified ASTM D3286, Btu/lb, dry).
- Carbon content (modified ASTM D5373, percent by weight, dry).
- Sulfur content (modified ASTM D4239 Method C, percent by weight, dry).
- Moisture content (modified ASTM D3173, percent by weight).

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- Copper, chromium, and arsenic in accordance with Methods 3050/6010 (EPA Method SW-846) and reported in ppm by weight, dry.

The composite samples will be processed by a third party vendor and/or laboratory for required analysis. It is noted that the National Council for Air and Stream Improvement (NCASI) has identified grinding of biomass samples in the laboratory as a possible point of sample contamination, due to the metals contained in the grinding equipment used in labs. As a result, the analytical laboratory may not grind the sample, but instead may cut the samples to appropriate size prior to digestion and analysis.

Throughout the sample collection, compositing, and delivery to the laboratories, a chain-of-custody will be utilized to document sample collection.

Any results which indicate contamination of the wood fuel by copper, chromium, and/or arsenic in concentrations that exceed the air permit-specified limits (i.e., 62.8 ppm copper, 83.3 ppm chromium, and 70.7 ppm arsenic) will be investigated by the Environmental Coordinator, Shift Supervisor, and/or Fuels Manager. Additional analysis, sampling, and testing will be performed to determine the extent of contaminated wood fuel.

Laboratory results on the samples will typically be available to the plant Fuels Manager within 3 days of receipt of the sample at the lab. Any results which indicate contamination of the wood material in the "weekly" section of the pile by copper, chromium, and/or arsenic in concentrations above the air permit-specified limits (i.e., 62.8 ppm copper, 83.3 ppm chromium, and 70.7 ppm arsenic) will be immediately investigated by the onsite Environmental, Health and Safety Representative (EH&S). The "weekly" section of the pile tested will not be burned until additional testing of the control sample is undertaken to verify the original test results. If necessary, additional sampling/testing will be performed to determine the extent of contaminated wood material in the "weekly" section of the fuel pile.

Correlation of Wood/Ash Analysis Results

Results from the wood material and mixed ash (fly ash and bottom ash) sampling and analyses will be correlated so that a comparison of the analyzed metals content in the feedstock (wood material) with that of the ash products can be made. This review of the metals analysis data will be used to evaluate the effectiveness of the fuel management program in removing chemically treated wood from the biomass fuel. Comparison of the ash sample results with the corresponding fuel test results will also be performed to ensure that existing material segregation and sampling procedures for the wood material provide for an accurate representation of the composition of the wood material burned at the facility.

This information will be used to assess the accuracy of the wood material sampling procedures and for determining the distribution of the initial wood material metals content in the fly and bottom ash products.

Records

Records of the various wood material fuel inspections and wood material fuel and ash sampling and analysis procedures outlined in this Plan will be maintained at the plant for review on an as-requested basis by the Compliance Authority. The records will typically include fuel delivery information (e.g., supplier, time/date of delivery, type of material, delivery size); written inspection reports of periodic unannounced site visits to wood material suppliers; and wood material and ash fuel sampling and analysis information (e.g., time/date of sampling, locations selected from the "weekly" sections for sampling, any atypical conditions, labs utilized, sample results). These records may also be used by plant personnel in investigating potential non-compliance events and verifying fuel and ash test results.

Palm Beach County Provisions

The Zoning Plan approved by Palm Beach County requires that New Hope Power Company revise the fuel management plan to incorporate the "Inclement Weather Operating Procedures" and "Wood, Bagasse, and Ash Inspection and Testing Plan" as submitted to the Palm Beach County Health Department. New Hope Power Company must also request that the revised fuel management plan be included in the Title V operating permit (Petition DOA 1992-014B and Condition 11 of Resolution R-2004-1372). This Appendix FM of the Title V permit satisfies the County requirement.

Permit Conditions

1. Wood Material - Sampling and Analysis: At least twice each month, the permittee shall have an analysis conducted on a representative "as-fired" wood material sample for the following: heating value (modified ASTM D3286, Btu/lb, dry), carbon and ash content (modified ASTM D5373, percent by weight, dry), sulfur content (modified ASTM D4239 Method C, percent by weight, dry), moisture content (modified ASTM D3173, percent by weight); copper, chromium,

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and arsenic (ASTM Methods 3050/6010 or EPA Method SW-846, ppmw, dry). Samples shall be taken at least two weeks apart. Records of the results of these analyses shall be maintained on site and made available upon request. [Permit No. PSD-FL-196(P); Rule 62-4.070(3), F.A.C.]

2. Wood Material - Prohibited Materials: Based on the analysis of a composite sample, wood material containing more than 70.7 ppm arsenic or 83.3 ppm chromium or 62.8 ppm copper shall not be burned. [Permit No. PSD-FL-196(P)]
3. Wood Material - Quarterly Report: Within 30 days following each calendar quarter, the permittee shall submit to the Compliance Authority a summary of the following for the calendar quarter: analytical results for the "as-fired" wood material samples taken during the calendar quarter; analytical results that indicate exceedances of the allowable concentrations of copper, chromium, and arsenic; the ultimate disposal of any off-specification material; and a summary of any re-sampling/re-analysis of the wood material performed in the event an exceedance is indicated by the original analysis. [Permit No. PSD-FL-196(P); Rule 62-4.070(3), F.A.C.]
4. Wood Material - Firing Records: The permittee shall track the amount of wood chips delivered to the site and the amount of wood chips fired in the cogeneration boilers. The total annual heat input rate from firing wood chips shall be calculated based on the annual firing rate and the measured heating values as determined from the sampling and analyses conducted throughout the year. [Rules 62-4.070(3) and 62-213.440(1)(b)1.b, F.A.C.]

DISTILLATE OIL AND NATURAL GAS

Description

Distillate oil and natural gas are fired as startup/supplemental fuels in the cogeneration boilers and as the primary fuels for Boiler 16. Distillate oil shall be new No. 2 oil with a maximum sulfur content of 0.05% by weight. Each boiler may startup solely on natural gas or distillate oil. The firing of all fossil fuels (distillate oil and natural gas) shall be less than 25% of the total heat input to each cogeneration boiler during any calendar quarter.

The fuel oil system consists of a truck unloading facility, a 50,000-gallon fuel oil storage tank, two fuel oil transfer pumps, a fuel oil dispensing station, and associated piping, valves, and instrumentation. The fuel oil will be stored in an enclosed tank surrounded by a berm, which is sized to contain the full capacity of the tank in the event of a spill. The tank will be located at a distance from the plant in accordance with the NFPA separation requirements. The area around the fuel tank will be serviced by hydrants connected to the fire system yard loop. Any spilled oil will be collected and taken off-site for proper disposal.

Permit Conditions

1. Oil - Sampling and Analyses:
 - a. For each oil delivery, the permittee shall record and retain the date, the gallons delivered, heating value and a certified fuel oil analysis from the vendor including the following information: heating value (Btu/lb), density (pounds/gallon), sulfur content (percent by weight), and identification of the test method used.
 - b. The following methods are approved analytical methods for determining these characteristics: ASTM Method D-129, ASTM D-1552, ASTM D-2622, and ASTM D-4294. Other more recent or equivalent ASTM methods or Department approved methods are also acceptable.
 - c. At least once during each federal fiscal year, the permittee shall have a representative sample taken from each oil storage tank and analyzed in accordance with the authorized methods. Results of the analyses shall be retained on site and made available for inspection upon a request from the Compliance Authority.
[Rules 62-4.070(3) and 62-213.440(1)(b)1.b, F.A.C.]
2. Oil - Firing Records: For the cogeneration units, the permittee shall observe the oil flow meter and record the amount of oil fired for each calendar quarter within 10 days of the end of each quarter. The permittee shall also monitor and record the annual oil firing rate from the cogeneration units and Boiler 16 for use in filing the Annual Operating Report. The total annual heat input rate from oil firing shall be calculated based on the annual firing rate and the measured heating values as determined from the sampling and analyses conducted throughout the year. [Rules 62-4.070(3) and 62-213.440(1)(b)1.b, F.A.C.]
3. Natural Gas - Records: The permittee shall monitor and record the amount of natural gas combusted in each boiler on a quarterly basis within 10 days of the end of each month. [Rules 62-4.070(3) and 62-213.440(1)(b)1.b, F.A.C.]

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Africa	+ 27 11 254 4800
Asia	+ 852 2562 3658
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 55 21 3095 9500

solutions@golder.com
www.golder.com

Golder Associates Inc.
6026 NW 1st Place
Gainesville, FL 32607 USA
(352) 336-5600 - Phone
(352) 336-6603 - Fax

