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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

January 11, 2006

Mr. Jonathan Holtom, P.E.
North Permitting Section
Division of Air Resource Management
2600 Blair Stone Road
Tallahassee, FL 32399-2400

**RE: Polk Power Partners, LP
Mulberry Cogeneration Facility
Request for Additional Information
Permit Nos. 1050217-004-AC and 1050217-005-AV**

RECEIVED

JAN 17 2006

BUREAU OF AIR REGULATION

Dear Mr. Holtom:

This letter is in response to your letter dated November 18, 2005 requesting additional information regarding the permit application for a Title V air operation permit revision and an air construction permit revision for the Mulberry Cogeneration Facility. The following are our responses to the nine issues raised in your letter.

1. The Facility Regulatory Classifications page has been updated and resubmitted in the EPSAP system. Our hard copy of the previous submittal indicates that the appropriate boxes were checked, so there may be a glitch in the EPSAP system. Subsequent to this electronic submittal, we will follow up to ensure that you have received the necessary information.
2. An additional attachment (Description of Proposed Changes) has been added to the EPSAP application that summarizes all permit revisions that have been requested, as well as describing the operational changes associated with the requested heat input increase. In addition, per your request, a summary of the actual hours of operation of the unit for calendar years 2000 through 2004 is provided in Attachment 1 to this letter.
3. The following chronology provides additional background with respect to our requested heat input increase. In June 2004, the combustion turbine at Mulberry suffered a catastrophic failure due to foreign object damage. The plant was out of service for several weeks while repairs were made. The repairs included replacing portions of the hot gas section (buckets and blades) of the combustion turbine. The GE replacement parts available were of a different metallurgy, but are functionally equivalent to the damaged parts. Plant personnel and the plant's insurance company verified that the original equipment parts were no longer available from GE. GE has reported to Mulberry that the new metallurgy could allow the unit firing temperature to be increased from 2020 °F up to 2055 °F. There will be a corresponding increase in fuel consumption and mass emissions (~5%), as described in our initial application. The estimated increase in NOx emissions (the limiting pollutant) is estimated to be less than 4 tons per year above the maximum past actual baseline and the estimated hourly emission rate will still be significantly below the current permitted allowable. However, since the combustion liners are still of the old (i.e., 2020 °F) metallurgy, Mulberry has not taken advantage of this capability except during a brief, FDEP-approved engineering test in

November 2004. This testing indicated that the NOx concentration increased slightly at the higher firing temperature (i.e., from 7.5 ppmvd to 9.3 ppmvd, at 15% O2), although still well below the allowable permit limit of 15 ppmvd at 15% O2. Once the combustion liner is replaced with this new metallurgy, scheduled for the upcoming March 2006 outage, it is expected that the NOx concentrations will be comparable to the current lower firing temperature levels.

Therefore, although the higher firing temperature capability technically exists at this time, the Mulberry plant has not made use of it due to the existing permitted heat input limit and the fact that the turbine liner is still of the old metallurgy. Mulberry has continued to operate the turbine at a combustor temperature of 2020 °F. Following the March 2006 planned outage, the plant will have the capability to operate at a combustion temperature of up to 2055 °F on a continuous basis. Please note that the replacement of the combustion liners scheduled for March 2006 is completely independent of the request for the increase in the heat input limit. In other words, the capability to operate at the higher firing temperature and higher fuel consumption rate will exist after the March 2006 outage simply as a result of the capabilities of the new metallurgy. What is being requested in this permit application is the option to take advantage of this capability. In actual operation, it is likely that the capability to fire at 2055 °F will be extensively utilized during the peak power demand periods of the summer and utilized to a lesser extent, if at all, during other times of the year. As you know, the characteristics of combustion turbine operations are such that mass flow and corresponding mass emissions are at their lowest during the hot summer months.

4. We are not requesting an increase in the annual fuel usage allowed in the permit, only in the peak hourly fuel usage. The plant does not operate at full capacity for every hour of the year and does not need an increase in allowable annual fuel use. We don't wish to reduce the allowable hours of operation and don't believe that such an approach is necessary in order for the requested change to be practically enforceable. Mulberry Cogeneration continuously meters and records fuel usage and reports annual fuel use as part of the Annual Operating Report (AOR) submitted to FDEP. We respectfully suggest that this approach provides the agency with adequate reasonable assurance that all permit conditions are being met.
5. The requested list of changes and reason for the requests have been added in an attachment to the EPSAP submittal (i.e., Description of Proposed Changes).
6. The application has been changed to show the current method of compliance as "CEMS".
7. We have requested a NOx averaging time consistent with the changes to Subpart GG. Numerous power plants in Florida have been permitted using NOx averaging times as long as 24-hours. The startup and shutdown limits we are requesting are identical to the requested NOx limit for normal operations, with the exception that during startup and shutdown we are asking that the concentration (ppmvd at 15% O2) requirement be eliminated. It appears from your letter that you are asking us to consider a different averaging time for startup/shutdown emissions than during normal operations. In our opinion, this would create much confusion in our recordkeeping as opposed to using a single, consistent averaging time. Almost all startups that occur at Mulberry result in NOx emissions returning to below 15 ppm after the first hour. Giving us a 4-hour averaging time is not going to provide the plant incentive to extend startups for longer periods. On the contrary, it is in the commercial interests of the plant to complete the startup in the shortest period of time possible and have the turbine

Mr. Jonathan Holtom, P.E.

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operating in its most efficient (and lowest emitting) mode. Per your request, data on shutdown emissions have been provided in Attachment 2 to this letter.

8. Tuning of the Mulberry Frame 7EA combustion turbine ^{is} an interactive process in which the goal is to define firing parameters that produce efficient, low emission operations. Combustion engineering specialists calculate the initial firing parameters which, when entered into the control system for the unit, are intended to produce certain NOx, CO, and temperature results. These initial parameter values are based on design conditions. Next, the pre-engineered firing parameters are entered into the control program for the unit. The unit is started up and the results noted. The actual results are compared to the expected, desired results. If the actual results are not within an expected range, then the actual results are used to re-calculate the firing parameters. The re-calculated firing parameters are re-entered into the control system. The unit is re-started and the actual results are compared with the expected, desired results. When the actual and expected results are closely aligned, the process is complete. The time required to perform this tuning is not known in advance, but will vary depending on the number of iterations required and the occurrence of any unexpected problems with the actual mechanical operation of the unit. The need to implement this tuning process may be triggered by either software or hardware changes to the equipment.

The requested period of 72 hours per year for combustor tuning was drawn directly from the permit for the Tiger Bay facility, which employs the same type of combustion turbine (GE 7 EA) as the Mulberry Cogeneration Facility. The expected number of hours that will actually be required for tuning is not known at this time. It is anticipated that, subsequent to the combustion liner replacement in March 2006 outage, there will be a requirement to conduct combustion tuning for a period of 5 to 10 hours. Other tuning events cannot currently be forecast, but would be done on an as-needed basis in order to maximize turbine performance. Again, we decided to request 72 hours, simply because the precedent for this number had been set in the Tiger Bay permit and other permits issued by the Department. It is doubtful that the plant will ever need this many hours for tuning.

As some of the additional information requested by the Department is of an engineering nature, a professional engineer certification is provided in Attachment 3 to this response. Please feel free to contact me at (713) 580-6368 or Scott Osbourn of Golder Associates at (813) 287-1717, if you should have any questions regarding the above information.

Sincerely,



David A. Kellermeyer
Vice President, EH&S

Attachments

Cc: Scott Osbourn, P.E., Golder Associates, Inc.

ATTACHMENT 1
SUMMARY OF OPERATING HOURS

Annual Operating Hours*		
	2000	4459
	2001	4824
	2002	4304
	2003	4920
	2004	4405

* Data as reported in the annual operating reports (AORs)

ATTACHMENT 2
SHUTDOWN EMISSIONS

Shutdown Data

Date	Hour	NOx (ppm)	NOx (lb/hr)	
4/17/2005	18	7	25.7	
	19	6	22.8	
	20	6	20.7	
	21	38	9.9	
			14	19.8
4/22/2005	18	8	28.9	
	19	8	29.9	
	20	7	24.6	
	21	36	11.0	
			15	23.6
4/24/2005	18	6	22.6	
	19	7	25.9	
	20	8	29.3	
	21	37	11.8	
			15	22.4
5/22/2005	18	6	20.1	
	19	6	20.0	
	20	6	20.1	
	21	25	11.0	
			11	17.8
6/7/2005	18	6	20.5	
	19	6	21.6	
	20	6	21.5	
	21	27	11.9	
			11	18.9
6/16/2005	18	7	24.7	
	19	7	25.9	
	20	7	25.8	
	21	26	10.6	
			12	21.8
6/23/2005	18	8	27.7	

19	8	27.8	
20	8	27.7	
21	25	10.2	
	12	23.4	4-hr Average


6/26/2005

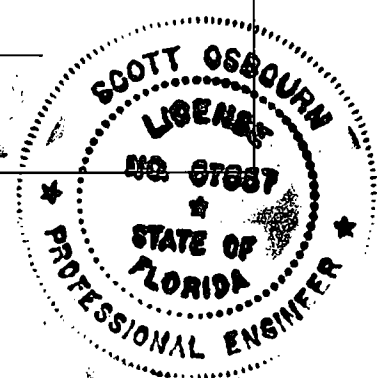
18	7	24.2	
19	7	25.3	
20	7	25.4	
21	23	10.1	
	11	21.3	4-hr Average

ATTACHMENT 3
PROFESSIONAL ENGINEER CERTIFICATION

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: Scott Osbourn Registration Number: 57557
2. Professional Engineer Mailing Address Organization/Firm: Golder Associates Inc. Street Address: 5100 W. Lemon St., Suite 114 City: Tampa State: FL Zip Code: 33609
3. Professional Engineer Telephone Numbers... Telephone: (813) 287-1717 ext. 211 Fax: (813) 287-1716
4. Professional Engineer Email Address: <u>sosbourn@golder.com</u>
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <p>(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</p> <p>(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.</p> <p>(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.</p> <p>(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.</p> <p>(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.</p> <p>Signature <u></u> Date <u>1/10/06</u></p> <p>(seal)</p>



* Attach any exception to certification statement.