ECT
Environmental Consulting & Technology, Inc.

February 24, 2005
ECT No. 040796-0100

Mr. Steven Palmer, P.E.
Siting Coordination Office
Florida Dept. of Environmental Protection
2600 Blair Stone Road, MS 48
Tallahassee, FL 32399-2400

Re: Blue Heron Energy Center
Site Certification Application No. PA00-42
DOAH Case No. 00-4564EPP
Responses to 3rd Round of Agency Sufficiency Comments

Dear Mr. Palmer:

On behalf of Blue Heron Energy Center, L.L.C. (Calpine), the following provides Calpine's responses to the two sufficiency comments included in the letter (dated February 4, 2005) to you from the St. Johns River Water Management district (SJRWMD or the District). A copy of the SJRWMD letter is attached.

SJRWMD COMMENT-1

In evaluating a proposed consumptive use of water, the District must evaluate whether the proposed use is reasonable beneficial. Section 373.019(4), F.S. defines reasonable beneficial as "the use of water in such quantity as is necessary for economic and efficient utilization for a purpose and in a manner which is both reasonable and consistent with the public interest." Please provide a quantitative justification for the requested water use of 2.9 mgd for phase 1 of the BHEC, including an estimate of contracted power amounts broken down by currently contracted anticipated contracts, and reserve capacity of the BHEC facility. [Paragraphs 10.2(a) & (b) and 10.3(a) & (b), A.H.]

RESPONSE

Overview of Calpine's Response

The quantity of water to be used by Calpine's Blue Heron Energy Center (BHEC)[1] is necessary for the economic and efficient use of the proposed electrical power plant. The water will be used to generate electricity in a clean, energy-efficient, and environmentally

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[1] For the purposes of this response, all references to the BHEC are limited to Phase 1 (540 MW) of the proposed facility.

sound manner. Calpine's water use will be reasonable and consistent with the public interest.

The Florida Public Service Commission (PSC) will review Calpine's power purchase contracts and determine whether there is a public need for the BHEC. The PSC is the only agency that has jurisdiction to evaluate this issue. If the PSC concludes that there is a need for the BHEC, the PSC's determination will create a legal presumption of "public need and necessity." The PSC's determination of need will be based on the operation of the entire electrical generating unit (540 MW), regardless of the amount of electricity that will be subject to power purchase contracts.

Since the SJRWMD may issue its report and recommendations to the Florida Department of Environmental Regulation (DEP) before the PSC issues a determination of need for the BHEC, the SJRWMD should expressly state in its report that the SJRWMD's conclusions and recommendations about the BHEC are contingent upon the issuance of a favorable determination of need by the PSC and, if such a determination is not issued, then the SJRWMD will reconsider and may retract its recommendations.

All of these issues are discussed in more detail in the following paragraphs.

Calpine's Power Purchase Contracts

Calpine currently is negotiating final contracts with two Florida utilities for the sale of electrical power from the BHEC to serve the electrical needs of Florida retail customers. The specific amount of power that will be sold to each of these utilities has not been conclusively determined. Calpine also is engaging in discussions with other Florida retail-serving utilities regarding the sale of power from the BHEC pursuant to power purchase contracts.

Since Calpine has not concluded its negotiations for the sale of the electrical power from the BHEC, Calpine cannot provide the SJRWMD with an accurate estimate at this time concerning (a) the amount of electricity that will be sold pursuant to contracts and (b) the amount of electricity that will be available for sale "on demand." However, for the reasons set forth below, Calpine respectfully submits that the SJRWMD does not need this information to complete the SJRWMD's analysis of Calpine's proposed water use.

The PSC's Determination of Need for the BHEC

As soon as practicable, Calpine will file a petition with the PSC for a determination of need for Phase 1 of the BHEC. Calpine's petition will be based on the amount of electrical power that Florida utilities will purchase from the BHEC, as established by the contracts that are in place when the petition is filed. The Florida utilities with power purchase contracts will join Calpine as parties in the PSC's determination of need proceeding.

In accordance with Section 403.519, F.S., the PSC's decision to approve or disapprove Calpine's petition will be based not only on the amount of contracted power identified in Calpine's petition, but also "the need for electric system reliability and integrity, the need for adequate electricity at a reasonable cost, and whether the proposed plant is the most cost-effective alternative available." The Florida statutes and the PSC's rules do not require that all or even a specified minimum amount of the electricity generated by the BHEC will be sold by contract to retail-serving Florida utilities. Similarly, the Florida statutes and the PSC's rules do not require Calpine to demonstrate that there is a present need for all of the electrical output of the BHEC when the PSC conducts its review of Calpine's petition.

These issues were previously addressed in a case involving the construction of Calpine's Osprey Energy Center (Osprey) in Auburndale, Florida. In the Osprey case, Calpine entered into a contract with the Seminole Electric Cooperative (Seminole) for the sale of 350 MW from a 529 MW power plant. The contract did not obligate Seminole to purchase Osprey's electricity for the life of the power plant. The PSC issued an affirmative determination of need for the Osprey facility in 2003, based on Seminole's need for 88 MW in 2004. The Osprey facility has been built and is operating successfully.

In Panda Energy International v. Jacobs ("Panda"), 813 So.2d 46 (Fla. 2002), the Florida Supreme Court upheld the PSC's determination of need for a new power plant (Hines 2), even though there was not "an actual present in-service need for all the electrical power to be generated at the proposed facility." Panda, 823 So.2d at 53. The Court also noted:

> Panda concedes that in certifying the 'need' for all 530 megawatts of Hines 2 capacity in 2003, the PSC has acted consistently with the applicable statutory criteria, its own rules, and a multitude of previous need determination decisions.[2]

Panda at 53. In support of this statement, the Florida Supreme Court cited numerous PSC decisions, including the PSC's decision in the Osprey case, which the Court summarized as follows:

> *In re Petition for Determination of Need for the Osprey Energy Center in Polk County by Seminole Electric Cooperative and Calpine Construction Finance Company, L.P.*, F.P.S.C. 2:443, 446 (2001)(PSC certified a 529-megawatt combined cycle exempt wholesale generation plant in 2003 when only 350 megawatts was contractually committed to provide 88 megawatts of the retail needs of Seminole Electric Cooperative in 2004).

Id. at fn. 8. Thus, the Florida Supreme Court is aware of the PSC's determination of need for Calpine's Osprey facility and the Court has cited this decision favorably. Given this

[2] All of the underlining in this document was added for emphasis.

judicial precedent, Calpine anticipates an affirmative determination of need from the PSC for the BHEC.

In light of the PSC's and Supreme Court's decisions in the Osprey case, Calpine believes the PSC will approve the operation of the entire 540-megawatts that will be generated by Phase 1 of the BHEC, and will not limit the operation of the BHEC unit to the amount of electricity that is under contract for sale. The PSC did not limit the operation of the Osprey facility, or the Hines 2 unit that was at issue in Panda, and we are not aware of any other case where the PSC has limited an electrical generating facility in this manner.

The generating capacity of a proposed power plant is determined primarily by the physical characteristics of the proposed facility. Consequently, the electrical output of a proposed power plant may not match the specific electrical need that is identified when the applicant submits a petition to the PSC. For this reason, and to provide cost-effective and reliable electricity, the PSC routinely approves proposed power plants that will generate more electricity than is needed at the time of the PSC's need proceeding. Indeed, if the generating capacity of a new power plant is limited to the current need for electricity, the power plant will be unable serve any future growth. In the present case, any uncommitted generating capacity in the BHEC will be available to meet the future power needs, growth, and system reliability requirements of Florida retail-serving utilities.

The SJRWMD Has No Statutory Authority To Evaluate Electrical Need

Section 403.519, F.S., is entitled "Exclusive forum for determination of need." This statute states that the PSC

shall be the sole forum for the determination of this matter [i.e., the need for the power plant], which accordingly shall not be raised in any other forum or in the review of proceedings in such other forum.

Given this clear statutory language, it is apparent that the SJRWMD does not have the statutory authority to evaluate the need for the electricity that will be generated by the BHEC. See also Florida Power Corporation v. State of Florida, Siting Board, 513 So.2d 1341, 1344 (Fla. 1st DCA 1987) (reversing an order of the Siting Board that required the Administrative Law Judge to evaluate the "relative degree of need" for an electrical transmission line).

The SJRWMD's Criteria for a Water Use Permit

Calpine recognizes that the SJRWMD must determine whether the BHEC's proposed consumptive use of water is a reasonable beneficial use, which is defined in Section 373.019(4), F.S., as "the use of water in such quantity as is necessary for economic and efficient utilization for a purpose and in a manner which is both reasonable and consistent with the public interest." Calpine's proposed use of water at the BHEC satisfies these

statutory criteria, as well as the applicable provisions in the SJRWMD's "Applicant's Handbook: Consumptive Uses of Water" (April 10, 2002).

Calpine's Site Certification Application (SCA) contains a detailed description of Calpine's proposed water supply plan. The following paragraph summarizes the key features of Calpine's plan and explains how Calpine's proposed BHEC Project satisfies all of the SJRWMD's applicable permitting criteria.

First, the BHEC has been designed to be extremely efficient in its use, reuse, and conservation of water. One of the Project's key water conservation measures is the use of a zero liquid discharge (ZLD) system. The ZLD system will enable Calpine to maximize its recycling and reuse of water, thus minimizing Calpine's consumptive use of water. The ZLD system and other water reuse measures will result in a water savings for Calpine of 20 to 25 percent, when compared to the water use at a typical natural gas-fired combined cycle power plant with no ZLD system. Second, the ZLD system will enable Calpine to eliminate all off-site wastewater discharges, and thus eliminate any adverse environmental impacts associated with such discharges. From an environmental perspective, the elimination of off-site wastewater discharges is a significant advantage that the BHEC will provide in comparison to typical power plants. Third, the BHEC will use excess stormwater and reverse osmosis brine to meet its needs. These two water sources are the lowest quality waters that are available and feasible to use. Importantly, the BHEC will not use ground water. Fourth, the proposed use of excess stormwater and brine at the BHEC will not interfere with any existing legal users, or induce saline water encroachment, or cause a violation of any minimum flows or levels for surface or ground waters. Fifth, Calpine's proposed use of water is consistent with the public interest. The BHEC will help improve the water quality in the Indian River Lagoon by reducing the amount of stormwater and the associated pollutants that currently flow in to the lagoon. Indeed, the BHEC has been designed to support and help achieve the goals and objectives set forth in the East Indian River County Master Stormwater Plan, which was developed by Indian River County, the Indian River Farms Water Control District (IRFWCD), and the SJRWMD. In addition, Section 403.519, F.S., states that the PSC's "determination of need for an electrical power plant shall create a presumption of public need and necessity." Thus, the PSC's favorable determination of need for the BHEC will create a legal presumption that the BHEC is in the public interest.

PPSA Procedures

Section 403.508(3), F.S., states that "an affirmative determination of need by the Public Service Commission pursuant to Section 403.519 shall be a condition precedent to the conduct of the certification hearing" before the Administrative Law Judge. Therefore, the certification hearing cannot be held and the BHEC cannot be approved unless the PSC determines that there is a public need and necessity for the BHEC. If the PSC does not issue an affirmative determination of need for the BHEC, any report or recommendations issued by the SJRWMD will be moot.

Conclusion

Based on the information set forth above and in the SCA, Calpine respectfully requests the SJRWMD to complete its evaluation of the BHEC. To address the SJRWMD's concerns about the PSC's determination of need for the BHEC, the SJRWMD 's report to the Department of Environmental Protection pursuant to Section 403.507, F.S., should expressly state that the SJRWMD's report and recommendations about the BHEC are contingent on the PSC's approval of Calpine's petition for a determination of need and, if the PSC does not grant approval of Calpine's petition, the SJRWMD will reconsider and may retract its report and recommendations. The SJRWMD also should present these same reservations in the prehearing stipulation filed with the Administrative Law Judge prior to the certification hearing. In this manner, the SJRWMD can complete its work under the PPSA in a timely manner and simultaneously ensure that the SJRWMD's interests are adequately protected.

SJRWMD COMMENT-2

The District acknowledges and appreciates that the proposed water supply plan for BHEC as laid out in the "Agreement Concerning Delivery and Use of Stormwater" (dated Aug 12, 2004) provides use of lower quality water sources, specifically surface water, stormwater, and RO brine discharge. However, the Agreement does not address Calpine's use of the County's reclaimed water at the BHEC and the SCA sufficiency response (dated December 2004) indicates that reclaimed water is not available. If County reclaimed water is intermittently available for use by BHEC, please further clarify the environmental, technical, and economical feasibility of its use. [Paragraphs 10.2(a) & (j) and 10.3(d), (f) & (g), A.H.]

RESPONSE

In Calpine's original SCA (October 2000) for the BHEC, Calpine proposed that reclaimed water from the Indian River County reclaimed water system would be used, when available, as a supplemental water source for the BHEC. At that time, the County indicated that the amount of reclaimed water available for use by the BHEC would be limited and variable because the County's other customers (e.g., golf courses) would be a higher priority for the County.

Based on subsequent discussions with the County and IRFWCD, an "Agreement Concerning Delivery and Use of Stormwater" (Agreement) was approved by Indian River County's Board of County Commissioners on August 10, 2004. During the discussions leading up to the Agreement, the County indicated its desire to have BHEC maximize its use of excess stormwater from the IRFWCD canal system. This approach was supportive of the goals in the East Indian River County Master Stormwater Plan. Also, the County indicated its strong desire for the BHEC to use some of the brine from the County's South Plant reverse osmosis water treatment facility. The County did not encourage Calpine to use reclaimed water because reclaimed water could be used for higher-quality uses (i.e.,

irrigation) and because the availability of reclaimed water would be limited due to existing and future demand growth. The Agreement is based on the BHEC's use of brine and excess stormwater because they are the lowest quality waters available and feasible for use by the BHEC.

The monthly water quality sampling data collected from November 2000 through November 2001 for reclaimed water and Lateral C Canal water are shown in the attached Table 1. The data show that the quality of the water in the Lateral C Canal is lower than the quality of the County's reclaimed water. Therefore, the use of excess stormwater from the canal, rather than reclaimed water, is environmentally preferred for the BHEC. Moreover, the District's criteria would restrict or preclude Calpine from using reclaimed water (i.e., a better quality resource).

Technically, the BHEC could use the higher-quality reclaimed water as a water supply source. However, reclaimed water would only be provided by the County on an as-available basis. Consequently, another source, such as the canal system, would still be needed. The use of three different sources of water (i.e., excess stormwater, brine, and reclaimed water) would be technically and logistically difficult to manage during the operation of the BHEC. The variable nature of the reclaimed water flow would require continuous monitoring, changing pumping rates, and opening/closing valves for each of the three water sources.

Economically, the use of reclaimed water would also require Calpine to build or provide funding for additional infrastructure and pipelines. As part of the Agreement, Calpine has already committed, at its expense, to build the pumping stations and pipelines to support the County's development of the Egret Marsh Regional Stormwater Park, buy additional lands for expansion of the park, and contribute funding for the brine pipeline from the County's South Plant water treatment facility. Interconnection with the reclaimed water system and use of this water would create yet additional financial burdens on Calpine. These burdens do not appear to be warranted.

Calpine believes that the proposed water supply plan for the BHEC, as presented in the Agreement with Indian River County and the IRFWCD, is the most environmentally beneficial and technically reasonable water supply plan for the BHEC.

We are available to discuss Calpine's sufficiency responses or any other related issues with you and other agency personnel to facilitate the review of the SCA. If you have any questions, please contact Ben Borsch at Calpine at 813/637-7305 or me at 352/332-0444.

Sincerely,

ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.

Jack D. Doolittle
Project Manger

JDD/tsw

cc: Hamilton S. Oven, Jr., FDEP, w/attachments
Scott Goorland, Esq., FDEP, w/attachments
Callie Register, P.E., SJRWMD, w/attachments
Tim Eves, Calpine, w/attachments
Ben Borsch, Calpine, w/attachments
David Dee, Esq., Landers & Parsons, w/attachments
All Recipients of Site Certification Application as shown on the attached Distribution List, w/attachments

Table 1. Comparison of Reclaimed Water and Latercal C Canal Mean Water Quality (November 2000—November 2001)

Parameters	Units	Reclaimed Water	Lateral C Canal	Water Quality Standard	Comments
Aluminum	mg/L	0.363	0.41	NA	(1)
Arsenic	mg/L	<0.01	<0.01	0.05	
Barium	mg/L	<0.1	<0.1	NA	
Beryllium	mg/L	<0.001	<0.001	0.00013	
Boron	mg/L	0.41	0.11	NA	(2)
Cadmium	mg/L	<0.001	<0.001	0.0032	
Calcium	mg/L	33.69	92.62	NA	(1)
Chromium	mg/L	<0.01	<0.01		
Cobalt	mg/L	<0.05	<0.05	NA	
Copper	mg/L	<0.05	0.043	0.0290	
Iron	mg/L	<0.11	1.03	1	(1) (3)
Lead	mg/L	<0.01	<0.01	0.0172	
Magnesium	mg/L	12.31	31.15	NA	(1)
Manganese	mg/L	<0.054	0.05	NA	(1)
Mercury	mg/L	<0.0003	<0.0003	0.000012	
Nickel	mg/L	<0.03	<0.03	0.16	
Selenium	mg/L	<0.01	<0.01	0.005	
Silicon	mg/L	10.11	9.92	NA	(2)
Silver	mg/L	<0.013	<0.01	0.00007	
Sodium	mg/L	137.7	164.8	NA	(1)
Strontium	mg/L	1.98	5.30	NA	(1)
Thallium	mg/L	<0.02	<0.003	0.0063	
Zinc	mg/L	<0.1	<0.1	0.37	
Alkalinity	mg/L	51.4	122.8	>20	(1)
Bicarbonate	mg/L	51.4	122.8	NA	(1)
Carbonate	mg/L	<2.0	<2.0	NA	

Table 1. Comparison of Reclaimed Water and Latercal C Canal Mean Water Quality (November 2000—November 2001) (Continued, Page 2 of 2)

Parameters	Units	Reclaimed Water	Lateral C Canal	Water Quality Standard	Comments
Chloride	mg/L	189.2	330.8	NA	(1)
Conductivity	µmhos/cm	864.6	1397.7	NA	(1)
Fluoride	mg/L	0.51	0.35	10	(1)
Hardness	mg/L	141.8	376.9	NA	(1)
Oil & Grease	mg/L	<1.85	2.1	5	(1)
pH	mg/L	6.75	7.48	6-8.5	(1)
Sulfate	mg/L	70.31	88.40	NA	(1)
Sulfide	mg/L	<1.0	<1.0	NA	
TDS	mg/L	549.2	942.3	NA	(1)
TOC	mg/L	8.85	17.08	NA	(1)
TSS	mg/L	NA	NA	NA	
Turbidity	NTU	1.3	7	29 above ambient	(1)
Fecal Coliform	cfu/100ml	<21	797		(1)
Chlorinated Herbicides					
Dalapon		3.4	<1.0		(2)
MCPP		<55	<50		
MCPA		93	<50		(2)
2,4-D		<1.0	<1.0		
Organochlorine Pesticides					
Heptachlor		<0.13	<0.05		
Beta BHC		<0.07	<0.05		
Heptachlor Epoxide		<0.05	<0.2		

Note: (1) Lateral C Canal water quality worse than reclaimed water.
(2) Lateral C Canal water quality better than reclaimed water.
(3) Lateral C Canal concentration exceeded Class III surface water quality standard for freshwater.

Source: ECT, 2005.

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February 28, 2005

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RE: Calpine Blue Heron Energy Center
Request for Additional Information

Dear Ms. Mulkey:

Your January 21, 2004 email requested additional information regarding the Calpine Blue Heron Energy Center Prevention of Significant Deterioration (PSD) permit application. The following responses to the issues raised in your email are provided on behalf of Blue Heron Energy Center, L.L.C.

A. FDEP Issue (Debbie Nelson)

Rule 62-212.400(3)(h)(5) states that an application must include information relating to the air quality impacts of, and the nature and extent of, all general commercial, residential, industrial and other growth which has occurred since August 7, 1977, in the area the facility or modification would affect. Although growth is addressed in the application, please satisfy this rule by evaluating growth as it relates to the August 7, 1977 date.

Response:

The project is located in a rural area of Indian River County that has not experienced significant general growth since August 7, 1977. Although there has been considerable residential and commercial growth in the eastern portions of the County since 1977, large areas near the site and further to the west remain undeveloped or in agricultural use. The air quality impacts of any major industrial project in the vicinity of the proposed Blue Heron Energy Center would have been subject to a detailed regulatory agency assessment under the PSD permitting program. Consequently, the air quality near the site is in attainment with all ambient air quality standards and is generally consistent with the air quality that would be expected in a rural area.

Impacts associated with construction of the Blue Heron Energy Center will be minor. While not readily quantifiable, the temporary increase in vehicular miles traveled in the area would be insignificant, as would any temporary increase in vehicular emissions associated with the construction of the facility. Construction of the facility is not expected to cause any significant, permanent increases in residential, commercial or industrial growth near the site.

The Blue Heron Energy Center is being constructed to meet general area electric power demands and, therefore, no significant secondary growth effects due to operation of the facility are anticipated. When operational, the Blue Heron Energy Center is projected to generate

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approximately 36 new jobs; this number of new personnel will not significantly affect growth in the area. The increase in natural gas demand due to operation of the Blue Heron Energy Center will have no major impact on local fuel markets. No significant air quality impacts due to associated industrial/commercial growth are expected.

B. EPA Region 4 Issue (Kathleen Forney)

The applicant proposed using catalytic oxidation for controlling CO emissions to 5.0 ppm with a 24-hour averaging time. We have seen other CTs (w/catalytic oxidation) permitted with CO emissions limits around 2.0 ppm (in GA and in other Regions) and we recommend FDEP consider this when drafting the PSD permit. Additionally, since the NAAQS for CO have 1-hour and 8-hour averaging times, we believe an averaging time closer o the NAAQS averaging times is more appropriate for BACT. For instance, FDEP has used 3-hour averaging times for CO emission limits in past CT permits.

Response:

The CO BACT limits set by FDEP for the recent FP&L Turkey Point Unit 5 project are 4.1 ppm (CT only, normal operation) and 7.6 ppm (CT + DB), with compliance based on a 3-hour stack test, and 8.0 ppm; 24-hour block average with compliance based on CO CEMS data. The BHEC proposed CO BACT limit of 5.0 ppm is on a 24-hour basis using CEMS data; i.e., is more stringent than the FP&L limit.

Maximum modeled Blue Heron Energy Center 1- and 8-hour CO impacts are each less than one percent of the NAAQS. As discussed in EPA's draft New Source Review Workshop Manual, BACT determinations do not consider impacts on air quality other than ensuring that the BACT emission limits will not cause any exceedances of air quality standards; i.e., BACT emission limits are primarily technology-based standards. Accordingly, there is no need for a shorter averaging time for the Blue Heron Energy Center CO BACT emission limit, just as there was no need for a shorter averaging time for FP&L's Unit 5.

Please contact me at (352) 332-0444 if any you have any questions or need any additional information.

Sincerely,

Thomas W. Davis

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