

STAFF REPORT

WATER USE PERMIT APPLICATION

DATE: May 20, 2010

PROJECT: Gainesville Renewable Energy Center

APPLICANT:

Gainesville Renewable
Energy Center
75 Arlington Street, 5th Floor
Boston, MA 02116

PERMIT APPLICATION NO.: 2-09-00040

DATE OF APPLICATION: December 1, 2009

APPLICATION COMPLETE: March 2, 2010

DEADLINE FOR AGENCY REPORT: June 14, 2010

MANAGER/MEMBER DETAIL:

AMERICAN RENEWABLES, LLC 75 ARLINGTON STREET, 5TH FLOOR BOSTON, MA 02116	MGRM
FRANK GETMAN 1 NEW HAMPSHIRE AVE – STE 207 PORTSMOUTH, NH 03801	MGR
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KAORU USAMI TYR ENERGY INC 7500 COLLEGE BLVD – STE 650 OVERLAND PARK, KS 66210	MGR

Project Review Staff

Kevin Wright and Carlos D. Herd, P.G., have reviewed the application.

Project Location

The withdrawal facilities are located in Township 8 South, Range 19 East, Section 27, Alachua County, adjacent to the Deerhaven Generating Station (map attached).

Project Description

The District received a water use permit application, which was included within the site certification application for the Gainesville Renewable Energy Center (GREC) on December 1, 2009. The applicant requests a groundwater withdrawal from the upper Floridan aquifer for power production. The operation will use two proposed production wells and two potable wells located within GREC property.

GREC's proposed wellfield consists of two 14-inch diameter production wells, both with a capacity of 1,250 gallons per minute (gpm). The potable wells will consist of two 5-inch diameter wells, both with a capacity of 20 gpm. GREC's proposed average daily use will be 1.4 million gallons per day (mgd).

Demonstration of Need

GREC's primary consumption of water will be evaporative cooling towers. Other uses include boiler water make up, dust control, effluent disposal, and indoor needs. GREC has provided a water balance demonstrating annual needs.

GREC will initiate groundwater usage in July 2012 at a rate of 0.1 mgd, and will increase to 1.4 mgd by November 2013 when plant is fully operational.

Gainesville Regional Utilities will voluntarily reduce their average allocated quantities associated with the Deerhaven Generating Station by 1.4 mgd. The site certification for Deerhaven Generating Station was issued on May 16, 1978.

Water Conservation

As a low impact development design, GREC is incorporating a zero liquid discharge system. A zero liquid discharge system will minimize water that is traditionally discharged to an open water body. A zero liquid discharge system also promotes efficient use of water.

Permit Duration

The water use associated with GREC will be permitted through the Florida Department of Environmental Protection's Siting Coordination Office with a duration of the life of the facility.

Evaluation of Conditions for Issuance of Permit

Will the project interfere with any presently existing legal use of water?

[ref. 40B-2.301(1)(b)]

The applicant has provided reasonable assurance that the project will not interfere with any presently existing legal use of water.

Is the project consistent with the public interest?

[ref. 40B-2.301(1)(c)]

The applicant has provided reasonable assurance that the project is consistent with the public interest.

Is the project reasonable-beneficial?

[ref. 40B-2.301(1)(a)]

The applicant has provided reasonable assurance that the project reasonable-beneficial based on the following criteria.

The use is in such quantity and of such quality as is necessary for economic and efficient use.

[ref. 40B-2.301(2)(a)]

The applicant has provided reasonable assurance that the use is in such quantity and of such quality as is necessary for economic and efficient use.

The use is for a purpose that is both reasonable and consistent with the public interest.

[ref. 40B-2.301(2)(b)]

The applicant has provided reasonable assurance that the use is for a purpose that is both reasonable and consistent with the public interest.

The source of water is capable of producing the requested amounts and appropriate quality of water.

[ref. 40B-2.301(2)(c)]

The applicant has provided reasonable assurance that the source of water is capable of producing the requested amounts and appropriate quality of water.

The use will not degrade the source from which it is withdrawn.

[ref. 40B-2.301(2)(d)]

The applicant has provided reasonable assurance that the use will not degrade the source from which it is withdrawn.

The use will not cause or contribute to flooding.

[ref. 40B-2.301(2)(e)]

The applicant has provided reasonable assurance that the use will not cause or contribute to flooding.

The use will not harm offsite land uses.

[ref. 40B-2.301(2)(f)]

The applicant has provided reasonable assurance that the use will not harm offsite land uses.

The use will not cause harm to wetlands or other surface waters.

[ref. 40B-2.301(2)(g)]

The applicant has provided reasonable assurance that the use will not cause harm to wetlands or other surface waters. This determination was made using the District's regional groundwater model.

The use will not cause or contribute to a violation of either minimum flows or levels.

[ref. 40B-2.301(2)(h)]

The applicant has agreed to enter into an Agreement with Suwannee River Water Management District, City of Alachua and Gainesville Regional Utilities to initially provide approximately 400,000 gpd of reclaimed water to offset a portion of the proposed plants cooling water needs. This Agreement will act as a mitigation strategy to provide reasonable assurance that the use will not cause or contribute to a future violation of either minimum flows or levels. Staff modeled the proposed average daily withdrawal of 1.0 mgd of groundwater and found that with use of 400,000 gpd of reclaimed water, there were no adverse impacts to the Santa Fe River or other natural features. This determination was made by a predictive simulation using the District's regional groundwater model.

The use will not cause or contribute to a violation of state water quality standards in waters of the state as set forth in Chapters 62-301, 32-302, 62-520, and 62-550, F.A.C.

[ref. 40B-2.301(2)(i)]

The applicant has provided reasonable assurance that the use will not cause or contribute to a violation of state water quality standards in waters of the state as set forth in Chapters 62-301, 32-302, 62-520, and 62-550, F.A.C.

The use is otherwise a reasonable-beneficial use as defined in Section 373.019(2), F.S., with consideration given to the factors set forth in subsection 62-40.410(2), F.A.C.

[ref. 40B-2.301(2)(j)]

The applicant has provided reasonable assurance that the use is otherwise a reasonable-beneficial use as defined in Section 373.019(2), F.S., with consideration given to the factors set forth in subsection 62-40.410(2), F.A.C.

Site Certification Limiting Conditions

Staff recommends the following limiting conditions be included in the permit site certification:

1. Gainesville Renewable Energy Center shall provide to the District monthly operating reports showing daily groundwater pumpage no later than 10 working days after the end of each quarter. The Suwannee River Water Management District water use permit number 09-00040 shall be displayed on all reports.
2. If water use causes or contributes to a violation of Minimum Flows and Levels (MFLs), the District reserves the right to curtail future withdrawal rates or otherwise modify the site certification as described in the recovery or prevention strategy associated with the MFL.
3. If water use causes adverse impacts to occur, the District reserves the right to curtail future withdrawal rates or otherwise modify the site certification.
Adverse impacts include:
 - a. Cumulative reduction in well water levels that impairs the ability of the well to produce water;
 - b. Cumulative reduction in levels in an adjacent water body such as a lake, pond, or retention/detention area that impairs the designated function of the water body or the ability for a permitted withdrawal facility to produce water;
 - c. Saline water intrusion or induced movement of pollutants into the water supply of an adjacent water use, resulting in harm due to a reduction in water quality;
 - d. Land collapse or subsidence caused by reduction in water levels;
 - e. Damage to crops and other types of vegetation;
 - f. Harm to a naturally occurring water body such as lake, pond, or wetland by reducing water levels or changing the hydroperiod; and,
 - g. Harm to the natural system including damage to habitat for endangered or threatened species, or species of special concern.
4. Gainesville Renewable Energy Center shall maintain an accurate, non-resettable, totalizing flow meter(s) at each water withdrawal point. The meters shall be accurate to within 5 percent of actual flow. The meters shall be calibrated at a minimum every 5 years with a report of the calibration submitted to the District within 30 days of completion. Meters found to be outside the 5 percent flow measurement requirement shall be repaired or replaced within 30 days of discovery. The District shall be notified of any broken meters within 10 days of discovery, and the reported flow shall be estimated and submitted to the District for the time the meter was out of service.
5. If the actual flow is found to be greater than 5% different from the measured flow, within 30 days, the Permittee shall have the meter re-calibrated, repaired, or replaced, whichever is necessary. Documentation of the test and

a certificate of re-calibration, if applicable, shall be submitted within 30 days of each test or re-calibration.

6. Gainesville Regional Utilities will reduce allocated quantities for Deerhaven Generating Station by 1.4 mgd.
7. Gainesville Renewable Energy Center shall monitor and report groundwater levels continuously at one centrally located well as approved by the District. The groundwater monitoring program shall be implemented at least one year prior to operation. The data shall be submitted no later than 10 working days after the end of each quarter. The reference datum should be North American Vertical Datum of 1988 (NAVD 88).
8. Gainesville Renewable Energy Center (GREC) shall provide to the District a written implementation plan and schedule for the use of reclaimed water from the City of Alachua to replace as much of the groundwater withdrawals as practicable for cooling purposes no later than 3 years after the commencement of operations. The plan shall include the identification of the supply of reclaimed water, the anticipated uncommitted amount of the supply, the plans, facilities, and estimated costs for providing the reclaimed water to the GREC site, and the schedule to begin the use of the reclaimed water no later than 5 years after the commencement of operations. Based on the District's review and approval of the implementation plan and schedule, GREC shall implement the plan for the use of reclaimed water according to the approved schedule, and the conditions of the certification shall be modified to require the use of reclaimed water.
9. In the event that an uncommitted, reasonable reclaimed water supply becomes available or is definitively scheduled to become available at the GREC site boundary to meet all or part of the cooling tower makeup water needs prior to the required schedule above, GREC shall provide the District a written implementation plan and schedule for using the reclaimed water. Based on the District's review and approval of the plan and schedule, GREC shall implement the plan and the conditions of the certification shall be modified to require the use of reclaimed water to reduce groundwater use.
10. If reclaimed water is used to supply all or part of the cooling tower makeup needs, groundwater use shall continue to be allowed for plant process and potable water use and, to the extent necessary, as supplemental or standby water supply for cooling tower makeup.