

**Case No. 09-891/892-EL-REN**  
**Killen Generating Station**  
**Staff Interrogatories – Initial Set**

Question 1: In Section B, the application asks for facility owner information for each of multiple owners. In addition to the facility owner information provided by Dayton Power & Light Company, please provide the information for Duke Energy, the other facility owner, as well.

Answer 1:

**B. Name of the Facility Owner:**

The Dayton Power and Light Company (67%), Duke Energy Ohio, Inc. (33%)

*Please note that the facility owner name listed will be the name that appears on the certificate.*

*If the facility has multiple owners, please provide the following information for each on additional sheets.*

Applicant's Legal Name: Duke Energy Ohio, Inc.

Title: Senior Vice President Midwest Non-Regulated Generation Operations

Organization: Commercial Business

Owner's Address: 139 East Fourth Street

Street Address: 139 East Fourth Street

City: Cincinnati State: OH Zip Code: 45202

Country: USA

Phone: 513-419-5467 Fax: 513-419-5616

Email Address: Chuck.Whitlock@Duke-Energy.com

Web Site Address (if applicable): <http://www.duke-energy.com>

Question 2: Should the application(s) be approved by the Commission, please indicate the facility owner name or names that should appear on the certificate and the address to which the certificate should be sent.

Answer 2:

The Facility Owner's name on the Certificate should be solely that of the Operator, which is consistent with how environmental permits are issued. Thus, the Certificate should be issued to:

The Dayton Power and Light Company

and mailed to: 1065 Woodman Drive

Dayton, Ohio 45432

ATTN: Legal Department

Question 3: In Section I, what is the expected heat content (BTU/lb.), moisture, ash, and sulfur content for each of the fuel types listed, coal, the wood cellulose pellets, and biodiesel? Please describe the source and process for determining these heating values, how they may be verified, as well as the frequency of this calculation under a regular schedule of operation.

Answer 3:

The expected heat content (BTU/lb) or (BTU/gal), moisture, ash, and sulfur content for the fuel types wood cellulose pellet, coal, and biodiesel are as followed:

	Wood Cellulose Pellet	Range for Coal
Heat Content (BTU/lb)	7,250	11,300 to 13,000
Moisture %	15.00	7.00 to 13.50
Ash %	3.00	8.00 to 13.50
Sulfur Content %	0.15	1.00 to 3.00

	Biodiesel
Heat Content (BTU/gal)	130,000
Moisture	< 500 ppm
Ash	N/A
Sulfur Content	< 15 ppm/gal

The source for all testing is by an independent laboratory and the process for determining these heating values are in accordance with the current published applicable ASTM standards. Samples are taken of each load of fuel at the origin and tested prior to receiving the fuel at the station.

Question 4: In Section H (09-891), in the facility description, how will the actual portion of the wood cellulose pellets be measured (tonnage) and verified?

Answer 4:

The actual portion of the wood cellulose pellets is measured first at the origin by certified scales. After the fuel is loaded into each delivery truck a weight slip is generated. A second weighing of each truck happens at the loading dock. Each truck is weighed when entering and leaving the dock via certified truck scale to get the total tons delivered on each truck. This procedure represents the actual tonnage portion of the wood cellulose pellet that will be delivered to the station. Once the composite fuel reaches the station, it is weighed as it is unloaded on the station's #3 scale and then weighed on the gravimetric feeder as the fuel is fed into each pulverizer. The weight used in the formula set forth in response to Question 6 for purposes of determining the amount of RECs earned will initially be the weight at origin. If facility modifications are made to include an on-site blending capability, the weight used will be as measured at the blending facility.

Question 5: In Section G.10 (09-892), in the facility description, how will the actual portion of the biodiesel used in test burn periods be measured (gallons) and verified?

Answer 5:

The volume of the biofuel is initially measured at the loading facility as it is loaded into the tanker truck. It will be verified at Killen Station as it is unloaded into our storage tanks using volume flow devices. Samples of the biofuel will be taken as it unloaded to determine energy content. Once the biofuel is blended, samples will be taken again to verify that a proper blend was achieved. The amount of biodiesel consumed will be determined by oil meters at each piece of equipment consuming the oil, and verified by the volume change in Killen's storage tank.

Question 6: In section G.10b, the formula submitted for computing the proportions of output per fuel type by MWh generated, does not include the mass or the heating value of the fuels. Please submit a formula to be used that includes these variables.

Answer 6:

Calculation:

$$(M_b * HV_b) / [(M_c * HV_c) + (M_b * HV_b)] \times MWh_{Total} = MWh_{Ren}$$

Where:

$M_b$  = Mass of biofuel

$HV_b$  = Heating value of biofuel

$M_c$  = Mass of coal

$HV_c$  = Heating value of the coal

$MWh_{Total}$  = Total megawatt hours of generation from the facility

$MWh_{Ren}$  = Megawatt hours of generation attributed to a renewable source

Question 7: In II, in addition to the projected annual generation for the facility, what is the projected annual generation from each fuel type, including the biomass resources?

Answer 7:

Below you will find the 5 year average annual historical generation output and the range of annual generation for each fuel type based on the 5 year average.

5 yr average historical generation – 4,191,134 MWh

Wood Cellulose Pellet (0% to 10%) – 0 to 417,835 MWh

Biodiesel (0% to 20%) – 0 to 2,556 MWh

Note - All numbers are 100% plant and have not been adjusted for ownership share.

Question 8: Please provide the dates that the photographs were taken of the installed facility and the meters.

Answer 8:

The facility pictures in section G.3 of both Applications were taken on August 24, 2007.

The meter pictures in section N. of both Applications were taken on September 24, 2009.

Question 9: Please indicate the frequency with which the generation (MWh) of the renewable biomass resources will be calculated and reported to the GATS tracking system.

Answer 9:

The frequency with which the generation (MWh) of the renewable biomass resources will be calculated and reported to the GATS tracking system will be monthly.

Question 10: As requested in Section H, please provide a detailed description of all of the modifications or retrofits that rendered it eligible for consideration as a qualified renewable energy resource. These may include modifications that will be made to the facility, equipment, or process, including fuel use. Some indication has already been given under H, although please provide in greater detail, including such information as how the quantity and heat content of the biomass fuels will be measured; modifications to fuel handling and storage; and the process and frequency of the use of the pellets and the biodiesel at the Killen Generating station. Please include this description as an exhibit and identify the subject matter in the heading of the exhibit.

Answer 10:

The information requested is attached here in Exhibit A.

As a point of clarification, DP&L notes that while there may be physical modifications at the Killen Station to accommodate the use of biofuels, DP&L is not seeking to certify a fixed percentage of the Killen station and is not relying on any physical modifications to qualify the output associated with the use of biofuels. As set forth in greater detail in DP&L reply comments to the comments filed by the Ohio Consumers' Counsel in this case, the use of qualifying fuels, in this instance biomass, is sufficient under Ohio law to qualify the portion of the output attributable to the biofuels irrespective of whether there are any physical modifications to the facility.

Notwithstanding the foregoing, however, DP&L states that there may be some physical modifications as set forth in greater detail in Exhibit A.

Question 11: Please provide the initial date of operation using the renewable resource, when available.

Answer 11:

September 30, 2009

Question 12: Please describe the content (fully characterize the fuel material) and sources of the biomass resources.

Answer 12:

See Paragraph 1 Exhibit A for the characterization of the fuel materials. All biomass resources will be sustainably sourced in compliance with the requirements of the "Biomass Energy" definition contained in paragraph E of Chapter 4901:1-40-01 of the PUCO rules.

## EXHIBIT A

### Response to Staff Interrogatory 10

Qualifying Modification: The modifications made to qualify a portion of the output of the Killen Station for Renewable Energy Certificates is a change in fuel. Specifically, the portion of the fuel used at the Killen Station, which may vary from 0% to 10% at any given time, will be biomass. With respect to 09-891-EL-REN, the qualifying fuel is a composite material in the form of a mixture of cellulose (wood) and grasses in proportions that may vary. Because both the wood and the grasses are biomass, irrespective of the potential variability in proportions between wood and grasses, 100% of the product is biomass. With respect to 09-892-EL-REN, the qualifying fuel is biodiesel, which is a product virtually identical to diesel fuel but is created from biological sources, e.g., plant or animal fats and oils.

Physical Modifications: With respect to 09-891-EL-REN, in order to facilitate a long-term use of the wood/grass product, station modifications will likely include a truck weighing facility, unloading facility, storage facility, and equipment to convey the biofuel from the storage area to a blending facility for injection into the boilers. Additionally there will be process modifications to verify Btu content. The truck weighing facility will verify the weight of what is delivered to the plant, and, as part of the unloading process, a random sample of the product will be taken during unloading to determine heat energy.

With respect to 09-891-EL-REN and the biodiesel fuel that will be blended with regular diesel fuel and used for flame stabilization and start up purposes, there will be modified procedures to measure volume delivered (an unload meter) and sampling to verify the Btu content of the fuel. In circumstances where biodiesel may constitute 20% or more of the biodiesel/regular diesel blend and during cold weather, biodiesel may require some additional physical modifications to be made including heating the pipes used to deliver the fuel from tanks to the boilers to prevent the fuel from congealing.

Quantity and Heat Content Measurement: The information sought for this portion of Interrogatory 10 is as set forth in response to Staff Interrogatories 3 through 7.

Process and Frequency of Use: The information sought with respect to process is described in the Application, the Revised Application and in response to other Interrogatories. The frequency of use cannot be estimated with precision at this time and is largely dependent on fuel supply. Assuming, however, that there is and remains an adequate fuel supply with daily deliveries of the biofuel described in 09-891-EL-REN, it is expected that that biofuel would be used every day that the Killen Station is dispatched, which is virtually every day that the Killen Station is available. The biofuel described in 09-892-EL-REN would be used for start-up and flame stabilization purposes, which are needed sporadically.

1. I am the duly authorized representative of the Killen Generating Station.
2. I have personally examined and am familiar with all information contained in the foregoing responses, including any exhibits and attachments, and that based upon my inquiry of those persons immediately responsible for obtaining the information contained in the responses; I believe that the information is true, accurate and complete.
3. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Michael L. Harrell, Killen Plant Manager  
Signature and Title      Michael L. Harrell

December 30, 2009  
Date

**This foregoing document was electronically filed with the Public Utilities**

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Summary: Response to Initial Set of Staff Interrogatories for the Killen Generating Station electronically filed by Mr. Robert J Adams on behalf of The Dayton Power and Light Company