D H E C
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Catherine B. Templeton, Director
Promoting and protecting the health of the public and the environment

November 18, 2013

Mr. Gary Minck
Johnson Controls Battery Group, Inc.
1800 Paper Mill Road
Florence, SC 29501

Re: Furnace 3 (ID 09) Emissions Testing – Conducted June 4-6, 2013

Dear Mr. Minck:

The Department has reviewed the referenced tests and the results are summarized below:

Furnace No. 3 (ID 09) Average Particulate Matter and Metals Emissions				
Pollutant	**Emission Concentration (gr/dscf)**	**Emission Rate (lb/hr)**	**Emission Limit**	**Modeled Emission Rate (lb/hr)**
Particulate Matter	1.60E-03	0.63	0.022 gr/dscf 14.37[1] lb/hr	----
Antimony	<9.17E-08	<3.62E-05	----	1.76E-02
Arsenic	<1.56E-08	<6.33E-06	----	8.81E-03
Beryllium	<2.41E-09	<9.70E-07	----	----
Cadmium	<4.01E-07	<1.63E-04	----	8.81E-03
Chromium	1.71E-07	6.90E-05	----	1.76E-03[2]
Lead	2.59E-07	1.05E-04	8.70E-04 gr/dscf	0.18
Mercury	<1.87E-06	<7.64E-04	----	1.23E-03[3]
Nickel	3.21E-06	1.32E-03	----	----
Selenium	<1.40E-08	<5.67E-06	----	----
Manganese	2.16E-05	8.66E-03	----	----

[1]Based on a production rate of 6.50 tph.
[2]Chromium results are reported as total chromium. Chromium limit is based on CR^{+6} compounds.
[3]Emission rates may be used to demonstrate compliance with facility-wide emission limits in semiannual compliance reports.

Furnace No. 3 (ID 09) Average Gaseous Pollutant Emissions[1]			
Pollutant	**Emission Concentration (ppm)**	**Emission Rate (lb/hr)**	**Modeled Emission Rates (lb/hr)**
Sulfur Dioxide[2]	20.8	10.6	2.33
Oxides of Nitrogen	24.7	8.11	4.19
Carbon Monoxide	38.8	7.75	4.79

[1]Emission rates may be used to demonstrate compliance with TPY emission limits submitted in semiannual compliance reports.
[2]A fourth 60-minute run was conducted for SO_2 due to a failed post-run analyzer drift assessment.

Visible Emissions Summary	
	Method 9
Minutes of Observation	180
Highest 6 Minute Set	0%
Sets Greater Than Standard	0
Allowable Opacity Limit	20%

The EPA Method 9 opacity was at a static 0% during the test.

Furnace No. 3 Baghouse Operating Parameters					
	Compartment	**1**	**2**	**3**	**4**
Module Differential Pressure (in. H_2O)	Range	5.80 – 6.70	5.60 – 6.50	4.30 – 5.30	4.10 – 5.00
	Average	6.17	6.08	4.82	4.65
HEPA Differential Pressure (in. H_2O)	Range	0.30 – 0.70	0.40 – 0.50	0.30 – 0.400	0.50 – 0.60
	Average	0.53	0.44	0.40	0.54
Overall Differential Pressure (in. H_2O)	Range	7.67 – 9.09			
	Average	8.24			

During the test of Furnace No. 1, the average production rate was 6.50 tons per hour, 97.7 percent of the rated capacity of 6.65 tons per hour. Furnace temperature ranged from 764.1°F to 1,506°F and averaged 1,172°F. The afterburner temperature ranged from 1,220°F to 1,831°F and averaged 1,546°F. Scrubber pH ranged from 2.90 to 10.4 and averaged 5.66. Scrubber recirculation flow ranged from 182.8 gpm to 186.1 gpm and averaged 185.2 gpm.

The building enclosure meets the requirements of 40 CFR §63.545.

Compliance Status of Furnace 3:

(Permit No. 1040-0129-CA).....**Compliance**
(40 CFR 63, Subpart X).....**Compliance**
NOx, SO_2, and CO (Permit No. 1040-0129).....**Not Applicable***

***Note:** The NOx, SO_2, and CO emission rates from Furnace 3 are higher than the Modeled Emission Rates in Attachment A of Permit 1040-0129-CA.

The next source test for particulate matter, lead, mercury, and sulfur dioxide for Furnace 3 shall be conducted no later than **June 30, 2015.**

If I can be of further assistance, please do not hesitate to call me at (803) 898-0834 or e-mail me at williadt@dhec.sc.gov.

Sincerely,

Derek Taylor Williams

Derek T. Williams
Environmental Health Manager
Source Evaluation Section
SC DHEC Bureau of Air Quality

Cc: Compliance file: 1040-0129

Ec:

Michael Shroup	Carol Boney	Dawn Jordan
Bryan Baxley	James Myers	Heinz Kaiser