



## DEPARTMENT OF NATURAL RESOURCES

## MISSOURI AIR CONSERVATION COMMISSION

## PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **062010-010** Project Number: 2010-03-004

Parent Company: Johnson Controls Battery Group, Inc.

Parent Company Address: P.O. Box 591, Milwaukee, WI 53201-0591

Installation Name: Johnson Controls Battery Group, Inc.

Installation Number: 021-0009

Installation Address: 4722 Pear Street, St. Joseph, MO 64503

Location Information: Buchanan County, S25, T57N, R35W

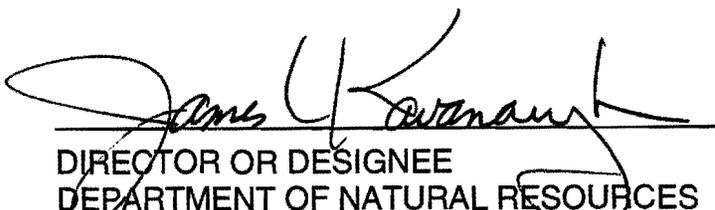
Application for Authority to Construct was made for:

The installation of a new Chemset Curing Chamber. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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- Standard Conditions (on reverse) are applicable to this permit.
- Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

JUN 23 2010

EFFECTIVE DATE

  
 DIRECTOR OR DESIGNEE  
 DEPARTMENT OF NATURAL RESOURCES

## STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

**You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review.** In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Departments' Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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Permit No.	
Project No.	2010-03-004

**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions: *The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."*

Johnson Controls Battery Group, Inc.  
Buchanan County, S25, T57N, R35W

1. Performance Testing
  - A. Johnson Controls Battery Group, Inc. shall perform lead stack testing on their new Chemset Curing Chamber (EP-450). The Stack shall be done in accordance to the New Source Performance Regulations, 10 CSR 10-6.070 – *New Source Performance Standards (NSPS) for Lead-Acid Battery Manufacturing Plants*, 40 CFR Part 60, Subpart KK and Maximum Achievable Control Technology (MACT) Regulations, 10 CSR 10-6.075, *National Emission Standards for Hazardous Air Pollutants for Lead Acid Battery Manufacturing Area Sources*, 40 CFR Part 63, Subpart P P P P P
  - B. These tests shall be performed within 60 days after achieving the maximum production rate of the installation, but not later than 180 days after initial start-up for commercial operation and shall be conducted in accordance with the Stack Test Procedures outlined in Special Condition 1.A
  - C. A completed Proposed Test Plan Form (enclosed) must be submitted to the Air Pollution Control Program 30 days prior to the proposed test date so that the Air Pollution Control Program may arrange a pretest meeting, if necessary, and assure that the test date is acceptable for an observer to be present. The Proposed Test Plan may serve the purpose of notification and must be approved by the Director prior to conducting the required emission testing.
  - D. Two (2) copies of a written report of the performance test results shall be submitted to the Director within 30 days of completion of any required testing. The report must include legible copies of the raw data sheets, analytical instrument laboratory data, and complete sample calculations from the required U.S. EPA Method for at least one (1) sample run.
  - E. The test report is to fully account for all operational and emission parameters addressed both in the permit conditions as well as in any other applicable state or federal rules or regulations

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (5) REVIEW

Project Number: 2010-03-004  
Installation ID Number: 021-0009  
Permit Number:

Johnson Controls Battery Group, Inc.  
4722 Pear Street  
St. Joseph, MO 64503

Complete: March 1, 2010

Parent Company:  
Johnson Controls Battery Group, Inc.  
P.O. Box 591  
Milwaukee, WI 53201-0591

Buchanan County, S25, T57N, R35W

REVIEW SUMMARY

- Johnson Controls Battery Group, Inc. has applied for authority to install a new Chemset Curing Chamber.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. That HAP of concern from this process is Lead Compounds.
- 40 CFR 60 Subpart KK, "Standards of Performance for Lead-Acid Battery Manufacturing Plants" applies to the equipment.
- 40 CFR Part 63 Subpart P, "National Emission Standards for Hazardous Air Pollutants for Lead Acid Battery Manufacturing Area Sources" applies to the installation.
- No air pollution control equipment is being used in association with the new equipment.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels.
- This installation is located in Buchanan County, an attainment area for all criteria pollutants.
- This installation is on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are counted toward major source applicability.

- Ambient air quality modeling was performed to determine the ambient impact of Lead.
- Emissions testing are required for the equipment.
- An Intermediate Operating Permit is required for this installation within 90 days of equipment startup.
- Approval of this permit is recommended with special conditions.

### INSTALLATION DESCRIPTION

Johnson Controls Battery Group, Inc. (JCBGI) manufactures lead-acid batteries for the motor vehicle after-market. The plant is located on 20 acres of land in the southeast portion of the City of St. Joseph. This installation is an existing minor source of PM<sub>10</sub> and a de minimis source for lead compounds.

The following permits have been issued to Johnson Controls Battery Group, Inc. from the Air Pollution Control Program.

**Table 1: Permit History**

Permit Number	Description
0381-004	Replacement of four plate stackers on COS lines #2 through 5
0281-003	Installation of a central vacuum cleaner
1182-002	Installation of two OSI tunnel type drying ovens for lead paste
0185-004	Increase production by installing an additional lead-acid battery manufacturing line
0485-011	Installation of a second COS line
0788-006	Installation of a scrap lead plate salvage tumbler
0290-013	Installation of a Chem Set/Steam Chamber
1090-004	New pastemixer and strip caster to produce lead strip for casting
0492-012	Replacement of battery plate stackers on COS lines 2, 3, and 7 and upgrade COS operations and heat sealers on COS 2 and 3
1192-015	Replacement of the existing RADCO vacuum system and a Mark V COS line
0793-026	Increase production by modifying existing equipment
0194-009	Installation of three new JCI pasters and a JCI-II vacuum stacker
1294-010	Installation of a chemset chamber, two lead oxide storage tanks, two trim dry ovens, expanded metal plate making system #2, a lead cylinder caster and two lead oxide mills
0895-035	Installation of COS Line #9
0196-015	Installation of a lead cylinder caster, two Sovema lead oxide mills and a storage tank system
0796-014	Installation of a new pasting line, four new Sovema Mills, and one cylinder caster lead pot and caster units and the modification of chemset chambers #1, #2, and #3
1199-007	Installation of a single lead pot to support the existing five (5) cylinder casters
032003-030	Increase in production at the existing lead-acid battery manufacturing plant
062006-008	Modification to existing Chemsets and addition of new Chemset
112006-002	Installation of two additional lead oxide manufacturing ball mills and an additional cylinder casting lead
102009-010	Installation of alternative COS line

## PROJECT DESCRIPTION

JCBGI is installing a new Chemset Curing Chamber in order to operate more efficiently. There are currently five Chemsets at the JCBGI facility with each having the capacity to operate at 7.15 tons of pasted plates per hour. The current capacity bottlenecks their pasting lines before the Chemsets and their Cast-On Strap (COS) Lines after the Chemsets. The new Chemset will debottleneck their process and allow for more production at their pasting and COS lines. The maximum hourly design rate of the new Chemset is also 7.15 tons of pasted plate per hour. There will be no control devices in association with the new equipment and the pollutants of concern will be PM<sub>10</sub>, Lead Compounds and Lead. JCBGI performed stack testing for PM<sub>10</sub> on a similar Chemset Curing Chamber with the same MHDR. The stack test PM<sub>10</sub> emission rates were used to calculate the PM<sub>10</sub> potential to emit.

## EMISSIONS/CONTROLS EVALUATION

The emission factors used in this analysis were obtained from the MOEIS data base and stack testing performed on similar Chemset Curing Chamber. The MOEIS emission factors were derived from stack testing done on each process. The highest emission factor for each process was used in order to obtain the worst case. The existing potential emissions of the facility have only been calculated for PM<sub>10</sub>. This project does not warrant the need to calculate the existing potential emissions of the other criteria pollutants. JCBGI currently operates under an intermediate operating permit and if JCBGI ever changed there intermediate operating permit status to a Part 70 status the existing potential emissions of the entire facility would need to be calculated. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year.) JCBGI currently has a 21.0 ton PM<sub>10</sub> installation wide limit. The new Chemset Curing Chamber should not be included in this 21.0 ton PM<sub>10</sub> installation wide limit. The following table provides an emissions summary for this project.

**Table 2: Emissions Summary (tons per year)**

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2009 EIQ)	Potential Emissions of the Application
PM <sub>10</sub>	15.0	<21.0	6.65	2.56
SO <sub>x</sub>	40.0	N/D	0.35	N/A
NO <sub>x</sub>	40.0	N/D	5.78	N/A
VOC	40.0	N/D	0.38	N/A
CO	100.0	N/D	1.16	N/A
Lead	0.6	N/D	0.17	0.32
<sup>[1]</sup> Lead Compounds	0.01	N/D	0.00	<sup>[2]</sup> 0.32

N/A = Not Applicable; N/D = Not Determined

<sup>1</sup> For Lead Compounds the value represents the Screening Model Action Level

<sup>2</sup> Potential Emissions of Lead Compounds account for the lead portion of the total mass of the compounds.

## PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutant are below de minimis levels.

## APPLICABLE REQUIREMENTS

Johnson Controls Battery Group, Inc. shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

### GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110  
The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required April 1 for the previous year's emissions.
- *Operating Permits*, 10 CSR 10-6.065
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-3.090

### SPECIFIC REQUIREMENTS

- *New Source Performance Regulations*, 10 CSR 10-6.070 – *New Source Performance Standards (NSPS) for Lead-Acid Battery Manufacturing Plants*, 40 CFR Part 60, Subpart KK
- *Maximum Achievable Control Technology (MACT) Regulations*, 10 CSR 10-6.075, *National Emission Standards for Hazardous Air Pollutants for Lead Acid Battery Manufacturing Area Sources*, 40 CFR Part 63, Subpart P P P P P P

## AMBIENT AIR QUALITY IMPACT ANALYSIS

The emissions of lead compounds from this project are expected to be higher than the Screen Modeling Action Level (SMAL) of 0.01 tons per year. Therefore, ambient air quality modeling on lead was performed for this project. The results show that the installation will be below the National Ambient Air Quality Standard (NAAQS) for lead and Risk Assessment Level (RAL) for lead compounds. For more detailed information on the modeling analysis, please see the memorandum dated May 17, 2010 titled "Ambient Air Quality Impact Analysis (AAQIA) for Johnson Controls Battery Group, Inc."

### STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

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Gerad Fox  
Environmental Engineer

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Date

### PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated February 24, 2010, received March 1, 2010, designating Johnson Controls Battery Group, Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Kansas City Regional Office Site Survey, dated March 23, 2010.