

PERMIT BOOK

STATE OF MISSOURI



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: 122008 - 008 Project Number: 2007-12-048

Parent Company: Enersys, Inc.

Parent Company Address: 2366 Bernville Road, Reading, PA 19605

Installation Name: Enersys Energy Products, Inc.

Installation Address: 617 N. Ridgeview Dr., Warrensburg, MO 64093

Location Information: Johnson County, S19, T46N, R25W

Application for Authority to Construct was made for:
The construction of a new process line and support equipment. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

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

DEC 29 2008

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 not more than 60 days but at least 30 days in advance of this date. 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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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."

Energys Energy Products, Inc.
Johnson County, S19, T46N, R25W

1. Superseding Condition
 - A. The conditions of this permit supersede Special Condition 3.B found in the previously issued construction permit (Permit Number 032006-008) from the Air Pollution Control Program.

2. Emission Limitation
 - A. Annual Limitation
 - (1) Energys Energy Products, Inc. shall emit less than 0.6 tons of lead from the entire installation in any consecutive 12-month period.
 - (2) Energys Energy Products, Inc. shall maintain an accurate record of lead emitted into the atmosphere from the entire installation. Attachment A or an equivalent form shall be used for this purpose.
 - (3) Energys Energy Products, Inc. shall maintain all records required by this permit for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.
 - (4) Energys Energy Products, Inc. shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after the end of the month during which the records from Special Condition 2.A(2) indicate that the source exceeds the limitation of Special Condition 2.A(1).
 - B. Hourly Limitation
 - (1) Energys Energy Products, Inc. shall comply with the emission rates listed in Table 1.
 - (2) Energys Energy Products, Inc. shall demonstrate compliance with Special Condition 2.B.(1) through testing as described in Special Condition 6.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

Table 1: Hourly Lead Emissions Limitations

Emission Point	Emission Unit Description	Control Device	Emission Rate (lb/hr)
96	Concasser 2	Baghouse	$1.71 \cdot 10^{-3}$
102	Ball Mill 2	Baghouse	$4.88 \cdot 10^{-4}$
103	Ball Mill 3	Baghouse	$4.88 \cdot 10^{-4}$
104	Transfer System #1	Baghouse	$4.76 \cdot 10^{-5}$
105	Transfer System#2	Baghouse	$4.76 \cdot 10^{-5}$
106	Cent. Vac 1	HEPPA	$1.63 \cdot 10^{-3}$
107	Cent. Vac 1	HEPPA	$8.16 \cdot 10^{-4}$
108	Pos Filter Rec. #5	Baghouse	$6.35 \cdot 10^{-5}$
109	Neg Filter Rec. #6	Baghouse	$1.03 \cdot 10^{-4}$
110	Pos Paste Mixer #5	Scrubber	$5.40 \cdot 10^{-4}$
111	Neg Paste Mixer #6	Scrubber	$1.32 \cdot 10^{-4}$
113	Curing Oven #11	None	$9.37 \cdot 10^{-5}$
114	Curing Oven #12	None	$9.37 \cdot 10^{-5}$
115	Curing Oven #13	None	$9.37 \cdot 10^{-5}$
116	Curing Oven #14	None	$9.37 \cdot 10^{-5}$
117	Curing Oven #15	None	$9.37 \cdot 10^{-5}$
118	Curing Oven #16	None	$9.37 \cdot 10^{-5}$
119	Curing Oven #17	None	$9.37 \cdot 10^{-5}$
120	Curing Oven #18	None	$9.37 \cdot 10^{-5}$
121	Curing Oven #19	None	$9.37 \cdot 10^{-5}$
122	Curing Oven #20	None	$9.37 \cdot 10^{-5}$

3. Control Device—Baghouse

- A. Energsys Energy Products, Inc. shall control emissions from the emission points EP-96, EP-102, EP-103, EP-104, EP-105, EP-108 and EP-109 using baghouses as specified in the permit application. The baghouses shall be operated and maintained in accordance with the manufacturer's specifications. Each baghouse shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that the Missouri Department of Natural Resources' employees may easily observe them. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- B. Enersys Energy Products, Inc. shall monitor and record the operating pressure drop across the baghouses at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
 - C. Enersys Energy Products, Inc. shall maintain an operating and maintenance log for the baghouses and drum filters which shall include the following:
 - (1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - (2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
4. Control Device— High Efficiency Particulate Arresting (HEPA) Cartridge Filters
- A. Enersys Energy Products, Inc. shall control emissions from the emission points EP-106 and EP-107 with HEPA cartridge filters as specified in the permit application.
 - B. Each cartridge filter equipped with HEPA filter must be in operation at all times when the associated equipment is in operation. Enersys Energy Products, Inc. shall shut down any process controlled by a cartridge filter equipped with HEPA filter during a malfunction until such time that the installation or its vendor(s) make the required repairs to the control device.
 - C. Each cartridge filter equipped with HEPA filter shall be operated and maintained in accordance with the manufacturer's specifications. The cartridge filter shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that the Missouri Department of Natural Resources' employees may easily observe them.
 - D. Enersys Energy Products, Inc. shall monitor and record the operating pressure drop across each cartridge filter equipped with HEPA filter at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
 - E. Enersys Energy Products, Inc. shall maintain an operating and maintenance log for each cartridge filter equipped with HEPA filter which shall include the following:
 - (1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - (2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

5. Control Device—Scrubber Conditions
 - A. Energys Energy Products, Inc. shall control emissions from the emission points EP-110 and EP-111 with scrubbers as specified in the permit application. The scrubbers shall be in operation at all times the associated equipment is in use. The scrubbers shall be operated and maintained in accordance with the manufacturer's specifications.
 - B. Energys Energy Products, Inc. shall maintain an operating, maintenance and inspection log for the scrubbers which shall include the following:
 - C. Incidents of malfunction(s) including the date(s) and duration of the event, the probable cause, any corrective actions taken and the impact on emissions due to the malfunction;
 - (1) Any maintenance activities conducted on the unit, such as replacement of equipment, etc.; and
 - (2) A record of regular inspection schedule, the date and results of all inspections including any actions or maintenance activities that result from that inspection.

6. Performance Testing Requirements
 - A. Energys Energy Producers, Inc. shall conduct initial performance testing of the emission points listed in Table 1 to verify the emission rate listed in that table. The tests shall be performed according to 10 CSR 10-6.030 Sampling Methods for Air Pollution Sources, or any method approved by the Air Pollution Control Program.
 - B. Energys Energy Producers, Inc. shall develop emission factors for the emission points listed in Table 1 in units of pounds of lead per battery produced.
 - C. Energys Energy Producers, Inc. shall conduct testing sufficient to demonstrate compliance with any and all applicable new source performance standard(s).
 - D. The initial performance tests shall be performed within 60 days of achieving the maximum production rate, but no later than 180 days after initial startup.
 - E. The initial performance test date(s) shall be pre-arranged with the Air Pollution Control Program a minimum of 30 days prior to the proposed test date so that a pre-test meeting may be arranged if necessary, and to assure that the test date is acceptable for an observer from the Air Pollution Control Program to be present. A proposed test plan shall be submitted to the Air Pollution Control Program a minimum of 30 days prior to the proposed test date. The test plan must be approved by the Air Pollution control Program prior to the test date.

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

Project Number: 2007-12-048
Installation ID Number: 101-0023
Permit Number:

Energys Energy Products, Inc.
617 N. Ridgeview Dr.
Warrensburg, MO 64093

Complete: December 17, 2007

Parent Company:
Energys, Inc.
2366 Bernville Road
Reading, PA 19605

Johnson County, S19, T46N, R25W

REVIEW SUMMARY

- Energys Energy Products, Inc. has applied for authority to construct a new process line and support equipment.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. HAPs of concern from this process are lead.
- Subpart KK, of the New Source Performance Standards (NSPS), *Standards of Performance for Lead-Acid Battery Manufacturing Plants*, applies to some of the proposed equipment.
- Subpart P, of 40 CFR Part 63 - National Emission Standards for Hazardous Air Pollutants for Source Categories (MACT), *National Emission Standards for Hazardous Air Pollutants for Lead Acid Battery Manufacturing Area Sources*, applies to the installation.
- Baghouses, HEPA filters and scrubbers are being used to control the lead emissions from the equipment in this permit.
- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of volatile organic compounds (VOC) are above de minimis levels.
- This installation is located in Johnson County, an attainment area for all criteria air pollutants.
- This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].

- Ambient air quality modeling was performed to determine the ambient impact of lead. Lead emissions are greater than the screening model action level (SMAL) for lead compounds.
- Emissions testing is required for the equipment.
- A Part 70 Operating Permit is required for this installation within one year of equipment startup or an Intermediate Operating Permit within 90 days of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Energys Energy Products, Inc. is engaged in the manufacture of specialty lead-acid batteries for various commercial and industrial applications. The facility consists of two plants, Plant 1 and Plant 2, located on the same site in an industrial park on the east side of Warrensburg, Missouri. Some of the lead oxide is manufactured at the installation, while the remainder is purchased for use as a raw material in the manufacture of the lead-acid batteries.

After issuance of this permit, Energys Energy Products, Inc. will be considered a Part 70 source for operating permits because the potential emissions of VOC will be greater than 100 tons per year. The applicant is required to submit a Part 70 Operating Permit application or request a 100 ton per year VOC limit be added to their existing operating permit. Energys Energy Products, Inc. also requested an installation wide *de minimis* limit for lead emissions.

The following permits have been issued to Energys Energy Products, Inc. from the Air Pollution Control Program.

Table 2: Construction Permits Issued

Permit Number	Description
0284-011A-018A	Lead acid battery plant
0885-008-009	Lead smelting furnace
0590-013	Central vacuum cleaner system, battery core drying, melting pot and filters
1090-008	New continuous grid casting process
0791-002	Lead oxide transfer from two storage silos and mixing room
1292-001	Replacement of electric melting pot (lead melting pot)
1193-001	Modify plate perforation lube system from kerosene to a "vanishing oil"
1294-012	Installation of 3 new grid perforators, replacement of a Wirtz continuous grid caster with a continuous chill caster, and construction of a new lead manufacturing facility on the same site
0495-017	New drying oven
0196-014	Installation of additional equipment in facility permitted in Permit No. 1294-012
0896-020	Transfer of existing Natural Gas fired cast-on-strap from Plant #1 to Plant #2
092000-004	New lead acid battery manufacturing line
052001-019	Temporary permit for testing a cast on strap machine
092000-004A	Modification of performance testing requirements
112003-012	New lead oxide manufacturing process line and replacement of an existing weigh hopper within the existing paste mixing process
122004-010	Phase I of the Large VRLA Cell Assembly line
032006-008	Phase II of the VRLA Cell Assembly Line

PROJECT DESCRIPTION

Energys Energy Products, Inc. will add a lead acid battery line that will include the following equipment.

Table 3: New Equipment:

Emission Unit	Description
EP96	North primary and reclaim furnaces, south primary and reclaim furnaces, multi-alloy caster, and dip caster
EP97	Perforator # 6-Gen
EP98	Perforator #7 -Gen
EP99	Perforator #8 -Gen
EP100	Perforator #9 -Gen
EP101-Int.	Melting pot, nugget caster, 6 cooling silos, 2 off-spec silos
EP 102	Oxide Mill # 2
EP103	Oxide Mill # 3
EP104	Storage Silo- Oxide Mill
EP105	Storage Silo- Oxide Mill
EP106	Cental Vac 1-Gen
EP107	Cental Vac 2-Gen
EP108	Positive Filter Receiving System # 2
EP109	Negative Filter Receiving System # 2
EP110	Positive Paste Mixing System Scrubber # 2
EP111	Negative Paste Mixing System Scrubber # 2
EP112-Int.	Postive and Negative Pastes (2, ea), and stackers (2, ea)
EP113	Curing Oven #11
EP114	Curing Oven #12
EP115	Curing Oven #13
EP116	Curing Oven #14
EP117	Curing Oven #15
EP118	Curing Oven #16
EP119	Curing Oven #17
EP120	Curing Oven #18
EP121	Curing Oven #19
EP122	Curing Oven #20
EP123-Int	Stuffing Epoxy Formation

Lead is received in the form of solid blocks. These blocks are melted and formed into a long thin plate with varying width depending on the type of battery to be produced. The plate is coiled and sent to the perforators. The perforators punch holes in the plate to form a mesh that will hold the lead oxide. Lead oxide paste is produced in the oxide mills, cooled and stored in silos. The lead oxide is combined with the perforated plates in the pasters. The pasted plates are stacked to form the batteries cell. The cells are sent to curing ovens. After curing, the cells are soldered together and placed in cases. The cases are filled with acid and charged.

In addition to the equipment listed in Table 3, Energys will add multiple small natural gas heating units. These units have a combined heat input of 30.45 million British thermal units per hour.

EMISSIONS/CONTROLS EVALUATION

The emission rates used in this analysis were obtained from stack test data submitted by the applicant from similar sources at the installation. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8,760 hours per year.) Volatile organic compound (VOC) will be emitted from the perforators. These emissions were calculated using a mass balance approach and assuming all the VOC are emitted. The following table provides an emissions summary for this project.

Table 4: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2007 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM ₁₀	15.0	8.05	3.23	0.44	N/A
SO _x	40.0	0.23	0.20	0.07	N/A
NO _x	40.0	41.38	3.38	12.70	N/A
VOC	40.0	138.45	53.62	40.67	N/A
CO	100.0	32.31	2.84	2.54	N/A
Non-Lead HAPs	10.0/25.0	0.3924	N/D	N/A	N/A
Lead	0.6/0.01 ¹	1.85	0.03	0.03	< 0.6

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

¹Lead *de minimis* level is 0.6 tons per year; Lead SMAL is 0.01 tons per year.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of VOC are above *de minimis* levels.

APPLICABLE REQUIREMENTS

Energys Energy Products, 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 June 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

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400
- *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
- *National Emission Standards for Hazardous Air Pollutants for Source Categories (MACT) 40 CFR Part 63, Subpart P*PPPP, *National Emission Standards for Hazardous Air Pollutants for Lead Acid Battery Manufacturing Area Sources*

AMBIENT AIR QUALITY IMPACT ANALYSIS

Ambient air quality modeling was performed to determine the ambient impact of lead. The potential emissions of this pollutant are above the screen modeling action levels

Table 5: Ambient Air Quality Impact Analysis Results

Pollutant	Modeled Impact	RAL	Time Period
Lead Compounds	1.981	2 µg/m ³	8-hour

For a complete description of the ambient air quality impact analysis consult the modeling memo. The results of the ambient air quality impact analysis demonstrate compliance with the risk assessment level for lead.

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.

Michael Mittermeyer
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated December 6, 2007, received December 17, 2007, designating Enersys, 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 December 26, 2007.

Mr. Abdel Shilbaya
Environmental Specialist
Energys Energy Products, Inc.
617 N. Ridgeview Dr.
Warrensburg, MO 64093

RE: New Source Review Permit - Project Number: 2007-12-048

Dear Mr. Shilbaya:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files.

Operation in accordance with these conditions, your new source review permit application and with your amended operating permit is necessary for continued compliance.

The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Michael Mittermeyer at the departments' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102, or by telephone at (573) 751-4817. Thank you for your time and attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale
New Source Review Unit Chief

KBH:mmk

Enclosures

c: Kansas City Regional Office
PAMS File: 2007-12-048

Permit Number: