

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: 012010 - 005 Project Number: 2009-10-022

Parent Company: United States Air Force

Parent Company Address: 660 10th Street, Suite 125, Whiteman AFB, MO 65305

Installation Name: Whiteman AFB

Installation Address: 660 10th Street, Whiteman AFB, MO 65305

Location Information: Johnson County, S4, T45N, R24W

Application for Authority to Construct was made for:  
The use of ArcJet™ thermal spraying equipment to repair military equipment.  
This review was conducted in accordance with Section (5), 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.

JAN 15 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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### 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."*

Whiteman AFB  
Johnson County, S4, T45N, R24W

1. Control Requirement -100 Percent Capture Requirement
  - A. Thermal spraying requires the use of an enclosure (such as a booth, drop gown, tarp frame enclosure) that prevents diffusion of fumes and ensures 100 percent capture of any material that is not transferred to the object being coated.
  - B. When thermal spraying is being performed, all air inlets and access openings must be covered to prevent the escape of dust or mist contaminants into areas outside the enclosure.
  - C. Whiteman AFB shall demonstrate negative pressure by using visual indicators, such as a flag test or puff or smoke test at the operation site to ensure that material is being transported to the baghouse.
2. Control Device Requirement-Baghouse
  - A. Whiteman AFB shall control emissions from the Arcjet™ thermal spraying equipment using a baghouse as specified in the permit application.
  - B. The baghouse shall be operated and maintained in accordance with the manufacturer's specifications. The 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 Resource employees may easily observe them.
  - C. Replacement filters for the baghouses shall be kept on hand at all times. 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).
  - D. Whiteman AFB 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

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**SPECIAL CONDITIONS:**

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

by the manufacturer's performance warranty.

- E. Whiteman AFB shall maintain an operating and maintenance log for the baghouses 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.
  
- 3. **Records Retention**  
Whiteman AFB 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. These records shall include Material Safety Data Sheets (MSDS) for all materials used

Mr. Glenn Golson  
Natural Resources Element Chief  
Whiteman AFB  
660 10th Street  
Whiteman AFB, MO 65305

RE: New Source Review Permit - Project Number: 2009-10-022  
Installation ID: 101-0009

Dear Mr. Golson:

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 operating permit, if applicable, 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.

This project consists of the spraying of specialized wires with an Arcjet™ spray gun that is similar to plasma spray coating, which uses a focused spray stream to coat materials. The maximum hourly design rate of the spray gun is 35 pounds per hour. A transfer efficiency of 70 percent was applied to the process, a 100 percent capture efficiency and a 99 percent control efficiency was applied to baghouse for particulate matter. To obtain the required, 100 percent capture efficiency the welding site will need an enclosure or a shroud that ensures 100 percent capture. The material supplied indicated that this equipment will be operated in 5 to 10 minute periods and emissions would be molten metal or metal globs turning into beads of metal or splashes of metal. It is likely that some of the material is PM<sub>10</sub>, but little information exists about emissions from this process. The site provided information indicating high (99.99 percent) control on 0.5 micron particles from the type of baghouse selected. However, it did not indicate the amount of PM<sub>10</sub> expected from the process. Because of the metal beads forming, it is not likely all of the PM is PM<sub>10</sub>. Therefore, it would be conservative to estimate the PM<sub>10</sub> emissions equal to 50 percent of the PM controlled emissions value.

The uncontrolled PM potential emission of this project is 45.99 tons per year of PM. This amount of PM emissions requires a permit because 45.99 tons per year is larger than de minimis

Mr. Glenn Golson  
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levels of less than 25 tons per year listed for PM found in 10 CSR 10-6.6.020 *Definitions and Commons Reference Table*, (3) Table 1 De Minimis Emission Levels. The controlled emissions of this project are 0.4599 tons of PM per year and the controlled PM<sub>10</sub> amount is 0.2230. The material contains Hazardous Air Pollutants (HAPs): Nickel (CAS# 7440-02-0), Cobalt (CAS # 7440-48-4), and Chromium (CAS # 7440-47-3). The HAP emissions are counted towards the projects Potential to Emit. These HAP emissions are also considered PM sources, control that is applicable to PM sources is applicable to these HAP sources. The controlled Potential to Emit is 0.43 tons per year for Nickel, 0.00046 tons per year for Cobalt, and 0.0009 tons per year for Chromium. These totals are below the 10.0 tons per year de minimis level for individual HAPs listed in Table 1 and is below the screen modeling action level for each HAP.

You are still obligated to meet all applicable air pollution control rules, Department of Natural Resources' rules, or any other applicable federal, state, or local agency regulations. Specifically, you should avoid violating 10 CSR 10-6.045 Open Burning Requirements, 10 CSR 10-3.090 Restriction of Emission of Odors, 10 CSR 10-6.170 Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin, and 10 CSR 10-6.400 Restriction of Emission of Particulate Matter From Industrial Processes.

A copy of this letter should be kept with the unit and be made available to Department of Natural Resources' personnel upon verbal request. If you have any questions regarding this determination, please contact Mr. Tim Hines with 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

Kyra L. Moore  
Permits Section Chief

KLM:thm

c: Kansas City Regional Office  
PAMS File: 2009-10-022

Permit Number: