Prevention of Significant Air Quality Deterioration Review
Kia Motors Manufacturing Georgia, LLC,
located in West Point, Georgia (Troup County)

FINAL DETERMINATION

SIP/Title V Permit Application No. 17363
July 2007

State of Georgia
Department of Natural Resources
Environmental Protection Division

Air Protection Branch

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BACKGROUND

On April 19, 2007, Kia Motors Manufacturing Georgia, LLC (hereafter "Kia") submitted an application for an air quality permit to construct and operate a new automobile and light duty truck assembly plant. The facility is located at Gabbettville Road and Webb Bartley Road in West Point, Troup County. The proposed auto assembly plant will located inside the 2200 acre West Point Economic Development Site currently owned by the State of Georgia.

The proposed plant would consist of metal stamping and welding to manufacture the auto bodies, surface coating of the auto bodies, and assembly of the components onto the vehicles. Maximum anticipated production is 300,000 vehicles per year. The permitted site also consists of a distribution center in which vehicles are prepared for delivery.

On June 19, 2007, the Division issued a Preliminary Determination stating that the project described in Application No. 17363 should be approved. The Preliminary Determination contained a draft Air Quality Permit for the construction and operation of facility.

A public notice was placed in a newspaper of general circulation in the area (*The Valley Times-News*) on June 22, 2007 notifying the public of the proposed construction and providing the opportunity for written public comment. The public comment period expired on July 23, 2007. The notice also informed the public that the Division would conduct a public meeting and public hearing on July 23, 2007. The Division also provided press releases to the other newspapers in Troup County

During the comment period, comments were received from U.S. EPA Region 4. No written comments were received from the general public. One oral comment was received during the July 23, 2007 public hearing. None of the comments received from EPA or the public resulted in any change to the permit. Therefore, it is recommended that the final permit be issued unchanged from the draft.

A copy of the final permit is included in Appendix A. A copy of written comments received during the public comment period is provided in Appendix B.

U.S. EPA REGION 4 COMMENTS

Comments were received from Jim Little, U.S. EPA Region 4, by email and fax on July 23, 2007. The comments are typed, verbatim, below and were the result of reviews by Jim Little of U.S. EPA Region 4.

Comment 1

1. Fine Particles - Fine particulate matter (PM2.5) is a regulated NSR pollutant that will be emitted from the proposed facility and should be acknowledged as such in the final determination. At the discretion of the Georgia Environmental Protection Division (GEPD), GEPD could state that it is following EPA's guidance in using PM10 as a surrogate for PM2.5 until final PM2.5 NSR implementation rules are adopted. Included in this acknowledgement of PM2.5 could be something to the effect that GEPD has concluded the project will not cause or contribute to adverse ambient PM2.5 concentrations based on an assessment of PM10 impacts.

EPD Response:
Georgia EPD understands EPA's point and agrees; Georgia EPD did indeed use EPA guidance and use PM-10 as a surrogate for PM2.5. Potential PM-10 emissions are estimated at 52 tons per year. Given that modeling indicates compliance with the NAAQS for PM-10, the Division concludes that the project will not result in adverse ambient PM2.5 concentrations.

Comment 2

2. Plantwide Volatile Organic Compounds Emissions Limit - On page 6 of the preliminary determination, GEPD states the following: "The KMMG facility is planned for nominal assembly of 270,000 vehicles per year with a capacity of 300,000 vehicles per year. All annual emission estimates are based on capacity production of 300,000 vehicles per year." From this statement, we assume that the plantwide volatile organic compounds (VOC) emissions limit of 452 tons per consecutive 12-month period is based on the "capacity" of 300,000 vehicles per year. The "nominal assembly" rate of 270,000 vehicles per year in the quote above indicates that the "capacity" production rate of 300,000 vehicles per year might not be reached initially. Rather than establishing a separate plantwide VOC emissions limit for a production rate of 270,000 vehicles per year, we understand that nested VOC limits and work practice standards will serve to limit 12-month emissions for production levels less than 300,000 vehicles per year. We request confirmation of this understanding in the final determination.

EPD Response:
The 452 tpy plantwide VOC limit essentially an add-on to the permit to serve the two purposes: It helps establish the production capacity of the plant as initially permitted, and it ensures that the toxic impact assessment conducted as part of the review remains valid. In addition to these purposes, the plantwide limit also helps minimize VOC emissions as a coverall for VOC sources that may not otherwise be limited. However, the permit already contains VOC limits and work practice standards that are "nested" into the 452 tpy limit. With these limits and work practice standards in place, Georgia EPD has determined that no tiered plantwide emission limit is necessary.

Comment 3

3. Boiler Hazardous Air Pollutants Standards - On page 19 of the preliminary determination, GEPD lists the national emissions standards for hazardous air pollutants (NESHAP) for boilers as an applicable requirement. Please note, however, that these standards were vacated by the U.S. Court of Appeals for the District of Columbia Circuit in a decision issued June 8, 2007. Because of the procedure by which the Court's decisions are implemented, the Court's vacatur has not yet taken effect. We raise this point simply to say that at some future date GEPD may have to remove or otherwise revise the provisions of the permit related to the boiler NESHAP.

EPD Response:
Georgia EPD is aware of the vacatur of the Boiler MACT, and will make changes to the permit as the needed when the Boiler MACT issue is resolved.

Comment 4

4. AP-42 Emission Factors - AP-42 emission factors are cited at different points in the preliminary determination. Use of AP-42 factors to assess applicability or to establish emissions limits is at the permittee's risk. AP-42 emission factors represent general industry averages and are not intended for use in permitting actions for specific facilities.

EPD Response:
AP-42 emission factors were used in part for establishing the plantwide NOx limit and CO limits. For NOx, in addition to AP-42 factors, stack testing and manufacturer emissions data was used. For CO, in addition to AP-42, manufacturer data was used. Georgia EPD understands that if it is revealed that actual emission rates exceed AP-42 (or those used in the application), adjustments will be made to ensure compliance with the applicable emission limit.

Comment 5

5. E-coat Emissions Testing - GEPD is requiring testing to assess the assumed "20/80" split for the E-coat operation. We understand that the "20/80" split assumption is an enforceable permit condition, and that testing will be for compliance purposes and not for the purpose of readjusting the assumption.

EPD Response:
The assumed 20/80 emissions split for the E-coat operation and associated cure oven is not a set limit, per se, but if actual operating conditions differ significantly from this assumption, the facility may be out of compliance with the BACT VOC limit for E-coat, and potentially the plantwide VOC limit.

If the split results in VOC emissions exceeding the BACT limit (that would occur around a 50/50 split), then enforcement action would take place. In addition to enforcement (including a possible consent order), permitting would also be involved. Because it was the obligation of Kia to provide an accurate permit application, they are under the onus of complying with the limits that resulted from the BACT analysis. If such an exceedance occurred, Georgia EPD would seek to have Kia re-evaluate BACT and determine the cost effectiveness (cost per ton of emissions controlled) given the actual test results and require controls on the E-coat booth itself (in addition to the E-coat oven) if deemed cost effective by the Division..

Comment 6

6. Test Stand Emissions - On page 31 of the preliminary determination, GEPD concludes that emissions from test stands should be treated as mobile source emissions. GEPD states that this conclusion is "pursuant to U.S. EPA policy memos." We are not certain which policy memos are referred to in this conclusion. A portion of the engine testing at Kia will be at a stationary location where emissions will go to the atmosphere through a single point. We request more specific support for the conclusion that such emissions are "mobile source" emissions and not emissions from a stationary emissions unit.

EPD Response:
To clarify, area in question is a vehicle testing stand and area, not an engine test stand. The vehicles are fully assembled at the point of testing, and the tests involve final checks of road-worthiness and quality assurance. There is no stationary stands for which engines to be mounted and tested. The Clean Air Act Amendments of 1990 define stationary source as "generally any source of an air pollutant except those resulting directly from an internal combustion engine for transportation purposes."

The finished vehicles, at this point, are subject to EPA's emission standards for light-duty onroad vehicles is further support that the vehicle emissions during testing should be considered mobile and not stationary in nature.

Regarding carbon monoxide, the EPA on-road emission rate for Kia models is 4.2 grams CO per mile traveled (www.epa.gov/greenvehicles/rating.htm). 4.2 g/mile x 300,000 cars per year x 3 minutes per car x 30 miles per hour (conservative estimate given that the engines will likely be a idle) = 4163 pounds per year carbon monoxide (2.1 tons) . NOx, VOC, and PM emissions from vehicle testing are estimated at less than 100 pounds per year each (0.05 tons).

Comment 7

7. Hot Water Generator Nitrogen Oxides Emissions - An alternative best available control technology analysis for nitrogen oxides (NOx) emissions from hot water generators appears on page 32 of the preliminary determination. We have two comments about this analysis, both related to the third bullet item in the analysis. (a) GEPD evaluated a burner that would achieve 20 ppm of NOx rather than 30 ppm NOx. The lower emitting burner is said to reduce NOx emissions from 22.0 tpy to 19.9 tpy. We understand that GEPD has assessed these numbers and will provide revised results in the final determination. (b) GEPD states that "the slight reduction in NOx would not warrant the large increase in carbon monoxide emissions." This is the reverse of the reasoning we typically see. We are more used to seeing a discussion pointing to the importance of minimizing NOx emissions at the expense of increasing CO emissions because of the importance of NOx emissions on ozone formation. Please confirm that any revised NOx emission reduction values have not led GEPD to change its conclusion.

EPD Response:
Regarding the NOx emissions estimates from the three hot water generators, the potential NOx would go from 22 tpy to 18.9 tpy (revised from 19.9 tpy). The estimate is calculated as follows:

NOx Emissions from 30 ppm NOx burners
NOx = 30 ppm (0.036 lb/MMBtu) using natural gas and 140 ppm (0.18 lb/MMBtu) using fuel oil
1905 hours per year (max hours based on 1million gallon limit):
natural gas: 3 x 25.11MMBtu/hr x 0.036 lb/MMBtu = 2.71 lb/hr x (8760-1905) = 9.3 tpy
Fuel oil: 3 x 24.5 MMBtu/hr x 0.18 lb/MMBtu = 13.2 lb/hr x 1905 hr/yr = 12.6 tpy.
NOx Total 9.3 + 12.6 = 22 tpy

CO Emissions from 30 ppm NOx burners
CO = 50 ppm (0.04 lb/MMBtu) using natural gas and 90 ppm (0.07 lb/MMBtu) using fuel oil 1905 hours per year (max hours based on 1million gallon limit):
natural gas: 3 x 25.11MMBtu/hr x 0.04 lb/MMBtu = 3.0 lb/hr x (8760-1905) = 10.3 tpy
Fuel oil: 3 x 24.5 MMBtu/hr x 0.07 lb/MMBtu = 5.15 lb/hr x 1905 hr/yr = 5 tpy.
CO Total 10.3 + 5 = 15.3 tpy

NOx Emissions from 20 ppm NOx burners
NOx = 20 ppm (0.024 lb/MMBtu) using natural gas and 140 ppm (0.18 lb/MMBtu) using fuel oil 1905 hours per year (max hours based on 1million gallon limit):
natural gas: 3 x 25.11MMBtu/hr x 0.024 lb/MMBtu = 1.81 lb/hr x (8760-1905) = 6.2 tpy
Fuel oil: 3 x 24.5 MMBtu/hr x 0.18 lb/MMBtu = 13.2 lb/hr x 1905 hr/yr = 12.6 tpy.
NOx Total 6.2 + 12.6 = 18.9 tpy

CO Emissions from 30 ppm NOx burners
CO = 200 ppm (0.16 lb/MMBtu) using natural gas and 90 ppm (0.07 lb/MMBtu) using fuel oil 1905 hours per year (max hours based on 1million gallon limit):
natural gas: 3 x 25.11MMBtu/hr x 0.16 lb/MMBtu = 12.1 lb/hr x (8760-1905) = 41.3 tpy
Fuel oil: 3 x 24.5 MMBtu/hr x 0.07 lb/MMBtu = 5.15 lb/hr x 1905 hr/yr = 5 tpy.
CO Total 41.3 + 5 = 46.3 tpy

Therefore, using 20 ppm burners results in the following net changes
NOx = -3.1 tpy
CO = +31
10:1 ratio.

To address EPA's question about minimizing NOx at the expense of increasing CO, Georgia EPD has determined that, given the fact that Troup County is located in an attainment area for ozone, and the CO emissions would increase ten tons for every one ton NOx reduced, the use of a lower-NOx burner is not warranted in this case. While Georgia EPD agrees with EPA that reducing NOx emissions is more critical than reducing CO emissions, the point of diminishing returns where CO increases outweight NOx decreases is unclear.

KIA COMMENTS

None received from Kia.

WRITTEN PUBLIC COMMENTS

None received from the public.

PUBLIC HEARING COMMENTS

A public meeting and hearing was held on July 23, 2007 at the West Point Recreational Department Gym. The event was attended by six citizens, and a local newspaper reporter. One oral comment (anonymous) was received during the hearing; that comment is replicated below.

Comment (anonymous)
I want to make sure that, if Kia gets out of compliance with [their permit], that EPD will make them get back into compliance and not just receive a fine and be allowed to operate out of compliance [for extended periods].

EPD Response:
If Georgia EPD finds Kia out of compliance with the permit, whether through compliance inspection, submitted test results, or required reporting, appropriate enforcement action will be carried out. Such enforcement actions may include consent orders involving monetary fines, but all enforcement actions would also include corrective action requirements to get back into compliance within a reasonable time.

EPD CHANGES

On page 28 of the preliminary determination, GEPD states that the proposed VOC emission limit of 90 tons during a 12-month period for purge, cleaning and body wipe operations "equates to a limit of 0.6 tons VOC per 1,000 vehicles." This is a typo. The correct units are 0.6 lb/car, which equates to 0.3 tons per 1,000 vehicles. No change to the permit necessary.

APPENDIX A

AIR QUALITY PERMIT
3711-285-0084-P-01-0

APPENDIX B

WRITTEN COMMENTS
RECEIVED DURING
COMMENT PERIOD