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OPERATING PERMIT (CONDITIONAL MAJOR) Issued Pursuant to Tennessee Air Quality Act

Date Issued: September 28, 2006

Permit Number:
457440P

Date Expires: July 1, 2011

Issued To:
DENSO Manufacturing Athens Tennessee, Inc.

Installation Address:
2400 Denso Drive
Athens

Installation Description:

Source 29: Calibration and Valve Assembly Rooms #1 & #2
Source 42: Spark Plug #3 and Associated Operations
Source 28: Six (6) Gas Fired Boilers (B-3 through B-8)
Source 30: Four (4) Heater Assembly Operations (#1-#4)
Source 38: Monolithic Carrier Production with Kilns #1 and #2

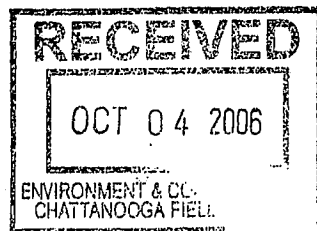
Emission Source Reference No.
54-0158
CONDITIONAL MAJOR

The holder of this permit shall comply with the conditions contained in this permit as well as all applicable provisions of the Tennessee Air Pollution Control Regulations.

CONDITIONS:

1. The application that was utilized in the preparation of this permit is dated June 23, 2004 with April 12, 2006 update and is signed by Wayne Brown, Manager, General Services of the permitted facility. If this person terminates his/her employment or is reassigned different duties such that he/she is no longer the responsible person to represent and bind the facility in environmental permitting affairs, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification shall be in writing and submitted within thirty (30) days of the change. The notification shall include the name and title of the new person assigned by the source owner or operator to represent and bind the facility in environmental permitting affairs. All representations, agreement to terms and conditions and covenants made by the former responsible person that were used in the establishment of limiting permit conditions on this permit will continue to be binding on the facility until such time that a revision to this permit is obtained that would change said representations, agreements and covenants.

(conditions continued on next page)



Gary R. Stephens

TECHNICAL SECRETARY

No Authority is Granted by this Permit to Operate, Construct, or Maintain any Installation in Violation of any Law, Statute, Code, Ordinance, Rule, or Regulation of the State of Tennessee or any of its Political Subdivisions.

NON-TRANSFERABLE

POST AT INSTALLATION ADDRESS

Section I: General Conditions

- E-2.** The permittee has elected to opt-out of being issued a major source operating permit pursuant to Division Rule 1200-3-9-.02(11)(a). The permittee would be considered a major source because their "potential to emit" values for Volatile Organic Compounds (VOCs), any combination of Hazardous Air Pollutants, and a single Hazardous Air Pollutants (HAPs) were equal to or greater than 100 tons per year, 25 tons per year and 10 tons per year, respectively, at the time of application. The permittee has voluntarily agreed to be subject to limitations in order to stay below the major source applicability threshold of 100 tons per year of VOCs, 25 tons per year for any combination of HAPs, and 10 tons per year (TPY) for a single HAP.
- E-3.** The permittee is placed on notice that conditions E-4 and E-5 of this operating permit contain limitations that allow the permittee to opt out of the major source operating permit program requirements specified in Division Rule 1200-3-9-.02(11). Failure to abide by these limits will not only subject the permittee to enforcement action by the State of Tennessee, but it may also result in the imposition of Federal enforcement action by the United States Environmental Protection Agency and the loss of being Federally recognized as a Conditional Major Source.
- E-4.** Volatile organic compounds (VOC) emitted from this facility including all insignificant and exempt sources shall not exceed 99 tons during all intervals of 12 consecutive months. This emission limitation is established pursuant to Rule 1200-3-7-.01(5) and agreement letter dated October 9, 2003.
- E-5.** Emissions of any single hazardous air pollutant (HAP) and any combination of hazardous air pollutant (HAP) listed in Section 112 of the Federal Clean Air Act shall not exceed 9.9 and 24.9 tons, respectively during all intervals of 12 consecutive months from the entire facility including all insignificant and exempt sources. This emission limitation is established pursuant to Rule 1200-3-7-.01(5) and agreement letter dated October 9, 2003.
- E-6.** Any non compliance with any condition(s) of this permit set to restrain the "potential to emit" below the applicability threshold(s) of 1200-3-9-.02(11) of the Tennessee Air Pollution Control Regulations, shall be reported in writing to the Technical Secretary within fifteen (15) working days of such discovery. This notification, at a minimum, shall include the identification of the source, identification of the permit condition(s) violated and details of the violation.
- E-7.** Should proof of compliance for the pollutant(s) with emission limitation(s) placed on this permit be required, the emissions measuring test method(s) and procedure(s) are the following:

Pollutant or ParameterTesting Methodology

Volatile Organic Content of material
Used (Coatings/Inks/solvents, etc)

EPA Method 24 as published in the
current 40 CFR 60, Appendix A

- E-8.** The permittee shall calculate the actual quantities of VOC and HAPs emitted from this facility during each calendar month and maintain records of these emissions in a form that readily shows compliance with Conditions E-4 & E-5 of this permit. **(See attached table at the end of permit; condition E-15).** The permittee shall keep records of monthly material usage from monthly inventory reports for VOC containing materials, calibration fluid and clean-up solvent. Monthly emissions may be calculated assuming that calibration fluids and solvents (paint, thinner and clean-up solvents) removed from inventory in a given month are emitted that month. The VOC content of the waste solvents shall be determined from a composite sample of the waste solvents generated on a monthly basis. The amount of VOC to be credited* (condition E16-5) shall be determined no later than the fifteenth day of the following month. The emissions calculated pursuant to this paragraph shall be deemed the actual VOC emissions from the facility for compliance purposes. Unused

solvents returned to inventory on a given month may be credited* to that month's emissions.

- * "Credited" means that this quantity of material can be deducted from the amount of material which is used when calculating emissions. The emissions are deducted because either
 - a. That quantity of material being deducted is material which is being returned to the inventory; therefore, this material is not emitted from this facility.
 - b. That quantity of material being deducted is shipped offsite as waste or for proper reuse, and therefore this material is not emitted from this facility.
 - c. The quantity of material is shipped offsite as residuals in the fuel injectors and therefore, this material is not emitted from this facility.

Procedures for determining the above quantities are found in condition E16-5 and approved VOC compliance protocol (attachment A).

- E-9. Upon the malfunction/failure of any emission control device(s) serving this facility, the operation of the process(es) served by the device(s) shall be regulated by Chapter 1200-3-20 of the Tennessee Air Pollution Control Regulations.
- E-10. Unless otherwise addressed by Chapter 1200-3-20, all control devices shall be fully operational during all times of source operation.
- E-11. Routine maintenance, as required to maintain specified emission limits, shall be performed on the air pollution control device(s). Maintenance records shall be recorded in a suitable permanent form and kept available for inspection by the Division. These records must be retained for a period of not less than five years.
- E-12. A written report stating the compliance status of this facility with Conditions E-4 and E-5 shall be submitted by March 31 of every year, beginning in the year 2007. This report shall cover the preceding calendar year and shall include the records required by Conditions E-8, E-15, E16-3, E19-2 and E20-5. All days when "deviations" occurred, as the term "deviation" is defined by conditions E16-4 and E20-8, shall be specified in this report. This report shall be submitted to the Chattanooga Environmental Assistance Center at the following address:

Chattanooga Environmental Field Office
Division of Air Pollution Control
Suite 550, 540 McCallie Avenue
Chattanooga, TN 37402

- E-13. This permit supersedes all previous air permits for these sources.
- E-14. Volatile organic compounds (VOC) including HAPs emitted from all exempt and insignificant sources shall not exceed 25.0 tons (including 1.0 ton (max.) of any single HAP and 3.0 tons (max.) of all combined HAPs) during all intervals of 12 consecutive months. This total 25.0 tons (including 1.0 ton (max.) of any single HAP and 3.0 tons (max.) of all combined HAPs) shall be added to the facility wide actual emissions as calculated for all intervals of 12 consecutive months.

E-15. Annual log table for entire facility as required by condition E-8. Information may be presented in another format which provides the same information.

YEARLY VOC/HAP LOG FOR EMISSION SOURCE REFERENCE # 54-0158

MONTH/YEAR	VOC EMISSIONS TONS per MONTH	(*) VOC EMISSIONS TONS per 12 MONTHS	HAP-1 EMISSIONS TONS per MONTH	(*) HAP-1 EMISSIONS TONS per 12 MONTHS	HAP-2 EMISSIONS TONS per MONTH	(*) HAP-2 EMISSIONS TONS per 12 MONTHS	HAP-3 EMISSIONS TONS per MONTH	(*) HAP-3 EMISSIONS TONS per 12 MONTHS	HAP-4 EMISSIONS TONS per MONTH	(*) HAP-4 EMISSIONS TONS per 12 MONTHS	TOTAL HAP EMISSIONS TONS per MONTH	(*) TOTAL HAP EMISSIONS TONS per 12 MONTHS
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												

(*) The Tons per 12 Month value is the sum of the VOC (or HAP) emissions in the 11 months preceding the month just completed + the VOC (or HAP) emissions in the month just completed. If data is not available for the 11 months preceding the initial use of this Table, this value will be equal to the value for tons per month. For the second month it will be the sum of the first month and the second month. Indicate in parentheses the number of months summed [i.e., 6 (2) represents 6 tons emitted in 2 months].

Section II: Source Specific Conditions

Source 54-0158-29: Calibration and Valve Assembly Rooms #1 and #2. Regenerative Thermal Oxidizer (RTO) Control. Four (4) Lines: C-3 Line #1 and Line #2; UC Line #1 and Line #2

E16-1. Particulate matter (PM) emitted from this source shall not exceed 1.0 pounds per hour (lb/hr). This emission limitation is established pursuant to Rule 1200-3-26-6-.2(b)6 of the Tennessee Air Pollution Control Regulations and the information contained in the agreement letter dated March 14, 2003 from the permittee.

Compliance: Compliance with this standard is inherent since no particulate matter is generated by this process.

E16-2. The as-supplied VOC and HAP content of all VOC and HAP-containing materials to be used by this source shall be determined as follows:

All Coatings, Inks, Adhesives, Thinners, Solvents, etc. - from Material Safety Data Sheets (MSDS) or manufacturer or vendor formulation data which explicitly list the VOC content by weight.

The results of these determinations shall be compiled in the following tabular format or an alternative format which readily provides the same required information. This table, along with MSDS or other supporting documentation for each material used, shall be maintained at the source location and made available for inspection by the Technical Secretary or his representative, beginning 180 days from the issue date of this permit. If new materials are used, or if material formulation is changed, the table shall be updated within 90 days from the initial date of usage of the new or altered material.

Process Material Description	Material Density (lb/gal)	VOC Content (lb/gal)	HAP 1 Content (lb/gal)	HAP 2 Content (lb/gal)
Material #1				
Material #2				
etc.				

E16-3. A log of usage of all VOC and HAP-containing materials shall be maintained at the source location. The permittee shall calculate the total VOC and HAP emitted from this source during each calendar month and maintain records of these emissions in a form that readily shows compliance with Conditions E-4 and E-5 of this permit. (See example below) This log must be maintained at the source location and kept available for inspection by the Technical Secretary or his representative. This log must be retained for a period of not less than five (5) years.

Material Name	Usage (gal/month)	VOC/HAP Usage* (ton/month)	VOC Emitted** (ton/month)	HAP 1 Emitted** (ton/month)	HAP 2 Emitted** (ton/month)	Total HAP Emitted (ton/month)
Material 1						
Material 2						
Etc.						

* to be determined as follows: usage (gal/month) X VOC/HAP content (lb/gal)

** to be determined utilizing the methodology set forth in conditions E-8 and E16-5..

Note: All emissions from this table shall also be included in the annual facility wide record keeping log table required by conditions E-8, E-15 and E16-5.

E16-4. The overall control efficiency to be used in emission calculations has been determined to be 84.8% or higher based on RTO destruction efficiency of 97.5% multiplied by average capture efficiency of 87%. Both of these values are based on RTO performance test done on October 12, 2005 and Division acceptance letter dated

February 17, 2006. The permittee may reestablish these values through additional source emissions testing. The Technical Secretary must be notified at least thirty (30) days prior to the actual testing date so that an official observer may be present. When approved the revised values may be incorporated into this permit by an administrative amendment.

Compliance Monitoring: The permittee shall monitor the temperature of RTO control device. The temperature-sensing device shall have an accuracy that is $\pm 25^{\circ}\text{F}$, as described by manufacture specifications, over its operating range. The oxidizer shall be equipped with a liquid crystal or equivalent display that continuously indicates the sensed temperature. The following applies to each oxidizer control device:

The average RTO operating temperature is 1594°F based on October 12, 2005 performance by the company. The permittee shall continuously record the temperature with a continuous strip chart recorder or a digital data logger. All 3-hour block averages (starting at midnight) of operation in which the average combustion temperature was more than 28°C (50°F) below the combustion temperature specified above shall be considered deviations.

E16-5. All waste VOC's that are drummed and shipped offsite to a proper reuse or disposal site or, which are shipped offsite in finished injectors can be deducted from the facility's VOC emissions. Before credit can be given, the following conditions must be met:

(a) The quantity of VOC containing waste shipped offsite shall be obtained from hazardous waste manifests and disposal records. The permittee shall analyze the VOC contain calibration fluid waste stream at least once a year utilizing EPA Method 24/24A. The results of this analysis shall be submitted along with compliance status report as specified in condition E-12 of this permit.

Based on the results of the most recent analysis of waste calibration fluid conducted by the permittee, which has been accepted by the Division, the VOC content is set at 97.24% by weight, which may vary according to annual analysis. Therefore, the credited amount of waste VOC shall be calculated by multiplying this number (97.24% by weight) by the gallons/or pounds of waste calibration fluid shipped each month and in accordance with the approved VOC compliance protocol submitted by the company which is made part of this permit as Attachment A.

(b) Credit for residual VOC shipped offsite in finished injectors shall be determined as per approved protocol submitted by the company and is made part of this permit as attachment A.

This log and record of yearly VOC emissions must be retained for a period of not less than five years.

E16-6. Sulfur dioxide (SO_2) emitted from this source shall not exceed 1.0 pounds per hour (lb/hr). This emission limitation is established pursuant to Rule 1200-3-26-6-.2(b)6 of the Tennessee Air Pollution Control Regulations and the information contained in the agreement letter dated March 14, 2003 from the permittee.

Compliance: Compliance with this standard is inherent by the nature of the process.

E16-7. Visible emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for one (1) six-minute period in any one (1) hour period, and for no more than four (4) six-minute periods in any twenty-four (24) hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average). TAPCR 1200-3-5-.03(6) and TAPCR 1200-3-5-.01(1)

- E16-8. Only natural gas and/or propane/calibration fluid shall be used as fuels for the air pollution control device (Regenerative Thermal Oxidizer (RTO)).
- E16-9. Compliance with conditions E-2, E-4 and E-5 shall be shown by calculating the actual quantities of VOC and HAPs emitted from this source and facility utilizing the usage logs, methods and procedures as outlined in conditions E-8, E16-3, E16-4, E-16-5 and approved VOC Compliance Protocol (attachment A) of this permit.

Source 54-0158-42: Spark Plug #3 Rust Inhibitor Application; Alkaline Washer; Silicone Injection Machine; Marketing Printer and FKR Inspection Machine.

- E17-1. It has been determined that the new spark plug #3 Rust Inhibitor Application, Alkaline Washer, Silicone Injection Machine, Marketing Printer, and FKR Inspection Machine, as described in your application would each constitute an *insignificant activity or insignificant emissions unit*, as defined in part 1200-3-9-.04(2)(a)3. of the Tennessee Air Pollution Control Regulations. Specifically, the proposed operation would result in potential emissions from each emission unit of less than five (5) tons per year of each air contaminant and each regulated air pollutant that is not a hazardous air pollutant (HAP), and less than 1,000 pounds per year of each hazardous air pollutant.

Source 54-0158-28 Six (6) Gas-fired Boilers (16.74 MMBTU/hr total): Boilers Number B-3, B-4, B-5, B-6, B-7 and B-8

- E18-1. The maximum total heat input capacity for this fuel-burning installation shall not exceed 16,740,000 British Thermal Units per hour (16.74 MMBTU/Hr), on a daily average basis.
- E18-2. Only natural gas shall be used as fuel for this source.
- E18-3. Particulate matter (TSP) emitted from this fuel-burning installation shall not exceed 0.45 pound per million British Thermal Units (lb/MMBTU).

The above emission limitation is established pursuant to Rule 1200-3-6-.02(2) of the Tennessee Air Pollution Control Regulations.

- E18-4. Sulfur dioxide (SO₂) emitted from this source shall not exceed one (1.0) pound per hour.

The above emission limitation is established pursuant to Rule 1200-3-14-.01(3) of the Tennessee Air Pollution Control Regulations and the information contained in the agreement letter dated January 3, 2000 from the permittee.

- E18-5. Visible emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for one (1) six-minute period in any one (1) hour period, and for no more than four (4) six-minute periods in any twenty-four (24) hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average). TAPCR 1200-3-5-.03(6) and TAPCR 1200-3-5-.01(1)

Source 54-0158-30 Four Heater Assembly Operations (#1, #2, #3, #4)

- E19-1. The as-supplied VOC content of all VOC-containing materials to be used by this source shall be determined as follows:

All Coatings, Inks, Adhesives, Thinners, Solvents, etc. - from Material Safety Data Sheets (MSDS) or manufacturer or vendor formulation data which explicitly list the VOC content by weight.

The results of these determinations shall be compiled in the following tabular format or an alternative format which readily provides the same required information. This table, along with MSDS or other supporting documentation for each material used, shall be maintained at the source location and made available for inspection by the Technical Secretary or his representative, beginning 180 days from the issue date of this permit. If new materials are used, or if material formulation

is changed, the table shall be updated within 90 days from the initial date of usage of the new or altered material.

Process Material Description	Material Density (lb/gal)	VOC Content (lb/gal)
Material #1		
Material #2		
Etc.		

E19-2.A log of all VOC-containing materials used shall be maintained at the source location. The permittee shall calculate the total VOC emitted from this source during each calendar month and maintain records of these emissions in a form that readily shows compliance with Conditions E-4 and E-5 of this permit. (See example below) This log must be maintained at the source location and kept available for inspection by the Technical Secretary or his representative. This log must be retained for a period of not less than five (5) years.

Process Materials	Usage (gal/month)	VOC Content (lb/gal)	VOC Emitted (ton/month)
Material #1			
Material #2			
etc.			
Total:			

E19-3.Visible emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for one (1) six-minute period in any one (1) hour period, and for no more than four (4) six-minute periods in any twenty-four (24) hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average). TAPCR 1200-3-5-.03(6) and TAPCR 1200-3-5-.01(1)

Source 54-0158-38: Monolithic Carrier Production: Consisting of Mixing/Extruding Process with Baghouse as control; Kiln #1 with Thermal Oxidizer as Control; Kiln #2 with Thermal Oxidizer (TO) as Controls

E20-1.The maximum combined heat input capacity of this source is 28 million British thermal units per hour (MMBtu/hr).

E20-2.Only natural gas and propane shall be used as fuel(s) for this source.

E20-3.Particulate matter (TSP) emitted from this source shall not exceed 0.02 grain per dry standard cubic foot of stack gases (7.03 pounds per hour).

E20-4.The as-supplied VOC/HAP content of all VOC-containing materials to be used by this new source shall be determined as follows:

All lubricants, oils, etc. - from Material Safety Data Sheets (MSDS) or manufacturer or vendor formulation data which explicitly list the VOC content by weight.

The results of these determinations shall be compiled in the following tabular format or an alternative format which readily provides the same required information. This table, along with MSDS or other supporting documentation for each material to be used, shall be maintained at the source location and made available for inspection by the Technical Secretary or his representative, beginning within 180 days of initial start-up. If new materials are used, or if material formulation is changed, the table shall be updated within 90 days from the initial date of usage of the new or altered material.

Process Material Description	Material Density (lb/gal)	VOC Content (lb/gal or wt %)	HAP Content (lb/gal or wt%)
Material #1			
Material #2			
Etc.			

E20-5. A log of all HAP and VOC-containing materials used shall be maintained at the source location. The permittee shall calculate the total VOC emitted from this source during each calendar month and maintain records of these emissions in a form that readily shows compliance with Conditions E-4 and E-5 of this permit. (See example below) This log must be maintained at the source location and kept available for inspection by the Technical Secretary or his representative. This log must be retained for a period of not less than five (5) years.

Process Materials	Usage (gal/month or lb/month)	VOC Content (lb/gal or wt %)	Overall Control Efficiency (%)	VOC Emitted (ton/month)	VOC Emitted * (tons/12 months)
Material #1			**		
Material #2					
Etc.					
Totals:					

(*) The tons/12 month value is the sum of the VOC emissions in the 11 months preceding the month just completed + the VOC emissions in the month just completed. If data is not available for the 11 months preceding the initial use of this log, this value will be equal to the value for tons per month. For the second month it will be the sum of the first month and the second month. Indicate in parentheses the number of months summed, that is, 6 (2) represent 6 tons VOC emitted in 2 months.

(**) Minimum overall control efficiency to be used in emission calculations is set at 99.0%; based on thermal oxidizers destruction efficiency of 99.8% (99.4% for #2 kiln) multiplied by average capture efficiency (assigned 100%). Thermal oxidizer (TO) performance tests were done on May 29, 2003 for kiln #1 and March 24, 2004 for Kiln #2; and Division acceptance letter dated February 8, 2005. The permittee may reestablish these values through additional source emissions testing. The Technical Secretary must be notified at least thirty (30) days prior to the actual testing date so that an official observer may be present. When approved the revised values may be incorporated into this permit by an administrative amendment. A capture efficiency of 100% is assigned to this source based on the source meeting the requirements for permanent total enclosure as set forth in USEPA Method 204, 40 CFR Part 51, Appendix M.

E20-6. Visible emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for one (1) six-minute period in any one (1) hour period, and for no more than four (4) six-minute periods in any twenty-four (24) hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average). TAPCR 1200-3-5-.03(6) and TAPCR 1200-3-5-.01(1)

E20-7. This source shall not fire greenware without the use of the control device(s). In case of control device malfunction, any product previously loaded into the kiln may finish traveling through the heated kiln. Ballast or dummy parts would be loaded in to the kiln in order to maintain the kiln thermal mass balance. No additional green product would be loaded into the kiln until the control device is fully and properly functioning.

E20-8. Compliance with conditions E-2, E-4 and E-5 shall be shown by calculating the actual quantities of VOC and HAPs emitted from this source and facility utilizing the usage logs, methods and procedures as outlined in conditions E20-4 & E20-5; and maintaining the required thermal oxidizer (TO) temperature as outlined below:

Kiln #1: The Thermal Oxidizer (TO) shall not operate more than 50° F below the average combustion temperature recorded during the performance test, which is 780° F. Therefore, the minimum operating temperature for a 3-hour period is set at 730° F.

Kiln #2: The TO shall not operate more than 50° F below the average combustion temperature recorded during the performance test, which is 797° F. Therefore, the minimum operating temperature for a 3-hour period is set at 747° F.

The permittee shall monitor the temperature of each thermal oxidizer control device. The temperature-sensing device shall have an accuracy that is ± 25°F, as described by manufacture specifications, over its operating range. The oxidizer shall be equipped with a liquid crystal or equivalent display that continuously indicates the sensed temperature. The following applies to each oxidizer control device:

The unit shall continuously record a temperature for oxidizers equipped with continuous strip chart recorder or digital data logger. All 3-hour periods of

operation in which the average combustion temperature was more than 28°C (50°F) below the combustion temperature specified above shall be considered deviations.

(End of conditions)

The permit application gives the location of this source as 35°28'37" Latitude and 84°38'41" Longitude.