Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

NOTICE OF 30-DAY PERIOD
FOR PUBLIC COMMENT

Preliminary Findings Regarding a
Significant Modification to a
Part 70 Operating Permit

for Allison Transmission, Inc. - Speedway Main Campus in Marion County

Significant Source Modification No.: 097-36831-00310
Significant Permit No.: 097-36910-00310

The Office of Air Quality (OAQ) has reviewed a modification application submitted by Allison Transmission, Inc. - Speedway Main Campus, located at One Allison Way, Indianapolis, Indiana 46222 on February 12, 2016 for a significant modification of its Part 70 Operating Permit Renewal issued on February 24, 2015. If approved by IDEM's Office of Air Quality (OAQ), this proposed modification would allow Allison Transmission, Inc. to make certain changes at its existing source. The application submitted by Allison Transmission, Inc. is related to the installation of two (2) 2,965 HP emergency generators, the construction of four new test cells identified as 50N, 50S, 52N and 52S and the modification of the descriptive information of engine transmission test cell 53. Allison Transmission submitted three individual projects under one permit application. One project consists of the construction of engine transmission test cells 50N, 50S, 52N, and 52S. The second project consists of the installation of two emergency generators. The final project consists of the modification of the descriptive information of engine transmission test cell 53.

The applicant intends to construct and operate new equipment that will emit air pollutants; therefore, the permit contains new or different permit conditions. In addition, some conditions from previously issued permits/approvals have been corrected, changed, or removed. These corrections, changes, and removals may include Title I changes. IDEM has reviewed this application and has developed preliminary findings, consisting of a draft permit and several supporting documents, which would allow the applicant to make this change.

A copy of the permit application and IDEM's preliminary findings are available at:

Speedway Public Library
5633 W. 25th Street
Speedway, Indiana 46224

A copy of the preliminary findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/.

How can you participate in this process?

The date that this notice is published in a newspaper marks the beginning of a 30-day public comment period. If the 30th day of the comment period falls on a day when IDEM offices are closed for business, all comments must be postmarked or delivered in person on the next business day that IDEM is open.

You may request that IDEM hold a public hearing about this draft permit. If adverse comments concerning the **air pollution impact** of this draft permit are received, with a request for a public hearing, IDEM will decide whether or not to hold a public hearing. IDEM could also decide to hold a public meeting instead of, or in addition to, a public hearing. If a public hearing or meeting is held, IDEM will make a separate announcement of the date, time, and location of that hearing or meeting. At a hearing, you would have an opportunity to submit written comments and make verbal comments. At a meeting,

you would have an opportunity to submit written comments, ask questions, and discuss any air pollution concerns with IDEM staff.

Comments and supporting documentation, or a request for a public hearing should be sent in writing to IDEM at the address below. If you comment via e-mail, please include your full U.S. mailing address so that you can be added to IDEM's mailing list to receive notice of future action related to this permit. If you do not want to comment at this time, but would like to receive notice of future action related to this permit application, please contact IDEM at the address below. Please refer to permit number 097-36831-00310 and 097-36910-00310 in all correspondence.

Comments should be sent to:

David Matousek
IDEM, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
(800) 451-6027, ask for extension 2-8253
Or dial directly: (317) 232-8253
Fax: (317) 232-6749 attn: David Matousek
E-mail: dmatouse@idem.IN.gov

All comments will be considered by IDEM when we make a decision to issue or deny the permit. Comments that are most likely to affect final permit decisions are those based on the rules and laws governing this permitting process (326 IAC 2), air quality issues, and technical issues. IDEM does not have legal authority to regulate zoning, odor, or noise. For such issues, please contact your local officials.

For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

What will happen after IDEM makes a decision?

Following the end of the public comment period, IDEM will issue a Notice of Decision stating whether the permit has been issued or denied. If the permit is issued, it may be different than the draft permit because of comments that were received during the public comment period. If comments are received during the public notice period, the final decision will include a document that summarizes the comments and IDEM's response to those comments. If you have submitted comments or have asked to be added to the mailing list, you will receive a Notice of the Decision. The notice will provide details on how you may appeal IDEM's decision, if you disagree with that decision. The final decision will also be available on the Internet at the address indicated above, at the local library indicated above, and the IDEM public file room on the 12th floor of the Indiana Government Center North, 100 N. Senate Avenue, Indianapolis, Indiana 46204-2251.

If you have any questions, please contact David Matousek of my staff at the above address.

Nathan C. Bell, Section Chief
Permits Branch
Office of Air Quality

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

DRAFT

Carol S. Comer
Commissioner

Ms. Teresa Colson
Allison Transmission, Inc. - Speedway Main Campus
One Allison Way
Indianapolis, Indiana 46222

Re: 097-36831-00310
Significant Source Modification

Dear Ms. Colson:

Allison Transmission, Inc. was issued Part 70 Operating Permit Renewal No. T097-34667-00310 on February 24, 2015 for a stationary transmission manufacturing plant located at One Allison Way, Indianapolis, Indiana 46222. An application to modify the source was received on February 12, 2016. Pursuant to the provisions of 326 IAC 2-7-10.5, a Significant Source Modification is hereby approved as described in the attached Technical Support Document.

Pursuant to 326 IAC 2-7-10.5, the following emission are approved for construction or modification at the source:

1. The emission unit description contained in Section A.2(c) for emission unit ETC was updated to remove test cells 40N, 40S, 50, and 51S and to add test cells 50N, 50S, 52N, and 52S. Emission unit ETC was updated to include the following descriptive information for these test cells:

Test Cell ID	Construction Dates	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
50N	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 093
50S	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 097
52N	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 098
52S	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 099

[40 CFR 60, Subpart IIII] [40 CFR 60, Subpart JJJJ] [40 CFR 63, Subpart ZZZZ]

2. One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1a, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1a. [40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

3. One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1b, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1b. [40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

4. Transmission Test Cell 53, identified as ETC53, approved in 2014 for construction, consisting of two reciprocating engines (53N and 53S) firing low sulfur diesel fuel (150 ppm or less), with an estimated maximum engine size of equal to or less than 1000 HP each and exhausting to Stack/Vents PTE95 and PTE96.

   Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60 Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply.

The following construction conditions are applicable to the proposed modification:

General Construction Conditions

1. The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).

2. This approval to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

3. Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

Commenced Construction

4. Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(j), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.

Approval to Construct

6. Pursuant to 326 IAC 2-7-10.5(h)(2), this Significant Source Modification authorizes the construction of the new emission unit(s), when the Significant Source Modification has been issued.

   Pursuant to 326 IAC 2-7-10.5(m), the emission units constructed under this approval shall not be placed into operation prior to revision of the source's Part 70 Operating Permit to incorporate the required operation conditions.

DRAFT

Pursuant to 326 IAC 2-7-12, operation of the new emission unit(s) is not approved until the Significant Permit Modification has been issued. Operating conditions shall be incorporated into the Part 70 Operating Permit as a Significant Permit Modification in accordance with 326 IAC 2-7-10.5(m)(2) and 326 IAC 2-7-12 (Permit Modification).

A copy of the permit is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5.

If you have any questions on this matter, please contact David Matousek of my staff, OAQ, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana, 46204-2251, or call at (800) 451-6027, and ask for David Matousek or extension 2-8253 or dial (317) 232-8253.

Sincerely,

Nathan C. Bell, Section Chief
Permits Branch
Office of Air Quality

Attachments: Significant Source Modification and Technical Support Document

cc: File - Marion County
Marion County Health Department
U.S. EPA, Region 5
Compliance and Enforcement Branch

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

Significant Source Modification to a Part 70 Source

OFFICE OF AIR QUALITY

DRAFT

Allison Transmission, Inc. - Speedway Main Campus
One Allison Way
Indianapolis, Indiana 46222

(herein known as the Permittee) is hereby authorized to construct subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17. This permit also addresses certain new source review requirements for new and/or existing equipment and is intended to fulfill the new source review procedures pursuant to 326 IAC 2-7-10.5, applicable to those conditions.

Significant Source Modification No.: 097-36831-00310	
Issued by: Nathan C. Bell, Section Chief Permits Branch Office of Air Quality	Issuance Date:

DRAFT

TABLE OF CONTENTS

DRAFT

D.8. EMISSIONS UNIT OPERATION CONDITIONS

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.8.1 Particulate Matter Limitations Except Lake County [326 IAC 6.5-1-2(a)]

Compliance Determination Requirements

D.8.2 Particulate Control

D.9. EMISSIONS UNIT OPERATION CONDITIONS

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.9.1 Particulate Matter Limitations Except Lake County [326 IAC 6.5-1-2(a)]
D.9.2 PSD Minor Limit [326 IAC 2-2]
D.9.3 Nonattainment NSR Minor Limit [326 IAC 2-1.1-5]
D.9.4 Sulfur Dioxide (SO2) [326 IAC 7-1.1-1]
D.9.5 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

Compliance Determination Requirements

D.9.6 NOx Emissions Determination
D.9.7 CO Emissions Determination
D.9.8 SO2 Emissions Determination
D.9.9 Sulfur Dioxide Emissions and Sulfur Content

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.9.10 Record Keeping Requirements
D.9.11 Reporting Requirements

E.1. New Source Performance Standards [326 IAC 2-7-5(1)] [326 IAC 12-1] [40 CFR 60, Subpart Dc]

E.1.1 General Provision Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR 60, Subpart A]
E.1.2 Standard of Performance for Small Industrial-Commercial Institutional Steam Generating Units [326 IAC 12] [40 CFR 60, Subpart Dc]

E.2. New Source Performance Standards [326 IAC 2-7-5(1)] [326 IAC 12-1] [40 CFR 60, Subpart IIII]

E.2.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR Part 60, Subpart A]
E.2.2 Standard of Performance for Stationary Compression Ignition Internal Combustion Engines [326 IAC 12] [40 CFR 60, Subpart IIII]
E.2.3 Standard of Performance for Stationary Compression Ignition Internal Combustion Engines [326 IAC 12] [40 CFR 60, Subpart IIII]

E.3. National Emission Standards for Hazardous Air Pollutants [326 IAC 2-7-5(1)] [326 IAC 20-1] [40 CFR 63, Subpart CCCCCC]

E.3.1 General Provision Relating National Emission Standards for Hazardous Air Pollutants [326 IAC 20] [40 CFR 63, Subpart A]
E.3.2 Standard National Emission Standards for Hazardous Air Pollutants for Gasoline Dispensing Facilities [40 CFR Part 63.11110, Subpart CCCCCC]

E.4. National Emission Standards for Hazardous Air Pollutants [326 IAC 2-7-5(1)] [326 IAC 20-1] [40 CFR 63, Subpart WWWWWW]

E.4.1 General Provision Relating to National Emission Standards for Hazardous Air Pollutants [326 IAC 20-1] [40 CFR 63, Subpart A]
E.4.2 National Emission Standards for Hazardous Air Pollutants for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW]

E.5. New Source Performance Standards [326 IAC 2-7-5(1)] [326 IAC 12-1] [40 CFR 60, Subpart KKKK]

E.5.1 General Provision Relating to New Source Performance Standards (NSPS) [40 CFR 60, Subpart A] [326 IAC 12-1]

E.5.2 Stationary Combustion Turbines NSPS Requirements [40 CFR 60, Subpart KKKK] [326 IAC 12]

E.6. National Emission Standards for Hazardous Air Pollutants [326 IAC 2-7-5(1)] [326 IAC 20-1] [40 CFR 63, Subpart ZZZZ]

E.6.1 General Provision Relating to National Emission Standards for Hazardous Air Pollutants [326 IAC 20-1] [40 CFR 63, Subpart A]

E.6.2 Stationary Reciprocating Internal Combustion Engines NESHAP [326 IAC 20-82] [40 CFR 63, Subpart ZZZZ]

E.6.3 Stationary Reciprocating Internal Combustion Engines NESHAP [326 IAC 20-82] [40 CFR 63, Subpart ZZZZ]

E.7. New Source Performance Standards [326 IAC 2-7-5(1)] [326 IAC 12-1] [40 CFR 60, Subpart JJJJ]

E.7.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR Part 60, Subpart A]

E.7.2 Standard of Performance for Stationary Compression Ignition Internal Combustion Engines [326 IAC 12] [40 CFR 60, Subpart JJJJ]

Certification
Emergency Occurrence Report
Part 70 Usage and Quarterly Reports
Quarterly Deviation and Compliance Monitoring Report

Attachment A - 40 CFR 60, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
Attachment B - 40 CFR 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
Attachment C - 40 CFR 63, Subpart CCCCCC, National Emissions Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities
Attachment D - 40 CFR 63, Subpart WWWWWW, National Emissions Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations
Attachment E - 40 CFR 60, Subpart KKKK, Standards of Performance for Stationary Combustion Turbines
Attachment F - 40 CFR 63, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants Reciprocating Internal Combustion Engines
Attachment G - 40 CFR 60, Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

DRAFT

SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)][326 IAC 2-7-5(14)][326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary transmission manufacturing plant.

Source Address:	One Allison Way, Indianapolis, Indiana 46222
General Source Phone Number:	317-242-2042
SIC Code:	3714 (Motor Vehicle Parts and Accessories)
County Location:	Marion County, Wayne Township
Source Location Status:	Nonattainment for SO_2 standard Attainment for all other criteria pollutants
Source Status:	Part 70 Operating Permit Program Major Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Nested Source with fossil fuel fired boilers (or combinations thereof) totaling more than two hundred fifty million (250,000,000) British thermal units per hour heat input, as 1 of 28 Source Categories, within a non-listed source

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)][326 IAC 2-7-5(14)]

This stationary source consists of the following emission units and pollution control devices:

(a) One (1) Union Iron Works Boiler, identified as emission unit BLR 4, capable of combusting only natural gas, with a maximum capacity of seventy two (72) million British thermal units (MMBtu) Btu per hour, exhausting out one stack identified as stack ID# 3107 and constructed in 1953.

(b) One (1) Union Iron Works Boiler, identified as emission unit BLR 5, capable of combusting only natural gas, with a maximum capacity of ninety six (96) million British thermal units (MMBtu) Btu per hour, exhausting out one stack identified as stack ID# 3108 and constructed in 1969.

(c) Emission Unit ETC consists of the following twenty five (25) engineering development transmission test cells; 701, 704, 705, 706, 707, 709, 710, 711, 712, 32N, 32S, 38N, 39N, 39S, 41N, 41S, 48N, 48S, 49N, 49S, 50N, 50S, 51N, 52N and 52S. The table below lists the fuel type and engine type that each cell is capable of accommodating based on the physical characteristics of each cell. Test cell 704 utilizes an oxidation catalyst system to control CO emissions.

Test Cell ID	Construction Dates	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
701	prior 1977	Diesel	Reciprocating or Gas Turbine	4000	PTE 057
704	prior 1977	Diesel	Reciprocating	2400	PTE 065

Test Cell ID	Construction Dates	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
705	prior 1977	Diesel	Reciprocating or Gas Turbine	2400 for reciprocating; 4000 for gas turbine	PTE 067
706	prior 1977	Diesel	Reciprocating	4000	PTE 069
707	prior 1977	Diesel	Reciprocating	2400	PTE 071
709	prior 1977	Diesel	Reciprocating	2400	PTE 075
710	prior 1977	Diesel	Reciprocating	1500	PTE 077
711	prior 1977	Diesel	Reciprocating	2400	PTE 079
712	prior 1977	Diesel	Reciprocating	1500	PTE 080
32N	prior 1977	Diesel	Reciprocating	2400	PTE 008
32S	prior 1977	Diesel	Reciprocating	1500	PTE 006
38N	prior 1977	Diesel	Reciprocating	4000	PTE 011
39N	prior 1977 modified 1980's	Diesel	Reciprocating	2400	PTE 018
39S	prior 1977	Diesel	Reciprocating	1500	PTE 020
41N	prior 1977	Diesel	Reciprocating	1200	PTE 023
41S	prior 1977	Diesel	Reciprocating	1200	PTE 021
48N	prior 1977	Diesel	Reciprocating	1200	PTE 040
48S	prior 1977	Diesel	Reciprocating	1200	PTE 041
49N	prior 1977	Diesel	Reciprocating	1500	PTE 086
49S	prior 1977	Diesel	Reciprocating	1500	PTE 087
50N	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 093
50S	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 097
51N	prior 1977	Diesel	Reciprocating	1200	PTE 084

Test Cell ID	Construction Dates	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
52N	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 098
52S	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 099

All of the engines except gas turbine engines located in Test Cells 701 and 705 are affected sources under 40 CFR 63, Subpart ZZZZ. Any gas turbine engines in test cells 701 and 705 are considered affected sources under 40 CFR 60, Subpart KKKK when a new turbine is installed in the test cell and a test cell exemption does not apply. The diesel reciprocating engines in each of the test cells are considered affected sources under 40 CFR 60, Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply. The gasoline reciprocating engines in test cells 50N, 50S, 52N, and 52S are considered an affected source under 40 CFR 60, Subpart JJJJ when a new gasoline engine is installed in the test cell and a test cell exemption does not apply.

(d) Emission unit DTC consists of the following four (4) transmission reliability test cells, TC-107, TC-109, TC-111 and TC-112. All test cells were constructed in 1985. The following engines can be used in any one of the individual test cells mentioned above:

Test Cell ID	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
TC-107	Diesel	Reciprocating	1500	PTE 045
TC-109	Diesel	Reciprocating	1500	PTE 043
TC-111	Diesel	Reciprocating	1500	PTE 049
TC-112	Diesel	Reciprocating	1500	PTE 050

Under 40 CFR 63, Subpart ZZZZ, these engines are each an affected source. The engines in each of the test cells are considered affected sources under 40 CFR 60, Subpart IIII when a new engine is installed in the test cell and a test cell exemption does not apply.

(e) Emission unit PTS14 consists of the following five (5) transmission test stands, identified as test stand O-1, O-2, O-24, O-25 and O-31. Test stands O-1, O-2, O-24, O-25 and O-31 were constructed in 1978, 1979, 1986, 1986, and 1984 respectively. The table below lists the fuel type and engine type that each stand is capable of accommodating based on the physical characteristics of each stand. Test stands O-1, O-2, and O-31 each utilize an oxidation catalyst system to control CO emissions.

Test Stand ID	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
O-1	Diesel	Reciprocating	2400	14041
O-2	Diesel	Reciprocating	2400	14038
O-24	Diesel	Reciprocating	600	14024

Test Stand ID	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
O-25	Diesel	Reciprocating	600	14023
O-31	Diesel	Reciprocating	2400	14045

Under 40 CFR 63, Subpart ZZZZ, these engines are each an affected source. The engines in each of the test stands are considered affected sources under 40 CFR 60, Subpart IIII when a new engine is installed in the test stand and a test cell exemption does not apply.

(f) Transmission Test Cell 702, identified as Emission Unit ID ETC702, consisting of one (1) reciprocating engine firing diesel fuel, with an estimated maximum engine size of 4000 hp, and exhausting at Stack/ Vent IDs PTE062 and PTE062A. This emission unit can accommodate engines of greater than 600 horsepower. Constructed in 2002.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60, Subpart IIII when a new engine is installed in the test cell and a test cell exemption does not apply.

(g) One (1) natural gas-fired boiler, identified as Emission Unit ID BLR6, constructed in 2011, with a maximum heat input of 99 million Btu per hour, equipped with low-NO_X burners and flue gas recirculation.

Under 40 CFR 60, Subpart Dc, this operation is an affected source.

(h) Hydrochloric Acid Tanks in Plating Room

(i) Transmission Test Cell 55, identified as ETC55, permitted in 2013, consisting of two reciprocating diesel-fired engines, with an estimated maximum engine size of 4,000 hp each, exhausting to Stacks/Vents PTE93 and PTE94.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60, Subpart IIII when a new engine is installed in the test cell and a test cell exemption does not apply.

(j) Transmission Test Cell 53, identified as ETC53, approved in 2015 for construction, consisting of two reciprocating engines (53N and 53S) firing low sulfur diesel fuel (150 ppm or less), with an estimated maximum engine size of equal to or less than 1000 HP each and exhausting to Stack/Vents PTE95 and PTE96.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60 Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply.

(k) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1a, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1a. [40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

(l) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1b, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1b. [40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

A.3 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)][326 IAC 2-7-5(14)]

This stationary source also includes the following insignificant activities as defined in 326 IAC 2-7-1(21):

(a) Space heaters, process heaters, or boilers using the following fuels:

(1) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour. [326 IAC 6.5-1-2]

(2) Propane or liquefied petroleum gas, or butane-fired combustion sources with heat input equal to or less than six million (6,000,000) Btu per hour.

(3) Fuel oil-fired combustion sources with heat input equal to or less than two million (2,000,000) Btu per hour and firing fuel containing less than five-tenths (0.5) percent sulfur by weight.

(4) Combustion source flame safety purging on startup.

(b) Fuel dispensing activities, including the following:

(1) A gasoline fuel transfer and dispensing operation handling less than or equal to one thousand three hundred (1,300) gallons per day, such and filling storage tanks having a storage capacity equal to or less than ten thousand five hundred (10,500) gallons. Such storage tanks may be in a fixed location or on mobile equipment.

Under 40 CFR 63, Subpart CCCCCC, this operation is an affected source.

(2) A petroleum fuel, other than gasoline, dispensing facility having a storage capacity less than or equal to ten thousand five hundred (10,500) gallons, and dispensing three thousand five hundred (3,500) gallons per or less.

(c) The following VOC and HAP storage containers:

(1) Storage tanks with capacity less than or equal to one thousand (1,000) gallons and annual throughputs less than twelve thousand (12,000) gallons.

(2) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.

(d) Refractory storage not requiring air pollution control equipment.

(e) Application of oils, greases, lubricants or other nonvolatile materials applied as temporary protective coatings.

(f) Machining where an aqueous cutting coolant continuously floods the machining interface.

(g) Cleaners and solvents characterized as follows:

(1) having a vapor pressure equal to or less than 2kPa; 15 mm Hg; or 0.3 psi measured at 38 degrees C (100^{o} F) or;

(2) having a vapor pressure equal to or less than 0.7 kPa; 5mm Hg; or 0.1 psi measured at 20^{o} C (68^{o} F); the use of which for all cleaners and solvents combined does not exceed 145 gallons per 12 months.

(h) The following equipment related to manufacturing activities not resulting in the emission of HAPs: soldering equipment, welding equipment.

(i) Closed loop heating and cooling systems.

(j) Solvent recycling systems with batch capacity less than or equal to 100 gallons.

(k) Activities associated with the treatment of wastewater streams with an oil and grease content less than or equal to 1% by volume.

(l) Any operation using aqueous solutions containing less than 1% by weight of VOCs excluding HAPs.

(m) Water based adhesives that are less than or equal to 5% by volume of VOCs excluding HAPs.

(n) Noncontact cooling tower systems with forced and induced draft cooling tower system not regulated under a NESHAP.

(o) Quenching operations used with heat treating processes.

(p) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment.

(q) Heat exchanger cleaning and repair.

(r) Process vessel degassing and cleaning to prepare for internal repairs.

(s) Paved and unpaved roads and parking lots with public access [326 IAC 6-4].

(t) Underground conveyors.

(u) Asbestos abatement projects regulated by 326 IAC 14-10.

(v) Purging of gas lines and vessels that is related to routine maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process.

(w) Equipment used to collect any material that might be released during a malfunction, process upset, or spill cleanup, including catch tanks, temporary liquid separators, tanks, and fluid handling equipment.

(x) Blowdown for any of the following: boiler; compressors; pumps; and cooling tower.

(y) On-site fire and emergency response training approved by the department.

(z) Emergency diesel generators not exceeding 1600 horsepower. [326 IAC 6.5-1-2(a)]

(1) one (1) 1490 hp diesel emergency generator located in the Powerhouse courtyard.

(2) one (1) 490 hp diesel emergency generator located in Plant 7.

(3) one (1) 415 hp diesel emergency generator located in Plant 12/14.

Under 40 CFR 60, Subpart IIII, these operations are each an affected source. Under 40 CFR 63, Subpart ZZZZ, these operations are each an affected source.

(aa) Emergency Stationary fire pumps. [326 IAC 6.5-1-2(a)]

(bb) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including the following: deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations. [326 IAC 6.5-1-2(a)]

(1) Shot Blast controlled with fabric filters. [326 IAC 6.5-1-2(a)]

(cc) Purge double block and bleed valves.

(dd) Filter or coalescer media changeout.

(ee) A laboratory as defined in 326 IAC 2-7-1(21)(D).

(ff) Activities or categories of activities with individual HAP emissions not previously identified. Any unit emitting greater than 1 pound per day but less than 5 pounds per day or 1 ton per year of a single HAP.

(1) Production welding - manganese [326 IAC 6.5-1-2(a)]

(2) Hydrochloric Acid Tanks in Plating Room

(gg) The following activities or categories not previously identified which have potential emissions less than significance thresholds listed under 326 IAC 2-7-1(21);

(1) Heat Treating. [326 IAC 6.5-1-2(a)]

(2) The following tanks involved in plating operations:

(A) Three copper rod tanks (Dept. 1492 tanks A6, A7, A8)

(B) One copper strike tank (Dept. 1492 tank A5)

(C) Three (3) pickling (HCL) tanks (Dept. 1492 tanks A3, B1, B19)

(D) One anodizing (H_2SO_4) tank (Dept. 1492 tank G3)

(E) One manganese phosphate tank (Dept. 1492 tank F3)

Under 40 CFR 63, Subpart WWWWWW, this operation is an affected source.

(F) One solution machining (HNO_3) tank (Dept. 1492 tank J6)

(G) One (1) derusting tanks (Dept. 1492 tank E5)

(H) Three copper strip tanks (Dept. 1492 tanks I9, I10, I11)

(ii) Two (2) maintenance paint booths

(hh) One (1) soil and groundwater remediation system, identified as Emission Unit ENCORE, installed in 2003, consisting of:

(1) Soil vapor extraction (SVE) system, located at Plant 12, including miscellaneous piping and:

(A) seventeen (17) soil vapor extraction wells;

(B) one (1) 90 gallon knock-out tank, and

(C) one (1) 30 -horsepower blower rated at 750 standard cubic feet per minute (scfm), with emissions exhausting to one (1) stack identified as SVE vent.

(2) Soil vapor extraction (SVE) system, located at Plant 14, including miscellaneous piping and:

(A) nine (9) soil vapor extraction wells;

(B) one (1) 117 gallon knock-out tank, and

(C) one (1) 10-horsepower blower rated at 300 standard cubic feet per minute (scfm), with emissions exhausting to one (1) stack identified as SVE vent.

(3) Dense non-aqueous phase liquid (DNAPL)/groundwater recovery system, including miscellaneous piping, pumps and:

(A) up to twenty (20) recovery wells;

(B) one (1) DNAPL/water separator rated at 15 gpm, with emissions exhausting to one (1) stack identified as SVE vent;

(C) one (1) 875 gallon flow equalization tank, with emissions exhausting to one (1) stack identified as air stripper vent; and

(D) one (1) air stripper rated at sixty (60) gpm, with one (1) five (5) horsepower blower rated at 320 scfm with emissions exhausting to one (1) stack identified as air stripper vent.

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

(a) It is a major source, as defined in 326 IAC 2-7-1(22);

(b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Permit Term [326 IAC 2-7-5(2)][326 IAC 2-1.1-9.5][326 IAC 2-7-4(a)(1)(D)][IC 13-15-3-6(a)]

(a) This permit, T097-34667-00310, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

(b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.

B.3 Term of Conditions [326 IAC 2-1.1-9.5]

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

(a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or

(b) the emission unit to which the condition pertains permanently ceases operation.

B.4 Enforceability [326 IAC 2-7-7] [IC 13-17-12]

Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

B.5 Severability [326 IAC 2-7-5(5)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]

This permit does not convey any property rights of any sort or any exclusive privilege.

B.7 Duty to Provide Information [326 IAC 2-7-5(6)(E)]

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

(b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.8 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

(a) A certification required by this permit meets the requirements of 326 IAC 2-7-6(1) if:

(1) it contains a certification by a "responsible official" as defined by 326 IAC 2-7-1(35), and

(2) the certification states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) The Permittee may use the attached Certification Form, or its equivalent with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

(c) A "responsible official" is defined at 326 IAC 2-7-1(35).

B.9 Annual Compliance Certification [326 IAC 2-7-6(5)]

(a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. All certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than July 1 of each year to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

(b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) The annual compliance certification report shall include the following:

(1) The appropriate identification of each term or condition of this permit that is the basis of the certification;

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-7-5(3); and

(5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

The submittal by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

B.10 Preventive Maintenance Plan [326 IAC 2-7-5(12)][326 IAC 1-6-3]

(a) A Preventive Maintenance Plan meets the requirements of 326 IAC 1-6-3 if it includes, at a minimum:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

The Permittee shall implement the PMPs.

(b) If required by specific condition(s) in Section D of this permit where no PMP was previously required, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee’s control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The PMP extension notification does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

The Permittee shall implement the PMPs.

(c) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. The

PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(d) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.11 Emergency Provisions [326 IAC 2-7-16]

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance and Enforcement Branch), or
Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
Facsimile Number: 317-233-6865

(5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4(c)(8) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.

(g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

B.12 Permit Shield [326 IAC 2-7-15][326 IAC 2-7-20][326 IAC 2-7-12]

(a) Pursuant to 326 IAC 2-7-15, the Permittee has been granted a permit shield. The permit shield provides that compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that either the applicable requirements are included and specifically identified in this permit or the permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable. The Indiana statutes from IC 13 and rules from 326 IAC, referenced in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a Part 70 permit under 326 IAC 2-7 or for applicable requirements for which a permit shield has been granted.

This permit shield does not extend to applicable requirements which are promulgated after the date of issuance of this permit unless this permit has been modified to reflect such new requirements.

(b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, IDEM, OAQ shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.

(c) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application. Erroneous information means information that the Permittee knew to

be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.

(d) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:

(1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;

(2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;

(3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and

(4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.

(e) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).

(f) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ, has issued the modifications. [326 IAC 2-7-12(c)(7)]

(g) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ, has issued the modification. [326 IAC 2-7-12(b)(8)]

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5][326 IAC 2-7-10.5]

(a) All terms and conditions of permits established prior to T097-34667-00310 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised under 326 IAC 2-7-10.5, or

(3) deleted under 326 IAC 2-7-10.5.

(b) Provided that all terms and conditions are accurately reflected in this combined permit, all previous registrations and permits are superseded by this combined new source review and part 70 operating permit.

B.14 Termination of Right to Operate [326 IAC 2-7-10][326 IAC 2-7-4(a)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source’s existing permit, consistent with 326 IAC 2-7-3 and 326 IAC 2-7-4(a).

B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-7-5(6)(C)][326 IAC 2-7-8(a)][326 IAC 2-7-9]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit.
[326 IAC 2-7-5(6)(C)] The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:

(1) That this permit contains a material mistake.

(2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.

(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]

(c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-7-9(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]

B.16 Permit Renewal [326 IAC 2-7-3][326 IAC 2-7-4][326 IAC 2-7-8(e)]

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(42). The renewal application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(b) A timely renewal application is one that is:

(1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and

(2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-7 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified, pursuant to 326 IAC 2-7-4(a)(2)(D), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.17 Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12]

(a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.18 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)][326 IAC 2-7-12(b)(2)]

(a) No Part 70 permit revision or notice shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.

(b) Notwithstanding 326 IAC 2-7-12(b)(1) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.

B.19 Operational Flexibility [326 IAC 2-7-20][326 IAC 2-7-10.5]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b) or (c) without a prior permit revision, if each of the following conditions is met:

(1) The changes are not modifications under any provision of Title I of the Clean Air Act;

(2) Any preconstruction approval required by 326 IAC 2-7-10.5 has been obtained;

(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

(5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-7-20(b)(1) and (c)(1). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-7-20(b)(1) and (c)(1).

(b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(37)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

(1) A brief description of the change within the source;

(2) The date on which the change will occur;

(3) Any change in emissions; and

(4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) Emission Trades [326 IAC 2-7-20(c)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).

(d) Alternative Operating Scenarios [326 IAC 2-7-20(d)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ or U.S. EPA is required.

(e) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.20 Source Modification Requirement [326 IAC 2-7-10.5]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2.

B.21 Inspection and Entry [326 IAC 2-7-6][IC 13-14-2-2][IC 13-30-3-1][IC 13-17-3-2]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy any records that must be kept under the conditions of this permit;

(c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

(d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.22 Transfer of Ownership or Operational Control [326 IAC 2-7-11]

(a) The Permittee must comply with the requirements of 326 IAC 2-7-11 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

(b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.23 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)][326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.

(b) Except as provided in 326 IAC 2-7-19(e), failure to pay may result in administrative enforcement action or revocation of this permit.

(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.24 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314] [326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-7-5(1)]

C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

C.2 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-1 (Applicability) and 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1.

C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

The Permittee shall not operate an incinerator except as provided in 326 IAC 4-2 or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in 326 IAC 9-1-2 or in this permit.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted. The provisions of 326 IAC 1-7-1(3), 326 IAC 1-7-2, 326 IAC 1-7-3(c) and (d), 326 IAC 1-7-4, and 326 IAC 1-7-5(a), (b), and (d) are not federally enforceable.

C.7 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of

326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

(1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or

(2) If there is a change in the following:

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

(f) Demolition and Renovation
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).

(g) Indiana Licensed Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Licensed Asbestos inspector is not federally enforceable.

Testing Requirements [326 IAC 2-7-6(1)]

C.8 Performance Testing [326 IAC 3-6]

(a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.9 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)][326 IAC 2-7-6(1)]

C.10 Compliance Monitoring [326 IAC 2-7-5(3)][326 IAC 2-7-6(1)]

(a) For new units:
Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units shall be implemented on and after the date of initial start-up.

(b) For existing units:
Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance to begin such monitoring. If, due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

C.11 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

(a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale. The analog instrument shall be capable of measuring values outside of the normal range.

(b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

Corrective Actions and Response Steps [326 IAC 2-7-5][326 IAC 2-7-6]

C.12 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

(a) The Permittee shall maintain the most recently submitted written emergency reduction plans (ERPs) consistent with safe operating procedures.

(b) Upon direct notification by IDEM, OAQ that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.13 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68]

If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

C.14 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]

Upon detecting an excursion where a response step is required by the D Section or an exceedance of a limitation in this permit:

(a) The Permittee shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned or are returning to normal without operator action (such as through response by a computerized distribution control system); or

(3) any necessary follow-up actions to return operation to normal or usual manner of operation.

(c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:

(1) monitoring results;

(2) review of operation and maintenance procedures and records; and/or

(3) inspection of the control device, associated capture system, and the process.

(d) Failure to take reasonable response steps shall be considered a deviation from the permit.

(e) The Permittee shall record the reasonable response steps taken.

C.15 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5][326 IAC 2-7-6]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall submit a description of its response actions to IDEM, OAQ no later than seventy-five (75) days after the date of the test.

(b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.16 Emission Statement [326 IAC 2-7-5(3)(C)(iii)][326 IAC 2-7-5(7)][326 IAC 2-7-19(c)][326 IAC 2-6]

Pursuant to 326 IAC 2-6-3(a)(1), the Permittee shall submit by July 1 of each year an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:

(1) Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);

(2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1(33) (“Regulated pollutant, which is used only for purposes of Section 19 of this rule”) from the source, for purpose of fee assessment.

The statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue
MC 61-50 IGCN 1003
Indianapolis, Indiana 46204-2251

The emission statement does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

C.17 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. Support information includes the following, where applicable:

(AA) All calibration and maintenance records.
(BB) All original strip chart recordings for continuous monitoring instrumentation.
(CC) Copies of all reports required by the Part 70 permit.

Records of required monitoring information include the following, where applicable:

(AA) The date, place, as defined in this permit, and time of sampling or measurements.
(BB) The dates analyses were performed.
(CC) The company or entity that performed the analyses.
(DD) The analytical techniques or methods used.
(EE) The results of such analyses.
(FF) The operating conditions as existing at the time of sampling or measurement.

These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

C.18 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of this paragraph. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that a deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

(b) The address for report submittal is:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(d) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

Stratospheric Ozone Protection

C.19 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with applicable standards for recycling and emissions reduction.

DRAFT

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Descriptions:

(a) One (1) Union Iron Works Boiler, identified as emission unit BLR 4, capable of combusting only natural gas, with a maximum capacity of seventy two (72) million British thermal units (MMBtu) Btu per hour, exhausting out one stack identified as stack ID# 3107 and constructed in 1953.

(b) One (1) Union Iron Works Boiler, identified as emission unit BLR 5, capable of combusting only natural gas, with a maximum capacity of ninety six (96) million British thermal units (MMBtu) Btu per hour, exhausting out one stack identified as stack ID# 3108 and constructed in 1969.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Particulate Rules: Marion County [326 IAC 6.5-6-2(a)] [326 IAC 6.5-6-2(b)]

(a) Pursuant to 326 IAC 6.5-6-2(a), particulate (PM) emissions from emission units BLR 4 and BLR 5 shall be limited to:

(1) 0.15 pounds per million Btu for each emission unit; and

(2) 39.3 tons per year for all emission units combined.

(b) Pursuant to 326 IAC 6.5-6-2(b), compliance with the particulate (PM) emissions limit in Condition D.1.1(a) shall be determined at the end of each month based on the sum of the monthly calculated emissions for the most recent twelve (12) consecutive month period. The monthly emissions shall be calculated using AP-42 emissions factors or alternative emission factors approved by the Commissioner.

D.1.2 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for emission units BLR 4 and BLR 5. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.3 Record Keeping Requirements

(a) To document the compliance status with Condition D.1.1(b), the Permittee shall maintain monthly fuel usage records for each boiler BLR 4 and BLR 5.

(b) Section C - General Record Keeping Requirements contains the Permittee's obligation with regard to the records required to be maintained by this condition.

D.1.4 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.1.1(b) shall be submitted using the reporting form located at the end of this permit, or its equivalent, not later than thirty (30) days after the end of the calendar quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35).

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Descriptions:

(c) Emission Unit ETC consists of the following twenty five (25) engineering development transmission test cells; 701, 704, 705, 706, 707, 709, 710, 711, 712, 32N, 32S, 38N, 39N, 39S, 41N, 41S, 48N, 48S, 49N, 49S, 50N, 50S, 51N, 52N and 52S. The table below lists the fuel type and engine type that each cell is capable of accommodating based on the physical characteristics of each cell. Test cell 704 utilizes an oxidation catalyst system to control CO emissions.

Test Cell ID	Construction Dates	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
701	prior 1977	Diesel	Reciprocating or Gas Turbine	4000	PTE 057
704	prior 1977	Diesel	Reciprocating	2400	PTE 065
705	prior 1977	Diesel	Reciprocating or Gas Turbine	2400 for reciprocating; 4000 for gas turbine	PTE 067
706	prior 1977	Diesel	Reciprocating	4000	PTE 069
707	prior 1977	Diesel	Reciprocating	2400	PTE 071
709	prior 1977	Diesel	Reciprocating	2400	PTE 075
710	prior 1977	Diesel	Reciprocating	1500	PTE 077
711	prior 1977	Diesel	Reciprocating	2400	PTE 079
712	prior 1977	Diesel	Reciprocating	1500	PTE 080
32N	prior 1977	Diesel	Reciprocating	2400	PTE 008
32S	prior 1977	Diesel	Reciprocating	1500	PTE 006
38N	prior 1977	Diesel	Reciprocating	4000	PTE 011
39N	prior 1977 modified 1980's	Diesel	Reciprocating	2400	PTE 018
39S	prior 1977	Diesel	Reciprocating	1500	PTE 020
41N	prior 1977	Diesel	Reciprocating	1200	PTE 023
41S	prior 1977	Diesel	Reciprocating	1200	PTE 021
48N	prior 1977	Diesel	Reciprocating	1200	PTE 040
48S	prior 1977	Diesel	Reciprocating	1200	PTE 041
49N	prior 1977	Diesel	Reciprocating	1500	PTE 086
49S	prior 1977	Diesel	Reciprocating	1500	PTE 087

50N	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 093
50S	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 097
51N	prior 1977	Diesel	Reciprocating	1200	PTE 084
52N	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 098
52S	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 099

All of the engines except gas turbine engines located in Test Cells 701 and 705 are affected sources under 40 CFR 63, Subpart ZZZZ. Any gas turbine engines in test cells 701 and 705 are considered affected sources under 40 CFR 60, Subpart KKKK when a new turbine is installed in the test cell and a test cell exemption does not apply. The diesel reciprocating engines in each of the test cells are considered affected sources under 40 CFR 60, Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply. The gasoline reciprocating engines in test cells 50N, 50S, 52N, and 52S are considered an affected source under 40 CFR 60, Subpart JJJJ when a new gasoline engine is installed in the test cell and a test cell exemption does not apply.

(k) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1a, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1a.
[40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

(l) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1b, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1b.
[40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.2.1 Particulate Matter Limitations Except Lake County [326 IAC 6.5-1-2(a)]

Pursuant to 326 IAC 6.5-1-2(a) (Particulate Matter Limitations Except Lake County), particulate (PM) emissions from each of the twenty five (25) Test Cells covered under Emissions Unit ETC (except test cells 50N, 50S, 52N, and 52S while combusting diesel fuel) and both emergency generators, identified as Genset 1a and Genset 1b shall not exceed three hundredths (0.03) grains per dry standard cubic foot of exhaust air.

D.2.2 Sulfur Dioxide (SO2) [326 IAC 7-1.1-1]

Pursuant to 326 IAC 7-1.1-1 (SO_2 Emissions Limitations), Sulfur Dioxide (SO_2) emissions from Test Cells 701, 704, 705, 706, 707, 709, 711, 32N and 38N shall each not exceed five tenths (0.5) pounds per million Btu heat input.

D.2.3 PSD Minor Limit [326 IAC 2-2]

(a) In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to Test Cell 39N, the Permittee shall comply with the following:

(1) NOx emissions from diesel fuel fired reciprocating engines utilized in Test Cell 39N shall be limited to less than forty (40) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(2) The input of diesel fuel to reciprocating engines utilized in Test Cell 39N shall be less than 182,481 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. For the purposes of determining compliance, each gallon of diesel fuel burned in reciprocating engines that are equal to or less than 600 horsepower shall be equivalent to one and thirty seven hundredths (1.378) gallons of diesel fuel burned in reciprocating engines that are greater than 600 horsepower.

Compliance with the above limits shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to Test Cell 39N.

(b) Pursuant to significant source modification 097-36831-00310, the Permittee shall comply with the following:

(1) Combined VOC emissions from test cells 50N, 52N, 50S, and 52S shall be less than 40.0 tons per twelve consecutive month period, with compliance determined at the end of each month.

(2) Combined NOx emissions from test cells 50N, 52N, 50S, and 52S shall be less than 40.0 tons per twelve consecutive month period, with compliance determined at the end of each month.

Compliance with the above emission limitations shall limit VOC and NOx emissions of test cells 50N, 52N, 50S, and 52S to less than 40 tons per twelve consecutive month period, each, and shall render the requirements of 326 IAC 2-2 (PSD) not applicable to the 2016 modification for test cells 50N, 52N, 50S, and 52S.

D.2.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for Emission Unit ETC. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.2.5 Sulfur Dioxide Emissions and Sulfur Content

Compliance for Test Cells 701, 704, 705, 706, 707, 709, 711, 32N and 38N shall be determined utilizing one of the following options:

(a) Pursuant to 326 IAC 3-7-4, the Permittee shall demonstrate that the sulfur dioxide emissions do not exceed five-tenths (0.5) pounds per million Btu heat input by:

(1) Providing vendor analysis of fuel delivered, if accompanied by a certification; or

(2) Analyzing the fuel sample to determine the sulfur content of the fuel via the procedures in 40 CFR 60, Appendix A, Method 19.

(A) Fuel samples may be collected from the fuel tank immediately after the fuel tank is filled and before any fuel is combusted; and

(B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling; or

(b) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6.

A determination of noncompliance pursuant to either of the methods specified in (a) or (b) above shall not be refuted by evidence of compliance pursuant to the other method.

D.2.6 Emission Factors and Performance Testing

(a) The Permittee shall use the following NOx emissions factors in conjunction with the actual throughput of diesel fuel fired in reciprocating engines utilized in Test Cell 39N to determine compliance with emissions limitation in Condition D.2.3:

Reciprocating Engine Size (horsepower)	NOx emissions factor
600 or less	0.6042 pounds per gallon of diesel fuel combusted
greater than 600	0.4384 pounds per gallon of diesel fuel combusted

Monthly NOx emissions shall be determined by the following equation:

NOx emissions (tons) = (0.6042 lbs/gal x gal throughput for engines 600 hp or less + 0.4384 lbs/gal x gal throughput for engines greater than 600 hp) / 2,000 lbs NOx per ton NOx

(b) In order to determine compliance with Condition D.2.3(b)(1), VOC emissions from test cells 50N, 52N, 50S, and 52S shall be calculated using the following equations:

(1) Total VOC Emissions from a Single Test Cell (tons/this month) = VOC Emissions from Gasoline Combustion from a Single Test Cell (tons/this month) + VOC Emissions from Natural Gas Combustion from a Single Test Cell (tons/month) + VOC Emissions from Diesel Combustion from a Single Test Cell (tons/month)

(2) VOC Emissions from Gasoline Combustion from a Single Test Cell (tons/this month) =

FC x HC x (1 / BSFC) x EF x CF x 1 ton/2,000 lb

Where:
FC = gallons of gasoline combusted this month
HC = heat content of gasoline, 130,000 Btu/gallon or documented site specific heat content
BSCF = brake specific fuel consumption, 8,000 Btu/hp.hr or documented engine specific factor
EF = VOC emission factor in g/kw.hr, 2.7 g/kw.hr or documented engine specific factor
CF = conversion factor, 1.645 E-03 lb.kw/g.hp

(3) VOC Emissions from Natural Gas Combustion from a Single Test Cell (tons/this month) =

FC x HC x (1 / BSFC) x EF x CF x 1 ton/2,000 lb

Where: FC = MMCF of natural gas combusted this month
HC = heat content of natural gas, 1,020 MMBtu/MMCF or documented site specific heat content
BSCF = brake specific fuel consumption, 8,750 Btu/hp.hr or documented engine specific factor
EF = VOC emission factor in g/hp.hr, 0.7 g/hp.hr or documented engine specific factor
CF = conversion factor, 2,204.63 lb.Btu/g.MMBtu

(4) VOC Emissions from Diesel Combustion from a Single Test Cell (tons/this month) =

FC x HC x (1 / BSFC) x EF x CF x 1 ton/2,000 lb

Where: FC = gallons of diesel combusted this month
HC = heat content of diesel, 140,000 Btu/gallon or documented site specific heat content
BSCF = brake specific fuel consumption, 7,000 Btu/hp.hr or documented engine specific factor
EF = VOC emission factor in g/kw.hr, 0.19 g/kw.hr or documented engine specific factor
CF = conversion factor, 1.645 E-03 lb.kw/g.hp

(5) Total VOC Emissions for Compliance with Condition D.2.3(b)(1) (tons/this month) = Total VOC Emissions from Test Cell 50N + Total VOC Emissions from Test Cell 52N + Total VOC Emissions from Test Cell 50S + Total VOC Emissions from Test Cell 52S

(6) VOC Emissions for Compliance with Condition D.2.3(b)(1) (tons/twelve consecutive month period) = Total VOC Emissions for Compliance with Condition D.2.3(b)(1) (tons/this month) + Total VOC Emissions for Compliance with Condition D.2.3(b)(1) (tons previous eleven months)

(c) In order to determine compliance with Condition D.2.3(b)(2), NOx emissions from test cells 50N, 52N, 50S, and 52S shall be calculated using the following equations:

(1) Total NOx Emissions from a Single Test Cell (tons/this month) = NOx Emissions from Gasoline Combustion from a Single Test Cell (tons/this month) + NOx Emissions from Natural Gas Combustion from a Single Test Cell (tons/month) + NOx Emissions from Diesel Combustion from a Single Test Cell (tons/month)

(2) NOx Emissions from Gasoline Combustion from a Single Test Cell (tons/this month) =

FC x HC x (1 / BSFC) x EF x CF x 1 ton/2,000 lb

Where: FC = gallons of gasoline combusted this month
HC = heat content of gasoline, 130,000 Btu/gallon or documented site specific heat content
BSCF = brake specific fuel consumption, 8,000 Btu/hp.hr or documented engine specific factor

EF = NOx emission factor in g/kw.hr, 2.7 g/kw.hr or documented engine specific factor
CF = conversion factor, 1.645 E-03 lb.kw/g.hp

(3) NOx Emissions from Natural Gas Combustion from a Single Test Cell (tons/this month) =

FC x HC x (1 / BSFC) x EF x CF x 1 ton/2,000 lb

Where: FC = MMCF of natural gas combusted this month
HC = heat content of natural gas, 1,020 MMBtu/MMCF or documented site specific heat content
BSCF = brake specific fuel consumption, 8,750 Btu/hp.hr or documented engine specific factor
EF = NOx emission factor in g/hp.hr, 1.0 g/hp.hr or documented engine specific factor
CF = conversion factor, 2,204.63 lb.Btu/g.MMBtu

(4) NOx Emissions from Diesel Combustion from a Single Test Cell (tons/this month) =

FC x HC x (1 / BSFC) x EF x CF x 1 ton/2,000 lb

Where: FC = gallons of diesel combusted this month
HC = heat content of diesel, 140,000 Btu/gallon or documented site specific heat content
BSCF = brake specific fuel consumption, 7,000 Btu/hp.hr or documented engine specific factor
EF = For test cells 50N, 52N, 50S, and 52S, the NOx emission factor in g/kw.hr, is 3.5 g/kw.hr for diesel engines with an output rating greater than 750 HP or 0.4 g/kw.hr for diesel engines with an output rating equal to or less than 750 HP or a documented engine specific factor.
CF = conversion factor, 1.645 E-03 lb.kw/g.hp

(5) Total NOx Emissions for Compliance with Condition D.2.3(b)(2) (tons/this month) = Total NOx Emissions from Test Cell 50N + Total NOx Emissions from Test Cell 52N + Total NOx Emissions from Test Cell 50S + Total NOx Emissions from Test Cell 52S

(6) NOx Emissions for Compliance with Condition D.2.3(b)(2) (tons/twelve consecutive month period) = Total NOx Emissions for Compliance with Condition D.2.3(b)(1) (tons/this month) + Total NOx Emissions for Compliance with Condition D.2.3(b)(1) (tons previous eleven months)

(d) Pursuant to IC 13-15-7-1, IC 13-15-7-2, 326 IC 2-1.1-9(2) and 326 IAC 2-1.1-11 the IDEM, OAQ reserves the authority to require the Permittee to conduct performance tests to verify the emissions factors of this permit.

(e) After issuance of this permit, if the performance test results indicate a discrepancy between the emission factors and the actual emissions rate observed during the test, the Permittee shall inform IDEM, OAQ, Permits Branch of such variation no later than 90 days of the submission of performance test report to IDEM.

(f) Pursuant to IC 13-15-7-1, IC 13-15-7-2 and 326 IC 2-1.1-9(2), the IDEM, OAQ may re-evaluate the permit conditions and emissions factors. IDEM, OAQ may, at its discretion, use the authority under IC 13-15-7-2, IC 13-15-7-2 and/or 326 IAC 2-1.1-9(2) to re-open and revise the permit to more closely reflect the actual performance test results using permit amendment or modification procedures.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.2.7 Record Keeping Requirements

(a) To document the compliance status with Condition D.2.2, the Permittee shall maintain records in accordance with (1) through (6) below. Records necessary to demonstrate compliance shall be available not later than thirty (30) days of the end of each compliance period.

(1) Calendar dates covered in the compliance determination period;

(2) Actual diesel fuel usage since last compliance determination period and equivalent sulfur dioxide emissions;

(3) A certification, signed by the owner or operator which is not necessarily the responsible official, that the records of the fuel supplier certifications represent all of the fuel combusted during the period; and

If the fuel supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:

(4) Fuel supplier certifications.

(5) The name of the fuel supplier; and

(6) A statement from the fuel supplier that certifies the sulfur content of the diesel fuel.

(b) To document the compliance status with Condition D.2.3 and Condition D.2.6, the Permittee shall:

(1) Maintain monthly records of the diesel fuel throughput in Test Cell 39N for engines 600 horsepower or less and maintain monthly records of diesel fuel throughput in Test Cell 39N for engines greater than 600 horsepower.

(2) Maintain records of NOx emissions on a monthly basis using the emissions factors in Condition D.2.6 in conjunction with monthly diesel fuel throughput in test Cell 39N to calculate emissions from Test Cell 39N.

(3) Maintain monthly records of fuel usage in test cells 50N, 52N, 50S, and 52S. Records shall include type of fuel combusted and the monthly amount of each fuel combusted.

(4) Maintain records of engine manufacturer emission estimates for VOC and NOx for each engine family installed in test cells 50N, 52N, 50S, and 52S.

(5) Maintain records of NOx and VOC emissions from test cells 50N, 52N, 50S, and 52S each month and each compliance period using the equations in Condition D.2.6.

(6) Maintain records of fuel consumption rates provided by the engine manufacturer for each engine type installed in test cells 50N, 52N, 50S, and 52S.

(c) Section C - General Record Keeping Requirements contains the Permittee's obligation with regard to the records required to be maintained by this condition.

D.2.8 Reporting Requirements

Quarterly summaries of the information to document the compliance status with Condition D.2.3 and Condition D.2.6 shall be submitted using the reporting forms located at the end of this permit, or their equivalent, not later than thirty (30) days after the end of the calendar quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The reports submitted by the Permittee do require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35).

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Descriptions:

(d) Emission unit DTC consists of the following four (4) transmission reliability test cells, TC-107, TC-109, TC-111 and TC-112. The emissions from test cells TC-107, TC-109, TC-111 and TC-112 are exhausted out stacks PTE 045, PTE 043, PTE 049 and PTE 050, respectively. All test cells were constructed in 1985. The following engines can be used in any one of the individual test cells mentioned above:

Test Cell ID	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
TC-107	Diesel	Reciprocating	1500	PTE 045
TC-109	Diesel	Reciprocating	1500	PTE 043
TC-111	Diesel	Reciprocating	1500	PTE 049
TC-112	Diesel	Reciprocating	1500	PTE 050

Under 40 CFR 63, Subpart ZZZZ, these engines are each an affected source. The engines in each of the test cells are considered affected sources under 40 CFR 60, Subpart IIII when a new engine is installed in the test cell and a test cell exemption does not apply.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.3.1 Particulate Matter Limitations Except Lake County [326 IAC 6.5-1-2(a)]

Pursuant to 326 IAC 6.5-1-2(a) (Particulate Matter Limitations Except Lake County), particulate (PM) emissions from each of the Test Cells TC-107, TC-109, TC-111 and TC-112 shall not exceed three hundredths (0.03) grains per dry standard cubic foot of exhaust air.

D.3.2 PSD Minor Limit [326 IAC 2-2]

In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to Test Cells TC-107, TC-109, TC-111 and TC-112, the Permittee shall comply with the following:

(a) Combined NOx emissions from diesel fuel fired reciprocating engines utilized in Test Cells TC-107, TC-109, TC-111 and TC-112 shall be limited to less than forty (40) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) The combined input of diesel fuel to reciprocating engines utilized in Test Cells TC-107, TC-109, TC-111 and TC-112 shall be less than 182,481 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. For the purposes of determining compliance, each gallon of diesel fuel burned in reciprocating engines that are equal to or less than 600 horsepower shall be equivalent to one and thirty seven hundredths (1.378) gallons of diesel fuel burned in reciprocating engines that are greater than 600 horsepower.

Compliance with the above limits shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to Test Cells TC-107, TC-109, TC-111 and TC-112.

D.3.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for Test Cells TC-107, TC-109, TC-111 and TC-112. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.3.4 Emission Factors and Performance Testing

(a) The Permittee shall use the following NOx emissions factors in conjunction with the actual throughput of diesel fuel fired in reciprocating engines utilized in Test Cells TC-107, TC-109, TC-111, TC-112 to determine compliance with emissions limitation in Condition D.3.2:

Reciprocating Engine Size (horsepower)	NOx emissions factor
600 or less	0.6042 pounds per gallon of diesel fuel combusted
greater than 600	0.4384 pounds per gallon of diesel fuel combusted

(b) Monthly NOx emissions shall be determined by the following equation:

NOx emissions (tons) = (0.6042 lbs/gal x gal throughput for engines 600 hp or less + 0.4384 lbs/gal x gal throughput for engines greater than 600 hp) / 2,000 lbs NOx per ton NOx

(c) Pursuant to IC 13-15-7-1, IC 13-15-7-2, 326 IC 2-1.1-9(2) and 326 IAC 2-1.1-11 the IDEM, OAQ reserves the authority to require the Permittee to conduct performance tests to verify the emissions factors of this permit.

(d) After issuance of this permit, if the performance test results indicate a discrepancy between the emission factors and the actual emissions rate observed during the test, the Permittee shall inform IDEM, OAQ, Permits Branch of such variation no later than 90 days of the submission of performance test report to IDEM.

(e) Pursuant to IC 13-15-7-1, IC 13-15-7-2 and 326 IC 2-1.1-9(2), the IDEM, OAQ may re-evaluate the permit conditions and emissions factors. IDEM, OAQ may, at its discretion, use the authority under IC 13-15-7-2, IC 13-15-7-2 and/or 326 IAC 2-1.1-9(2) to re-open and revise the permit to more closely reflect the actual performance test results using permit amendment or modification procedures.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.3.5 Record Keeping Requirements

(a) To document the compliance status with Condition D.3.2 and Condition D.3.4, the Permittee shall:

(1) Maintain monthly records of the diesel fuel throughput in Test Cells TC-107, TC-109, TC-111, TC-112 for engines 600 horsepower or less and maintain monthly records of diesel fuel throughput in Test Cells TC-107, TC-109, TC-111, TC-112 for engines greater than 600 horsepower.

(2) Maintain records of NOx emissions on a monthly basis using the emissions factors in Condition D.3.4 in conjunction with monthly diesel fuel throughput in Test Cells TC-107, TC-109, TC-111, TC-112 to calculate combined NOx emissions from Test Cells TC-107, TC-109, TC-111, TC-112. Records necessary to demonstrate the compliance status shall be available not later than thirty (30) days of the end of each compliance period.

(b) Section C - General Record Keeping Requirements contains the Permittee's obligation with regard to the records required to be maintained by this condition.

D.3.6 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.3.2 and Condition D.3.4 shall be submitted using the reporting form located at the end of this permit, or its equivalent, not later than thirty (30) days after the end of the calendar quarter being reported. The report submitted by the Permittee does require the certification a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35).

SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Descriptions:

(e) Emission unit PTS14 consists of the following five (5) transmission test stands, identified as test stand O-1, O-2, O-24, O-25 and O-31. Test stands O-1, O-2, O-24, O-25 and O-31 were constructed in 1978, 1979, 1986, 1986, and 1984 respectively. The table below lists the fuel type and engine type that each stand is capable of accommodating based on the physical characteristics of each stand. Test stands O-1, O-2, and O-31 each utilize an oxidation catalyst system to control CO emissions.

Test Stand ID	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
O-1	Diesel	Reciprocating	2400	14041
O-2	Diesel	Reciprocating	2400	14038
O-24	Diesel	Reciprocating	600	14024
O-25	Diesel	Reciprocating	600	14023
O-31	Diesel	Reciprocating	2400	14045

Under 40 CFR 63, Subpart ZZZZ, these engines are each an affected source. The engines in each of the test stands are considered affected sources under 40 CFR 60, Subpart IIII when a new engine is installed in the test stand and a test cell exemption does not apply.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.4.1 Particulate Matter Limitations Except Lake County [326 IAC 6.5-1-2(a)]

Pursuant to 326 IAC 6.5-1-2(a) (Particulate Matter Limitations Except Lake County), particulate (PM) emissions from each of the Test Stands O-1, O-2, O-24, O-25 and O-31 shall not exceed three hundredths (0.03) grains per dry standard cubic foot of exhaust air.

D.4.2 PSD Minor Limit [326 IAC 2-2]

In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) Requirements) not applicable to Test Stands O-1, O-2, O-24, O-25 and O-31, the Permittee shall comply with the following:

(a) Combined NOx emissions from diesel fuel fired reciprocating engines utilized in Test Stands O-1 and O-2 shall be limited to less than forty (40) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) The combined input of diesel fuel to reciprocating engines utilized in Test Stands O-1 and O-2 shall be less than 182,481 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. For the purposes of determining compliance, each gallon of diesel fuel burned in reciprocating engines that are equal to or less than 600 horsepower shall be equivalent to one and thirty seven hundredths (1.378) gallons of diesel fuel burned in reciprocating engines that are greater than 600 horsepower.

(c) Combined NOx emissions from diesel fuel fired reciprocating engines utilized in Test Stands O-24 and O-25 shall be limited to less than forty (40) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(d) The combined input of diesel fuel to reciprocating engines utilized in Test Stands O-24 and O-25 shall be less than 182,481 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. For the purposes of determining compliance, each gallon of diesel fuel burned in reciprocating engines that are equal to or less than 600 horsepower shall be equivalent to one and thirty seven hundredths (1.378) gallons of diesel fuel burned in reciprocating engines that are greater than 600 horsepower.

(e) NOx emissions from diesel fuel fired reciprocating engines utilized in Test Stand O-31 shall be limited to less than forty (40) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(f) The input of diesel fuel to reciprocating engines utilized in Test Stand O-31 shall be less than 182,481 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. For the purposes of determining compliance, each gallon of diesel fuel burned in reciprocating engines that are equal to or less than 600 horsepower shall be equivalent to one and thirty seven hundredths (1.378) gallons of diesel fuel burned in reciprocating engines that are greater than 600 horsepower.

Compliance with the above limits shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to Test Stands O-1, O-2, O-24, O-25 and O-31.

D.4.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for Test Stands O-1, O-2, O-24, O-25 and O-31. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.4.4 Emission Factors and Performance Testing

(a) The Permittee shall use the following NOx emissions factors in conjunction with the actual throughput of diesel fuel fired in reciprocating engines utilized in Test Stands O-1, O-2, O-24, O-25 and O-31 to determine compliance with emissions limitation in Condition D.4.2:

Reciprocating Engine Size (horsepower)	NOx emissions factor
600 or less	0.6042 pounds per gallon of diesel fuel combusted
greater than 600	0.4384 pounds per gallon of diesel fuel combusted

(b) Monthly NOx emissions shall be determined by the following equation:

NOx emissions (tons) = (0.6042 lbs/gal x gal throughput for engines 600 hp or less + 0.4384 lbs/gal x gal throughput for engines greater than 600 hp) / 2,000 lbs NOx per ton NOx

(c) Pursuant to IC 13-15-7-1, IC 13-15-7-2, 326 IC 2-1.1-9(2) and 326 IAC 2-1.1-11 the IDEM, OAQ reserves the authority to require the Permittee to conduct performance tests to verify the emissions factors of this permit.

(d) After issuance of this permit, if the performance test results indicate a discrepancy between the emission factors and the actual emissions rate observed during the test, the Permittee shall inform IDEM, OAQ, Permits Branch of such variation no later than 90 days of the submission of performance test report to IDEM.

(e) Pursuant to IC 13-15-7-1, IC 13-15-7-2 and 326 IC 2-1.1-9(2), the IDEM, OAQ may re-evaluate the permit conditions and emissions factors. IDEM, OAQ may, at its discretion, use the authority under IC 13-15-7-2, IC 13-15-7-2 and/or 326 IAC 2-1.1-9(2) to re-open and revise the permit to more closely reflect the actual performance test results using permit amendment or modification procedures.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.4.5 Record Keeping Requirements

(a) To document the compliance status with Condition D.4.2(b) and Condition D.4.4, for Test Stands O-1 and O-2, maintain monthly records of the diesel fuel throughput for engines 600 horsepower or less and maintain monthly records of diesel fuel throughput for engines greater than 600 horsepower. Maintain records of the combined NOx emissions on a monthly basis using the emissions factors in Condition D.4.4 in conjunction with combined monthly diesel fuel throughput in Test Stands O-1 and O-2 to calculate NOx emissions from Test Stand O-1 and O-2. Records necessary to demonstrate compliance shall be available no later than thirty (30) days of the end of each compliance period.

(b) To document the compliance status with Condition D.4.2(d), for Test Stands O-24 and O-25, maintain monthly records of the diesel fuel throughput for engines 600 horsepower or less and maintain monthly records of diesel fuel throughput for engines greater than 600 horsepower. Maintain records of the combined NOx emissions on a monthly basis using the emissions factors in Condition D.4.4 in conjunction with combined monthly diesel fuel throughput in Test Stands O-24 and O-25 to calculate NOx emissions from Test Stand O-24 and O-25. Records necessary to demonstrate compliance shall be available no later than thirty (30) days of the end of each compliance period.

(c) To document the compliance status with Condition D.4.2(f), for Test Stand O-31, maintain monthly records of the diesel fuel throughput for engines 600 horsepower or less and maintain monthly records of diesel fuel throughput for engines greater than 600 horsepower. Maintain records of the NOx emissions on a monthly basis using the emissions factors in Condition D.4.4 in conjunction with monthly diesel fuel throughput in Test Stand O-31 to calculate emissions from Test Stand O-31. Records necessary to demonstrate compliance shall be available no later than thirty (30) days after the end of each compliance period.

(d) Section C - General Record Keeping Requirements contains the Permittee's obligation with regard to the records required to be maintained by this condition.

D.4.6 Reporting Requirements

Quarterly summaries of the information to document the compliance status with Condition D.4.2 and Condition D.4.4 shall be submitted using the reporting forms located at the end of this permit, or their equivalent, not later than thirty (30) days after the end of the calendar quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The reports submitted by the Permittee do require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35).

SECTION D.5 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Descriptions:

(j) Transmission Test Cell 53, identified as ETC53, approved in 2015 for construction, consisting of two reciprocating engines (53N and 53S) firing low sulfur diesel fuel (150 ppm or less), with an estimated maximum engine size of equal to or less than 1000 HP each and exhausting to Stack/Vents PTE95 and PTE96.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60 Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.5.1 Particulate Matter Limitations Except Lake County [326 IAC 6.5-1-2(a)]

Pursuant to 326 IAC 6.5-1-2(a) (Particulate Matter Limitations Except Lake County), particulate (PM) emissions from ETC53 shall not exceed three hundredths (0.03) grains per dry standard cubic foot of exhaust air.

D.5.2 PSD Minor Limit [326 IAC 2-2]

In order to render the requirements of 326 IAC 2-2 not applicable to ETC53, NOx emissions from diesel fuel fired reciprocating engines utilized in ETC53 shall be less than forty (40) tons per twelve (12) consecutive month period, with compliance determined at the end of each month. Compliance with these limits shall render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to ETC53.

D.5.3 Sulfur Dioxide (SO2) [326 IAC 7-1.1-1]

Pursuant to 326 IAC 7-1.1-2 (SO_2 Emissions Limitations), Sulfur Dioxide (SO_2) emissions from ETC53 shall not exceed five tenths (0.5) pounds per million Btu heat input.

D.5.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for ETC53. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.5.5 NOx Emissions Determination

To comply with the NOx emissions limit in Condition D.5.2(a), the following equation shall be used:

$$NOx = [(FU \times D \times EF / FCR)_{Engine\ 1} + (FU \times D \times EF / FCR)_{Engine\ 2}] \times 1\ ton / 2{,}000\ lb$$

Where:
NOx = NOx emissions (ton/month)
FU = Fuel Usage (gal/month)
D = Density of fuel (lb/gal)
EF = NOx Emission Factor (lb/hp-hr) (For each engine type used, the emission factor shall be the emission limitation from the applicable federal engine emission standards.)
FCR = Fuel Consumption Rate (lb fuel/hp-hr)

D.5.6 Sulfur Dioxide Emissions and Sulfur Content

Compliance with Condition D.5.3 shall be determined utilizing one of the following options:

(a) Pursuant to 326 IAC 3-7-4, the Permittee shall demonstrate that the sulfur dioxide emissions do not exceed five-tenths (0.5) pounds per million Btu heat input by:

(1) Providing vendor analysis of fuel delivered, if accompanied by a certification; or

(2) Analyzing the fuel sample to determine the sulfur content of the fuel via the procedures in 40 CFR 60, Appendix A, Method 19.

(A) Fuel samples may be collected from the fuel tank immediately after the fuel tank is filled and before any fuel is combusted; and

(B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling; or

(b) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6.

A determination of noncompliance pursuant to either of the methods specified in (a) or (b) above shall not be refuted by evidence of compliance pursuant to the other method.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.5.7 Record Keeping Requirements

(a) To document the compliance status with Condition D.5.2, the Permittee shall:

(1) Maintain monthly records of the diesel fuel throughput, fuel density, fuel consumption rate, and the emission factors for NOx for Engine 1 and Engine 2 in Test Cell ETC53.

(2) Maintain records of NOx emissions on a monthly basis using the equation in Condition D.5.5.

(b) To document the compliance status with Condition D.5.3, the Permittee shall maintain records in accordance with (1) through (6) below:

(1) Calendar dates covered in the compliance determination period;

(2) Actual diesel fuel usage since last compliance determination period and equivalent sulfur dioxide emissions;

(3) A certification, signed by the owner or operator which is not necessarily the responsible official, that the records of the fuel supplier certifications represent all of the fuel combusted during the period; and

If the fuel supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:

(4) Fuel supplier certifications.

(5) The name of the fuel supplier; and

(6) A statement from the fuel supplier that certifies the sulfur content of the diesel fuel.

(c) Section C - General Record Keeping Requirements contains the Permittee's obligation with regard to the records required to be maintained by this condition.

D.5.8 Reporting Requirements

Quarterly summaries of the information to document the compliance status with Condition D.5.2 and D.5.5 shall be submitted using the reporting forms located at the end of this permit, or their equivalent, not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The reports submitted by the Permittee do require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35).

SECTION D.6 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Descriptions:

(f) Transmission Test Cell 702, identified as Emission Unit ID ETC702, consisting of one (1) reciprocating engine firing diesel fuel, with an estimated maximum engine size of 4000 hp, and exhausting at Stack/ Vent IDs PTE062 and PTE062A. This emission unit can accommodate engines of greater than 600 horsepower. Constructed in 2002.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60, Subpart IIII when a new engine is installed in the test cell and a test cell exemption does not apply.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.6.1 Particulate Matter Limitations Except Lake County [326 IAC 6.5-1-2(a)]

Pursuant to 326 IAC 6.5-1-2(a) (Particulate Matter Limitations Except Lake County), particulate (PM) emissions from Emission Unit ID ETC702 shall not exceed three hundredths (0.03) grains per dry standard cubic foot of exhaust air.

D.6.2 PSD Minor Limit [326 IAC 2-2] [Significant Source Modification 097-15550-00310]

In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to Test Cell 702, the Permittee shall comply with the following:

(a) NOx emissions from diesel fuel fired reciprocating engines utilized in Test Cell 702 shall be limited to less than forty (40) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) The input of diesel fuel to Test Cell 702 shall be less than 173,516 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. For the purposes of determining compliance, each gallon of diesel fuel burned in reciprocating engines that are equal to or less than 600 horsepower shall be equivalent to one and thirty seven hundredths (1.378) gallons of diesel fuel burned in reciprocating engines that are greater than 600 horsepower.

Compliance with the above limits shall render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to Test Cell 702.

D.6.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for Test Cell 702. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.6.4 Emission Factors and Performance Testing

(a) The Permittee shall use the following NOx emissions factors in conjunction with the actual throughput of diesel fuel fired in reciprocating engines utilized in Test Cell 702 to determine compliance with emissions limitation in Condition D.6.2:

Reciprocating Engine Size (horsepower)	NOx emissions factor
600 or less	0.6042 pounds per gallon of diesel fuel combusted
greater than 600	0.4384 pounds per gallon of diesel fuel combusted

(b) Monthly NOx emissions shall be determined by the following equation:

NOx emissions (tons) = (0.6042 lbs/gal x gal throughput for engines 600 hp or less + 0.4384 lbs/gal x gal throughput for engines greater than 600 hp) / 2,000 lbs NOx per ton NOx

(c) Pursuant to IC 13-15-7-1, IC 13-15-7-2, 326 IC 2-1.1-9(2) and 326 IAC 2-1.1-11 the IDEM, OAQ reserves the authority to require the Permittee to conduct performance tests to verify the emissions factors of this permit.

(d) After issuance of this permit, if the performance test results indicate a discrepancy between the emission factors and the actual emissions rate observed during the test, the Permittee shall inform IDEM, OAQ, Permits Branch of such variation no later than 90 days of the submission of performance test report to IDEM.

(e) Pursuant to IC 13-15-7-1, IC 13-15-7-2 and 326 IC 2-1.1-9(2), the IDEM, OAQ may re-evaluate the permit conditions and emissions factors. IDEM, OAQ may, at its discretion, use the authority under IC 13-15-7-2, IC 13-15-7-2 and/or 326 IAC 2-1.1-9(2) to re-open and revise the permit to more closely reflect the actual performance test results using permit amendment or modification procedures.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.6.5 Record Keeping Requirements

(a) To document the compliance status with Condition D.6.2 and Condition D.6.4, the Permittee shall:

(1) Maintain monthly records of the diesel fuel throughput in Test Cell 702 for engines 600 horsepower or less and maintain monthly records of diesel fuel throughput in Test Cell 702 for engines greater than 600 horsepower.

(2) Maintain records of NOx emissions on a monthly basis using the emissions factors in Condition D.6.4 in conjunction with monthly diesel fuel throughput in Test Cell 702 to calculate NOx emissions from Test Cell 702. Records necessary to demonstrate compliance shall be available no later than thirty (30) days of the end of each compliance period.

(b) Section C - General Record Keeping Requirements contains the Permittee's obligation with regard to the records required to be maintained by this condition.

D.6.6 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.6.2 and D.6.4 shall be submitted using the reporting form located at the end of this permit, or its equivalent, not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35).

SECTION D.7 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Descriptions:

(g) One (1) natural gas-fired boiler, identified as Emission Unit ID BLR6, constructed in 2011, with a maximum heat input of 99 million Btu per hour, equipped with low-NO_X burners and flue gas recirculation.

Under 40 CFR 60, Subpart Dc, this operation is an affected source.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.7.1 Particulate Emission Limitations for Sources of Indirect Heating [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), particulate emissions from Boiler BLR6 shall be limited to less than 0.25 pounds per MMBtu heat input.

The limit was calculated using the following equation:

$Pt = 1.09 / Q^{0.26}$

Where
Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input; and
Q = Total source maximum heat input capacity in MMBtu/hr (Q equals 267 MMBtu/hr)

D.7.2 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for Emission Unit ID BLR6 and any control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

SECTION D.8 EMISSIONS UNIT OPERATION CONDITIONS

Insignificant Activities:

(a) Space heaters, process heaters, or boilers using the following fuels:

(1) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour. [326 IAC 6.5-1-2]

(z) Emergency diesel generators not exceeding 1600 horsepower. [326 IAC 6.5-1-2(a)]

(1) one (1) 1490 hp diesel emergency generator located in the Powerhouse courtyard.

(2) one (1) 490 hp diesel emergency generator located in Plant 7.

(3) one (1) 415 hp diesel emergency generator located in Plant 12/14.

Under 40 CFR 60, Subpart IIII, these operations are each an affected source. Under 40 CFR 63, Subpart ZZZZ, these operations are each an affected source.

(aa) Emergency Stationary fire pumps. [326 IAC 6.5-1-2(a)]

(bb) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including the following: deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations. [326 IAC 6.5-1-2(a)]

(1) Shot Blast controlled with fabric filters. [326 IAC 6.5-1-2(a)]

(ff) Activities or categories of activities with individual HAP emissions not previously identified. Any unit emitting greater than 1 pound per day but less than 5 pounds per day or 1 ton per year of a single HAP.

(1) Production welding - manganese [326 IAC 6.5-1-2(a)]

(gg) The following activities or categories not previously identified which have potential emissions less than significance thresholds listed under 326 IAC 2-7-1(21);

(1) Heat Treating [326 IAC 6.5-1-2(a)]

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.8.1 Particulate Matter Limitations Except Lake County [326 IAC 6.5-1-2(a)]

Pursuant to 326 IAC 6.5-1-2(a) (Particulate Matter Limitations Except Lake County), particulate (PM) emissions from the natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour, emergency diesel generators, emergency stationary fire pumps, grinding and machining operations, shot blast, heat treating operations and production welding each shall not exceed three hundredths (0.03) grains per dry standard cubic foot of exhaust air.

Compliance Determination Requirements

D.8.2 Particulate Control

In order to comply with D.8.1, the fabric filters for particulate control shall be in operation and control emissions from shot blasting at all times that the shot blasting units are in operation.

SECTION D.9 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Descriptions:

(i) Transmission Test Cell 55, identified as ETC55, permitted in 2013, consisting of two reciprocating diesel-fired engines, with an estimated maximum engine size of 4,000 hp each, exhausting to Stacks/Vents PTE93 and PTE94.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60, Subpart IIII when a new engine is installed in the test cell and a test cell exemption does not apply.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.9.1 Particulate Matter Limitations Except Lake County [326 IAC 6.5-1-2(a)]

Pursuant to 326 IAC 6.5-1-2(a) (Particulate Matter Limitations Except Lake County), particulate (PM) emissions from ETC55 shall not exceed three hundredths (0.03) grains per dry standard cubic foot of exhaust air.

D.9.2 PSD Minor Limit [326 IAC 2-2]

In order to render the requirements of 326 IAC 2-2 not applicable to ETC55, the Permittee shall comply with the following:

(a) NOx emissions from diesel fuel fired reciprocating engines utilized in ETC55 shall be less than forty (40) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) CO emissions from diesel fuel fired reciprocating engines utilized in ETC55 shall be less than one-hundred (100) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with these limits shall render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to ETC55.

D.9.3 Nonattainment NSR Minor Limit [326 IAC 2-1.1-5]

In order to render to ensure compliance with 326 IAC 2-1.1-5, the Permittee shall comply with the following for ETC55:

SO_2 emissions from diesel fuel fired reciprocating engines utilized in ETC55 shall be less than forty (40) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with this limit shall ensure compliance with 326 IAC 2-1.1-5 (Nonattainment NSR) for ETC55.

D.9.4 Sulfur Dioxide (SO2) [326 IAC 7-1.1-1]

Pursuant to 326 IAC 7-1.1-2 (SO_2 Emissions Limitations), Sulfur Dioxide (SO_2) emissions from ETC55 shall not exceed five tenths (0.5) pounds per million Btu heat input.

D.9.5 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for ETC55. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.9.6 NOx Emissions Determination

To comply with the NOx emissions limit in Condition D.9.2(a), the following equation shall be used:

$NOx = [(FU \times D \times EF / FCR)_{Engine\ 1} + (FU \times D \times EF / FCR)_{Engine\ 2}] \times 1\ ton / 2{,}000\ lb$

Where:
NOx = NOx emissions (ton/month)
FU = Fuel Usage (gal/month)
D = Density of fuel (lb/gal)
EF = NOx Emission Factor (lb/hp-hr) (For each engine type used, the emission factor shall be the emission limitation from the applicable federal engine emission standards.)
FCR = Fuel Consumption Rate (lb fuel/hp-hr)

D.9.7 CO Emissions Determination

To comply with the CO emissions limit in Condition D.9.2(b), the following equation shall be used:

$CO = [(FU \times D \times EF / FCR)_{Engine\ 1} + (FU \times D \times EF / FCR)_{Engine\ 2}] \times 1\ ton / 2{,}000\ lb$

Where:
CO = CO emissions (ton/month)
FU = Fuel Usage (gal/month)
D = Density of fuel (lb/gal)
EF = CO Emission Factor (lb/hp-hr) (For each engine type used, the emission factor shall be the emission limitation from the applicable federal engine emission standards.)
FCR = Fuel Consumption Rate (lb fuel/hp-hr)

D.9.8 SO_2 Emissions Determination

To comply with the SO_2 emissions limit in Condition D.9.3, the following equation shall be used:

$SO_2 = [(FU \times D \times EF / FCR)_{Engine\ 1} + (FU \times D \times EF / FCR)_{Engine\ 2}] \times 1\ ton / 2{,}000\ lb$

Where:
SO_2 = SO_2 emissions (ton/month)
FU = Fuel Usage (gal/month)
D = Density of fuel (lb/gal)
EF = SO_2 Emission Factor (0.00405 lb SO_2/hp-hr) (from AP-42, Table 3.4-1)
FCR = Fuel Consumption Rate (lb fuel/hp-hr)

D.9.9 Sulfur Dioxide Emissions and Sulfur Content

Compliance with Condition D.9.4 shall be determined utilizing one of the following options:

(a) Pursuant to 326 IAC 3-7-4, the Permittee shall demonstrate that the sulfur dioxide emissions do not exceed five-tenths (0.5) pounds per million Btu heat input by:

(1) Providing vendor analysis of fuel delivered, if accompanied by a certification; or

(2) Analyzing the fuel sample to determine the sulfur content of the fuel via the procedures in 40 CFR 60, Appendix A, Method 19.

(A) Fuel samples may be collected from the fuel tank immediately after the fuel tank is filled and before any fuel is combusted; and

(B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling; or

(b) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6.

A determination of noncompliance pursuant to either of the methods specified in (a) or (b) above shall not be refuted by evidence of compliance pursuant to the other method.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.9.10 Record Keeping Requirements

(a) To document the compliance status with Condition D.9.2, the Permittee shall:

(1) Maintain monthly records of the diesel fuel throughput, fuel density, fuel consumption rate, and the emission factors for NOx and CO for Engine 1 and Engine 2 in Test Cell ETC55.

(2) Maintain records of NOx emissions on a monthly basis using the equation in Condition D.9.6.

(3) Maintain records of CO emissions on a monthly basis using the equation in Condition D.9.7.

(b) To document the compliance status with Condition D.9.3, the Permittee shall:

(1) Maintain monthly records of the diesel fuel throughput, fuel density, fuel consumption rate, and the emission factor for SO_2 for Engine 1 and Engine 2 in Test Cell ETC55.

(2) Maintain records of SO_2 emissions on a monthly basis using the equation in Condition D.9.8.

(c) To document the compliance status with Condition D.9.4, the Permittee shall maintain records in accordance with (1) through (6) below:

(1) Calendar dates covered in the compliance determination period;

(2) Actual diesel fuel usage since last compliance determination period and equivalent sulfur dioxide emissions;

(3) A certification, signed by the owner or operator which is not necessarily the responsible official, that the records of the fuel supplier certifications represent all of the fuel combusted during the period; and

If the fuel supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:

(4) Fuel supplier certifications.

(5) The name of the fuel supplier; and

(6) A statement from the fuel supplier that certifies the sulfur content of the diesel fuel.

(d) Section C - General Record Keeping Requirements contains the Permittee's obligation with regard to the records required to be maintained by this condition.

D.9.11 Reporting Requirements

Quarterly summaries of the information to document the compliance status with Condition D.9.2, D.9.3, D.9.6, D.9.7, and D.9.8 shall be submitted using the reporting forms located at the end of this permit, or their equivalent, not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The reports submitted by the Permittee do require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35).

SECTION E.1 New Source Performance Standards [326 IAC 2-7-5(1)] [326 IAC 12-1] [40 CFR 60, Subpart Dc]

Facility Description:

(g) One (1) natural gas-fired boiler, identified as Emission Unit ID BLR6, constructed in 2011, with a maximum heat input of 99 million Btu per hour, equipped with low-NOx burners and flue gas recirculation.

Under 40 CFR 60, Subpart Dc, this operation is an affected source.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

E.1.1 General Provision Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR 60, Subpart A]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, for Emission Unit ID BLR6 except when otherwise specified in 40 CFR Part 60, Subpart Dc.

(b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.1.2 Standard of Performance for Small Industrial-Commercial Institutional Steam Generating Units [326 IAC 12] [40 CFR 60, Subpart Dc]

Pursuant to 40 CFR 60, Subpart Dc, the Permittee shall comply with the following provisions of Standard of Performance for Small Industrial-Commercial Institutional Steam Generating Units, 40 CFR 60, Subpart Dc (included as Attachment A of this permit), which are incorporated as 326 IAC 12, for the Steam Boiler, identified as BLR6:

(1) 40 CFR 60.40c(a), (b);
(2) 40 CFR 60.41c;
(3) 40 CFR 60.48c(a), (g), (i); and
(4) 40 CFR 60.7

SECTION E.2 New Source Performance Standards [326 IAC 2-7-5(1)] [326 IAC 12-1] [40 CFR 60, Subpart IIII]

Facility Description:

(c) Emission Unit ETC consists of the following twenty five (25) engineering development transmission test cells; 701, 704, 705, 706, 707, 709, 710, 711, 712, 32N, 32S, 38N, 39N, 39S, 41N, 41S, 48N, 48S, 49N, 49S, 50N, 50S, 51N, 52N and 52S. The table below lists the fuel type and engine type that each cell is capable of accommodating based on the physical characteristics of each cell. Test cell 704 utilizes an oxidation catalyst system to control CO emissions.

Test Cell ID	Construction Dates	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
701	prior 1977	Diesel	Reciprocating or Gas Turbine	4000	PTE 057
704	prior 1977	Diesel	Reciprocating	2400	PTE 065
705	prior 1977	Diesel	Reciprocating or Gas Turbine	2400 for reciprocating; 4000 for gas turbine	PTE 067
706	prior 1977	Diesel	Reciprocating	4000	PTE 069
707	prior 1977	Diesel	Reciprocating	2400	PTE 071
709	prior 1977	Diesel	Reciprocating	2400	PTE 075
710	prior 1977	Diesel	Reciprocating	1500	PTE 077
711	prior 1977	Diesel	Reciprocating	2400	PTE 079
712	prior 1977	Diesel	Reciprocating	1500	PTE 080
32N	prior 1977	Diesel	Reciprocating	2400	PTE 008
32S	prior 1977	Diesel	Reciprocating	1500	PTE 006
38N	prior 1977	Diesel	Reciprocating	4000	PTE 011
39N	prior 1977 modified 1980's	Diesel	Reciprocating	2400	PTE 018
39S	prior 1977	Diesel	Reciprocating	1500	PTE 020
41N	prior 1977	Diesel	Reciprocating	1200	PTE 023
41S	prior 1977	Diesel	Reciprocating	1200	PTE 021
48N	prior 1977	Diesel	Reciprocating	1200	PTE 040
48S	prior 1977	Diesel	Reciprocating	1200	PTE 041

49N	prior 1977	Diesel	Reciprocating	1500	PTE 086
49S	prior 1977	Diesel	Reciprocating	1500	PTE 087
50N	prior to 1977 modified 2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 093
50S	prior to 1977 modified 2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 097
51N	prior 1977	Diesel	Reciprocating	1200	PTE 084
52N	prior to 1977 modified 2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 098
52S	prior to 1977 modified 2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 099

All of the engines except gas turbine engines located in Test Cells 701 and 705 are affected sources under 40 CFR 63, Subpart ZZZZ. Any gas turbine engines in test cells 701 and 705 are considered affected sources under 40 CFR 60, Subpart KKKK when a new turbine is installed in the test cell and a test cell exemption does not apply. The diesel reciprocating engines in each of the test cells are considered affected sources under 40 CFR 60, Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply. The gasoline reciprocating engines in test cells 50N, 50S, 52N, and 52S are considered an affected source under 40 CFR 60, Subpart JJJJ when a new gasoline engine is installed in the test cell and a test cell exemption does not apply.

(d) Emission unit DTC consists of the following four (4) transmission reliability test cells, TC-107, TC-109, TC-111 and TC-112. All test cells were constructed in 1985. The following engines can be used in any one of the individual test cells mentioned above:

Test Cell ID	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
TC-107	Diesel	Reciprocating	1500	PTE 045
TC-109	Diesel	Reciprocating	1500	PTE 043
TC-111	Diesel	Reciprocating	1500	PTE 049
TC-112	Diesel	Reciprocating	1500	PTE 050

Under 40 CFR 63, Subpart ZZZZ, these engines are each an affected source. The engines in each of the test cells are considered affected sources under 40 CFR 60, Subpart IIII when a new engine is installed in the test cell and a test cell exemption does not apply.

(e) Emission unit PTS14 consists of the following five (5) transmission test stands, identified as test stand O-1, O-2, O-24, O-25 and O-31. Test stands O-1, O-2, O-24, O-25 and O-31 were constructed in 1978, 1979, 1986, 1986, and 1984 respectively. The table below lists the fuel type and engine type that each stand is capable of accommodating based on the physical characteristics of each stand. Test stands O-1, O-2, and O-31 each utilize an oxidation catalyst system to control CO emissions.

Test Stand ID	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
O-1	Diesel	Reciprocating	2400	14041
O-2	Diesel	Reciprocating	2400	14038
O-24	Diesel	Reciprocating	600	14024
O-25	Diesel	Reciprocating	600	14023
O-31	Diesel	Reciprocating	2400	14045

Under 40 CFR 63, Subpart ZZZZ, these engines are each an affected source. The engines in each of the test stands are considered affected sources under 40 CFR 60, Subpart IIII when a new engine is installed in the test stand and a test cell exemption does not apply.

(f) Transmission Test Cell 702, identified as Emission Unit ID ETC702, consisting of one (1) reciprocating engine firing diesel fuel, with an estimated maximum engine size of 4000 hp, and exhausting at Stack/ Vent IDs PTE062 and PTE062A. This emission unit can accommodate engines of greater than 600 horsepower. Constructed in 2002.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60, Subpart IIII when a new engine is installed in the test cell and a test cell exemption does not apply.

(i) Transmission Test Cell 55, identified as ETC55, permitted in 2013, consisting of two reciprocating diesel-fired engines, with an estimated maximum engine size of 4,000 hp each, exhausting to Stacks/Vents PTE93 and PTE94.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60, Subpart IIII when a new engine is installed in the test cell and a test cell exemption does not apply.

(j) Transmission Test Cell 53, identified as ETC53, approved in 2015 for construction, consisting of two reciprocating engines (53N and 53S) firing low sulfur diesel fuel (150 ppm or less), with an estimated maximum engine size of equal to or less than 1000 HP each and exhausting to Stack/Vents PTE95 and PTE96.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60 Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply.

(k) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1a, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1a.
[40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

(l) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1b, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1b. [40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

Insignificant Activities

(z) Emergency diesel generators not exceeding 1600 horsepower. [326 IAC 6.5-1-2(a)]

(1) one (1) 1490 hp diesel emergency generator located in the Powerhouse courtyard.

(2) one (1) 490 hp diesel emergency generator located in Plant 7.

(3) one (1) 415 hp diesel emergency generator located in Plant 12/14.

Under 40 CFR 60, Subpart IIII, these operations are each an affected source. Under 40 CFR 63, Subpart ZZZZ, these operations are each an affected source.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

E.2.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 60 [326 IAC 12-1] [40 CFR Part 60, Subpart A]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, for the units as described in this section except when otherwise specified in 40 CFR Part 60, Subpart IIII.

(b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue,
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.2.2 Standard of Performance for Stationary Compression Ignition Internal Combustion Engines [326 IAC 12] [40 CFR 60, Subpart IIII]

Pursuant to 40 CFR 60, Subpart IIII, the Permittee shall comply with the following provisions of Standard of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60, Subpart IIII (included as Attachment B of this permit), which are incorporated as 326 IAC 12, for the diesel emergency generators:

(1) 40 CFR 60.4200(a)(2)(i), (a)(4), (c), and (d);
(2) 40 CFR 60.4205(b), and (e);
(3) 40 CFR 60.4206;
(4) 40 CFR 60.4207(b);
(5) 40 CFR 60.4209;
(6) 40 CFR 60.4211(a), (c), (f)(1), (f)(2)(i), and (f)(3);
(7) 40 CFR 60.4214(b), and (c);
(8) 40 CFR 60.4218;
(9) 40 CFR 60.4219;
(10) Table 5; and
(11) Table 8.

E.2.3 Standard of Performance for Stationary Compression Ignition Internal Combustion Engines [326 IAC 12] [40 CFR 60, Subpart IIII]

Pursuant to 40 CFR 60, Subpart IIII, the Permittee shall comply with the following provisions of Standard of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60, Subpart IIII (included as Attachment B of this permit), which are incorporated as 326 IAC 12, for the test cells ETC, DTC, PTS14, 702, ETC55, and ETC53:

(1) 40 CFR 60.4200(a)(2)(i), (a)(4), (b), and (d);
(2) 40 CFR 60.4204(a), (b), and (d);
(3) 40 CFR 60.4206;
(4) 40 CFR 60.4207(b);
(5) 40 CFR 60.4209(b);
(6) 40 CFR 60.4211(a), (b), and (c);
(7) 40 CFR 60.4214(a), and (c);
(8) 40 CFR 60.4218;
(9) 40 CFR 60.4219;
(10) Table 1;
(11) Table 5; and
(12) Table 8.

SECTION E.3 National Emission Standards for Hazardous Air Pollutants [326 IAC 2-7-5(1)] [326 IAC 20-1] [40 CFR 63, Subpart CCCCCC]

Insignificant Activities:

(b) Fuel dispensing activities, including the following:

(1) A gasoline fuel transfer and dispensing operation handling less than or equal to one thousand three hundred (1,300) gallons per day, such and filling storage tanks having a storage capacity equal to or less than ten thousand five hundred (10,500) gallons. Such storage tanks may be in a fixed location or on mobile equipment.

Under 40 CFR 63, Subpart CCCCCC, this operation is an affected source.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

E.3.1 General Provision Relating National Emission Standards for Hazardous Air Pollutants [326 IAC 20-1] [40 CFR 63, Subpart A]

(a) Pursuant to 40 CFR Part 63.1, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 20-1, for the gasoline fuel transfer and dispensing operation except when otherwise specified in 40 CFR Part 63, Subpart CCCCCC.

(b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue,
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.3.2 Standard National Emission Standards for Hazardous Air Pollutants for Gasoline Dispensing Facilities [40 CFR Part 63.11110, Subpart CCCCCC]

Pursuant to 40 CFR 63, Subpart CCCCCC, the Permittee shall comply with the following provisions of National Emission Standards for Hazardous Air Pollutants for Gasoline Dispensing Facilities, 40 CFR 63, Subpart CCCCCC (included as Attachment C of this permit) for the a gasoline fuel transfer and dispensing operation:

(1) 40 CFR 63.11111(a) and (b)
(2) 40 CFR 63.11112(a) and (d)
(3) 40 CFR 63.11113(b)
(4) 40 CFR 63.11115
(5) 40 CFR 63.11116
(6) 40 CFR 63.11125(d)
(7) 40 CFR 63.11126(b)
(8) 40 CFR 63.11130
(9) 40 CFR 63.11132
(10) Table 3

SECTION E.4 National Emission Standards for Hazardous Air Pollutants [326 IAC 2-7-5(1)] [326 IAC 20-1] [40 CFR 63, Subpart WWWWWW]

Facility Description:

(gg) The following activities or categories not previously identified which have potential emissions less than significance thresholds listed under 326 IAC 2-7-1(21);

(2) The following tanks involved in plating operations:

(E) One manganese phosphate tank (Dept. 1492 tank F3)

Under 40 CFR 63, Subpart WWWWWW, this operation is an affected source.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

E.4.1 General Provision Relating to National Emission Standards for Hazardous Air Pollutants [326 IAC 20-1] [40 CFR 63, Subpart A]

(a) Pursuant to 40 CFR 63.1, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 20-1, for the plating operations except when otherwise specified in 40 CFR Part 63, Subpart WWWWWW.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue,
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.4.2 National Emission Standards for Hazardous Air Pollutants for Plating and Polishing Operations [40 CFR 63, Subpart WWWWWW]

Pursuant to 40 CFR Part 63, Subpart WWWWWW (included as Attachment D of this permit), the Permittee shall comply with the following provisions of National Emission Standards for Hazardous Air Pollutants for Plating and Polishing Operations, 40 CFR Part 63, Subpart WWWWWW (included as Attachment D of this permit), for the plating operations:

(1) 40 CFR 63.11504(a)(1)(iii)
(2) 40 CFR 63.11505(a) and (b)
(3) 40 CFR 63.11506(a)
(4) 40 CFR 63.11507(a) and (g)
(5) 40 CFR 63.11508(a), (b), (c)(1) and (2), and (d)
(6) 40 CFR 63.11509(a)(1)-(3), (b), (c)(1), (c)(2)(i), (c)(7), (d), (e) and (f)
(7) 40 CFR 63.11510
(8) 40 CFR 63.11511
(9) Table 1

SECTION E.5 New Source Performance Standards [326 IAC 2-7-5(1)] [326 IAC 12-1] [40 CFR 60, Subpart KKKK]

Facility Description:

(c) Emission Unit ETC consists of the following development transmission test cells:

Test Cell ID	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
701	Diesel	Reciprocating or Gas Turbine	4000	PTE 057
705	Diesel	Reciprocating or Gas Turbine	2400 for reciprocating; 4000 for gas turbine	PTE 067

Any gas turbine engines in test cells 701 and 705 are considered affected sources under 40 CFR 60, Subpart KKKK when a new turbine is installed in the test cell and a test cell exemption does not apply.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

This section only applies at times when a turbine engine is installed in the test cell and a test cell exemption does not apply.

Emission Limitations and Standards [326 IAC 2-7-5(1)]

E.5.1 General Provisions Relating to New Source Performance Standards (NSPS) [40 CFR 60, Subpart A] [326 IAC 12-1]

Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, for the Test Cell 701 and Test Cell 705 (of Emission Unit ETC) except when otherwise specified in 40 CFR 60, Subpart KKKK.

E.5.2 Stationary Combustion Turbines NSPS Requirements [40 CFR 60, Subpart KKKK] [326 IAC 12]

Pursuant to 40 CFR 60, Subpart KKKK, the Permittee shall comply with the following provisions of 40 CFR 60, Subpart KKKK (included as Attachment E of this permit), which are incorporated as 326 IAC 12 for Test Cell 701 and Test Cell 705 (of Emission Unit ETC):

(1) 40 CFR 60.4305
(2) 40 CFR 60.4315
(3) 40 CFR 60.4320(a)
(4) 40 CFR 60.4325
(5) 40 CFR 60.4330(a)
(6) 40 CFR 60.4333
(7) 40 CFR 60.4375
(8) 40 CFR 60.4395
(9) 40 CFR 60.4420

SECTION E.6 National Emission Standards for Hazardous Air Pollutants [326 IAC 2-7-5(1)] [326 IAC 20-1] [40 CFR 63, Subpart ZZZZ]

Facility Description:

(c) Emission Unit ETC consists of the following twenty five (25) engineering development transmission test cells; 701, 704, 705, 706, 707, 709, 710, 711, 712, 32N, 32S, 38N, 39N, 39S, 41N, 41S, 48N, 48S, 49N, 49S, 50N, 50S, 51N, 52N and 52S. The table below lists the fuel type and engine type that each cell is capable of accommodating based on the physical characteristics of each cell. Test cell 704 utilizes an oxidation catalyst system to control CO emissions.

Test Cell ID	Construction Dates	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
701	prior 1977	Diesel	Reciprocating or Gas Turbine	4000	PTE 057
704	prior 1977	Diesel	Reciprocating	2400	PTE 065
705	prior 1977	Diesel	Reciprocating or Gas Turbine	2400 for reciprocating; 4000 for gas turbine	PTE 067
706	prior 1977	Diesel	Reciprocating	4000	PTE 069
707	prior 1977	Diesel	Reciprocating	2400	PTE 071
709	prior 1977	Diesel	Reciprocating	2400	PTE 075
710	prior 1977	Diesel	Reciprocating	1500	PTE 077
711	prior 1977	Diesel	Reciprocating	2400	PTE 079
712	prior 1977	Diesel	Reciprocating	1500	PTE 080
32N	prior 1977	Diesel	Reciprocating	2400	PTE 008
32S	prior 1977	Diesel	Reciprocating	1500	PTE 006
38N	prior 1977	Diesel	Reciprocating	4000	PTE 011
39N	prior 1977 modified 1980's	Diesel	Reciprocating	2400	PTE 018
39S	prior 1977	Diesel	Reciprocating	1500	PTE 020
41N	prior 1977	Diesel	Reciprocating	1200	PTE 023
41S	prior 1977	Diesel	Reciprocating	1200	PTE 021
48N	prior 1977	Diesel	Reciprocating	1200	PTE 040
48S	prior 1977	Diesel	Reciprocating	1200	PTE 041
49N	prior 1977	Diesel	Reciprocating	1500	PTE 086

49S	prior 1977	Diesel	Reciprocating	1500	PTE 087
50N	prior to 1977 modified 2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 093
50S	prior to 1977 modified 2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 097
51N	prior 1977	Diesel	Reciprocating	1200	PTE 084
52N	prior to 1977 modified 2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 098
52S	prior to 1977 modified 2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 099

All of the engines except gas turbine engines located in Test Cells 701 and 705 are affected sources under 40 CFR 63, Subpart ZZZZ. Any gas turbine engines in test cells 701 and 705 are considered affected sources under 40 CFR 60, Subpart KKKK when a new turbine is installed in the test cell and a test cell exemption does not apply. The diesel reciprocating engines in each of the test cells are considered affected sources under 40 CFR 60, Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply. The gasoline reciprocating engines in test cells 50N, 50S, 52N, and 52S are considered an affected source under 40 CFR 60, Subpart JJJJ when a new gasoline engine is installed in the test cell and a test cell exemption does not apply.

(d) Emission unit DTC consists of the following four (4) transmission reliability test cells, TC-107, TC-109, TC-111 and TC-112. All test cells were constructed in 1985. The following engines can be used in any one of the individual test cells mentioned above:

Test Cell ID	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
TC-107	Diesel	Reciprocating	1500	PTE 045
TC-109	Diesel	Reciprocating	1500	PTE 043
TC-111	Diesel	Reciprocating	1500	PTE 049
TC-112	Diesel	Reciprocating	1500	PTE 050

Under 40 CFR 63, Subpart ZZZZ, these engines are each an affected source. The engines in each of the test cells are considered affected sources under 40 CFR 60, Subpart IIII when a new engine is installed in the test cell and a test cell exemption does not apply.

(e) Emission unit PTS14 consists of the following five (5) transmission test stands, identified as test stand O-1, O-2, O-24, O-25 and O-31. Test stands O-1, O-2, O-24, O-25 and O-31 were constructed in 1978, 1979, 1986, 1986, and 1984 respectively. The table below lists the fuel type and engine type that each stand is capable of accommodating based on the physical characteristics of each stand. Test stands O-1, O-2, and O-31 each utilize an oxidation catalyst system to control CO emissions.

Test Stand ID	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
O-1	Diesel	Reciprocating	2400	14041
O-2	Diesel	Reciprocating	2400	14038
O-24	Diesel	Reciprocating	600	14024
O-25	Diesel	Reciprocating	600	14023
O-31	Diesel	Reciprocating	2400	14045

Under 40 CFR 63, Subpart ZZZZ, these engines are each an affected source. The engines in each of the test stands are considered affected sources under 40 CFR 60, Subpart IIII when a new engine is installed in the test stand and a test cell exemption does not apply.

(f) Transmission Test Cell 702, identified as Emission Unit ID ETC702, consisting of one (1) reciprocating engine firing diesel fuel, with an estimated maximum engine size of 4000 hp, and exhausting at Stack/ Vent IDs PTE062 and PTE062A. This emission unit can accommodate engines of greater than 600 horsepower. Constructed in 2002.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60, Subpart IIII when a new engine is installed in the test cell and a test cell exemption does not apply.

(i) Transmission Test Cell 55, identified as ETC55, permitted in 2013, consisting of two reciprocating diesel-fired engines, with an estimated maximum engine size of 4,000 hp each, exhausting to Stacks/Vents PTE93 and PTE94.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60, Subpart IIII when a new engine is installed in the test cell and a test cell exemption does not apply.

(j) Transmission Test Cell 53, identified as ETC53, approved in 2015 for construction, consisting of two reciprocating engines (53N and 53S) firing low sulfur diesel fuel (150 ppm or less), with an estimated maximum engine size of equal to or less than 1000 HP each and exhausting to Stack/Vents PTE95 and PTE96.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60 Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply.

(k) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1a, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1a.
[40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

(l) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1b, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1b.
[40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

Insignificant Activities

(z) Emergency diesel generators not exceeding 1600 horsepower. [326 IAC 6.5-1-2(a)]

(1) one (1) 1490 hp diesel emergency generator located in the Powerhouse courtyard.

(2) one (1) 490 hp diesel emergency generator located in Plant 7.

(3) one (1) 415 hp diesel emergency generator located in Plant 12/14.

Under 40 CFR 60, Subpart IIII, these operations are each an affected source. Under 40 CFR 63, Subpart ZZZZ, these operations are each an affected source.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

E.6.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants (NESHAP) [326 IAC 20-1] [40 CFR 63, Subpart A]

(a) Pursuant to 40 CFR 63.1, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 20-1, for the emission listed above, except as otherwise specified in 40 CFR 63, Subpart ZZZZ.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.6.2 Stationary Reciprocating Internal Combustion Engines NESHAP [326 IAC 20-82] [40 CFR 63, Subpart ZZZZ]

Pursuant to 40 CFR 63, Subpart ZZZZ, the Permittee shall comply with the provisions of 40 CFR 63, Subpart ZZZZ (included as Attachment F of this permit), which are incorporated as 326 IAC 20-82, as follows:

(a) The Permittee shall comply with the following provisions of 40 CFR 63, Subpart ZZZZ when a new stationary RICE, defined as a RICE that commenced construction on or after June 12, 2006 pursuant to 40 CFR 63.6590(a)(2)(iii), is installed and operated in a test cell, and the test cell exemption does not apply:

(1) 40 CFR 63.6580;
(2) 40 CFR 63.6585(a), (c), and (e);
(3) 40 CFR 63.6590(a)(2)(iii), and (c)(1);
(4) 40 CFR 63.6595(a)(6), (a)(7), and (c);
(5) 40 CFR 63.6605;
(6) 40 CFR 63.6650(f);
(7) 40 CFR 63.6665;
(8) 40 CFR 63.6670;
(9) 40 CFR 63.6675; and
(10) Table 8.

(b) The Permittee shall comply with the following provisions of 40 CFR 63, Subpart ZZZZ when a diesel-fired, nonemergency, existing stationary RICE, defined as a RICE that commenced construction prior to June 12, 2006 pursuant to 40 CFR 63.6590(a)(1)(iii), with a power output of less than or equal to 300 HP, is installed and operated in a test cell, and the test cell exemption does not apply:

(1) 40 CFR 63.6580;
(2) 40 CFR 63.6585(a), (c), (d), and (e);
(3) 40 CFR 63.6590(a)(1)(iii);
(4) 40 CFR 63.6595(a)(1) and (c);

(5) 40 CFR 63.6603(a);
(6) 40 CFR 63.6605;
(7) 40 CFR 63.6612;
(8) 40 CFR 63.6625(e)(4), (h), and (i);
(9) 40 CFR 63.6640(a) and (b);
(10) 40 CFR 63.6645(a)(2);
(11) 40 CFR 63.6655(e)(3);
(12) 40 CFR 63.6660;
(13) 40 CFR 63.6665;
(14) 40 CFR 63.6670;
(15) 40 CFR 63.6675;
(16) Table 2d (Item 1); and
(17) Table 8.

(c) The Permittee shall comply with the following provisions of 40 CFR 63, Subpart ZZZZ when a diesel-fired, nonemergency, existing stationary RICE, defined as a RICE that commenced construction prior to June 12, 2006 pursuant to 40 CFR 63.6590(a)(1)(iii), with a power output greater than 500 HP, is installed and operated in a test cell, and the test cell exemption does not apply:

(1) 40 CFR 63.6580;
(2) 40 CFR 63.6585(a), (c), (d), and (e);
(3) 40 CFR 63.6590(a)(1)(iii);
(4) 40 CFR 63.6595(a)(1) and (c);
(5) 40 CFR 63.6603(a), (d) and (e);
(6) 40 CFR 63.6604(a);
(7) 40 CFR 63.6605;
(8) 40 CFR 63.6612;
(9) 40 CFR 63.6615;
(10) 40 CFR 63.6620(a), (b), (d), (e), (f), (g), (h), and (i);
(11) 40 CFR 63.6625(a), (b), (g), and (h);
(12) 40 CFR 63.6630(a), (b), and (c);
(13) 40 CFR 63.6635;
(14) 40 CFR 63.6640(a), (b), and (e);
(15) 40 CFR 63.6645(a)(2), (g), (h), and (i);
(16) 40 CFR 63.6650(a), (b), (c), (d), (e), and (f);
(17) 40 CFR 63.6655(a), (b), (d), and (e);
(18) 40 CFR 63.6665;
(19) 40 CFR 63.6670;
(20) 40 CFR 63.6675;
(21) Table 2b (item 2 and 3)
(22) Table 2d (item 3)
(23) Table 3 (item 4)
(24) Table 4 (item 1 and 3)
(25) Table 5 (item 1, 2, 3, 4, 5, and 6);
(26) Table 6 (item 3, 10, and 11); and
(27) Table 8.

E.6.3 Stationary Reciprocating Internal Combustion Engines NESHAP [326 IAC 20-82] [40 CFR 63, Subpart ZZZZ]

Pursuant to 40 CFR 63, Subpart ZZZZ, the Permittee shall comply with the provisions of 40 CFR 63, Subpart ZZZZ (included as Attachment F of this permit), which are incorporated as 326 IAC 20-82, for the emergency generators, as follows:

(a) The Permittee shall comply with the following provisions of 40 CFR 63, Subpart ZZZZ when a compression ignition, emergency, new stationary RICE, defined as a RICE that commenced construction on or after June 12, 2006 pursuant to 40 CFR 63.6590(a)(2)(iii) is installed:

(1) 40 CFR 63.6580;
(2) 40 CFR 63.6585(a), (c), and (e);
(3) 40 CFR 63.6590(a)(2)(iii), and (c)(1);
(4) 40 CFR 63.6595(a)(6), (a)(7), and (c);
(5) 40 CFR 63.6605;
(6) 40 CFR 63.6650(f);
(7) 40 CFR 63.6665;
(8) 40 CFR 63.6670;
(9) 40 CFR 63.6675; and
(10) Table 8.

(b) The Permittee shall comply with the following provisions of 40 CFR 63, Subpart ZZZZ when a compression ignition, emergency, existing stationary RICE, defined as a RICE that commenced construction before June 12, 2006 pursuant to 40 CFR 63.6590(a)(1)(iii) is installed:

(1) 40 CFR 63.6580;
(2) 40 CFR 63.6585(a), (c), and (e);
(3) 40 CFR 63.6590(a)(1)(iii);
(4) 40 CFR 63.6595(a)(1);
(5) 40 CFR 63.6603(a);
(6) 40 CFR 63.6605;
(7) 40 CFR 63.6625(e)(5), (f), (h), and (i);
(8) 40 CFR 63.6640(a), (b), (e), (f)(1), (f)(2)(i), and (f)(4);
(9) 40 CFR 63.6645(a)(5);
(10) 40 CFR 63.6650(f);
(11) 40 CFR 63.6655(d), and (e)(2);
(12) 40 CFR 63.6660;
(13) 40 CFR 63.6665;
(14) 40 CFR 63.6670;
(15) 40 CFR 63.6675;
(16) Table 2d (item 4); and
(17) Table 6 (item 9).

SECTION E.7 New Source Performance Standards [326 IAC 2-7-5(1)] [326 IAC 12-1] [40 CFR 60, Subpart JJJJ]

Facility Description:

(c) Emission Unit ETC consists of the following development transmission test cells:

Test Cell ID	Construction Dates	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
50N	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 093
50S	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 097
52N	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 098
52S	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 099

All of the engines except gas turbine engines located in Test Cells 701 and 705 are affected sources under 40 CFR 63, Subpart ZZZZ. Any gas turbine engines in test cells 701 and 705 are considered affected sources under 40 CFR 60, Subpart KKKK when a new turbine is installed in the test cell and a test cell exemption does not apply. The diesel reciprocating engines in each of the test cells are considered affected sources under 40 CFR 60, Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply. The gasoline reciprocating engines in test cells 50N, 50S, 52N, and 52S are considered an affected source under 40 CFR 60, Subpart JJJJ when a new gasoline engine is installed in the test cell and a test cell exemption does not apply.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

This section only applies at times when a new gasoline or natural gas engine is installed in the test cell and a test cell exemption does not apply.

E.7.1 General Provisions Relating to Standards of Performance under 40 CFR Part 60 [326 IAC 12-1] [40 CFR Part 60, Subpart A]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the units as described in this section except when otherwise specified in 40 CFR Part 60, Subpart JJJJ.

(b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue,
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.7.2 Standards of Performance for Stationary Spark Ignition Internal Combustion Engines [326 IAC 12] [40 CFR 60, Subpart JJJJ]

Pursuant to 40 CFR 60, Subpart JJJJ, the Permittee shall comply with the provisions of Standard of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60, Subpart JJJJ (included as Attachment G of this permit), which are incorporated by reference in 326 IAC 12, for 50N, 52N, 50S, 52S, and ETC53:

When combusting natural gas or gasoline

(1) 40 CFR 60.4230(a)(4), (a)(6), (b), (d), and (e);
(2) 40 CFR 60.4233(a), (b), (d), (e), (f)(1 through 4), and (h);
(3) 40 CFR 60.4234;
(4) 40 CFR 60.4235;
(5) 40 CFR 60.4243(a)(1), (b)(1), (e), and (g);
(6) 40 CFR 60.4245(a);
(7) 40 CFR 60.4246;
(8) 40 CFR 60.4248;
(9) Table 1; and
(10) Table 3.

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
PART 70 OPERATING PERMIT
CERTIFICATION

Source Name: Allison Transmission, Inc.
Source Address: One Allison Way, Indianapolis, Indiana 46222
Part 70 Permit No.: T097-34667-00310

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.

Please check what document is being certified:

☐ Annual Compliance Certification Letter

☐ Test Result (specify) _____.

☐ Report (specify) _____.

☐ Notification (specify) _____.

☐ Affidavit (specify) _____.

☐ Other (specify) _____.

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:
Printed Name:
Title/Position:
Phone:
Date:

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
Phone: (317) 233-0178
Fax: (317) 233-6865

PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT

Source Name: Allison Transmission, Inc.
Source Address: One Allison Way, Indianapolis, Indiana 46222
Part 70 Permit No.: T097-34667-00310

This form consists of 2 pages **Page 1 of 2**

□ This is an emergency as defined in 326 IAC 2-7-1(12)

- The Permittee must notify the Office of Air Quality (OAQ), within four (**4**) daytime business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and
- The Permittee must submit notice in writing or by facsimile within two (**2**) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16.

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

DRAFT

If any of the following are not applicable, mark N/A **Page 2 of 2**

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N
Type of Pollutants Emitted: TSP, PM-10, SO_2, VOC, NO_X, CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by:_____

Title / Position: _____

Date:_____

Phone: _____

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance and Enforcement Branch

Part 70 Usage Report
(Submit Report Quarterly)

Source Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Mail Code: M-29, Indianapolis Indiana 46222
Part 70 Permit No.: T097-34667-00310
Facility: BLR 4 and BLR 5
Parameter: PM emissions
Limit: 39.3 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Quarter:_____ Year:_____

Month	Type of Fuel	Amount combusted this month	Amount combusted in the previous 11 months	PM Emission Factor	Monthly PM Emissions (tons/month)	Twelve month sum of PM Emissions (tons/12 months)
	Natural Gas					
	Natural Gas					
	Natural Gas					

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:_____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance and Enforcement Branch

Part 70 Usage Report
(Submit Report Quarterly)

Source Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Mail Code: M-29, Indianapolis Indiana 46222
Part 70 Permit No.: T097-34667-00310
Facility: Emission Unit ETC Test Cell 39N
Parameter: Diesel fuel usage; limit the potential to emit NOx in Test Cell 39N to less than forty (40) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
Limit: The input of diesel fuel to reciprocating engines utilized in Test Cell Stand 39N shall be less than 182,481 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. For the purposes of determining compliance, each gallon of diesel fuel burned in reciprocating engines that are equal to or less than 600 horsepower shall be equivalent to one and thirty seven hundredths (1.378) gallons of diesel fuel burned in reciprocating engines that are greater than 600 horsepower.

Quarter:_____ Year:_____

	Column 1				Column 2				Column 1 + Column 2			
	This Month				Previous 11 Months				12 Month Total			
Month	Diesel fuel usage in engines > 600 hp (gal)	Equivalent gallons in engines ≤ 600 hp (gal x 1.378)	Total Diesel fuel usage (gal)	NOx emissions (tons)	Diesel fuel usage in engines > 600 hp (gal)	Equivalent gallons in engines ≤ 600 hp (gal x 1.378)	Total Diesel fuel usage (gal)	NOx emissions (tons)	Diesel fuel usage in engines > 600 hp (gal)	Equivalent gallons in engines ≤ 600 hp (gal x 1.378)	Total Diesel fuel usage (gal)	NOx emissions (tons)

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:_____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance and Enforcement Branch

Part 70 Usage Report
(Submit Report Quarterly)

Source Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Mail Code: M-29, Indianapolis Indiana 46222
Part 70 Permit No.: T097-34667-00310
Facility: Emission Unit DTC (TC-107, TC-109, TC-111 and TC-112)
Parameter: Combined diesel fuel usage; limit the combined potential to emit NOx in Test Cells TC-107, TC-109, TC-111 and TC-112 to less than forty (40) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
Limit: The combined input of diesel fuel to reciprocating engines utilized in Test Cells TC-107, TC-109, TC-111 and TC-112 shall be less than 182,481 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. For the purposes of determining compliance, each gallon of diesel fuel burned in reciprocating engines that are equal to or less than 600 horsepower shall be equivalent to one and thirty seven hundredths (1.378) gallons of diesel fuel burned in reciprocating engines that are greater than 600 horsepower.

Quarter:_____ Year:_____

	Column 1				Column 2				Column 1 + Column 2			
	This Month				Previous 11 Months				12 Month Total			
Month	Diesel fuel usage in engines > 600 hp (gal)	Equivalent gallons in engines ≤ 600 hp (gal x 1.378)	Total Diesel fuel usage (gal)	NOx emissions (tons)	Diesel fuel usage in engines > 600 hp (gal)	Equivalent gallons in engines ≤ 600 hp (gal x 1.378)	Total Diesel fuel usage (gal)	NOx emissions (tons)	Diesel fuel usage in engines > 600 hp (gal)	Equivalent gallons in engines ≤ 600 hp (gal x 1.378)	Total Diesel fuel usage (gal)	NOx emissions (tons)

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:_____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance and Enforcement Branch

Part 70 Usage Report
(Submit Report Quarterly)

Source Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Mail Code: M-29, Indianapolis Indiana 46222
Part 70 Permit No.: T097-34667-00310
Facility: Emission Unit PTS14 (Test Stands O-1 and O-2 only)
Parameter: Combined diesel fuel usage; limit the combined potential to emit NOx in Test Stands O-1 and O-2 to less than forty (40) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
Limit: The combined input of diesel fuel to reciprocating engines utilized in Test Stands O-1 and O-2 shall be less than 182,481 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. For the purposes of determining compliance, each gallon of diesel fuel burned in reciprocating engines that are equal to or less than 600 horsepower shall be equivalent to one and thirty seven hundredths (1.378) gallons of diesel fuel burned in reciprocating engines that are greater than 600 horsepower.

Quarter:_____ Year:_____

	Column 1				Column 2				Column 1 + Column 2			
	This Month				Previous 11 Months				12 Month Total			
Month	Diesel fuel usage in engines > 600 hp (gal)	Equivalent gallons in engines ≤ 600 hp (gal x 1.378)	Total Diesel fuel usage (gal)	NOx emissions (tons)	Diesel fuel usage in engines > 600 hp (gal)	Equivalent gallons in engines ≤ 600 hp (gal x 1.378)	Total Diesel fuel usage (gal)	NOx emissions (tons)	Diesel fuel usage in engines > 600 hp (gal)	Equivalent gallons in engines ≤ 600 hp (gal x 1.378)	Total Diesel fuel usage (gal)	NOx emissions (tons)

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:_____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance and Enforcement Branch

Part 70 Usage Report
(Submit Report Quarterly)

Source Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Mail Code: M-29, Indianapolis Indiana 46222
Part 70 Permit No.: T097-34667-00310
Facility: Emission Unit PTS14 (Test Stands O-24 and O-25 only)
Parameter: Combined diesel fuel usage; limit the combined potential to emit NOx in Test Stands O-24 and O-25 to less than forty (40) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
Limit: The combined input of diesel fuel to reciprocating engines utilized in Test Stands O-24 and O-25 shall be less than 182,481 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. For the purposes of determining compliance, each gallon of diesel fuel burned in reciprocating engines that are equal to or less than 600 horsepower shall be equivalent to one and thirty seven hundredths (1.378) gallons of diesel fuel burned in reciprocating engines that are greater than 600 horsepower.

Quarter:_____ Year:_____

	Column 1				Column 2				Column 1 + Column 2			
	This Month				Previous 11 Months				12 Month Total			
Month	Diesel fuel usage in engines > 600 hp (gal)	Equivalent gallons in engines ≤ 600 hp (gal x 1.378)	Total Diesel fuel usage (gal)	NOx emissions (tons)	Diesel fuel usage in engines > 600 hp (gal)	Equivalent gallons in engines ≤ 600 hp (gal x 1.378)	Total Diesel fuel usage (gal)	NOx emissions (tons)	Diesel fuel usage in engines > 600 hp (gal)	Equivalent gallons in engines ≤ 600 hp (gal x 1.378)	Total Diesel fuel usage (gal)	NOx emissions (tons)

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:_____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance and Enforcement Branch

Part 70 Usage Report
(Submit Report Quarterly)

Source Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Mail Code: M-29, Indianapolis Indiana 46222
Part 70 Permit No.: T097-34667-00310
Facility: Emission Unit PTS14 (Test Stand O-31)
Parameter: Diesel fuel usage; limit the potential to emit NOx in Test Stand O-31 to less than forty (40) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
Limit: The input of diesel fuel to reciprocating engines utilized in Test Stand O-31 shall be less than 182,481 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. For the purposes of determining compliance, each gallon of diesel fuel burned in reciprocating engines that are equal to or less than 600 horsepower shall be equivalent to one and thirty seven hundredths (1.378) gallons of diesel fuel burned in reciprocating engines that are greater than 600 horsepower.

Quarter:_____ Year:_____

	Column 1				Column 2				Column 1 + Column 2			
	This Month				Previous 11 Months				12 Month Total			
Month	Diesel fuel usage in engines > 600 hp (gal)	Equivalent gallons in engines ≤ 600 hp (gal x 1.378)	Total Diesel fuel usage (gal)	NOx emissions (tons)	Diesel fuel usage in engines > 600 hp (gal)	Equivalent gallons in engines ≤ 600 hp (gal x 1.378)	Total Diesel fuel usage (gal)	NOx emissions (tons)	Diesel fuel usage in engines > 600 hp (gal)	Equivalent gallons in engines ≤ 600 hp (gal x 1.378)	Total Diesel fuel usage (gal)	NOx emissions (tons)

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:_____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance and Enforcement Branch

Part 70 Usage Report
(Submit Report Quarterly)

Source Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Mail Code: M-29, Indianapolis Indiana 46222
Part 70 Permit No.: T097-34667-00310
Facility: Emission Unit ETC702 (Test Cell 702)
Parameter: Diesel fuel usage; limit the potential to emit NOx in Test Cell 702 to less than forty (40) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
Limit: The input of diesel fuel to reciprocating engines utilized in Test Cell 702 shall be less than 173,516 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. For the purposes of determining compliance, each gallon of diesel fuel burned in reciprocating engines that are equal to or less than 600 horsepower shall be equivalent to one and thirty seven hundredths (1.378) gallons of diesel fuel burned in reciprocating engines that are greater than 600 horsepower.

Quarter:_____ Year:_____

	Column 1				Column 2				Column 1 + Column 2			
	This Month				Previous 11 Months				12 Month Total			
Month	Diesel fuel usage in engines > 600 hp (gal)	Equivalent gallons in engines ≤ 600 hp (gal x 1.378)	Total Diesel fuel usage (gal)	NOx emissions (tons)	Diesel fuel usage in engines > 600 hp (gal)	Equivalent gallons in engines ≤ 600 hp (gal x 1.378)	Total Diesel fuel usage (gal)	NOx emissions (tons)	Diesel fuel usage in engines > 600 hp (gal)	Equivalent gallons in engines ≤ 600 hp (gal x 1.378)	Total Diesel fuel usage (gal)	NOx emissions (tons)

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:_____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance and Enforcement Branch

Part 70 Quarterly Report

Source Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Mail Code: M-29, Indianapolis Indiana 46222
Part 70 Permit No.: T097-34667-00310
Facility: Emission Unit ETC55
Parameter: NOx Emissions
Limit: NOx emissions from diesel fuel fired reciprocating engines utilized in ETC55 shall be less than forty (40) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

The following equation shall be used to determine compliance:

$NOx = [(FU \times D \times EF / FCR)_{Engine\ 1} + (FU \times D \times EF / FCR)_{Engine\ 2}] \times 1\ ton / 2{,}000\ lb$

Where:
NOx = NOx emissions (ton/month)
FU = Fuel Usage (gal/month)
D = Density of fuel (lb/gal)
EF = NOx Emission Factor (lb/hp-hr) (For each engine type used, the emission factor shall be the emission limitation from the applicable federal engine emission standards.)
FCR = Fuel Consumption Rate (lb fuel/hp-hr)

Quarter:_____ Year:_____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:_____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance and Enforcement Branch

Part 70 Quarterly Report

Source Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Mail Code: M-29, Indianapolis Indiana 46222
Part 70 Permit No.: T097-34667-00310
Facility: Emission Unit ETC55
Parameter: CO Emissions
Limit: CO emissions from diesel fuel fired reciprocating engines utilized in ETC55 shall be less than one-hundred (100) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

The following equation shall be used to determine compliance:

$CO = [(FU \times D \times EF / FCR)_{Engine\ 1} + (FU \times D \times EF / FCR)_{Engine\ 2}] \times 1\ ton / 2{,}000\ lb$

Where:
CO = CO emissions (ton/month)
FU = Fuel Usage (gal/month)
D = Density of fuel (lb/gal)
EF = CO Emission Factor (lb/hp-hr) (For each engine type used, the emission factor shall be the emission limitation from the applicable federal engine emission standards.)
FCR = Fuel Consumption Rate (lb fuel/hp-hr)

Quarter:_____ Year:_____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:_____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance and Enforcement Branch

Part 70 Quarterly Report

Source Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Mail Code: M-29, Indianapolis Indiana 46222
Part 70 Permit No.: T097-34667-00310
Facility: Emission Unit ETC55
Parameter: SO_2 Emissions
Limit: SO_2 emissions from diesel fuel fired reciprocating engines utilized in ETC55 shall be less than forty (40) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

The following equation shall be used to determine compliance:

$SO_2 = [(FU \times D \times EF / FCR)_{Engine\ 1} + (FU \times D \times EF / FCR)_{Engine\ 2}] \times 1\ ton / 2{,}000\ lb$

Where:
SO_2 = SO_2 emissions (ton/month)
FU = Fuel Usage (gal/month)
D = Density of fuel (lb/gal)
EF = SO_2 Emission Factor (0.00405 lb SO_2/hp-hr) (from AP-42, Table 3.4-1)
FCR = Fuel Consumption Rate (lb fuel/hp-hr)

Quarter:_____ Year:_____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:_____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
Compliance and Enforcement Branch

Part 70 Quarterly Report

Source Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Mail Code: M-29, Indianapolis Indiana 46222
Part 70 Permit No.: T097-34667-00310
Facility: Emission Unit ETC53
Parameter: NOx Emissions
Limit: NOx emissions from reciprocating engines utilized in ETC53 shall be less than forty (40) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

The following equation shall be used to determine compliance:

$NOx = [(FU \times D \times EF / FCR)_{Engine\ 1} + (FU \times D \times EF / FCR)_{Engine\ 2}] \times 1\ ton / 2{,}000\ lb$

Where:
NOx = NOx emissions (ton/month)
FU = Fuel Usage (gal/month)
D = Density of fuel (lb/gal)
EF = NOx Emission Factor (lb/hp-hr) (For each engine type used, the emission factor shall be the emission limitation from the applicable federal engine emission standards.)
FCR = Fuel Consumption Rate (lb fuel/hp-hr)

Quarter:_____ Year:_____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:_____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report – Test Cell 50N, 52N, 50S, and 52S VOC Emissions

Source Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Indianapolis, Indiana
Part 70 Permit No.: T097-34667-00310
Facility: Test Cells 50N, 52N, 50S, and 52S
Parameter: VOC emissions (Condition D.2.3(b)(1))
Limit: Combined VOC emissions from test cells 50N, 52N, 50S, and 52S shall be less than 40.0 tons per twelve consecutive month period, with compliance determined at the end of each month.

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report – Test Cell 50N, 52N, 50S, and 52S NOx Emissions

Source Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Indianapolis, Indiana
Part 70 Permit No.: T097-34667-00310
Facility: Test Cells 50N, 52N, 50S, and 52S
Parameter: NOx emissions (Condition D.2.3(b)(2))
Limit: Combined NOx emissions from test cells 50N, 52N, 50S, and 52S shall be less than 40.0 tons per twelve consecutive month period, with compliance determined at the end of each month.

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

DRAFT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
PART 70 OPERATING PERMIT
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Allison Transmission, Inc.
Source Address: One Allison Way, Indianapolis, Indiana 46222
Part 70 Permit No.: T097-34667-00310

Months: _____ to _____ Year: _____

This report shall be submitted quarterly based on a calendar year. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of paragraph (a) of Section C-General Reporting. Any deviation from the requirements of this permit, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

DRAFT

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Part 70 Significant Source and Significant Permit Modification

Source Description and Location

Source Name:	Allison Transmission, Inc. - Speedway Main Campus
Source Location:	One Allison Way, Indianapolis, Indiana 46222
County:	Marion County, Wayne Township
SIC Code:	3714 (Motor Vehicle Parts and Accessories)
Operation Permit No.:	T097-34667-00310
Operation Permit Issuance Date:	February 24, 2015
Significant Source Modification No.:	097-36831-00310
Significant Permit Modification No.:	097-36910-00310
Permit Reviewer:	David Matousek

Source Definition

This transmission manufacturing plant consists of five (5) plants, including Plant 3, Plant 4, Plant 6, Plant 12, Plant 14, and Plant 16, located at One Allison Way, Indianapolis, Indiana 46222

The five (5) plants are located on contiguous or adjacent properties and have the same two digit SIC code and are still under common ownership. Therefore they are considered one (1) major source, as defined by 326 IAC 2-7-1(22).

This conclusion was initially determined under Part 70 Operating Permit T097-6898-00310 on June 21, 2004 and was updated under Significant Source Modification 097-36831-00310 to correct typographical errors and to incorporate an address change.

Existing Approvals

The source was issued Part 70 Operating Permit Renewal No. T097-34667-00310 on February 24, 2015. The source has since received the following approvals:

(a) Administrative Amendment No. 097-36225-00310, issued on October 6, 2015.

County Attainment Status

The source is located in Marion County, Wayne Township.

Pollutant	Designation
SO_2	Non-attainment effective October 4, 2013, for the Center Township, Perry Township, and Wayne Township. Better than national standards for the remainder of the county.
CO	Attainment effective February 18, 2000, for the part of the city of Indianapolis bounded by 11th Street on the north; Capitol Avenue on the west; Georgia Street on the south; and Delaware Street on the east. Unclassifiable or attainment effective November 15, 1990, for the remainder of Indianapolis and Marion County.
O_3	Unclassifiable or attainment effective July 20, 2012, for the 2008 8-hour ozone standard.[1]

Pollutant	Designation
$PM_{2.5}$	Attainment effective July 11, 2013, for the annual $PM_{2.5}$ standard.
$PM_{2.5}$	Unclassifiable or attainment effective December 13, 2009, for the 24-hour $PM_{2.5}$ standard.
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Unclassifiable or attainment effective December 31, 2011.
[1]Attainment effective October 18, 2000, for the 1-hour ozone standard for the Indianapolis area, including Marion County, and is a maintenance area for the 1-hour ozone National Ambient Air Quality Standards (NAAQS) for purposes of 40 CFR 51, Subpart X*. The 1-hour designation was revoked effective June 15, 2005.	

(a) Ozone Standards
Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to ozone. Marion County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) $PM_{2.5}$
Marion County has been classified as attainment for $PM_{2.5}$. Therefore, direct $PM_{2.5}$, SO_2, and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(c) SO_2
U.S. EPA, in the Federal Register Notice 78 FR 47191 dated August 5, 2013, has designated Marion County, Wayne Township, as nonattainment for SO_2. Therefore, SO_2 emissions were reviewed pursuant to the requirements of Emission Offset, 326 IAC 2-3.

(e) Other Criteria Pollutants
Marion County has been classified as attainment or unclassifiable in Indiana for CO, PM_{10}, NO_2 and lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Source Status - Existing Source

The table below summarizes the potential to emit of the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits:

Pollutant	**Emissions** (ton/yr)
PM	177.00
PM_{10}	165.80
$PM_{2.5}$	165.70
SO_2	807.00
NO_X	5,065.20
VOC	248.85
CO	1,559.20
HAPs	
Formaldehyde	3.24
Total	**9.98**

On June 23, 2014, in the case of Utility Air Regulatory Group v. EPA, cause no. 12-1146, (available at http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court's decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources "previously classified as 'Major' based solely on greenhouse gas emissions."

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHGs emissions to determine operating permit applicability or PSD applicability to a source or modification.

(a) This existing source is a major stationary source, under PSD (326 IAC 2-2), because a PSD regulated pollutant, excluding GHGs, is emitted at a rate of 250 tons per year or more, and it is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).

(b) This existing source is a major stationary source, under Emission Offset (326 IAC 2-3), because SO2, a nonattainment regulated pollutant, is emitted at a rate of 100 tons per year or more.

(c) These emissions are based upon the Technical Support Document for Administrative Amendment number 097-36225-00310.

(d) This existing source is not a major source of HAPs, as defined in 40 CFR 63.2, because HAPs emissions are less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA).

Description of Proposed Modification

The Office of Air Quality (OAQ) has reviewed a modification application submitted by Allison Transmission, Inc. - Speedway Main Campus, located at One Allison Way, Indianapolis, Indiana 46222 on February 12, 2016 for a significant modification of its Part 70 Operating Permit Renewal issued on February 24, 2015. If approved by IDEM's Office of Air Quality (OAQ), this proposed modification would allow Allison Transmission, Inc. to make certain changes at its existing source. The application submitted by Allison Transmission, Inc. is related to the installation of two (2) 2,965 HP emergency generators, the construction of four new test cells identified as 50N, 50S, 52N and 52S and the modification of the descriptive information of engine transmission test cell 53. Allison Transmission submitted three individual projects under one permit application. One project consists of the construction of engine transmission test cells 50N, 50S, 52N, and 52S. The second project consists of the installation of two emergency generators. The final project consists of the modification of the descriptive information of engine transmission test cell 53. The following emission units are being added to the source:

New Emission Units

(a) The following test cells have been added to emission unit ETC:

Test Cell ID	Construction Dates	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
50N	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 093
50S	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 097
52N	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 098
52S	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 099

[40 CFR 60, Subpart IIII] [40 CFR 60, Subpart JJJJ] [40 CFR 63, Subpart ZZZZ]

(b) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1a, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1a. [40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

(c) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1b, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1b. [40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

Modified Emission Units

(a) Transmission Test Cell 53, identified as ETC53, approved in 2015 for construction, consisting of two reciprocating engines (53N and 53S) firing low sulfur diesel fuel (150 ppm or less), with an estimated maximum engine size of equal to or less than 1000 HP each and exhausting to Stack/Vents PTE95 and PTE96.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60 Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply.

Emission Units Removed

(a) IDEM, OAQ is also removing references in the permit to test cells 40N, 40S, 50, and 51 south. These test cells are no longer in service.

(b) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6.

Enforcement Issues

There are no pending enforcement actions related to this modification.

Stack Summary

Stack ID	Operation	Height (ft)	Diameter (ft)	Flow Rate (acfm)	Temperature (^{0}F)
G1a	Genset 1a	3.0	1.75	702	979
G1b	Genset 1b	3.0	1.75	702	979
PTE 093	TC50N	36.0	0.80	7,689	880
PTE 097	TC50S	36.0	0.80	4,133	975
PTE 098	TC52N	36.0	0.80	7,689	880
PTE 099	TC52S	36.0	0.80	4,133	975

Emission Calculations

See Appendix A of this Technical Support Document for detailed emission calculations for this modification.

See Appendix B of this Technical Support Document for detailed emission calculation for the entire source after the modification.

Project Aggregation Analysis for Permit Level Determinations

Project Aggregation Analysis Background Information

When a major source for Prevention of Significant Deterioration (PSD) and/or Emission Offset (EO) submits an application for a source modification, IDEM, OAQ reviews the permitting history of the source to determine if previous projects should be aggregated with the current project. The application for construction of the new engine transmission test cells and the installation of the emergency generators was received by IDEM, OAQ on February 12, 2016.

On June 21, 2016, an aggregation analysis was submitted by Allison Transmission, Inc. for the Boiler House Project and is included as Appendix C to the TSD.

On August 3, 2016, an aggregation analysis was submitted by Allison Transmission, Inc. for the upgrading of test cells (ADV Refurbishment), with additional information submitted on August 16, 2016, and is included as Appendix D to the TSD.

The aggregation analyses submitted by Allison Transmission, Inc. were based on the aggregation criteria developed by U.S. EPA in a memorandum entitled "Applicability of New Source Review Circumvention Guidance to 3M - Maplewood, Minnesota", dated June 17, 1993, which is available on the internet at the following link:

https://www.epa.gov/sites/production/files/2015-07/documents/maplwood.pdf:

Project Aggregation Analysis Determinations

IDEM, OAQ reviewed the two (2) aggregation analyses submitted by Allison Transmission, Inc. and has made the following determinations:

1) **ETC55 Project, ETC53 Project, and Proposed 2016 Modification (TC 50N/S and TC 52N/S)**

IDEM, OAQ has determined that the test cell ETC55 approved for construction in 2013, test cell ETC53 (53N and 53S) approved for construction in 2015, and the four (4) test cells (TC50N, TC50S, TC52N, and TC52S) proposed for construction in 2016 are not considered part of the same project for the reasons provided by Allison Transmission, Inc. (ATI) in its aggregation analysis (see Appendix D to the TSD). Allison Transmission, Inc., has indicated that upgrading only one test cell makes business sense for ATI whether or not any other test cell is upgraded; the test cell upgrades are not interrelated or interdependent, the test cell projects are economically viable without the other test cell upgrades, and the test cell projects were approved as separate projects through separate capital planning approvals by ATI management in different years.

IDEM OAQ has determined that the four (4) test cells (TC50N, TC50S, TC52N, and TC52S) proposed for construction in 2016 will be considered part of the same project, since they were proposed in the same source/permit modification application, were approved and funded through the same capital planning approval by ATI management in the same year, and are scheduled for construction within the same project construction period.

2) **Test Cell Upgrade Projects and Boiler House Project (including Emergency Generators)**
IDEM, OAQ has determined that the test cell upgrade projects (ADV Refurbishment) described in item 1 above and the Boiler House project (including emergency generators) are not considered part of the same project for the reasons provided by Allison Transmission, Inc. in its Boiler House project aggregation analysis (see Appendix C to the TSD). Allison Transmission, Inc., has indicated that Test Cell Upgrade Projects (ADV Refurbishment) and the Boiler House Project are not interdependent, they are managed under separate management chains that do not intersect until they reach ATI's President, have no shared functionality and either one could be built and operate normally without the other one ever being built.

3) **Boiler House Project and Emergency Generators**
IDEM, OAQ has determined that the installation of the emergency generators would be considered part of the Boiler House Project.

This determination was made based on the Boiler House Project schedule, which indicates that the Boiler House Project is a phased project with the emergency generators scheduled to be installed in 2016-2017 with the boilers installed in 2018-2019 (see Appendix C to the TSD). The Boiler House Project and the emergency generators also have a similar purpose in that they would provide power to the plant and are both are interrelated in that the emergency generators could provide power when the boiler(s) are down.

IDEM, OAQ informed Allison Transmission, Inc. that all emission units installed under this phased project would be aggregated for Prevention of Significant Deterioration (PSD) and Emission Offset (EO) purposes. This includes the generators, the cooling tower, and the new boiler. Allison Transmission, Inc. provided assurances that this phased project would be limited in order to avoid PSD and/or EO review. Allison Transmission, Inc. will be submitting future application for a source modification/permit modification to obtain construction/operating approval for the cooling tower, and the new boiler.

Permit Level Determination – Part 70 Modification to an Existing Source

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emission unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, IDEM, or the appropriate local air pollution control agency."

The following tables are used to determine the appropriate permit level under 326 IAC 2-7-10.5. The tables reflect the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit. If the control equipment has been determined to be integral, the table reflects the PTE after consideration of the integral control device.

Project 1
The revision of the descriptive information for engine transmission test cell 53, identified as ETC53. This project results in the following change in the Potential to Emit of ETC53:

PTE Change of the Modified Process - Test Cell ETC53			
Pollutant	**PTE Before Modification** (ton/yr)	**PTE After Modification** (ton/yr)	**Increase from Modification** (ton/yr)
PM	6.32	6.13	0.00
PM_{10}	6.32	6.13	0.00
$PM_{2.5}$	6.32	6.13	0.00
SO_2	5.18	1.06	0.00
VOC	189.14	6.18	0.00
CO	60.97	48.18	0.00
NO_X	250.19	210.24	0.00
Formaldehyde	3.24	0.07	0.00
Combined HAP	3.62	0.23	0.00

The PTE of engine transmission test cell ETC53 before the modification was established under Significant Source Modification 097-34820-00310. The PTE of engine transmission test cell ETC53 after the modification is included in Appendix B of this TSD.

This source modification is not subject to 326 IAC 2-7-10.5.

Additionally, the modification is subject to 326 IAC 2-7-11(a)(7); because, the project revises descriptive information where the revision will not trigger a new applicable requirement or violate a permit term.

Project 2
The installation of the emergency generators has the following potential to emit:

Potential to Emit of New Units (tons per year)									
Emission Unit	**PM**	**PM10**	**Direct PM2.5**	**SO2**	**VOC**	**CO**	**NOx**	**Single HAP***	**Combined HAP**
Generator 1a	0.21	0.21	0.21	0.09	0.68	0.73	6.54	4.1E-03	8.17E-03
Generator 1a	0.21	0.21	0.21	0.09	0.68	0.73	6.54	4.1E-03	8.17E-03
PTE of Modification	0.41	0.41	0.41	0.18	1.37	1.46	13.07	8.2E-03	0.02

* Formaldehyde

This source modification is subject to 326 IAC 2-7-10.5(e)(1)(B)(ii); because, the modification has a potential to emit less than twenty-five (25) tons per year of and equal to or greater than ten (10) tons per year of NOx.

Additionally, the modification is subject to 326 IAC 2-7-11(a)(8)(A); because, the project incorporates an exempt unit as described in 326 IAC 2-1.1-3.

Project 3
The construction of test cells 50N, 52N, 50S, and 52S has the following potential to emit:

Potential to Emit of New Units (tons per year)									
Emission Unit	**PM**	**PM10**	**Direct PM2.5**	**SO2**	**VOC**	**CO**	**NOx**	**Single HAP***	**Combined HAP**
Test Cell - 50N	2.05	2.05	2.05	1.68	12.65	20.61	12.65	1.32	1.81
Test Cell - 52N	2.05	2.05	2.05	1.68	12.65	20.61	12.65	1.32	1.81
Test Cell - 50S	2.05	2.05	2.05	1.68	12.65	25.22	25.22	1.32	1.82
Test Cell - 52S	2.05	2.05	2.05	1.68	12.65	25.22	25.22	1.32	1.82
PTE of Modification	8.21	8.21	8.21	6.73	50.59	91.66	75.74	5.26	7.24

* Formaldehyde

This source modification is subject to 326 IAC 2-7-10.5(g)(4)(C and D); because, the modification has a potential to emit greater than or equal to twenty-five (25) tons per year of VOC and NOx.

Additionally, the modification is subject to 326 IAC 2-7-12(d)(1); because, the modification does not qualify as a minor permit modification or as an administrative amendment due to the case-by-case determination of an emission limitation or other standard.

Project 3 has the highest level permitting requirements. Therefore, all three projects will be incorporated into the Part 70 Operating Permit Renewal using a significant source modification and significant permit modification under a single permitting action.

Permit Level Determination – PSD and Emission Offset

(a) Each project must be evaluated individually for the purposes of PSD. The first project evaluated is the installation of the emergency generators.

The table below summarizes the potential to emit, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this Part 70 significant source and significant permit modification, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Limited Potential to Emit of Engine Generator Project (TPY)								
Emission Unit	**PM**	**PM10**	**Direct PM2.5**	**SO2**	**VOC**	**CO**	**NOx**	**GHG as CO2e**
Generator 1a	0.21	0.21	0.21	0.09	0.68	0.73	6.54	849
Generator 1b	0.21	0.21	0.21	0.09	0.68	0.73	6.54	849
PTE of Modification	0.41	0.41	0.41	0.18	1.37	1.46	13.07	1,698
PSD Significant Thresholds	25	15	10	---	40	100	40	75,000
EO Significant Thresholds	---	---	---	40	---	---	---	---

On June 23, 2014, in the case of Utility Air Regulatory Group v. EPA, cause no. 12-1146, (available at http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court's decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources "previously classified as 'Major' based solely on greenhouse gas emissions."

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHGs emissions to determine operating permit applicability or PSD applicability to a source or modification.

This modification to an existing major PSD stationary source is not major because:

(a) The emissions increase of each PSD regulated pollutant, excluding GHGs, are less than the PSD significant thresholds; and

(b) The emissions increase of GHGs from this modification to an existing major PSD source are less than seventy-five thousand (75,000) tons of CO2 equivalent (CO2e) emissions per year.

Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

This modification to an existing major Emission Offset stationary source is not major because the emissions increase of SO2 is less than the Emission Offset significant thresholds. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.

(b) The second project to be evaluated is the construction of the test cells, identified as 50N, 52N, 50S, and 52S.

The table below summarizes the potential to emit, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this Part 70 significant source and significant permit modification, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Limited Potential to Emit of Test Cell Project (TPY)								
Emission Unit	**PM**	**PM10**	**Direct PM2.5**	**SO2**	**VOC**	**CO**	**NOx**	**GHG as CO2e**
Test Cell - 50N	2.05	2.05	2.05	1.68	< 40.0	20.61	< 40.0	3,539
Test Cell - 52N	2.05	2.05	2.05	1.68		20.61		3,539
Test Cell - 50S	2.05	2.05	2.05	1.68		20.61		5,016
Test Cell - 52S	2.05	2.05	2.05	1.68		20.61		5,016
PTE of Modification	8.21	8.21	8.21	6.73	< 40.0	91.66	< 40.0	17,110
PSD Significant Thresholds	25	15	10	---	40.0	100	40.0	75,000
EO Significant Thresholds	---	---	---	40	---	---	---	---

On June 23, 2014, in the case of Utility Air Regulatory Group v. EPA, cause no. 12-1146, (available at http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court's decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources "previously classified as 'Major' based solely on greenhouse gas emissions."

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHGs emissions to determine operating permit applicability or PSD applicability to a source or modification.

This modification to an existing major PSD stationary source is not major because:

(a) The emissions increase of each PSD regulated pollutant, excluding GHGs, are less than the PSD significant thresholds; and

(b) The emissions increase of GHGs from this modification to an existing major PSD source are less than seventy-five thousand (75,000) tons of CO2 equivalent (CO2e) emissions per year.

Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

This modification to an existing major Emission Offset stationary source is not major because the emissions increase of SO2 is less than the Emission Offset significant thresholds. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.

The unlimited PTE of VOC and NOx of the modification are each greater than the respective PSD significant thresholds. Therefore, the Permittee requested a PSD minor limit to restrict VOC and NOx emissions of the modification to less than 40 tons per year, each. IDEM, OAQ is including the following emission limitation to assure the PTE of VOC and NOx of the modification are each less than 40 tons per year and the requirements of 326 IAC 2-2 (PSD) are not applicable:

Prevention of Significant Deterioration (PSD) Minor Limit [326 IAC 2-2]
Pursuant to significant source modification 097-36831-00310, the Permittee shall comply with the following:

(1) Combined VOC emissions from test cells 50N, 52N, 50S, and 52S shall be less than 40.0 tons per twelve consecutive month period, with compliance determined at the end of each month.

(2) Combined NOx emissions from test cells 50N, 52N, 50S, and 52S shall be less than 40.0 tons per twelve consecutive month period, with compliance determined at the end of each month.

Compliance with the above emission limitations shall limit VOC and NOx emissions of test cells 50N, 52N, 50S, and 52S to less than 40 tons per twelve consecutive month period, each, and shall render the requirements of 326 IAC 2-2 (PSD) not applicable to the 2016 modification for test cells 50N, 52N, 50S, and 52S.

(c) The third project to be reviewed is the modification of transmission test cell 53. The modified emission unit is added to the Part 70 Operating Permit Renewal as follows:

Limited Potential to Emit of Engine Generator Project (TPY)								
Emission Unit	**PM**	**PM10**	**Direct PM2.5**	**SO2**	**VOC**	**CO**	**NOx**	**GHG as CO2e**
Transmission Test Cell ETC53	6.13	6.13	6.13	1.06	6.18	48.18	< 40	10,033
PTE of Modification	6.13	6.13	6.13	1.06	6.18	48.18	< 40	10,033
PSD Significant Thresholds	25	15	10	---	40	100	40	75,000
EO Significant Thresholds	---	---	---	40	---	---	---	---

On June 23, 2014, in the case of Utility Air Regulatory Group v. EPA, cause no. 12-1146, (available at http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court's decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources "previously classified as 'Major' based solely on greenhouse gas emissions."

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHGs emissions to determine operating permit applicability or PSD applicability to a source or modification.

This modification to an existing major PSD stationary source is not major because:

(a) The emissions increase of each PSD regulated pollutant, excluding GHGs, are less than the PSD significant thresholds; and

(b) The emissions increase of GHGs from this modification to an existing major PSD source are less than seventy-five thousand (75,000) tons of CO2 equivalent (CO2e) emissions per year.

Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

This modification to an existing major Emission Offset stationary source is not major because the emissions increase of SO2 is less than the Emission Offset significant thresholds. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.

The Permittee requested the removal of the provisions to combust gasoline and natural gas in transmission test cell 53 under significant source modification 097-36831-00310. Transmission test cell 53 was added to the source under significant source modification number 097-34820-00310, issued on February 2, 2015 and the unlimited potential to emit VOC and NOx of the modification were in excess 40 tons per twelve consecutive month period, each. The Permittee requested limits on NOx and VOC to ensure the requirements of 326 IAC 2-2 did not apply. After removing the ability to combust natural gas and gasoline, transmission test cell 53 no longer has uncontrolled VOC emissions in

excess of 40 tons per year. Therefore, the PSD minor limit for VOC is no longer needed. The PSD minor limit for NOx is still needed for transmission test cell 53 because the unlimited potential to emit NOx still exceeds 40 TPY. The modified PSD minor limit is shown below:

PSD Minor Limit [326 IAC 2-2]
In order to render the requirements of 326 IAC 2-2 not applicable to ETC53, NOx emissions from diesel fuel fired reciprocating engines utilized in ETC53 shall be less than forty (40) tons per twelve (12) consecutive month period with compliance determined at the end of each month. Compliance with these limits shall render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to ETC53.

Potential to Emit After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the emission units. Any new control equipment is considered federally enforceable only after issuance of this Part 70 permit renewal, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Potential to Emit After Issuance (TPY)											
Emission Unit		***PM**	**PM_{10}**	****$PM_{2.5}$**	**SO_2**	**NOx**	**VOC**	**CO**	**GHG as CO2e**	**Total HAPs**	*****Single Worst HAP**
Existing	ENCORE	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.60	0.00
	ETC53	6.13	6.13	6.13	1.06	< 40.0	6.18	48.18	10033	0.23	0.07
	ETC55	12.3	7.0	7.0	39.9	39.9	12.4	99.9	20397	0.19	0.01
	BLR4	0.6	2.4	2.4	0.2	31.5	1.7	26.5	38074	1.38	0.06
	BLR5	0.8	3.2	3.2	0.3	42.0	2.3	35.3	50765		
	BLR6	0.8	3.3	3.3	0.3	13.9	2.4	36.4	52141	0.82	0.03
	ETC, less new TCs	129.7	116.9	116.9	647.3	4101.8	135.7	1089.6	< 75000	2.03	0.44
	DTC	2.8	2.8	2.8	2.6	39.9	3.3	8.6	30460	0.71	0.22
	PTS14 O-1&O-2	1.2	0.7	0.7	6.3	39.9	1.1	10.6	42644	0.02	0.001
	PTS14 O-24&25	2.8	2.8	2.8	2.6	39.9	3.3	8.6		0.01	0.001
	PTS14 O-31	1.2	0.7	0.7	6.3	39.9	1.1	10.6		0.02	0.001
	ETC702	1.2	0.7	0.7	6.0	38.0	1.1	10.1	20307	0.19	0.0
New	Genset 1a	0.2	0.2	0.2	0.1	6.5	0.7	0.7	848.9	0.0	0.0
	Genset 1b	0.2	0.2	0.2	0.1	6.5	0.7	0.7	848.9	0.0	0.0
	ETC, Test Cell 50N	2.1	2.1	2.1	1.7	< 40.00	< 40.00	20.6	3538.6	1.8	1.3
	ETC, Test Cell 52N	2.1	2.1	2.1	1.7			20.6	3538.6	1.8	1.3
	ETC, Test Cell 50S	2.1	2.1	2.1	1.7			25.2	5016.3	1.8	1.3
	ETC, Test Cell 52S	2.1	2.1	2.1	1.7			25.2	5016.3	1.8	1.3
Source Wide Total		**168.3**	**155.3**	**155.2**	**719.8**	**4519.9**	**211.9**	**1477.6**	**> 100,000**	**13.5**	**6.10**
Title V Major Source Thresholds		NA	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds		250	250	250	NA	250	250	250	100,000	NA	NA
Emission Offset Major Source Thresholds		NA	NA	NA	100	NA	NA	NA	NA	NA	NA

negl. = negligible, NA = not applicable
* Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a regulated air pollutant". **$PM_{2.5}$ listed is direct $PM_{2.5}$. *** Single worst case HAP is formaldehyde.

On June 23, 2014, in the case of Utility Air Regulatory Group v. EPA, cause no. 12-1146, (available at http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court's decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources "previously classified as 'Major' based solely on greenhouse gas emissions."

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHGs emissions to determine operating permit applicability or PSD applicability to a source or modification.

(a) This existing source is a major stationary source, under PSD (326 IAC 2-2), because a PSD regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).

(b) This existing source is a major stationary source, under Emission Offset (326 IAC 2-3), because SO2, a nonattainment regulated pollutant, is emitted at a rate of 100 tons per year or more.

(c) These emissions are based upon Appendix B to this TSD.

(d) This existing source is not a major source of HAPs, as defined in 40 CFR 63.2, because HAPs emissions are less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA).

Federal Rule Applicability Determination

The following federal rules are applicable to the source due to this modification:

CAM:

(a) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to new or modified emission units that involve a pollutant-specific emission unit and meet the following criteria:

(1) has a potential to emit before controls equal to or greater than the Part 70 major source threshold for the pollutant involved;

(2) is subject to an emission limitation or standard for that pollutant; and

(3) uses a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

This modification consists of the installation of two emergency generators, the construction of four engine test cells, and the modification of a transmission test cell. All emission units included in this modification individually do not have a potential to emit before controls equal to or greater than the Part 70 major source threshold for any Part 70 pollutant. In addition, all new and modified emission units are subject to a post November 15, 1990 NESHAP and NSPS. Based on this evaluation, the requirements of 40 CFR Part 64, CAM are not applicable to any of the new or modified units as part of this modification.

NSPS:

(b) **40 CFR 60, Subpart GG (Standards of Performance for Stationary Gas Turbines) (326 IAC 12):** The provisions of 40 CFR 60, Subpart GG applies to all stationary gas turbines with a heat input at peak load equal to or greater than 10 MMBtu/hr, based on the lower heating value of the fuel that commence construction, modification, or reconstruction after October 3, 1977. The emergency generators and the prime movers that will be installed in test cells 50N, 50S, 52N, and 52S are not stationary gas turbines. This source does contain emission units meeting the definition of a stationary gas turbine. However, these emission units are subject to the provisions of 40 CFR 60, Subpart KKKK and are exempt from regulation by 40 CFR 60, Subpart JJJJ pursuant to 40 CFR 60.4305(b). Therefore, the provisions of 40 CFR 60, Subpart GG are not included in the permit.

(c) **40 CFR 60, Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines) (326 IAC 12):** The engines installed in test cells 50N, 50S, 52N, and 52S are subject to the provisions of 40 CFR 60, Subpart IIII when a diesel engine constructed, modified or reconstructed after July 11, 2005 is installed and the test cell exemption in 40 CFR 60.4200(b) does not apply. Both emergency generators are subject to the provisions of 40 CFR 60, Subpart IIII at all times because they are compression ignition RICE constructed after July 11, 2005. Test Cells 50N, 50S, 52N, and 50S and both emergency generators, identified as Genset 1a and 1b are subject to the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (40 CFR 60.4200, Subpart), which is incorporated by reference as 326 IAC 12, and included as Attachment B to this permit. The emission units located at this source and subject to this rule include:

(1) Emission Unit ETC consists of the following twenty five (25) engineering development transmission test cells; 701, 704, 705, 706, 707, 709, 710, 711, 712, 32N, 32S, 38N, 39N, 39S, 41N, 41S, 48N, 48S, 49N, 49S, 50N, 50S, 51N, 52N and 52S. The table below lists the fuel type and engine type that each cell is capable of accommodating based on the physical characteristics of each cell. Test cell 704 utilizes an oxidation catalyst system to control CO emissions.

Test Cell ID	Construction Dates	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
701	prior 1977	Diesel	Reciprocating or Gas Turbine	4000	PTE 057
704	prior 1977	Diesel	Reciprocating	2400	PTE 065
705	prior 1977	Diesel	Reciprocating or Gas Turbine	2400 for reciprocating; 4000 for gas turbine	PTE 067
706	prior 1977	Diesel	Reciprocating	4000	PTE 069
707	prior 1977	Diesel	Reciprocating	2400	PTE 071
709	prior 1977	Diesel	Reciprocating	2400	PTE 075
710	prior 1977	Diesel	Reciprocating	1500	PTE 077
711	prior 1977	Diesel	Reciprocating	2400	PTE 079
712	prior 1977	Diesel	Reciprocating	1500	PTE 080
32N	prior 1977	Diesel	Reciprocating	2400	PTE 008
32S	prior 1977	Diesel	Reciprocating	1500	PTE 006
38N	prior 1977	Diesel	Reciprocating	4000	PTE 011

Test Cell ID	Construction Dates	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
39N	prior 1977 modified 1980's	Diesel	Reciprocating	2400	PTE 018
39S	prior 1977	Diesel	Reciprocating	1500	PTE 020
41N	prior 1977	Diesel	Reciprocating	1200	PTE 023
41S	prior 1977	Diesel	Reciprocating	1200	PTE 021
48N	prior 1977	Diesel	Reciprocating	1200	PTE 040
48S	prior 1977	Diesel	Reciprocating	1200	PTE 041
49N	prior 1977	Diesel	Reciprocating	1500	PTE 086
49S	prior 1977	Diesel	Reciprocating	1500	PTE 087
50N	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 093
50S	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 097
51N	prior 1977	Diesel	Reciprocating	1200	PTE 084
52N	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 098
52S	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 099

All of the engines except gas turbine engines located in Test Cells 701 and 705 are affected sources under 40 CFR 63, Subpart ZZZZ. Any gas turbine engines in test cells 701 and 705 are considered affected sources under 40 CFR 60, Subpart KKKK when a new turbine is installed in the test cell and a test cell exemption does not apply. The diesel reciprocating engines in each of the test cells are considered affected sources under 40 CFR 60, Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply. The gasoline reciprocating engines in test cells 50N, 50S, 52N, and 52S are considered an affected source under 40 CFR 60, Subpart JJJJ when a new gasoline engine is installed in the test cell and a test cell exemption does not apply.

(2) Emission unit DTC consists of the following four (4) transmission reliability test cells, TC-107, TC-109, TC-111 and TC-112. All test cells were constructed in 1985. The following engines can be used in any one of the individual test cells mentioned above:

Test Cell ID	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
TC-107	Diesel	Reciprocating	1500	PTE 045
TC-109	Diesel	Reciprocating	1500	PTE 043
TC-111	Diesel	Reciprocating	1500	PTE 049
TC-112	Diesel	Reciprocating	1500	PTE 050

Under 40 CFR 63, Subpart ZZZZ, these engines are each an affected source. The engines in each of the test cells are considered affected sources under 40 CFR 60, Subpart IIII when a new engine is installed in the test cell and a test cell exemption does not apply.

(3) Emission unit PTS14 consists of the following five (5) transmission test stands, identified as test stand O-1, O-2, O-24, O-25 and O-31. Test stands O-1, O-2, O-24, O-25 and O-31 were constructed in 1978, 1979, 1986, 1986, and 1984 respectively. The table below lists the fuel type and engine type that each stand is capable of accommodating based on the physical characteristics of each stand. Test stands O-1, O-2, and O-31 each utilize an oxidation catalyst system to control CO emissions.

Test Stand ID	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
O-1	Diesel	Reciprocating	2400	14041
O-2	Diesel	Reciprocating	2400	14038
O-24	Diesel	Reciprocating	600	14024
O-25	Diesel	Reciprocating	600	14023
O-31	Diesel	Reciprocating	2400	14045

Under 40 CFR 63, Subpart ZZZZ, these engines are each an affected source. The engines in each of the test stands are considered affected sources under 40 CFR 60, Subpart IIII when a new engine is installed in the test stand and a test cell exemption does not apply.

(4) Transmission Test Cell 702, identified as Emission Unit ID ETC702, consisting of one (1) reciprocating engine firing diesel fuel, with an estimated maximum engine size of 4000 hp, and exhausting at Stack/ Vent IDs PTE062 and PTE062A. This emission unit can accommodate engines of greater than 600 horsepower. Constructed in 2002.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60, Subpart IIII when a new engine is installed in the test cell and a test cell exemption does not apply.

(5) Transmission Test Cell 55, identified as ETC55, permitted in 2013, consisting of two reciprocating diesel-fired engines, with an estimated maximum engine size of 4,000 hp each, exhausting to Stacks/Vents PTE93 and PTE94.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60, Subpart IIII when a new engine is installed in the test cell and a test cell exemption does not apply.

(6) Transmission Test Cell 53, identified as ETC53, approved in 2015 for construction, consisting of two reciprocating engines (53N and 53S) firing low sulfur diesel fuel (150 ppm or less), with an estimated maximum engine size of equal to or less than 1000 HP each and exhausting to Stack/Vents PTE95 and

PTE96.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60, Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply.

(7) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1a, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1a. [40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

(8) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1b, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1b. [40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

Insignificant Activities

(1) Emergency diesel generators not exceeding 1600 horsepower. [326 IAC 6.5-1-2(a)]

(A) one (1) 1,490 hp diesel emergency generator located in the Powerhouse courtyard.

(B) one (1) 490 hp diesel emergency generator located in Plant 7.

(C) one (1) 415 hp diesel emergency generator located in Plant 12/14.

Under 40 CFR 60, Subpart IIII, these operations are each an affected source.
Under 40 CFR 63, Subpart ZZZZ, these operations are each an affected source.

Nonapplicable portions of the NSPS will not be included in the permit. The emission units described above are subject to the following portions of 40 CFR 60, Subpart IIII:

Emergency Engines

(1) 40 CFR 60.4200(a)(2)(i), (a)(4), (c), and (d);
(2) 40 CFR 60.4205(b), and (e);
(3) 40 CFR 60.4206;
(4) 40 CFR 60.4207(b);
(5) 40 CFR 60.4209;
(6) 40 CFR 60.4211(a), (c), (f)(1), (f)(2)(i), and (f)(3);
(7) 40 CFR 60.4214(b), and (c);
(8) 40 CFR 60.4218;
(9) 40 CFR 60.4219;
(10) Table 5; and
(11) Table 8.

Non-Emergency Engines

(1) 40 CFR 60.4200(a)(2)(i), (a)(4), (b), and (d);
(2) 40 CFR 60.4204(a), (b), and (d);
(3) 40 CFR 60.4206;
(4) 40 CFR 60.4207(b);
(5) 40 CFR 60.4209(b);
(6) 40 CFR 60.4211(a), (b), and (c);
(7) 40 CFR 60.4214(a), and (c);
(8) 40 CFR 60.4218;

(9) 40 CFR 60.4219;
(10) Table 1;
(11) Table 5; and
(12) Table 8.

(d) **40 CFR 60, Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines) (326 IAC 12):** The provisions of 40 CFR 60, Subpart JJJJ are applicable to all owners and operators of stationary spark ignition RICE that commence construction after June 12, 2006. Test cells 50N, 50S, 52N, and 52S are subject to the requirements of 40 CFR 60, Subpart JJJJ when a gasoline or natural gas engine modified or reconstructed after June 12, 2006 is installed and the test cell exemption in 40 CFR 60.4230(b) does not apply.

Test cells 50N, 50S, 52N, and 52S are subject to the requirements of 40 CFR 60, Subpart JJJJ when a gasoline or natural gas engine that commenced construction after June 12, 2006, where the engine is manufactured on or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP); on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP; on or after July 1, 2008, for engines with a maximum engine power less than 500 HP; or on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 KW (25 HP) is installed and the test cell exemption in 40 CFR 60.4230(b) does not apply.

The emission units listed below are subject to the Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (40 CFR 60.4230, Subpart JJJJ), which is incorporated by reference as 326 IAC 12, and included as Attachment G to this permit.

(1) Emission Unit ETC consists of the following:

Test Cell ID	Construction Dates	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
50N	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 093
50S	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 097
52N	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 098
52S	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 099

Nonapplicable portions of the NSPS will not be included in the permit. The emission units described above are subject to the following portions of 40 CFR 60, Subpart JJJJ:

(1) 40 CFR 60.4230(a)(4), (a)(6), (b), (d), and (e);
(2) 40 CFR 60.4233(a), (b), (d), (e), (f)(1 through 4), and (h);

(3) 40 CFR 60.4234;
(4) 40 CFR 60.4235;
(5) 40 CFR 60.4243(a)(1), (b)(1), (e), and (g);
(6) 40 CFR 60.4245(a);
(7) 40 CFR 60.4246;
(8) 40 CFR 60.4248;
(9) Table 1; and
(10) Table 3.

(e) **40 CFR 60, Subpart KKKK (Standards of Performance for Stationary Combustion Turbines) (326 IAC 12):** The provisions of 40 CFR 60, Subpart KKKK apply to stationary combustion turbines that commenced construction, modification, or reconstruction after February 18, 2005. Test cells 50N, 50S, 52N, and 52S and the emergency generators do not meet the definition of a stationary combustion turbine and the provisions of 40 CFR 60, Subpart KKKK are not included in the permit for these units. Test cells 701 and 705 are still subject to the Standards of Performance for Stationary Combustion Turbines (40 CFR 60.4300, Subpart KKKK) and the provisions are already included in the permit.

(f) There are no other New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit.

NESHAP:

(g) **40 CFR 63, Subpart YYYY (National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines) (326 IAC 20-90):** 40 CFR 63, Subpart YYYY establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emissions from stationary combustion turbines located at major sources of HAP emissions. Allison Transmission, Inc. is an area source of HAP and the emergency generators and test cells 50N, 50S, 52N, and 52S do not meet the definition of stationary combustion turbines. Therefore, the provisions of 40 CFR 63, Subpart YYYY are not included in the permit.

(h) **40 CFR 63, Subpart ZZZZ (National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines) (326 IAC 20-82):** The provisions of 40 CFR 63, Subpart ZZZZ apply to stationary RICE located at area and major sources of HAP. The following emission units are subject to the National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63.6580, Subpart ZZZZ), which is incorporated by reference as 326 IAC 20-82, and included as Attachment F to this permit. The emission units located at this source and subject to 40 CFR 63, Subpart ZZZZ include:

(1) Emission Unit ETC consists of the following twenty five (25) engineering development transmission test cells; 701, 704, 705, 706, 707, 709, 710, 711, 712, 32N, 32S, 38N, 39N, 39S, 41N, 41S, 48N, 48S, 49N, 49S, 50N, 50S, 51N, 52N and 52S. The table below lists the fuel type and engine type that each cell is capable of accommodating based on the physical characteristics of each cell. Test cell 704 utilizes an oxidation catalyst system to control CO emissions.

Test Cell ID	Construction Dates	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
701	prior 1977	Diesel	Reciprocating or Gas Turbine	4000	PTE 057
704	prior 1977	Diesel	Reciprocating	2400	PTE 065
705	prior 1977	Diesel	Reciprocating or Gas Turbine	2400 for reciprocating; 4000 for gas turbine	PTE 067
706	prior 1977	Diesel	Reciprocating	4000	PTE 069

Test Cell ID	Construction Dates	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
707	prior 1977	Diesel	Reciprocating	2400	PTE 071
709	prior 1977	Diesel	Reciprocating	2400	PTE 075
710	prior 1977	Diesel	Reciprocating	1500	PTE 077
711	prior 1977	Diesel	Reciprocating	2400	PTE 079
712	prior 1977	Diesel	Reciprocating	1500	PTE 080
32N	prior 1977	Diesel	Reciprocating	2400	PTE 008
32S	prior 1977	Diesel	Reciprocating	1500	PTE 006
38N	prior 1977	Diesel	Reciprocating	4000	PTE 011
39N	prior 1977 modified 1980's	Diesel	Reciprocating	2400	PTE 018
39S	prior 1977	Diesel	Reciprocating	1500	PTE 020
41N	prior 1977	Diesel	Reciprocating	1200	PTE 023
41S	prior 1977	Diesel	Reciprocating	1200	PTE 021
48N	prior 1977	Diesel	Reciprocating	1200	PTE 040
48S	prior 1977	Diesel	Reciprocating	1200	PTE 041
49N	prior 1977	Diesel	Reciprocating	1500	PTE 086
49S	prior 1977	Diesel	Reciprocating	1500	PTE 087
50N	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 093
50S	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 097
51N	prior 1977	Diesel	Reciprocating	1200	PTE 084
52N	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 098
52S	2016	Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas	Reciprocating	Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP	PTE 099

All of the engines except gas turbine engines located in Test Cells 701 and 705 are affected sources under 40 CFR 63, Subpart ZZZZ. Any gas turbine engines in test cells 701 and 705 are considered affected sources under 40 CFR 60, Subpart KKKK when a new turbine is installed in the test cell and a test cell exemption does not apply. The diesel reciprocating engines in each of the test cells are considered affected sources under 40 CFR 60, Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply. The gasoline reciprocating engines in test cells 50N, 50S, 52N, and 52S are considered an affected source under 40 CFR 60, Subpart JJJJ when a new gasoline engine is installed in the test cell and a test cell exemption does not apply.

(2) Emission unit DTC consists of the following four (4) transmission reliability test cells, TC-107, TC-109, TC-111 and TC-112. All test cells were constructed in 1985. The following engines can be used in any one of the individual test cells

mentioned above:

Test Cell ID	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
TC-107	Diesel	Reciprocating	1500	PTE 045
TC-109	Diesel	Reciprocating	1500	PTE 043
TC-111	Diesel	Reciprocating	1500	PTE 049
TC-112	Diesel	Reciprocating	1500	PTE 050

Under 40 CFR 63, Subpart ZZZZ, these engines are each an affected source. The engines in each of the test cells are considered affected sources under 40 CFR 60, Subpart IIII when a new engine is installed in the test cell and a test cell exemption does not apply.

(3) Emission unit PTS14 consists of the following five (5) transmission test stands, identified as test stand O-1, O-2, O-24, O-25 and O-31. Test stands O-1, O-2, O-24, O-25 and O-31 were constructed in 1978, 1979, 1986, 1986, and 1984 respectively. The table below lists the fuel type and engine type that each stand is capable of accommodating based on the physical characteristics of each stand. Test stands O-1, O-2, and O-31 each utilize an oxidation catalyst system to control CO emissions.

Test Stand ID	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
O-1	Diesel	Reciprocating	2400	14041
O-2	Diesel	Reciprocating	2400	14038
O-24	Diesel	Reciprocating	600	14024
O-25	Diesel	Reciprocating	600	14023
O-31	Diesel	Reciprocating	2400	14045

Under 40 CFR 63, Subpart ZZZZ, these engines are each an affected source. The engines in each of the test stands are considered affected sources under 40 CFR 60, Subpart IIII when a new engine is installed in the test stand and a test cell exemption does not apply.

(4) Transmission Test Cell 702, identified as Emission Unit ID ETC702, consisting of one (1) reciprocating engine firing diesel fuel, with an estimated maximum engine size of 4000 hp, and exhausting at Stack/ Vent IDs PTE062 and PTE062A. This emission unit can accommodate engines of greater than 600 horsepower. Constructed in 2002.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60, Subpart IIII when a new engine is installed in the test cell and a test cell exemption does not apply.

(5) Transmission Test Cell 55, identified as ETC55, permitted in 2013, consisting of two reciprocating diesel-fired engines, with an estimated maximum engine size of 4,000 hp each, exhausting to Stacks/Vents PTE93 and PTE94.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60, Subpart IIII when a new engine is installed in the test cell and a test cell exemption does not apply.

(6) Transmission Test Cell 53, identified as ETC53, approved in 2015 for construction, consisting of two reciprocating engines (53N and 53S) firing low

sulfur diesel fuel (150 ppm or less), with an estimated maximum engine size of equal to or less than 1000 HP each and exhausting to Stack/Vents PTE95 and PTE96.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60, Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply.

(7) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1a, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1a. [40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

(8) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1b, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1b. [40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

Insignificant Activities

(1) Emergency diesel generators not exceeding 1600 horsepower. [326 IAC 6.5-1-2(a)]

(A) one (1) 1,490 hp diesel emergency generator located in the Powerhouse courtyard.

(B) one (1) 490 hp diesel emergency generator located in Plant 7.

(C) one (1) 415 hp diesel emergency generator located in Plant 12/14.

Under 40 CFR 60, Subpart IIII, these operations are each an affected source.
Under 40 CFR 63, Subpart ZZZZ, these operations are each an affected source.

Nonapplicable portions of NESHAP 40 CFR 63, Subpart ZZZZ will not be included in the permit:

(1) The Permittee shall comply with the following provisions of 40 CFR 63, Subpart ZZZZ when a new stationary RICE, defined as a RICE that commenced construction on or after June 12, 2006 pursuant to 40 CFR 63.6590(a)(2)(iii), is installed and operated in a test cell, and the test cell exemption does not apply:

New Stationary RICE (constructed on or after June 12, 2006)
Nonemergency, Compression Ignition and Spark Ignition

(1) 40 CFR 63.6580;
(2) 40 CFR 63.6585(a), (c), and (e);
(3) 40 CFR 63.6590(a)(2)(iii), and (c)(1);
(4) 40 CFR 63.6595(a)(6), (a)(7), and (c);
(5) 40 CFR 63.6605;
(6) 40 CFR 63.6650(f);
(7) 40 CFR 63.6665;
(8) 40 CFR 63.6670;
(9) 40 CFR 63.6675; and
(10) Table 8.

The provisions of 40 CFR 63 Subpart A – General Provisions, which are incorporated as 326 IAC 20-1, apply to the facility described in this section except when otherwise specified in 40 CFR 63, Subpart ZZZZ.

(2) The Permittee shall comply with the following provisions of 40 CFR 63, Subpart ZZZZ when a diesel-fired, nonemergency, existing stationary RICE, defined as a RICE that commenced construction prior to June 12, 2006 pursuant to 40 CFR 63.6590(a)(1)(iii), with a power output of less than or equal to 300 HP, is installed and operated in a test cell, and the test cell exemption does not apply:

Existing Stationary RICE (constructed prior to June 12, 2006)
Non-Emergency, Diesel-Fired
Less than or equal to 300 HP

(1) 40 CFR 63.6580;
(2) 40 CFR 63.6585(a), (c), (d), and (e);
(3) 40 CFR 63.6590(a)(1)(iii);
(4) 40 CFR 63.6595(a)(1) and (c);
(5) 40 CFR 63.6603(a);
(6) 40 CFR 63.6605;
(7) 40 CFR 63.6612;
(8) 40 CFR 63.6625(e)(4), (h), and (i);
(9) 40 CFR 63.6640(a) and (b);
(10) 40 CFR 63.6645(a)(2);
(11) 40 CFR 63.6655(e)(3);
(12) 40 CFR 63.6660;
(13) 40 CFR 63.6665;
(14) 40 CFR 63.6670;
(15) 40 CFR 63.6675;
(16) Table 2d (Item 1); and
(17) Table 8.

The provisions of 40 CFR 63 Subpart A – General Provisions, which are incorporated as 326 IAC 20-1, apply to the facility described in this section except when otherwise specified in 40 CFR 63, Subpart ZZZZ.

(3) The Permittee shall comply with the following provisions of 40 CFR 63, Subpart ZZZZ when a diesel-fired, nonemergency, existing stationary RICE, defined as a RICE that commenced construction prior to June 12, 2006 pursuant to 40 CFR 63.6590(a)(1)(iii), with a power output greater than 500 HP, is installed and operated in a test cell, and the test cell exemption does not apply:

Existing Stationary RICE (constructed prior to June 12, 2006)
Non-Emergency, Diesel-Fired
Greater than 500 HP

(1) 40 CFR 63.6580;
(2) 40 CFR 63.6585(a), (c), (d), and (e);
(3) 40 CFR 63.6590(a)(1)(iii);
(4) 40 CFR 63.6595(a)(1) and (c);
(5) 40 CFR 63.6603(a), (d) and (e);
(6) 40 CFR 63.6604(a);
(7) 40 CFR 63.6605;
(8) 40 CFR 63.6612;
(9) 40 CFR 63.6615;
(10) 40 CFR 63.6620(a), (b), (d), (e), (f), (g), (h), and (i);
(11) 40 CFR 63.6625(a), (b), (g), and (h);
(12) 40 CFR 63.6630(a), (b), and (c);
(13) 40 CFR 63.6635;
(14) 40 CFR 63.6640(a), (b), and (e);
(15) 40 CFR 63.6645(a)(2), (g), (h), and (i);
(16) 40 CFR 63.6650(a), (b), (c), (d), (e), and (f);
(17) 40 CFR 63.6655(a), (b), (d), and (e);

(18) 40 CFR 63.6665;
(19) 40 CFR 63.6670;
(20) 40 CFR 63.6675;
(21) Table 2b (item 2 and 3)
(22) Table 2d (item 3)
(23) Table 3 (item 4)
(24) Table 4 (item 1 and 3)
(25) Table 5 (item 1, 2, 3, 4, 5, and 6);
(26) Table 6 (item 3, 10, and 11); and
(27) Table 8.

The provisions of 40 CFR 63 Subpart A – General Provisions, which are incorporated as 326 IAC 20-1, apply to the facility described in this section except when otherwise specified in 40 CFR 63, Subpart ZZZZ.

(4) The Permittee shall comply with the following provisions of 40 CFR 63, Subpart ZZZZ when a compression ignition, emergency, new stationary RICE, defined as a RICE that commenced construction on or after June 12, 2006 pursuant to 40 CFR 63.6590(a)(2)(iii) is installed:

New Stationary RICE (constructed on or after to June 12, 2006)
Emergency, Diesel-Fired
(1) 40 CFR 63.6580;
(2) 40 CFR 63.6585(a), (c), and (e);
(3) 40 CFR 63.6590(a)(2)(iii), and (c)(1);
(4) 40 CFR 63.6595(a)(6), (a)(7), and (c);
(5) 40 CFR 63.6605;
(6) 40 CFR 63.6650(f);
(7) 40 CFR 63.6665;
(8) 40 CFR 63.6670;
(9) 40 CFR 63.6675; and
(10) Table 8.

The provisions of 40 CFR 63 Subpart A – General Provisions, which are incorporated as 326 IAC 20-1, apply to the facility described in this section except when otherwise specified in 40 CFR 63, Subpart ZZZZ.

(5) The Permittee shall comply with the following provisions of 40 CFR 63, Subpart ZZZZ when a compression ignition, emergency, existing stationary RICE, defined as a RICE that commenced construction before June 12, 2006 pursuant to 40 CFR 63.6590(a)(1)(iii) is installed:

Existing Stationary RICE (constructed before June 12, 2006)
Emergency, Diesel Fired
(1) 40 CFR 63.6580;
(2) 40 CFR 63.6585(a), (c), and (e);
(3) 40 CFR 63.6590(a)(1)(iii);
(4) 40 CFR 63.6595(a)(1);
(5) 40 CFR 63.6603(a);
(6) 40 CFR 63.6605;
(7) 40 CFR 63.6625(e)(5), (f), (h), and (i);
(8) 40 CFR 63.6640(a), (b), (e), (f)(1), (f)(2)(i), and (f)(4);
(9) 40 CFR 63.6645(a)(5);
(10) 40 CFR 63.6650(f);
(11) 40 CFR 63.6655(d), and (e)(2);
(12) 40 CFR 63.6660;
(13) 40 CFR 63.6665;
(14) 40 CFR 63.6670;

(15) 40 CFR 63.6675;
(16) Table 2d (item 4); and
(17) Table 6 (item 9).

(i) **40 CFR 63, Subpart PPPPP (National Emission Standards for Hazardous Air Pollutants for Engine Test Cells/Stands) (326 IAC 20-75):** 40 CFR 63, Subpart PPPPP establishes national emission standards for hazardous air pollutants (NESHAP) for engine test cells/stands located at major sources of hazardous air pollutants (HAP) emissions. Allison Transmission, Inc. is an area source of HAP. Therefore, the provisions of 40 CFR 63, Subpart PPPPP are not included in the permit.

(j) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAP) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

State Rule Applicability Determination

The following state rules are applicable to the source due to the modification:

Entire Source

326 IAC 1-7 (Stack Height Provisions)
This rule applies to all sources having exhaust gas stacks through which a potential of twenty-five (25) tons per year or more of particulate matter (PM) or sulfur dioxide (SO2) are emitted. The emergency generators and test cells 50N, 50S, 52N, and 52S each do not have potential SO2 and PM emissions of twenty-five (25) tons per year or more of particulate matter (PM) or sulfur dioxide (SO2). However, this source does contain other emission units with exhaust stacks which a potential of twenty-five (25) tons per year or more of particulate matter (PM) or sulfur dioxide (SO2) are emitted. Therefore, the provisions of 326 IAC 1-7 are included in the permit.

326 IAC 2-2 and 2-3 (PSD and Emission Offset)
PSD and Emission Offset applicability is discussed under the Permit Level Determination – PSD and Emission Offset section.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
This source is an area source of HAP and will emit less than ten (10) tons per year for a single HAP and less than twenty-five (25) tons per year for a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 2-6 (Emission Reporting)
This source is subject to 326 IAC 2-6 (Emission Reporting) because it is required to have an operating permit pursuant to 326 IAC 2-7 (Part 70). The potential to emit of VOC and PM10 is greater than 250 tons per year, and the potential to emit of NOx is greater than 2,500 tons per year. Therefore, pursuant to 326 IAC 2-6-3(a)(1), annual reporting is required. An emission statement shall be submitted by July 1, 2016, and every year thereafter. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

326 IAC 2-7-6(5) (Annual Compliance Certification)
The U.S. EPA Federal Register 79 FR 54978 notice does not exempt Title V Permittees from the requirements of 40 CFR 70.6(c)(5)(iv) or 326 IAC 2-7-6(5)(D), but the submittal of the Title V annual compliance certification to IDEM satisfies the requirement to submit the Title V annual compliance certifications to EPA. IDEM does not intend to revise any permits since the requirements of 40 CFR 70.6(c)(5)(iv) or 326 IAC 2-7-6(5)(D) still apply, but Permittees can note on their Title V annual compliance certification that submission to IDEM has satisfied reporting to EPA per Federal Register 79 FR 54978. This only applies to Title V Permittees and Title V compliance certifications.

326 IAC 6.5 PM Limitations Except Lake County
This rule applies to sources located in one of the following counties: Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo or Wayne. Sources specifically listed in 326 IAC 6.5-2 through 326 IAC 6.5-10 are subject to the provisions of 326 IAC 6.5. Sources not specifically listed in 326 IAC 6.5-2 through 6.5-10, with the potential to emit one hundred (100) tons per year or more, or with actual emissions of ten (10) tons per year or more of particulate matter are subject to the provisions of 326 IAC 6.5-1-2. The rule does not apply to combustion sources that burn only natural gas at sources or facilities identified in 326 IAC 6.5-2 through 326 IAC 6.5-10, as long as the units continue to burn natural gas. The rule also exempts surface coating, reinforced plastic composites fabricating manufacturing processes, and graphic arts manufacturing processes that use the following:

(1) Dip coating
(2) Roll coating
(3) Flow coating
(4) Brush coating
(5) less than 5 gallons of coating a day

Allison Transmission, Inc. is located in Marion County and is specifically listed in 326 IAC 6.5-6-2. Allison Transmission has the potential to emit one hundred (100) tons per year or more, and actual emissions of ten (10) tons per year or more of particulate matter and is subject to the provisions of 326 IAC 6.5. Emission units not listed in 326 IAC 6.5-6-2 are subject to 326 IAC 6.5-1-2. If any of the provisions or 326 IAC 6.5 conflict with or are inconsistent with limitations established in 326 IAC 12, then the most stringent limitation shall apply. The current permit contains 326 IAC 6.5 emission limitations for: Boiler 4, Boiler 5, twenty-five (25) test cells identified as ETC, test cell TC-107, test cell TC109, test cell TC-111, test cell TC-112, test stand O-1, test stand O-2, test stand O-24, test stand O-25, test stand O-31, transmission test cell 53 identified as ETC53, transmission test cell 702 identified as ETC702, transmission test cell 55 identified as ETC55, the existing emergency diesel generators, the existing emergency stationary fire pumps, grinding and machining operations, shot blast operations, heat treating operations and production welding. The applicability of 326 IAC 6.5 to the modified test cells 50N, 50S, 52N, 52S, and the proposed emergency generators are discussed below in State Rule Applicability Determination - Individual Facilities section.

326 IAC 6.8 PM Limitations for Lake County
This source is not subject to 326 IAC 6.8 because it is not located in Lake County.

Individual Facilities

Test Cells 50N, 50S, 52N, and 52S

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
HAP emissions from each of the test cells are less than ten (10) tons per year for a single HAP and less than twenty-five (25) tons per year for a combination of HAP. Therefore, the provisions of 326 IAC 2-4.1 do not apply. Also, pursuant to 326 IAC 2-4.1-1(b)(2), the requirements of 326 IAC 2-4.1-1 do not apply to a major source specifically regulated, or exempt from regulation, by a standard issued pursuant to Section 112(d), 112(h), or 112(j) of the CAA. The test cells are all subject to a National Emission Standard for Hazardous Air

Pollutants, 40 CFR 63, Subpart ZZZZ. Therefore, the provisions of 36 IAC 2-4.1 do not apply to the test cells.

326 IAC 6.5 PM Limitations Except Lake County
Test cells 50N, 50S, 52N, and 52S have potential PM emissions and are subject to 326 IAC 6.5-1-2 unless a more restrictive PM emission limit is contained in a new source performance standard referenced in 326 IAC 12.

Diesel Fuel
The test stands are subject to a PM emission limitation when combusting diesel fuel, pursuant to 40 CFR 60, Subpart IIII. The Permittee has the option of selecting emission limitations under 40 CFR 89 or 40 CFR 1039.101. The Permittee selected emission limitations under 40 CFR 1039.

Allowable PM emissions under 326 IAC 6.5 are shown below:

Operation (Diesel)	Heat Input (MMBtu/hr)	F-Factor (dscf/MMBtu)	Stack Flow (dscf/hr)	326 IAC 6.5 Limit	Allowable PM Emissions
TC50N	4.9	9,190	45,031	0.03 gr/dscf	0.193 lb/hr
TC50S	7.0	9,190	64,330	0.03 gr/dscf	0.28 lb/hr
TC52N	4.9	9,190	45,031	0.03 gr/dscf	0.193 lb/hr
TC52S	7.0	9,190	64,330	0.03 gr/dscf	0.28 lb/hr

Allowable PM Emissions under 40 CFR 1039 are shown below:

Operation (Diesel)	HP Rating	40 CFR 1039 Limit	Allowable 40 CFR 1039
TC50N	700	0.02 g/kw.hr	0.02 lb/hr
TC50S	1000	0.04 g/kw.hr	0.07 lb/hr
TC52N	700	0.02 g/kw.hr	0.02 lb/hr
TC52S	1000	0.04 g/kw.hr	0.07 lb/hr

Test cells 50N, 50S, 52N, and 52S are subject to a more restrictive PM limitation under 326 IAC 12, when the engine is combusting diesel fuel and is compliant with 40 CFR 1039.

Gasoline and Natural Gas
The test stands are not subject to an emission limitation under 326 IAC 12, while combusting natural gas or gasoline and are subject to the 326 IAC 6.5 limit. Pursuant to 326 IAC 6.5-1-2(a) and while combusting gasoline or natural gas, PM emissions from test cells 50N, 50S, 52N, and 52S shall not exceed 0.03 grains per dry standard cubic foot.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)
The provisions of 326 IAC 7-1.1 apply to all emission units with a potential to emit 25 tons per year or 10 pounds per hour of sulfur dioxide (SO2). Test cells 50N, 50S, 52N, and 52S each do not have the potential to emit 25 tons per year or 10 pounds per hour of SO2. Therefore, the provisions of 326 IAC 7-1.1 are not included in the permit for test cells 50N, 50S, 52N, and 52S.

326 IAC 8-1-6 (New Facilities, General Reduction Requirements)
The provisions of 326 IAC 8-1-6 are applicable to new facilities as of January 1, 1980, that have

potential emissions of twenty-five (25) tons per year or more of VOC, are located anywhere in the state, and are not otherwise regulated by another Article 8 rule, 326 IAC 20-48 (Emission Standards for Hazardous Air Pollutants for Boat Manufacturing), or 326 IAC 20-56 (Reinforced Plastic Composites Production). Individually, the test cells have potential VOC emissions of less than 25 tons per year. Therefore, the provisions of 326 IAC 8-1-6 are not included in the permit for the test cells.

326 IAC 10-5 (Nitrogen Oxide Reduction Program for Internal Combustion Engines (ICE))
The provisions of 326 IAC 10-5 are applicable to all owners or operators of any large NOx SIP Call engine. A large NOx SIP Call engine is defined in the rule as a stationary internal combustion engine identified and designated as large in the NOx SIP Call engine inventory as emitting more than one (1) ton of NOx per average ozone season day in 1995. The NOx SIP Call engine inventory is an inventory of internal combustion engines compiled by the U.S. EPA as part of the NOx SIP Call rule. The RICE installed in the test cells do not qualify as large NOx SIP Call engines. Therefore, the provisions of 326 IAC 10-5 are not included in the permit.

Diesel-Fired Emergency Generators

326 IAC 6.5 PM Limitations Except Lake County
The emergency generators have potential PM emissions and are subject to 326 IAC 6.5-1-2 unless a more restrictive PM emission limit is contained in a new source performance standard referenced in 326 IAC 12. The Permittee provided the following stack exhaust information:

Diesel Generators (2,965 HP)	Heat Input (MMBtu/hr)	F-Factor (dscf/MMBtu)	Stack Flow (dscf/hr)	326 IAC 6.5 Limit	Allowable PM Emissions
Genset 1a	20.76	9,190	190,784	0.03 gr/dscf	0.82 lb/hr
Genset 1b	20.76	9,190	190,784	0.03 gr/dscf	0.82 lb/hr

The emergency generators are subject to a PM emission limitation under 40 CFR 60, Subpart IIII. Pursuant to 40 CFR 60.4205(b), Subpart IIII, 2007 model year and later emergency RICE are subject to the emission standards for new nonroad CI engines in 40 CFR 60.4202, Subpart IIII. Pursuant to 40 CFR 60.4202(a)(2), Subpart IIII, stationary CI RICE with a maximum engine power greater than or equal to 37 KW (50 HP) must meet the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants beginning in model year 2007. The emergency generators produce 2,965 HP (2,211 kW) and are subject to a 0.2 gram/kw.hr emission limit for PM, pursuant to 40 CFR 89.112, Table 1. The 0.2 g/kw.hr emission limitation under 40 CFR 89.112 allows 0.97 lb PM/hr of PM emissions. The emission limitation under 326 IAC 6.5 is more restrictive. Therefore, the provisions of 326 IAC 6.5 are included in the permit for the emergency generators.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)
The provisions of 326 IAC 7-1.1 apply to all emission units with a potential to emit 25 tons per year or 10 pounds per hour of sulfur dioxide (SO2). The diesel-fired emergency generators do not have the potential to emit 25 tons per year or 10 pounds per hour of SO2. Therefore, the provisions of 326 IAC 7-1.1 are not included in the permit for the emergency generators.

326 IAC 8-1-6 (New Facilities, General Reduction Requirements)
The provisions of 326 IAC 8-1-6 are applicable to new facilities as of January 1, 1980, that have potential emissions of twenty-five (25) tons per year or more of VOC, are located anywhere in the state, and are not otherwise regulated by another Article 8 rule, 326 IAC 20-48 (Emission Standards for Hazardous Air Pollutants for Boat Manufacturing), or 326 IAC 20-56 (Reinforced Plastic Composites Production). Each generator has potential VOC emissions of less than 25 tons per year. Therefore, the provisions of 326 IAC 8-1-6 are not included in the permit for the emergency generators.

326 IAC 10-5 (Nitrogen Oxide Reduction Program for Internal Combustion Engines (ICE))
The provisions of 326 IAC 10-5 are applicable to all owners or operators of any large NOx SIP Call engine. A large NOx SIP Call engine is defined in the rule as a stationary internal combustion engine identified and designated as large in the NOx SIP Call engine inventory as emitting more than one (1) ton of NOx per average ozone season day in 1995. The NOx SIP Call engine inventory is an inventory of internal combustion engines compiled by the U.S. EPA as part of the NOx SIP Call rule. The emergency generators do not qualify as large NOx SIP Call engines. Therefore, the provisions of 326 IAC 10-5 are not included in the permit.

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions; however, these provisions do not always fulfill the requirement for a continuous demonstration. When this occurs, IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

If the Compliance Determination Requirements are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The Compliance Determination Requirements applicable to this modification are as follows:

Compliance Determination Requirements		
Emission Unit	**Parameter**	**Frequency**
Test Cells 50N, 52N, 50S, and 52S	VOC Record Keeping	Monthly
Test Cells 50N, 52N, 50S, and 52S	NOx Record Keeping	Monthly

In addition to record keeping, the test cells are subject to compliance determination requirements under 40 CFR 60, Subpart IIII, 40 CFR 60, Subpart JJJJ and 40 CFR 63, Subpart ZZZZ. The emergency generators are also subject to additional compliance determination requirements under 40 CFR 60, Subpart IIII.

There are no additional compliance monitoring requirements proposed in the permit.

Proposed Changes

The changes listed below have been made to Part 70 Operating Permit No. T097-34667-00310. Deleted language appears as ~~strikethroughs~~ and new language appears in **bold**:

Modification No. 1:

General Information Updates

IDEM, OAQ is clarifying Section A.1 to better describe the county location and SIC code. Revisions are shown below:

A.1 General Information [326 IAC 2-7-4(c)][326 IAC 2-7-5(14)][326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary transmission manufacturing plant.

Source Address:	One Allison Way, Indianapolis, Indiana 46222
General Source Phone Number:	317-242-2042
SIC Code:	3714 **(Motor Vehicle Parts and Accessories)**
County Location:	Marion **County,** Wayne Township
Source Location Status:	**********

Modification No. 2:

Section A - Emission Unit Description Updates

IDEM, OAQ is revising Section A.2 to add the emergency generators and to remove the descriptions of existing test cells 40N, 40S, 50, and 51S and add test cells 50N, 52N, 50S, and 52S. Revisions are shown below:

A.2 Emission Units and Pollution Control Equipment Summary
[326 IAC 2-7-4(c)(3)][326 IAC 2-7-5(14)]

This stationary source consists of the following emission units and pollution control devices:

(c) Emission Unit ETC consists of the following twenty five (25) engineering development transmission test cells; 701, 704, 705, 706, 707, 709, 710, 711, 712, 32N, 32S, 38N, 39N, 39S, ~~40N, 40S,~~ 41N, 41S, 48N, 48S, 49N, 49S, 50**N**, **50S,** 51N**, 52N and 52S**~~ and 51S~~. ~~All test cells were constructed prior to 1977. Test cell 39N was modified during the 1980's.~~ The table below lists the fuel type and engine type that each cell is capable of accommodating based on the physical characteristics of each cell. Test cell 704 utilizes an oxidation catalyst system to control CO emissions.

Test Cell ID	**Construction Dates**	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
701	**prior 1977**	Diesel	Reciprocating or Gas Turbine	4000	PTE 057
704	**prior 1977**	Diesel	Reciprocating	2400	PTE 065
705	**prior 1977**	Diesel	Reciprocating or Gas Turbine	2400 for reciprocating; 4000 for gas turbine	PTE 067
706	**prior 1977**	Diesel	Reciprocating	4000	PTE 069
707	**prior 1977**	Diesel	Reciprocating	2400	PTE 071

Test Cell ID	**Construction Dates**	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
709	**prior 1977**	Diesel	Reciprocating	2400	PTE 075
710	**prior 1977**	Diesel	Reciprocating	1500	PTE 077
711	**prior 1977**	Diesel	Reciprocating	2400	PTE 079
712	**prior 1977**	Diesel	Reciprocating	1500	PTE 080
32N	**prior 1977**	Diesel	Reciprocating	2400	PTE 008
32S	**prior 1977**	Diesel	Reciprocating	1500	PTE 006
38N	**prior 1977**	Diesel	Reciprocating	4000	PTE 011
39N	**prior 1977 modified 1980's**	Diesel	Reciprocating	2400	PTE 018
39S	**prior 1977**	Diesel	Reciprocating	1500	PTE 020
~~40N~~		~~Diesel~~	~~Reciprocating~~	~~1500~~	~~PTE 013~~
~~40S~~		~~Diesel~~	~~Reciprocating~~	~~1500~~	~~PTE 014~~
41N	**prior 1977**	Diesel	Reciprocating	1200	PTE 023
41S	**prior 1977**	Diesel	Reciprocating	1200	PTE 021
48N	**prior 1977**	Diesel	Reciprocating	1200	PTE 040
48S	**prior 1977**	Diesel	Reciprocating	1200	PTE 041
49N	**prior 1977**	Diesel	Reciprocating	1500	PTE 086
49S	**prior 1977**	Diesel	Reciprocating	1500	PTE 087
~~50~~		~~Diesel~~	~~Reciprocating~~	~~2400~~	~~PTE 093~~
50N	**2016**	**Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas**	**Reciprocating**	**Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP**	**PTE 093**
50S	**2016**	**Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas**	**Reciprocating**	**Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP**	**PTE 097**
51N	**prior 1977**	Diesel	Reciprocating	1200	PTE 084
~~51S~~		~~Gasoline or Diesel~~	~~Reciprocating~~	~~700~~	~~PTE 082~~

Test Cell ID	**Construction Dates**	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
52N	**2016**	**Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas**	**Reciprocating**	**Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP**	**PTE 098**
52S	**2016**	**Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas**	**Reciprocating**	**Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP**	**PTE 099**

All of the engines except gas turbine engines located in Test Cells 701 and 705 are affected sources under 40 CFR 63 Subpart ZZZZ. Any gas turbine engines in test cells 701 and 705 are considered affected sources under 40 CFR 60, Subpart KKKK when a new turbine is installed in the test cell and a test cell exemption does not apply. The diesel reciprocating engines in each of the test cells are considered affected sources under 40 CFR 60, Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply. The gasoline reciprocating engine**s** in test cell**s 50N, 50S, 52N, and** 52~~1~~S ~~is~~**are** considered an affected source under 40 CFR 60, Subpart JJJJ when a new gasoline engine is installed in the test cell and a test cell exemption does not apply. **************

(k) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1a, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1a. [40 CFR 60, Subpart IIII]
[40 CFR 63, Subpart ZZZZ]

(l) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1b, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1b. [40 CFR 60, Subpart IIII]
[40 CFR 63, Subpart ZZZZ]

Modification No. 3:

Section D.2 - Emission Unit Description Updates

IDEM, OAQ is revising the emission unit descriptions in Section D.2 to reflect the revised descriptive information for emission unit ETC and to add the emergency generators. Revisions are shown below:

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emission~~s~~ Unit Description**s**~~:~~

(c) Emission Unit ETC consists of the following twenty five (25) engineering development transmission test cells; 701, 704, 705, 706, 707, 709, 710, 711, 712, 32N, 32S, 38N, 39N, 39S, ~~40N, 40S,~~ 41N, 41S, 48N, 48S, 49N, 49S, 50**N**, **50S,** 51N**, 52N and 52S** ~~and 51S~~. ~~All test cells were constructed prior to 1977. Test cell 39N was modified during the 1980's.~~ The table below lists the fuel type and engine type that each cell is capable of accommodating based on the physical characteristics of each cell. Test cell 704 utilizes an oxidation catalyst system to control CO emissions.

Test Cell ID	**Construction Dates**	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
701	**prior 1977**	Diesel	Reciprocating or Gas Turbine	4000	PTE 057
704	**prior 1977**	Diesel	Reciprocating	2400	PTE 065
705	**prior 1977**	Diesel	Reciprocating or Gas Turbine	2400 for reciprocating; 4000 for gas turbine	PTE 067
706	**prior 1977**	Diesel	Reciprocating	4000	PTE 069
707	**prior 1977**	Diesel	Reciprocating	2400	PTE 071
709	**prior 1977**	Diesel	Reciprocating	2400	PTE 075
710	**prior 1977**	Diesel	Reciprocating	1500	PTE 077
711	**prior 1977**	Diesel	Reciprocating	2400	PTE 079
712	**prior 1977**	Diesel	Reciprocating	1500	PTE 080
32N	**prior 1977**	Diesel	Reciprocating	2400	PTE 008
32S	**prior 1977**	Diesel	Reciprocating	1500	PTE 006
38N	**prior 1977**	Diesel	Reciprocating	4000	PTE 011
39N	**prior 1977 modified 1980's**	Diesel	Reciprocating	2400	PTE 018
39S	**prior 1977**	Diesel	Reciprocating	1500	PTE 020
~~40N~~		~~Diesel~~	~~Reciprocating~~	~~1500~~	~~PTE 013~~
~~40S~~		~~Diesel~~	~~Reciprocating~~	~~1500~~	~~PTE 014~~
41N	**prior 1977**	Diesel	Reciprocating	1200	PTE 023
41S	**prior 1977**	Diesel	Reciprocating	1200	PTE 021
48N	**prior 1977**	Diesel	Reciprocating	1200	PTE 040
48S	**prior 1977**	Diesel	Reciprocating	1200	PTE 041
49N	**prior 1977**	Diesel	Reciprocating	1500	PTE 086
49S	**prior 1977**	Diesel	Reciprocating	1500	PTE 087
~~50~~		~~Diesel~~	~~Reciprocating~~	~~2400~~	~~PTE 093~~

50N	**2016**	**Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas**	**Reciprocating**	**Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP**	**PTE 093**
50S	**2016**	**Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas**	**Reciprocating**	**Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP**	**PTE 097**
51N	**prior 1977**	Diesel	Reciprocating	1200	PTE 084
~~51S~~		~~Gasoline or Diesel~~	~~Reciprocating~~	~~700~~	~~PTE 082~~
52N	**2016**	**Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas**	**Reciprocating**	**Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP**	**PTE 098**
52S	**2016**	**Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas**	**Reciprocating**	**Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP**	**PTE 099**

All of the engines except gas turbine engines located in Test Cells 701 and 705 are affected sources under 40 CFR 63 Subpart ZZZZ. Any gas turbine engines in test cells 701 and 705 are considered affected sources under 40 CFR 60, Subpart KKKK when a new turbine is installed in the test cell and a test cell exemption does not apply. The diesel reciprocating engines in each of the test cells are considered affected sources under 40 CFR 60, Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply. The gasoline reciprocating engine**s** in test cell**s 50N, 50S, 52N, and** 52~~1~~S ~~is~~**are** considered an affected source under 40 CFR 60, Subpart JJJJ when a new gasoline engine is installed in the test cell and a test cell exemption does not apply.

(k) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1a, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1a. [40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

(l) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1b, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1b. [40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ] **********

Modification No. 4:

Condition D.2.1 - Particulate Matter Limitations

IDEM, OAQ is revising original Condition D.2.1 to add a particulate matter emission limitation for both emergency generators. Revisions are shown below:

D.2.1 Particulate Matter Limitations Except Lake County [326 IAC 6.5-1-2(a)]

Pursuant to 326 IAC 6.5-1-2(a) (Particulate Matter Limitations Except Lake County), particulate (PM) emissions from each of the twenty five (25) Test Cells covered under Emissions Unit ETC **(except test cells 50N, 50S, 52N, and 52S while combusting diesel fuel) and both emergency generators, identified as Genset 1a and Genset 1b** shall not exceed three hundredths (0.03) grains per dry standard cubic foot of exhaust air.

Modification No. 5:

PSD Minor Limit for New Test Cells

IDEM, OAQ is revising original Condition D.2.3 to add a PSD minor limit for NOx and VOC for test cells 50N, 52N, 50S, and 52S. Proposed revisions are shown below:

D.2.3 PSD Minor Limit [326 IAC 2-2]

(a) ~~**********~~

(**1**~~a~~) ~~**********~~

(**2**~~b~~) ~~**********~~

(b) Pursuant to significant source modification 097-36831-00310, the Permittee shall comply with the following:

(1) Combined VOC emissions from test cells 50N, 52N, 50S, and 52S shall be less than 40.0 tons per twelve consecutive month period, with compliance determined at the end of each month.

(2) Combined NOx emissions from test cells 50N, 52N, 50S, and 52S shall be less than 40.0 tons per twelve consecutive month period, with compliance determined at the end of each month.

Compliance with the above emission limitations shall limit VOC and NOx emissions of test cells 50N, 52N, 50S, and 52S to less than 40 tons per twelve consecutive month period, each, and shall render the requirements of 326 IAC 2-2 (PSD) not applicable to the 2016 modification for test cells 50N, 52N, 50S, and 52S.

Modification No. 6:

Compliance Determination Requirements

IDEM, OAQ is adding compliance determination requirements for test cells 50N, 52N, 50S, and 52N. The Permittee is now required to calculate VOC and NOx emissions from the new test cells to determine compliance with the new PSD minor limits for VOC and NOx. Proposed revisions are shown below:

D.2.6 Emission Factors and Performance Testing

(a) ~~**********~~

~~(b)~~ Monthly NOx emissions shall be determined by the following equation:

~~**********~~

(b) In order to determine compliance with Condition D.2.3(b)(1), VOC emissions from test cells 50N, 52N, 50S, and 52S shall be calculated using the following equations:

(1) Total VOC Emissions from a Single Test Cell (tons/this month) = VOC Emissions from Gasoline Combustion from a Single Test Cell (tons/this month) + VOC Emissions from Natural Gas Combustion from a Single Test Cell (tons/month) + VOC Emissions from Diesel Combustion from a Single Test Cell (tons/month)

(2) VOC Emissions from Gasoline Combustion from a Single Test Cell (tons/this month) =

FC x HC x (1 / BSFC) x EF x CF x 1 ton/2,000 lb

Where:
- **FC = gallons of gasoline combusted this month**
- **HC = heat content of gasoline, 130,000 Btu/gallon or documented site specific heat content**
- **BSCF = brake specific fuel consumption, 8,000 Btu/hp.hr or documented engine specific factor**
- **EF = VOC emission factor in g/kw.hr, 2.7 g/kw.hr or documented engine specific factor**
- **CF = conversion factor, 1.645 E-03 lb.kw/g.hp**

(3) VOC Emissions from Natural Gas Combustion from a Single Test Cell (tons/this month) =

FC x HC x (1 / BSFC) x EF x CF x 1 ton/2,000 lb

Where:
- **FC = MMCF of natural gas combusted this month**
- **HC = heat content of natural gas, 1,020 MMBtu/MMCF or documented site specific heat content**
- **BSCF = brake specific fuel consumption, 8,750 Btu/hp.hr or documented engine specific factor**
- **EF = VOC emission factor in g/hp.hr, 0.7 g/hp.hr or documented engine specific factor**
- **CF = conversion factor, 2,204.63 lb.Btu/g.MMBtu**

(4) VOC Emissions from Diesel Combustion from a Single Test Cell (tons/this month) =

FC x HC x (1 / BSFC) x EF x CF x 1 ton/2,000 lb

Where:
- **FC = gallons of diesel combusted this month**
- **HC = heat content of diesel, 140,000 Btu/gallon or documented site specific heat content**
- **BSCF = brake specific fuel consumption, 7,000 Btu/hp.hr or documented engine specific factor**
- **EF = VOC emission factor in g/kw.hr, 0.19 g/kw.hr or documented engine specific factor**
- **CF = conversion factor, 1.645 E-03 lb.kw/g.hp**

(5) Total VOC Emissions for Compliance with Condition D.2.3(b)(1) (tons/this month) = Total VOC Emissions from Test Cell 50N + Total VOC Emissions from Test Cell 52N + Total VOC Emissions from Test Cell 50S + Total VOC Emissions from Test Cell 52S

(6) VOC Emissions for Compliance with Condition D.2.3(b)(1) (tons/twelve consecutive month period) = Total VOC Emissions for Compliance with Condition D.2.3(b)(1) (tons/this month) + Total VOC Emissions for Compliance with Condition D.2.3(b)(1) (tons previous eleven months)

(c) In order to determine compliance with Condition D.2.3(b)(2), NOx emissions from test cells 50N, 52N, 50S, and 52S shall be calculated using the following equations:

(1) Total NOx Emissions from a Single Test Cell (tons/this month) = NOx Emissions from Gasoline Combustion from a Single Test Cell (tons/this month) + NOx Emissions from Natural Gas Combustion from a Single Test Cell (tons/month) + NOx Emissions from Diesel Combustion from a Single Test Cell (tons/month)

(2) NOx Emissions from Gasoline Combustion from a Single Test Cell (tons/this month) =

FC x HC x (1 / BSFC) x EF x CF x 1 ton/2,000 lb

Where:	**FC =**	**gallons of gasoline combusted this month**
	HC =	**heat content of gasoline, 130,000 Btu/gallon or documented site specific heat content**
	BSCF =	**brake specific fuel consumption, 8,000 Btu/hp.hr or documented engine specific factor**
	EF =	**NOx emission factor in g/kw.hr, 2.7 g/kw.hr or documented engine specific factor**
	CF =	**conversion factor, 1.645 E-03 lb.kw/g.hp**

(3) NOx Emissions from Natural Gas Combustion from a Single Test Cell (tons/this month) =

FC x HC x (1 / BSFC) x EF x CF x 1 ton/2,000 lb

Where:	**FC =**	**MMCF of natural gas combusted this month**
	HC =	**heat content of natural gas, 1,020 MMBtu/MMCF or documented site specific heat content**
	BSCF =	**brake specific fuel consumption, 8,750 Btu/hp.hr or documented engine specific factor**
	EF =	**NOx emission factor in g/hp.hr, 1.0 g/hp.hr or documented engine specific factor**
	CF =	**conversion factor, 2,204.63 lb.Btu/g.MMBtu**

(4) NOx Emissions from Diesel Combustion from a Single Test Cell (tons/this month) =

FC x HC x (1 / BSFC) x EF x CF x 1 ton/2,000 lb

Where:	**FC =**	**gallons of diesel combusted this month**
	HC =	**heat content of diesel, 140,000 Btu/gallon or documented site specific heat content**
	BSCF =	**brake specific fuel consumption, 7,000 Btu/hp.hr or documented engine specific factor**
	EF =	**For test cells 50N, 52N, 50S, and 52S, the NOx emission factor in g/kw.hr, is 3.5 g/kw.hr for diesel engines with an output rating greater than 750 HP or 0.4 g/kw.hr for diesel engines with an output rating equal to or less than 750 HP or a documented engine specific factor.**
	CF =	**conversion factor, 1.645 E-03 lb.kw/g.hp**

(5) Total NOx Emissions for Compliance with Condition D.2.3(b)(2) (tons/this month) = Total NOx Emissions from Test Cell 50N + Total NOx Emissions from Test Cell 52N + Total NOx Emissions from Test Cell 50S + Total NOx Emissions from Test Cell 52S

(6) NOx Emissions for Compliance with Condition D.2.3(b)(2) (tons/twelve consecutive month period) = Total NOx Emissions for Compliance with Condition D.2.3(b)(1) (tons/this month) + Total NOx Emissions for Compliance with Condition D.2.3(b)(1) (tons previous eleven months)

(**d**~~c~~) **********

(**e**~~d~~) **********

(**f**~~e~~) **********

D.2.8 Reporting Requirements

~~A quarterly summary~~ **Quarterly summaries** of the information to document the compliance status with Condition D.2.3 and Condition D.2.6 shall be submitted using the reporting form**s** located at the end of this permit, or ~~its~~ **their** equivalent, not later than thirty (30) days after the end of the calendar quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report**s** submitted by the Permittee do~~es~~ require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

Modification No. 7:

Record Keeping Requirements

IDEM, OAQ is adding record keeping and reporting requirements to the permit as a result of the new PSD minor limits for VOC and NOx. Proposed revisions are shown below:

D.2.7 Record Keeping Requirements

(a) **********

(b) To document the compliance status with Condition D.2.3 and Condition D.2.6, the Permittee shall:

(1) **********

(2) **********

(3) Maintain monthly records of fuel usage in test cells 50N, 52N, 50S, and 52S. Records shall include type of fuel combusted and the monthly amount of each fuel combusted.

(4) Maintain records of engine manufacturer emission estimates for VOC and NOx for each engine family installed in test cells 50N, 52N, 50S, and 52S.

(5) Maintain records of NOx and VOC emissions from test cells 50N, 52N, 50S, and 52S each month and each compliance period using the equations in Condition D.2.6.

(6) Maintain records of fuel consumption rates provided by the engine manufacturer for each engine type installed in test cells 50N, 52N, 50S, and 52S.

Modification No. 8:

SO2 Limitations - Test Cell 50

IDEM, OAQ is removing the requirements of 326 IAC 7-1.1 - Sulfur Dioxide Emission Limitations from original Condition D.2.2 and D.2.5 for test cell 50, since it has been replaced as part of the modification. Revisions are shown below:

D.2.2 Sulfur Dioxide (SO2) [326 IAC 7-1.1-1]

Pursuant to 326 IAC 7-1.1-1 (SO_2 Emissions Limitations), Sulfur Dioxide (SO_2) emissions from Test Cells 701, 704, 705, 706, 707, 709, 711, 32N~~,~~ **and** 38N ~~and 50~~ shall each not exceed five tenths (0.5) pounds per million Btu heat input.

D.2.5 Sulfur Dioxide Emissions and Sulfur Content

Compliance for Test Cells 701, 704, 705, 706, 707, 709, 711, 32N~~,~~ **and** 38N ~~and 50~~ shall be determined utilizing one of the following options: *************

Modification No. 9:

Section E.2 - Emission Unit Description Updates

IDEM, OAQ is revising the emission unit description box in Section E.2 to include the revised emission unit descriptions for the modified test cells. IDEM, OAQ is removing the rule citation in the emission unit description box. Revisions are shown below:

SECTION E.2 New Source Performance Standards [326 IAC 2-7-5(1)] [326 IAC 12-1] [40 CFR 60, Subpart IIII]

Facility Description ~~[326 IAC 2-7-5(14)]~~:

(c) Emission Unit ETC consists of the following twenty five (25) engineering development transmission test cells; 701, 704, 705, 706, 707, 709, 710, 711, 712, 32N, 32S, 38N, 39N, 39S, ~~40N, 40S,~~ 41N, 41S, 48N, 48S, 49N, 49S, 50**N**, **50S,** 51N**, 52N and 52S** ~~and 51S~~. ~~All test cells were constructed prior to 1977. Test cell 39N was modified during the 1980's.~~ The table below lists the fuel type and engine type that each cell is capable of accommodating based on the physical characteristics of each cell. Test cell 704 utilizes an oxidation catalyst system to control CO emissions.

Test Cell ID	**Construction Dates**	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
701	**prior 1977**	Diesel	Reciprocating or Gas Turbine	4000	PTE 057
704	**prior 1977**	Diesel	Reciprocating	2400	PTE 065
705	**prior 1977**	Diesel	Reciprocating or Gas Turbine	2400 for reciprocating; 4000 for gas turbine	PTE 067
706	**prior 1977**	Diesel	Reciprocating	4000	PTE 069
707	**prior 1977**	Diesel	Reciprocating	2400	PTE 071
709	**prior 1977**	Diesel	Reciprocating	2400	PTE 075
710	**prior 1977**	Diesel	Reciprocating	1500	PTE 077

711	**prior 1977**	Diesel	Reciprocating	2400	PTE 079
712	**prior 1977**	Diesel	Reciprocating	1500	PTE 080
32N	**prior 1977**	Diesel	Reciprocating	2400	PTE 008
32S	**prior 1977**	Diesel	Reciprocating	1500	PTE 006
38N	**prior 1977**	Diesel	Reciprocating	4000	PTE 011
39N	**prior 1977 modified 1980's**	Diesel	Reciprocating	2400	PTE 018
39S	**prior 1977**	Diesel	Reciprocating	1500	PTE 020
~~40N~~		~~Diesel~~	~~Reciprocating~~	~~1500~~	~~PTE 013~~
~~40S~~		~~Diesel~~	~~Reciprocating~~	~~1500~~	~~PTE 014~~
41N	**prior 1977**	Diesel	Reciprocating	1200	PTE 023
41S	**prior 1977**	Diesel	Reciprocating	1200	PTE 021
48N	**prior 1977**	Diesel	Reciprocating	1200	PTE 040
48S	**prior 1977**	Diesel	Reciprocating	1200	PTE 041
49N	**prior 1977**	Diesel	Reciprocating	1500	PTE 086
49S	**prior 1977**	Diesel	Reciprocating	1500	PTE 087
~~50~~		~~Diesel~~	~~Reciprocating~~	~~2400~~	~~PTE 093~~
50N	**2016**	**Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas**	**Reciprocating**	**Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP**	**PTE 093**
50S	**2016**	**Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas**	**Reciprocating**	**Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP**	**PTE 097**
51N	**prior 1977**	Diesel	Reciprocating	1200	PTE 084
~~51S~~		~~Gasoline or Diesel~~	~~Reciprocating~~	~~700~~	~~PTE 082~~
52N	**2016**	**Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas**	**Reciprocating**	**Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP**	**PTE 098**

52S	**2016**	**Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas**	**Reciprocating**	**Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP**	**PTE 099**

All of the engines except gas turbine engines located in Test Cells 701 and 705 are affected sources under 40 CFR 63 Subpart ZZZZ. Any gas turbine engines in test cells 701 and 705 are considered affected sources under 40 CFR 60, Subpart KKKK when a new turbine is installed in the test cell and a test cell exemption does not apply. The diesel reciprocating engines in each of the test cells are considered affected sources under 40 CFR 60, Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply. The gasoline reciprocating engine**s** in test cell**s 50N, 50S, 52N, and** 52~~1~~S ~~is~~**are** considered an affected source under 40 CFR 60, Subpart JJJJ when a new gasoline engine is installed in the test cell and a test cell exemption does not apply. **********

(k) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1a, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1a. [40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

(l) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1b, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1b. [40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

****

Modification No. 10:

Section E.2 - Applicability of 40 CFR 60, Subpart IIII

IDEM, OAQ is updating the applicable portions shown in original Section E.2. Proposed revisions are shown below:

E.2.2 Standard of Performance for Stationary Compression Ignition Internal Combustion Engines [326 IAC 12] [40 CFR 60, Subpart IIII]

Pursuant to 40 CFR 60, Subpart IIII, the Permittee shall comply with the following provisions of Standard of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60, Subpart IIII (included as Attachment B of this permit), which are incorporated as 326 IAC 12, for the diesel emergency generators:

~~(1) 40 CFR 60.4200(a)(4), and (c)~~
~~(2) 40 CFR 60.4205(b), and (e)~~
~~(3) 40 CFR 60.4206~~
~~(4) 40 CFR 60.4207(d)~~
~~(5) 40 CFR 60.4208~~
~~(6) 40 CFR 60.4209(a)~~
~~(7) 40 CFR 60.4211(a), (c), (f), and (g)(3)~~
~~(8) 40 CFR 60.4212~~
~~(9) 40 CFR 60.4214(b)~~
~~(10) 40 CFR 60.4218~~
~~(11) 40 CFR 60.4219~~
~~(12) Table 5~~
~~(13) Table 8~~

(1) 40 CFR 60.4200(a)(2)(i), (a)(4), (c), and (d);
(2) 40 CFR 60.4205(b), and (e);
(3) 40 CFR 60.4206;
(4) 40 CFR 60.4207(b);

(5) 40 CFR 60.4209;
(6) 40 CFR 60.4211(a), (c), (f)(1), (f)(2)(i), and (f)(3);
(7) 40 CFR 60.4214(b), and (c);
(8) 40 CFR 60.4218;
(9) 40 CFR 60.4219;
(10) Table 5; and
(11) Table 8.

E.2.3 Standard of Performance for Stationary Compression Ignition Internal Combustion Engines [326 IAC 12] [40 CFR 60, Subpart IIII]

Pursuant to 40 CFR 60, Subpart IIII, the Permittee shall comply with the following provisions of Standard of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60, Subpart IIII (included as Attachment B of this permit), which are incorporated as 326 IAC 12, for the test cells ETC, DTC, PTS14, 702, ETC55, and ETC53:

~~(1) 40 CFR 60.4200~~
~~(2) 40 CFR 60.4201~~
~~(3) 40 CFR 60.4204(a), (b) and (e)~~
~~(4) 40 CFR 60.4206~~
~~(5) 40 CFR 60.4207(a), (b) and (e)~~
~~(6) 40 CFR 60.4208(a), (e), (h) and (i)~~
~~(7) 40 CFR 60.4211(a), (b), (c), (d), (e) and (g)~~
~~(8) 40 CFR 60.4214(a)~~
~~(9) 40 CFR 60.4218~~
~~(10) 40 CFR 60.4219~~
(1) 40 CFR 60.4200(a)(2)(i), (a)(4), (b), and (d);
(2) 40 CFR 60.4204(a), (b), and (d);
(3) 40 CFR 60.4206;
(4) 40 CFR 60.4207(b);
(5) 40 CFR 60.4209(b);
(6) 40 CFR 60.4211(a), (b), and (c);
(7) 40 CFR 60.4214(a), and (c);
(8) 40 CFR 60.4218;
(9) 40 CFR 60.4219;
(10) Table 1;
(11) Table 5; and
(12) Table 8.

Modification No. 11:

Section E.6 - Emission Unit Description Updates

IDEM, OAQ is revising the emission unit description box in Section E.6 to include the revised emission unit descriptions for the modified test cells. IDEM, OAQ is removing the rule citation in the emission unit description box. Revisions are shown below:

SECTION E.6 National Emission Standards for Hazardous Air Pollutants [326 IAC 2-7-5(1)] [326 IAC 20-1] [40 CFR 63, Subpart ZZZZ]

Facility Description ~~[326 IAC 2-7-5(14)]~~:

(c) Emission Unit ETC consists of the following twenty five (25) engineering development transmission test cells; 701, 704, 705, 706, 707, 709, 710, 711, 712, 32N, 32S, 38N, 39N, 39S, ~~40N, 40S,~~ 41N, 41S, 48N, 48S, 49N, 49S, 50**N**, **50S,** 51N**, 52N and 52S** ~~and 51S~~. ~~All test cells were constructed prior to 1977. Test cell 39N was modified during the 1980's.~~ The table below lists the fuel type and engine type that each cell is capable of accommodating based on the physical characteristics of each cell. Test cell 704 utilizes an oxidation catalyst system to control CO emissions.

Test Cell ID	**Construction Dates**	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
701	**prior 1977**	Diesel	Reciprocating or Gas Turbine	4000	PTE 057
704	**prior 1977**	Diesel	Reciprocating	2400	PTE 065
705	**prior 1977**	Diesel	Reciprocating or Gas Turbine	2400 for reciprocating; 4000 for gas turbine	PTE 067
706	**prior 1977**	Diesel	Reciprocating	4000	PTE 069
707	**prior 1977**	Diesel	Reciprocating	2400	PTE 071
709	**prior 1977**	Diesel	Reciprocating	2400	PTE 075
710	**prior 1977**	Diesel	Reciprocating	1500	PTE 077
711	**prior 1977**	Diesel	Reciprocating	2400	PTE 079
712	**prior 1977**	Diesel	Reciprocating	1500	PTE 080
32N	**prior 1977**	Diesel	Reciprocating	2400	PTE 008
32S	**prior 1977**	Diesel	Reciprocating	1500	PTE 006
38N	**prior 1977**	Diesel	Reciprocating	4000	PTE 011
39N	**prior 1977 modified 1980's**	Diesel	Reciprocating	2400	PTE 018
39S	**prior 1977**	Diesel	Reciprocating	1500	PTE 020
~~40N~~		~~Diesel~~	~~Reciprocating~~	~~1500~~	~~PTE 013~~
~~40S~~		~~Diesel~~	~~Reciprocating~~	~~1500~~	~~PTE 014~~
41N	**prior 1977**	Diesel	Reciprocating	1200	PTE 023
41S	**prior 1977**	Diesel	Reciprocating	1200	PTE 021
48N	**prior 1977**	Diesel	Reciprocating	1200	PTE 040
48S	**prior 1977**	Diesel	Reciprocating	1200	PTE 041
49N	**prior 1977**	Diesel	Reciprocating	1500	PTE 086
49S	**prior 1977**	Diesel	Reciprocating	1500	PTE 087
~~50~~		~~Diesel~~	~~Reciprocating~~	~~2400~~	~~PTE 093~~

50N	**2016**	**Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas**	**Reciprocating**	**Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP**	**PTE 093**
50S	**2016**	**Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas**	**Reciprocating**	**Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP**	**PTE 097**
51N	**prior 1977**	Diesel	Reciprocating	1200	PTE 084
~~51S~~		~~Gasoline or Diesel~~	~~Reciprocating~~	~~700~~	~~PTE 082~~
52N	**2016**	**Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas**	**Reciprocating**	**Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP**	**PTE 098**
52S	**2016**	**Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas**	**Reciprocating**	**Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP**	**PTE 099**

All of the engines except gas turbine engines located in Test Cells 701 and 705 are affected sources under 40 CFR 63 Subpart ZZZZ. Any gas turbine engines in test cells 701 and 705 are considered affected sources under 40 CFR 60, Subpart KKKK when a new turbine is installed in the test cell and a test cell exemption does not apply. The diesel reciprocating engines in each of the test cells are considered affected sources under 40 CFR 60, Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply. The gasoline reciprocating engine**s** in test cell**s 50N, 50S, 52N, and** 52~~1~~S ~~is~~**are** considered an affected source under 40 CFR 60, Subpart JJJJ when a new gasoline engine is installed in the test cell and a test cell exemption does not apply. **********

(k) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1a, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1a. [40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

(l) One (1) diesel-fired emergency generator, approved in 2016 for construction, identified as Genset 1b, with a maximum power output of 2,965 HP (22.76 MMBtu/hr input), using low sulfur diesel (150 ppm sulfur) equipped with a diesel particulate filter, exhausting to stack G1b. [40 CFR 60, Subpart IIII] [40 CFR 63, Subpart ZZZZ]

****

Modification No. 12:

Section E.6 - Applicability of 40 CFR 63, Subpart ZZZZ

IDEM, OAQ is updating the applicable requirements under 40 CFR 63, Subpart ZZZZ. The proposed revisions are shown below:

E.6.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants (NESHAP) [326 IAC 20-1] [40 CFR 63, Subpart A]

(a) Pursuant to 40 CFR 63.1, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 20-1, for the ~~six (6) transmission test cells (ETC, DTC, PTS14, 702, ETC55, and ETC53) when using existing engines, and the emergency generators~~**emission listed above,** except **as**~~when~~ otherwise specified in 40 CFR 63, Subpart ZZZZ.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.6.2 Stationary Reciprocating Internal Combustion Engines NESHAP [326 IAC 20-82] [40 CFR 63, Subpart ZZZZ]

Pursuant to 40 CFR 63, Subpart ZZZZ, the Permittee shall comply with the provisions of 40 CFR 63, Subpart ZZZZ (included as Attachment F of this permit), which are incorporated as 326 IAC 20-82**, as follows**~~, for test cells ETC, DTC, PTS14, 702, ETC55, and ETC53~~:

~~When using new engines~~
~~(1) 40 CFR 63.6580~~
~~(2) 40 CFR 63.6585(a), (c), (e)~~
~~(3) 40 CFR 63.6590(a)(2)(iii) and (c)(1)~~
~~(4) 40 CFR 63.6595(a)(7)~~
~~(5) 40 CFR 63.6665~~
~~(6) 40 CFR 63.6670~~
~~(7) 40 CFR 63.6675~~

~~When using existing engines combusting diesel fuel~~
~~(1) 40 CFR 63.6580~~
~~(2) 40 CFR 63.6585~~
~~(3) 40 CFR 63.6590(a)(1)(iii) and (iv)~~
~~(4) 40 CFR 63.6595(a)(1), (b), and (c)~~
~~(5) 40 CFR 63.6603(a) and (e)~~
~~(6) 40 CFR 63.6604(a)~~
~~(7) 40 CFR 63.6605~~
~~(8) 40 CFR 63.6612~~
~~(9) 40 CFR 63.6615~~
~~(10) 40 CFR 63.6620(a), (d), (e), (f), (g), (h), and (i)~~
~~(11) 40 CFR 63.6625(e)(4), (g), (h), (i)~~
~~(12) 40 CFR 63.6630(a), (b), and (c)~~
~~(13) 40 CFR 63.6635~~
~~(14) 40 CFR 63.6640(a), (b), and (e)~~
~~(15) 40 CFR 63.6645(a)(2), (a)(5), (g), and (h)~~
~~(16) 40 CFR 63.6650~~
~~(17) 40 CFR 63.6655~~
~~(18) 40 CFR 63.6660~~
~~(19) 40 CFR 63.6665~~
~~(20) 40 CFR 63.6670~~
~~(21) 40 CFR 63.6675~~
~~(22) Table 2b~~
~~(23) Table 2d (item 1), (item 2), and (item 3)~~
~~(24) Table 3 (item 4)~~
~~(25) Table 4 (items 1 and 3)~~

~~(26) Table 5 (items 1, 2, 3, 4, 5, 6, 11 and 12)~~
~~(27) Table 6 (items 3, 9, 10, and 11)~~
~~(28) Table 7 (item 1)~~
~~(29) Table 8~~

~~When using existing engines combusting natural gas or gasoline~~

~~(1) 40 CFR 63.6580~~
~~(2) 40 CFR 63.6585~~
~~(3) 40 CFR 63.6590(a)(1)(iii) and (iv)~~
~~(4) 40 CFR 63.6595(a)(1), (b), and (c)~~
~~(5) 40 CFR 63.6603(a) and (f)~~
~~(6) 40 CFR 63.6605~~
~~(7) 40 CFR 63.6612~~
~~(8) 40 CFR 63.6620(a), (d), (e), (f), (g), (h), and (i)~~
~~(9) 40 CFR 63.6625(e)(5), (e)(7), (e)(8), (e)(9), (e)(10), (h), and (j)~~
~~(10) 40 CFR 63.6630 (a), (b), (c), (d), and (e)~~
~~(11) 40 CFR 63.6635~~
~~(12) 40 CFR 63.6640(a), (b), (c), and (e)~~
~~(13) 40 CFR 63.6645(a)(2), (a)(5), (g), and (h)~~
~~(14) 40 CFR 63.6650~~
~~(15) 40 CFR 63.6655~~
~~(16) 40 CFR 63.6660~~
~~(17) 40 CFR 63.6665~~
~~(18) 40 CFR 63.6670~~
~~(19) 40 CFR 63.6675~~
~~(20) Table 2d (items, 6, 7, 8, 9, 10, 11, and 12)~~
~~(21) Table 4~~
~~(22) Table 5 (items 13 and 14)~~
~~(23) Table 6 (items 14 and 15)~~
~~(24) Table 7 (item 3)~~
~~(25) Table 8~~
~~(26) Appendix A~~

(a) The Permittee shall comply with the following provisions of 40 CFR 63, Subpart ZZZZ when a new stationary RICE, defined as a RICE that commenced construction on or after June 12, 2006 pursuant to 40 CFR 63.6590(a)(2)(iii), is installed and operated in a test cell, and the test cell exemption does not apply:

(1) 40 CFR 63.6580;
(2) 40 CFR 63.6585(a), (c), and (e);
(3) 40 CFR 63.6590(a)(2)(iii), and (c)(1);
(4) 40 CFR 63.6595(a)(6), (a)(7), and (c);
(5) 40 CFR 63.6605;
(6) 40 CFR 63.6650(f);
(7) 40 CFR 63.6665;
(8) 40 CFR 63.6670;
(9) 40 CFR 63.6675; and
(10) Table 8.

(b) The Permittee shall comply with the following provisions of 40 CFR 63, Subpart ZZZZ when a diesel-fired, nonemergency, existing stationary RICE, defined as a RICE that commenced construction prior to June 12, 2006 pursuant to 40 CFR 63.6590(a)(1)(iii), with a power output of less than or equal to 300 HP, is installed and operated in a test cell, and the test cell exemption does not apply:

(1) 40 CFR 63.6580;
(2) 40 CFR 63.6585(a), (c), (d), and (e);
(3) 40 CFR 63.6590(a)(1)(iii);

(4) 40 CFR 63.6595(a)(1) and (c);
(5) 40 CFR 63.6603(a);
(6) 40 CFR 63.6605;
(7) 40 CFR 63.6612;
(8) 40 CFR 63.6625(e)(4), (h), and (i);
(9) 40 CFR 63.6640(a) and (b);
(10) 40 CFR 63.6645(a)(2);
(11) 40 CFR 63.6655(e)(3);
(12) 40 CFR 63.6660;
(13) 40 CFR 63.6665;
(14) 40 CFR 63.6670;
(15) 40 CFR 63.6675;
(16) Table 2d (Item 1); and
(17) Table 8.

(c) The Permittee shall comply with the following provisions of 40 CFR 63, Subpart ZZZZ when a diesel-fired, nonemergency, existing stationary RICE, defined as a RICE that commenced construction prior to June 12, 2006 pursuant to 40 CFR 63.6590(a)(1)(iii), with a power output greater than 500 HP, is installed and operated in a test cell, and the test cell exemption does not apply:

(1) 40 CFR 63.6580;
(2) 40 CFR 63.6585(a), (c), (d), and (e);
(3) 40 CFR 63.6590(a)(1)(iii);
(4) 40 CFR 63.6595(a)(1) and (c);
(5) 40 CFR 63.6603(a), (d) and (e);
(6) 40 CFR 63.6604(a);
(7) 40 CFR 63.6605;
(8) 40 CFR 63.6612;
(9) 40 CFR 63.6615;
(10) 40 CFR 63.6620(a), (b), (d), (e), (f), (g), (h), and (i);
(11) 40 CFR 63.6625(a), (b), (g), and (h);
(12) 40 CFR 63.6630(a), (b), and (c);
(13) 40 CFR 63.6635;
(14) 40 CFR 63.6640(a), (b), and (e);
(15) 40 CFR 63.6645(a)(2), (g), (h), and (i);
(16) 40 CFR 63.6650(a), (b), (c), (d), (e), and (f);
(17) 40 CFR 63.6655(a), (b), (d), and (e);
(18) 40 CFR 63.6665;
(19) 40 CFR 63.6670;
(20) 40 CFR 63.6675;
(21) Table 2b (item 2 and 3)
(22) Table 2d (item 3)
(23) Table 3 (item 4)
(24) Table 4 (item 1 and 3)
(25) Table 5 (item 1, 2, 3, 4, 5, and 6);
(26) Table 6 (item 3, 10, and 11); and
(27) Table 8.

E.6.3 Stationary Reciprocating Internal Combustion Engines NESHAP [326 IAC 20-82] [40 CFR 63, Subpart ZZZZ]

Pursuant to 40 CFR 63, Subpart ZZZZ, the Permittee shall comply with the ~~following~~ provisions of 40 CFR 63, Subpart ZZZZ (included as Attachment F of this permit), which are incorporated as 326 IAC 20-82, for the emergency generators**, as follows**:

~~(1) 40 CFR 63.6580~~
~~(2) 40 CFR 63.6585~~
~~(3) 40 CFR 63.6590(a)(1)(iii) and (iv)~~

~~(4) 40 CFR 63.6595(a)(1), (b), and (c)~~
~~(5) 40 CFR 63.6603(a)~~
~~(6) 40 CFR 63.6605~~
~~(7) 40 CFR 63.6625(e)(3), (f), (h), and (i)~~
~~(8) 40 CFR 63.6635~~
~~(9) 40 CFR 63.6640(a), (b), (e), and (f)~~
~~(10) 40 CFR 63.6645(a)(5)~~
~~(11) 40 CFR 63.6650~~
~~(12) 40 CFR 63.6655~~
~~(13) 40 CFR 63.6660~~
~~(14) 40 CFR 63.6665~~
~~(15) 40 CFR 63.6670~~
~~(16) 40 CFR 63.6675~~
~~(17) Table 2d (item 4)~~
~~(18) Table 6 (item 9)~~
~~(19) Table 8~~

(a) The Permittee shall comply with the following provisions of 40 CFR 63, Subpart ZZZZ when a compression ignition, emergency, new stationary RICE, defined as a RICE that commenced construction on or after June 12, 2006 pursuant to 40 CFR 63.6590(a)(2)(iii) is installed:

(1) 40 CFR 63.6580;
(2) 40 CFR 63.6585(a), (c), and (e);
(3) 40 CFR 63.6590(a)(2)(iii), and (c)(1);
(4) 40 CFR 63.6595(a)(6), (a)(7), and (c);
(5) 40 CFR 63.6605;
(6) 40 CFR 63.6650(f);
(7) 40 CFR 63.6665;
(8) 40 CFR 63.6670;
(9) 40 CFR 63.6675; and
(10) Table 8.

(b) The Permittee shall comply with the following provisions of 40 CFR 63, Subpart ZZZZ when a compression ignition, emergency, existing stationary RICE, defined as a RICE that commenced construction before June 12, 2006 pursuant to 40 CFR 63.6590(a)(1)(iii) is installed:

(1) 40 CFR 63.6580;
(2) 40 CFR 63.6585(a), (c), and (e);
(3) 40 CFR 63.6590(a)(1)(iii);
(4) 40 CFR 63.6595(a)(1);
(5) 40 CFR 63.6603(a);
(6) 40 CFR 63.6605;
(7) 40 CFR 63.6625(e)(5), (f), (h), and (i);
(8) 40 CFR 63.6640(a), (b), (e), (f)(1), (f)(2)(i), and (f)(4);
(9) 40 CFR 63.6645(a)(5);
(10) 40 CFR 63.6650(f);
(11) 40 CFR 63.6655(d), and (e)(2);
(12) 40 CFR 63.6660;
(13) 40 CFR 63.6665;
(14) 40 CFR 63.6670;
(15) 40 CFR 63.6675;
(16) Table 2d (item 4); and
(17) Table 6 (item 9).

Modification No. 13:

Section E.7 - Emission Unit Description Updates

IDEM, OAQ is revising original Section E.7 to remove test cell 51S and to add the new test cells subject to the provisions of 40 CFR 60, Subpart JJJJ. IDEM, OAQ is also updating the applicable portions of the rule. The proposed revisions are shown below:

SECTION E.7 New Source Performance Standards [326 IAC 2-7-5(1)] [326 IAC 12-1] [40 CFR 60, Subpart JJJJ]

Facility Description

(c) Emission Unit ETC consists of the following development transmission test cells:

Test Cell ID	Construction Dates	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
50N	**2016**	**Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas**	**Reciprocating**	**Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP**	**PTE 093**
50S	**2016**	**Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas**	**Reciprocating**	**Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP**	**PTE 097**
52N	**2016**	**Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas**	**Reciprocating**	**Diesel - 700 HP Gasoline - 650 HP Natural Gas - 650 HP**	**PTE 098**
52S	**2016**	**Gasoline, Low Sulfur Diesel (150 ppm Sulfur), Natural Gas**	**Reciprocating**	**Diesel - 1000 HP Gasoline - 650 HP Natural Gas - 650 HP**	**PTE 099**

All of the engines except gas turbine engines located in Test Cells 701 and 705 are affected sources under 40 CFR 63 Subpart ZZZZ. Any gas turbine engines in test cells 701 and 705 are considered affected sources under 40 CFR 60, Subpart KKKK when a new turbine is installed in the test cell and a test cell exemption does not apply. The diesel reciprocating engines in each of the test cells are considered affected sources under 40 CFR 60, Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply. The gasoline reciprocating engines in test cells 50N, 50S, 52N, and 52S are considered an affected source under 40 CFR 60, Subpart JJJJ when a new gasoline engine is installed in the test cell and a test cell exemption does not apply.

~~Test Cell ID~~	~~Fuel Type~~	~~Engine Type~~	~~Estimated Maximum Engine Size in Horsepower~~	~~Stack ID~~
~~51S~~	~~Gasoline or Diesel~~	~~Reciprocating~~	~~700~~	~~PTE 082~~

~~The gasoline reciprocating engine in test cell 51S is considered an affected source under 40 CFR 60 Subpart JJJJ when a new gasoline engine is installed in the test cell and a test cell exemption does not apply.~~ **********

E.7.2 Standards of Performance for Stationary Spark Ignition Internal Combustion Engines [326 IAC 12] [40 CFR 60, Subpart JJJJ]

Pursuant to 40 CFR 60, Subpart JJJJ, the Permittee shall comply with the provisions of Standard of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60, Subpart JJJJ (included as Attachment G of this permit), which are incorporated by reference in 326 IAC 12, for ~~51S~~**50N, 52N, 50S, 52S,** and ETC53:

When combusting natural gas or gasoline

~~(1) 40 CFR 60.4230(a)(4)(i), (a)(4)(ii), (a)(4)(iii), (a)(4)(iv), and (c)~~
~~(2) 40 CFR 60.4232~~
~~(3) 40 CFR 60.4233(a), (b), (d), (e), (f), and (h)~~
~~(4) 40 CFR 60.4234~~
~~(5) 40 CFR 60.4235~~
~~(6) 40 CFR 60.4243(b)~~
~~(7) 40 CFR 60.4244~~
~~(8) 40 CFR 60.4245(a) and (d)~~
~~(9) 40 CFR 60.4246~~
~~(10) 40 CFR 60.4248~~
~~(11) Table 1~~
~~(12) Table 2~~
~~(13) Table 3~~

(1) 40 CFR 60.4230(a)(4), (a)(6), (b), (d), and (e);
(2) 40 CFR 60.4233(a), (b), (d), (e), (f)(1 through 4), and (h);
(3) 40 CFR 60.4234;
(4) 40 CFR 60.4235;
(5) 40 CFR 60.4243(a)(1), (b)(1), (e), and (g);
(6) 40 CFR 60.4245(a);
(7) 40 CFR 60.4246;
(8) 40 CFR 60.4248;
(9) Table 1; and
(10) Table 3.

Modification No. 14:

Reporting Form Revisions

IDEM, OAQ is adding two additional reporting forms to the permit to allow the Permittee to report VOC and NOx emissions from test cells 50N, 52N, 50S, and 52S. The reporting forms are shown below:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report – Test Cell 50N, 52N, 50S, and 52S VOC Emissions

Source Name:	**Allison Transmission, Inc. - Speedway Main Campus**
Source Address:	**One Allison Way, Indianapolis, Indiana**
Part 70 Permit No.:	**T097-34667-00310**
Facility:	**Test Cells 50N, 52N, 50S, and 52S**
Parameter:	**VOC emissions (Condition D.2.3(b)(1))**
Limit:	**Combined VOC emissions from test cells 50N, 52N, 50S, and 52S shall be less than 40.0 tons per twelve consecutive month period, with compliance determined at the end of each month.**

QUARTER: _____ **YEAR:** _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

☐ **No deviation occurred in this quarter.**

☐ **Deviation/s occurred in this quarter.**
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report – Test Cell 50N, 52N, 50S, and 52S NOx Emissions

Source Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Indianapolis, Indiana
Part 70 Permit No.: T097-34667-00310
Facility: Test Cells 50N, 52N, 50S, and 52S
Parameter: NOx emissions (Condition D.2.3(b)(2))
Limit: Combined NOx emissions from test cells 50N, 52N, 50S, and 52S shall be less than 40.0 tons per twelve consecutive month period, with compliance determined at the end of each month.

QUARTER: _____ **YEAR:** _____

Month	Column 1	Column 2	Column 1 + Column 2

	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

☐ **No deviation occurred in this quarter.**

☐ **Deviation/s occurred in this quarter.**
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

Modification No. 15:

Section E.2 - Emission Unit Description Updates

IDEM, OAQ is removing the rule citation and standardizing the format of the emission unit description boxes in original Sections D.1, D.3, D.4, D.5, D.6, D.7, D.8, D.9, E.1, E.3, E.4 and E.5

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit~~Facility~~ Description**:** ~~[326 IAC 2-7-5(14)]~~ **~~**********~~**

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit~~Facility~~ Description**:** ~~[326 IAC 2-7-5(14)]~~ **********

SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit~~Facility~~ Description**:** ~~[326 IAC 2-7-5(14)]~~ **********

SECTION D.5 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit~~Facility~~ Description**:** ~~[326 IAC 2-7-5(14)]~~ **********

SECTION D.6 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit~~Facility~~ Description**:** ~~[326 IAC 2-7-5(14)]~~ **********

SECTION D.7 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit~~Facility~~ Description**:** ~~[326 IAC 2-7-5(14)]~~ **********

SECTION D.8 EMISSIONS UNIT OPERATION CONDITIONS

Insignificant Activities**:**

~~Facility Description [326 IAC 2-7-5(14)]~~ **********

SECTION D.9 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit~~Facility~~ Description**:** ~~[326 IAC 2-7-5(14)]~~ **********

SECTION E.1 New Source Performance Standards [326 IAC 2-7-5(1)] [326 IAC 12-1] [40 CFR 60, Subpart Dc]

Facility Description ~~[326 IAC 2-7-5(14)]~~: **********

SECTION E.3 National Emission Standards for Hazardous Air Pollutants [326 IAC 2-7-5(1)] [326 IAC 20-1] [40 CFR 63, Subpart CCCCCC]

~~Facility Description [326 IAC 2-7-5(14)]~~: **********

SECTION E.4 National Emission Standards for Hazardous Air Pollutants [326 IAC 2-7-5(1)] [326 IAC 20-1] [40 CFR 63, Subpart WWWWWW]

Facility Description ~~[326 IAC 2-7-5(14)]~~: **********

SECTION E.5 New Source Performance Standards [326 IAC 2-7-5(1)] [326 IAC 12-1] [40 CFR 60, Subpart KKKK]

Facility Description**:** ~~[326 IAC 2-7-5(14)]~~ **************

Modification No. 16:

Transmission Test Cell 53 Revisions

During the applicant review period, the Permittee requested a revision to the emission unit description of transmission test cell 53 to remove gasoline and natural gas as potential fuels. IDEM, OAQ has removed all references to natural gas and gasoline as potential fuels for the engines installed in transmission test cell 53. This revision also changes the unlimited potential to emit of the test cell 53 and eliminates the need for a PSD minor limit for VOC. IDEM, OAQ has made the following revisions to the Part 70 Operating Permit Renewal as a result of this comment:

A.2 Emission Units and Pollution Control Equipment Summary
[326 IAC 2-7-4(c)(3)][326 IAC 2-7-5(14)]
~~**************~~

(j) Transmission Test Cell 53, identified as ETC53, approved in 201**5**~~4~~ for construction, consisting of two reciprocating engines (53N and 53S) firing **low sulfur** diesel fuel **(150 ppm or less)**~~, gasoline, or natural gas~~, with an estimated maximum engine size of equal to or less than 1000 **HP**~~hp~~ each and exhausting to Stack/Vents PTE95 and PTE96.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60, Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply. ~~The engine is considered an affected source under 40 CFR 60, Subpart JJJJ when a new gasoline or natural gas engine is installed in the test cell and a test cell exemption does not apply.~~

SECTION D.5 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Descriptions:

(j) Transmission Test Cell 53, identified as ETC53, approved in 201**5**~~4~~ for construction, consisting of two reciprocating engines (53N and 53S) firing **low sulfur** diesel fuel **(150 ppm or less)**~~, gasoline, or natural gas~~, with an estimated maximum engine size of equal to or less than 1000 **HP**~~hp~~ each and exhausting to Stack/Vents PTE95 and PTE96.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60, Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply. ~~The engine is considered an affected source under 40 CFR 60, Subpart JJJJ when a new gasoline or natural gas engine is installed in the test cell and a test cell exemption does not apply.~~

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

D.5.2 PSD Minor Limit [326 IAC 2-2]

In order to render the requirements of 326 IAC 2-2 not applicable to ETC53, ~~the Permittee shall comply with the following:~~

~~(a)~~ ~~NOx emissions from diesel fuel fired reciprocating engines utilized in ETC53 shall be less than forty (40) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.~~

~~(b)~~ ~~VOC emissions from diesel fuel fired reciprocating engines utilized in ETC53 shall be less than twenty-five (25) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.~~

Compliance with these limits shall render 326 IAC 2-2 (Prevention of Significant Deterioration) not applicable to ETC53.

~~D.5.6 VOC Emissions Determination~~

~~To comply with the VOC emissions limit in Condition D.5.2(b), the following equation shall be used:~~

~~$VOC = [(FU \times D \times EF / FCR)_{Engine\ 1} + (FU \times D \times EF / FCR)_{Engine\ 2}] \times 1\ ton / 2{,}000\ lb$~~

~~Where:~~
~~VOC = VOC emissions (ton/month)~~
~~FU = Fuel Usage (gal/month)~~
~~D = Density of fuel (lb/gal)~~
~~EF = VOC Emission Factor (lb/hp-hr) (For each engine type used, the emission factor shall be the emission limitation from the applicable federal engine emission standards.)~~
~~FCR = Fuel Consumption Rate (lb fuel/hp-hr)~~

D.5.**6**~~7~~ Sulfur Dioxide Emissions and Sulfur Content

****

D.5.**7**~~8~~ Record Keeping Requirements

(a) To document the compliance status with Condition D.5.2, the Permittee shall:

(1) Maintain monthly records of the diesel fuel throughput, fuel density, fuel consumption rate, and the emission factors for NOx ~~and VOC~~ for Engine 1 and Engine 2 in Test Cell ETC53.

(2) Maintain records of NOx emissions on a monthly basis using the equation in Condition D.5.5.

~~(3)~~ ~~Maintain records of VOC emissions on a monthly basis using the equation in Condition D.5.6.~~

(b) **********

D.5.**8**~~9~~ Reporting Requirements

Quarterly summaries of the information to document the compliance status with Condition D.5.2~~,~~ **and D.5.5** ~~D.5.3, D.5.6, D.5.7, and D.5.8~~ shall be submitted using the reporting forms located at the end of this permit, or their equivalent, not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The reports submitted by the Permittee do require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35).

****

SECTION E.2 New Source Performance Standards [326 IAC 2-7-5(1)] [326 IAC 12-1] [40 CFR 60, Subpart IIII]

Facility Description:**********

(j) Transmission Test Cell 53, identified as ETC53, approved in 201**5**~~4~~ for construction, consisting of two reciprocating engines (53N and 53S) firing **low sulfur** diesel fuel **(150 ppm or less)**~~,~~ ~~gasoline, or natural gas~~, with an estimated maximum engine size of equal to or less than 1000 **HP**~~hp~~ each and exhausting to Stack/Vents PTE95 and PTE96.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60, Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply. ~~The engine is considered an affected source under 40 CFR 60, Subpart JJJJ when a new gasoline or natural gas engine is installed in the test cell and a test cell exemption does not apply.~~ **********

SECTION E.6 National Emission Standards for Hazardous Air Pollutants [326 IAC 2-7-5(1)] [326 IAC 20-1] [40 CFR 63, Subpart ZZZZ]

Facility Description:**********

(j) Transmission Test Cell 53, identified as ETC53, approved in 201**5**~~4~~ for construction, consisting of two reciprocating engines (53N and 53S) firing **low sulfur** diesel fuel **(150 ppm or less)**~~,~~ ~~gasoline, or natural gas~~, with an estimated maximum engine size of equal to or less than 1000 hp each and exhausting to Stack/Vents PTE95 and PTE96.

Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60, Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply. ~~The engine is considered an affected source under 40 CFR 60, Subpart JJJJ when a new gasoline or natural gas engine is installed in the test cell and a test cell exemption does not apply.~~ **********

SECTION E.7 New Source Performance Standards [326 IAC 2-7-5(1)] [326 IAC 12-1] [40 CFR 60, Subpart JJJJ]

Facility Description: **********

~~(j) Transmission Test Cell 53, identified as ETC53, approved in 2014 for construction, consisting of two reciprocating engines (53N and 53S) firing diesel fuel, gasoline, or natural gas, with an estimated maximum engine size of equal to or less than 1000 hp each and exhausting to Stack/Vents PTE95 and PTE96.~~

~~Under 40 CFR 63, Subpart ZZZZ, this operation is an affected source. The engine is considered an affected source under 40 CFR 60, Subpart IIII when a new diesel engine is installed in the test cell and a test cell exemption does not apply. The engine is considered an affected source under 40 CFR 60, Subpart JJJJ when a new gasoline or natural gas engine is installed in the test cell and a test cell exemption does not apply.~~ **********

~~INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT~~
~~OFFICE OF AIR QUALITY~~
~~Compliance and Enforcement Branch~~

~~Part 70 Quarterly Report~~

~~Source Name: Allison Transmission, Inc. - Speedway Main Campus~~
~~Source Address: One Allison Way, Mail Code: M-29, Indianapolis Indiana 46222~~
~~Part 70 Permit No.: T097-34667-00310~~

~~Facility: Emission Unit ETC53~~
~~Parameter: VOC Emissions~~
~~Limit: VOC emissions from diesel fuel fired reciprocating engines utilized in ETC55 shall be less than twenty-five (25) tons per twelve (12) consecutive month period, with compliance determined at the end of each month~~

~~The following equation shall be used to determine compliance:~~

~~$VOC = [(FU \times D \times EF / FCR)_{Engine\ 1} + (FU \times D \times EF / FCR)_{Engine\ 2}] \times 1\ ton / 2{,}000\ lb$~~

~~Where:~~
~~VOC = VOC emissions (ton/month)~~
~~FU = Fuel Usage (gal/month)~~
~~D = Density of fuel (lb/gal)~~
~~EF = VOC Emission Factor (lb/hp-hr) (For each engine type used, the emission factor shall be the emission limitation from the applicable federal engine emission standards.)~~
~~FCR = Fuel Consumption Rate (lb fuel/hp-hr)~~

~~Quarter: _____ Year: _____~~

~~Month~~	~~Column 1~~	~~Column 2~~	~~Column 1 + Column 2~~
	~~This Month~~	~~Previous 11 Months~~	~~12 Month Total~~

~~☐ No deviation occurred in this quarter.~~

~~☐ Deviation/s occurred in this quarter.~~
~~Deviation has been reported on: _____~~

~~Submitted by: _____~~
~~Title / Position: _____~~
~~Signature: _____~~
~~Date: _____~~
~~Phone: _____~~

Modification No. 17:

Degreasing Operations

The Permittee indicates Allison Transmission, Inc. - Speedway Main Campus does not contain any cold cleaning degreasing operations. Therefore, IDEM, OAQ is removing the reference in Section A.3(g). The remaining insignificant activities have been renumbered. Revisions are shown below:

A.3 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)][326 IAC 2-7-5(14)]

This stationary source also includes the following insignificant activities as defined in 326 IAC 2-7-1(21): **********

~~(g) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6.~~

(**g**~~h~~) **********

(**h**~~i~~) **********

(**i**~~j~~) **********

(j~~k~~) **********

(k~~l~~) **********

(l~~m~~) **********

(m~~n~~) **********

(n~~o~~) **********

(o~~p~~) **********

(p~~q~~) **********

(q~~r~~) **********

(r~~s~~) **********

(s~~t~~) **********

(t~~u~~) **********

(u~~v~~) **********

(v~~w~~) **********

(w~~x~~) **********

(x~~y~~) **********

(y~~z~~) **********

(z~~aa~~) **********

(aa~~bb~~) **********

(bb~~cc~~) **********

(cc~~dd~~) **********

(dd~~ee~~) **********

(ee~~ff~~) **********

(ff~~gg~~) **********

(gg~~hh~~) **********

(hh~~ii~~) **********
****

SECTION D.8 EMISSIONS UNIT OPERATION CONDITIONS

Insignificant Activities:
****

(**z**~~aa~~) Emergency diesel generators not exceeding 1600 horsepower. [326 IAC 6.5-1-2(a)]

(1) one (1) 1490 hp diesel emergency generator located in the Powerhouse courtyard.

(2) one (1) 490 hp diesel emergency generator located in Plant 7.

(3) one (1) 415 hp diesel emergency generator located in Plant 12/14.

Under 40 CFR 60, Subpart IIII, these operations are each an affected source. Under 40 CFR 63, Subpart ZZZZ, these operations are each an affected source.

(**aa**~~bb~~) Emergency Stationary fire pumps. [326 IAC 6.5-1-2(a)]

(**bb**~~cc~~) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including the following: deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations. [326 IAC 6.5-1-2(a)]

(1) Shot Blast controlled with fabric filters. [326 IAC 6.5-1-2(a)]

(**ff**~~gg~~) Activities or categories of activities with individual HAP emissions not previously identified. Any unit emitting greater than 1 pound per day but less than 5 pounds per day or 1 ton per year of a single HAP.

(1) Production welding - manganese [326 IAC 6.5-1-2(a)]

(**gg**~~hh~~) The following activities or categories not previously identified which have potential emissions less than significance thresholds listed under 326 IAC 2-7-1(21);

(1) Heat Treating [326 IAC 6.5-1-2(a)]

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

SECTION E.2 New Source Performance Standards [326 IAC 2-7-5(1)] [326 IAC 12-1] [40 CFR 60, Subpart IIII]

****

Insignificant Activities

(**z**~~aa~~) Emergency diesel generators not exceeding 1600 horsepower. [326 IAC 6.5-1-2(a)]
****

****

SECTION E.4 National Emission Standards for Hazardous Air Pollutants [326 IAC 2-7-5(1)] [326 IAC 20-1] [40 CFR 63, Subpart WWWWWW]

Facility Description:

(**gg**~~hh~~) The following activities or categories not previously identified which have potential emissions less than significance thresholds listed under 326 IAC 2-7-1(21);
****

****

SECTION E.6 National Emission Standards for Hazardous Air Pollutants [326 IAC 2-7-5(1)] [326 IAC 20-1] [40 CFR 63, Subpart ZZZZ]

****

Insignificant Activities

(**z**~~aa~~) Emergency diesel generators not exceeding 1600 horsepower. [326 IAC 6.5-1-2(a)]
****

Modification No. 18:

Revised Emission Unit Description for PTS14

IDEM, OAQ is updating the emission unit description for PTS14 in Section A.2, Section D.4, Section E.2, and Section E.6 to change all references to test cell to test stand. IDEM, OAQ is revising the description of PTS14 to make it consistent. Proposed revisions are shown below:

A.2 Emission Units and Pollution Control Equipment Summary
[326 IAC 2-7-4(c)(3)][326 IAC 2-7-5(14)]

~~*********~~

(e) Emission unit PTS14 consists of the following five (5) transmission test stands, identified as test stand O-1, O-2, O-24, O-25 and O-31. Test stands O-1, O-2, O-24, O-25 and O-31 were constructed in 1978, 1979, 1986, 1986, and 1984 respectively. The table below lists the fuel type and engine type that each **stand**~~cell~~ is capable of accommodating based on the physical characteristics of each **stand**~~cell~~. Test stands O-1, O-2, and O-31 each utilize an oxidation catalyst system to control CO emissions.

Test **Stand**~~Cell~~ ID	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
O-1	Diesel	Reciprocating	2400	14041
O-2	Diesel	Reciprocating	2400	14038
O-24	Diesel	Reciprocating	600	14024
O-25	Diesel	Reciprocating	600	14023
O-31	Diesel	Reciprocating	2400	14045

Under 40 CFR 63, Subpart ZZZZ, these engines are each an affected source. The engines in each of the test **stands**~~cells~~ are considered affected sources under 40 CFR 60, Subpart IIII when a new engine is installed in the test **stand**~~cell~~ and a test cell exemption does not apply. ~~*********~~

SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

****

(e) Emission unit PTS14 consists of the following five (5) transmission test stands, identified as test stand O-1, O-2, O-24, O-25 and O-31. Test stands O-1, O-2, O-24, O-25 and O-31 were constructed in 1978, 1979, 1986, 1986, and 1984 respectively. **The table below lists the fuel type and engine type that each stand is capable of accommodating based on the physical characteristics of each stand.** ~~The emissions from test stands O-1, O-2, O-24, O-25 and O-31 are exhausted out stacks 14041, 14038, 14024, 14023, and 14045, respectively.~~ Test stands O-1, O-2, and O-31 each utilize an oxidation catalyst system to control CO emissions.

Test **Stand**~~Cell~~ ID	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
O-1	Diesel	Reciprocating	2400	14041
O-2	Diesel	Reciprocating	2400	14038
O-24	Diesel	Reciprocating	600	14024
O-25	Diesel	Reciprocating	600	14023
O-31	Diesel	Reciprocating	2400	14045

Under 40 CFR 63, Subpart ZZZZ, these engines are each an affected source. The engines in each of the test **stands**~~cells~~ are considered affected sources under 40 CFR 60, Subpart IIII when a new engine is installed in the test **stand**~~cell~~ and a test cell exemption does not apply.

****

SECTION E.2 New Source Performance Standards [326 IAC 2-7-5(1)] [326 IAC 12-1] [40 CFR 60, Subpart IIII]

****

(e) Emission unit PTS14 consists of the following five (5) transmission test stands, identified as test stand O-1, O-2, O-24, O-25 and O-31. Test stands O-1, O-2, O-24, O-25 and O-31 were constructed in 1978, 1979, 1986, 1986, and 1984 respectively. The table below lists the fuel type and engine type that each **stand**~~cell~~ is capable of accommodating based on the physical characteristics of each **stand**~~cell~~. Test stands O-1, O-2, and O-31 each utilize an oxidation catalyst system to control CO emissions.

Test **Stand**~~Cell~~ ID	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
O-1	Diesel	Reciprocating	2400	14041
O-2	Diesel	Reciprocating	2400	14038
O-24	Diesel	Reciprocating	600	14024
O-25	Diesel	Reciprocating	600	14023
O-31	Diesel	Reciprocating	2400	14045

Under 40 CFR 63, Subpart ZZZZ, these engines are each an affected source. The engines in each of the test **stands**~~cells~~ are considered affected sources under 40 CFR 60, Subpart IIII when a new engine is installed in the test **stand**~~cell~~ and a test cell exemption does not apply.

****

SECTION E.6 National Emission Standards for Hazardous Air Pollutants [326 IAC 2-7-5(1)] [326 IAC 20-1] [40 CFR 63, Subpart ZZZZ]

****

(e) Emission unit PTS14 consists of the following five (5) transmission test stands, identified as test stand O-1, O-2, O-24, O-25 and O-31. Test stands O-1, O-2, O-24, O-25 and O-31 were constructed in 1978, 1979, 1986, 1986, and 1984 respectively. The table below lists the fuel type and engine type that each **stand**~~cell~~ is capable of accommodating based on the physical characteristics of each **stand**~~cell~~. Test stands O-1, O-2, and O-31 each utilize an oxidation catalyst system to control CO emissions.

Test **Stand**~~Cell~~ ID	Fuel Type	Engine Type	Estimated Maximum Engine Size in Horsepower	Stack ID
O-1	Diesel	Reciprocating	2400	14041
O-2	Diesel	Reciprocating	2400	14038
O-24	Diesel	Reciprocating	600	14024
O-25	Diesel	Reciprocating	600	14023
O-31	Diesel	Reciprocating	2400	14045

Under 40 CFR 63, Subpart ZZZZ, these engines are each an affected source. The engines in each of the test **stands**~~cells~~ are considered affected sources under 40 CFR 60, Subpart IIII when a new engine is installed in the test **stand**~~cell~~ and a test cell exemption does not apply.

****

Conclusion and Recommendation

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Significant Source Modification No. 097-36831-00310 and Significant Permit Modification No. 097-36910-00310. The staff recommend to the Commissioner that this Part 70 Significant Source and Significant Permit Modification be approved.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to David Matousek at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 232-8253 or toll free at 1-800-451-6027 extension 2-8253.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

Appendix A to the Technical Support Document
Potential to Emit Summary

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Address: One Allison Way, Indianapolis, Indiana 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek
Date: April 25, 2016

Potential to Emit of Generator Project (TPY)												
Emission Unit	**PM**	**PM10**	**Direct PM2.5**	**SO2**	**VOC**	**CO**	**NOx**	**GHG as CO2e**	**Combined HAP**	**Benzene**	**Formaldehyde**	**Hexane**
Generator 1a	0.21	0.21	0.21	0.09	0.68	0.73	6.54	849	8.17E-03	4.03E-03	4.09E-04	0.00E+00
Generator 1b	0.21	0.21	0.21	0.09	0.68	0.73	6.54	849	8.17E-03	4.03E-03	4.09E-04	0.00E+00
PTE of Generator Project	0.41	0.41	0.41	0.18	1.37	1.46	13.07	1,697.88	1.63E-02	8.05E-03	8.19E-04	0.00E+00
PSD Significant Level	25	15	10	40	40	100	40	75,000	not applicable	not applicable	not applicable	not applicable

Potential to Emit of Test Cell Project (TPY)												
Emission Unit	**PM**	**PM10**	**Direct PM2.5**	**SO2**	**VOC**	**CO**	**NOx**	**GHG as CO2e**	**Combined HAP**	**Benzene**	**Formaldehyde**	**Hexane**
Test Cell - 50N	2.05	2.05	2.05	1.68	12.65	20.61	12.65	3,539	1.81	0.02	1.32	0.03
Test Cell - 52N	2.05	2.05	2.05	1.68	12.65	20.61	12.65	3,539	1.81	0.02	1.32	0.03
Test Cell - 50S	2.05	2.05	2.05	1.68	12.65	25.22	25.22	5,016	1.82	0.02	1.32	0.03
Test Cell - 52S	2.05	2.05	2.05	1.68	12.65	25.22	25.22	5,016	1.82	0.02	1.32	0.03
PTE of Modification	8.21	8.21	8.21	6.73	50.59	91.66	75.74	17,110	7.24	0.08	5.26	0.11
PSD Significant Level	25	15	10	40	40	100	40	75,000	not applicable	not applicable	not applicable	not applicable

(continued on next page)

Appendix A to the Technical Support Document

Potential to Emit Summary

(continued from previous page)

Limited Potential to Emit of Generator Project (TPY)												
Emission Unit	**PM**	**PM10**	**Direct PM2.5**	**SO2**	**VOC**	**CO**	**NOx**	**GHG as CO2e**	**Combined HAP**	**Benzene**	**Formaldehyde**	**Hexane**
Generator 1a	0.21	0.21	0.21	0.09	0.68	0.73	6.54	849	8.17E-03	4.03E-03	4.09E-04	0.00E+00
Generator 1b	0.21	0.21	0.21	0.09	0.68	0.73	6.54	849	8.17E-03	4.03E-03	4.09E-04	0.00E+00
PTE of Modification	0.41	0.41	0.41	0.18	1.37	1.46	13.07	1,698	1.63E-02	8.05E-03	8.19E-04	0.00E+00
PSD Significant Level	25	15	10	40	40	100	40	75,000	not applicable	not applicable	not applicable	not applicable

Limited Potential to Emit of Test Cell Project (TPY)												
Emission Unit	**PM**	**PM10**	**Direct PM2.5**	**SO2**	**VOC**	**CO**	**NOx**	**GHG as CO2e**	**Combined HAP**	**Benzene**	**Formaldehyde**	**Hexane**
Test Cell - 50N	2.05	2.05	2.05	1.68	< 40.00	20.61	< 40.00	3,539	1.81	0.02	1.32	0.03
Test Cell - 52N	2.05	2.05	2.05	1.68		20.61		3,539	1.81	0.02	1.32	0.03
Test Cell - 50S	2.05	2.05	2.05	1.68		25.22		5,016	1.82	0.02	1.32	2.77E-02
Test Cell - 52S	2.05	2.05	2.05	1.68		25.22		5,016	1.82	0.02	1.32	0.03
PTE of Modification	8.21	8.21	8.21	6.73	< 40.00	91.66	< 40.00	17,110	7.24	0.08	5.26	0.11
PSD Significant Level	25	15	10	40	40	100	40	75,000	not applicable	not applicable	not applicable	not applicable

Appendix A to the Technical Support Document (TSD)
PTE of Diesel Fired Emergency Generator - Genset 1a and 1b, each generator

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Address: One Allison Way, Indianapolis, Indiana 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek
Date: April 25, 2016

Operating Parameters

Engine Output	2,965	HP (each generator)		
Brake Specific Fuel Consumption	7,000	Btu/Hp.Hr		
Heat Input	20.76	MMBtu/hr	or	10,378 MMBtu/yr
Diesel Fuel Heat Content	140.00	MMBtu/kgal		
Hours of Operation PTE	500	hours/yr		
Energy Input	1,482,500	Hp-hr/yr		
Fuel Usage	74.13	kgallon/yr		

Emission Calculations (TPY)				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
PM	0.17	g/kw.hr	0.21	Kohler Power Systems - EPA Certificate Date
PM_{10}	0.17	g/kw.hr	0.21	Kohler Power Systems - EPA Certificate Date
$PM_{2.5}$	0.17	g/kw.hr	0.21	Kohler Power Systems - EPA Certificate Date
SO_2	1.21E-04	lb/hp-hr	0.09	AP-42, Chapter 3.4, Table 3.4-1, S = 0.015%
VOC	0.56	g/kw.hr	0.68	Kohler Power Systems - EPA Certificate Date
CO	0.60	g/kw.hr	0.73	Kohler Power Systems - EPA Certificate Date
NO_x	5.36	g/kw.hr	6.54	Kohler Power Systems - EPA Certificate Date
Hazardous Air Pollutants				
Acetaldehyde	2.52E-05	lb/MMBtu	1.31E-04	AP-42, Chapter 3.4, Table 3.4-3
Acrolein	7.88E-06	lb/MMBtu	4.09E-05	AP-42, Chapter 3.4, Table 3.4-3
Benzene	7.76E-04	lb/MMBtu	4.03E-03	AP-42, Chapter 3.4, Table 3.4-3
Formaldehyde	7.89E-05	lb/MMBtu	**4.09E-04**	AP-42, Chapter 3.4, Table 3.4-3
Toluene	2.81E-04	lb/MMBtu	1.46E-03	AP-42, Chapter 3.4, Table 3.4-3
Xylene	1.93E-04	lb/MMBtu	1.00E-03	AP-42, Chapter 3.4, Table 3.4-3
Total PAH	2.12E-04	lb/MMBtu	1.10E-03	AP-42, Chapter 3.4, Table 3.4-4
Total HAP			8.17E-03	
Greenhouse Gas Emissions				
CO_2	73.96	kg/MMBtu	846	40 CFR 98, Subpart C
CH_4	3.00E-03	kg/MMBtu	3.43E-02	40 CFR 98, Subpart C, Table C-2
N_2O	6.00E-04	kg/MMBtu	6.86E-03	40 CFR 98, Subpart C, Table C-2
CO_2e			849	

Methodology:
1) PTE (TPY) = Emission Factor (g/hp-hr) x Output (HP) x Operating Hours (hours/yr) x 1 lb/453.59 g x 1 ton/2,000 lb
2) PTE (TPY) = Emission Factor (lb/MMBtu) x Heat Input (MMBtu/hr) x Operating Hours (hr/yr) x 1 ton/2,000 lb
3) PTE (TPY) = Emission Factor (kg/MMBtu) x 2.2046 lb/kg x Heat Input (MMBtu/hr) x Operating Hours (hr/yr) x 1 ton/2,000 lb
4) PTE (TPY as CO_2e) = [TPY CO_2] + [TPY CH_4 x 25] + [TPY N_2O x 298]
5) Engine Heat Input (MMBtu/hr) = Output (HP) x Brake Specific Fuel Consumption (Btu/Hp-hr) x 1 MMBtu/1,000,000 Btu
6) Fuel Consumption (kgal/yr) = [Operating Hours (hr/yr) x Heat Input (MMBtu/hr)] ÷ Fuel Heat Content (MMBtu/kgal)
7) PTE (TPY) = Energy Input (Hp-hr/yr) x Emission Factor (g/KW.hr) x [1 lb/453.59 g] x [1 KW/1.341 Hp] x [1 ton/2,000 lb]

Appendix A to the Technical Support Document (TSD)
Potential to Emit - TC50N and TC52N - After Project - Each Test Cell

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Address: One Allison Way, Indianapolis, Indiana 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek
Date: April 25, 2016

Maximum Power - Diesel	700	HP	Heat Input	4.90 MMBtu/hr	(BSFC in Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	6,132,000 hp.hr/yr	7,000

Potential to Emit - Diesel Fuel				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
PM	0.02	g/kw.hr	0.10	40 CFR 1039.101, Table 1, CI engines < 560 kW.
PM_{10}	0.02	g/kw.hr	0.10	Assumed the same as PM
$PM_{2.5}$	0.02	g/kw.hr	0.10	Assumed the same as PM
SO_2	1.21E-04	lb/hp.hr	0.37	AP-42, Ch. 3.4, Table 3.4-1, S=0.015%
VOC	0.19	g/kw.hr	0.96	40 CFR 1039.101, Table 1, CI engines < 560 kW.
CO	3.50	g/kw.hr	17.66	40 CFR 1039.101, Table 1, CI engines < 560 kW.
NO_x	0.40	g/kw.hr	2.02	40 CFR 1039.101, Table 1, CI engines < 560 kW.

Maximum Power - Gasoline	650	HP	Heat Input	5.20 MMBtu/hr	(BSFC in Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	5,694,000 hp.hr/yr	8,000

Potential to Emit - Gasoline				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
PM	7.21E-04	lb/hp.hr	2.05	Assumed the same as PM10
PM_{10}	7.21E-04	lb/hp.hr	2.05	AP-42, Ch. 3.3, Table 3.3-1
$PM_{2.5}$	7.21E-04	lb/hp.hr	2.05	Assumed the same as PM10
SO_2	5.91E-04	lb/hp.hr	1.68	AP-42, Ch. 3.3, Table 3.3-1
VOC	2.70	g/kw.hr	12.65	40 CFR 1048.101(a)(2)
CO	4.40	g/kw.hr	20.61	40 CFR 1048.101(a)(2)
NO_x	2.70	g/kw.hr	12.65	40 CFR 1048.101(a)(2)

Maximum Power - Natural Gas	650	HP	Heat Input	5.69 MMBtu/hr	(BSFC in Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	5,694,000 hp.hr/yr	8,750

Potential to Emit - Natural Gas (4-Stroke Lean Burn)				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
PM (filterable only)	9.91E-03	lb/MMBtu	0.25	AP-42, Ch. 3.2, Table 3.2-2
PM_{10} (filterable + condensable)	9.99E-03	lb/MMBtu	0.25	AP-42, Ch. 3.2, Table 3.2-2
$PM_{2.5}$ (filterable + condensable)	9.99E-03	lb/MMBtu	0.25	AP-42, Ch. 3.2, Table 3.2-2
SO_2	5.88E-04	lb/MMBtu	0.01	AP-42, Ch. 3.2, Table 3.2-2
VOC	0.70	g/hp.hr	4.39	40 CFR 60, Subpart JJJJ, Table 1, 7/1/2010 and later
CO	2.00	g/hp.hr	12.55	40 CFR 60, Subpart JJJJ, Table 1, 7/1/2010 and later
NO_x	1.00	g/hp.hr	6.28	40 CFR 60, Subpart JJJJ, Table 1, 7/1/2010 and later

Potential to Emit of Test Cell				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
PM	7.21E-04	lb/hp.hr	2.05	Assumed the same as PM10
PM_{10}	7.21E-04	lb/hp.hr	2.05	AP-42, Ch. 3.3, Table 3.3-1
$PM_{2.5}$	7.21E-04	lb/hp.hr	2.05	Assumed the same as PM10
SO_2	5.91E-04	lb/hp.hr	1.68	AP-42, Ch. 3.3, Table 3.3-1
VOC	2.70	g/kw.hr	12.65	40 CFR 1048.101(a)(2)
CO	3.50	g/kw.hr	20.61	40 CFR 1039.101, Table 1, CI engines < 560 kW.
NO_x	2.70	g/kw.hr	12.65	40 CFR 1048.101(a)(2)

(continued on next page)

Appendix A to the Technical Support Document (TSD)
Potential to Emit - TC50N and TC52N - After Project - Each Test Cell

(continued from previous page)

Hazardous Air Pollutant (HAP) Emissions

Maximum Power - Diesel	700	HP	Heat Input	4.90	MMBtu/hr (BSFC 7,000 Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	6,132,000	hp.hr/yr

PTE HAPs - Diesel / Gasoline (no factors available for gasoline)

Pollutant	Emission Factor		PTE (TPY)	Emission Factor Source
Acenaphthene	4.68E-06	lb/MMBtu	1.00E-04	AP-42, Chapter 3.4, Table 3.4-4
Acenaphthylene	9.23E-06	lb/MMBtu	1.98E-04	AP-42, Chapter 3.4, Table 3.4-4
Acetaldehyde	2.52E-05	lb/MMBtu	5.41E-04	AP-42, Chapter 3.4, Table 3.4-3
Acrolein	7.88E-06	lb/MMBtu	1.69E-04	AP-42, Chapter 3.4, Table 3.4-3
Anthracene	1.23E-06	lb/MMBtu	2.64E-05	AP-42, Chapter 3.4, Table 3.4-4
Benz(a)anthracene	6.22E-07	lb/MMBtu	1.33E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzene	**7.76E-04**	**lb/MMBtu**	**1.67E-02**	**AP-42, Chapter 3.4, Table 3.4-3**
Benzo(a)pyrene	2.57E-07	lb/MMBtu	5.52E-06	AP-42, Chapter 3.4, Table 3.4-4
Benzo(b)fluoranthene	1.11E-06	lb/MMBtu	2.38E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzo(e)pyrene				no factor
Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu	1.19E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzo(k)fluoranthene	2.18E-07	lb/MMBtu	4.68E-06	AP-42, Chapter 3.4, Table 3.4-4
Biphenyl				no factor
Butadiene, 1,3-				no factor
Carbon Tetrachloride				no factor
Chlorobenzene				no factor
Chloroform				no factor
Chrysene	1.53E-06	lb/MMBtu	3.28E-05	AP-42, Chapter 3.4, Table 3.4-4
Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu	7.43E-06	AP-42, Chapter 3.4, Table 3.4-4
Dichloropropene, 1,3-				no factor
Ethylbenzene				no factor
Ethylene Dibromide				no factor
Fluoanthene	4.03E-06	lb/MMBtu	8.65E-05	AP-42, Chapter 3.4, Table 3.4-4
Fluorene	1.28E-05	lb/MMBtu	2.75E-04	AP-42, Chapter 3.4, Table 3.4-4
Formaldehyde	7.89E-05	lb/MMBtu	1.69E-03	AP-42, Chapter 3.4, Table 3.4-3
Hexane				no factor
Indo(1,2,3-c,d)pyrene	4.14E-07	lb/MMBtu	8.89E-06	AP-42, Chapter 3.4, Table 3.4-4
Methanol				no factor
Methylene Chloride				no factor
Methylnaphthalene, 2-				no factor
Naphthalene	1.30E-04	lb/MMBtu	2.79E-03	AP-42, Chapter 3.4, Table 3.4-4
Phenanthrene	4.08E-05	lb/MMBtu	8.76E-04	AP-42, Chapter 3.4, Table 3.4-4
Phenol				no factor
Pyrene	3.71E-06	lb/MMBtu	7.96E-05	AP-42, Chapter 3.4, Table 3.4-4
Styrene				no factor
Tetrachloroethane				no factor
Tetrachloroethane, 1,1,2,2-				no factor
Toluene	2.81E-04	lb/MMBtu	6.03E-03	AP-42, Chapter 3.4, Table 3.4-4
Trichloroethane, 1,1,2-				no factor
Trimethylpentane, 2,2,4-				no factor
Vinyl Chloride				no factor
Xylene	1.93E-04	lb/MMBtu	4.14E-03	AP-42, Chapter 3.4, Table 3.4-4
Combined HAP			**0.03**	

Combined HAP Emission Factor **1.57E-03 lb/MMBtu**
Highest Single HAP - Benzene **1.67E-02 TPY**

(continued on next page)

Appendix A to the Technical Support Document (TSD)
Potential to Emit - TC50N and TC52N - After Project - Each Test Cell

(continued from previous page)

Maximum Power - Natural Gas	650 HP	Heat Input	5.69 MMBtu/hr (BSFC 8,100 Btu/hp.hr)
Hours of Operation	8,760 hr/yr	Energy Input	6,132,000 hp.hr/yr

PTE HAPs - Natural Gas

Pollutant	Emission Factor		PTE (TPY)	Emission Factor Source
Acenaphthene	1.25E-06	lb/MMBtu	3.11E-05	AP-42, Chapter 3.2, Table 3.2-2
Acenaphthylene	5.53E-06	lb/MMBtu	1.38E-04	AP-42, Chapter 3.2, Table 3.2-2
Acetaldehyde	8.36E-03	lb/MMBtu	0.21	AP-42, Chapter 3.2, Table 3.2-2
Acrolein	5.14E-03	lb/MMBtu	0.13	AP-42, Chapter 3.2, Table 3.2-2
Anthracene				no factor
Benz(a)anthracene				no factor
Benzene	4.40E-04	lb/MMBtu	1.10E-02	AP-42, Chapter 3.2, Table 3.2-2
Benzo(a)pyrene				no factor
Benzo(b)fluoranthene	1.66E-07	lb/MMBtu	4.14E-06	AP-42, Chapter 3.2, Table 3.2-2
Benzo(e)pyrene	4.15E-07	lb/MMBtu	1.03E-05	AP-42, Chapter 3.2, Table 3.2-2
Benzo(g,h,i)perylene	4.14E-07	lb/MMBtu	1.03E-05	AP-42, Chapter 3.2, Table 3.2-2
Benzo(k)fluoranthene				no factor
Biphenyl	2.12E-04	lb/MMBtu	5.28E-03	AP-42, Chapter 3.2, Table 3.2-2
Butadiene, 1,3-	2.67E-04	lb/MMBtu	6.65E-03	AP-42, Chapter 3.2, Table 3.2-2
Carbon Tetrachloride	3.67E-05	lb/MMBtu	9.14E-04	AP-42, Chapter 3.2, Table 3.2-2
Chlorobenzene	3.04E-05	lb/MMBtu	7.57E-04	AP-42, Chapter 3.2, Table 3.2-2
Chloroform	2.85E-05	lb/MMBtu	7.10E-04	AP-42, Chapter 3.2, Table 3.2-2
Chrysene	6.93E-07	lb/MMBtu	1.73E-05	AP-42, Chapter 3.2, Table 3.2-2
Dibenz(a,h)anthracene				no factor
Dichloropropene, 1,3-	2.64E-05	lb/MMBtu	6.58E-04	AP-42, Chapter 3.2, Table 3.2-2
Ethylbenzene	3.97E-05	lb/MMBtu	9.89E-04	AP-42, Chapter 3.2, Table 3.2-2
Ethylene Dibromide	4.43E-05	lb/MMBtu	1.10E-03	AP-42, Chapter 3.2, Table 3.2-2
Fluoanthene	1.11E-06	lb/MMBtu	2.77E-05	AP-42, Chapter 3.2, Table 3.2-2
Fluorene	5.67E-06	lb/MMBtu	1.41E-04	AP-42, Chapter 3.2, Table 3.2-2
Formaldehyde	**5.28E-02**	**lb/MMBtu**	**1.32**	AP-42, Chapter 3.2, Table 3.2-2
Hexane	1.11E-03	lb/MMBtu	2.77E-02	AP-42, Chapter 3.2, Table 3.2-2
Indo(1,2,3-c,d)pyrene				no factor
Methanol	2.50E-03	lb/MMBtu	6.23E-02	AP-42, Chapter 3.2, Table 3.2-2
Methylene Chloride	2.00E-05	lb/MMBtu	4.98E-04	AP-42, Chapter 3.2, Table 3.2-2
Methylnaphthalene, 2-	3.32E-05	lb/MMBtu	8.27E-04	AP-42, Chapter 3.2, Table 3.2-2
Naphthalene	7.44E-05	lb/MMBtu	1.85E-03	AP-42, Chapter 3.2, Table 3.2-2
Phenanthrene	1.04E-05	lb/MMBtu	2.59E-04	AP-42, Chapter 3.2, Table 3.2-2
Phenol	2.40E-05	lb/MMBtu	5.98E-04	AP-42, Chapter 3.2, Table 3.2-2
Pyrene	1.36E-06	lb/MMBtu	3.39E-05	AP-42, Chapter 3.2, Table 3.2-2
Styrene	2.36E-05	lb/MMBtu	5.88E-04	AP-42, Chapter 3.2, Table 3.2-2
Tetrachloroethane	2.48E-06	lb/MMBtu	6.18E-05	AP-42, Chapter 3.2, Table 3.2-2
Tetrachloroethane, 1,1,2,2-	4.00E-05	lb/MMBtu	9.96E-04	AP-42, Chapter 3.2, Table 3.2-2
Toluene	4.08E-04	lb/MMBtu	1.02E-02	AP-42, Chapter 3.2, Table 3.2-2
Trichloroethane, 1,1,2-	3.18E-05	lb/MMBtu	7.92E-04	AP-42, Chapter 3.2, Table 3.2-2
Trimethylpentane, 2,2,4-	2.50E-04	lb/MMBtu	6.23E-03	AP-42, Chapter 3.2, Table 3.2-2
Vinyl Chloride	1.49E-05	lb/MMBtu	3.71E-04	AP-42, Chapter 3.2, Table 3.2-2
Xylene	1.84E-04	lb/MMBtu	4.58E-03	AP-42, Chapter 3.2, Table 3.2-2
Combined HAP			**1.80**	

Combined HAP Emission Factor **7.22E-02 lb/MMBtu**

Highest Single HAP - Formaldehyde **1.32 TPY**

(continued on next page)

Appendix A to the Technical Support Document (TSD)
Potential to Emit - TC50N and TC52N - After Project - Each Test Cell

(continued from previous page)

PTE HAPs - Worst Case				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
Acenaphthene	4.68E-06	lb/MMBtu	1.00E-04	AP-42, Chapter 3.4, Table 3.4-4
Acenaphthylene	9.23E-06	lb/MMBtu	1.98E-04	AP-42, Chapter 3.4, Table 3.4-4
Acetaldehyde	8.36E-03	lb/MMBtu	0.21	AP-42, Chapter 3.2, Table 3.2-2
Acrolein	5.14E-03	lb/MMBtu	0.13	AP-42, Chapter 3.2, Table 3.2-2
Anthracene	1.23E-06	lb/MMBtu	2.64E-05	AP-42, Chapter 3.4, Table 3.4-4
Benz(a)anthracene	6.22E-07	lb/MMBtu	1.33E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzene	7.76E-04	lb/MMBtu	1.67E-02	AP-42, Chapter 3.4, Table 3.4-3
Benzo(a)pyrene	2.57E-07	lb/MMBtu	5.52E-06	AP-42, Chapter 3.4, Table 3.4-4
Benzo(b)fluoranthene	1.11E-06	lb/MMBtu	2.38E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzo(e)pyrene	4.15E-07	lb/MMBtu	1.03E-05	AP-42, Chapter 3.2, Table 3.2-2
Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu	1.19E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzo(k)fluoranthene	2.18E-07	lb/MMBtu	4.68E-06	AP-42, Chapter 3.4, Table 3.4-4
Biphenyl	2.12E-04	lb/MMBtu	5.28E-03	AP-42, Chapter 3.2, Table 3.2-2
Butadiene, 1,3-	2.67E-04	lb/MMBtu	6.65E-03	AP-42, Chapter 3.2, Table 3.2-2
Carbon Tetrachloride	3.67E-05	lb/MMBtu	9.14E-04	AP-42, Chapter 3.2, Table 3.2-2
Chlorobenzene	3.04E-05	lb/MMBtu	7.57E-04	AP-42, Chapter 3.2, Table 3.2-2
Chloroform	2.85E-05	lb/MMBtu	7.10E-04	AP-42, Chapter 3.2, Table 3.2-2
Chrysene	1.53E-06	lb/MMBtu	3.28E-05	AP-42, Chapter 3.4, Table 3.4-4
Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu	7.43E-06	AP-42, Chapter 3.4, Table 3.4-4
Dichloropropene, 1,3-	2.64E-05	lb/MMBtu	6.58E-04	AP-42, Chapter 3.2, Table 3.2-2
Ethylbenzene	3.97E-05	lb/MMBtu	9.89E-04	AP-42, Chapter 3.2, Table 3.2-2
Ethylene Dibromide	4.43E-05	lb/MMBtu	1.10E-03	AP-42, Chapter 3.2, Table 3.2-2
Fluoanthene	4.03E-06	lb/MMBtu	8.65E-05	AP-42, Chapter 3.4, Table 3.4-4
Fluorene	1.28E-05	lb/MMBtu	2.75E-04	AP-42, Chapter 3.4, Table 3.4-4
Formaldehyde	**5.28E-02**	**lb/MMBtu**	**1.32**	**AP-42, Chapter 3.2, Table 3.2-2**
Hexane	1.11E-03	lb/MMBtu	2.77E-02	AP-42, Chapter 3.2, Table 3.2-2
Indo(1,2,3-c,d)pyrene	4.14E-07	lb/MMBtu	8.89E-06	AP-42, Chapter 3.4, Table 3.4-4
Methanol	2.50E-03	lb/MMBtu	6.23E-02	AP-42, Chapter 3.2, Table 3.2-2
Methylene Chloride	2.00E-05	lb/MMBtu	4.98E-04	AP-42, Chapter 3.2, Table 3.2-2
Methylnaphthalene, 2-	3.32E-05	lb/MMBtu	8.27E-04	AP-42, Chapter 3.2, Table 3.2-2
Naphthalene	1.30E-04	lb/MMBtu	2.79E-03	AP-42, Chapter 3.4, Table 3.4-4
Phenanthrene	4.08E-05	lb/MMBtu	8.76E-04	AP-42, Chapter 3.4, Table 3.4-4
Phenol	2.40E-05	lb/MMBtu	5.98E-04	AP-42, Chapter 3.2, Table 3.2-2
Pyrene	3.71E-06	lb/MMBtu	7.96E-05	AP-42, Chapter 3.4, Table 3.4-4
Styrene	2.36E-05	lb/MMBtu	5.88E-04	AP-42, Chapter 3.2, Table 3.2-2
Tetrachloroethane	2.48E-06	lb/MMBtu	6.18E-05	AP-42, Chapter 3.2, Table 3.2-2
Tetrachloroethane, 1,1,2,2-	4.00E-05	lb/MMBtu	9.96E-04	AP-42, Chapter 3.2, Table 3.2-2
Toluene	2.81E-04	lb/MMBtu	1.02E-02	AP-42, Chapter 3.4, Table 3.4-4
Trichloroethane, 1,1,2-	3.18E-05	lb/MMBtu	7.92E-04	AP-42, Chapter 3.2, Table 3.2-2
Trimethylpentane, 2,2,4-	2.50E-04	lb/MMBtu	6.23E-03	AP-42, Chapter 3.2, Table 3.2-2
Vinyl Chloride	1.49E-05	lb/MMBtu	3.71E-04	AP-42, Chapter 3.2, Table 3.2-2
Xylene	1.93E-04	lb/MMBtu	4.58E-03	AP-42, Chapter 3.4, Table 3.4-4
Combined HAP			**1.81**	

Combined HAP Emission Factor **7.25E-02 lb/MMBtu**

Highest Single HAP - Formaldehyde **1.32 TPY**

(continued on next page)

Appendix A to the Technical Support Document (TSD)
Potential to Emit - TC50N and TC52N - After Project - Each Test Cell

(continued from previous page)

Greenhouse Gas (GHG) Emissions

Maximum Power - Diesel	700	HP	Heat Input	4.90	MMBtu/hr (BSFC 7,000 Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	6,132,000	hp.hr/yr

Greenhouse Gas Emissions - Diesel (TPY)

Pollutant	Emission Factor		PTE (TPY)	Emission Factor Source
CO_2	73.96	kg/MMBtu	3,499	40 CFR 98, Subpart C
CH_4	3.00E-03	kg/MMBtu	0.14	40 CFR 98, Subpart C, Table C-2
N_2O	6.00E-04	kg/MMBtu	0.03	40 CFR 98, Subpart C, Table C-2
CO_2e			3,511	

Maximum Power - Gasoline	650	HP	Heat Input	5.20	MMBtu/hr (BSFC 7,985 Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	5,694,000	hp.hr/yr

Greenhouse Gas Emissions - Gasoline (TPY)

Pollutant	Emission Factor		PTE (TPY)	Emission Factor Source
CO_2	70.22	kg/MMBtu	3,526	40 CFR 98, Subpart C
CH_4	3.00E-03	kg/MMBtu	0.15	40 CFR 98, Subpart C, Table C-2
N_2O	6.00E-04	kg/MMBtu	0.03	40 CFR 98, Subpart C, Table C-2
CO_2e			3,539	

Maximum Power - Natural Gas	650	HP	Heat Input	5.69	MMBtu/hr (BSFC 8,100 Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	5,694,000	hp.hr/yr

Greenhouse Gas Emissions - Natural Gas (TPY)

Pollutant	Emission Factor		PTE (TPY)	Emission Factor Source
CO_2	53.06	kg/MMBtu	2,914	40 CFR 98, Subpart C
CH_4	1.10E-03	kg/MMBtu	0.06	40 CFR 98, Subpart C, Table C-2
N_2O	1.00E-04	kg/MMBtu	0.005	40 CFR 98, Subpart C, Table C-2
CO_2e			2,917	

Greenhouse Gas Emissions - Worst Case

Pollutant	Emission Factor	PTE (TPY)	Emission Factor Source
CO_2		3,526	40 CFR 98, Subpart C, Diesel
CH_4		0.15	40 CFR 98, Subpart C, Table C-2, Diesel / Gas
N_2O		0.03	40 CFR 98, Subpart C, Table C-2, Diesel / Gas
CO_2e		3,539	

Methodology:

1) PTE (TPY) = Emission Factor (g/hp-hr) x Output (HP) x Operating Hours (hours/yr) x 1 lb/453.59 g x 1 ton/2,000 lb
2) PTE (TPY) = Emission Factor (lb/MMBtu) x Heat Input (MMBtu/hr) x Operating Hours (hr/yr) x 1 ton/2,000 lb
3) PTE (TPY) = Emission Factor (kg/MMBtu) x 2.2046 lb/kg x Heat Input (MMBtu/hr) x Operating Hours (hr/yr) x 1 ton/2,000 lb
4) PTE (TPY as CO_2e) = [TPY CO_2] + [TPY CH_4 x 25] + [TPY N_2O x 298]
5) Engine Heat Input (MMBtu/hr) = Output (HP) x Brake Specific Fuel Consumption (Btu/Hp-hr) x 1 MMBtu/1,000,000 Btu
6) Fuel Consumption (kgal/yr) = [Operating Hours (hr/yr) x Heat Input (MMBtu/hr)] ÷ Fuel Heat Content (MMBtu/kgal)

Appendix A to the Technical Support Document (TSD)
Potential to Emit - TC50S and TC52S - After Project - Each Test Cell

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Address: One Allison Way, Indianapolis, Indiana 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek
Date: April 25, 2016

Maximum Power - Diesel	1,000 HP	Heat Input	7.00 MMBtu/hr	(BSFC in Btu/hp.hr)	
Hours of Operation	8,760 hr/yr	Energy Input	8,760,000 hp.hr/yr	7,000	

Potential to Emit - Diesel Fuel				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
PM	0.04	g/kw.hr	0.29	40 CFR 1039.101, Table 1, > 560KW
PM_{10}	0.04	g/kw.hr	0.29	Assumed the same as PM
$PM_{2.5}$	0.04	g/kw.hr	0.29	Assumed the same as PM
SO_2	1.21E-04	lb/hp.hr	0.53	AP-42, Ch. 3.4, Table 3.4-1, S=0.015%
VOC	0.19	g/kw.hr	1.37	40 CFR 1039.101, Table 1, > 560KW
CO	3.50	g/kw.hr	25.22	40 CFR 1039.101, Table 1, > 560KW
NO_x	3.50	g/kw.hr	25.22	40 CFR 1039.101, Table 1, > 560KW

Maximum Power - Gasoline	650 HP	Heat Input	5.20 MMBtu/hr	(BSFC in Btu/hp.hr)	
Hours of Operation	8,760 hr/yr	Energy Input	5,694,000 hp.hr/yr	8,000	

Potential to Emit - Gasoline				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
PM	7.21E-04	lb/hp.hr	2.05	Assumed the same as PM10
PM_{10}	7.21E-04	lb/hp.hr	2.05	AP-42, Ch. 3.3, Table 3.3-1
$PM_{2.5}$	7.21E-04	lb/hp.hr	2.05	Assumed the same as PM10
SO_2	5.91E-04	lb/hp.hr	1.68	AP-42, Ch. 3.3, Table 3.3-1
VOC	2.70	g/kw.hr	12.65	40 CFR 1048.101(a)(2)
CO	4.40	g/kw.hr	20.61	40 CFR 1048.101(a)(2)
NO_x	2.70	g/kw.hr	12.65	40 CFR 1048.101(a)(2)

Maximum Power - Natural Gas	650 HP	Heat Input	5.69 MMBtu/hr	(BSFC in Btu/hp.hr)	
Hours of Operation	8,760 hr/yr	Energy Input	5,694,000 hp.hr/yr	8,750	

Potential to Emit - Natural Gas (4-Stroke Lean Burn)				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
PM (filterable only)	9.91E-03	lb/MMBtu	0.25	AP-42, Ch. 3.2, Table 3.2-2
PM_{10} (filterable + condensable)	9.99E-03	lb/MMBtu	0.25	AP-42, Ch. 3.2, Table 3.2-2
$PM_{2.5}$ (filterable + condensable)	9.99E-03	lb/MMBtu	0.25	AP-42, Ch. 3.2, Table 3.2-2
SO_2	5.88E-04	lb/MMBtu	0.01	AP-42, Ch. 3.2, Table 3.2-2
VOC	0.70	g/hp.hr	4.39	40 CFR 60, Subpart JJJJ, Table 1, 7/1/2010 and later
CO	2.00	g/hp.hr	12.55	40 CFR 60, Subpart JJJJ, Table 1, 7/1/2010 and later
NO_x	1.00	g/hp.hr	6.28	40 CFR 60, Subpart JJJJ, Table 1, 7/1/2010 and later

Potential to Emit of Test Cell				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
PM	7.21E-04	lb/hp.hr	2.05	Assumed the same as PM10
PM_{10}	7.21E-04	lb/hp.hr	2.05	AP-42, Ch. 3.3, Table 3.3-1
$PM_{2.5}$	7.21E-04	lb/hp.hr	2.05	Assumed the same as PM10
SO_2	5.91E-04	lb/hp.hr	1.68	AP-42, Ch. 3.3, Table 3.3-1
VOC	2.70	g/kw.hr	12.65	40 CFR 1048.101(a)(2)
CO	3.50	g/kw.hr	25.22	40 CFR 1039.101, Table 1, > 560KW
NO_x	3.50	g/kw.hr	25.22	40 CFR 1039.101, Table 1, > 560KW

(continued on next page)

Appendix A to the Technical Support Document (TSD)
Potential to Emit - TC50S and TC52S - After Project - Each Test Cell

(continued from previous page)

Hazardous Air Pollutant (HAP) Emissions

Maximum Power - Diesel	1,000	HP	Heat Input	7.00	MMBtu/hr (BSFC 7,000 Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	8,760,000	hp.hr/yr

PTE HAPs - Diesel / Gasoline (no factors available for gasoline)

Pollutant	Emission Factor		PTE (TPY)	Emission Factor Source
Acenaphthene	4.68E-06	lb/MMBtu	1.43E-04	AP-42, Chapter 3.4, Table 3.4-4
Acenaphthylene	9.23E-06	lb/MMBtu	2.83E-04	AP-42, Chapter 3.4, Table 3.4-4
Acetaldehyde	2.52E-05	lb/MMBtu	7.73E-04	AP-42, Chapter 3.4, Table 3.4-3
Acrolein	7.88E-06	lb/MMBtu	2.42E-04	AP-42, Chapter 3.4, Table 3.4-3
Anthracene	1.23E-06	lb/MMBtu	3.77E-05	AP-42, Chapter 3.4, Table 3.4-4
Benz(a)anthracene	6.22E-07	lb/MMBtu	1.91E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzene	7.76E-04	lb/MMBtu	2.38E-02	AP-42, Chapter 3.4, Table 3.4-3
Benzo(a)pyrene	2.57E-07	lb/MMBtu	7.88E-06	AP-42, Chapter 3.4, Table 3.4-4
Benzo(b)fluoranthene	1.11E-06	lb/MMBtu	3.40E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzo(e)pyrene				no factor
Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu	1.70E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzo(k)fluoranthene	2.18E-07	lb/MMBtu	6.68E-06	AP-42, Chapter 3.4, Table 3.4-4
Biphenyl				no factor
Butadiene, 1,3-				no factor
Carbon Tetrachloride				no factor
Chlorobenzene				no factor
Chloroform				no factor
Chrysene	1.53E-06	lb/MMBtu	4.69E-05	AP-42, Chapter 3.4, Table 3.4-4
Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu	1.06E-05	AP-42, Chapter 3.4, Table 3.4-4
Dichloropropene, 1,3-				no factor
Ethylbenzene				no factor
Ethylene Dibromide				no factor
Fluoanthene	4.03E-06	lb/MMBtu	1.24E-04	AP-42, Chapter 3.4, Table 3.4-4
Fluorene	1.28E-05	lb/MMBtu	3.92E-04	AP-42, Chapter 3.4, Table 3.4-4
Formaldehyde	**7.89E-05**	**lb/MMBtu**	**2.42E-03**	AP-42, Chapter 3.4, Table 3.4-3
Hexane				no factor
Indo(1,2,3-c,d)pyrene	4.14E-07	lb/MMBtu	1.27E-05	AP-42, Chapter 3.4, Table 3.4-4
Methanol				no factor
Methylene Chloride				no factor
Methylnaphthalene, 2-				no factor
Naphthalene	1.30E-04	lb/MMBtu	3.99E-03	AP-42, Chapter 3.4, Table 3.4-4
Phenanthrene	4.08E-05	lb/MMBtu	1.25E-03	AP-42, Chapter 3.4, Table 3.4-4
Phenol				no factor
Pyrene	3.71E-06	lb/MMBtu	1.14E-04	AP-42, Chapter 3.4, Table 3.4-4
Styrene				no factor
Tetrachloroethane				no factor
Tetrachloroethane, 1,1,2,2-				no factor
Toluene	2.81E-04	lb/MMBtu	8.62E-03	AP-42, Chapter 3.4, Table 3.4-4
Trichloroethane, 1,1,2-				no factor
Trimethylpentane, 2,2,4-				no factor
Vinyl Chloride				no factor
Xylene	1.93E-04	lb/MMBtu	5.92E-03	AP-42, Chapter 3.4, Table 3.4-4
Combined HAP			**0.05**	

Combined HAP Emission Factor **1.57E-03 lb/MMBtu**

Highest Single HAP - Formaldehyde **0.02 TPY**

(continued on next page)

Appendix A to the Technical Support Document (TSD)
Potential to Emit - TC50S and TC52S - After Project - Each Test Cell

(continued from previous page)

Maximum Power - Natural Gas	650 HP	Heat Input	5.69 MMBtu/hr (BSFC 8,100 Btu/hp.hr)
Hours of Operation	8,760 hr/yr	Energy Input	8,760,000 hp.hr/yr

PTE HAPs - Natural Gas

Pollutant	Emission Factor		PTE (TPY)	Emission Factor Source
Acenaphthene	1.25E-06	lb/MMBtu	3.11E-05	AP-42, Chapter 3.2, Table 3.2-2
Acenaphthylene	5.53E-06	lb/MMBtu	1.38E-04	AP-42, Chapter 3.2, Table 3.2-2
Acetaldehyde	8.36E-03	lb/MMBtu	0.21	AP-42, Chapter 3.2, Table 3.2-2
Acrolein	5.14E-03	lb/MMBtu	0.13	AP-42, Chapter 3.2, Table 3.2-2
Anthracene				no factor
Benz(a)anthracene				no factor
Benzene	4.40E-04	lb/MMBtu	1.10E-02	AP-42, Chapter 3.2, Table 3.2-2
Benzo(a)pyrene				no factor
Benzo(b)fluoranthene	1.66E-07	lb/MMBtu	4.14E-06	AP-42, Chapter 3.2, Table 3.2-2
Benzo(e)pyrene	4.15E-07	lb/MMBtu	1.03E-05	AP-42, Chapter 3.2, Table 3.2-2
Benzo(g,h,i)perylene	4.14E-07	lb/MMBtu	1.03E-05	AP-42, Chapter 3.2, Table 3.2-2
Benzo(k)fluoranthene				no factor
Biphenyl	2.12E-04	lb/MMBtu	5.28E-03	AP-42, Chapter 3.2, Table 3.2-2
Butadiene, 1,3-	2.67E-04	lb/MMBtu	6.65E-03	AP-42, Chapter 3.2, Table 3.2-2
Carbon Tetrachloride	3.67E-05	lb/MMBtu	9.14E-04	AP-42, Chapter 3.2, Table 3.2-2
Chlorobenzene	3.04E-05	lb/MMBtu	7.57E-04	AP-42, Chapter 3.2, Table 3.2-2
Chloroform	2.85E-05	lb/MMBtu	7.10E-04	AP-42, Chapter 3.2, Table 3.2-2
Chrysene	6.93E-07	lb/MMBtu	1.73E-05	AP-42, Chapter 3.2, Table 3.2-2
Dibenz(a,h)anthracene				no factor
Dichloropropene, 1,3-	2.64E-05	lb/MMBtu	6.58E-04	AP-42, Chapter 3.2, Table 3.2-2
Ethylbenzene	3.97E-05	lb/MMBtu	9.89E-04	AP-42, Chapter 3.2, Table 3.2-2
Ethylene Dibromide	4.43E-05	lb/MMBtu	1.10E-03	AP-42, Chapter 3.2, Table 3.2-2
Fluoanthene	1.11E-06	lb/MMBtu	2.77E-05	AP-42, Chapter 3.2, Table 3.2-2
Fluorene	5.67E-06	lb/MMBtu	1.41E-04	AP-42, Chapter 3.2, Table 3.2-2
Formaldehyde	**5.28E-02**	**lb/MMBtu**	**1.32**	AP-42, Chapter 3.2, Table 3.2-2
Hexane	1.11E-03	lb/MMBtu	2.77E-02	AP-42, Chapter 3.2, Table 3.2-2
Indo(1,2,3-c,d)pyrene				no factor
Methanol	2.50E-03	lb/MMBtu	6.23E-02	AP-42, Chapter 3.2, Table 3.2-2
Methylene Chloride	2.00E-05	lb/MMBtu	4.98E-04	AP-42, Chapter 3.2, Table 3.2-2
Methylnaphthalene, 2-	3.32E-05	lb/MMBtu	8.27E-04	AP-42, Chapter 3.2, Table 3.2-2
Naphthalene	7.44E-05	lb/MMBtu	1.85E-03	AP-42, Chapter 3.2, Table 3.2-2
Phenanthrene	1.04E-05	lb/MMBtu	2.59E-04	AP-42, Chapter 3.2, Table 3.2-2
Phenol	2.40E-05	lb/MMBtu	5.98E-04	AP-42, Chapter 3.2, Table 3.2-2
Pyrene	1.36E-06	lb/MMBtu	3.39E-05	AP-42, Chapter 3.2, Table 3.2-2
Styrene	2.36E-05	lb/MMBtu	5.88E-04	AP-42, Chapter 3.2, Table 3.2-2
Tetrachloroethane	2.48E-06	lb/MMBtu	6.18E-05	AP-42, Chapter 3.2, Table 3.2-2
Tetrachloroethane, 1,1,2,2-	4.00E-05	lb/MMBtu	9.96E-04	AP-42, Chapter 3.2, Table 3.2-2
Toluene	4.08E-04	lb/MMBtu	1.02E-02	AP-42, Chapter 3.2, Table 3.2-2
Trichloroethane, 1,1,2-	3.18E-05	lb/MMBtu	7.92E-04	AP-42, Chapter 3.2, Table 3.2-2
Trimethylpentane, 2,2,4-	2.50E-04	lb/MMBtu	6.23E-03	AP-42, Chapter 3.2, Table 3.2-2
Vinyl Chloride	1.49E-05	lb/MMBtu	3.71E-04	AP-42, Chapter 3.2, Table 3.2-2
Xylene	1.84E-04	lb/MMBtu	4.58E-03	AP-42, Chapter 3.2, Table 3.2-2
Combined HAP			**1.80**	

Combined HAP Emission Factor **7.22E-02 lb/MMBtu**

Highest Single HAP - Formaldehyde **1.32 TPY**

(continued on next page)

Appendix A to the Technical Support Document (TSD)
Potential to Emit - TC50S and TC52S - After Project - Each Test Cell

(continued from previous page)

PTE HAPs - Worst Case				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
Acenaphthene	4.68E-06	lb/MMBtu	1.43E-04	AP-42, Chapter 3.4, Table 3.4-4
Acenaphthylene	9.23E-06	lb/MMBtu	2.83E-04	AP-42, Chapter 3.4, Table 3.4-4
Acetaldehyde	8.36E-03	lb/MMBtu	0.21	AP-42, Chapter 3.2, Table 3.2-2
Acrolein	5.14E-03	lb/MMBtu	0.13	AP-42, Chapter 3.2, Table 3.2-2
Anthracene	1.23E-06	lb/MMBtu	3.77E-05	AP-42, Chapter 3.4, Table 3.4-4
Benz(a)anthracene	6.22E-07	lb/MMBtu	1.91E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzene	7.76E-04	lb/MMBtu	2.38E-02	AP-42, Chapter 3.4, Table 3.4-3
Benzo(a)pyrene	2.57E-07	lb/MMBtu	7.88E-06	AP-42, Chapter 3.4, Table 3.4-4
Benzo(b)fluoranthene	1.11E-06	lb/MMBtu	3.40E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzo(e)pyrene	4.15E-07	lb/MMBtu	1.03E-05	AP-42, Chapter 3.2, Table 3.2-2
Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu	1.70E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzo(k)fluoranthene	2.18E-07	lb/MMBtu	6.68E-06	AP-42, Chapter 3.4, Table 3.4-4
Biphenyl	2.12E-04	lb/MMBtu	5.28E-03	AP-42, Chapter 3.2, Table 3.2-2
Butadiene, 1,3-	2.67E-04	lb/MMBtu	6.65E-03	AP-42, Chapter 3.2, Table 3.2-2
Carbon Tetrachloride	3.67E-05	lb/MMBtu	9.14E-04	AP-42, Chapter 3.2, Table 3.2-2
Chlorobenzene	3.04E-05	lb/MMBtu	7.57E-04	AP-42, Chapter 3.2, Table 3.2-2
Chloroform	2.85E-05	lb/MMBtu	7.10E-04	AP-42, Chapter 3.2, Table 3.2-2
Chrysene	1.53E-06	lb/MMBtu	4.69E-05	AP-42, Chapter 3.4, Table 3.4-4
Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu	1.06E-05	AP-42, Chapter 3.4, Table 3.4-4
Dichloropropene, 1,3-	2.64E-05	lb/MMBtu	6.58E-04	AP-42, Chapter 3.2, Table 3.2-2
Ethylbenzene	3.97E-05	lb/MMBtu	9.89E-04	AP-42, Chapter 3.2, Table 3.2-2
Ethylene Dibromide	4.43E-05	lb/MMBtu	1.10E-03	AP-42, Chapter 3.2, Table 3.2-2
Fluoanthene	4.03E-06	lb/MMBtu	1.24E-04	AP-42, Chapter 3.4, Table 3.4-4
Fluorene	1.28E-05	lb/MMBtu	3.92E-04	AP-42, Chapter 3.4, Table 3.4-4
Formaldehyde	**5.28E-02**	**lb/MMBtu**	**1.32**	**AP-42, Chapter 3.2, Table 3.2-2**
Hexane	1.11E-03	lb/MMBtu	2.77E-02	AP-42, Chapter 3.2, Table 3.2-2
Indo(1,2,3-c,d)pyrene	4.14E-07	lb/MMBtu	1.27E-05	AP-42, Chapter 3.4, Table 3.4-4
Methanol	2.50E-03	lb/MMBtu	6.23E-02	AP-42, Chapter 3.2, Table 3.2-2
Methylene Chloride	2.00E-05	lb/MMBtu	4.98E-04	AP-42, Chapter 3.2, Table 3.2-2
Methylnaphthalene, 2-	3.32E-05	lb/MMBtu	8.27E-04	AP-42, Chapter 3.2, Table 3.2-2
Naphthalene	1.30E-04	lb/MMBtu	3.99E-03	AP-42, Chapter 3.4, Table 3.4-4
Phenanthrene	4.08E-05	lb/MMBtu	1.25E-03	AP-42, Chapter 3.4, Table 3.4-4
Phenol	2.40E-05	lb/MMBtu	5.98E-04	AP-42, Chapter 3.2, Table 3.2-2
Pyrene	3.71E-06	lb/MMBtu	1.14E-04	AP-42, Chapter 3.4, Table 3.4-4
Styrene	2.36E-05	lb/MMBtu	5.88E-04	AP-42, Chapter 3.2, Table 3.2-2
Tetrachloroethane	2.48E-06	lb/MMBtu	6.18E-05	AP-42, Chapter 3.2, Table 3.2-2
Tetrachloroethane, 1,1,2,2-	4.00E-05	lb/MMBtu	9.96E-04	AP-42, Chapter 3.2, Table 3.2-2
Toluene	2.81E-04	lb/MMBtu	1.02E-02	AP-42, Chapter 3.4, Table 3.4-4
Trichloroethane, 1,1,2-	3.18E-05	lb/MMBtu	7.92E-04	AP-42, Chapter 3.2, Table 3.2-2
Trimethylpentane, 2,2,4-	2.50E-04	lb/MMBtu	6.23E-03	AP-42, Chapter 3.2, Table 3.2-2
Vinyl Chloride	1.49E-05	lb/MMBtu	3.71E-04	AP-42, Chapter 3.2, Table 3.2-2
Xylene	1.93E-04	lb/MMBtu	5.92E-03	AP-42, Chapter 3.4, Table 3.4-4
Combined HAP			**1.82**	

Combined HAP Emission Factor **7.25E-02 lb/MMBtu**

Highest Single HAP - Formaldehyde **1.32 TPY**

(continued on next page)

Appendix A to the Technical Support Document (TSD)
Potential to Emit - TC50S and TC52S - After Project - Each Test Cell
(continued from previous page)

Greenhouse Gas (GHG) Emissions

Maximum Power - Diesel	1,000	HP	Heat Input	7.00	MMBtu/hr (BSFC 7,000 Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	8,760,000	hp.hr/yr

Greenhouse Gas Emissions - Diesel (TPY)

Pollutant	Emission Factor		PTE (TPY)	Emission Factor Source
CO_2	73.96	kg/MMBtu	4,999	40 CFR 98, Subpart C
CH_4	3.00E-03	kg/MMBtu	0.20	40 CFR 98, Subpart C, Table C-2
N_2O	6.00E-04	kg/MMBtu	0.04	40 CFR 98, Subpart C, Table C-2
CO_2e			5,016	

Maximum Power - Gasoline	650	HP	Heat Input	5.20	MMBtu/hr (BSFC 7,985 Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	5,694,000	hp.hr/yr

Greenhouse Gas Emissions - Gasoline (TPY)

Pollutant	Emission Factor		PTE (TPY)	Emission Factor Source
CO_2	70.22	kg/MMBtu	3,526	40 CFR 98, Subpart C
CH_4	3.00E-03	kg/MMBtu	0.15	40 CFR 98, Subpart C, Table C-2
N_2O	6.00E-04	kg/MMBtu	0.03	40 CFR 98, Subpart C, Table C-2
CO_2e			3,539	

Maximum Power - Natural Gas	650	HP	Heat Input	5.69	MMBtu/hr (BSFC 8,100 Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	5,694,000	hp.hr/yr

Greenhouse Gas Emissions - Natural Gas (TPY)

Pollutant	Emission Factor		PTE (TPY)	Emission Factor Source
CO_2	53.06	kg/MMBtu	2,914	40 CFR 98, Subpart C
CH_4	1.10E-03	kg/MMBtu	0.06	40 CFR 98, Subpart C, Table C-2
N_2O	1.00E-04	kg/MMBtu	0.005	40 CFR 98, Subpart C, Table C-2
CO_2e			2,917	

Greenhouse Gas Emissions - Worst Case

Pollutant	Emission Factor	PTE (TPY)	Emission Factor Source
CO_2		4,999	40 CFR 98, Subpart C, Diesel
CH_4		0.20	40 CFR 98, Subpart C, Table C-2, Diesel / Gas
N_2O		0.04	40 CFR 98, Subpart C, Table C-2, Diesel / Gas
CO_2e		5,016	

Methodology:
1) PTE (TPY) = Emission Factor (g/hp-hr) x Output (HP) x Operating Hours (hours/yr) x 1 lb/453.59 g x 1 ton/2,000 lb
2) PTE (TPY) = Emission Factor (lb/MMBtu) x Heat Input (MMBtu/hr) x Operating Hours (hr/yr) x 1 ton/2,000 lb
3) PTE (TPY) = Emission Factor (kg/MMBtu) x 2.2046 lb/kg x Heat Input (MMBtu/hr) x Operating Hours (hr/yr) x 1 ton/2,000 lb
4) PTE (TPY as CO_2e) = [TPY CO_2] + [TPY CH_4 x 25] + [TPY N_2O x 298]
5) Engine Heat Input (MMBtu/hr) = Output (HP) x Brake Specific Fuel Consumption (Btu/Hp-hr) x 1 MMBtu/1,000,000 Btu
6) Fuel Consumption (kgal/yr) = [Operating Hours (hr/yr) x Heat Input (MMBtu/hr)] ÷ Fuel Heat Content (MMBtu/kgal)

Appendix B: Emissions Calculations
Emission Summary

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Indianapolis, IN 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek

Uncontrolled Potential Emissions

Emission Unit		PM (tons/yr)	PM_{10} (tons/yr)	$PM_{2.5}$ (tons/yr)	SO_2 (tons/yr)	NOx (tons/yr)	VOC (tons/yr)	CO (tons/yr)	GHG as CO_2e	Total HAPs (tons/yr)	Worst Single HAP (tons/yr)		Hexane (TPY)	Formaldehyde (TPY)	Benzene (TPY)
Existing	ENCORE	-	-	-	-	-	0.05	-	-	0.60	0.55	Perchloroethylene	0.00	0.00	0.00
	ETC53	6.13	6.13	6.13	1.06	210.24	6.18	48.18	10,033	0.23	0.07	Formaldehyde	0.00	0.07	0.06
	ETC55	12.3	7.0	7.0	70.9	420.5	12.4	100.8	20,397	0.19	0.09	Benzene	0.00	0.01	0.09
	BLR4	0.6	2.4	2.4	0.2	31.5	1.7	26.5	38,074	1.38	1.32	Hexane	1.32	0.06	1.50E-03
	BLR5	0.8	3.2	3.2	0.3	42.0	2.3	35.3	50,765						
	BLR6	0.8	3.3	3.3	0.3	13.9	2.4	36.4	52,141	0.82	0.78	Hexane	0.78	0.03	9.10E-04
	ETC, less new	134.3	119.8	119.8	678.2	4297.3	139.1	1141.5	222,359	2.11	1.04	Benzene	0.00	0.46	1.04
	DTC	57.0	57.0	57.0	53.3	811.3	66.2	174.8	30,460	0.71	0.17	Benzene	0.00	0.22	0.17
	PTS14 O-1&O-2	14.7	8.4	8.2	74.3	470.9	13.2	125.1	42,644	0.23	0.11	Benzene	0.00	0.01	0.11
	PTS14 O-24&25	11.4	11.4	11.4	10.7	162.3	13.2	35.0		0.14	0.03	Benzene	0.00	0.04	0.03
	PTS14 O-31	7.4	4.2	4.1	37.2	235.5	6.6	62.5		0.12	0.06	Benzene	0.00	0.07	0.32
	ETC702	12.3	7.0	6.8	61.9	392.4	11.0	104.2	20,307	0.19	0.10	Benzene	0.00	0.00	0.10
New	Genset 1a	0.2	0.2	0.2	0.1	6.5	0.7	0.7	849	0.01	4.09E-04	Formaldehyde	0.00	4.09E-04	4.03E-03
	Genset 1b	0.2	0.2	0.2	0.1	6.5	0.7	0.7	849	0.0	4.09E-04	Formaldehyde	0.00	4.09E-04	4.03E-03
	ETC, Test Cell 50N	2.1	2.1	2.1	1.7	12.6	12.6	20.6	3539	1.81	1.32	Formaldehyde	0.03	1.32	0.02
	ETC, Test Cell 52N	2.1	2.1	2.1	1.7	12.6	12.6	20.6	3539	1.8	1.32	Formaldehyde	0.03	1.32	0.02
	ETC, Test Cell 50S	2.1	2.1	2.1	1.7	25.2	12.6	25.2	5,016	1.82	1.32	Formaldehyde	0.03	1.32	0.02
	ETC, Test Cell 52S	2.1	2.1	2.1	1.7	25.2	12.6	25.2	5016	1.8	1.3	Formaldehyde	0.03	1.32	0.02
Sourcewide Total		**266.3**	**238.5**	**238.0**	**995.1**	**7176.7**	**326.4**	**1983.4**	**505987**	**14.0**			**2.21**	**6.23**	**2.01**

Appendix B: Emissions Calculations
Emission Summary

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Indianapolis, IN 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek

Limited Potential to Emit

Emission Unit		PM (tons/yr)	PM_{10} (tons/yr)	$PM_{2.5}$ (tons/yr)	SO_2 (tons/yr)	NOx (tons/yr)	VOC (tons/yr)	CO (tons/yr)	GHG as CO2e	Total HAPs (tons/yr)	Worst Single HAP (Hexane) (tons/yr)		Hexane (TPY)	Formaldehyde (TPY)	Benzene (TPY)
Existing	ENCORE	-	-	-	-	-	0.05	-	-	0.60	0.55	Perchloroethylene	0.00	0.00	0.00
	ETC53	6.13	6.13	6.13	1.06	< 40	6.18	48.18	10033	0.23	0.07	Formaldehyde	0.00	0.07	0.06
	ETC55	12.3	7.0	7.0	39.9	39.9	12.4	99.9	20,397	0.19	0.09	Benzene	0.00	0.01	0.09
	BLR4	0.6	2.4	2.4	0.2	31.5	1.7	26.5	38,074	1.38	1.32	Hexane	1.32	0.06	1.50E-03
	BLR5	0.8	3.2	3.2	0.3	42.0	2.3	35.3	50,765						
	BLR6	0.8	3.3	3.3	0.3	13.9	2.4	36.4	52,141	0.82	0.78	Hexane	0.78	0.03	0.00
	ETC, less new	129.7	116.9	116.9	647.3	4101.8	135.7	1089.6	< 75000	2.03	0.99	Benzene	0.00	0.44	0.99
	DTC	2.8	2.8	2.8	2.6	39.9	3.3	8.6	30,460	0.71	0.17	Benzene	0.00	0.22	0.17
	PTS14 O-1&O-2	1.2	0.7	0.7	6.3	39.9	1.1	10.6	42,644	0.02	0.01	Benzene	0.00	0.001	0.01
	PTS14 O-24&25	2.8	2.8	2.8	2.6	39.9	3.3	8.6		0.01	0.01	Benzene	0.00	0.001	0.007
	PTS14 O-31	1.2	0.7	0.7	6.3	39.9	1.1	10.6		0.02	0.01	Benzene	0.00	0.001	0.010
	ETC702	1.2	0.7	0.7	6.0	38.0	1.1	10.1	20,307	0.19	0.10	Benzene	0.00	0.00	0.10
New	Genset 1a	0.2	0.2	0.2	0.1	6.5	0.7	0.7	848.9	0.0	0.0	Formaldehyde	0.0	0.0	0.0
	Genset 1b	0.2	0.2	0.2	0.1	6.5	0.7	0.7	848.9	0.0	0.0	Formaldehyde	0.0	0.0	0.0
	ETC, Test Cell 50N	2.1	2.1	2.1	1.7	< 40.00	< 40.00	20.6	3538.6	1.8	1.3	Formaldehyde	2.77E-02	1.3	1.7E-02
	ETC, Test Cell 52N	2.1	2.1	2.1	1.7			20.6	3538.6	1.8	1.3		2.77E-02	1.3	1.7E-02
	ETC, Test Cell 50S	2.1	2.1	2.1	1.7			25.2	5016.3	1.8	1.3		2.77E-02	1.3	2.4E-02
	ETC, Test Cell 52S	2.1	2.1	2.1	1.7			25.2	5016.3	1.8	1.3		2.77E-02	1.3	2.4E-02
Sourcewide Total		**168.3**	**155.3**	**155.2**	**719.8**	**4519.9**	**211.9**	**1477.6**	**> 100,000**	**13.5**			**2.21**	**6.10**	**1.53**

Appendix B to the Technical Support Document (TSD)
Potential to Emit - Test Cell 53N/53S - After Project

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Address: One Allison Way, Indianapolis, Indiana 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek
Date: June 15, 2016

Maximum Power - Diesel	1,000	HP	or	746 KW
Hours of Operation	8,760	hr/yr		
Heat Input	7.00	MMBtu/hr		
Energy Input	8,760,000	hp.hr/yr		
Brake Specific Fuel Consumption	7,000	Btu/hp.hr		
Diesel Sulfur Content (S)	150	ppm	or	0.015 %

Potential to Emit - Diesel Fuel				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Worst Case Emission Factor**
PM	7.00E-04	lb/hp-hr	3.07	AP-42, Ch. 3.4, Table 3.4-1, SCC 2-02-004-01
PM_{10}	7.00E-04	lb/hp-hr	3.07	Assumed the same as PM
$PM_{2.5}$	7.00E-04	lb/hp-hr	3.07	Assumed the same as PM
SO_2	1.21E-04	lb/hp.hr	0.53	AP-42, Ch. 3.4, Table 3.4-1, S=0.015%
VOC	7.05E-04	lb/hp-hr	3.09	AP-42, Ch. 3.4, Table 3.4-1, SCC 2-02-004-01
CO	5.50E-03	lb/hp-hr	24.09	AP-42, Ch. 3.4, Table 3.4-1, SCC 2-02-004-01
NO_x	0.024	lb/hp-hr	105.12	AP-42, Ch. 3.4, Table 3.4-1, SCC 2-02-004-01

Greenhouse Gas (GHG) Emissions

Greenhouse Gas Emissions - Diesel (TPY)				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor**
CO_2	73.96	kg/MMBtu	4,999	40 CFR 98, Subpart C
CH_4	3.00E-03	kg/MMBtu	0.20	40 CFR 98, Subpart C, Table C-2
N_2O	6.00E-04	kg/MMBtu	0.04	40 CFR 98, Subpart C, Table C-2
CO_2e			5,016	

Methodology:
1) PTE (TPY) = Emission Factor (g/hp-hr) x Output (HP) x Operating Hours (hours/yr) x 1 lb/453.59 g x 1 ton/2,000 lb
2) PTE (TPY) = Emission Factor (lb/MMBtu) x Heat Input (MMBtu/hr) x Operating Hours (hr/yr) x 1 ton/2,000 lb
3) PTE (TPY) = Emission Factor (kg/MMBtu) x 2.2046 lb/kg x Heat Input (MMBtu/hr) x Operating Hours (hr/yr) x 1 ton/2,000 lb
4) PTE (TPY as CO_2e) = [TPY CO_2] + [TPY CH_4 x 25] + [TPY N_2O x 298]
5) Engine Heat Input (MMBtu/hr) = Output (HP) x Brake Specific Fuel Consumption (Btu/Hp-hr) x 1 MMBtu/1,000,000 Btu
6) Fuel Consumption (kgal/yr) = [Operating Hours (hr/yr) x Heat Input (MMBtu/hr)] ÷ Fuel Heat Content (MMBtu/kgal)
7) Emission Factor (lb/hp.hr) = Emission Factor (g/kw.hr) x 1 lb/453.59 g x 1 kw/1.341 hp
8) Limited PTE (TPY) = Unlimited PTE (TPY) x Limited PTE NOx (TPY) / Unlimited PTE NOx (TPY)

(continued on next page)

Appendix B to the Technical Support Document (TSD)
Potential to Emit - Test Cell 53N/53S - After Project

(continued from previous page)

Hazardous Air Pollutant (HAP) Emissions

PTE HAPs - Diesel Combustion				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Worst Case Emission Factor**
Acenaphthene	4.68E-06	lb/MMBtu	1.43E-04	AP-42, Ch. 3.4, Table 3.4-4, 10/96
Acenaphthylene	9.23E-06	lb/MMBtu	2.83E-04	AP-42, Ch. 3.4, Table 3.4-4, 10/96
Acetaldehyde	7.67E-04	lb/MMBtu	0.02	AP-42, Ch. 3.3, Table 3.3-2, 10/96
Acrolein	7.88E-06	lb/MMBtu	2.42E-04	AP-42, Ch. 3.4, Table 3.4-3, 10/96
Anthracene	1.87E-06	lb/MMBtu	5.73E-05	AP-42, Ch. 3.3, Table 3.3-2, 10/96
Benz(a)anthracene	1.68E-06	lb/MMBtu	5.15E-05	AP-42, Ch. 3.3, Table 3.3-2, 10/96
Benzene	9.33E-04	lb/MMBtu	0.03	AP-42, Ch. 3.3, Table 3.3-2, 10/96
Benzo(b)fluoranthene	1.11E-06	lb/MMBtu	3.40E-05	AP-42, Ch. 3.4, Table 3.4-4, 10/96
Chrysene	1.53E-06	lb/MMBtu	4.69E-05	AP-42, Ch. 3.4, Table 3.4-4, 10/96
Fluoranthene	7.61E-06	lb/MMBtu	2.33E-04	AP-42, Ch. 3.3, Table 3.3-2, 10/96
Fluorene	2.92E-05	lb/MMBtu	8.95E-04	AP-42, Ch. 3.3, Table 3.3-2, 10/96
Formaldehyde	1.18E-03	lb/MMBtu	0.04	AP-42, Ch. 3.3, Table 3.3-2, 10/96
Naphthalene	1.30E-04	lb/MMBtu	3.99E-03	AP-42, Ch. 3.4, Table 3.4-4, 10/96
Phenanthrene	4.08E-05	lb/MMBtu	1.25E-03	AP-42, Ch. 3.4, Table 3.4-4, 10/96
Pyrene	4.78E-06	lb/MMBtu	1.47E-04	AP-42, Ch. 3.3, Table 3.3-2, 10/96
Toluene	4.09E-04	lb/MMBtu	0.01	AP-42, Ch. 3.3, Table 3.3-2, 10/96
Xylene	2.85E-04	lb/MMBtu	8.74E-03	AP-42, Ch. 3.3, Table 3.3-2, 10/96
Combined HAP	3.81E-03	lb/MMBtu		Summation of all listed HAP.
Combined HAP			**0.12**	

Highest Single HAP - Formaldehyde **0.04 TPY**

TC 53 Summary	Potential to Emit (TPY)			Limited PTE (TPY)
Pollutant	**53N**	**53S**	**TC 53 Total**	**TC53**
PM	3.07	3.07	6.13	6.13
PM10	3.07	3.07	6.13	6.13
PM2.5	3.07	3.07	6.13	6.13
SO2	0.53	0.53	1.06	1.06
VOC	3.09	3.09	6.18	6.18
CO	24.09	24.09	48.18	48.18
NOx	105.12	105.12	210.24	< 40
CO2e	5,016	5,016	10,033	10,033
Benzene	0.03	0.03	0.06	0.06
Formaldehyde	0.04	0.04	0.07	0.07
Hexane	0.00E+00	0.00E+00	0.00E+00	0.00
Combined HAP	0.12	0.12	0.23	0.23

Appendix B: Emission Calculations
Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP) Maximum Input Rate (>4.2 MMBtu/hr)
ETC55

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Indianapolis, IN 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek

Emissions calculated from 40 CFR 89.112, Tier 2 emission standards for nonroad engines (kW > 560, model year 2006 or more recent)

Output Horsepower Rating (hp)	4000
Maximum Hours Operated per Year	8760
Potential Throughput (hp-hr/yr)	35,040,000

	Pollutant						
	PM	PM10	direct PM2.5	SO2	NOx	VOC	CO
Emission Factor in g/kW-hr[1]	0.20	0.20	0.20	see below	6.4	see below	3.5
Emission Factor in g/hp-hr[1]	0.15	0.15	0.15		4.8		2.6
Emission Factor in lb/hp-hr	3.29E-04	3.29E-04	3.29E-04		1.05E-02		5.75E-03
Potential Emission in tons/yr	5.8	5.8	5.8		184.3		100.8

Emissions calculated based AP-42 Emission Factors

Output Horsepower Rating (hp)	4000	Potential Throughput (hp-hr/yr)	35,040,000
Maximum Hours Operated per Year	8760	Sulfur Content (S) of Fuel (% by weight)	0.5

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr[2]	7.00E-04	4.01E-04	4.01E-04	4.05E-03 *(.00809S)*	2.40E-02 **see below	7.05E-04	5.50E-03
Potential Emission in tons/yr	12.3	7.0	7.0	70.9	420.5	12.4	96.4

**NOx emission factor: uncontrolled = 0.024 lb/hp-hr, controlled by ignition timing retard = 0.013 lb/hp-hr

Worst Case Potential to Emit

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Potential Emission in tons/yr	**12.3**	**7.0**	**7.0**	**70.9**	**420.5**	**12.4**	**100.8**

Hazardous Air Pollutants (HAPs)

	Pollutant						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/hp-hr****	5.12E-06	1.97E-06	1.35E-06	5.52E-07	1.76E-07	5.52E-08	1.48E-06
Potential Emission in tons/yr	0.09	0.03	0.02	0.01	3E-03	1E-03	0.03

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)
****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.4-1).

Potential Emission of Total HAPs (tons/yr)	**0.19**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/hp-hr	1.16E+00	6.35E-05	9.30E-06
Potential Emission in tons/yr	20,323	1.11	0.16

Summed Potential Emissions in tons/yr	20,324
CO2e Total in tons/yr	20,397

Methodology
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
[1] Emission Factors from 40 CFR 89.112, Tier 2 emission standards for nonroad engines (kW > 560, model year 2006 or more recent)
[2] Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1 , 3.4-2, 3.4-3, and 3.4-4.
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix B: Emission Calculations
Natural Gas Combustion Only
MMBtu/hr <100
BLR4 through BLR5

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Indianapolis, IN 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek

Emission Unit BLR4 through BLR5

MMBtu/Mms	1000
Sulfur Content	NA
Ash Content	NA

EMISSION UNIT DESCRIPTION

Emission Unit I.D.	Heat Capacity MMBtu/hr		Heat Capacity MMCF/hr	Date Installed
BLR4	72		0.072	1953
BLR5	96		0.096	1963

	Pollutant						
	PM	PM-10	PM2.5	SO2	NOx	NMTOC	CO
NG - Lbs/Mms	1.9	7.6	7.6	0.6	100	5.5	84
BLR4	0.60	2.40	2.40	0.19	31.54	1.73	26.49
BLR5	0.80	3.20	3.20	0.25	42.05	2.31	35.32

*PM emission factor is filterable PM only. PM_{10} and $PM_{2.5}$ emission factors are filterable and condensable PM combined.
**Emission Factors for NO_x: Uncontrolled = 100, Low NO_x Burner = 50, Low NO_x Burners/Flue gas recirculation = 32

Methodology
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
Mms = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
Potential Throughput (Mms/yr) = Heat Input Capacity (MMBtu/hr) / Heating Value (MMBtu/Mms) x 8,760 hrs/yr
Potential Emissions (tons/yr) = Throughput (Mms/yr) x Emission Factor (lb/Mms) / 2,000 lb/ton

Hazardous Air Pollutants (HAPs) Calculations

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Total-Organics
Emission Factor in lb/Mms	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	1.5E-03	8.8E-04	0.06	1.32	2.5E-03	**1.38**

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	Total-Metals
Emission Factor in lb/Mms	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	3.7E-04	8.1E-04	1.0E-03	2.8E-04	1.5E-03	**4.0E-03**

Methodology
Emission Factors from AP-42 Tables in 1.4 (2/98)

Total HAPs	**1.39**

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Greenhouse Gas Calculations

	BLR4			BLR5		
	CO2	CH4	N2O	CO2	CH4	N2O
Emission Factor in lb/Mms	120,000	2.3	2.2	120,000	2.3	2.2
Potential Emission in tons/yr	37,843	0.73	0.69	50,458	0.97	0.93
Summed Potential Emissions in tons/yr	37,845			50,459		
CO2e Total in tons/yr	38,074			50,765		

Methodology
The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (ton/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix B: Emissions Calculations
Natural Gas Combustion Only
MMBtu/hr <100
BLR6

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Indianapolis, IN 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek

Heat Input Capacity MMBtu/hr	HHV MMBtu/Mms	Potential Throughput Mms/yr
99.0	1000	867.2

BLR6	Pollutant						
	PM*	PM_{10}*	$PM_{2.5}$*	SO_2	NO_x	VOC	CO
Emission Factor in lb/Mms	1.9	7.6	7.6	0.6	32 **see below	5.5	84
Potential Emissions in tons/yr	0.82	3.30	3.30	0.26	13.88	2.38	36.42

*PM emission factor is filterable PM only. PM_{10} and $PM_{2.5}$ emission factors are filterable and condensable PM combined.

**Emission Factors for NO_x: Uncontrolled = 100, Low NO_x Burner = 50, Low NO_x Burners/Flue gas recirculation = 32

Methodology
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
Mms = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
Potential Throughput (Mms/yr) = Heat Input Capacity (MMBtu/hr) ÷ Heating Value (MMBtu/Mms) x 8,760 hrs/yr
Potential Emissions (tons/yr) = Throughput (Mms/yr) x Emission Factor (lb/Mms) ÷ 2,000 lb/ton

Hazardous Air Pollutants (HAPs) Calculations

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Total-Organics
Emission Factor in lb/Mms	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emissions in tons/yr	9.1E-04	5.2E-04	0.03	0.78	1.5E-03	0.82

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	Total-Metals
Emission Factor in lb/Mms	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emissions in tons/yr	2.2E-04	4.8E-04	6.1E-04	1.6E-04	9.1E-04	2.4E-03

Methodology is the same as previous page.
The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Total HAPs	**0.82**

Greenhouse Gas Calculations

	BLR6		
	CO_2	CH_4	N_2O
Emission Factor in lb/Mms	120000	2.3	0.64
Potential Emissions in tons/yr	52,034	1.00	0.28
Summed Potential Emissions in tons/yr	52,036		
CO2e Total in tons/yr	52,141		

Methodology
The N_2O Emission Factor for uncontrolled is 2.2. The N_2O Emission Factor for low NO_x burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Potential Emissions (tons/yr) = Throughput (Mms/yr) x Emission Factor (lb/Mms) ÷ 2,000 lb/ton
CO_2e (ton/yr) = CO_2 Potential Emission ton/yr x CO_2 GWP (1) + CH_4 Potential Emission ton/yr x CH_4 GWP (21) + N_2O Potential Emission ton/yr x N_2O GWP (310)

Appendix B: Emission Calculations
Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP) Maximum Input Rate (>4.2 MMBtu/hr)
ETC (at maximum horsepower of 4000 hp)
Without 50N, 52,N, 50S, and 52S

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Indianapolis, IN 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek

Emission Unit	ETC	Plant 3
Heat Content	137000	Btu/gal (diesel)
Heat Content	130000	Btu/gal (gasoline)
Sulfur Content (%)	0.5	%

Cell ID Number	Fuel Type	Output (HP)	Maximum Unit Capacity (MMBtu/hr)	Maximum Unit Capacity (gal/hr)	S/V I.D.
701	Diesel/Gas Turbine	4000	28.0	204.4	PTE057
704	Diesel	2400	16.8	122.6	PTE065
705	Diesel/Gas Turbine	2400	16.8	122.6	PTE067
706	Diesel	4000	28.0	204.4	PTE069
707	Diesel	2400	16.8	122.6	PTE071
709	Diesel	2400	16.8	122.6	PTE075
710	Diesel	1500	10.5	76.6	PTE077
711	Diesel	2400	16.8	122.6	PTE079
712	Diesel	1500	10.5	76.6	PTE080
32N	Diesel	2400	16.8	122.6	PTE008
32S	Diesel	1500	10.5	76.6	PTE006
38N	Diesel	4000	28.0	204.4	PTE011
39N	Diesel	2400	16.8	122.6	PTE018
39S	Diesel	1500	10.5	76.6	PTE020
41N	Diesel	1200	8.4	61.3	PTE023
41S	Diesel	1200	8.4	61.3	PTE021
48N	Diesel	1200	8.4	61.3	PTE040
48S	Diesel	1200	8.4	61.3	PTE041
49N	Diesel	1500	10.5	76.6	PTE086
49S	Diesel	1500	10.5	76.6	PTE087
51N	Diesel	1200	8.4	61.3	PTE084
Totals			**306.6**	**2237.96**	

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/MMBtu	1.65E+02	8.10E-03	1.32E-03
Potential Emission in tons/yr	221,580	10.88	1.78

Summed Potential Emissions in tons/yr	**221,592**
CO2e Total in tons/yr	**222,359**

Potential Throughput (MMBtu/yr) = [Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix B: Emission Calculations
Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP) Maximum Input Rate (>4.2 MMBtu/hr)
ETC (at maximum horsepower of 4000 hp)

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Indianapolis, IN 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek

POTENTIAL EMISSIONS - MAX HP CONFIGURATION										
Pollutant	NOx	CO	SOx	PM	PM-10	PM-2.5	TOC	Combined HAP	Formaldehyde	Benzene
Factor (Diesel)	3.2	0.85	0.505	0.1	0.0573	0.0556	0.09	1.57E-03	7.89E-05	7.76E-04
Factor (Gasoline)	1.63	0.99	0.084	0.1	0.1	0.1	3.03	Not Available	Not Available	Not Available
Factor (Diesel Turbine)	0.88	0.0033	0.505	0.0043	0.0072	0.0072	0.00041	1.29E-03	2.80E-04	5.50E-05
Units	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu
Factor (Diesel) (lb/gal)	0.4384	0.116					0.012			

326 IAC 7-1.1-1 Sulfur Content Limit (lbs SO2/MMBtu)	0.5
NOx Limit for Test Cell 39N (tons/12-months)	40

	Potential to Emit (tons/year)										
Cell No.	NOx	CO	SOx	PM	PM-10	PM-2.5	TOC	Combined HAP	Formaldehyde	Benzene	limited SO2
701	392.4	104.2	***61.9***	12.3	7.0	6.8	11.0	0.19	0.010	0.095	61.3
704	235.5	62.5	***37.2***	7.4	4.2	4.1	6.6	0.12	0.006	0.057	36.8
705	235.5	62.5	***37.2***	7.4	4.2	4.1	6.6	0.12	0.006	0.057	36.8
706	392.4	104.2	***61.9***	12.3	7.0	6.8	11.0	0.19	0.010	0.095	61.3
707	235.5	62.5	***37.2***	7.4	4.2	4.1	6.6	0.12	0.006	0.057	36.8
709	235.5	62.5	***37.2***	7.4	4.2	4.1	6.6	0.12	0.006	0.057	36.8
710	147.2	39.1	23.2	4.6	2.6	2.6	4.1	0.07	0.004	0.036	
711	235.5	62.5	***37.2***	7.4	4.2	4.1	6.6	0.12	0.006	0.057	36.8
712	147.2	39.1	23.2	4.6	2.6	2.6	4.1	0.07	0.004	0.036	
32N	235.5	62.5	***37.2***	7.4	4.2	4.1	6.6	0.12	0.006	0.057	36.8
32S	147.2	39.1	23.2	4.6	2.6	2.6	4.1	0.07	0.004	0.036	
38N	392.4	104.2	***61.9***	12.3	7.0	6.8	11.0	0.19	0.010	0.095	61.3
39N	235.5	62.5	37.2	7.4	4.2	4.1	6.6	0.12	0.006	0.057	6.3
39S	147.2	39.1	23.2	4.6	2.6	2.6	4.1	0.07	0.004	0.036	
41N	117.7	31.3	18.6	3.7	2.1	2.0	3.3	0.06	0.003	0.029	
41S	117.7	31.3	18.6	3.7	2.1	2.0	3.3	0.06	0.003	0.029	
48N	117.7	31.3	18.6	3.7	2.1	2.0	3.3	0.06	0.003	0.029	
48S	117.7	31.3	18.6	3.7	2.1	2.0	3.3	0.06	0.003	0.029	
49N	147.2	39.1	23.2	4.6	2.6	2.6	4.1	0.07	0.004	0.036	
49S	147.2	39.1	23.2	4.6	2.6	2.6	4.1	0.07	0.004	0.036	
51N	117.7	31.3	18.6	3.7	2.1	2.0	3.3	0.06	0.003	0.029	
701 (gas turbines)	107.9	0.4	61.9	0.5	0.9	0.9	0.1	0.2	0.034	0.007	
705 (gas turbines)	64.8	0.2	37.2	0.3	0.5	0.5	0.03	0.1	0.021	0.004	
Worst Case Total	**4297.3**	**1141.5**	**678.2**	**134.3**	**76.9**	**74.7**	**120.9**	**2.11**	**0.15**	**1.04**	

PTE w/39N limited	4101.84	1089.55	647.32	128.18	73.45	71.27	115.36	2.02	0.14	0.99
39N Limited	< 40	10.6	6.31	1.25	0.72	0.70	1.13	0.02	9.86E-04	9.70E-03

APPLICABLE EMISSIONS LIMITATIONS

Pollutant	Test Cell	Regulation	Limit
PM	All Cells	326 IAC 6-1-2(a)	0.03 gr/dscf
SO2	***All Cells in Italics***	326 IAC 7-1.1-2	0.5 lbs/MMBtu or 0.5% Sulfur (Test Cell 39N fuel use limits restrict SO2 < 25tpy)
NOx	39N	326 IAC 2-2	<40 tpy such that 326 IAC 2-2 will not apply
Limited Throughput	39N	326 IAC 2-2	182,480.84 gal/yr (for > 600 hp) = (39.9998 tons NOx/12-months x 2000 lbs/ton)/(3.2 lbs NOx/MMBtu x 0.137 MMBtu/gal)

Methodology

Emission Factors for Diesel Engines greater than 600 HP, (AP-42 Section 3.4 (10/96)); NOx emission factor (uncontrolled) = 3.2 lb/MMBtu
Emission Factors for Gasoline Engines from AP-42 Table 3.3-1 (10/96). CO EF corrected 3/24/09.
Emission Factors for Diesel Turbines from AP-42 Table 3.1 (4/00).
PTE (ton/yr) = Max Capacity (MMBtu/hr) x Emission Factor (lb/MMBtu) x 8760 hr/yr x 1 ton / 2000 lb
Limited Emissions (ton/yr) = Limited Throughput (gal/yr) x Emission Factor (lb/MMBtu) x Heat Content (MMBtu/gal) x 1 ton/2000 lb

Appendix B: Emission Calculations
Reciprocating Internal Combustion Engines - Diesel Fuel
Maximum Output Rating (600 HP and less) - Maximum Input Rate (4.2 MMBtu/hr and less)
ETC (at 600 HP)
Without 50N, 52,N, 50S, and 52S

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Indianapolis, IN 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek

Emission Unit	ETC	Plant 3
Heat Content	137000	Btu/gal (diesel)
Heat Content	130000	Btu/gal (gasoline)
Sulfur Content (%)	0.5	%

Cell ID Number	Fuel Type	Output (HP)	Maximum Unit Capacity (MMBtu/hr)	Maximum Unit Capacity (gal/hr)	S/V I.D.
701	Diesel/Gas Turbine	600	4.2	30.7	PTE057
704	Diesel	600	4.2	30.7	PTE065
705	Diesel/Gas Turbine	600	4.2	30.7	PTE067
706	Diesel	600	4.2	30.7	PTE069
707	Diesel	600	4.2	30.7	PTE071
709	Diesel	600	4.2	30.7	PTE075
710	Diesel	600	4.2	30.7	PTE077
711	Diesel	600	4.2	30.7	PTE079
712	Diesel	600	4.2	30.7	PTE080
32N	Diesel	600	4.2	30.7	PTE008
32S	Diesel	600	4.2	30.7	PTE006
38N	Diesel	600	4.2	30.7	PTE011
39N	Diesel	600	4.2	30.7	PTE018
39S	Diesel	600	4.2	30.7	PTE020
40N	Diesel	600	4.2	30.7	PTE013
40S	Diesel	600	4.2	30.7	PTE014
41N	Diesel	600	4.2	30.7	PTE023
41S	Diesel	600	4.2	30.7	PTE021
48N	Diesel	600	4.2	30.7	PTE040
48S	Diesel	600	4.2	30.7	PTE041
49N	Diesel	600	4.2	30.7	PTE086
49S	Diesel	600	4.2	30.7	PTE087
50	Diesel	600	4.2	30.7	PTE093
51N	Diesel	600	4.2	30.7	PTE084
51S	Gasoline or Diesel	600	4.2	30.7	PTE082
Totals			**105.0**	**766.42**	

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/MMBtu	1.64E+02	6.61E-03	1.32E-03
Potential Emission in tons/yr	75,424	3.04	0.61

Summed Potential Emissions in tons/yr	**75,427**
CO2e Total in tons/yr	**75,676**

Potential Throughput (MMBtu/yr) = [Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix B: Emission Calculations
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (600 HP and less) Maximum Input Rate (4.2 MMBtu/hr and less)
ETC (at 600 hp)

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Indianapolis, IN 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek

POTENTIAL EMISSIONS - MAX HP CONFIGURATION										
Pollutant	NOx	CO	SOx	PM	PM-10	PM-2.5	TOC	Combined HAP	Formaldehyde	Benzene
Factor (Diesel)	4.41	0.95	0.29	0.31	0.31	0.31	0.36	3.87E-03	1.18E-03	9.33E-04
Factor (Gasoline)	1.63	0.99	0.084	0.1	0.1	0.1	3.03	Not Available	Not Available	Not Available
Factor (Diesel Turbine)	0.88	0.0033	0.505	0.0043	0.0072	0.0072	0.00041	1.29E-03	2.80E-04	5.50E-05
Units	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu
Factor (Diesel) (lb/gal)	0.6042	0.1302					0.0493			

326 IAC 7-1.1-1 Sulfur Content Limit (lbs SO2/MMBtu)	0.5
NOx Limit for Test Cell 39N (tons/12-months)	40

	Potential to Emit (tons/year)										
Cell No.	NOx	CO	SOx	PM	PM-10	PM-2.5	TOC	Combined HAP	Formaldehyde	Benzene	limited SO2
701	81.1	17.5	***5.3***	5.7	5.7	5.7	6.6	0.07	0.022	0.017	9.2
704	81.1	17.5	***5.3***	5.7	5.7	5.7	6.6	0.07	0.022	0.017	9.2
705	81.1	17.5	***5.3***	5.7	5.7	5.7	6.6	0.07	0.022	0.017	9.2
706	81.1	17.5	***5.3***	5.7	5.7	5.7	6.6	0.07	0.022	0.017	9.2
707	81.1	17.5	***5.3***	5.7	5.7	5.7	6.6	0.07	0.022	0.017	9.2
709	81.1	17.5	***5.3***	5.7	5.7	5.7	6.6	0.07	0.022	0.017	9.2
710	81.1	17.5	5.3	5.7	5.7	5.7	6.6	0.07	0.022	0.017	
711	81.1	17.5	***5.3***	5.7	5.7	5.7	6.6	0.07	0.022	0.017	9.2
712	81.1	17.5	5.3	5.7	5.7	5.7	6.6	0.07	0.022	0.017	
32N	81.1	17.5	***5.3***	5.7	5.7	5.7	6.6	0.07	0.022	0.017	9.2
32S	81.1	17.5	5.3	5.7	5.7	5.7	6.6	0.07	0.022	0.017	
38N	81.1	17.5	***5.3***	5.7	5.7	5.7	6.6	0.07	0.022	0.017	9.2
39N	81.1	17.5	5.3	5.7	5.7	5.7	6.6	0.07	0.022	0.017	2.6
39S	81.1	17.5	5.3	5.7	5.7	5.7	6.6	0.07	0.022	0.017	
41N	81.1	17.5	5.3	5.7	5.7	5.7	6.6	0.07	0.022	0.017	
41S	81.1	17.5	5.3	5.7	5.7	5.7	6.6	0.07	0.022	0.017	
48N	81.1	17.5	5.3	5.7	5.7	5.7	6.6	0.07	0.022	0.017	
48S	81.1	17.5	5.3	5.7	5.7	5.7	6.6	0.07	0.022	0.017	
49N	81.1	17.5	5.3	5.7	5.7	5.7	6.6	0.07	0.022	0.017	
49S	81.1	17.5	5.3	5.7	5.7	5.7	6.6	0.07	0.022	0.017	
51N	81.1	17.5	5.3	5.7	5.7	5.7	6.6	0.07	0.022	0.017	
701 (gas turbines)	16.2	0.1	9.3	0.1	0.1	0.1	0.01	0.02	0.005	0.001	
705 (gas turbines)	16.2	0.1	9.3	0.1	0.1	0.1	0.01	0.02	0.005	0.001	
Worst Case Total	**1703.7**	**367.0**	**119.9**	**119.8**	**119.8**	**119.8**	**139.1**	**1.50**	**0.46**	**0.36**	
PTE w/39N limited	1662.5	358.1	117.2	116.9	116.9	116.9	135.7	1.46	0.44	0.35	
39N Limited	< 40	8.6	2.6	2.8	2.8	2.8	3.3	0.04	1.07E-02	8.46E-03	

APPLICABLE EMISSIONS LIMITATIONS

Pollutant	Test Cell	Regulation	Limit
PM	All Cells	326 IAC 6-1-2(a)	0.03 gr/dscf
SO2	***All Cells in Italics***	326 IAC 7-1.1-2	0.5 lbs/MMBtu or 0.5% Sulfur (Test Cell 39N fuel use limits restrict SO2 < 25tpy)
NOx	39N	326 IAC 2-2	<40 tpy such that 326 IAC 2-2 will not apply
Limited Throughput	39N	326 IAC 2-2	132,409.75 gal/yr (for > 600 hp) = (39.999 ton/yr x 2,000 lb/ton x 1 MMBtu/4.41 lb NOx x 1 gallon/137,000 Btu x 1E6 Btu/MMBtu

Methodology
Emission Factors for Diesel Engines 600 HP and less, (AP-42 Section 3.3 (10/96))
Emission Factors for Gasoline Engines from AP-42 Table 3.3-1 (10/96). CO EF corrected 3/24/09.
Emission Factors for Diesel Turbines from AP-42 Table 3.1 (4/00).
PTE (ton/yr) = Max Capacity (MMBtu/hr) x Emission Factor (lb/MMBtu) x 8760 hr/yr x 1 ton / 2000 lb
Limited Emissions (ton/yr) = Limited Throughput (gal/yr) x Emission Factor (lb/MMBtu) x Heat Content (MMBtu/gal) x 1 ton/2000 lb

Limited PTE Test Cell 39N

Engine	NOx	CO	SOx	PM	PM-10	PM-2.5	TOC	Combined HAP	Formaldehyde	Benzene
> 600 HP	< 40	10.63	6.31	1.25	0.72	0.70	1.13	0.02	9.86E-04	9.70E-03
≤ 600 HP	< 40	8.62	2.63	2.81	2.81	2.81	3.27	0.04	1.07E-02	8.46E-03
Limited PTE	< 40	10.63	6.31	2.81	2.81	2.81	3.27	0.04	1.07E-02	9.70E-03

Limited PTE of ETC - Without 50N, 52N, 50S, and 52S and With 39N

Engine	NOx	CO	SOx	PM	PM-10	PM-2.5	TOC	Combined HAP	Formaldehyde	Benzene
> 600 HP, less 39N	1,622.53	349.52	114.61	114.06	114.06	114.06	132.45	1.43	0.43	0.34
≤ 600 HP, less 39N	4,061.84	1,078.93	641.01	126.93	72.73	70.57	114.24	2.00	0.14	9.85E-01
Limited PTE 39N	< 40	10.63	6.31	2.81	2.81	2.81	3.27	0.04	0.01	9.70E-03
Limited PTE of ETC	4,101.84	1,089.55	647.32	129.74	116.87	116.87	135.72	2.03	0.44	0.99

Appendix B to the Technical Support Document (TSD)
Potential to Emit - TC50N and TC52N - After Project - Each Test Cell

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Address: One Allison Way, Indianapolis, Indiana 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek
Date: April 25, 2016

Maximum Power - Diesel	700	HP	Heat Input	4.90 MMBtu/hr	(BSFC in Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	6,132,000 hp.hr/yr	7,000

Potential to Emit - Diesel Fuel				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
PM	0.02	g/kw.hr	0.10	40 CFR 1039.101, Table 1, CI engines < 560 kW.
PM_{10}	0.02	g/kw.hr	0.10	Assumed the same as PM
$PM_{2.5}$	0.02	g/kw.hr	0.10	Assumed the same as PM
SO_2	1.21E-04	lb/hp.hr	0.37	AP-42, Ch. 3.4, Table 3.4-1, S=0.015%
VOC	0.19	g/kw.hr	0.96	40 CFR 1039.101, Table 1, CI engines < 560 kW.
CO	3.50	g/kw.hr	17.66	40 CFR 1039.101, Table 1, CI engines < 560 kW.
NO_x	0.40	g/kw.hr	2.02	40 CFR 1039.101, Table 1, CI engines < 560 kW.

Maximum Power - Gasoline	650	HP	Heat Input	5.20 MMBtu/hr	(BSFC in Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	5,694,000 hp.hr/yr	8,000

Potential to Emit - Gasoline				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
PM	7.21E-04	lb/hp.hr	2.05	Assumed the same as PM10
PM_{10}	7.21E-04	lb/hp.hr	2.05	AP-42, Ch. 3.3, Table 3.3-1
$PM_{2.5}$	7.21E-04	lb/hp.hr	2.05	Assumed the same as PM10
SO_2	5.91E-04	lb/hp.hr	1.68	AP-42, Ch. 3.3, Table 3.3-1
VOC	2.70	g/kw.hr	12.65	40 CFR 1048.101(a)(2)
CO	4.40	g/kw.hr	20.61	40 CFR 1048.101(a)(2)
NO_x	2.70	g/kw.hr	12.65	40 CFR 1048.101(a)(2)

Maximum Power - Natural Gas	650	HP	Heat Input	5.69 MMBtu/hr	(BSFC in Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	5,694,000 hp.hr/yr	8,750

Potential to Emit - Natural Gas (4-Stroke Lean Burn)				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
PM (filterable only)	9.91E-03	lb/MMBtu	0.25	AP-42, Ch. 3.2, Table 3.2-2
PM_{10} (filterable + condensable)	9.99E-03	lb/MMBtu	0.25	AP-42, Ch. 3.2, Table 3.2-2
$PM_{2.5}$ (filterable + condensable)	9.99E-03	lb/MMBtu	0.25	AP-42, Ch. 3.2, Table 3.2-2
SO_2	5.88E-04	lb/MMBtu	0.01	AP-42, Ch. 3.2, Table 3.2-2
VOC	0.70	g/hp.hr	4.39	40 CFR 60, Subpart JJJJ, Table 1, 7/1/2010 and later
CO	2.00	g/hp.hr	12.55	40 CFR 60, Subpart JJJJ, Table 1, 7/1/2010 and later
NO_x	1.00	g/hp.hr	6.28	40 CFR 60, Subpart JJJJ, Table 1, 7/1/2010 and later

Potential to Emit of Test Cell				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
PM	7.21E-04	lb/hp.hr	2.05	Assumed the same as PM10
PM_{10}	7.21E-04	lb/hp.hr	2.05	AP-42, Ch. 3.3, Table 3.3-1
$PM_{2.5}$	7.21E-04	lb/hp.hr	2.05	Assumed the same as PM10
SO_2	5.91E-04	lb/hp.hr	1.68	AP-42, Ch. 3.3, Table 3.3-1
VOC	2.70	g/kw.hr	12.65	40 CFR 1048.101(a)(2)
CO	3.50	g/kw.hr	20.61	40 CFR 1039.101, Table 1, CI engines < 560 kW.
NO_x	2.70	g/kw.hr	12.65	40 CFR 1048.101(a)(2)

(continued on next page)

Appendix B to the Technical Support Document (TSD)
Potential to Emit - TC50N and TC52N - After Project - Each Test Cell
(continued from previous page)

Hazardous Air Pollutant (HAP) Emissions

Maximum Power - Diesel	700	HP	Heat Input	4.90	MMBtu/hr (BSFC 7,000 Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	6,132,000	hp.hr/yr

PTE HAPs - Diesel / Gasoline (no factors available for gasoline)				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
Acenaphthene	4.68E-06	lb/MMBtu	1.00E-04	AP-42, Chapter 3.4, Table 3.4-4
Acenaphthylene	9.23E-06	lb/MMBtu	1.98E-04	AP-42, Chapter 3.4, Table 3.4-4
Acetaldehyde	2.52E-05	lb/MMBtu	5.41E-04	AP-42, Chapter 3.4, Table 3.4-3
Acrolein	7.88E-06	lb/MMBtu	1.69E-04	AP-42, Chapter 3.4, Table 3.4-3
Anthracene	1.23E-06	lb/MMBtu	2.64E-05	AP-42, Chapter 3.4, Table 3.4-4
Benz(a)anthracene	6.22E-07	lb/MMBtu	1.33E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzene	7.76E-04	lb/MMBtu	1.67E-02	AP-42, Chapter 3.4, Table 3.4-3
Benzo(a)pyrene	2.57E-07	lb/MMBtu	5.52E-06	AP-42, Chapter 3.4, Table 3.4-4
Benzo(b)fluoranthene	1.11E-06	lb/MMBtu	2.38E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzo(e)pyrene				no factor
Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu	1.19E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzo(k)fluoranthene	2.18E-07	lb/MMBtu	4.68E-06	AP-42, Chapter 3.4, Table 3.4-4
Biphenyl				no factor
Butadiene, 1,3-				no factor
Carbon Tetrachloride				no factor
Chlorobenzene				no factor
Chloroform				no factor
Chrysene	1.53E-06	lb/MMBtu	3.28E-05	AP-42, Chapter 3.4, Table 3.4-4
Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu	7.43E-06	AP-42, Chapter 3.4, Table 3.4-4
Dichloropropane, 1,3-				no factor
Ethylbenzene				no factor
Ethylene Dibromide				no factor
Fluoranthene	4.03E-06	lb/MMBtu	8.65E-05	AP-42, Chapter 3.4, Table 3.4-4
Fluorene	1.28E-05	lb/MMBtu	2.75E-04	AP-42, Chapter 3.4, Table 3.4-4
Formaldehyde	**7.89E-05**	**lb/MMBtu**	**1.69E-03**	AP-42, Chapter 3.4, Table 3.4-3
Hexane				no factor
Indo(1,2,3-c,d)pyrene	4.14E-07	lb/MMBtu	8.89E-06	AP-42, Chapter 3.4, Table 3.4-4
Methanol				no factor
Methylene Chloride				no factor
Methylnaphthalene, 2-				no factor
Naphthalene	1.30E-04	lb/MMBtu	2.79E-03	AP-42, Chapter 3.4, Table 3.4-4
Phenanthrene	4.08E-05	lb/MMBtu	8.76E-04	AP-42, Chapter 3.4, Table 3.4-4
Phenol				no factor
Pyrene	3.71E-06	lb/MMBtu	7.96E-05	AP-42, Chapter 3.4, Table 3.4-4
Styrene				no factor
Tetrachloroethane				no factor
Tetrachloroethane, 1,1,2,2-				no factor
Toluene	2.81E-04	lb/MMBtu	6.03E-03	AP-42, Chapter 3.4, Table 3.4-4
Trichloroethane, 1,1,2-				no factor
Trimethylpentane, 2,2,4-				no factor
Vinyl Chloride				no factor
Xylene	1.93E-04	lb/MMBtu	4.14E-03	AP-42, Chapter 3.4, Table 3.4-4
Combined HAP			**0.03**	

Highest Single HAP - Formaldehyde **0.02 TPY**

(continued on next page)

Appendix B to the Technical Support Document (TSD)
Potential to Emit - TC50N and TC52N - After Project - Each Test Cell
(continued from previous page)

Maximum Power - Natural Gas	650	HP	Heat Input	5.69	MMBtu/hr (BSFC 8,100 Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	6,132,000	hp.hr/yr

PTE HAPs - Natural Gas				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
Acenaphthene	1.25E-06	lb/MMBtu	3.11E-05	AP-42, Chapter 3.2, Table 3.2-2
Acenaphthylene	5.53E-06	lb/MMBtu	1.38E-04	AP-42, Chapter 3.2, Table 3.2-2
Acetaldehyde	8.36E-03	lb/MMBtu	0.21	AP-42, Chapter 3.2, Table 3.2-2
Acrolein	5.14E-03	lb/MMBtu	0.13	AP-42, Chapter 3.2, Table 3.2-2
Anthracene				no factor
Benz(a)anthracene				no factor
Benzene	4.40E-04	lb/MMBtu	1.10E-02	AP-42, Chapter 3.2, Table 3.2-2
Benzo(a)pyrene				no factor
Benzo(b)fluoranthene	1.66E-07	lb/MMBtu	4.14E-06	AP-42, Chapter 3.2, Table 3.2-2
Benzo(e)pyrene	4.15E-07	lb/MMBtu	1.03E-05	AP-42, Chapter 3.2, Table 3.2-2
Benzo(g,h,i)perylene	4.14E-07	lb/MMBtu	1.03E-05	AP-42, Chapter 3.2, Table 3.2-2
Benzo(k)fluoranthene				no factor
Biphenyl	2.12E-04	lb/MMBtu	5.28E-03	AP-42, Chapter 3.2, Table 3.2-2
Butadiene, 1,3-	2.67E-04	lb/MMBtu	6.65E-03	AP-42, Chapter 3.2, Table 3.2-2
Carbon Tetrachloride	3.67E-05	lb/MMBtu	9.14E-04	AP-42, Chapter 3.2, Table 3.2-2
Chlorobenzene	3.04E-05	lb/MMBtu	7.57E-04	AP-42, Chapter 3.2, Table 3.2-2
Chloroform	2.85E-05	lb/MMBtu	7.10E-04	AP-42, Chapter 3.2, Table 3.2-2
Chrysene	6.93E-07	lb/MMBtu	1.73E-05	AP-42, Chapter 3.2, Table 3.2-2
Dibenz(a,h)anthracene				no factor
Dichloropropane, 1,3-	2.64E-05	lb/MMBtu	6.58E-04	AP-42, Chapter 3.2, Table 3.2-2
Ethylbenzene	3.97E-05	lb/MMBtu	9.89E-04	AP-42, Chapter 3.2, Table 3.2-2
Ethylene Dibromide	4.43E-05	lb/MMBtu	1.10E-03	AP-42, Chapter 3.2, Table 3.2-2
Fluoranthene	1.11E-06	lb/MMBtu	2.77E-05	AP-42, Chapter 3.2, Table 3.2-2
Fluorene	5.67E-06	lb/MMBtu	1.41E-04	AP-42, Chapter 3.2, Table 3.2-2
Formaldehyde	**5.28E-02**	**lb/MMBtu**	**1.32**	AP-42, Chapter 3.2, Table 3.2-2
Hexane	1.11E-03	lb/MMBtu	2.77E-02	AP-42, Chapter 3.2, Table 3.2-2
Indo(1,2,3-c,d)pyrene				no factor
Methanol	2.50E-03	lb/MMBtu	6.23E-02	AP-42, Chapter 3.2, Table 3.2-2
Methylene Chloride	2.00E-05	lb/MMBtu	4.98E-04	AP-42, Chapter 3.2, Table 3.2-2
Methylnaphthalene, 2-	3.32E-05	lb/MMBtu	8.27E-04	AP-42, Chapter 3.2, Table 3.2-2
Naphthalene	7.44E-05	lb/MMBtu	1.85E-03	AP-42, Chapter 3.2, Table 3.2-2
Phenanthrene	1.04E-05	lb/MMBtu	2.59E-04	AP-42, Chapter 3.2, Table 3.2-2
Phenol	2.40E-05	lb/MMBtu	5.98E-04	AP-42, Chapter 3.2, Table 3.2-2
Pyrene	1.36E-06	lb/MMBtu	3.39E-05	AP-42, Chapter 3.2, Table 3.2-2
Styrene	2.36E-05	lb/MMBtu	5.88E-04	AP-42, Chapter 3.2, Table 3.2-2
Tetrachloroethane	2.48E-06	lb/MMBtu	6.18E-05	AP-42, Chapter 3.2, Table 3.2-2
Tetrachloroethane, 1,1,2,2-	4.00E-05	lb/MMBtu	9.96E-04	AP-42, Chapter 3.2, Table 3.2-2
Toluene	4.08E-04	lb/MMBtu	1.02E-02	AP-42, Chapter 3.2, Table 3.2-2
Trichloroethane, 1,1,2-	3.18E-05	lb/MMBtu	7.92E-04	AP-42, Chapter 3.2, Table 3.2-2
Trimethylpentane, 2,2,4-	2.50E-04	lb/MMBtu	6.23E-03	AP-42, Chapter 3.2, Table 3.2-2
Vinyl Chloride	1.49E-05	lb/MMBtu	3.71E-04	AP-42, Chapter 3.2, Table 3.2-2
Xylene	1.84E-04	lb/MMBtu	4.58E-03	AP-42, Chapter 3.2, Table 3.2-2
Combined HAP			**1.80**	

Highest Single HAP - Formaldehyde **1.32 TPY**

(continued on next page)

Appendix B to the Technical Support Document (TSD)

Potential to Emit - TC50N and TC52N - After Project - Each Test Cell

(continued from previous page)

PTE HAPs - Worst Case				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
Acenaphthene	4.68E-06	lb/MMBtu	1.00E-04	AP-42, Chapter 3.4, Table 3.4-4
Acenaphthylene	9.23E-06	lb/MMBtu	1.98E-04	AP-42, Chapter 3.4, Table 3.4-4
Acetaldehyde	8.36E-03	lb/MMBtu	0.21	AP-42, Chapter 3.2, Table 3.2-2
Acrolein	5.14E-03	lb/MMBtu	0.13	AP-42, Chapter 3.2, Table 3.2-2
Anthracene	1.23E-06	lb/MMBtu	2.64E-05	AP-42, Chapter 3.4, Table 3.4-4
Benz(a)anthracene	6.22E-07	lb/MMBtu	1.33E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzene	7.76E-04	lb/MMBtu	1.67E-02	AP-42, Chapter 3.4, Table 3.4-3
Benzo(a)pyrene	2.57E-07	lb/MMBtu	5.52E-06	AP-42, Chapter 3.4, Table 3.4-4
Benzo(b)fluoranthene	1.11E-06	lb/MMBtu	2.38E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzo(e)pyrene	4.15E-07	lb/MMBtu	1.03E-05	AP-42, Chapter 3.2, Table 3.2-2
Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu	1.19E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzo(k)fluoranthene	2.18E-07	lb/MMBtu	4.68E-06	AP-42, Chapter 3.4, Table 3.4-4
Biphenyl	2.12E-04	lb/MMBtu	5.28E-03	AP-42, Chapter 3.2, Table 3.2-2
Butadiene, 1,3-	2.67E-04	lb/MMBtu	6.65E-03	AP-42, Chapter 3.2, Table 3.2-2
Carbon Tetrachloride	3.67E-05	lb/MMBtu	9.14E-04	AP-42, Chapter 3.2, Table 3.2-2
Chlorobenzene	3.04E-05	lb/MMBtu	7.57E-04	AP-42, Chapter 3.2, Table 3.2-2
Chloroform	2.85E-05	lb/MMBtu	7.10E-04	AP-42, Chapter 3.2, Table 3.2-2
Chrysene	1.53E-06	lb/MMBtu	3.28E-05	AP-42, Chapter 3.4, Table 3.4-4
Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu	7.43E-06	AP-42, Chapter 3.4, Table 3.4-4
Dichloropropane, 1,3-	2.64E-05	lb/MMBtu	6.58E-04	AP-42, Chapter 3.2, Table 3.2-2
Ethylbenzene	3.97E-05	lb/MMBtu	9.89E-04	AP-42, Chapter 3.2, Table 3.2-2
Ethylene Dibromide	4.43E-05	lb/MMBtu	1.10E-03	AP-42, Chapter 3.2, Table 3.2-2
Fluoranthene	4.03E-06	lb/MMBtu	8.65E-05	AP-42, Chapter 3.4, Table 3.4-4
Fluorene	1.28E-05	lb/MMBtu	2.75E-04	AP-42, Chapter 3.4, Table 3.4-4
Formaldehyde	**5.28E-02**	**lb/MMBtu**	**1.32**	**AP-42, Chapter 3.2, Table 3.2-2**
Hexane	1.11E-03	lb/MMBtu	2.77E-02	AP-42, Chapter 3.2, Table 3.2-2
Indo(1,2,3-c,d)pyrene	4.14E-07	lb/MMBtu	8.89E-06	AP-42, Chapter 3.4, Table 3.4-4
Methanol	2.50E-03	lb/MMBtu	6.23E-02	AP-42, Chapter 3.2, Table 3.2-2
Methylene Chloride	2.00E-05	lb/MMBtu	4.98E-04	AP-42, Chapter 3.2, Table 3.2-2
Methylnaphthalene, 2-	3.32E-05	lb/MMBtu	8.27E-04	AP-42, Chapter 3.2, Table 3.2-2
Naphthalene	1.30E-04	lb/MMBtu	2.79E-03	AP-42, Chapter 3.4, Table 3.4-4
Phenanthrene	4.08E-05	lb/MMBtu	8.76E-04	AP-42, Chapter 3.4, Table 3.4-4
Phenol	2.40E-05	lb/MMBtu	5.98E-04	AP-42, Chapter 3.2, Table 3.2-2
Pyrene	3.71E-06	lb/MMBtu	7.96E-05	AP-42, Chapter 3.4, Table 3.4-4
Styrene	2.36E-05	lb/MMBtu	5.88E-04	AP-42, Chapter 3.2, Table 3.2-2
Tetrachloroethane	2.48E-06	lb/MMBtu	6.18E-05	AP-42, Chapter 3.2, Table 3.2-2
Tetrachloroethane, 1,1,2,2-	4.00E-05	lb/MMBtu	9.96E-04	AP-42, Chapter 3.2, Table 3.2-2
Toluene	2.81E-04	lb/MMBtu	1.02E-02	AP-42, Chapter 3.4, Table 3.4-4
Trichloroethane, 1,1,2-	3.18E-05	lb/MMBtu	7.92E-04	AP-42, Chapter 3.2, Table 3.2-2
Trimethylpentane, 2,2,4-	2.50E-04	lb/MMBtu	6.23E-03	AP-42, Chapter 3.2, Table 3.2-2
Vinyl Chloride	1.49E-05	lb/MMBtu	3.71E-04	AP-42, Chapter 3.2, Table 3.2-2
Xylene	1.93E-04	lb/MMBtu	4.58E-03	AP-42, Chapter 3.4, Table 3.4-4
Combined HAP			**1.81**	

Highest Single HAP - Formaldehyde **1.32 TPY**

(continued on next page)

Appendix B to the Technical Support Document (TSD)
Potential to Emit - TC50N and TC52N - After Project - Each Test Cell
(continued from previous page)

Greenhouse Gas (GHG) Emissions

Maximum Power - Diesel	700	HP	Heat Input	4.90	MMBtu/hr (BSFC 7,000 Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	6,132,000	hp.hr/yr

Greenhouse Gas Emissions - Diesel (TPY)				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
CO_2	73.96	kg/MMBtu	3,499	40 CFR 98, Subpart C
CH_4	3.00E-03	kg/MMBtu	0.14	40 CFR 98, Subpart C, Table C-2
N_2O	6.00E-04	kg/MMBtu	0.03	40 CFR 98, Subpart C, Table C-2
CO_2e			3,511	

Maximum Power - Gasoline	650	HP	Heat Input	5.20	MMBtu/hr (BSFC 7,985 Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	5,694,000	hp.hr/yr

Greenhouse Gas Emissions - Gasoline (TPY)				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
CO_2	70.22	kg/MMBtu	3,526	40 CFR 98, Subpart C
CH_4	3.00E-03	kg/MMBtu	0.15	40 CFR 98, Subpart C, Table C-2
N_2O	6.00E-04	kg/MMBtu	0.03	40 CFR 98, Subpart C, Table C-2
CO_2e			3,539	

Maximum Power - Natural Gas	650	HP	Heat Input	5.69	MMBtu/hr (BSFC 8,100 Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	5,694,000	hp.hr/yr

Greenhouse Gas Emissions - Natural Gas (TPY)				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
CO_2	53.06	kg/MMBtu	2,914	40 CFR 98, Subpart C
CH_4	1.10E-03	kg/MMBtu	0.06	40 CFR 98, Subpart C, Table C-2
N_2O	1.00E-04	kg/MMBtu	0.005	40 CFR 98, Subpart C, Table C-2
CO_2e			2,917	

Greenhouse Gas Emissions - Worst Case			
Pollutant	**Emission Factor**	**PTE (TPY)**	**Emission Factor Source**
CO_2		3,526	40 CFR 98, Subpart C, Diesel
CH_4		0.15	40 CFR 98, Subpart C, Table C-2, Diesel / Gas
N_2O		0.03	40 CFR 98, Subpart C, Table C-2, Diesel / Gas
CO_2e		3,539	

Methodology:
1) PTE (TPY) = Emission Factor (g/hp-hr) x Output (HP) x Operating Hours (hours/yr) x 1 lb/453.59 g x 1 ton/2,000 lb
2) PTE (TPY) = Emission Factor (lb/MMBtu) x Heat Input (MMBtu/hr) x Operating Hours (hr/yr) x 1 ton/2,000 lb
3) PTE (TPY) = Emission Factor (kg/MMBtu) x 2.2046 lb/kg x Heat Input (MMBtu/hr) x Operating Hours (hr/yr) x 1 ton/2,000 lb
4) PTE (TPY as CO_2e) = [TPY CO_2] + [TPY CH_4 x 25] + [TPY N_2O x 298]
5) Engine Heat Input (MMBtu/hr) = Output (HP) x Brake Specific Fuel Consumption (Btu/Hp-hr) x 1 MMBtu/1,000,000 Btu
6) Fuel Consumption (kgal/yr) = [Operating Hours (hr/yr) x Heat Input (MMBtu/hr)] ÷ Fuel Heat Content (MMBtu/kgal)
7) Emission Factor (lb/hp.hr) = Emission Factor (g/kw.hr) x 1 lb/453.59 g x 1 kw/1.34 hp

Appendix B to the Technical Support Document (TSD)
Potential to Emit - TC50S and TC52S - After Project - Each Test Cell

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Address: One Allison Way, Indianapolis, Indiana 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek
Date: April 25, 2016

Maximum Power - Diesel	1,000	HP	Heat Input	7.00 MMBtu/hr	(BSFC in Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	8,760,000 hp.hr/yr	7,000

Potential to Emit - Diesel Fuel				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
PM	0.04	g/kw.hr	0.29	40 CFR 1039.101, Table 1, > 560KW
PM_{10}	0.04	g/kw.hr	0.29	Assumed the same as PM
$PM_{2.5}$	0.04	g/kw.hr	0.29	Assumed the same as PM
SO_2	1.21E-04	lb/hp.hr	0.53	AP-42, Ch. 3.4, Table 3.4-1, S=0.015%
VOC	0.19	g/kw.hr	1.37	40 CFR 1039.101, Table 1, > 560KW
CO	3.50	g/kw.hr	25.22	40 CFR 1039.101, Table 1, > 560KW
NO_x	3.50	g/kw.hr	25.22	40 CFR 1039.101, Table 1, > 560KW

Maximum Power - Gasoline	650	HP	Heat Input	5.20 MMBtu/hr	(BSFC in Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	5,694,000 hp.hr/yr	8,000

Potential to Emit - Gasoline				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
PM	7.21E-04	lb/hp.hr	2.05	Assumed the same as PM10
PM_{10}	7.21E-04	lb/hp.hr	2.05	AP-42, Ch. 3.3, Table 3.3-1
$PM_{2.5}$	7.21E-04	lb/hp.hr	2.05	Assumed the same as PM10
SO_2	5.91E-04	lb/hp.hr	1.68	AP-42, Ch. 3.3, Table 3.3-1
VOC	2.70	g/kw.hr	12.65	40 CFR 1048.101(a)(2)
CO	4.40	g/kw.hr	20.61	40 CFR 1048.101(a)(2)
NO_x	2.70	g/kw.hr	12.65	40 CFR 1048.101(a)(2)

Maximum Power - Natural Gas	650	HP	Heat Input	5.69 MMBtu/hr	(BSFC in Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	5,694,000 hp.hr/yr	8,750

Potential to Emit - Natural Gas (4-Stroke Lean Burn)				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
PM (filterable only)	9.91E-03	lb/MMBtu	0.25	AP-42, Ch. 3.2, Table 3.2-2
PM_{10} (filterable + condensable)	9.99E-03	lb/MMBtu	0.25	AP-42, Ch. 3.2, Table 3.2-2
$PM_{2.5}$ (filterable + condensable)	9.99E-03	lb/MMBtu	0.25	AP-42, Ch. 3.2, Table 3.2-2
SO_2	5.88E-04	lb/MMBtu	0.01	AP-42, Ch. 3.2, Table 3.2-2
VOC	0.70	g/hp.hr	4.39	40 CFR 60, Subpart JJJJ, Table 1, 7/1/2010 and later
CO	2.00	g/hp.hr	12.55	40 CFR 60, Subpart JJJJ, Table 1, 7/1/2010 and later
NO_x	1.00	g/hp.hr	6.28	40 CFR 60, Subpart JJJJ, Table 1, 7/1/2010 and later

Potential to Emit of Test Cell				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
PM	7.21E-04	lb/hp.hr	2.05	Assumed the same as PM10
PM_{10}	7.21E-04	lb/hp.hr	2.05	AP-42, Ch. 3.3, Table 3.3-1
$PM_{2.5}$	7.21E-04	lb/hp.hr	2.05	Assumed the same as PM10
SO_2	5.91E-04	lb/hp.hr	1.68	AP-42, Ch. 3.3, Table 3.3-1
VOC	2.70	g/kw.hr	12.65	40 CFR 1048.101(a)(2)
CO	3.50	g/kw.hr	25.22	40 CFR 1039.101, Table 1, > 560KW
NO_x	3.50	g/kw.hr	25.22	40 CFR 1039.101, Table 1, > 560KW

(continued on next page)

Appendix B to the Technical Support Document (TSD)
Potential to Emit - TC50S and TC52S - After Project - Each Test Cell

(continued from previous page)

Hazardous Air Pollutant (HAP) Emissions

Maximum Power - Diesel	1,000	HP	Heat Input	7.00	MMBtu/hr (BSFC 7,000 Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	8,760,000	hp.hr/yr

PTE HAPs - Diesel / Gasoline (no factors available for gasoline)				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
Acenaphthene	4.68E-06	lb/MMBtu	1.43E-04	AP-42, Chapter 3.4, Table 3.4-4
Acenaphthylene	9.23E-06	lb/MMBtu	2.83E-04	AP-42, Chapter 3.4, Table 3.4-4
Acetaldehyde	2.52E-05	lb/MMBtu	7.73E-04	AP-42, Chapter 3.4, Table 3.4-3
Acrolein	7.88E-06	lb/MMBtu	2.42E-04	AP-42, Chapter 3.4, Table 3.4-3
Anthracene	1.23E-06	lb/MMBtu	3.77E-05	AP-42, Chapter 3.4, Table 3.4-4
Benz(a)anthracene	6.22E-07	lb/MMBtu	1.91E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzene	7.76E-04	lb/MMBtu	2.38E-02	AP-42, Chapter 3.4, Table 3.4-3
Benzo(a)pyrene	2.57E-07	lb/MMBtu	7.88E-06	AP-42, Chapter 3.4, Table 3.4-4
Benzo(b)fluoranthene	1.11E-06	lb/MMBtu	3.40E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzo(e)pyrene				no factor
Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu	1.70E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzo(k)fluoranthene	2.18E-07	lb/MMBtu	6.68E-06	AP-42, Chapter 3.4, Table 3.4-4
Biphenyl				no factor
Butadiene, 1,3-				no factor
Carbon Tetrachloride				no factor
Chlorobenzene				no factor
Chloroform				no factor
Chrysene	1.53E-06	lb/MMBtu	4.69E-05	AP-42, Chapter 3.4, Table 3.4-4
Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu	1.06E-05	AP-42, Chapter 3.4, Table 3.4-4
Dichloropropane, 1,3-				no factor
Ethylbenzene				no factor
Ethylene Dibromide				no factor
Fluoranthene	4.03E-06	lb/MMBtu	1.24E-04	AP-42, Chapter 3.4, Table 3.4-4
Fluorene	1.28E-05	lb/MMBtu	3.92E-04	AP-42, Chapter 3.4, Table 3.4-4
Formaldehyde	**7.89E-05**	**lb/MMBtu**	**2.42E-03**	AP-42, Chapter 3.4, Table 3.4-3
Hexane				no factor
Indo(1,2,3-c,d)pyrene	4.14E-07	lb/MMBtu	1.27E-05	AP-42, Chapter 3.4, Table 3.4-4
Methanol				no factor
Methylene Chloride				no factor
Methylnaphthalene, 2-				no factor
Naphthalene	1.30E-04	lb/MMBtu	3.99E-03	AP-42, Chapter 3.4, Table 3.4-4
Phenanthrene	4.08E-05	lb/MMBtu	1.25E-03	AP-42, Chapter 3.4, Table 3.4-4
Phenol				no factor
Pyrene	3.71E-06	lb/MMBtu	1.14E-04	AP-42, Chapter 3.4, Table 3.4-4
Styrene				no factor
Tetrachloroethane				no factor
Tetrachloroethane, 1,1,2,2-				no factor
Toluene	2.81E-04	lb/MMBtu	8.62E-03	AP-42, Chapter 3.4, Table 3.4-4
Trichloroethane, 1,1,2-				no factor
Trimethylpentane, 2,2,4-				no factor
Vinyl Chloride				no factor
Xylene	1.93E-04	lb/MMBtu	5.92E-03	AP-42, Chapter 3.4, Table 3.4-4
Combined HAP			**0.05**	

Highest Single HAP - Formaldehyde **0.02 TPY**

(continued on next page)

Appendix B to the Technical Support Document (TSD)
Potential to Emit - TC50S and TC52S - After Project - Each Test Cell

(continued from previous page)

Maximum Power - Natural Gas	650	HP	Heat Input	5.69	MMBtu/hr (BSFC 8,100 Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	8,760,000	hp.hr/yr

PTE HAPs - Natural Gas

Pollutant	Emission Factor		PTE (TPY)	Emission Factor Source
Acenaphthene	1.25E-06	lb/MMBtu	3.11E-05	AP-42, Chapter 3.2, Table 3.2-2
Acenaphthylene	5.53E-06	lb/MMBtu	1.38E-04	AP-42, Chapter 3.2, Table 3.2-2
Acetaldehyde	8.36E-03	lb/MMBtu	0.21	AP-42, Chapter 3.2, Table 3.2-2
Acrolein	5.14E-03	lb/MMBtu	0.13	AP-42, Chapter 3.2, Table 3.2-2
Anthracene				no factor
Benz(a)anthracene				no factor
Benzene	4.40E-04	lb/MMBtu	1.10E-02	AP-42, Chapter 3.2, Table 3.2-2
Benzo(a)pyrene				no factor
Benzo(b)fluoranthene	1.66E-07	lb/MMBtu	4.14E-06	AP-42, Chapter 3.2, Table 3.2-2
Benzo(e)pyrene	4.15E-07	lb/MMBtu	1.03E-05	AP-42, Chapter 3.2, Table 3.2-2
Benzo(g,h,i)perylene	4.14E-07	lb/MMBtu	1.03E-05	AP-42, Chapter 3.2, Table 3.2-2
Benzo(k)fluoranthene				no factor
Biphenyl	2.12E-04	lb/MMBtu	5.28E-03	AP-42, Chapter 3.2, Table 3.2-2
Butadiene, 1,3-	2.67E-04	lb/MMBtu	6.65E-03	AP-42, Chapter 3.2, Table 3.2-2
Carbon Tetrachloride	3.67E-05	lb/MMBtu	9.14E-04	AP-42, Chapter 3.2, Table 3.2-2
Chlorobenzene	3.04E-05	lb/MMBtu	7.57E-04	AP-42, Chapter 3.2, Table 3.2-2
Chloroform	2.85E-05	lb/MMBtu	7.10E-04	AP-42, Chapter 3.2, Table 3.2-2
Chrysene	6.93E-07	lb/MMBtu	1.73E-05	AP-42, Chapter 3.2, Table 3.2-2
Dibenz(a,h)anthracene				no factor
Dichloropropane, 1,3-	2.64E-05	lb/MMBtu	6.58E-04	AP-42, Chapter 3.2, Table 3.2-2
Ethylbenzene	3.97E-05	lb/MMBtu	9.89E-04	AP-42, Chapter 3.2, Table 3.2-2
Ethylene Dibromide	4.43E-05	lb/MMBtu	1.10E-03	AP-42, Chapter 3.2, Table 3.2-2
Fluoranthene	1.11E-06	lb/MMBtu	2.77E-05	AP-42, Chapter 3.2, Table 3.2-2
Fluorene	5.67E-06	lb/MMBtu	1.41E-04	AP-42, Chapter 3.2, Table 3.2-2
Formaldehyde	**5.28E-02**	**lb/MMBtu**	**1.32**	AP-42, Chapter 3.2, Table 3.2-2
Hexane	1.11E-03	lb/MMBtu	2.77E-02	AP-42, Chapter 3.2, Table 3.2-2
Indo(1,2,3-c,d)pyrene				no factor
Methanol	2.50E-03	lb/MMBtu	6.23E-02	AP-42, Chapter 3.2, Table 3.2-2
Methylene Chloride	2.00E-05	lb/MMBtu	4.98E-04	AP-42, Chapter 3.2, Table 3.2-2
Methylnaphthalene, 2-	3.32E-05	lb/MMBtu	8.27E-04	AP-42, Chapter 3.2, Table 3.2-2
Naphthalene	7.44E-05	lb/MMBtu	1.85E-03	AP-42, Chapter 3.2, Table 3.2-2
Phenanthrene	1.04E-05	lb/MMBtu	2.59E-04	AP-42, Chapter 3.2, Table 3.2-2
Phenol	2.40E-05	lb/MMBtu	5.98E-04	AP-42, Chapter 3.2, Table 3.2-2
Pyrene	1.36E-06	lb/MMBtu	3.39E-05	AP-42, Chapter 3.2, Table 3.2-2
Styrene	2.36E-05	lb/MMBtu	5.88E-04	AP-42, Chapter 3.2, Table 3.2-2
Tetrachloroethane	2.48E-06	lb/MMBtu	6.18E-05	AP-42, Chapter 3.2, Table 3.2-2
Tetrachloroethane, 1,1,2,2-	4.00E-05	lb/MMBtu	9.96E-04	AP-42, Chapter 3.2, Table 3.2-2
Toluene	4.08E-04	lb/MMBtu	1.02E-02	AP-42, Chapter 3.2, Table 3.2-2
Trichloroethane, 1,1,2-	3.18E-05	lb/MMBtu	7.92E-04	AP-42, Chapter 3.2, Table 3.2-2
Trimethylpentane, 2,2,4-	2.50E-04	lb/MMBtu	6.23E-03	AP-42, Chapter 3.2, Table 3.2-2
Vinyl Chloride	1.49E-05	lb/MMBtu	3.71E-04	AP-42, Chapter 3.2, Table 3.2-2
Xylene	1.84E-04	lb/MMBtu	4.58E-03	AP-42, Chapter 3.2, Table 3.2-2
Combined HAP			**1.80**	

Highest Single HAP - Formaldehyde **1.32 TPY**

(continued on next page)

Appendix B to the Technical Support Document (TSD)
Potential to Emit - TC50S and TC52S - After Project - Each Test Cell

(continued from previous page)

PTE HAPs - Worst Case				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
Acenaphthene	4.68E-06	lb/MMBtu	1.43E-04	AP-42, Chapter 3.4, Table 3.4-4
Acenaphthylene	9.23E-06	lb/MMBtu	2.83E-04	AP-42, Chapter 3.4, Table 3.4-4
Acetaldehyde	8.36E-03	lb/MMBtu	0.21	AP-42, Chapter 3.2, Table 3.2-2
Acrolein	5.14E-03	lb/MMBtu	0.13	AP-42, Chapter 3.2, Table 3.2-2
Anthracene	1.23E-06	lb/MMBtu	3.77E-05	AP-42, Chapter 3.4, Table 3.4-4
Benz(a)anthracene	6.22E-07	lb/MMBtu	1.91E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzene	7.76E-04	lb/MMBtu	2.38E-02	AP-42, Chapter 3.4, Table 3.4-3
Benzo(a)pyrene	2.57E-07	lb/MMBtu	7.88E-06	AP-42, Chapter 3.4, Table 3.4-4
Benzo(b)fluoranthene	1.11E-06	lb/MMBtu	3.40E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzo(e)pyrene	4.15E-07	lb/MMBtu	1.03E-05	AP-42, Chapter 3.2, Table 3.2-2
Benzo(g,h,i)perylene	5.56E-07	lb/MMBtu	1.70E-05	AP-42, Chapter 3.4, Table 3.4-4
Benzo(k)fluoranthene	2.18E-07	lb/MMBtu	6.68E-06	AP-42, Chapter 3.4, Table 3.4-4
Biphenyl	2.12E-04	lb/MMBtu	5.28E-03	AP-42, Chapter 3.2, Table 3.2-2
Butadiene, 1,3-	2.67E-04	lb/MMBtu	6.65E-03	AP-42, Chapter 3.2, Table 3.2-2
Carbon Tetrachloride	3.67E-05	lb/MMBtu	9.14E-04	AP-42, Chapter 3.2, Table 3.2-2
Chlorobenzene	3.04E-05	lb/MMBtu	7.57E-04	AP-42, Chapter 3.2, Table 3.2-2
Chloroform	2.85E-05	lb/MMBtu	7.10E-04	AP-42, Chapter 3.2, Table 3.2-2
Chrysene	1.53E-06	lb/MMBtu	4.69E-05	AP-42, Chapter 3.4, Table 3.4-4
Dibenz(a,h)anthracene	3.46E-07	lb/MMBtu	1.06E-05	AP-42, Chapter 3.4, Table 3.4-4
Dichloropropane, 1,3-	2.64E-05	lb/MMBtu	6.58E-04	AP-42, Chapter 3.2, Table 3.2-2
Ethylbenzene	3.97E-05	lb/MMBtu	9.89E-04	AP-42, Chapter 3.2, Table 3.2-2
Ethylene Dibromide	4.43E-05	lb/MMBtu	1.10E-03	AP-42, Chapter 3.2, Table 3.2-2
Fluoranthene	4.03E-06	lb/MMBtu	1.24E-04	AP-42, Chapter 3.4, Table 3.4-4
Fluorene	1.28E-05	lb/MMBtu	3.92E-04	AP-42, Chapter 3.4, Table 3.4-4
Formaldehyde	**5.28E-02**	**lb/MMBtu**	**1.32**	**AP-42, Chapter 3.2, Table 3.2-2**
Hexane	1.11E-03	lb/MMBtu	2.77E-02	AP-42, Chapter 3.2, Table 3.2-2
Indo(1,2,3-c,d)pyrene	4.14E-07	lb/MMBtu	1.27E-05	AP-42, Chapter 3.4, Table 3.4-4
Methanol	2.50E-03	lb/MMBtu	6.23E-02	AP-42, Chapter 3.2, Table 3.2-2
Methylene Chloride	2.00E-05	lb/MMBtu	4.98E-04	AP-42, Chapter 3.2, Table 3.2-2
Methylnaphthalene, 2-	3.32E-05	lb/MMBtu	8.27E-04	AP-42, Chapter 3.2, Table 3.2-2
Naphthalene	1.30E-04	lb/MMBtu	3.99E-03	AP-42, Chapter 3.4, Table 3.4-4
Phenanthrene	4.08E-05	lb/MMBtu	1.25E-03	AP-42, Chapter 3.4, Table 3.4-4
Phenol	2.40E-05	lb/MMBtu	5.98E-04	AP-42, Chapter 3.2, Table 3.2-2
Pyrene	3.71E-06	lb/MMBtu	1.14E-04	AP-42, Chapter 3.4, Table 3.4-4
Styrene	2.36E-05	lb/MMBtu	5.88E-04	AP-42, Chapter 3.2, Table 3.2-2
Tetrachloroethane	2.48E-06	lb/MMBtu	6.18E-05	AP-42, Chapter 3.2, Table 3.2-2
Tetrachloroethane, 1,1,2,2-	4.00E-05	lb/MMBtu	9.96E-04	AP-42, Chapter 3.2, Table 3.2-2
Toluene	2.81E-04	lb/MMBtu	1.02E-02	AP-42, Chapter 3.4, Table 3.4-4
Trichloroethane, 1,1,2-	3.18E-05	lb/MMBtu	7.92E-04	AP-42, Chapter 3.2, Table 3.2-2
Trimethylpentane, 2,2,4-	2.50E-04	lb/MMBtu	6.23E-03	AP-42, Chapter 3.2, Table 3.2-2
Vinyl Chloride	1.49E-05	lb/MMBtu	3.71E-04	AP-42, Chapter 3.2, Table 3.2-2
Xylene	1.93E-04	lb/MMBtu	5.92E-03	AP-42, Chapter 3.4, Table 3.4-4
Combined HAP			**1.82**	

Highest Single HAP - Formaldehyde **1.32 TPY**

(continued on next page)

Appendix B to the Technical Support Document (TSD)
Potential to Emit - TC50S and TC52S - After Project - Each Test Cell

(continued from previous page)

Greenhouse Gas (GHG) Emissions

Maximum Power - Diesel	1,000	HP	Heat Input	7.00	MMBtu/hr (BSFC 7,000 Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	8,760,000	hp.hr/yr

Greenhouse Gas Emissions - Diesel (TPY)				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
CO_2	73.96	kg/MMBtu	4,999	40 CFR 98, Subpart C
CH_4	3.00E-03	kg/MMBtu	0.20	40 CFR 98, Subpart C, Table C-2
N_2O	6.00E-04	kg/MMBtu	0.04	40 CFR 98, Subpart C, Table C-2
CO_2e			5,016	

Maximum Power - Gasoline	650	HP	Heat Input	5.20	MMBtu/hr (BSFC 7,985 Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	5,694,000	hp.hr/yr

Greenhouse Gas Emissions - Gasoline (TPY)				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
CO_2	70.22	kg/MMBtu	3,526	40 CFR 98, Subpart C
CH_4	3.00E-03	kg/MMBtu	0.15	40 CFR 98, Subpart C, Table C-2
N_2O	6.00E-04	kg/MMBtu	0.03	40 CFR 98, Subpart C, Table C-2
CO_2e			3,539	

Maximum Power - Natural Gas	650	HP	Heat Input	5.69	MMBtu/hr (BSFC 8,100 Btu/hp.hr)
Hours of Operation	8,760	hr/yr	Energy Input	5,694,000	hp.hr/yr

Greenhouse Gas Emissions - Natural Gas (TPY)				
Pollutant	**Emission Factor**		**PTE (TPY)**	**Emission Factor Source**
CO_2	53.06	kg/MMBtu	2,914	40 CFR 98, Subpart C
CH_4	1.10E-03	kg/MMBtu	0.06	40 CFR 98, Subpart C, Table C-2
N_2O	1.00E-04	kg/MMBtu	0.005	40 CFR 98, Subpart C, Table C-2
CO_2e			2,917	

Greenhouse Gas Emissions - Worst Case			
Pollutant	**Emission Factor**	**PTE (TPY)**	**Emission Factor Source**
CO_2		4,999	40 CFR 98, Subpart C, Diesel
CH_4		0.20	40 CFR 98, Subpart C, Table C-2, Diesel / Gas
N_2O		0.04	40 CFR 98, Subpart C, Table C-2, Diesel / Gas
CO_2e		5,016	

Methodology:

1) PTE (TPY) = Emission Factor (g/hp-hr) x Output (HP) x Operating Hours (hours/yr) x 1 lb/453.59 g x 1 ton/2,000 lb
2) PTE (TPY) = Emission Factor (lb/MMBtu) x Heat Input (MMBtu/hr) x Operating Hours (hr/yr) x 1 ton/2,000 lb
3) PTE (TPY) = Emission Factor (kg/MMBtu) x 2.2046 lb/kg x Heat Input (MMBtu/hr) x Operating Hours (hr/yr) x 1 ton/2,000 lb
4) PTE (TPY as CO_2e) = [TPY CO_2] + [TPY CH_4 x 25] + [TPY N_2O x 298]
5) Engine Heat Input (MMBtu/hr) = Output (HP) x Brake Specific Fuel Consumption (Btu/Hp-hr) x 1 MMBtu/1,000,000 Btu
6) Fuel Consumption (kgal/yr) = [Operating Hours (hr/yr) x Heat Input (MMBtu/hr)] ÷ Fuel Heat Content (MMBtu/kgal)
7) Emission Factor (lb/hp.hr) = Emission Factor (g/kw.hr) x 1 lb/453.59 g x 1 kw/1.34 hp

Appendix B: Emission Calculations
Reciprocating Internal Combustion Engines - Diesel Fuel
DTC

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Indianapolis, IN 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek

Engines tested in the DTC test cells may vary in size (from less than 600 hp to a maximum of 1500 hp). Therefore, the unlimited potential to emit calculations were performed using the **worst case** AP42 emission factors diesel engines 600 HP and less (AP-42 Section 3.3 (10/96)).

Emission Unit	DTC	
Plant	3	
Heat Content	137000	Btu/gal
Sulfur Content	0.5	%

EMISSION UNIT DESCRIPTION							
Cell ID Number	Model Number	Output (HP)	Maximum Unit Capacity (gal/hr)	Maximum Unit Capacity (MMBtu/hr)	Type of Fuel	S/V I.D.	Date Installed
TC-107	DT446C	1500	15	10.50	Diesel	PTE045	1985
TC-109	6V-53T	1500	12	10.50	Diesel	PTE043	1985
TC-111	DT466	1500	15	10.50	Diesel	PTE049	1985
TC-112	N-14E	1500	24	10.50	Diesel	PTE050	1985
			Total	**42.00**			

POTENTIAL EMISSIONS										
Pollutant	PM	PM-10	PM-2.5	SOx	NOx	TOC	CO	Combined HAP	Formaldehyde	Benzene
Factor (Diesel) (< 600 hp)	0.31	0.31	0.31	0.29	4.41	0.36	0.95	3.87E-03	1.18E-03	9.33E-04
Units	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu
Factor (Diesel) (lbs/kgal)					604.2					
Cell No.	PM	PM-10	PM-2.5	SOx	NOx	TOC	CO	Combined HAP	Formaldehyde	Benzene
TC-107	14.26	14.26	14.26	13.34	202.82	16.56	43.69	0.18	0.054	0.04
TC-109	14.26	14.26	14.26	13.34	202.82	16.56	43.69	0.18	0.054	0.04
TC-111	14.26	14.26	14.26	13.34	202.82	16.56	43.69	0.18	0.054	0.04
TC-112	14.26	14.26	14.26	13.34	202.82	16.56	43.69	0.18	0.054	0.04
Total	**57.03**	**57.03**	**57.03**	**53.35**	**811.26**	**66.23**	**174.76**	**0.71**	**0.217**	**0.17**

Emission Factors for Diesel Engines 600 HP and less, (AP-42 Section 3.3 (10/96))
PTE (ton/yr) = Max Capacity (MMBtu/hr) x Emission Factor (lb/MMBtu) x 8760 hr/yr x 1 ton / 2000 lb

APPLICABLE EMISSIONS LIMITATIONS			
Pollutant	Test Cell	Regulation	Limit
PM	All Cells	326 IAC 6-1-2(a)	0.03 gr/dscf
SO2	All Cells	none because SO2 PTE < 25 tpy	
NOx	All Cells	326 IAC 2-2	< 40 tons/yr

Test cells TC-107,109,111, and 112
Limitation required to make 326 IAC 2-2 (PSD) not applicable:

For engines > 600 hp	(39.9998 tons NOx/12-months x 2000 lbs/ton)/(3.2 lbs NOx/MMBtu x 0.137 MMBtu/gal) =	182,481	Gal./12-months	Equivalency: 1.378
For engines =< 600 hp	(39.9998 tons NOx/12-months x 2000 lbs/ton)/(4.41 lbs NOx/MMBtu x 0.137 MMBtu/gal) =	132,412	Gal./12-months	
	or			
For engines > 600 hp	(39.9998 tons NOx/12-months x 2000 lbs/ton) / (0.024 lbs/Hp-Hr) =	3,333,317	Hp-Hr/12-months	
For engines =< 600 hp	(39.9998 tons NOx/12-months x 2000 lbs/ton) / (0.031 lbs/Hp-Hr) =	2,580,632	Hp-Hr/12-months	

For engines > 600 hp 3.2 lbs NOx/MMBtu x 0.137 MMBtu/gal x 1000 gal/kgal = 438.4 lbs NOx/kgal
For engines =< 600 hp 4.41 lbs NOx/MMBtu x 0.137 MMBtu/gal x 1000 gal/kgal = 604.2 lbs NOx/kgal

Total Emissions @ limited throughput										
Pollutant	PM	PM-10	PM-2.5	SOx	NOx	TOC (NM)	CO	Combined HAP	Formaldehyde	Benzene
Total	2.81	2.81	2.81	2.63	39.90	3.27	8.62	0.04	0.011	0.008

Limited Emissions (ton/yr) = Limited Throughput (gal/yr) x Emission Factor (lb/MMBtu) x Heat Content (MMBtu/gal) x 1 ton/2000 lb

Test Cell	Air Flow Rate (cfm)	326 IAC 6.5 PM Limit (grains/dscf)	Equivalent PM (lb/hr)
TC-107	1193	0.03	0.31
TC-109	4543	0.03	1.17
TC-111	4360	0.03	1.12
TC-112	7047	0.03	1.81
		Total	**4.41**

= **19.3** **ton/yr**

where equivalent PM pound per hour emission rate = 0.03 gr/dscf x ft^3/min x 60 min/hr x pound/7000 grains

Greenhouse Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/MMBtu	1.65E+02	8.10E-03	1.32E-03
Potential Emission in tons/yr	30,353	1.49	0.24

Summed Potential Emissions in tons/yr	**30,355**
CO2e Total in tons/yr	**30,460**

Potential Throughput (MMBtu/yr) = [Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix B: Emission Calculations
Reciprocating Internal Combustion Engines - Diesel Fuel
PTS14

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Indianapolis, IN 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek

Emission Unit	PTS14	
Heat Content	137000	Btu/gal
Sulfur Content	0.5	%

EMISSION UNIT DESCRIPTION

Cell ID Number	Model Number	Output (HP)	Maximum Capacity (gal/hr)	Maximum Unit Capacity (MMBtu/hr)	Type of Fuel	Stack I.D. #	Date Installed
O-1	16V149TI	2400	22.2	16.80	Diesel	14041	1978
O-2	16V149TI	2400	22.2	16.80	Diesel	14038	1979
O-24	6V53T	600	15.3	4.20	Diesel	14024	1986
O-25	6V53T	600	15.3	4.20	Diesel	14023	1986
O-31	16V149TI	2400	22.2	16.80	Diesel	14045	1984

POTENTIAL EMISSIONS

Emission Factors for Diesel Engines for 600 HP and less, (AP-42 Section 3.3 (10/96))

Pollutant	PM	PM-10	PM-2.5	SOx	NOx	TOC	CO	Combined HAP	Formaldehyde	Benzene
Factor	0.31	0.31	0.31	0.29	4.41	0.36	0.95	3.87E-03	1.18E-03	9.33E-04
Units	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu
Factor (Diesel) (lbs/kgal)					604.2					
Cell No.	PM	PM-10	PM-10	SOx	NOx	TOC	CO	Combined HAP	Formaldehyde	Benzene
O-24	5.70	5.70	5.70	5.33	81.13	6.62	17.48	0.07	0.02	0.02
O-25	5.70	5.70	5.70	5.33	81.13	6.62	17.48	0.07	0.02	0.02
sub-total	11.41	11.41	11.41	10.67	162.25	13.25	34.95	0.14	0.04	0.03

Emission Factors for Diesel Engines with greater than 600 HP, (AP-42 Section 3.4 (10/96))

Pollutant	PM	PM-10	PM-2.5	SOx	NOx	TOC (NM)	CO	Combined HAP	Formaldehyde	Benzene
Factor	0.1	0.0573	0.0556	0.505	3.2	0.09	0.85	1.57E-03	7.89E-05	7.76E-04
Units	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu	lbs/MMBtu
Factor (Diesel) (lbs/kgal)					438.4					
Cell No.	PM	PM-10	PM-2.5	SOx	NOx	TOC	CO	Combined HAP	Formaldehyde	Benzene
O-1	7.36	4.22	4.09	37.16	235.47	6.62	62.55	0.12	0.01	0.06
O-2	7.36	4.22	4.09	37.16	235.47	6.62	62.55	0.12	0.01	0.06
sub-total	14.72	8.43	8.18	74.32	470.94	13.25	125.09	0.23	0.01	0.11
O-31	7.36	4.22	4.09	37.16	235.47	6.62	62.55	0.12	0.01	0.06
Total	**48.20**	**32.49**	**31.86**	**196.47**	**1339.60**	**46.36**	**347.68**	**0.72**	**0.07**	**0.32**

PTE (ton/yr) = Max Capacity (MMBtu/hr) x Emission Factor (lb/MMBtu) x 8760 hr/yr x 1 ton / 2000 lb

APPLICABLE EMISSIONS LIMITATIONS

Pollutant	Test Cell	Regulation	Limit	Diesel Fuel usage limitation	Horsepower hour limitation
PM	All Cells	326 IAC 6-1-2(a)	0.03 gr/dscf	NA	NA
NOx	O-24,25	326 IAC 2-2	< 40 tons/yr	132,412	2,580,632
NOx	O-31	326 IAC 2-2	< 40 tons/yr	182,481	3,333,317
NOx	O-1,O-2	326 IAC 2-2	< 40 tons/yr	182,481	3,333,317
SO2	All Cells	none because SO2 PTE < 25 tpy			

Test cells O-24, and O-25 combined

Limitation required to make 326 IAC 2-2 (PSD) not applicable:

For engines =< 600 hp (39.9998 tons NOx/12-months x 2000 lbs/ton)/(4.41 lbs NOx/MMBtu x 0.137 MMBtu/gal) = 132,412 Gal./12 month For engines =< 600 hp
Equivalency: 1.378
182,481 Gal./12 month For engines > 600 hp

or

For engines =< 600 hp (39.9998 tons NOx/12-months x 2000 lbs/ton)/(0.031 lb/Hp-hr) = 2,580,632 Hp-Hr/12 month

Total O-24 & O-25 Emissions @ limited throughput

Pollutant	PM	PM-10	PM-2.5	SOx	NOx	TOC (NM)	CO	Combined HAP	Formaldehyde	Benzene
Total	2.81	2.81	2.81	2.63	39.9	3.27	8.62	0.01	0.001	0.007

Test Cell O-31

Limitation required to make 326 IAC 2-2 (PSD) not applicable:

For engines > 600 hp (39.9998 tons NOx/12-months x 2000 lbs/ton)/(3.2 lbs NOx/MMBtu x 0.137 MMBtu/gal) = 182,481 Gal./12 month

or

For engines > 600 hp (39.9998 tons NOx/12-months x 2000 lbs/ton) / (0.024 lbs/Hp-Hr) = 3,333,317 Hp-Hr/12 month

O-31 Emissions @ limited throughput

Pollutant	PM	PM-10	PM-2.5	SOx	NOx	TOC (NM)	CO	Combined HAP	Formaldehyde	Benzene
Total	1.25	0.72	0.69	6.31	39.9	1.12	10.62	0.02	0.001	0.010

Test Cell O-1 and O-2 combined

Limitation required to make 326 IAC 2-2 (PSD) not applicable:

For engines > 600 hp (39.9998 tons NOx/12-months x 2000 lbs/ton)/(3.2 lbs NOx/MMBtu x 0.137 MMBtu/gal) = 182,481 Gal./12 month

or

For engines > 600 hp (39.9998 tons NOx/12-months x 2000 lbs/ton) / (0.024 lbs/Hp-Hr) = 3,333,317 Hp-Hr/12 month

O-1 and O-2 Emissions @ limited throughput

Pollutant	PM	PM-10	PM-2.5	SOx	NOx	TOC (NM)	CO	Combined HAP	Formaldehyde	Benzene
Total	1.25	0.72	0.69	6.31	39.9	1.12	10.62	0.02	0.001	0.010

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/MMBtu	1.65E+02	8.10E-03	1.32E-03
Potential Emission in tons/yr	42,495	2.09	0.34

Summed Potential Emissions in tons/yr	**42,497**
CO2e Total in tons/yr	**42,644**

Potential Throughput (MMBtu/yr) = [Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix B: Emission Calculations
Internal Combustion Engines - Diesel Fuel
Diesel Fired Reciprocating Engine (>600 HP)
Emission Unit ID ETC 702

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Indianapolis, IN 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek

A. Emissions calculated based on heat input capacity (MMBtu/hr)

Heat Input Capacity (hp)	Heat Input Capacity (MMBtu/hr)	Weight % Sulfur (S)
4000	28	0.5

	Pollutant								
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Combined HAP	Benzene
Emission Factor in lb/MMBtu	0.1	0.0573	0.0556	0.505 *(1.01S)*	3.2 **see below	0.09	0.85	1.57E-03	7.76E-04
Potential Emission in tons/yr	12.26	7.03	6.82	61.9	392.4	11.0	104.2	0.19	0.10

**NOx emissions: uncontrolled = 3.2 lb/MMBtu, controlled with ignition timing retard = 1.9 lb/MMBtu
Emission factors from AP-42 Tables 3.4-1 & 3.4-2 (10/96)

B. Emissions calculated based on conversion of AP-42 emission factors to lbs/1000 gal

Heat Input Capacity (MMBtu/hr)	Potential Throughput (gal/yr)	Heat Input (Btu/gal)	Weight % Sulfur (S)
28	1790365	137000	0.5

	Pollutant								
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Combined HAP	Benzene
Emission Factor in lb/1000 gal	13.70	7.85	7.62	69.2	438.4	12.3	116.5	0.22	0.11
Potential Emission in tons/yr	12.26	7.03	6.82	61.9	392.4	11.0	104.2	0.19	0.10

C. Emissions calculated based on limiting fuel throughput

Limited fuel throughput **173516** gallons/year

	Pollutant								
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Combined HAP	Benzene
Emission Factor in lb/1000 gal	13.7	7.9	7.6	69.2	438.4	12.3	116.5	0.22	0.11
Limited Emissions in tons/yr	1.19	0.68	0.66	6.00	38.03	1.07	10.10	0.02	0.01

Methodology
Potential Throughput: (Heat input capacity (MMBtu/hr) / heat input content (Btu/gal)) x 8760
Emission Factors are from AP 42 (Supplement B 10/96)Table 3.4-1 and Table 3.4-2
Emission (tons/yr) = [Heat input rate (MMBtu/hr) x Emission Factor (lb/MMBtu)] * 8760 hr/yr / (2,000 lb/ton)

Test Cell	Air Flow Rate (cfm)	Equivalent PM (lb/hr)	Equivalent PM (tons/yr)
ETC702	1100	0.3	1.2

where equivalent PM pound per hour emission rate = 0.03 gr/dscf x ft^3/min x 60 min/hr x pound/7000 grains

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/MMBtu	1.65E+02	8.10E-03	1.32E-03
Potential Emission in tons/yr	20,236	0.99	0.16

Summed Potential Emissions in tons/yr	**20,237**
CO2e Total in tons/yr	**20,307**

Potential Throughput (MMBtu/yr) = [Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix B: Emission Calculations
Soil Vapor Extraction (SVE) and Dense Non-Aqueous Phase Liquid (DNAPL) / Groundwater Recovery System
Potential to Emit (PTE) of Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAP)
Emission Unit ID ENCORE

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Source Address: One Allison Way, Indianapolis, IN 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek

Plant 12 SVE System*								
		Actual Emissions (lbs)						
Quarter	Actual Operating Time (hrs)	PCE (lbs) HAP**	1,1,1-TCA (lbs) HAP**	Chloroform (lbs) HAP/VOC	TCE (lbs) HAP/VOC	Cumene (lbs) HAP/VOC	Toluene (lbs) HAP/VOC	cls-1,2-DCE (lbs) HAP/VOC
3rd Quarter 2013 (7/1-9/30)	2171	87.96	0	0	1.42	0	0.39	0.63
4th Quarter 2013 (10/1-12/31)	2208	198.59	0	0	2.17	0	0.20	0.76
1st Quarter 2014 (1/1-3/31)	768.5	153.92	0	0	1.98	0	0.00	0.75
2nd Quarter 2014 (4/1-6/30)	1927	80.84	0	0	1.54	0	0.08	0.51
3rd Quarter 2014 (7/1-9/30)	1594	107.93	0	0	1.93	0	0.00	0.72
4th Quarter 2014 (10/1-12/31)	2194.5	148.05	0	0	2.02	0	0.00	0.81
1st Quarter 2015 (1/1-3/31)	1986	100.84	0	0	1.62	0	0.07	0.49
2nd Quarter 2015 (4/1-6/30)	2355	111.18	0	0	0.95	0	0.00	0.00
Totals	**15204.00**	**989.31**	**0**	**0**	**13.63**	**0.00**	**0.74**	**4.66**
2-year Adjustment Factor	**1.15**							
2- year Adjusted Emissions (lbs/two-year period)		**1140.01**	**0**	**0**	**15.71**	**0.00**	**0.85**	**5.37**
PTE (tons/year)		**0.29**	**0**	**0**	**3.93E-03**	**0.00**	**2.13E-04**	**1.34E-03**
PTE of VOC (tons/year)	**0.01**							
PTE of Total HAP (tons/year)	**0.29**							

Plant 14 SVE System*								
		Actual Emissions (lbs)						
Quarter	Actual Operating Time (hrs)	PCE (lbs) HAP**	1,1,1-TCA (lbs) HAP**	Chloroform (lbs) HAP/VOC	TCE (lbs) HAP/VOC	Cumene (lbs) HAP/VOC	Toluene (lbs) HAP/VOC	cls-1,2-DCE (lbs) HAP/VOC
3rd Quarter 2013 (7/1-9/30)	1485	156.88	0	0.00	0.61	0.00	0.77	0.35
4th Quarter 2013 (10/1-12/31)	2210.5	181.62	0	0.00	0.69	0.00	0.49	0.62
1st Quarter 2014 (1/1-3/31)	1564.5	108.94	0	39.04	0.41	0.00	0.00	0.58
2nd Quarter 2014 (4/1-6/30)	2052	78.66	0	56.03	0.34	0.00	0.00	0.31
3rd Quarter 2014 (7/1-9/30)	2294	48.34	4.357	3.23	0.27	0.00	0.00	0.40
4th Quarter 2014 (10/1-12/31)	2194	48.78	0	10.68	0.24	0.00	0.00	0.28
1st Quarter 2015 (1/1-3/31)	1053.65	16.16	0	0.00	0.17	0.09	0.00	0.01
2nd Quarter 2015 (4/1-6/30)	2063.5	23.81	0	0.00	0.24	0.15	0.00	0.00
Totals	**14917.15**	**663.19**	**4.36**	**108.99**	**2.96**	**0.24**	**1.26**	**2.55**
2-year Adjustment Factor	**1.17**							
2- year Adjusted Emissions (lbs/two-year period)		**778.91**	**5.12**	**128.00**	**3.48**	**0.28**	**1.48**	**2.99**
PTE (tons/year)		**0.19**	**1.28E-03**	**3.20E-02**	**8.69E-04**	**6.99E-05**	**3.71E-04**	**7.48E-04**
PTE of VOC (tons/year)	**3.41E-02**							
PTE of Total HAP (tons/year)	**0.23**							

Plant 12 Dense Non-Aqueous Phase Liquid (DNAPL) / Groundwater Recovery System (Air Stripper)*								
		Actual Emissions (lbs)						
Quarter	Actual Operating Time (hrs)	PCE (lbs) HAP**	1,1,1-TCA (lbs) HAP**	Chloroform (lbs) HAP/VOC	TCE (lbs) HAP/VOC	Cumene (lbs) HAP/VOC	Toluene (lbs) HAP/VOC	cls-1,2-DCE (lbs) HAP/VOC
3rd Quarter 2013 (7/1-9/30)	1989	5.73	0	0	0.77	0	0.01	0.74
4th Quarter 2013 (10/1-12/31)	2131	75.00	0	0	4.83	0	0.00	2.04
1st Quarter 2014 (1/1-3/31)	2056	53.31	0	0	3.40	0	0.01	1.42
2nd Quarter 2014 (4/1-6/30)	2079.1	20.05	0	0	1.66	0	0.01	0.54
3rd Quarter 2014 (7/1-9/30)	1766.7	44.80	0	0	3.93	0	0.00	1.34
4th Quarter 2014 (10/1-12/31)	1396.2	47.31	0	0	4.26	0	0.01	1.48
1st Quarter 2015 (1/1-3/31)	2171	4.28	0	0	0.76	0	0.04	0.40
2nd Quarter 2015 (4/1-6/30)	2023	2.29	0	0	0.36	0	0.04	0.29
Totals	**15612.00**	**252.77**	**0**	**0**	**19.96**	**0**	**0.11**	**8.25**
2-year Adjustment Factor	**1.12**							
2- year Adjusted Emissions (lbs/two-year period)		**283.66**	**0**	**0**	**22.40**	**0**	**0.12**	**9.26**
PTE (tons/year)		**0.07**	**0**	**0**	**5.60E-03**	**0**	**3.02E-05**	**2.31E-03**
PTE of VOC (tons/year)	**7.94E-03**							
PTE of Total HAP (tons/year)	**7.89E-02**							

	PTE (tons/year)		
Process/Emission Unit	VOC (tons/year)	Total HAPs (tons/year)	Highest Single HAP (tons/year) (PCE)
SVE (Plant 12 and Plant 14)	0.04	0.52	0.48
DNAPL/Groundwater Total (Plant 12)	7.94E-03	0.08	0.07
Totals	**0.05**	**0.60**	**0.55**

Methodology
*Pollutant mass removal information from monitoring data provided by source.
**Perchloroethylene (PCE) and 1,1,1-Trichloroethane (1,1,1-TCA) have been exempted from the definition of volatile organic compounds (VOC) under 40 CFR 51.100, since they have been determined to have negligible photochemical reactivity.
2-year Adjustment Factor = (8760 hours/year) * (2 years/two-year period) / Actual Total Operating Time (hours/two-year period)
2-year Adjusted Emissions (lbs/two-year period) = Total Actual Pollutant Emissions (lbs/two-year period) * 2-year Adjustment Factor
PTE of Pollutant (tons/year) = (2-year Adjusted Emissions (lbs/two-year period)) / (2 years/two-year period) / (2000 lbs/ton)
PTE of VOC = SUM of PTE (Chloroform, TCE, Cumene, Toluene, and cls-1,2-DCE)
PTE of Total HAP = SUM of PTE (PCE, 1,1,1-TCA, Chloroform, TCE, Cumene, Toluene, and cls-1,2-DCE)

Appendix B to the Technical Support Document (TSD)
PTE of Diesel Fired Emergency Generator - Genset 1a and 1b, each generator

Company Name: Allison Transmission, Inc. - Speedway Main Campus
Address: One Allison Way, Indianapolis, Indiana 46222
Significant Permit Modification No.: 097-36831-00310
Significant Source Modification No.: 097-36910-00310
Reviewer: David Matousek
Date: April 25, 2016

Operating Parameters

Engine Output	2,965	HP (each generator)		
Brake Specific Fuel Consumption	7,000	Btu/Hp.Hr		
Heat Input	20.76	MMBtu/hr	or	10,378 MMBtu/yr
Diesel Fuel Heat Content	140.00	MMBtu/kgal		
Hours of Operation PTE	500	hours/yr		
Energy Input	1,482,500	Hp-hr/yr		
Fuel Usage	74.13	kgallon/yr		

Emission Calculations (TPY)

Pollutant	Emission Factor		PTE (TPY)	Emission Factor Source
PM	0.17	g/kw.hr	0.21	Kohler Power Systems - EPA Certificate Date
PM_{10}	0.17	g/kw.hr	0.21	Kohler Power Systems - EPA Certificate Date
$PM_{2.5}$	0.17	g/kw.hr	0.21	Kohler Power Systems - EPA Certificate Date
SO_2	1.21E-04	lb/hp-hr	0.09	AP-42, Chapter 3.4, Table 3.4-1, S = 0.015%
VOC	0.56	g/kw.hr	0.68	Kohler Power Systems - EPA Certificate Date
CO	0.60	g/kw.hr	0.73	Kohler Power Systems - EPA Certificate Date
NO_x	5.36	g/kw.hr	6.54	Kohler Power Systems - EPA Certificate Date
Hazardous Air Pollutants				
Acetaldehyde	2.52E-05	lb/MMBtu	1.31E-04	AP-42, Chapter 3.4, Table 3.4-3
Acrolein	7.88E-06	lb/MMBtu	4.09E-05	AP-42, Chapter 3.4, Table 3.4-3
Benzene	7.76E-04	lb/MMBtu	4.03E-03	AP-42, Chapter 3.4, Table 3.4-3
Formaldehyde	7.89E-05	lb/MMBtu	**4.09E-04**	AP-42, Chapter 3.4, Table 3.4-3
Toluene	2.81E-04	lb/MMBtu	1.46E-03	AP-42, Chapter 3.4, Table 3.4-3
Xylene	1.93E-04	lb/MMBtu	1.00E-03	AP-42, Chapter 3.4, Table 3.4-3
Total PAH	2.12E-04	lb/MMBtu	1.10E-03	AP-42, Chapter 3.4, Table 3.4-4
Total HAP			0.01	
Greenhouse Gas Emissions				
CO_2	73.96	kg/MMBtu	846	40 CFR 98, Subpart C
CH_4	3.00E-03	kg/MMBtu	3.43E-02	40 CFR 98, Subpart C, Table C-2
N_2O	6.00E-04	kg/MMBtu	6.86E-03	40 CFR 98, Subpart C, Table C-2
CO_2e			849	

Methodology:
1) PTE (TPY) = Emission Factor (g/hp-hr) x Output (HP) x Operating Hours (hours/yr) x 1 lb/453.59 g x 1 ton/2,000 lb
2) PTE (TPY) = Emission Factor (lb/MMBtu) x Heat Input (MMBtu/hr) x Operating Hours (hr/yr) x 1 ton/2,000 lb
3) PTE (TPY) = Emission Factor (kg/MMBtu) x 2.2046 lb/kg x Heat Input (MMBtu/hr) x Operating Hours (hr/yr) x 1 ton/2,000 lb
4) PTE (TPY as CO_2e) = [TPY CO_2] + [TPY CH_4 x 25] + [TPY N_2O x 298]
5) Engine Heat Input (MMBtu/hr) = Output (HP) x Brake Specific Fuel Consumption (Btu/Hp-hr) x 1 MMBtu/1,000,000 Btu
6) Fuel Consumption (kgal/yr) = [Operating Hours (hr/yr) x Heat Input (MMBtu/hr)] ÷ Fuel Heat Content (MMBtu/kgal)

Indiana Department of Environmental Management
Office of Air Quality

Appendix C to the Technical Support Document (TSD)
for a Part 70
Significant Source and Significant Permit Modification

Source Description and Location

Source Name:	Allison Transmission, Inc. - Speedway Main Campus
Source Location:	One Allison Way, Indianapolis, Indiana 46222
County:	Marion County, Wayne Township
SIC Code:	3714 (Motor Vehicle Parts and Accessories)
Operation Permit No.:	T097-34667-00310
Operation Permit Issuance Date:	February 24, 2015
Significant Source Modification No.:	097-36831-00310
Significant Permit Modification No.:	097-36910-00310
Permit Reviewer:	David Matousek

Allison Transmission, Inc. submitted two (2) aggregation analyses. On June 21, 2016, an aggregation analysis was submitted by Allison Transmission, Inc. for the Boiler House Project and is included as Appendix C to the TSD. On August 3, 2016, an aggregation analysis was submitted by Allison Transmission, Inc. for the upgrading of test cells (ADV Refurbishment), with additional information submitted on August 16, 2016, and is included as Appendix D to the TSD.

On June 21, 2016, the following aggregation analysis was submitted by Allison Transmission, Inc. for the Boiler House Project, which includes the installation of two (2) emergency generators, the relocation of an existing boiler and the installation of a new boiler in a newly constructed boiler house.

Aggregation Analysis by Allison Transmission, Inc. for the Boiler House Project

NSR-Separate Projects Evaluation
Permit #'s: 097-36831-36910-00310

Prepared by: Allison Transmission, Inc.
Date: June 21, 2016

1. Filing of more than one minor source or minor modification application associated with emissions increases at a single plant within a short time period.

There have not been any minor source permit applications filed for ATI's Main Campus since June of 2011.

2. Application of funding. Is funding structured for a single or multiple projects?

The project funding is structured for single projects. Capital Appropriation Requests (CAR) were submitted, reviewed and approved for each project. There have been two (2) CARs approved for the new Boiler House project. The first one was approved in the fall of 2013 and the second one, which includes the emergency generators, in December of 2015.

3. Reports of consumer demand and projected production levels.

New Boiler House:

The installation of new Emergency Generators is one (1) phase of the multi-year new Boiler House project that is expected to be completed in 2019 or 2020, see Attachment 1. The planning for this project began in 2012, with ground breaking in 2013. This project has been delayed multiple times due to budgetary restraints, which in turn has changed the timing for applying for a permit. The current schedule is shown below:

- *Phase #1: CY2012 - New Boiler House design (complete)*
- *Phase #2: CY2014 - Site work, building structure and enclosure (complete)*
- *Phase #3: CY2014-CY2017 - Boiler House internal infrastructure, interior finishes, HVAC, external piping, generator installation, feed water pumps & equipment procurement*
- *Phase #4: CY2017-CY2018 - Cooling Tower system installation, Steam system equipment procurement, and boiler procurement*
- *Phase #5: CY2018-CY2019 - Controls, Compressed Air equipment procurement and installation, Boiler & Steam equipment installation*
- *Phase #6: CY2019-2020 - Final connections, commissioning, cut-over and removal of legacy Powerhouse equipment*

The projects described above are multi-year, multi-phase projects where the timing for applying for a permit has changed along with periodic project schedule changes. It is only coincidence that these projects required permitting at the same time and were included in the same permit application.

4. Statements of authorized representatives of the source regarding plans for operation.
Please see Attachment 2 for statements regarding the purpose of the new Boiler House and companywide facility improvements.

5. EPA's own analysis of the economic realities of the projects considered together.
The ADV Refurbishment and the new Boiler House projects are not interdependent. They are managed under separate management chains that do not intersect until they reach ATI's President. The projects have no shared functionality and either one could be built and operate normally without the other one ever being built.

Attachment 1

Allison to Construct New Boiler House

Indianapolis, Indiana, United States - October 23, 2013

Allison Transmission Facilities will begin a new construction project starting this month --- in fact, some plans affect parking effective this Friday, October 25, 2013. This major project involves the construction of a new Boiler House for our site. The contractor responsible for the building is Browning Construction Co., Indianapolis, IN.

This new Boiler House will be located south of the main campus and adjacent to the Fuel Farm. The building will accommodate boilers, air compressors, chillers, and additional supporting equipment. The planned completion of the building is August 2014.

Attachment 2

Boiler House Groundbreaking: Construction Receives the Green Light
Indianapolis, Indiana, United States - December 07, 2013

Just prior to Thanksgiving, Larry Dewey and Dave Parish met a small group of Allison Transmission employees along with eight Browning Construction representatives, at a location outlined by orange spray paint in the south parking lot near Post 307.

Located within the orange diagonal, a yellow earth mover was positioned next to an 8 x 10 foot opening in the asphalt. A banner placed on the vehicle's blade read, "Future Home of the New Boiler House." The new Allison Boiler House will supply electrical and steam power in support of the company's manufacturing operations.

With chrome plated shovels and smiles on their faces, the Allison contingent was the first to break ground. Larry Dewey, Allison Transmission Chairman, President and CEO said, "Since becoming an independent company in 2007, Allison has launched a number of major facility improvement projects, not only in Indianapolis but on an international basis, to ensure the products we produce continue to lead the industry in the markets we serve." With that being said, the Allison team scooped and tossed the first official load of earth from the site.

The construction of a new boiler house is the latest example of the company's commitment to improve operational efficiency, reduce down-time, and lessen its impact on the environment.

LEFT TO RIGHT: TOM LUCAS, RANDY BURGESS, CHARLES WOODS, LARRY DEWEY, DAVE PARISH, AND JIM JONES

Indiana Department of Environmental Management
Office of Air Quality

Appendix D to the Technical Support Document (TSD)
for a Part 70
Significant Source and Significant Permit Modification

Source Description and Location

Source Name:	Allison Transmission, Inc. - Speedway Main Campus
Source Location:	One Allison Way, Indianapolis, Indiana 46222
County:	Marion County, Wayne Township
SIC Code:	3714 (Motor Vehicle Parts and Accessories)
Operation Permit No.:	T097-34667-00310
Operation Permit Issuance Date:	February 24, 2015
Significant Source Modification No.:	097-36831-00310
Significant Permit Modification No.:	097-36910-00310
Permit Reviewer:	David Matousek

Allison Transmission, Inc. submitted two (2) aggregation analyses. On June 21, 2016, an aggregation analysis was submitted by Allison Transmission, Inc. for the Boiler House Project and is included as Appendix C to the TSD. On August 3, 2016, an aggregation analysis was submitted by Allison Transmission, Inc. for the upgrading of test cells (ADV Refurbishment), with additional information submitted on August 16, 2016, and is included as Appendix D to the TSD.

On August 3, 2016, the following aggregation analysis was submitted by Allison Transmission, Inc. for the upgrading of test cells (ADV Refurbishment). The analysis summarizes historical upgrades to test cells and possible future upgrades and their relationship to the test cell upgrades of 50N/S and 52N/S. On August 16, 2016, additional information was submitted by Allison Transmission, Inc. for this aggregation analysis. The additional information summarizes the relationship between the construction of test cells 50N/S, 52N/S, and the construction of test cell 53 under significant source modification 097-34820-00310, issued on February 2, 2015.

Aggregation Analysis by Allison Transmission, Inc. for Upgrading Test Cells

Allison Transmission, Inc.
Analysis Development and Validation Department
Refurbishment and Upgrades
Aggregation Analysis

As detailed below, one of the long-term goals of Allison Transmission, Inc.'s ("ATI") Analysis Development and Validation Department ("ADV") is to upgrade 15 of its transmission test cells. Some upgrades would be associated with air emissions increases; others would not. This general upgrade goal has not been approved by ATI's management team, has not been funded, and has not been designed. Rather, upgrades to only certain test cells have been approved by ATI's management team and funded. Air permit applications have been filed with IDEM for these management approved/funded upgrades. Upgrades to 2 test cells have been permitted and permits for upgrades to 4 test cells are presently pending with IDEM. No other test cell upgrades have been approved by ATI's management, funded, or designed. Upgrading only one test cell makes business sense for ATI whether or not any other test cell is upgraded; the upgrades are not interrelated.

Background

The ADV facility is located in Plant 3 at ATI's Speedway Main campus. ADV is the main facility for development and testing of ATI transmissions and component parts. The ADV test cells were originally constructed in the 1930s and 1940s to test airplane engines for military applications (see Photo 1).

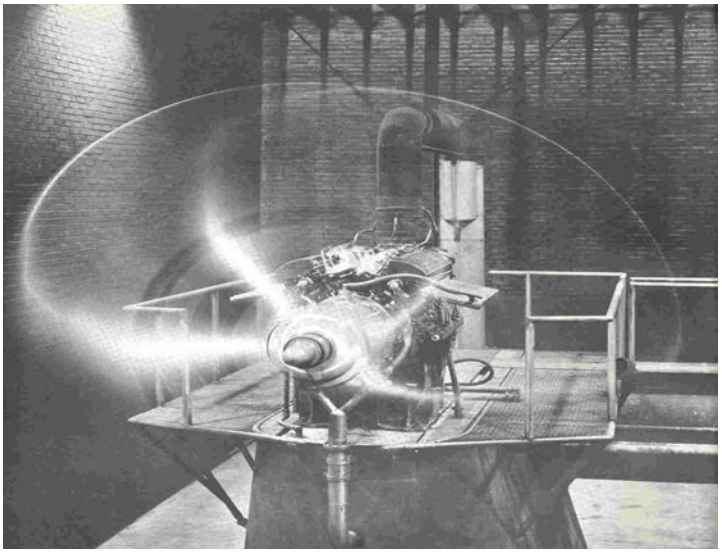

Photo 1

When what was then General Motors began manufacturing transmissions in 1946, many of the engine test cells were converted for use as engine powered transmission test cells. Photo 2 shows a typical ADV transmission test cell prior to the installation of the engine, transmission, drive shaft and testing equipment.

Photo 2

In addition to the fact that the transmission test cells are at least 70 years old, the reasons for the upgrades to the test cells are: (1) to create some multi-fueled, Class I explosion rated test cells; (2) to increase hybrid testing capability; and (3) to improve emissions testing capability. Upgrades are not being made in response to customer demand.

Aggregation Analysis

IDEM requested that the aggregation analysis be based on the 1993 U.S. EPA memorandum which discusses the applicability of New Source Review Circumvention Guidance to the 3M Maplewood facility. The following is a discussion of the applicability of the five (5) evaluation criteria identified in that memorandum to ADV's general goal to upgrade its transmission test cells.

Criteria #1 - Filing of more than one minor source or minor modification applications associated with emissions increases at a single plant within a short time period.

In 2012, ATI recognized a need for the capability to test its larger models of transmissions along with the corresponding engines and proposed to create a new transmission test cell for large, off-road transmissions. This need was separate from and unrelated to ADV's general goal to upgrade its transmission test cells.

In response to the newly identified need to test larger models of transmissions, in May 2013, ATI submitted to IDEM an air permit application for significant source/permit modifications which proposed construction of TC 55. TC 55 was then permitted for two diesel-fired engines with a maximum output rating of 4,000 HP each. However, physical limitations of the test cell will only allow for the operation of one engine at a time. The construction permit was issued on August 8, 2013 and the operating permit followed on August 22, 2013. The TC55 construction was completed in August of 2014.

With respect to transmission Test Cells 53N and 53S, ATI filed an air permit application with IDEM for significant source/permit modifications to upgrade the test cells to meet the National Fire Protection Association ("NFPA") Standards for Class 1 fuels in August 2014 and IDEM issued the requested permits in February 2015. The upgraded test cells were permitted to consist of two reciprocating engines to be fueled with diesel fuel, gasoline, or natural gas, with an estimated maximum engine output rating equal to or less than 500 hp each.

However, ATI has determined that, structurally, TC 53N and TC 53S are not well suited for the Class 1 fuels upgrade. As a result, TC 53N and TC 53S will remain diesel fuel only test cells (they will be renovated, but that work will not be associated with any emissions increases). This will be corrected as part of the current permitting action.

The current pending air permitting action involves upgrades to TC 50N, TC 50S, TC 52N, and TC 52S to meet the NFPA standards for Class 1 fuels, similar to the upgrades that were permitted for TC 53N and TC 53S. These transmission test cell upgrades were approved by the ATI management team and funded in January 2015 and ATI filed an air permit application with IDEM for significant source/permit modifications in February 2016.

No other transmission test cell upgrades, new construction, or other transmission test cell work associated with emissions increases have been approved by the ATI management team or funded. ADV would like to upgrade transmission test cells 48N, 48S, 46N and 46S, but it is unknown whether these upgrades would be for use of Class 1 fuels (which would be associated with emissions increases) or whether they would remain diesel test cells for which renovation and updating would not be associated with emissions increases. Upgrades to these test cells have not been approved by the ATI management team or funded. ADV also would like to renovate and update the five (5) T700 series test cells; this work would not be associated with emissions increases. It too has not been approved by the ATI management team or funded.

Table 1

Project Status

Project Description	Projects with ATI Funding Approval						ADV Wish List-Unfunded Projects				
Calendar Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Renovate and Upfit Test Cell TC 53N											
CAR approval Date				Jan-15							
Renovate and Upfit Test Cell TC 53S											
CAR approval Date				Jan-15							
Renovate and Upfit Test Cell TC 50S											
CAR approval Date				Jan-15							
Renovate and Upfit Test Cell TC 52S											
CAR approval Date				Jan-15							
Renovate and Upfit Test Cell TC 50N											
CAR approval Date				Jan-15							
Renovate and Upfit Test Cell TC 52N											
CAR approval Date				Jan-15							
Renovate and Upfit Test Cell TC 48N											
Renovate and Upfit Test Cell TC 48S											
Renovate and Upfit Test Cell TC 46N											
Renovate and Upfit Test Cell TC 46S											
Renovate and Upfit-(1) 700 Series Test Cell											
Renovate and Upfit-(1) 700 Series Test Cell											
Renovate and Upfit-(1) 700 Series Test Cell											
Renovate and Upfit-(1) 700 Series Test Cell											
Renovate and Upfit-(1) 700 Series Test Cell											

Complete
In Progress
Not Started

In a 2½-year period, ATI has been issued 2 permits (and applied for a 3rd) related to its transmission test cells.[1] As mentioned previously, it has been determined that, structurally, the modifications permitted for TC53N and TC53S cannot be made. Consequently, the Test Cell 53 permitting action should not be considered as part of the aggregation analysis because, ultimately, a permit modification was not required and the pending permit action will correct the permit to reflect that the modifications will not/have not occurred.

The Test Cell 55 construction and the Test Cell 50N, 50S, 52N and 52S upgrades do have in common that they are all transmission test cells located in ATI's ADV area. However, the modifications to the test cells differ both physically and in purpose. The Test Cell 55 construction was performed to provide a specific testing capability that ATI did not have. While the Test Cell 50N, 50S, 52N and 52S upgrades were performed to upgrade 70-year old test cells.

There have been no decisions made about any additional test cell upgrades that ADV hopes to make in the future. It is unknown whether those upgrades, if made, would be associated with emissions increases, design is not underway, and the ATI management team has not approved or funded any such upgrades. The test cells that have received funding approval are not reliant on future test cell upgrades in order to make sense from a business operations stand point. If future transmission test cell upgrades are ever pursued, an aggregation analysis will be undertaken at that time.

The permitting activities described above do not constitute an effort to circumvent Major New Source Review through the minor modification process. This is especially true when compared to the 3M Maplewood example of 12 permits being issued in 18 months.

Criteria #2 - Application of funding. Is funding structured for a single or multiple projects?

ATI capital projects are self-funded and structured for a single project. ATI policy requires that a "Capital Appropriations Request" ("CAR") be submitted for each proposed capital project. The CARs are reviewed by ATI's executive committee and funding for a project is approved based upon its contribution to current corporate objectives. Upon approval, capital projects are expected to be completed within one (1) year. With respect to the transmission test cells, funding for the TC 55 construction was requested through one CAR, funding for the TC 53 upfit (no emission increase) was requested through the same CAR as funding for the TC 50 and TC 52 upgrades. Each of these test cell projects is economically viable without the others and they are not dependent upon each other.

Criteria #3 - Reports of consumer demand and projected production levels.

The Test Cell 55 construction was initiated in response to the need for a state of the art testing facility where large transmissions, used in off-road applications, could be tested. ATI has no other test cells that can accommodate an engine/transmission combination of this size. Test cell 55 operates independently of the other test cells. It is not the recipient of parts or assemblies from another test cell and it is not the source of supply for an upstream test cell. This construction was not the result of increased projected operation or production lines or increased customer demand.

The upgrades of Test Cells 50N, 50S, 52N and 52S to meet the standards for Class 1 fuels are not being requested in response to increased operation or production levels or to increased customer demand. It simply is time to upgrade these old test cells if management approval is obtained and funding is available. The same is true for the permitted TC 53 upgrades that now will not occur due to structural limitations.

1 The other air permitting actions since ATI purchased and began operating the facility in August 2007 have either not been associated with air emissions increases and/or have not been associated with transmission test cells.

Criteria #4 - Statements of authorized representatives of the source regarding plans for operation.

There are no known statements by ATI that would indicate an effort by ATI to circumvent PSD/NSR review.

Criteria #5 - EPA's own analysis of the economic realities of the projects considered together.

ATI has initiated air permitting actions as needed to support the business activities of the corporation. As discussed previously, there is no interdependence between the transmission test cells. They each conduct test programs that may be similar but are not interdependent. The activities in existing test cells are not dependent on activities related to test cells that are currently part of a pending permitting action. Likewise, these test cells are not dependent on the future construction or modification of any other test cells.

Aggregation Analysis Summary:

Criteria #	Status	Comments
1	Allison does NOT meet this criteria	Projects not contingent upon each other
2	Allison does NOT meet this criteria	Funding structured for single projects
3	Allison does NOT meet this criteria	Project not generated by consumer demand
4	Allison does NOT meet this criteria	No such statements
5	Allison does NOT meet this criteria	No dependency on separate projects

Additional Information for
Aggregation Analysis by Allison Transmission, Inc. for Upgrading Test Cells

NSR-Separate Projects Evaluation
Permit #'s: 097-36831-36910-00310

Prepared by: Allison Transmission, Inc.
Date: August 16, 2016

1. Did Test Cells 53N/53S and the proposed new test cells (TC 50N, TC 50S, TC 52N, and TC 52S) receive ATI management approval at the same time?

   Answer: No

   If no, what dates?

   Answer:

   In September of 2013, Larry Dewey, CEO and David Graziosi, CFO granted capital planning approval for the Test Cell 53N & 53S up-fits received. This approval allowed ADV to begin plan and design work, as well as hire an architecture and design firm.

   In October of 2014, Larry Dewey, CEO and David Graziosi, CFO granted capital planning approval for the Test Cells 50N, 50S, 52N and 52S upgrades to Class 1 test cells. This approval allowed ADV to begin plan and design work, as well as hire an architecture and design firm.

Did ATI management approve Test Cells 53N/53S and the proposed new test cells (TC 50N, TC 50S, TC 52N, and TC 52S) as one project?

Answer: No

Provide necessary explanation.

Answer:

The TC53N and 53S upfit received capital planning approval, as a standalone project, in September of 2013. The engineering design began soon after the approval was granted.

The Test Cell 50N, 50S, 52N and 52S upgrades received capital planning approval in October of 2014. Design work for these test cells was then initiated in the winter of 2014/2015,

Did Test Cells 53N/53S and the proposed new test cells (TC 50N, TC 50S, TC 52N, and TC 52S) receive funding/CAR approval at the same time?

Answer: Yes-partial funding

If yes, what date?

On January 16, 2015, a CAR was approved that provided full funding for the TC 53N and 53S up fits and partial funding for the TC 50N, TC50S, TC52N, and TC52S upgrades. The remainder of the funding for TC 50N, TC 50S, TC 52N, and TC 52S upgrades was approved through an amendment to the CAR, approved on October 25, 2015.

Note that each project has a separate itemized budget. In addition, the projects are on separate schedules. The TC 53N and 53S up fit project was to be completed in 2015; the new proposed Class 1 test cells (TC 50N, TC 50S, TC 52N, TC 52S) were scheduled to be completed in 2016.

Did ATI management approve Test Cells 53N/53S and the proposed new test cells (TC 50N, TC 50S, TC 52N, and TC 52S) under the same CAR? Provide necessary explanation.

Answer: Yes

Provide necessary explanation.

On January 16, 2016, Larry Dewey, ATI-President/CEO approved a CAR for refurbishment activities within ADV. This included the TC53N and 53S upfit and the TC 50N, 50S, 52N and 52S upgrades.

2. In the original application for SSM 097-34820-00310, ATI indicated that test cell ETC53 (53N and 53S) was to be a new test cell and equipment from test cells 41N and 41S would be relocated to 53N and 53S.

Did ATI construct new test cells 53N and 53S and relocate equipment from test cells 41N and 41S to 53N and 53S?

Answer Part 1. Yes-Test Cells 53N and 53S were constructed as diesel fuel only test cells, not as Class 1 test cells.

Answer Part 2. TC 41N and 41S were not relocated and continue to operate as diesel test cells, just as they are currently permitted.

If yes, what equipment was relocated and what happened to test cells 41N and 41S?

Answer Part 1. Equipment from TC50 and TC51S is currently operating in TC53N and TC 53S.

Answer Part 2. TC 41N and 41S were not relocated and continue to operate as diesel test cells, just as they are currently permitted.

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

August 25, 2016

Teresa Colson
Allison Transmission, Inc. - Speedway Main Campus
1 Allison Way MC M29
Indianapolis, IN 46222-3271

Re: Public Notice
Allison Transmission, Inc. - Speedway Main Campus
Permit Level: Title V - Significant Source Modification & Title V - Significant Permit Modification
Permit Number: 097 - 36831 - 00310 & 097 - 36910 - 00310

Dear Teresa Colson:

Enclosed is a copy of your draft Title V - Significant Source Modification & Title V - Significant Permit Modification, Technical Support Document, emission calculations, and the Public Notice which will be printed in your local newspaper.

The Office of Air Quality (OAQ) has prepared two versions of the Public Notice Document. The abbreviated version will be published in the newspaper, and the more detailed version will be made available on the IDEM's website and provided to interested parties. Both versions are included for your reference. The OAQ has requested that the Indianapolis Star in Indianapolis, IN publish the abbreviated version of the public notice no later than August 25, 2016. You will not be responsible for collecting any comments, nor are you responsible for having the notice published in the newspaper.

OAQ has submitted the draft permit package to the Speedway Public Library, 5633 W 25th St in Speedway IN. As a reminder, you are obligated by 326 IAC 2-1.1-6(c) to place a copy of the complete permit application at this library no later than ten (10) days after submittal of the application or additional information to our department. We highly recommend that even if you have already placed these materials at the library, that you confirm with the library that these materials are available for review and request that the library keep the materials available for review during the entire permitting process.

Please review the enclosed documents carefully. This is your opportunity to comment on the draft permit and notify the OAQ of any corrections that are needed before the final decision. Questions or comments about the enclosed documents should be directed to David Matousek, Indiana Department of Environmental Management, Office of Air Quality, 100 N. Senate Avenue, Indianapolis, Indiana, 46204 or call (800) 451-6027, and ask for extension 2-8253 or dial (317) 232-8253.

Sincerely,
Len Pogost

Len Pogost
Permits Branch
Office of Air Quality

Enclosures
PN Applicant Cover letter 2/17/2016

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

ATTENTION: PUBLIC NOTICES, LEGAL ADVERTISING

August 24, 2016

Indianapolis Star
Attn: Classifieds
130 S. Meridian St.
Indianapolis, Indiana 46225

Enclosed, please find one Indiana Department of Environmental Management Notice of Public Comment for Allison Transmission, Inc. - Speedway Main Campus, Marion County, Indiana.

Since our agency must comply with requirements which call for a Notice of Public Comment, we request that you print this notice one time, no later than August 29, 2016.

Please send a notarized form, clippings showing the date of publication, and the billing to the Indiana Department of Environmental Management, Accounting, Room N1345, 100 North Senate Avenue, Indianapolis, Indiana, 46204.

To ensure proper payment, please reference account # 100174737.

We are required by the Auditor's Office to request that you place the Federal ID Number on all claims. If you have any conflicts, questions, or problems with the publishing of this notice or if you do not receive complete public notice information for this notice, please call Len Pogost at 800-451-6027 and ask for extension 3-2803 or dial 317-233-2803.

Sincerely,

Len Pogost

Len Pogost
Permit Branch
Office of Air Quality

Permit Level: Title V - Significant Source Modification & Title V - Significant Permit Modification
Permit Number: 097 - 36831 - 00310 & 097 - 36910 - 00310

Enclosure
PN Newspaper.dot 6/13/2013

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

August 25, 2016

To: Speedway Public Library 5633 W 25th St Speedway IN

From: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Subject: **Important Information to Display Regarding a Public Notice for an Air Permit**

Applicant Name: Allison Transmission, Inc. - Speedway Main Campus
Permit Number: 097 - 36831 - 00310 & 097 - 36910 - 00310

Enclosed is a copy of important information to make available to the public. This proposed project is regarding a source that may have the potential to significantly impact air quality. Librarians are encouraged to educate the public to make them aware of the availability of this information. The following information is enclosed for public reference at your library:

- Notice of a 30-day Period for Public Comment
- Request to publish the Notice of 30-day Period for Public Comment
- Draft Permit and Technical Support Document

You will not be responsible for collecting any comments from the citizens. Please refer all questions and request for the copies of any pertinent information to the person named below.

Members of your community could be very concerned in how these projects might affect them and their families. **Please make this information readily available until you receive a copy of the final package.**

If you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185. Questions pertaining to the permit itself should be directed to the contact listed on the notice.

Enclosures
PN Library.dot 2/16/2016

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

Notice of Public Comment

August 25, 2016
Allison Transmission, Inc. - Speedway Main Campus
097 - 36831 - 00310 & 097 - 36910 - 00310

Dear Concerned Citizen(s):

You have been identified as someone who could potentially be affected by this proposed air permit. The Indiana Department of Environmental Management, in our ongoing efforts to better communicate with concerned citizens, invites your comment on the draft permit.

Enclosed is a Notice of Public Comment, which has been placed in the Legal Advertising section of your local newspaper. The application and supporting documentation for this proposed permit have been placed at the library indicated in the Notice. These documents more fully describe the project, the applicable air pollution control requirements and how the applicant will comply with these requirements.

If you would like to comment on this draft permit, please contact the person named in the enclosed Public Notice. Thank you for your interest in the Indiana's Air Permitting Program.

Please Note: *If you feel you have received this Notice in error, or would like to be removed from the Air Permits mailing list, please contact Patricia Pear with the Air Permits Administration Section at 1-800-451-6027, ext. 3-6875 or via e-mail at PPEAR@IDEM.IN.GOV. If you have recently moved and this Notice has been forwarded to you, please notify us of your new address and if you wish to remain on the mailing list. Mail that is returned to IDEM by the Post Office with a forwarding address in a different county will be removed from our list unless otherwise requested.*

Enclosure
PN AAA Cover.dot 2/17/2016

Mail Code 61-53

IDEM Staff	LPOGOST 8/25/2016 Allison Transmission, Inc. - Speedway 097-36831-00310 & 097 - 36910 - 00310 draft		AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender	▶	Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: **CERTIFICATE OF MAILING ONLY**

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee Remarks
1		Teresa Colson Allison Transmission, Inc. - Speedway Main Campus 1 Allison Way MC M29 Indianapolis IN 46222-3271 (Source CAATS)									
2		Michael A Dick Sr VP Operations and Purchasing Allison Transmission, Inc. - Speedway Main Campus 1 Allison Way MC L05 Indianapolis IN 46222-3271 *(RO CAATS)*									
3		Johan & Susan Van Den Heuvel 4409 Blue Creek Drive Carmel IN 46033 *(Affected Party)*									
4		Indiana Members Credit Union 5103 Madison Avenue Indianapolis IN 46227 *(Affected Party)*									
5		TGM Autumn Woods, Inc. 500 North Dearboen, Suite 400 Chicago IL 60654 *(Affected Party)*									
6		Marion County Health Department 3838 N, Rural St Indianapolis IN 46205-2930 *(Health Department)*									
7		Indianapolis City Council and Mayors office 200 East Washington Street, Room E Indianapolis IN 46204 *(Local Official)*									
8		Marion County Commissioners 200 E. Washington St. City County Bldg., Suite 801 Indianapolis IN 46204 *(Local Official)*									
9		Speedway Public Library 5633 W 25th St Speedway IN 46224-3899 *(Library)*									
10		Matt Mosier Office of Sustainability City-County Bldg/200 E Washington St. Rm# 2460 Indianapolis IN 46204 *(Local Official)*									
11											
12											
13											
14											
15											

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is $50,000 per piece subject to a limit of $50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is $500. The maximum indemnity payable is $25,000 for registered mail, sent with optional postal insurance. See ***Domestic Mail Manual*** **R900, S913**, and **S921** for limitations of coverage on inured and COD mail. See ***International Mail Manual*** for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.

FACSIMILIE OF PS Form 3877