



State of Ohio Environmental Protection Agency

Street Address:

Lazarus Gov. Center
122 S. Front Street
Columbus, OH 43215

TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

Lazarus Gov. Center
P.O. Box 1049
Columbus, OH 43216-1049

RE: **FINAL PERMIT TO INSTALL MODIFICATION CERTIFIED MAIL**

ALLEN COUNTY

Application No: 03-09227

	TOXIC REVIEW
	PSD
Y	SYNTHETIC MINOR
Y	CEMS
G and H	MACT
Db, VV, NNN and III	NSPS
	NESHAPS
Y	NETTING
	MAJOR NON-ATTAINMENT
	MODELING SUBMITTED
	GASOLINE DISPENSING FACILITY

DATE: 11/20/2003

BP Chemicals Inc
Charles Treloar
1900 Fort Amanda Rd
Lima, OH 458020628

Enclosed Please find a modification to the Ohio EPA Permit To Install referenced above which will modify the terms and conditions.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed within thirty (30) days after the notice of the Directors action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
309 South Fourth Street, Room 222
Columbus, Ohio 43215

Sincerely,

Michael W. Ahern, Supervisor
Field Operations and Permit Section
Division of Air Pollution Control

CC: USEPA

NWDO



FINAL ADMINISTRATIVE MODIFICATION OF PERMIT TO INSTALL 03-09227

Application Number: **03-09227**

APS Premise Number: **0302020015**

Permit Fee: **\$500**

Name of Facility: **BP Chemicals Inc**

Person to Contact: **Charles Treloar**

Address: **1900 Fort Amanda Rd
Lima, OH 458020628**

Location of proposed air contaminant source(s) [emissions unit(s)]:
**1900 Fort Amanda Rd
Lima, OHIO**

Description of modification:

Acrylonitrile plant no. 2 recovery and purification section and acrylonitrile plant no. 2 reactor and absorption section.

The above named entity is hereby granted a modification to the permit to install described above pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this modification does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described source(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans included in the application, the above described source(s) of pollutants will be granted the necessary operating permits.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency


Director

GENERAL PERMIT CONDITIONS

TERMINATION OF PERMIT TO INSTALL

Substantial construction for installation must take place within 18 months of the effective date of this permit. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

NOTICE OF INSPECTION

The Director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above-named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, or to examine records or reports pertaining to the construction, modification or installation of the source(s) of environmental pollutants identified within this permit.

CONSTRUCTION OF NEW SOURCES

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

PERMIT TO INSTALL FEE

In accordance with Ohio Revised Code 3745.11, the specified Permit to Install fee must be remitted within 30 days of the effective date of this permit to install.

PUBLIC DISCLOSURE

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC Rule 3745-49-03.

APPLICABILITY

This Permit to Install is applicable only to the contaminant sources identified. Separate application must be made to the Director for the installation or modification of any other contaminant sources.

BEST AVAILABLE TECHNOLOGY

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

PERMIT TO OPERATE APPLICATION AND OPERATION AFTER COMPLETION OF CONSTRUCTION

If the permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77, the permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).

If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this Permit To Install is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. Permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the source(s) covered by this permit.

AIR EMISSION SUMMARY

The air contaminant emissions units listed below comprise the Permit to Install for **BP Chemicals Inc** located in **ALLEN** County. The emissions units listed below shall not exceed the emission limits/control requirements contained in the table. This condition in no way limits the applicability of any other state or federal regulations. Additionally, this condition does not limit the applicability of additional special terms and conditions of this permit.

Ohio EPA Source Number	Source Identification Description	BAT Determination	Applicable Federal & OAC Rules	Permit Allowable Mass Emissions and/or Control/Usage Requirements
P075 (Modi- fication) pre- viously permitted as emiss- ions units P 0 1 4 , P019, and P037	Acrylonitrile plant #2 recovery and purification section	Maintain a total resource effectiveness (TRE) Index Value greater than 1.0 or use of flare or use of thermal oxidizer and compliance with the terms and conditions of this permit	3745-31-05 3745-17-07 3745-17-11 3745-21-08 3745-21-09 (DD) 3745-23-06 3745-74-03 3745-74-06 40 CFR 60 Subpart VV 40 CFR 60 Subpart NNN 40 CFR 63 Subpart G 40 CFR 63 Subpart H	Particulate matter: 2.0 lbs/hr; Opacity Restrictions; Carbon Monoxide: 6.0 lbs/hr; Nitrogen oxides: 2.0 lbs/hr; Sulfur dioxide: 2.0 lbs/hr; Non-methane HC: 5.0 lbs/hr (as Carbon) (See Additional Special Terms and Conditions)
P035 (Modi- fication)	Acrylonitrile plant #2 reactor and absorption section	Use of absorber off- gas incinerator (AOGI) and compliance with the terms and conditions of this permit	3745-31-05 3745-21-08 3745-21-09 (DD) 3745-21-09 (EE) 3745-23-06 3745-74-03 3745-17-07 40 CFR 60 Subpart VV 40 CFR 60 Subpart III 40 Subpart 60 Subpart Db	Particulate matter: 6.0 lbs/hr; Opacity restrictions; Carbon monoxide: 5736 lbs/rolling 24 hr period Nitrogen oxides: 6614 lbs/rolling 24 hr period Sulfur dioxide: 2.5 lbs/hr; Non-methane HC: 130.8 lbs/hr (as carbon)

BP Chemicals Inc

PTI Application: 03-09227

Modification Issued: 11/20/2003

Facility ID: 0302020015

Cont'd

40 CFR 63

Subpart G

40 CFR 63

Subpart H

(See Additional
Special Terms and
Conditions)

SUMMARY
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons/Year (Total)</u>	<u>Ton/Year (Allowable increases due to modification)</u>
Nitrogen Oxides	1215.86	+521.2
Particulate Matter (PM) *	35.06	+11.19**
Sulfur Dioxide	19.76	+13.4
Non-Methane HC (As Carbon)	594.90	- 91.0
Carbon Monoxide	1004.28	-69.0

* All particulate matter emissions consist completely of PM₁₀.

** This increase in the PM emissions constitutes an increase in actual emissions of approximately 11 tons per year (TPY). The previous PM limit of 4 TPY for emissions unit P035, established in PTI Number 03-3033 was based on incorrect information and assumptions and should have been modified to >15 TPY to reflect what actual emissions are from the emission unit when employing BAT control. The difference between the 15 TPY actual emission rate and the current proposed limit of 26.30 TPY constitutes an increase of approximately 11 TPY. This PTI will correct the erroneous limit established in PTI Number 03-3033. The PM emission limit for emissions unit P075 will not increase beyond existing permit levels. See Additional Special Terms and Conditions for further information.

NSPS REQUIREMENTS

The following sources are subject to the applicable provisions of the New Source Performance Standards (NSPS) as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60.

<u>Source</u>	<u>Source Description</u>	<u>NSPS Regulation (Subpart)</u>
P075	Acrylonitrile plant Number 2 recovery and purification section	VV NNN
P035	Acrylonitrile plant Number 2 reactor and absorption section	VV III Db

The application and enforcement of these standards are delegated to the Ohio EPA. The requirements of 40 CFR Part 60 are also federally enforceable.

Pursuant to the NSPS, the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:

- a. construction date (no later than 30 days after such date);
- b. anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
- c. actual start-up date (within 15 days after such date); and
- d. date of performance testing (If required, at least 30 days prior to testing).

Reports are to be sent to:

Ohio Environmental Protection Agency
DAPC - Air Quality Modeling and Planning
P.O. Box 1049
Columbus, OH 43216-1049

and OEPA Northwest District Office - DAPC
347 North Dunbridge Road
Bowling Green, Ohio 43402

PERFORMANCE TEST REQUIREMENTS

The permittee shall conduct, or have conducted, performance testing on the air contaminant source(s) in accordance with procedures approved by the Agency. Two copies of the written report describing the test procedures followed and the results of such tests shall be submitted and signed by the person responsible for the test. The Director, or

an Ohio EPA representative, shall be allowed to witness the test, examine testing equipment, and require the acquisition or submission of data and information necessary to assure that the source operation and testing procedures provide a valid characterization of the emissions from the source and/or the performance of the control equipment.

- A. A completed Intent to Test form shall be submitted to the appropriate Ohio EPA District Office or Local Air Pollution Control Agency where the original permit application was filed. This notice shall be made 30 days in advance and shall specify the source operating parameters, the proposed test procedures, and the time, date, place and person(s) conducting such tests.
- B. Two copies of the test results shall be submitted within 30 days after the completion of the performance test.
- C. Tests shall be performed for the following source(s) and pollutant(s):

Source

Pollutant(s)

P035

CO, NO_x, Non-methane
HC

RECORD(S) RETENTION AND AVAILABILITY

All records required by this Permit to Install shall be retained on file for a period of not less than three years unless otherwise indicated by Ohio Environmental Protection Agency. All records shall be made available to the Director, or any representative of the Director, for review during normal business hours.

REPORTING REQUIREMENTS

Unless otherwise specified, reports required by the Permit to Install need only be submitted to OEPA Northwest District Office - DAPC, 347 North Dunbridge Road, Bowling Green, Ohio 43402.

WASTE DISPOSAL

The owner/operator shall comply with any applicable state and federal requirements governing the storage, treatment, transport and disposal of any waste material generated by the operation of the sources.

MAINTENANCE OF EQUIPMENT

This source and its associated air pollution control system(s) shall be maintained regularly in accordance with good engineering practices and the recommendations of the respective manufacturers in order to minimize air contaminant emissions.

MALFUNCTION/ABATEMENT

In accordance with OAC RULE 3745-15-06, any malfunction of the source(s) or associated air pollution control system(s) shall be reported immediately to the **Ohio EPA, Northwest District Office - DAPC, 347 North Dunbridge Road, Bowling Green, Ohio 43402.**

Except as provided by OAC Rule 3745-15-06(A)(3), scheduled maintenance of air pollution control equipment that requires the shutdown or bypassing of air pollution control system(s) must be accompanied by the shutdown of the associated air pollution sources.

AIR POLLUTION NUISANCES PROHIBITED

The air contaminant source(s) identified in this permit may not cause a public nuisance in violation of OAC Rule 3745-15-07.

NINETY DAY OPERATING PERIOD

The facility will be permitted to operate during a 90-day period in accordance with OAC Rule 3745-35-02(C)(4)(b). The purpose of this period of operation is to fulfill the performance tests conditions used in the determination of compliance with the provisions of this Permit to Install or other applicable Ohio EPA rules.

CONSTRUCTION COMPLIANCE CERTIFICATION

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

ADDITIONAL SPECIAL TERMS AND CONDITIONS

1. Introduction

This Permit to Install (PTI) is a modification to emissions units P014 (acrylo recovery section w/flare), P019 (HCN column w/overheads to thermal oxidizers), P037 (acrylo purification section w/flare & T.O.), and P035 (acrylonitrile reactors/quench columns/absorber w/absorber off-gas incinerator). This modifications permits construction which will increase the operating rates for the above mentioned emissions units. The increase in operating rates will only result in an increase in nitrogen oxides (NO_x), particulate matter (PM), and sulfur dioxide (SO₂) emissions from emissions unit P035. No increase in emissions will be experienced by modified emissions units P014, P019, and P037. A PTI modification is required for emissions units P014, P019, and P037 since the modification is considered to be "reconstruction" (as defined in 40 CFR 60.15) and 40 CFR 60 Subparts NNN and VV will be applicable to these emissions units.

Emissions units P014, P019, and P037 are all located in the acrylonitrile plant #2 recovery & purification section and will be consolidated under one emissions unit (P075) permit as requested by the company due to their common location, service, control devices, and emission limitations. Emissions units P014, P019, and P037 are all connected to a common header which vents to the acrylonitrile process flare. The modification of the acrylonitrile plant #2 recovery & purification section includes the installation of a water scrubber which will capture products (acrylonitrile, acetonitrile, and hydrogen cyanide) in the flare header line for recovery and eventual sale. The water scrubber is designed for a removal efficiency of greater than 98% which will result in a net decrease in emissions from the consolidated emissions units despite an increase in operating rates.

This PTI modification also increases NO_x, PM, and SO₂ emission limitations for emissions unit P035 due to an increase in operating rates. PM and SO₂ limitations are also being modified to amend previous permit limitations. Emissions unit P035 was involved in a recent stack testing program which demonstrated that previous emission limits established in PTI #03-3033 were lower than actual emission levels. Current actual emissions are consistent with "Best Available Technology" (BAT) since the permittee is achieving a 98% emissions reduction of VOC in accordance with Ohio Administrative Code (OAC) 3745-21-09 (EE).

A review of previous permit determinations revealed that limitations on emissions unit P035 were based on erroneous information and assumptions as submitted in the original application for PTI #03-3033. This permit modification will amend the previous emission limitations by increasing the allowable emission rate for PM and SO₂.

This PTI will also include in the permit, for emissions unit P035, all the requirements of 40 CFR 60 (NSPS) Subpart Db, Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units. Emissions unit P035 was previously eligible for the NO_x emission limitation exemption provided in 40 CFR 60.44b (e) which states that the natural gas usage for the incinerator shall be limited to an annual capacity factor of 10% as defined in 40 CFR 60.41b. The annual capacity factor for natural gas usage now exceeds 10% and the facility is applicable to 40 CFR 60.44b (f) which required compliance with 0.10 lb NO_x/MMBTU heat input for fuel combustion.

The permittee will demonstrate compliance with the 0.10 lb NO_x/MMBTU heat input limitation by the installation of NO_x continuous emission monitors (CEMs) on both the inlet (accounts for NO_x in inlet stream which is not due to natural gas combustion) and the outlet streams of the incinerator. CEMs data and information on natural gas usage and hydrocarbon content in the inlet stream will be used to determine the NO_x emissions from fuel combustion.

The modification to emissions unit P035 will result in an increase in emissions beyond the current permitted level for NO_x, PM, and SO₂. A net emissions change (baseline actual emissions vs. new permit allowable limits) as defined in 40 CFR 52.21 (PSD) will be experienced for non-methane hydrocarbons (NMHC), carbon monoxide (CO) and NO_x. The permittee has requested a synthetic minor permit which will limit the tons per year for NMHC and CO below significance levels. The permittee will utilize continuous emission monitors for NMHC and CO to demonstrate compliance with the long term tons per year limitations. The permittee has available NO_x emissions credits and will use a portion of them to net-out of PSD permitting requirements.

The increase in the PM emission limit does not exceed PSD significance levels. All PM emissions consist

of particulate matter < 10 microns in size (PM₁₀). PM emission limits in PTI #03-3033 should have originally been established at >15 tons per year in 1987. New emissions of PM/PM₁₀ consist of an increase of approximately 11 tons per year which is below PSD significance levels for PM and PM₁₀. The 15 tons per year of PM/PM₁₀ would not have exceeded PSD significance levels in 1987 since the PM level was 25 tons and a PM₁₀ level had not been established at that time.

2. Applicable Emission Limitations and/or control Requirements

A. Acrylonitrile Plant #2 Recovery & Purification Section (P075) will be subject to the following emission limitations:

Particulate Matter	-	2.0	lbs/hr,	8.8	tons/yr
Carbon Monoxide	-	6.0	lbs/hr,	26.3	tons/yr
Nitrogen Oxides	-	2.0	lbs/hr,	8.8	tons/yr
Sulfur Dioxide	-	2.0	lbs/hr,	8.9	tons/yr
Non-Methane HC (As Carbon)	-	5.0	lbs/hr,	21.9	tons/yr

B. Acrylonitrile Plant #2 Recovery & Purification Section (P075) Control Requirements

1. Emissions from the acrylonitrile plant #2 recovery and purification section shall be controlled by use of a closed process vent system.
2. The permittee shall control process vent emissions with a combination of a vent scrubber, flare or thermal oxidizer. The control equipment shall meet the conditions specified in OAC 3745-21-09 (DD) (10), 40 CFR 60 Subpart NNN, and 40 CFR 63 Subpart G:

a. Process Vent Control Requirements

The closed vent system stream will be required to meet at least one of the following criteria at all times:

- i. maintain a TRE index value greater than 1.0 without the use of VOC control devices as specified in 40 CFR 60 Subpart NNN; or
- ii. control closed vent system emissions with a flare; or
- iii. reduce closed vent system emissions of Total Organic Compounds (TOC) less methane and ethane by 98% or to a concentration less than 20 ppmv, on a dry basis corrected to 3% oxygen.

- C. Acrylonitrile Plant #2 Reactor & Absorption Section (P035, including absorber off-gas incinerator) will be subject to the following emission limitations:

Particulate Matter	6.0 lbs/hr,	26.3	tons/yr
Carbon Monoxide	5736 lbs/ rolling 24 hr, period	978.0	tons/yr
Nitrogen Oxides	6614 lbs/ rolling 24 hr, period	1,207.1	tons/yr
Sulfur Dioxide	2.5 lbs/hr,	11.0	tons/yr
Non-Methane HC (as Carbon)	130.8 lbs/hr	573.0	tons/yr

- D. The emissions of carbon monoxide from emissions unit P035 shall not exceed 978.0 tons per year, based upon a rolling, 365-day summation of the daily emissions.

To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the emission levels specified in the following table:

Month	Maximum Allowable Cumulative Emissions of Carbon Monoxide (Tons)
1	81.5
1-2	163.0
1-3	244.5
1-4	326.0
1-5	407.5
1-6	489.0
1-7	570.5
1-8	652.0
1-9	733.5
1-10	815.0
1-11	896.5
1-12	978.0

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual emission limitation for carbon monoxide shall be based upon a rolling, 365-day summation of the daily emissions.

E. Acrylonitrile Plant #2 Reactor & Absorption Section (P035) Control Requirements

1. NO_x emissions from the combustion of fuel in the absorber off-gas incinerator shall be limited to 0.10 lb/MMBTU heat input.
2. Emissions from the acrylonitrile plant #2 reactor & absorption section shall be controlled by the use of a closed process vent system.
3. The process vent steam shall be vented to a combustion device (AOGI) that is designed and operated to either:
 - a. to reduce the VOC emissions vented to it with an efficiency of at least ninety-eight percent by weight; or
 - b. to emit VOC (minus methane and ethane) at a concentration less than twenty parts per million by volume (ppmv), dry basis corrected to 3% oxygen.
4. The permittee shall control process vent emissions by use of a combustion device (AOGI). The AOGI shall meet the conditions specified in OAC 3745-21-09 (DD) (10) and 40 CFR 60 Subpart III:
 - a. Process vent control requirements
 - i. The AOGI shall be designed and operated to reduce VOC (minus methane and ethane) emissions by 98 weight-percent, or to a VOC (minus methane and ethane) concentration of 20 ppmv on a dry basis corrected to 3 percent oxygen, whichever is less stringent.
 - ii. The AOGI shall be designed and operated to reduce hazardous air pollutant (HAP) emissions by 98 weight-percent, or to a HAP concentration of 20 ppmv on a dry basis corrected to 3 percent oxygen, whichever is less stringent.
 - iii. The vent stream from the absorber shall be introduced into the flame zone of the AOGI.

3. Operational Restrictions

- A. Process Vent Operational Restriction for Acrylonitrile Plant #2 Recovery & Purification Section (Emissions Unit P075)
1. The closed vent system shall be operated at all times when emission may be vented to it.

2. Vent scrubber operational restrictions

The permittee shall establish a range of operating parameters that meet the requirements of 40 CFR 63.114(e).

3. Flare Operational Restrictions [OAC Rule 3745-21-09 (DD) (10)]

- a. The flare shall be designed for and operated with no visible emissions as determined by "Method 22, 40 CFR, Part 60, Appendix A," except for periods not to exceed a total of five minutes during any 120 consecutive minutes.
- b. The flare shall be operated with either an electric arc ignition system or a pilot flame. If a pilot flame is employed, the flame shall be present at all times. If an electric arc ignition system is employed, the arcing shall pulse continually.
- c. The flare shall be steam-assisted.
- d. The net heating value of the gas being combusted in the flare, as determined by the method specified in Paragraph (P)(2) of rule 3745-21-10 of the Administrative Code, shall be 300 Btu/scf or greater.
- e. The flare shall be designed and operated with an actual exit velocity, as determined by the method specified in Paragraph (P)(3) of Rule 3745-21-10 of the Administrative Code, less than 60 feet per second.
- f. The permittee shall ensure the flare is operated and maintained in conformance with its design.

4. Thermal Oxidizer Operational Restrictions

- a. The permittee shall establish a range of operating parameters that meet the requirements of 40 CFR 63 Subpart F, G and H as determined from performance testing.

B. Process Vent and AOGI Operational Restrictions for Acrylonitrile Plant #2 Reactor & Absorption Section (Emission Unit P035).

- 1. The closed vent system shall be operated at all times when emissions may be vented to it.
- 2. The permittee shall establish a range of operating parameters for the AOGI that meet the requirements of 40 CFR 60 Subpart III, 40 CFR 63.116 (C), and 40 CFR 63.114 (e).

4. Monitoring and/or Recordkeeping Requirements

A. Monitoring Requirements for Acrylonitrile Plant #2 Recovery & Purification Section (Emissions Unit P075)

1. Vent Scrubber Monitoring Requirements

The vent scrubber shall be equipped and operated with the following monitoring devices:

- a. a flow indicator that determines at least once every 15 minutes if flow is present in the bypass of the vent scrubber [40 CFR 63.114 (d)(1)];
- b. a scrubbing liquid temperature monitoring device having an accuracy of + 1 percent of the temperature being monitored and equipped with a continuous recorder [40 CFR 60.663 (d) (2) (i)];
- c. a scrubbing liquid flow rate monitoring device with an accuracy of + 1 percent of the flow rate being monitored and equipped with a continuous recorder; and
- d. a scrubbing liquid specific gravity monitoring device having an accuracy of + 0.02 specific gravity units and equipped with a continuous recorder shall be located on the flow inlet to the scrubber [40 CFR 60.663 (d) (1) (i)].

2. Flare Monitoring Requirements

- a. The flare shall be monitored with a thermocouple or any other equivalent device to detect the presence of a pilot flame. If an electric arc ignition system is employed, the arcing shall be monitored to detect any failure [40 CFR 63.114 (a) (2)].
- b. The permittee shall monitor the flare via a closed circuit television system to minimize visible emissions at all times.
- c. The permittee shall maintain and operate a flow indicator which provides a record of the acrylonitrile plant #2 recovery and purification section vent stream flow to the flare at least once every hour. The flow indicator shall be installed in the vent stream at a point closest to the flare and before being joined with any other vent stream [40 CFR 60.663 (b) (2)].

3. Thermal Oxidizer Monitoring Requirements

- a. The permittee shall operate and monitor the thermal oxidizer control devices in accordance with the requirements of OAC 3745-21-09 (DD) (10) and 40 CFR 60 Subpart NNN. BP Chemicals, Inc. shall operate continuous temperature monitoring and recording devices for the thermal oxidizer. The continuous monitoring and recording devices shall have an accuracy of + 1 percent of the temperature being

monitored expressed in degrees Celsius or + 0.5 °C whichever is greater [40 CFR 63.114 (a) (1)].

- b. The permittee shall maintain and operate a flow indicator which provides a record of the acrylonitrile plant #2 recovery and purification section vent stream flow to the thermal oxidizer at least once every hour. The flow indicator shall be installed in the vent stream at a point closest to the thermal oxidizer and before being joined with any other vent stream [40 CFR 60.633 (a) (2)].

B. Recordkeeping Requirements for Acrylonitrile Plant #2 Recovery & Purification Section (Emissions Unit P075).

1. The permittee shall comply with the recordkeeping requirements contained in OAC 3745-21-09 (DD), 40 CFR 60 Subpart NNN, and 40 CFR 63 Subpart G.
2. The permittee shall maintain records of all periods when there is no flow rate of the closed vent stream [40 CFR 63.118 (a) (3)].
3. The following information shall be recorded for the vent scrubber, flare, and thermal oxidizer and kept in a readily accessible location [OAC Rule 3745-21-09 (DD) (14) (d)]:
 - a. detailed schematics, design specifications, and piping and instrumentation diagram;
 - b. the dates and descriptions of any changes in the design specification;
 - c. a description of the parameter or parameters monitored to ensure that the vent scrubber, flare and thermal oxidizer are operated and maintained in conformance with their design, and an explanation of the reason for selecting such parameter or parameters;
 - d. periods when the closed vent system and the vent scrubber, flare and thermal oxidizer are not operated as designed; and
 - e. dates of start-ups and shutdowns of the closed vent system, vent scrubber, flare and thermal oxidizer.
4. The permittee shall collect and record a daily log or record of operating time for the closed vent system, vent scrubber, flare and thermal oxidizer, and monitoring equipment. The information shall be maintained in the company's files for a period of five years.
5. Vent Scrubber Recordkeeping Requirements

The permittee shall maintain the following records:

- a. hourly records of when the flow indicator on the bypass of the vent scrubber was not operating [40 CFR 63.118 (a) (3)];

- b. hourly records indicating when flow was detected in the bypass of the vent scrubber [40 CFR 63.118 (a) (3)];
- c. hourly records for all periods when the vent stream is diverted from the vent scrubber or when there is no flow rate of the vent stream [40 CFR 63.118 (a) (3)];
- d. scrubber liquid temperature and all 3-hour periods when the average temperature was more than 20 degrees Fahrenheit above the average temperature during the most recent performance test [40 CFR 60.665 (g) (1) (ii)];
- e. records when the scrubber liquid specific gravity was more than 0.1 specific gravity units below or above the average value during the most recent performance test [40 CFR 60.665 (g) (1) (ii)]; and
- f. records when the scrubber liquid flow rate was more than five gallons per minute less than the average value during the most recent performance test.

6. Flare Recordkeeping Requirements

The permittee shall maintain the following records:

- a. flow rate to the flare recorded at least once every hour [40 CFR 60.665 (d)];
- b. records of all periods when the closed vent stream is diverted from the flare or when there is no flow rate [40 CFR 60.665 (d)];
- c. records of all hourly periods when the flare pilot flame is absent [40 CFR 63.118 (a) (1)]; and
- d. records of all parameters listed in 40 CFR 60.665 (B) (3).

7. Thermal Oxidizer Recordkeeping Requirements

The permittee shall maintain the following records:

- a. continuous records of flow rate to the thermal oxidizer [40 CFR 60.665 (d)];
- b. continuous records of thermal oxidizer firebox temperature [40 CFR 60.665 (b) (1) (i)];
- c. records of all periods when the closed vent stream is diverted from the incinerator [40 CFR 60.665 (d)];
- d. records of all 3-hour periods during which the average combustion temperature was more than 50 degrees Fahrenheit below the average temperature at which compliance with 40 CFR 60 Subpart NNN requirements were demonstrated during a

performance test [40 CFR 60.665 (c)(1)]; and

e. records required per 40 CFR 60.665 (b)(1)(ii).

C. Monitoring Requirements for Acrylonitrile Plant #2 Reactor & Absorption Section (Emissions Unit P035)

1. The AOGI shall be equipped and operated with the following monitoring devices:

a. the permittee shall operate continuous temperature monitoring and recording devices for the firebox of the AOGI. The continuous monitoring and recording devices shall have an accuracy of + 1 percent of the temperature being monitored expressed in degrees Celsius or + 0.5 °C, whichever is greater [40 CFR 60.613 (a)(1)];

b. a flow indicator which provides a record of the acrylonitrile plant #2 reactor and absorption section vent stream flow to the incinerator at least once every hour. The flow indicator shall be installed in the vent stream at a point closest to the incinerator and before being joined with any other vent stream [40 CFR 60.613 (a)(2)]; and

c. a flow indicator that determines at least once every fifteen minutes whether flow is present in any bypass from AOGI [40 CFR 63.114 (d)(1)].

2. Compliance Demonstration Continuous Emissions Monitoring Requirements

a. The permittee shall operate and maintain equipment to continuously monitor and record CO, , and NO_x from this emissions unit in units of the applicable standard. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13.

b. Monitoring data collected by the CO continuous monitor will be used to demonstrate compliance with the CO tons per year limitation, based on a rolling, 365-day summation of the daily emissions.

D. Recordkeeping Requirements for Acrylonitrile Plant #2 Reactor & Absorption Section (Emissions Unit PO35)

1. The permittee shall maintain recordkeeping for the AOGI which complies with the requirements contained in OAC Rule 3745-21-09 (DD)(14)(d) and 40 CFR 60 Subpart III.

2. The following information shall be recorded and kept in a readily accessible location [OAC rule 3745-21-09 (DD)(14)(d)]:

a. detailed schematics, design specifications, and piping and instrumentation diagrams;

b. the dates and descriptions of any changes in the design specification;

- c. a description of the parameter or parameters monitored to ensure that the AOGI is operated and maintained in conformance with its design, and an explanation of the reason for selecting such parameter or parameters;
 - d. periods when the closed vent system and AOGI are not operated as designed; and
 - e. dates of start-ups and shutdowns of the closed vent system and AOGI.
 3. The permittee shall maintain continuous records of:
 - a. flowrate to the AOGI [40 CFR 60.615(d)]; and
 - b. AOGI Firebox temperature [40 CFR 60.615 (b)(1)].
 4. The permittee shall maintain the following records:
 - a. hourly records of whether the flow indicator on the bypass of the AOGI was operating [40 CFR 60.615(d)]; and
 - a. hourly records of all periods when the vent stream is diverted from the AOGI or when there is no flow rate to the AOGI [40 CFR 60.615(d)].
 5. In addition to the requirements of OAC Rule 3745-21-09(DD)(14)(d) and 40 CFR 60 Subpart III, the permittee shall collect and record the following information each day and maintain the information at the facility for a period of five years.
 - a. a log or record of operating time for the closed vent system, thermal oxidizer, and monitoring equipment; and
 - b. all three-hour periods of operating during which the average combustion temperature for the incinerator was greater than 50° Fahrenheit below the average combustion temperature established during the most recent stack test [40 CFR 60.615(c)(1)].
 6. The permittee shall maintain records of all data obtained by the continuous CO and NOx monitoring systems including, but not limited to parts per million CO, and NOx on an instantaneous (fifteen-minutes) basis, emissions of CO, and NOx in units of the applicable standards in the appropriate averaging period (e.g., hourly, hourly rolling, 3-hour, daily, 30-day rolling, etc.), results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.
- E. **Process Vent Equipment Leak Monitoring and Recordkeeping Requirements for Acrylonitrile Plant #2 Recovery & Purification Section (P075) and Reactor & Absorption Section (P035)**
 1. The permittee shall include equipment associated with Acrylonitrile Plant #2 Recovery & Purification Section (P075) and Reactor & Absorption Section (P035) in the current site fugitive leak detection and repair (LDAR) program. The LDAR program shall be in

accordance with the provisions of Ohio Administrative Code (OAC) Rule 3745-21-09 (DD) Leaks from process units that produce organic chemicals, 40 CFR 60 Subpart VV (Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry), and 40 CFR 63 Subpart H (National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks).

5. Reporting Requirements

A. Reporting Requirements for Acrylonitrile Plant #2 Recovery and Purification Section (Emissions Unit PO75)

1. The permittee shall comply with the reporting requirements contained in OAC 3745-21-09, 40 CFR 60 Subpart NNN, and 40 CFR 63 Subpart G.
2. The permittee shall submit the following reports on a quarterly basis:
 - a. exceedances of all monitored parameters;
 - b. a log of the operating time for the closed vent system, vent scrubber, flare, and thermal oxidizer;
 - c. periods of time when the closed vent system stream is diverted from system control devices;
 - d. all periods of time when the vent scrubber, flare, and/or thermal oxidizer was not operational;
 - e. all periods of time when required monitoring data was not collected;
 - f. all three-hour periods of operating during which the average combustion temperature in the thermal oxidizer was greater than 50 degrees Fahrenheit below the average combustion temperature established during the most recent stack test; and
 - g. all periods of time during which the pilot flame on the flare is not functioning properly.
3. The permittee shall submit quarterly reports by January 31, April 30, July 31, and October 31 of each year and shall cover the records for the previous calendar quarters.

B. Reporting Requirements for Acrylonitrile Plant #2 Reactor & Absorption Section (Emissions Unit P035)

1. Reporting requirements for the AOGI shall comply with the requirements contained in OAC 3745-21-09, 40 CFR 60 Subpart III, and 40 CFR 63 Subpart G.
2. The permittee shall submit the following reports on a quarterly basis:

- a. exceedances of all monitored parameters;
- b. a log or record of operating time for the closed vent system, thermal oxidizer, and monitoring equipment;
- c. periods of time when the closed vent system stream is diverted from the control device;
- d. all periods of time when the AOGI was not operational; and
- e. all periods of time when required monitoring data was not collected.

The permittee shall submit quarterly summaries of these records by April 30, July 31, October 31, and January 31 of each year and shall cover the records for the previous calendar quarters.

3. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 365-day emission limitation for CO and, for the first 12 calendar months of operation following the issuance of this permit, all exceedances of the maximum allowable cumulative emission levels.
4. Pursuant to OAC rules 3745-15-04, 3745-35-02, and ORC sections 3704.03(I) and 3704.031 and 40 CFR Parts 60.7 and 60.13(h), the permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA Northwest District Office (NWDO) documenting the date, commencement and completion times, duration, magnitude, reason (if known), and corrective actions taken (if any) of all instances of CO, and NOx values in excess of any applicable limitation(s) specified in the terms and conditions of this permit, in units of the standards. These reports shall also contain the total CO and NOx emissions for the calendar quarter (in tons).

The permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA Northwest District Office documenting any continuous CO, and NOx monitoring system downtime while the emissions unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emissions

unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time period of emissions unit and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall also be included in the quarterly report.

If there are no excess emissions during the calendar quarter, the permittee shall submit a statement to that effect along with the emissions unit operating time during the reporting period and the date, time, reason, and corrective action(s) taken for each time period of emissions unit, control equipment, and/or monitoring system malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall also be included in the quarterly report. These quarterly excess emission reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the date obtained during the previous calendar quarter.

- C. Process Vent Equipment Leak Reporting Requirements for Acrylonitrile Plant #2 Recovery & Purification Section (P075) and Reactor & Absorption Section (P035)
1. Pursuant to OAC Rule 3745-21-09(DD)(2)(m) and 40 CFR 60 Subpart VV (60.487), BP Chemicals, Inc. shall submit semiannual reports to the Ohio EPA, Northwest District Office. The reporting requirements of OAC Rule 3745-21-09(DD)(2)(m) may be satisfied by the submission of copies of the semiannual reports required by 40 CFR 63.182(d)(1). The reports shall be submitted by January 24 and July 24 of each year and shall include information for the preceding semiannual period. These reports shall also include the results of the compliance tests required under OAC Rule 3745-21-09(DD)(4)(c) .

6. Testing Requirements

- A. Process Vent Control Equipment Compliance Testing Requirements for Acrylonitrile Plant #2 Recovery & Purification Section (Emissions Unit P075)
1. The permittee shall comply with the performance testing requirements of OAC Rule 3745-21-09, 40 CFR 60 Subpart NNN, and 40 CFR 63 Subpart F
 - a. Vent scrubber performance testing requirements

The permittee shall perform a compliance test to demonstrate that a TRE index value greater than 1.0 is maintained without the use of control equipment. During the performance test, operating ranges shall be established for the scrubbing liquid flowrate, temperature, and specific gravity.
 - b. Thermal oxidizer performance testing requirements

The permittee, shall perform a compliance test to demonstrate a 98 weight-percent reduction in TOC (less methane and ethane) emissions or to a TOC (less methane and ethane) concentration of 20 ppmv, on a dry basis corrected to 3 percent oxygen. The Ohio EPA will accept the results from a required RCRA Trial Burn as

completion of the required performance testing.

- B. Process Vent Control Equipment Compliance Testing Requirements for Acrylonitrile Plant #2 Reactor & Absorption Section (P035).
 - 1. The permittee, shall perform a compliance test on the AOGI which demonstrates a 98 weight-percent reduction in TOC (minus methane and ethane) emissions or to a TOC (minus methane and ethane) concentration of 20 ppmv on a dry basis corrected to 3 percent oxygen. The permittee shall also establish operating ranges for the AOGI firebox temperature and stack excess oxygen during the compliance test.
- C. Process Vent Equipment Leak Testing Requirements for Acrylonitrile Plant #2 Recovery & Purification Section (P075) and Reactor & Absorption Section (P035)
 - 1. Equipment designed for no detectable emissions shall be tested annually for compliance with OAC rule 3745-21-09 (DD)(7). The closed vent system serving these emission units shall be tested once each calendar year for compliance with OAC Rule 3745-21-09 (DD)(9)(b). In addition, the closed system shall be operated at all times when emissions may be vented to it.

7. Miscellaneous Requirements

- A. 40 CFR 60 (NSPS) Subpart Db (Standards of Performance for Industrial - Commercial - Institutional Steam Generating Units) Requirements for AOGI

The AOGI is an incinerator used to control the closed vent system stream from the Acrylonitrile Plant #2 Reactor & Absorption Section (Emission Unit P035) as required by air pollution rules and regulations. The AOGI also acts as a steam generating unit (waste heat boiler) and is therefore required to comply with the applicable portions of 40 CFR 60 Subpart Db.

- 1. Nitrogen Oxide (NO_x) Emission Standard
 - a. Emissions from the AOGI will be required to meet the NO_x standard of 0.10 lb/MMBTU heat input as required by 40 CFR 60.44b.
- 2. Compliance Demonstration and Monitoring Requirements
 - a. The permittee shall demonstrate compliance with the NO_x standard of 0.10 lb/MMBTU heat input by installing continuous emission monitors (CEMs) on the inlet and outlet streams of the AOGI. The permittee shall also monitor and record natural gas (NG) usage and reactor propylene feeds. The HC content of the AOGI inlet stream will be determined from reactor propylene feeds and reactor conversion. The above information will be applied to the following equation for calculating lbs of NO_x per MMBTU heat input.

$$\text{Lbs NO}_x = \text{NO}_x (\text{outlet} - \text{NO}_x (\text{inlet}))$$

MMBTU heat input		MMBTU heat input	
NO _x (outlet)	=	NO _x emissions rate, avg. lb/hr as measured by CEM on AOGI outlet stream	
NO _x (inlet)	=	NO _x emission rate, avg. lb/hr as measured on AOGI inlet stream	
MMBTU heat input	=	(NG usage, lb/hr) x (23,000 Btu/lb NG)/10 ⁶	+
		(Reactor propylene feed, lb/hr) x (propylene purity, %) x (1 - Reactor conversion, %) x (19,683 Btu/lb propylene) / 10 ⁶	+
		(Reactor propylene feed, lb/hr) x (1 - propylene purity, %) x (19,929 Btu/lb propane) / 10 ⁶	

- b. The permittee shall demonstrate compliance with the 0.10 lb NO_x per MMBTU limit through a 30 day rolling average of all the calculated hourly NO_x emission rates for the preceding 30 operating days.
- c. The monitoring equipment shall be installed and operated in accordance with the applicable portions of 40 CFR 60.48b.

3. Recordkeeping and Reporting Requirements

- a. The permittee shall comply with the recordkeeping and reporting requirements outlined in 40 CFR 60.49b. Reporting requirements include the submission of quarterly excess emission reports to the Ohio EPA NWDO.

4. Testing Requirements

- a. The permittee shall conduct an initial compliance test as outlined in 40 CFR 60.46b(e).

B. Continuous Emission Monitoring Certification

Prior to the installation of the continuous CO and NO_x monitoring system, the permittee shall submit information detailing the proposed locations of the sampling sites in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance specifications 2 and 4 for approval by the Ohio EPA, Central Office.

Within 60 days of the effective date of this permit, the permittee shall conduct certification tests of the continuous CO, and NO_x monitoring system pursuant to ORC section 3704.03 (I) and 40 CFR

Part 60, Appendix B, Performance Specifications 2, 4, and 8. Personnel from the Ohio EPA NWDO shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. In accordance with OAC rule 3745-15-04, all copies of the test results shall be submitted to the Ohio EPA NWDO within 30 days after the test is completed. Copies of the test results shall be sent to the Ohio EPA NWDO and the Ohio EPA, Central Office. Certification of the continuous CO, and NO_x monitoring system shall be granted upon determination by the Ohio EPA, Central Office that the system meets all requirements of ORC section 3704.03 (I) and 40 CFR Part 60, Appendix B, Performance specifications 2, 4, and 8.

C. Continuous Emissions Monitoring Quality Assurance/Quality Control Requirements

Within 180 days of the effective date of this permit, the permittee shall develop a written quality assurance/quality control plans for the continuous CO, and NO_x monitoring systems designed to ensure continuous valid and representative readings of CO, and NO_x. The plans shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plans and logbooks dedicated to the continuous CO, and NO_x monitoring systems must be kept on site and available for inspection during regular office hours.