



ENTERPRISE PRODUCTS PARTNERS L.P.  
ENTERPRISE PRODUCTS HOLDINGS LLC  
(General Partner)

ENTERPRISE PRODUCTS OPERATING LLC

June 6, 2016

Federal Express

Beverly McKeone  
West Virginia Department of Environmental Protection (DEP)  
Division of Air Quality (DAQ)  
601 57<sup>th</sup> Street, SE, Room 1173  
Charleston, WV 25304



**RE: R13 Permit Application to Allow for Propane Processing  
Dominion Interconnect - R13-3102**

Dear Ms. McKeone:

Enterprise TE Products Pipeline Company LLC (Enterprise) owns and operates the Dominion Interconnect, located in Brooke County, West Virginia to provide pipeline transportation of products to the ATEX Express Pipeline System. In July 2013, Enterprise submitted a New Source Review permit application to install a flare to combust the finite volume of ethane product that must be evacuated from pipeline components only during intermittent operations. The flare may be used as a safety device for emergency or upset conditions and is supported by two propane-fired pilot lights. The site also includes ancillary pipeline components.

Enterprise is submitting this Class II Administrative Update to allow for the maintenance flare to process propane products as well and seeks to amend the site's R13 permit in the following ways.

- > Condition 5.1.2 – allowing the flare to combust propane product
- > Condition 5.1.3 – allowing maximum daily operation of the flare when combusting propane product not to exceed 0.0625 million standard cubic feet per day (MMscf/day)
- > Condition 5.1.4 – increasing the pounds per hour (lb/hr) and tons per year (tpy) emission limits to
  - Volatile Organic Compounds (VOC) – 142.70 lb/hr and 7.14 tpy
  - Oxides of nitrogen (NO<sub>x</sub>) – 10.93 lb/hr and 0.55 tpy
  - Carbon Monoxide (CO) – 49.85 lb/hr and 2.49 tpy
- > Condition 5.2.2 – monitoring daily throughput to the flare when the site processes propane product

Enclosed are the required R13 Application Form, table of contents, attachments, and permit process fee check.

If you have any questions or comments about the information, please do not hesitate to contact Michael Church, Sr. Environmental Scientist, at (607) 535-8728 [mjchurchill@eprod.com](mailto:mjchurchill@eprod.com); or Guillermo Triana at (713)-381-8135 [gatriana@eprod.com](mailto:gatriana@eprod.com).

Sincerely,

Guillermo Triana  
Sr. Environmental Scientist

Brad Cooley  
Sr. Manager, Environmental Permitting

Enclosures



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**DIVISION OF AIR QUALITY**

601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
(304) 926-0475

[www.dep.wv.gov/daq](http://www.dep.wv.gov/daq)

**APPLICATION FOR NSR PERMIT  
AND  
TITLE V PERMIT REVISION  
(OPTIONAL)**

PLEASE CHECK ALL THAT APPLY TO NSR (45CSR13) (IF KNOWN):

- CONSTRUCTION     MODIFICATION     RELOCATION  
 CLASS I ADMINISTRATIVE UPDATE     TEMPORARY  
 CLASS II ADMINISTRATIVE UPDATE     AFTER-THE-FACT

PLEASE CHECK TYPE OF 45CSR30 (TITLE V) REVISION (IF ANY):

- ADMINISTRATIVE AMENDMENT     MINOR MODIFICATION  
 SIGNIFICANT MODIFICATION

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS ATTACHMENT S TO THIS APPLICATION

**FOR TITLE V FACILITIES ONLY:** Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

**Section I. General**

1. Name of applicant (as registered with the WV Secretary of State's Office): Enterprise TE Products Pipeline Company LLC		2. Federal Employer ID No. (FEIN): 26-0431046	
3. Name of facility (if different from above): Dominion Interconnect		4. The applicant is the: <input type="checkbox"/> OWNER <input type="checkbox"/> OPERATOR <input checked="" type="checkbox"/> BOTH	
5A. Applicant's mailing address: P.O. Box 4324 Environmental, Houston, TX 77210		5B. Facility's present physical address: None	
6. West Virginia Business Registration. Is the applicant a resident of the State of West Virginia? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO - If YES, provide a copy of the Certificate of Incorporation/Organization/Limited Partnership (one page) including any name change amendments or other Business Registration Certificate as Attachment A. - If NO, provide a copy of the Certificate of Authority/Authority of L.L.C./Registration (one page) including any name change amendments or other Business Certificate as Attachment A.			
7. If applicant is a subsidiary corporation, please provide the name of parent corporation: Not Applicable			
8. Does the applicant own, lease, have an option to buy or otherwise have control of the proposed site? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO - If YES, please explain: Enterprise has a 15-year License Agreement which states "Dominion, at its sole cost and expense, will provide Enterprise with such land and rights of way at the location as reasonably necessary for Enterprise to construct, maintain, inspect, operate, protect, replace, or move the Measurement Facility." - If NO, you are not eligible for a permit for this source.			
9. Type of plant or facility (stationary source) to be constructed, modified, relocated, administratively updated or temporarily permitted (e.g., coal preparation plant, primary crusher, etc.): The site is now seeking to process propane product at the pipeline interconnect and maintenance flare.		10. North American Industry Classification System (NAICS) code for the facility: 48691	
11A. DAQ Plant ID No. (for existing facilities only): 009-00123		11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only): Not Applicable	

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.



<p>12A.</p> <ul style="list-style-type: none"> <li>For <b>Modifications, Administrative Updates or Temporary permits</b> at an existing facility, please provide directions to the <i>present location</i> of the facility from the nearest state road;</li> <li>For <b>Construction or Relocation permits</b>, please provide directions to the <i>proposed new site location</i> from the nearest state road. Include a <b>MAP as Attachment B</b>.</li> </ul> <p>From State Hwy 2 (Main St) in Follansbee, take Hwy 27 (Allegheny St) east and travel 1.4 mi; left onto Eldersville Rd (continuation of Hwy 27) and travel 3.6 mi; left onto Mechling Rd and travel 0.1 mi; right onto unnamed road and travel 0.5 mi to site.</p>		
<p>12.B. New site address (if applicable):</p> <p>Not Applicable</p>	<p>12C. Nearest city or town:</p> <p>Follansbee</p>	<p>12D. County:</p> <p>Brooke</p>
<p>12.E. UTM Northing (KM): 4,467.17</p>	<p>12F. UTM Easting (KM): 539.66</p>	<p>12G. UTM Zone: 17</p>
<p>13. Briefly describe the proposed change(s) at the facility:</p> <p>Allow the stationary flare to handle propane when it is being evacuated from components and piping for maintenance purposes only.</p>		
<p>14A. Provide the date of anticipated installation or change: 06/01/2016</p> <ul style="list-style-type: none"> <li>If this is an <b>After-The-Fact</b> permit application, provide the date upon which the proposed change did happen: / /</li> </ul>		<p>14B. Date of anticipated Start-Up if a permit is granted:</p> <p>06/01/2016</p>
<p>14C. Provide a <b>Schedule</b> of the planned <b>Installation of/Change</b> to and <b>Start-Up</b> of each of the units proposed in this permit application as <b>Attachment C</b> (if more than one unit is involved). Not Applicable</p>		
<p>15. Provide maximum projected <b>Operating Schedule</b> of activity/activities outlined in this application:</p> <p>Hours Per Day 5 Days Per Week 1 Weeks Per Year 20</p>		
<p>16. Is demolition or physical renovation at an existing facility involved? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p>		
<p>+17. <b>Risk Management Plans.</b> If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see <a href="http://www.epa.gov/ceppo">www.epa.gov/ceppo</a>), submit your <b>Risk Management Plan (RMP)</b> to U. S. EPA Region III.</p>		
<p>18. <b>Regulatory Discussion.</b> List all Federal and State air pollution control regulations that you believe are applicable to the proposed process (<i>if known</i>). A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance (<i>if known</i>). Provide this information as <b>Attachment D</b>.</p>		
<p><b>Section II. Additional attachments and supporting documents.</b></p>		
<p>19. Include a check payable to WVDEP – Division of Air Quality with the appropriate <b>application fee</b> (per 45CSR22 and 45CSR13).</p>		
<p>20. Include a <b>Table of Contents</b> as the first page of your application package.</p>		
<p>21. Provide a <b>Plot Plan</b>, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as <b>Attachment E</b> (Refer to <b>Plot Plan Guidance</b>) .</p> <ul style="list-style-type: none"> <li>Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).</li> </ul>		
<p>22. Provide a <b>Detailed Process Flow Diagram(s)</b> showing each proposed or modified emissions unit, emission point and control device as <b>Attachment F</b>.</p>		
<p>23. Provide a <b>Process Description</b> as <b>Attachment G</b>.</p> <ul style="list-style-type: none"> <li>Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).</li> </ul>		
<p><i>All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.</i></p>		

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H**.  
– For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I**.

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J**.

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K**.

28. Check all applicable **Emissions Unit Data Sheets** listed below:

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Bulk Liquid Transfer Operations | <input type="checkbox"/> Haul Road Emissions     | <input type="checkbox"/> Quarry  |
| <input type="checkbox"/> Chemical Processes              | <input type="checkbox"/> Hot Mix Asphalt Plant   | <input type="checkbox"/> Solid Materials Sizing, Handling and Storage Facilities |
| <input type="checkbox"/> Concrete Batch Plant            | <input type="checkbox"/> Incinerator             | <input type="checkbox"/> Storage Tanks   |
| <input type="checkbox"/> Grey Iron and Steel Foundry     | <input type="checkbox"/> Indirect Heat Exchanger |  |
| <input type="checkbox"/> General Emission Unit, specify  |  |  |

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L**.

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Absorption Systems        | <input type="checkbox"/> Baghouse                   | <input checked="" type="checkbox"/> Flare      |
| <input type="checkbox"/> Adsorption Systems        | <input type="checkbox"/> Condenser                  | <input type="checkbox"/> Mechanical Collector  |
| <input type="checkbox"/> Afterburner               | <input type="checkbox"/> Electrostatic Precipitator | <input type="checkbox"/> Wet Collecting System |
| <input type="checkbox"/> Other Collectors, specify |   |  |

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M**.

30. Provide all **Supporting Emissions Calculations** as **Attachment N**, or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O**.

- Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and **Example Legal Advertisement** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33. **Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

YES       NO

- If YES, identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's **"Precautionary Notice – Claims of Confidentiality"** guidance found in the **General Instructions** as **Attachment Q**.

### Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

- |  |   |
|--|---|
| <input type="checkbox"/> Authority of Corporation or Other Business Entity | <input type="checkbox"/> Authority of Partnership         |
| <input type="checkbox"/> Authority of Governmental Agency                  | <input type="checkbox"/> Authority of Limited Partnership |

Submit completed and signed **Authority Form** as **Attachment R**.

*All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.*

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

**Certification of Truth, Accuracy, and Completeness**

I, the undersigned  **Responsible Official** /  **Authorized Representative**, hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

**Compliance Certification**

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE   
(Please use blue ink)

DATE: 6/7/16  
(Please use blue ink)

35B. Printed name of signee: Mr. Graham W. Bacon		35C. Title: Executive Vice President
35D. E-mail:	36E. Phone: (713) 381-6595	36F. FAX: (866) 226-9817
36A. Printed name of contact person (if different from above): Ms. Shiver Nolan		36B. Title: Senior Compliance Administrator
36C. E-mail:	36D. Phone: (713) 381-6595	36E. FAX: (866) 226-9817

**PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Attachment A: Business Certificate               | <input checked="" type="checkbox"/> Attachment K: Fugitive Emissions Data Summary Sheet            |
| <input checked="" type="checkbox"/> Attachment B: Map(s)                             | <input checked="" type="checkbox"/> Attachment L: Emissions Unit Data Sheet(s)                     |
| <input type="checkbox"/> Attachment C: Installation and Start Up Schedule            | <input checked="" type="checkbox"/> Attachment M: Air Pollution Control Device Sheet(s)            |
| <input checked="" type="checkbox"/> Attachment D: Regulatory Discussion              | <input checked="" type="checkbox"/> Attachment N: Supporting Emissions Calculations                |
| <input checked="" type="checkbox"/> Attachment E: Plot Plan                          | <input checked="" type="checkbox"/> Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans |
| <input checked="" type="checkbox"/> Attachment F: Detailed Process Flow Diagram(s)   | <input checked="" type="checkbox"/> Attachment P: Public Notice                                    |
| <input checked="" type="checkbox"/> Attachment G: Process Description                | <input type="checkbox"/> Attachment Q: Business Confidential Claims                                |
| <input type="checkbox"/> Attachment H: Material Safety Data Sheets (MSDS)            | <input type="checkbox"/> Attachment R: Authority Forms   |
| <input checked="" type="checkbox"/> Attachment I: Emission Units Table               | <input type="checkbox"/> Attachment S: Title V Permit Revision Information                         |
| <input checked="" type="checkbox"/> Attachment J: Emission Points Data Summary Sheet | <input checked="" type="checkbox"/> Application Fee  |

Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.

**FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:**

- Forward 1 copy of the application to the Title V Permitting Group and:
- For Title V Administrative Amendments:
  - NSR permit writer should notify Title V permit writer of draft permit,
- For Title V Minor Modifications:
  - Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,
  - NSR permit writer should notify Title V permit writer of draft permit.
- For Title V Significant Modifications processed in parallel with NSR Permit revision:
  - NSR permit writer should notify a Title V permit writer of draft permit,
  - Public notice should reference both 45CSR13 and Title V permits,
  - EPA has 45 day review period of a draft permit.

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.



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**ATTACHMENT A**

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**Current Business Certificate**

# State of West Virginia



## Certificate

*I, Natalie E. Tennant, Secretary of State of the  
State of West Virginia, hereby certify that*

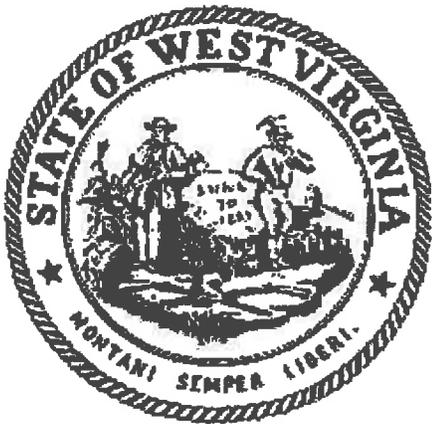
the attached true and exact copy of the Articles of Amendment to the Articles of Organization of  
**TE PRODUCTS PIPELINE COMPANY, LLC**

are filed in my office, signed and verified, as required by the provisions of West Virginia Code  
§31B-2-204 and conform to law. Therefore, I issue this

### **CERTIFICATE OF AMENDMENT TO THE CERTIFICATE OF AUTHORITY**

changing the name of the limited liability company to

**ENTERPRISE TE PRODUCTS PIPELINE COMPANY LLC**



*Given under my hand and the  
Great Seal of the State of  
West Virginia on this day of  
April 30, 2010*

*Natalie E. Tennant*

*Secretary of State*

CT

Natalie E. Tennant  
Secretary of State  
1900 Kanawha Blvd E.  
Bldg 1, Suite 157-K  
Charleston, WV 25305



Penney Barker, Manager  
Corporations Division  
Tel: (304)558-8000  
Fax: (304)558-8381  
www.wvssos.com  
Hrs: 8:30 a.m. - 5:00 p.m. ET

FILE ONE ORIGINAL  
(Two if you want a filed  
stamped copy returned to you)  
FEE: \$25.00

**WV APPLICATION FOR AMENDED  
CERTIFICATE OF AUTHORITY OF A  
LIMITED LIABILITY COMPANY**

In accordance with the provisions of the West Virginia Code, the undersigned limited liability company hereby applies for an Amended Certificate of Authority and submits the following statement:

- 1. Name under which the organization was authorized to transact business in WV: TE PRODUCTS PIPELINE COMPANY, LLC
- 2. Date Certificate of Authority was issued in West Virginia: 9/4/2007
- 3. Change of Name Information or Text of Amendment: (Attach one certified copy of the name change as filed in the home state)

Change of name from: TE PRODUCTS PIPELINE COMPANY, LLC

To: Enterprise TE Products Pipeline Company LLC

Name the organization elects to use in WV: \_\_\_\_\_  
(Due to home state name not being available)

**FILED**

APR 30 2010

Other amendment (use additional pages if necessary)

The name of the sole Manager of the Company has changed to Enterprise GP LLC.

IN THE OFFICE OF  
SECRETARY OF STATE

The address remains the same.

- 4. Contact name and number to reach in case of a problem with filing: (optional, however, listing one may help to avoid a return or rejection of filing if there is a problem with the document)

Jean Stromeyer 713-381-3969  
Contact Name Phone Number

Business e-mail address, if any: jstromeyer@eprod.com

- 5. Signature of person executing document:

*J. McElvinnott* VP, General Counsel & Asst. Sec'y. of Manager  
Signature Title/Capacity  
(Example: member, manager, etc.)



Issued by the Office of the Secretary of State

Revised 10/09

Corporations Section  
P.O.Box 13697  
Austin, Texas 78711-3697



Hope Andrade  
Secretary of State

## Office of the Secretary of State

### Certificate of Fact

The undersigned, as Secretary of State of Texas, does hereby certify that on March 25, 2010, TE Products Pipeline Company, LLC, a Domestic Limited Liability Company (LLC) (file number 800838893), changed its name to Enterprise TB Products Pipeline Company LLC.

It is further certified that the entity status in Texas is in existence.

In testimony whereof, I have hereunto signed my name officially and caused to be impressed hereon the Seal of State at my office in Austin, Texas on April 05, 2010.



A handwritten signature in cursive script, appearing to read "Hope Andrade".

Hope Andrade  
Secretary of State

Phone: (512) 463-5555  
Prepared by: Victoria Castillo

Come visit us on the internet at <http://www.sos.state.tx.us/>  
Fax: (512) 463-3709  
TID: 10267

Dial: 7-1-1 for Relay Services  
Document: 301923070002

Form 424  
(Revised 01/06)  
Return in duplicate to:  
Secretary of State  
P.O. Box 13697  
Austin, TX 78711-3697  
512 463-5555  
FAX: 512/463-5709  
Filing Fee: See instructions



Certificate of Amendment

This space reserved for office use.  
**FILED**  
In the Office of the  
Secretary of State of Texas  
MAR 25 2010  
Corporations Section

Entity Information

The name of the filing entity is:

TE Products Pipeline Company, LLC

State the name of the entity as currently shown in the records of the secretary of state. If the amendment changes the name of the entity, state the old name and not the new name.

The filing entity is a: (Select the appropriate entity type below.)

- |   |   |
|---|---|
| <input type="checkbox"/> For-profit Corporation               | <input type="checkbox"/> Professional Corporation               |
| <input type="checkbox"/> Nonprofit Corporation                | <input type="checkbox"/> Professional Limited Liability Company |
| <input type="checkbox"/> Cooperative Association              | <input type="checkbox"/> Professional Association               |
| <input checked="" type="checkbox"/> Limited Liability Company | <input type="checkbox"/> Limited Partnership                    |

The file number issued to the filing entity by the secretary of state is: 0800830193

The date of formation of the entity is: 06/30/2007

Amendments

**1. Amended Name**

(If the purpose of the certificate of amendment is to change the name of the entity, use the following statement)

The amendment changes the certificate of formation to change the article or provision that names the filing entity. The article or provision is amended to read as follows:

The name of the filing entity is: (state the new name of the entity below)

Enterprise TE Products Pipeline Company LLC

The name of the entity must contain an organizational designation or accepted abbreviation of such name, as applicable.

**2. Amended Registered Agent/Registered Office**

The amendment changes the certificate of formation to change the article or provision stating the name of the registered agent and the registered office address of the filing entity. The article or provision is amended to read as follows:

Form 424

7320180C - 12/06/2005 CT 4/2/06 0:10

RECEIVED  
MAR 25 2010  
Secretary of State

**Registered Agent**  
(Complete either A or B, but not both. Also complete C.)

A. The registered agent is an organization (cannot be entity named above) by the name of:

OR

B. The registered agent is an individual resident of the state whose name is:

First Name

MI

Last Name

Age

C. The business address of the registered agent and the registered office address is:

Street Address (No P.O. Box)

City

TX  
State

Zip Code

**3. Other Added, Altered, or Deleted Provisions**

Other changes or additions to the certificate of formation may be made in the space provided below. If the space provided is insufficient, incorporate the additional text by providing an attachment to this form. Please read the instructions to this form for further information on format.

Text Area (The attached addendum, if any, is incorporated herein by reference.)

Add each of the following provisions to the certificate of formation. The identification or reference of the added provision and the full text are as follows:

Alter each of the following provisions of the certificate of formation. The identification or reference of the altered provision and the full text of the provision as amended are as follows:

5. Manager. The limited liability company is managed by a manager, and the name and address of the manager is as follows:

Enterprise GP LLC  
1100 Louisiana Street, Suite 1000  
Houston, Texas 77002

Delete each of the provisions identified below from the certificate of formation.

**SIGNATURE/APPREVAL**

The amendments to the certificate of formation have been approved in the manner required by the Texas Business Organizations Code and by the governing documents of the entity.

12/18/04

**A.  This document becomes effective when the document is filed by the secretary of state.**

**B.  This document becomes effective at a later date, which is not more than ninety (90) days from the date of signing. The delayed effective date is: \_\_\_\_\_**

**C.  This document takes effect upon the occurrence of a future event or fact, other than the passage of time. The 90<sup>th</sup> day after the date of signing is: \_\_\_\_\_**

**The following event or fact will cause the document to take effect in the manner described below:**

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_

**The undersigned signs this document subject to the penalties imposed by law for the submission of a materially false or fraudulent instrument.**

**Date:** March 25, 2010

**By Enterpdes OP LLC, its Sole Manager**

*Richard H. Bachmann*

**Signature and title of authorized person(s) (see instructions)  
Richard H. Bachmann, Manager**

Corporations Section  
P.O.Box 13697  
Austin, Texas 78711-3697



Hope Andrade  
Secretary of State

## Office of the Secretary of State

The undersigned, as Secretary of State of Texas, does hereby certify that the attached is a true and correct copy of each document on file in this office as described below:

Enterprise TE Products Pipeline Company LLC  
Filing Number: 800838893

Certificate of Amendment

March 25, 2010

In testimony whereof, I have hereunto signed my name officially and caused to be impressed hereon the Seal of State at my office in Austin, Texas on April 05, 2010.



A handwritten signature in black ink, appearing to read "Hope Andrade".

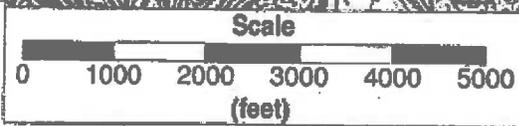
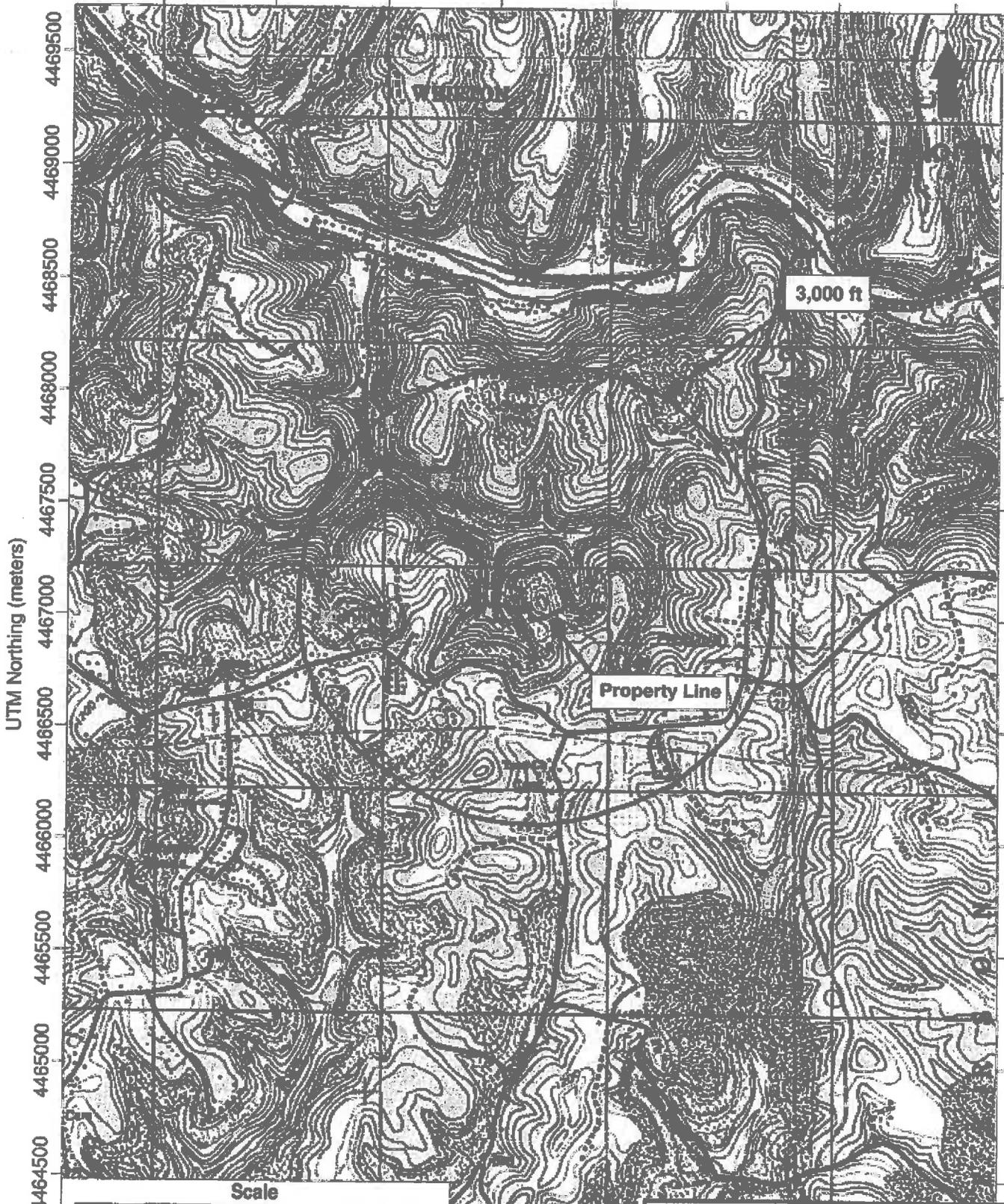
Hope Andrade  
Secretary of State

Phone: (512) 463-5555  
Prepared by: VCASTILLO

Come visit us on the Internet at <http://www.sos.state.tx.us/>  
Fax: (512) 463-5709  
TID: 10266

Dial: 7-1-1 for Relay Services  
Document: 301923070003

**Map**



Enterprise TE Products Pipeline Company LLC  
ATEX Pipeline Dominion Interconnect

Source: mytopo.com/  
Zone: 17  
Coordinate Datum: NAD 83

UTM Easting (meters)

Attachment B  
Area Map

**Installation and Start-up Schedule**

Not applicable.

## Regulatory Discussion

The requirements applicable to the proposed project at the WV Dominion Interconnect can be categorized as (1) work practice standards, and (2) monitoring, recordkeeping, and reporting requirements. The monitoring, recordkeeping, reporting, and testing plan is presented in Attachment O. To compile a list of the requirements applicable to a facility modification, it is first necessary to determine which federal and state air regulations apply to the facility as a whole, or to individual emission units. This section documents the applicability determinations for both federal and state air regulations.

This review is presented to supplement and/or add clarification to the information provided in the permit application forms, which fulfill the requirement to include citations and descriptions of applicable statutory requirements.

This section also provides non-applicability determinations for certain regulations, allowing the DAQ to confirm that identified regulations for which there may be some question of applicability are not applicable to the proposed project. Regulations that are categorically non-applicable are not discussed (e.g., NSPS Subpart J, Standards of Performance for Petroleum Refineries).

### Federal Regulations

As currently permitted, the pipeline, maintenance flare, and other ancillary components are subject to neither the federal construction and modification permit program, i.e. Prevention of Significant Deterioration (PSD, given that the Brooke County is in attainment with all National Ambient Air Quality Standards [NAAQS]), or the federal operating permit program, i.e. Title V, because the site-wide potential to emit (PTE) is less than either program's major source thresholds (MSTs) for any regulated air pollutant. Although the proposed project to process propane at the site will make the site have higher annual PTE for regulated air pollutants (see Table 1 below as well as Attachment N), the post-project site-wide PTE for all pollutants remain less than the respective PSD and Title V MSTs.

As also currently permitted, neither the site as a single stationary source or any individual piece of equipment meets the applicability criteria for any New Source performance Standard (NSPS) nor National Emissions Standard for Hazardous Air Pollutants (NESHAP). The implementation of the proposed project will not change any applicability determination, so no NSPS or NESHAP will continue to apply.

### West Virginia SIP Regulations

The proposed project is potentially subject to regulations contained in the West Virginia Code of State Regulations, Chapter 45 (45 CSR). These regulations fall under two main categories: those that are generally applicable (e.g., permit requirements), and those that have specific applicability (e.g., particulate matter [PM] standards for incinerators).

#### *45 CSR 6 - Control of Air Pollution from Combustion of Refuse*

This rule establishes emission standards for particulate matter and requirements for activities involving incineration of refuse which are not subject to, or are exempted from regulation under a federal counterpart for specific combustion sources. Given that, under 45 CSR 6.2.7, the destruction of any combustible liquid or

gaseous material by burning in a flare is considered incineration and that the flare is not subject to any unit-specific federal standard, the maintenance flare is subject to provisions of this rule. The proposed project of the flare combusting propane does not change this applicability determination. Under Permit Condition 5.1.7, the flare is already subject to the applicable 45 CSR 6 requirements and will remain subject once the flare is allowed to combust propane.

***45 CSR 13 - Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, Permission to Commence Construction, and Procedures for Evaluation***

Meeting the definition of a stationary source under 45 CSR 2.24.1, the site was constructed and operates under an R13 permit (No. R13-3102). As such, any proposal physical change in or change in the method of operation that results in an emissions increase of a regulated air pollutant must evaluate whether the proposed project would trigger a permit modification or Class II administrative update.

The provisions for a modification of a stationary under 45 CSR 13.2.17 apply to any physical change in or change in the method of operation which, among other criteria, results in an emissions increase of more than (1) six lb/hr and 10 tpy of any regulated air pollutant; (2) 144 pounds per calendar day (lb/day) of any regulated pollutant; (3) two lb/hr of aggregate HAP; or, (4) five tpy of aggregate HAP. The rule goes on to indicate that the use of an alternative fuel or raw material, provided that the source is designed to accommodate such alternative use without increasing emissions above the permit modification emission levels, does not constitute a modification of a stationary source.

Concurrently, an existing permit can undergo a Class II administrative update under 45 CSR 13.4.2.b. Such an update is limited to a change in a permit condition (or conditions) as necessary to allow changes in operating parameters, emission points, control equipment, or any other aspect of a source which results in an increase of any regulated air pollutant.

As shown in Table 1 below, the proposed change would result in a change in site-wide potential emissions.<sup>1</sup> On a one-hour basis, the proposed project would increase potential emissions of NO<sub>x</sub>, CO, and VOC. With the throughput limit of 6.25 million standard cubic feet per year (MMscf/yr) from Permit Condition 5.1.3 still in effect, the proposed project would also increase potential emissions of NO<sub>x</sub>, CO, and VOC. However, given that no pollutant has an emissions increase both of six lb/hr and 10 tpy, the project does not meet that permit modification criterion.

In terms of a calendar day, if the flare were operated continuously for 24 hours at its maximum hourly flow rate of 0.0625 MMscf/hr (i.e. 1.5 MMscf/day), then the VOC emissions increase from the proposed project would be greater than 144 lb/day. However, based on input from facility operations, the unit on an actual basis could only process up to 25 barrels (bbl) of liquid product (i.e. propane) in a single day. Since 25 bbl/day translates into 0.0078 MMscf/day, which is one-eighth of the flare's maximum hourly flow rate and nearly one-two hundredth of the flare's daily maximum, Enterprise would like to limit the potential daily throughput of propane product to 0.0625 MMscf/day. Doing so causes the site-wide potential daily emissions from processing propane to be, in fact, less than the site-wide daily PTE from processing ethane as currently permitted and means that the proposed project would not trigger a permit modification but would necessitate a Class II administrative update.

---

<sup>1</sup> Because the flare can only combust one type of product at a time (rather than, say, ethane and propane concurrently), the change in potential emissions must be compared when the site processes on propane against when it processes ethane.

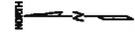
Table D.1 – Site-wide Change in Potential Emissions from Processing Propane Product

	Post-Project Product Flare	Post-Project Pilot Light	Post-Project Process Fugitives	Post-Project Site-Wide	Pre-Project Product Flare <sup>1</sup>	Pre-Project Pilot Light <sup>2</sup>	Pre-Project Process Fugitives <sup>1</sup>	Pre-Project Site-Wide	Site-Wide Emission Increase	Emission Increase Thresholds for R13 Permit Modification	Does the Project Cause an Emission Increase above the R13 Thresholds?
NO <sub>x</sub>	lb/hr	10.93	5.00E-03	10.94	6.99	5.00E-03	--	7.00	3.94	6	No
	lb/day	10.93	0.12	11.05	167.76	1.20E-01	--	167.88	-156.83	144	
	tpy	0.55	2.19E-02	0.57	0.35	2.19E-02	--	0.37	0.20	10	
CO	lb/hr	49.85	4.20E-03	49.85	38.08	4.20E-03	--	38.08	11.77	6	No
	lb/day	49.85	0.10	49.95	913.92	1.01E-01	--	914.02	-864.07	144	
	tpy	2.49	1.84E-02	2.51	1.90	1.84E-02	--	1.92	0.59	10	
PM <sub>10</sub> /PM <sub>2.5</sub>	lb/hr	--	--	--	--	--	--	--	--	6	No
	lb/day	--	--	--	--	--	--	--	--	144	
	tpy	--	--	--	--	--	--	--	--	10	
SO <sub>2</sub>	lb/hr	--	3.00E-05	3.00E-05	0.32	3.00E-05	--	0.32	-0.32	6	No
	lb/day	--	7.20E-04	7.20E-04	7.68	7.20E-04	--	7.68	-7.68	144	
	tpy	--	1.31E-04	1.31E-04	0.02	1.31E-04	--	0.02	-0.02	10	
VOC	lb/hr	142.70	2.75E-04	0.03	7.96	2.75E-04	0.03	7.99	134.74	6	No
	lb/day	142.70	6.60E-03	0.67	191.04	6.60E-03	0.67	191.72	-48.34	144	
	tpy	7.14	1.20E-03	0.12	0.40	1.20E-03	0.12	0.52	6.74	10	
Total HAPs	lb/hr	--	9.44E-05	--	--	9.44E-05	--	9.44E-05	--	2	No
	tpy	--	4.14E-04	--	--	4.14E-04	--	4.14E-04	--	5	

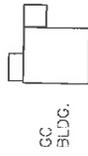
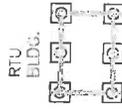
<sup>1</sup> Values match those as appeared in the site's July 2, 2013 initial R13 permit application.

<sup>2</sup> Although pilot light emissions were not included in the site's July 2, 2013 initial R13 permit application, these emissions are identical to the pro-project emissions profile given that the pilot light's operation are unaffected by the maintenance flare processing propane.

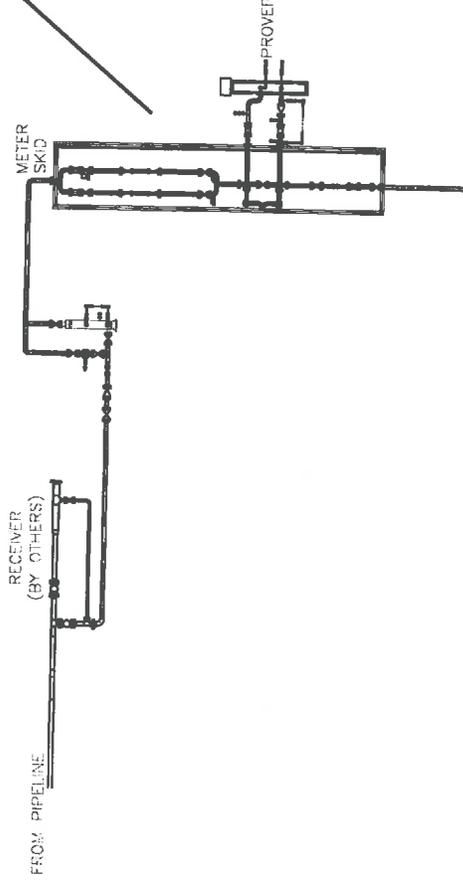
**Plot Plan**



FLARE STACK



DOMINION PIPELINE



PRELIMINARY FOR REFERENCE ONLY 28-JUN-2013

WILBROS ENGINEERING WILLBROS.COM 2013

ENTERPRISE PRODUCTS

PLOT PLAN DOMINION METER STATION

NO.	REVISION	ISSUED FOR	DATE	BY	CHKD BY	DATE	PROJECT #
1	ISSUED FOR REVISION ONLY	28-JUN-2013	28-JUN-2013	GREG HANEIKO		28-JUN-2013	AFE P19573

P:\Projects\52167 - ATEX P62\CA - CADD\Facilities\DOMINION\DRAWINGS\MECHANICAL\40191-PIPE-0001.dwg, 7/1/2013 9:09:20 AM

**Detailed Process Flow Diagram**

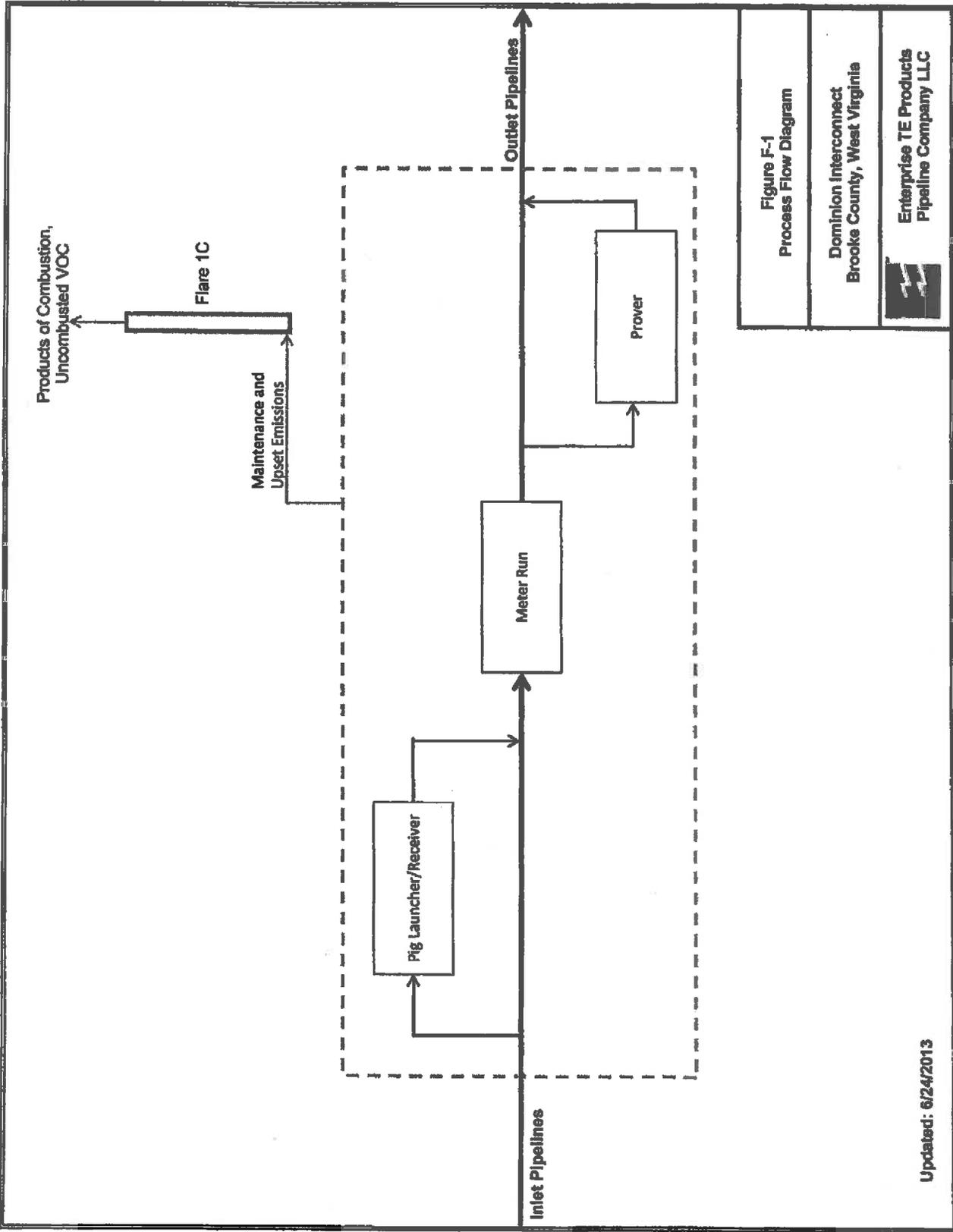


Figure F-1  
Process Flow Diagram

Dominion Interconnect  
Brooke County, West Virginia

Enterprise TE Products  
Pipeline Company LLC

Updated: 6/24/2013

## Process Description

Enterprise TE Products Pipeline Company LLC (Enterprise) owns and operates a permanent flare for ethane products that must be evacuated from components and piping for maintenance purposes only. In addition, the flare may be used as a safety device for emergency or upset conditions. The product flare is also supported by two propane-fired pilot lights and by ancillary pipeline components. The flare is located at the Brooke County, West Virginia Dominion Interconnect, which is used to provide pipeline transportation of products to the ATEX Express Pipeline System. In addition to ethane products, Enterprise is proposing that the flare handle propane products.

The pipeline and all associated components are a closed system carrying valuable ethane and (in the near future) propane products, and the company has a strong financial incentive to purge lines to the flare only as necessary during limited maintenance activities, including the following.

1. Meter Proving at Enterprise sites does not require any flaring during normal proving operations. The only time flaring is necessary is during maintenance on the prover which may occur once every three years. Flaring associated with meter proving maintenance may last approximately 1-2 hours per event (or less).
2. Meter Run Maintenance is only conducted on an as-needed basis to repair or replace equipment on the meter run including valves, flanges, gaskets, etc. Flaring associated with meter run maintenance may last approximately 1-3 hours per event (or less).
3. Pig Launcher (also known as a pig barrel) Purging is only required when pipeline pigging operations are necessary. This could include pipeline cleaning operations, integrity testing, etc. At a minimum, the company is required to conduct integrity testing of the pipeline once every five years which requires launch or receiving at integrity testing tool. Pipeline cleaning operations are performed only on an as-needed basis. The material in the pipeline is clean, liquid ethane or (in the near future) propane that will not deposit residues that should require frequent cleaning. Flaring associated with the purging of a pig launcher may last approximately 1-2 hours per event (or less).
4. Pipeline Purging activities are only required during maintenance or upset events on the pipeline. The duration of flaring associated with the pipeline purging would be performed with a larger, portable flare and not the small, existing, stationary flare due to the amount of time it would take.

**Material Safety Data Sheet**

Not applicable

**Emission Unit Table**



**Emission Points Data Summary Sheet**

**Attachment J  
EMISSION POINTS DATA SUMMARY SHEET**

**Table 1: Emissions Data**

Emission Point ID No. (Must match Emission Units Table & Plot Plan)	Emission Point Type <sup>1</sup>	Emission Unit Vented Through This Point (Must match Emission Units Table & Plot Plan)		Air Pollution Control Device (Must match Emission Units Table & Plot Plan)		Vent Time for Emission Unit (chemical processes only)		All Regulated Pollutants - Chemical Name/CAS <sup>3</sup> (Speciate VOCs & HAPS)	Maximum Potential Uncontrolled Emissions <sup>4</sup>		Maximum Potential Controlled Emissions <sup>5</sup>		Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor)	Est. Method Used <sup>6</sup>	Emission Concentration <sup>7</sup> (ppmv or mg/m <sup>3</sup> )
		ID No.	Source	ID No.	Device Type	Short Term <sup>2</sup>	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
F1	Upward vertical stack	F1	Flare	1C	Flare	Not Applicable	Not Applicable	NOx CO VOC (Propane)	10.93 49.85 7,135	0.55 2.49 356.8	10.93 49.85 142.7	0.55 2.49 7.14	Gas/Vapor Gas/Vapor Gas/Vapor	O-AP-42 O-AP-42 MB	

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

- Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.
- Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (i.e., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).
- List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS<sub>2</sub>, VOCs, H<sub>2</sub>S, Inorganics, Lead, Organics, O<sub>3</sub>, NO, NO<sub>2</sub>, SO<sub>2</sub>, SO<sub>3</sub>, all applicable Greenhouse Gases (including CO<sub>2</sub> and methane), etc. DO NOT LIST H<sub>2</sub>, H<sub>2</sub>O, N<sub>2</sub>, O<sub>2</sub>, and Noble Gases.
- Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).
- Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m<sup>3</sup>) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO<sub>2</sub>, use units of ppmv (See 45CSR10).



**Fugitive Emissions Data Summary Sheet**

## Attachment K

### FUGITIVE EMISSIONS DATA SUMMARY SHEET

The FUGITIVE EMISSIONS SUMMARY SHEET provides a summation of fugitive emissions. Fugitive emissions are those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening. Note that uncaptured process emissions are not typically considered to be fugitive, and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET.

Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions).

APPLICATION FORMS CHECKLIST - FUGITIVE EMISSIONS
<p>1.) Will there be haul road activities?</p> <p><input type="checkbox"/> Yes      <input checked="" type="checkbox"/> No</p> <p><input type="checkbox"/> If YES, then complete the HAUL ROAD EMISSIONS UNIT DATA SHEET.</p>
<p>2.) Will there be Storage Piles?</p> <p><input type="checkbox"/> Yes      <input checked="" type="checkbox"/> No</p> <p><input type="checkbox"/> If YES, complete Table 1 of the NONMETALLIC MINERALS PROCESSING EMISSIONS UNIT DATA SHEET.</p>
<p>3.) Will there be Liquid Loading/Unloading Operations?</p> <p><input type="checkbox"/> Yes      <input checked="" type="checkbox"/> No</p> <p><input type="checkbox"/> If YES, complete the BULK LIQUID TRANSFER OPERATIONS EMISSIONS UNIT DATA SHEET.</p>
<p>4.) Will there be emissions of air pollutants from Wastewater Treatment Evaporation?</p> <p><input type="checkbox"/> Yes      <input checked="" type="checkbox"/> No</p> <p><input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.</p>
<p>5.) Will there be Equipment Leaks (e.g. leaks from pumps, compressors, in-line process valves, pressure relief devices, open-ended valves, sampling connections, flanges, agitators, cooling towers, etc.)?</p> <p><input checked="" type="checkbox"/> Yes      <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> If YES, complete the LEAK SOURCE DATA SHEET section of the CHEMICAL PROCESSES EMISSIONS UNIT DATA SHEET.</p>
<p>6.) Will there be General Clean-up VOC Operations?</p> <p><input type="checkbox"/> Yes      <input checked="" type="checkbox"/> No</p> <p><input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.</p>
<p>7.) Will there be any other activities that generate fugitive emissions?</p> <p><input type="checkbox"/> Yes      <input checked="" type="checkbox"/> No</p> <p><input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET or the most appropriate form.</p>
<p>If you answered "NO" to all of the items above, it is not necessary to complete the following table, "Fugitive Emissions Summary."</p>

FUGITIVE EMISSIONS SUMMARY	All Regulated Pollutants - Chemical Name/CAS <sup>1</sup>	Maximum Potential Uncontrolled Emissions <sup>2</sup>		Maximum Potential Controlled Emissions <sup>3</sup>		Est. Method Used <sup>4</sup>
		lb/hr	ton/yr	lb/hr	ton/yr	
Haul Road/Road Dust Emissions Paved Haul Roads						
Unpaved Haul Roads						
Storage Pile Emissions						
Loading/Unloading Operations						
Wastewater Treatment Evaporation & Operations						
Equipment Leaks	Propane	0.028	0.12	0.028	0.12	O - EPA EF's
General Clean-up VOC Emissions						
Other						

<sup>1</sup> List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS<sub>2</sub>, VOCs, H<sub>2</sub>S, Inorganics, Lead, Organics, O<sub>3</sub>, NO, NO<sub>2</sub>, SO<sub>2</sub>, SO<sub>3</sub>, all applicable Greenhouse Gases (including CO<sub>2</sub> and methane), etc. DO NOT LIST H<sub>2</sub>, H<sub>2</sub>O, N<sub>2</sub>, O<sub>2</sub>, and Noble Gases.

<sup>2</sup> Give rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

<sup>3</sup> Give rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

<sup>4</sup> Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

**Emission Unit Data Sheet**

**Attachment L  
EMISSIONS UNIT DATA SHEET  
CHEMICAL PROCESS**

For chemical processes please fill out this sheet and all supplementary forms (see below) that apply. Please check all supplementary forms that have been completed.

- Emergency Vent Summary Sheet*
- Leak Sources Data Sheet*
- Toxicology Data Sheet*
- Reactor Data Sheet*
- Distillation Column Data Sheet*

1. Chemical process area name and equipment ID number (as shown in *Equipment List Form*)

2. Standard Industrial Classification Codes (SICs) for process(es)

3. List raw materials and  attach MSDSs

4. List Products and Maximum Production and  attach MSDSs

Description and CAS Number	Maximum Hourly (lb/hr)	Maximum Annual (ton/year)

5. Complete the *Emergency Vent Summary Sheet* for all emergency relief devices.

6. Complete the *Leak Source Data Sheet* and describe below or attach to application the leak detection or maintenance program to minimize fugitive emissions. Include detection instruments, calibration gases or methods, planned inspection frequency, and record-keeping, and similar pertinent information. If subject to a rule requirement (e.g. 40CFR60, Subpart VV), please list those here.

7. Clearly describe below or attach to application Accident Procedures to be followed in the event of an accidental spill or release.

**LEAK SOURCE DATA SHEET**

Source Category	Pollutant	Number of Source Components <sup>1</sup>	Number of Components Monitored by Frequency <sup>2</sup>	Average Time to Repair (days) <sup>3</sup>	Estimated Annual Emission Rate (lb/yr) <sup>4</sup>
Pumps <sup>5</sup>	light liquid VOC <sup>6,7</sup>	--	--	--	--
	heavy liquid VOC <sup>8</sup>	--	--	--	--
	Non-VOC <sup>9</sup>	--	--	--	--
Valves <sup>10</sup>	Gas VOC	--	--	--	--
	Light Liquid VOC	168	168	Not Available	140 lb of VOC / yr
	Heavy Liquid VOC	--	--	--	--
Safety Relief Valves <sup>11</sup>	Non-VOC	--	--	--	--
	Gas VOC	--	--	--	--
	Non VOC	--	--	--	--
Open-ended Lines <sup>12</sup>	VOC	--	--	--	--
	Non-VOC	--	--	--	--
	VOC	--	--	--	--
Sampling Connections <sup>13</sup>	Non-VOC	--	--	--	--
	VOC	--	--	--	--
	Non-VOC	--	--	--	--
Compressors	VOC	--	--	--	--
	Non-VOC	--	--	--	--
	VOC	--	--	--	--
Flanges	VOC	558	558	Not Available	86 lb of VOC / yr
	Non-VOC	--	--	--	--
	VOC	8	8	Not Available	20 lb of VOC / yr
Other	Non-VOC	--	--	--	--
	VOC	--	--	--	--

1 - 13 See notes on the following page.

**Air Pollution Control Device Sheet**



**Steam Injection**

20. Will steam injection be used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	21. Steam pressure Minimum Expected: Design Maximum:	PSIG
22. Total Steam flow rate: LB/hr	23. Temperature:	°F
24. Velocity ft/sec	25. Number of jet streams	
26. Diameter of steam jets: in	27. Design basis for steam injected: LB steam/LB hydrocarbon	
28. How will steam flow be controlled if steam injection is used?		

**Characteristics of the Waste Gas Stream to be Burned**

29.	Name	Quantity Grains of H <sub>2</sub> S/100 ft <sup>3</sup>	Quantity (LB/hr, ft <sup>3</sup> /hr, etc)	Source of Material
	Propane	0	62,520 scf/hr	Pipeline Product
30. Estimate total combustible to flare: 62,520 scf/hr LB/hr or ACF/hr (Maximum mass flow rate of waste gas) 1,042 scfm				
31. Estimated total flow rate to flare including materials to be burned, carrier gases, auxiliary fuel, etc.: 62,520 scf/hr LB/hr or ACF/hr				
32. Give composition of carrier gases: NA				
33. Temperature of emission stream: 116 °F Heating value of emission stream: 2,572 (HHV) BTU/ft <sup>3</sup> Mean molecular weight of emission stream: MW = 44 lb/lb-mole			34. Identify and describe all auxiliary fuels to be burned. BTU/scf BTU/scf BTU/scf BTU/scf	
35. Temperature of flare gas: 116 °F			36. Flare gas flow rate: 1,042 scf/min	
37. Flare gas heat content: 2,572 (HHV) BTU/ft <sup>3</sup>			38. Flare gas exit velocity: 2,977 scf/min	
39. Maximum rate during emergency for one major piece of equipment or process unit: 1,042 scf/min				
40. Maximum rate during emergency for one major piece of equipment or process unit: 3MMBtu/min(HHV)				
41. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification): Not Applicable				
42. Describe the collection material disposal system: Purging of pipeline and related components during maintenance operations.				
43. Have you included <b>Flare Control Device</b> in the Emissions Points Data Summary Sheet? Yes				

<p><b>44. Proposed Monitoring, Recordkeeping, Reporting, and Testing</b>  Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.</p>	
<p><b>MONITORING:</b>  See attached - consistent with the conditions in the flare's existing R13 permit.</p>	<p><b>RECORDKEEPING:</b>  See attached - consistent with the conditions in the flare's existing R13 permit.</p>
<p><b>REPORTING:</b>  See attached - consistent with the conditions in the flare's existing R13 permit.</p>	<p><b>TESTING:</b>  See attached - consistent with the conditions in the flare's existing R13 permit.</p>
<p><b>MONITORING:</b>  <b>RECORDKEEPING:</b>  <b>REPORTING:</b>  <b>TESTING:</b></p>	<p>Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.  Please describe the proposed recordkeeping that will accompany the monitoring.  Please describe any proposed emissions testing for this process equipment on air pollution control device.  Please describe any proposed emissions testing for this process equipment on air pollution control device.</p>
<p><b>45. Manufacturer's Guaranteed Capture Efficiency for each air pollutant.</b>  Not available</p>	
<p><b>46. Manufacturer's Guaranteed Control Efficiency for each air pollutant.</b>  Not available</p>	
<p><b>47. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.</b>  See attached IOM manual.</p>	

# **Series AFDS-3D Flare Tips, with Series HSLF Pilots, and HEIC Control Rack**

## **Installation, Operation and Maintenance Manual**

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## **1 INTRODUCTION**

This manual covers the component description, installation, operation and maintenance of Series AF flare tips, flare stacks and accessories. The equipment in this manual includes:

### **AFDS-3D-20 Flare System**

- Zeeco Model AF-16/30 Air-Assisted Flare Tip with Velocity Seal
- Quantity of one (1) Zeeco Model HSLF-Z-DT/C pilot assembly
- HEIC-1-T/S Ignition Rack Assembly
- The flare stack is designed as a shell inside a shell system that is the 16 inch flare gas riser is located inside and supported by the larger air riser. The air and gas streams are separated until proper mixing occurs at the exit of the flare tip.
- Utility piping for pilot fuel as well as conduit for thermocouple.



## **2 EQUIPMENT DESCRIPTION**

### **2.1 Series AF Air-Assist Flare Tip**

#### **2.1.1 Description**

The Zeeco Series AF Flare Tip is an air-assisted flare designed to dispose of a low-pressure hydrocarbon gas stream during normal or emergency plant operations. The assist air provides smokeless flaring up to the specified smokeless flaring rate as defined in the Customer Process Data Sheets Appendix in Section 9 of this manual.

The Zeeco Series AF Flare Tip incorporates a proprietary design that splits the waste gas stream into several smaller streams at the top of the flare to increase the gas / air contact surface area and promote better mixing. This key design feature maximizes the waste gas / assist air mixing while minimizing the amount of forced air required and resultant blower horsepower. Forced air from the blowers and gas from the flare header are routed separately from the base of the flare stack to the top of the flare. At no point do the air and gas mix prior to leaving the flare tip, ensuring the safety of the system. In addition, with this design concept, any Zeeco Series AF air-assisted flare can operate without the blowers being on and provide for safe disposal of the waste gases in the event of a power outage. The Series AF flare tip produces a superior quality flame, which stays erect during all atmospheric and flow conditions.

Flame lying on the exterior of the flare and burnback inside the flare tip are virtually eliminated by the forced air from the blowers, which create a strong upward velocity, making the impact from the wind minimal in shaping or moving the flame. The forced air also shortens the flame length and reduces radiation at grade by ensuring a well aerated mixture at the exit of the flare tip. The series AF also features an integral Velocity Seal for purge gas reduction.

#### **2.1.2 Features and Nomenclature**

The Zeeco Series AF Flare Tip is customized to meet the unique requirements of the combustion system in which it is utilized.

A summary of the model nomenclature is provided below. Please refer to the job specific drawings and documents for the applicable configuration and model designation. The Zeeco Series AF Model Designations are as follows:

**Model AF – Standard design air-assisted operation.**

**Model AFDS – “Spider” type tip with air-assist.**

**Model AFIT – Internal air-assist tubes.**



**Model AFTA – Triangular air-assist arms.**

**Model AFW – Integral air tip windshield.**

The provided Zeeco Model AFDS Flare Tip includes the following features:

- Air-assisted operation

### **2.1.3 Systems Options**

A summary of the most common options is provided below. Please refer to the job specific drawings and documents for the applicable configuration. Common options for the Zeeco Series AF Flare Tip include:

- Burnback thermocouple for detection of internal burning
- Optical monitors for smoke monitoring
- Equipment and design for protection against lightning

## **2.2 Series HSLF Flare Pilot**

### **2.2.1 Description**

The HSLF flare pilot is designed for the safe and reliable ignition of flare gases or liquids exiting a flare tip. This versatile pilot design can be used with the complete line of Zeeco flare tips as well as with those of other flare manufacturers. The HSLF pilot is suitable for extreme operating environments in both on and off-shore locations.

The basic components common to all HSLF pilot assemblies are as illustrated in Figure 1.

### **2.2.2 Features and Nomenclature**

The Zeeco Series HSLF Flare Pilot is customized to meet the unique requirements of the ignition system with which it is used. A summary of the most common options and the model nomenclature is provided below.

The Zeeco Series HSLF Pilot has four primary types. These are:

**Model HSLF-Z – Standard pilot with FFG ignition capability.**

**Model HSLF-Z-HEI – Pilot with HEI ignition capability. This model may or may not include a connection for FFG ignition, depending on the system requirements.**

**Model HSLF-Z-SA – Pilot with self-aspirating FFG ignition capability.**



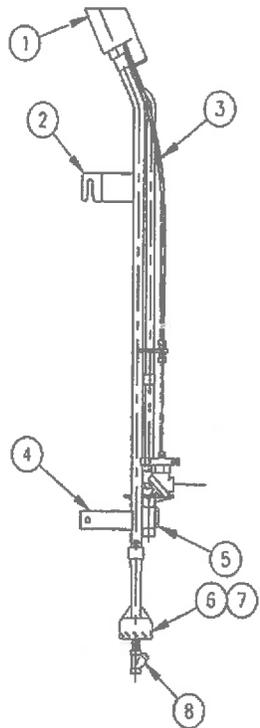
**Model HSLF-Z-SA-HEI** – Pilot with both self-aspirating FFG and HEI ignition capability.

For the complete model name, the model designation above is followed by the number and type of thermocouples included on the pilot. If thermocouples are included on the pilot for flame monitoring, a T/C is added to the name. If there is more than one thermocouple, the T/C designation is preceded by the total number of thermocouples which may be accommodated by the pilot for flame monitoring. If dual-element thermocouples are utilized, the T/C is preceded with a D, eg. DT/C. Optionally, a RT/C may be added in place of or in addition to T/C if retractable thermocouples are included in the system. A J is prepended to indicate when either the thermocouple or HEI wiring is directly connected to a nearby junction box, eg. JHEI or JT/C.

The provided pilot is a HSLF-Z-HEI.

Example 1: The complete model name of a Series HSLF Pilot with one fixed and one retractable thermocouple would be: HSLF-Z-RT/C-T/C

Example 2: The complete model name of a Series HSLF Pilot with HEI ignition, and two fixed thermocouples each with dual-elements would be: HSLF-Z-HEI-2DT/C



Item	Description
1	Pilot Tip/Shield
2	Upper mounting bracket
3	Thermocouple
4	Lower Mounting Bracket
5	HEI Probe
6	Pilot Mixer
7	Pilot Mixer Orifice Spud
8	Strainer

**Figure 1: HSLF-Z-HEI Pilot Components**

The Zeeco HSLF pilot has been designed to perform reliably under the most rigorous operating conditions. Investment cast components and the absence of weld seams in the heat affected zone ensure a longer service life due to increased ability to resist the effects of high heat and flame impingement. The pilot is designed to withstand high wind and rain density in both horizontal and vertical firing positions without loss of flame. Specific features include:

- 310 SS investment cast pilot tip/shield assembly inclusive of two (2) integral thermowells and integral Flame Front Generator (FFG) connection.
- Type 310 SS, investment cast pre-mix tip assembly with multiple discharge ports and stability ports.
- Investment cast flare tip mounting brackets.
- Investment cast mixer assembly. The mixer assembly is type 316L stainless steel with integral windshield and internal venturi throat.
- Pilot mixer and tip are matched to function over a wide range of fuel gas compositions. The HSLF pilot has been designed and tested on gas mixtures



ranging from 100% propane to 75% hydrogen. Excellent stability and ease of ignition has been proven over this range. The pilot fuel gas can be changed from grade level. The HSLF pilot can be designed to operate reliably on Propane, Hydrogen or Refinery Fuel Gases with no adjustment to pilot gas pressure or adjustment on the pilot itself.

- The HSLF self-inspiring mixer does not have an air adjustment door and does not require any adjustment to optimize the amount of inspired air.
- The HSLF pilot has been tested on various fuels for stability, ignition, and re-ignition in winds of 125 mph (55 m/s, 200 kph) combined with a 6 inch per hour rainfall. This testing was done with the pilot in both vertical and horizontal mounting positions. The HSLF pilot was proven to ignite, re-ignite and remain stable under all tested conditions.
- A stainless steel "Y" type strainer is provided at the inlet to the mixer assembly to prevent plugging of the mixer orifice during operation.
- Pilot heat release is nominally 65,000 Btu/hr (68,600 KJ/hr). The heat release is optimized so that it is sufficient to ensure ignition of any flared gases while keeping utility usage to a minimum.

### **2.2.3 System Options**

The Series HSLF Pilot may also be equipped with any of the following optional features:

- Investment cast thermocouple mounting brackets.
- Integral high energy direct spark ignition (HEI) connection. HEI ignition can be used in place of FFG ignition or as a back-up to FFG ignition. The spark is located at a point on the pilot that is away from the high heat area and in a gas stream that provides continuous cooling and protection.
- Thermocouple Temperature Transmitters allow ganging of thermocouple signals from the pilot(s) to the control system.

## **2.3 Series HEIC Automatic High Energy Ignition System**

### **2.3.1 Description**

The Zeeco Model HEIC Automatic High Energy Ignition system is designed to provide reliable direct spark ignition of flare pilots. The HEIC system may be used in place of or in conjunction with traditional flame front generator systems. The HEIC system consists of an ignition probe located near the pilot tip, wiring and an ignition module located at grade.

The HEI ignition probe is totally enclosed within a seal-welded stainless steel, protective guide tube. The guide tube is located below the heat-affected zone of the pilot flame.



Therefore, the ignition probe is never subjected to the pilot flame and is protected from direct radiation from the pilot and flare flame prolonging its service life.

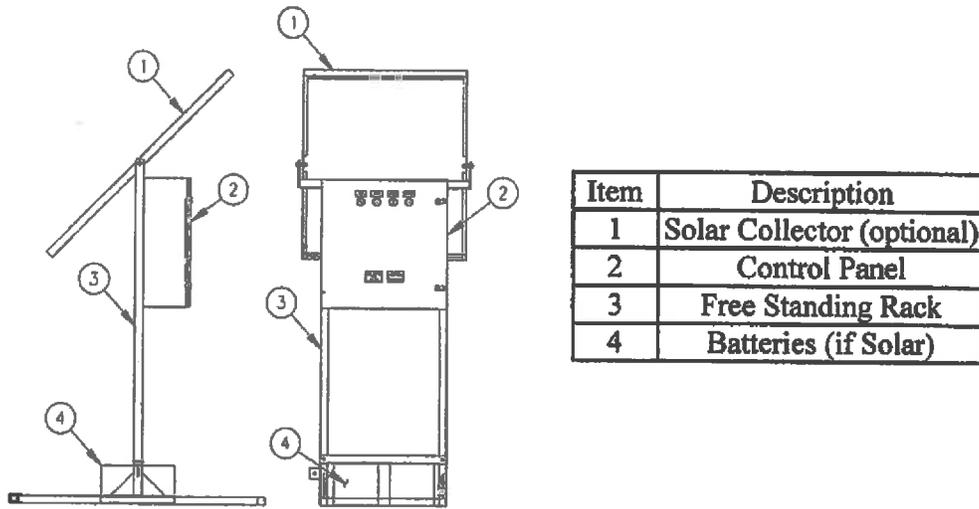
Solid state circuitry designed by Zeeco and fabricated specifically for our HEIC system makes up the components in the grade-mounted control panel. The ignition control module incorporates direct current capacity discharge rather than the traditional alternating current transformer power supply, allowing placement of the ignition panel to be at a greater distance from the flare tip as compared to other electric ignition systems. The ignition probe may be located up to 1000 feet (300 meters) away from the ignition module. The connection between the ignition module and the probe at the flare pilot is typical copper wire run through flexible conduit. The provided ignition system includes 35' Ft of flexible conduit and wire. No ignition fuel gas supply is required, simplifying utility piping.

The standard HEIC system includes monitoring of the pilot(s) ignition status. This is typically accomplished through the monitoring of temperature as measure by thermocouples mounted in the pilot tip. The HEIC system may also be designed to accommodate other flame monitoring devices used in place of or in addition to thermocouple.

The HEIC system is most commonly rack mounted for stand-alone installation, but may also be supplied as ship loose components for mounting by others or may be supplied for mounting to other system components or customer structures.

240 VAC power supply is the only utility requirement for an HEIC system. However, if the control panel is to be installed in a hazardous area, an instrument air supply for panel purge is required.

Pilot fuel gas piping, valves and instrumentation shall be supplied by Zeeco as part of the HEIC system. Please see the job specific documentation for the extent of the Zeeco scope of supply.



**Figure 2: HEIC Ignition System**

### 2.3.2 Features and Nomenclature

The Zeeco Series HEI High Energy Ignition system is customized to meet the unique requirements of the combustion system to which it is utilized. A summary of the most common options and model nomenclature is provided below.

The Zeeco Series HEI System has two primary types - these are:

**Model HEIM – Manually operated system. All operation takes place at the HEI local control panel.**

**Model HEIC – Manual or automatic operation. Automatic capabilities vary from automatic pilot relight upon flame verification failure to the capability to monitor all functions and control all operations from a remote location.**

For the complete model name, the HEIM or HEIC designation is followed by the number of pilots which the system is designed to ignite. If thermocouples are included in the HEI system for flame monitoring, a T/S is added to the name. The T/S designation is preceded by the total number of temperature switches utilized for flame monitoring. Optionally, an OM may be added in place of or in addition to T/S if optical monitors are

**Supporting Emission Calculations**



## Attachment N.1 - Maintenance Flare Emission Calculations

### FLARE SPECIFICATIONS

Product Flare	Gross Heating Value Btu/scf (HHV)	Maximum Actual Needed		Maximum Potential		
		Daily Flow Rate scf/day <sup>1</sup>	Daily Heat Input MMBtu/day (HHV)	Hourly Heat Input MMBtu/hr (HHV)	Annual Flow Rate scfy <sup>2,3</sup>	Annual Heat Input MMBtu/yr (HHV)
Product Flare	2,572	7,854	20.20	160.80	6,250,000	16,080
2 Propane Pilot Lights	2,572	1,200	3.09	0.13	438,000	1,127

<sup>1</sup> Derived from 25 barrels of liquid products (e.g. propane) in a single day, which is consistent with the maximum actual operations of other locations with similar requirements.

<sup>2</sup> Consistent with the site's July 2, 2013 initial R13 permit application, which served as the basis for the R13 permit issued on October 28, 2013.

<sup>3</sup> The value for the maximum annual operation of the flare matches the limit found in Condition 5.1.3. of the R13 permit issued on October 28, 2013.

Pollutant	Flare Product Emissions		Pilot Light Emissions	
	Uncontrolled Emission Factor lb/MMBtu (HHV) <sup>1,2,3,4</sup>	Proposed Potential Emissions lb/hr <sup>5,6</sup> tpy <sup>5,8</sup>	Uncontrolled Emission Factor lb/MMBtu (HHV) <sup>5,10,11</sup>	Proposed Potential Emissions lb/day tpy <sup>8</sup>
NO <sub>x</sub>	0.068	10.93	3.9E-02	0.12
CO	0.310	49.85	3.3E-02	0.10
PMPM <sub>10</sub> P <sub>M2.5</sub>	0.00E+00	0.00E+00	3.0E-03	9.12E-03
SO <sub>2</sub>	0.00E+00	0.00E+00	2.3E-04	7.20E-04
VOC	4.44E+01	142.70	2.1E-03	6.60E-03
Total HAPs	0.00E+00	0.00E+00	7.3E-04	2.27E-03
CO <sub>2</sub>	135.5	21,788	116.98	361.04
CH <sub>4</sub>	6.61E-03	1.06	2.20E-03	6.80E-03
N <sub>2</sub> O	1.32E-03	0.21	2.20E-04	6.80E-04
CO <sub>2</sub> e	136.1	21,878	117.1	361.41

<sup>1</sup> NO<sub>x</sub>, CO, PMPM<sub>10</sub>P<sub>M2.5</sub>, and SO<sub>2</sub> Emission factors from AP-42 Section 13.5 "Industrial Flares" - assumes smokeless and negligible sulfur content.

<sup>2</sup> VOC and HAP emission factors come from the product specifications.

<sup>3</sup> CO<sub>2</sub> emission factors for propane (gaseous) come from 40 CFR 98, Subpart C - Table C-1 "Default CO<sub>2</sub> Emission Factors and High Heat Values for Various Types of Fuel."

<sup>4</sup> CH<sub>4</sub> and N<sub>2</sub>O emission factors for fuel gas come from 40 CFR 98, Subpart C - Table C-2 "Default CH<sub>4</sub> and N<sub>2</sub>O Emission Factors for Various Types of Fuel."

<sup>5</sup> VOC:HAP Destruction Efficiency 98,000 %

<sup>6</sup> Hourly Proposed Potential Emissions (lb/hr) = Maximum Hourly Heat Input (MMBtu/hr [HHV]) × Controlled Emission Factor (lb/MMBtu [HHV])

<sup>7</sup> Daily Proposed Potential Emissions (lb/day) = Maximum Hourly Heat Input (MMBtu/hr [HHV]) × Controlled Emission Factor (lb/MMBtu [HHV])

<sup>8</sup> Annual Proposed Potential Emissions (tpy) = Maximum Annual Heat Input (MMBtu/yr [HHV]) × Controlled Emission Factor (lb/MMBtu [HHV]) × Conversion Factor (1 ton / 2,000 lb)

<sup>9</sup> Emission factors from AP-42 Section 1.4 "Natural Gas Combustion" Tables 1.4-1, 1.4-2, 1.4-3 & 1.4-4.

<sup>10</sup> CO<sub>2</sub> emission factors for natural gas come from 40 CFR 98, Subpart C - Table C-1 "Default CO<sub>2</sub> Emission Factors and High Heat Values for Various Types of Fuel."

<sup>11</sup> CH<sub>4</sub> and N<sub>2</sub>O emission factors for natural gas come from 40 CFR 98, Subpart C - Table C-2 "Default CH<sub>4</sub> and N<sub>2</sub>O Emission Factors for Various Types of Fuel."

## Attachment N.2 - Light Liquid Fugitive Emission Calculations

### Component Counts and Leak Rates

Component	Component Count <sup>2</sup>	TOC Emission Factor <sup>3</sup> (kg/hr/component)	VOC Potential Emissions <sup>4</sup>		
			(lb/hr)	(lb/day) <sup>5</sup>	(tpy) <sup>6</sup>
Valves	168	4.30E-05	1.59E-02	3.82E-01	6.98E-02
Fittings (Flanges/Connectors)	558	8.00E-06	9.84E-03	2.36E-01	4.31E-02
Pump Seals	0	5.40E-04	0.00E+00	0.00E+00	0.00E+00
Other <sup>1</sup>	8	1.30E-04	2.29E-03	5.50E-02	1.00E-02
<b>Total</b>			<b>0.028</b>	<b>0.673</b>	<b>0.123</b>

<sup>1</sup> The component type "Other" includes any equipment type other than connectors, flanges, open-ended lines, pumps and valves that have fugitive emissions.

<sup>2</sup> Component counts match those from the site's July 2, 2013 initial R13 permit application, where all components may not be in service but are included to conservatively over-estimate potential VOC emissions.

<sup>3</sup> Table 2-3: Marketing Terminal Average Emission Factors, Protocol for Equipment Leak Emission Estimates, EPA 453/R-95-017, November 1995.

<sup>4</sup> Multiplied by component weight % from MSDS.

VOC	100.00%
HAP	0.00%
CO <sub>2</sub>	0.00%
CH <sub>4</sub>	0.00%

<sup>5</sup> Based on 24 hours of potential operation in 1 day.

<sup>6</sup> Based on 8,760 hour of potential operation in 1 year.

## **Monitoring/Testing/Recordkeeping/Reporting Plans**

### **Monitoring Plans**

The maintenance flare is already subject to monitoring requirements under Permit Conditions 5.2.1, 5.2.2, and 5.2.3, and Enterprise plans on continuing to meet those requirements for the proposed project. In addition, Enterprise also plans on monitoring throughput to the flare on a daily basis when the site is processing propane product.

### **Testing Plans**

The maintenance flare is already subject to testing requirements under Permit Conditions 5.3.1, 5.3.2, 5.3.3, and 5.3.4, and Enterprise plans on continuing to meet those requirements for the proposed project.

### **Recordkeeping Plans**

The maintenance flare is already subject to recordkeeping requirements under Permit Conditions 5.4.1, 5.4.2, 5.4.3, 5.4.4, and 5.4.5, and Enterprise plans on continuing to meet those requirements for the proposed project.

### **Reporting Plans**

The maintenance flare is already subject to reporting requirements under Permit Conditions 5.5.1, 5.5.2, and 5.5.3, and Enterprise plans on continuing to meet those requirements for the proposed project.

**Class I Legal Advertisement**

**AIR QUALITY PERMIT NOTICE  
Notice of Application**

Notice is given that Enterprise TE Products Pipeline Company, LLC has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, to update its New Source Review permit (No. R13-3102) for a maintenance flare near Follansbee in Brooke County, West Virginia to process propane. The latitude and longitude coordinates are: 40.3541°, -80.5330°.

The applicant estimates the potential emissions increase of the following Regulated Air Pollutants will be:

- Carbon Monoxide = 0.6 tpy
- Oxides of Nitrogen = 0.2 tpy
- Volatile Organic Compounds = 6.7 tpy
- Sulfur Dioxide = <0.01 tpy
- Particulate Matter = <0.01 tpy
- Particulate Matter less than 10 micrometers = <0.01 tpy
- Particulate Matter less than 2.5 micrometers = <0.01 tpy
- Hazardous Air Pollutants = <0.01 tpy

Startup of propane operation is likely to begin on or about the 1st day of August, 2016. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57<sup>th</sup> Street, SE, Charleston, WV 25304, for at least 30 calendar days from this notice's publication date.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1227, during normal business hours.

Dated this the 11<sup>th</sup> day of May, 2016.

By: Enterprise TE Products Pipeline Company LLC  
Mr. Graham W. Bacon  
Executive Vice President  
PO Box 4324  
Houston, TX 77210-4324