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May 2, 2013

Wayne T. Lemoi  
Director, Southern Region  
Pipeline and Hazardous Materials Safety Administration  
233 Peachtree Street Ste. 600  
Atlanta, GA 30303

**Re: CPF 2-2013-5003M Notice of Amendment, Collins Pipeline Company, LLC ~ OP ID 26120**

Dear Mr. Lemoi:

During the week of November 5-8, 2012, a representative of the Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety, Southern Region inspected the Collins Pipeline Company's written Operations and Maintenance (O&M) procedures. During the inspection, the PHMSA inspector identified an apparent inadequacy within the O&M procedures for *§195.52 Immediate notice of certain accidents*. Pursuant to Chapter 601 of 49 United States Code, Notice of Amendment (NOA) *CPF 2-2013-5003M*, dated April 2, 2013, was issued to Collins Pipeline Company.

On the basis of the inspection, the written O&M procedures regarding the reporting of certain accidents did not allow Collins Pipeline Company to adequately calculate and provide a reasonable initial estimate of the amount of released product for all circumstances.

On behalf of Collins Pipeline Company and in response to *NOA CPF 2-2013-5003M*, ExxonMobil Pipeline Company (EMPCo) has chosen to Not Contest this Notice and has modified the Operations and Maintenance (EMPCo Hazardous Liquids Manual) to include the following:

***49 CFR § 195.52 Immediate notice of certain accidents.***

*...(c) Calculation. A pipeline operator must have a written procedure to calculate and provide a reasonable initial estimate of the amount of released product.*

**C. Establishing an Initial Estimate of Spill Volume**

- 1) Initial estimates of spilled volumes can be difficult to determine. Nevertheless, the rules and regulations of various regulatory agencies require that a pipeline operator provide a reasonable initial estimate of the amount of released product. This section sets forth the factors and procedure to be utilized to calculate the reasonable initial estimate that is to be reported to authorities.

- 2) For any release where the quantity of the released volume was either metered at a location immediately adjacent to the release point or can be precisely measured from the known size/volume of the container that released the material, report the metered/measured volume. This approach should only be used when none of the information listed in Paragraph 5, below, is also required to be known to determine the size of the release.
- 3) For any hazardous liquid release to soil of approximately 15 barrels or less, which presents no risk of contamination to surface water or groundwater, field personnel may estimate the amount of the release based on their visual inspection of the released material and using their experience and knowledge of the facility and operation involved in the release.
- 4) For HVL releases, the size of the rupture or opening through which material is escaping is a key piece of information necessary for estimating the size of the release with a reasonable degree of accuracy. If the size of the opening or rupture cannot be ascertained quickly and safely, then field personnel can make an initial estimate of the release based on sensory perception (sight, smell and sound) at the release site and using their experience and knowledge of the facility and operation involved in the release.
- 5) For any other release where the volume has not been metered or measured, the following information should be collected if available:
  - a. Location of release
  - b. Nominal pipe size/diameter
  - c. Tank or vessel size
  - d. Pipeline pressure or tank fill at time of release
  - e. Pipeline flow rate/pumping rate at time of release
  - f. OCC shutdown/isolation activity
  - g. Fluid/Product properties, including
    - i. Evaporative qualities
    - ii. Solubility characteristics
    - iii. Specific Gravity or Density
    - iv. Viscosity
  - h. Nature/size of damage to tank or pipeline
  - i. Displacement between block valves
  - j. Elevation profile and drain down rate
  - k. Depressurization rate or pressures
  - l. Over/short imbalance
  - m. Size of the visibly contaminated area
  - n. Depth of penetration of contamination into soil
  - o. Apparent saturation level of soil
  - p. Color and characteristics of any sheen/slick on the water
  - q. The approximate size of any visible cloud from an HVL release
  - r. Volume of collected material
  - s. Environmental conditions (water current speed & direction, flooding conditions, water temperature, wind speed & direction, air temperature)

Not all of the above factors are relevant in every release. Which of the above factors are relevant to a volume calculation depends on the nature of the release. A reasonable estimate of the released

volume will be calculated utilizing standard engineering calculations used to determine volume and or flow and the relevant factors from the above list. If precise information is not available to use in the calculations, missing information can be approximated using reasonable assumptions. Any assumptions used in making the estimate should be documented.

- 6) Spills of hazardous liquids to water require a timely and sometimes significant response effort. Since a purpose the early reporting of an estimated released volume is to assist agencies and first responders to appropriately size their response to the spill, the estimation of a released volume should assist responders in this effort and its calculation should be informed by lessons learned from previous spill responses. Those lessons include:
  - a. It is best practice to over-respond to a spill incident and send called-out resources home if they are not needed rather than try to mobilize additional needed resources after taking time to try and scope and “right size” the response.
  - b. All of the information listed in C.5.a. through C.5.s., above, will likely not be available and cannot be collected immediately after a release.
  - c. Some of the information gathered immediately after an emergency will likely prove to be incorrect upon later investigation.

Given these lessons from prior incidents and the need to size a response that is large enough for the event, best practice is to avoid inadvertently under-reporting the size of the release in the initial disclosure of the estimated release volume.

- 7) For hazardous liquid releases to soil and water where the spilled volume is relatively static (i.e., the entire spilled volume has either soaked into the ground and is not rapidly migrating through the soil or, in the case of a spill to water, the oil is floating on relatively calm still water) the release volume can be estimated as follows:

- a. Release of a hazardous liquid to soil. The following equation can be used to estimate a released volume estimate for a spill to soil:

$$\text{Volume} = (\text{Length of contaminated area in feet}) \times (\text{Width of contaminated area in feet}) \times (\text{Depth of contaminated area in feet}) \times (7.48 \text{ gallons / cubic foot}) \times (*\text{porosity factor}) \times (\text{Percent saturation of soil as a decimal (80\%=0.8)})$$

<b>*Range of Porosity Values</b>	
Soil Type	Porosity, $p_t$
Unconsolidated deposits	
Gravel	0.25 - 0.40
Sand	0.25 - 0.50
Silt	0.35 - 0.50
Clay	0.40 - 0.70
Rocks	
Fractured basalt	0.05 - 0.50
Karst limestone	0.05 - 0.50
Sandstone	0.05 - 0.30
Limestone, dolomite	0.00 - 0.20

Shale	0.00 - 0.10
Fractured crystalline rock	0.00 - 0.10
Dense crystalline rock	0.0 - 0.05

- b. Release of a hazardous liquid to water. The released volume for a spill to water can be estimated based on the thickness and size of the slick. If possible given time constraints, a number estimated using the following procedure should be checked against an engineering estimate prepared using the factors outlined in C.5.a through C.5.s., above:
- i. Estimate the thickness and distribution of the oil in the slick. Use the following oil color descriptions from ASTM F2534 to estimate the thickness of a crude oil slick:
    1. Barely Discernible 0.05 (Microns)
    2. Silvery sheen 0.01 (Microns)
    3. Bright bands of rainbow color 0.5 (Microns)
    4. Darkening Bands of Color 1.0 (Microns)
    5. Dull colors seen 3 (Microns)
    6. Light to Yellowish Brown slick 10 (Microns)
  - ii. Determine the Area of the spill by multiplying the estimated length of the sheen by the estimated width. Example: 100' X 50' = 5,000 ft<sup>2</sup>.
    - 1.
  - iii. Apply the Area (ft.<sup>2</sup>) to the following chart to determine liters or gallons:

<b>Appearance/Approximate Thickness</b>						
	<b>Barely Discernible</b>	<b>Silvery Sheen</b>	<b>Rainbow Colors</b>	<b>Darkening Bands of Color</b>	<b>Dull Colors</b>	<b>Light Brown</b>
<b>Approximate Thickness (Microns)</b>	<b>0.05</b>	<b>0.1</b>	<b>0.5</b>	<b>1</b>	<b>3</b>	<b>10</b>
<b>Area (ft.<sup>2</sup>)</b>	<b>Gallons</b>					
1,000	< .01	< .01	.01	.02	.1	.2
10,000	.01	.02	.1	.2	.7	2.5
43,560 (1 acre)	.05	.11	.53	1.1	3.2	10.7
100,000	.1	.2	1.2	2.4	7	24.5
500,000	.6	1.2	6	12	37	122
1,000,000	1.2	2.5	12.2	25	73	245
5,000,000	6	12.2	61	122	367	1224
10,000,000	12	24	122	245	734	2447

\* Based on numerous literature sources.

1000 microns = 1 millimeter; 1 micron thick is equivalent to  $1 \text{ m}^3 / \text{km}^2$

Note: Area of a spill is arrived at by multiplying the estimated length of the spill by estimated width.

Examples:  $100' \times 50' = 5,000 \text{ ft.}^2$

264.2 gal. = 1 ton of oil

1 mile = 5,280 ft. in length

- 8) All documents relating to the estimation of the released volume should be retained at least until such time as any administrative or legal proceedings related to the release are concluded.

The intent of this letter is to provide a detailed response to the assertion of inadequate procedures without the need of a formal hearing. However, if a solution to this matter cannot be agreed upon based on the information provided in this correspondence, EMPCo reserves the right to request a formal hearing on all issues outlined in the Notice, at which time EMPCo would be represented by counsel. Please confirm whether this response is satisfactory to address the subject Notice of Amendment CPF 2-2013-5003M.

Please contact Kirwin L Yates at (225) 324-3055 or [kirwin.l.yates@exxonmobil.com](mailto:kirwin.l.yates@exxonmobil.com) for any additional questions.

Sincerely,



Chris Hinson, on behalf of Mark Weesner

M. D. (Mark) Weesner  
Safety, Health and Environment Department Manager