

May 19, 2017

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First St., N.E., Room 1A Washington, DC 20426

**RE: Atlantic Coast Pipeline, LLC  
Atlantic Coast Pipeline  
Docket Nos. CP15-554-000 & CP15-554-001  
U.S. Forest Service Information Request dated May 14, 2017  
Regarding ACP Construction on Steep Slopes within National Forests**

Dear Ms. Bose:

On May 14, 2017, the U.S. Forest Service staff (“Forest Service” or “FS”) filed a request for supplemental information directed to Atlantic Coast Pipeline, LLC (“Atlantic”) with the Federal Energy Regulatory Commission (“FERC” or “Commission”) on the above-referenced docket (the “May 14 Request”). The Forest Service describes its May 14 Request as a “Reiteration of Previous Information Requests and Discussions;” however, the letter also includes requests for data that was previously provided to the Forest Service, data that is requested for the first time on May 14, 2017, and data that the Forest Service previously indicated is not required for development of the Final Environmental Impact Statement, but would be incorporated in the Construction, Operation and Maintenance Plan (or “COM Plan”) for the Atlantic Coast Pipeline (“ACP”).

As further described in response to Question No. 5, below, Atlantic has developed an extensive Best in Class (“BIC”) program for management of ACP construction on steep slopes. The program is based on industry best practices and construction experience in a variety of steep slope terrains. It was first described in Atlantic’s draft resource reports, and supplements the customary FERC-required procedures. This ACP program builds on the soils and geo-hazard analyses that have been conducted during project development. The BIC program is presented in Resource Report 6, section 6.4.2 and was provided in more detail to the Forest Service on November 21, 2016. As detailed in these documents, the program establishes nine pre-defined categories of steep slopes for application of incremental measures above and beyond the FERC standards. For each identified category of steep slopes, there is a corresponding group of pre-defined, relevant potential mitigation tools.

The BIC program in conjunction with the geo-hazard program has evaluated and classified the appropriate slopes along ACP’s proposed route. The BIC program includes a

protocol for expert review of each given slope to apply a selection of mitigation measures as appropriate to address the particular conditions found at that slope during construction. By establishing a robust set of tools and protocols in the BIC program, a consistent recognition of slope conditions and proactive techniques to ensure slope stability.

Atlantic recognizes that not every slope encountered during construction will be a direct match to the pre-designated BIC categories. For this reason, Atlantic agreed that slope-specific construction management plans would be developed in such cases. The May 14 Request relates specifically to two examples of slope-specific plans, referred to as Monongahela National Forest (“MNF”) Site No. 1 (“MNF01”) and George Washington National Forest (“GWNF”) Site No. 2 (“GWNF02”). Through extensive consultation with the Forest Service surrounding these two plans, they were identified as representative of sites that appear to present a high risk of failure, slippage or erosion and sedimentation and the parties jointly agreed on the approach to be taken for similar cases on Forest Service lands.

By establishing the mitigation measures adopted in the slope-specific plans and by application of the BIC program to steep slopes that otherwise meet the established categories, Atlantic will ensure compliance with relevant forest plan standards for soil and slope stability. Atlantic looks forward to continuing its consultation with the Forest Service to complete the design effort for MNF01 and GWNF02, which Atlantic expects to incorporate into the Construction, Operation and Maintenance Plan for the ACP.

The May 14 Request and Atlantic’s response to each question are detailed below and in the attachment documents.

1. Provide the additional information regarding effectiveness of techniques and materials that the FS requested during our meeting on March 24, 2017.

**Response: The requested information is provided as Attachment 1. Based on the guidance provided during our telephone consultation on Monday, May 15, Atlantic understands that this information is responsive to the Forest Service request.**

2. Provide the construction narrative that the FS requested during our conference calls on December 8, 2016, and February 17, 2017.

**Response: The requested narrative is provided as Attachment 2.**

3. Provide the results of the seismic refraction surveys that were conducted in November, 2016. These survey results are being used to determine the depth to bedrock.

**Response: This newly-requested information is provided as Attachment 3.**

4. For the MNF01 site, evaluate the likely extent and severity of problems that may be created by the shrink-swell properties and other mineralogical characteristics of the soils derived from the Mauch Chunk geologic group. Evaluate the potential for such problems to pollute nearby streams and karst hydrologic systems, and prescribe site-specific design techniques that will prevent the potential problems from occurring. We discussed the need to account for the mineralogy of the soils at this site during our November 21, 2016 meeting, on our conference calls on December 8, 2016 and February 17, 2017, and during our March 24, 2017 meeting.

**Response: This slope stability calculation information was originally provided on November 21, 2016 and has been revised based on comments from the Forest Service on March 24, 2017. The revised information is submitted as Attachment 4. The bulking factor that Atlantic has utilized is that published by FHWA [1988] Federal Lands Highway Project Development and Design Manual, Chapter 6; and WVDOT [1998] Design Directive 406 - Earthwork Factors. February 26, 1998.**

**The avoidance and mitigation measures described in the erosion and sedimentation control plans include FERC and state required measures and BIC measures that exceed those requirements. These plans have been submitted to the State of West Virginia and are currently under review. These provisions have been developed over years of practical experience specifically in response to potential to pollute nearby streams and karst hydrologic systems. Site specific designs and the Karst Terrain Assessment, Construction, Monitoring and Mitigation Plan are provided in the draft COM plan.**

5. Clarify which Best-in-Class (BIC) techniques would be applied in specific locations within the MNF01 and GWNF02 sites, and provide a rationale for their selection. In addition, describe or depict the “multiple lines of defense” techniques that were mentioned during our April 11, 2017 field trip as a means of ensuring long term success. Currently the designs present lists of BIC techniques that may be used depending on the problems that are encountered, but the designs do not identify specific techniques or implementation procedures for specific conditions, hazards, or potential hazards. The FS understands that a certain amount of flexibility is needed to react to unexpected conditions that may be encountered during construction. However, site-specific designs should be based on a thorough evaluation of field conditions and information gathered from surveys so that the solutions to expected problems can be prescribed to prevent the occurrence of those problems. We want to avoid situations that require retrofitting a solution after a problem has occurred. We discussed the need for location-specific prescription of BIC techniques during our November 21, 2016 meeting and on our December 8, 2016 conference call.

**Response:** Atlantic has provided site-specific designs for two steep slopes along the ACP route, one in the MNF and one in the GWNF. Each of these designs identifies the site-specific mitigation measures that will be applied at that particular site. These two examples were selected by the Forest Service for site-specific design and mitigation development, to demonstrate the application of the BIC process as well as the potential site-specific slope stabilization measures.

As described at Page 1, above, each of the BIC pre-described categories are associated with a list of BIC mitigation techniques that are appropriate to manage features or issues arising for construction in that slope category. The BIC program establishes the protocol to ensure adoption of appropriate, effective measures from the list of tools in that category. The BIC protocol also calls for site-specific designs in cases where the slope does not fall within any of the pre-identified BIC categories. These site-specific designs already reflect site-specific approach and mitigation measures to ensuring slope stability at that particular site.

Examples of location-specific information the FS would like to see incorporated into the designs are listed below:

- a. Conditions related to each site including geologic formation, bedrock type, slope gradient, slope type, slope composition, primary soil parent material, soil saturation level, vegetation level, presence/absence and type of soil movement related to past or present mass movement of the substrate.
- b. For each of the abovementioned conditions, identify whether that condition is a contributing factor to existing or potential mass movement. Identify the risk level of the factor contributing to mass movement and the likely severity of any movement. Prescribe measures for avoiding the hazard, or, if it cannot be avoided completely, prescribe measures to control the risk, and note the residual post-control risk.
  - i. For example, if slope is a site specific condition that cannot be avoided, the risk level would be high if slope is above 40 percent. The control measure would be to control surface and subsurface water movement using slope breakers, bleeder drains, or other controls at specified intervals

**Response: Subpart a:** The requested information has been provided on the record, through Order 1 soil survey reports and geohazard reports on the proposed ACP route across Forest lands.

**Subpart b:** Atlantic performed a slope stability analysis for each location as a part of the site-specific design. Each site-specific design describes the subsurface stratigraphy and engineering parameters that have been used in the calculations. These analyses follow standard engineering practices, which do not rely upon all factors that are listed in subpart a, above.

For each steep slope segment, depict the specific controls to be used in their actual locations and configurations on the design drawing.

**Response: Atlantic will provide appropriate controls detail on a case-by-case basis, through its documentation of the implemented BIC protocols at each steep slope.**

Describe short-term and long-term monitoring for high risk sites and those sites that experience mass movement. Certain areas pose a higher risk and could require a specific monitoring plan to address site specific conditions.

**Response: During construction and until restoration is complete, all slopes will be monitored daily by experienced project environmental inspectors and geologist that are supporting construction activities. During operations, Atlantic will monitor all slopes through routine aerial patrols on a monthly basis. In addition to the aerial patrols, foot patrols are also conducted periodically. Additional monitoring requirements will be considered in the development of the COM Plan in conjunction with the Forest Service.**

6. For the GWNF02 site, the Computation Analysis Package Geohazard Mitigation Design at ACP AP-1 MP 84.95 to 85.05 (TXG0007-013-CA-002) shows a plan to place the temporary spoils in the Extra Workspace (EWS) straddling the ridgetop (Figure 4. Anticipated Average Slope Inclination Values for the Temporary Ground). The Cut-Fill Volume Calculations (Figure 6) show 1) a cut on the ridgetop for the winch pad, and 2) a fill 6-10 feet deep in a relatively small area in the EWS south of the cut on the ridgetop. However, Figure 6 also shows a fill 6-10 feet deep covering a larger area that is not in the EWS, but rather is on the steep side slope between contour elevations 2770' and 2830'.

Similarly, Figure 6 shows fills 0-3 and 3-6 feet deep covering a larger area that is not in the EWS but rather is on the steep side slope between contour elevations 2650' and 2830'. These fills (0-10 feet deep) are temporary spoils that are not in the EWS but rather on steep side slopes which include slope inclinations of 37 degrees (Figure 4). Provide the excavation source for the temporary spoils placed on the steep side slopes between contour elevations 2650' and 2830'. Identify whether these temporary spoils on steep side slopes include material excavated from the ridgetop for the winch pad.

The Summary of Factor of Safety against shallow seated sliding (Table 4) includes a Factor of Safety for "Temporary Spoils in EWS" and for "Side Slopes". Is the Factor of Safety for "Side Slopes" for temporary spoils on side slopes? If so, then relabel "Side Slopes" to "Temporary Spoils on Side Slopes." Also, in the Temporary Ground section (p. 7-9), when discussing temporary spoils (not topsoil segregation material) it would help to avoid confusion by stating "a temporary spoils depth of 10 ft" rather than "a soil depth of 10 ft."

**Response: This information was not requested prior to the May 14 Request. Atlantic held a telephone conference to review the location-specific details with Mr. Tom Collins of the Forest Service on May 17, 2017. As a result of this conversation several minor changes to figures and table and wording revisions were identified. These are incorporated in Attachment 6.**

7. For the MNF01 site, provide Temporary Ground and Final Ground sections as was provided for the GWNF02 site in the Computation Analysis Package Geohazard Mitigation Design at ACP AP-1 MP 84.95 to 85.05. In regard to the Final Ground, consider especially the Factor of Safety for the restoration fill within the following ACP station locations:

4419+25 to 4421+00  
4421+60 to 4424+00  
4427+00 to 4428+50  
4434+60 to 4436+00  
4438+40 to 4442+00

**Response: This information was not requested prior to the May 14 letter; however, the requested sections are as Attachment 4.**

8. For the MNF01 site, provide a Geologic and Structural Mapping Summary Report as was provided for the GWNF02 site ACP AP-1 MP 84.95 to 85.05.

**Response: This information was provided as to the GWNF02 on April 12, 2017, as reported in Atlantic's supplemental report of Agency Correspondence filed on May 5, 2017 at Appendix D. FERC Accession No. 20170505-4000. The same information was first requested by the Forest Service in its May 14, 2017 request as to MNF01; the report is provided as Attachment 7.**

Atlantic has also attached the revised Steep Slope Report, which is provided as Attachment 8.

Respectfully,

*Leslie Hartz*

cc: Kevin Bowman  
Attachments