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October 30, 2016

Norman Bay, Chairman
Federal Energy Regulatory Commission
888 First Street, NE, Room 1A
Washington, DC 20426

ATTN: Atlantic Coast Pipeline Comments
FERC Docket 15-554

Dear Chairman Bay:

I am writing this letter to submit to FERC Docket 15-554 a report written by natural gas industry representatives about the difficulties of constructing and operating natural gas pipelines in the mountains of West Virginia. The document is titled, "Mitigation of Land Movement in Steep and Rugged Terrain for Pipeline Projects: Lessons Learned from Constructing Pipelines in West Virginia." The report was prepared for the INGAA Foundation, Inc. (whose current Chairman is Dominion Energy President, Diane Leopold) by Golder Associates, Inc. in April 2016.

The report confirms what we fear and know intuitively about the proposed Atlantic Coast Pipeline crossing the high mountains in West Virginia. It is several hundred pages of evidence of how difficult and risk laden this task would be. Reading it underscores my appreciation for the Forest Service's insistence that Atlantic prepare site-specific analysis and design for the pipeline where it crosses critical slopes and watersheds as they requested in a letter Atlantic on October 24, 2016. The Forest Service's basic question appears to be: Can the pipeline be constructed through this difficult terrain safely and with acceptable levels of risk from landslide and to water quality? This report suggests that the risks cannot be mitigated fully and the answer is "no".

The industry report focuses appropriately on West Virginia, noting that "The unique conditions in West Virginia include mountainous terrain that is variable, steep, rugged, geologically diverse, and can be very wet" (page 1). The map supporting this statement (Figure 1-1 from Radbruck-Hall, et al., 1982 USGS Professional Paper 1183) is striking, showing West

Virginia and the High Alleghenies as among the most susceptible and the largest landslide incidence area in the entire United States.

As explained in Section 1.1 of the report, the objective of the study was to communicate key considerations when planning and implementing mitigation of landslides and erosion related hazards that may threaten a pipeline. The considerations included:

- “The importance of identifying landslide and erosion hazards, and incorporation of that information into the design, planning and construction phases of a project.”
- “The critical role of route selection in identifying and avoiding hazards that may impact pipelines and ROWs.”
- “The need to incorporate site-specific mitigation measures into the project planning process, to address threats to the pipeline and the ROW.”
- The final important objective is to recognize that risk is inherent in this terrain, regardless of the mitigation measures selected to address the hazard.

The report itself focuses on the Mitigation planning related to the hazards of steep slopes, soil susceptibility and their interaction with weather events and other stresses, including construction. However, how this Mitigation planning fits into the larger picture is important. And those with regulatory responsibilities, including State and Federal agencies, FERC and the Forest Service, should be convinced that Atlantic is acting responsibly about the difficulty, cost, feasibility and risks of constructing across these mountains.

With respect to the first two considerations noted above, Atlantic has reversed the process. Instead of recognizing and quantifying the extreme landslide risks in the mountains in the design and route selection phase, they chose to ignore them amid promises to evaluate at a later stage of the project. The geotechnical hazard analysis was performed almost two years after project initiation. Sections 2.1.9.5 and 8.7.2 of Atlantic’s draft Construction, Operation and Maintenance Plan, submitted on August 22, 2016) explicitly establishes a process of identifying and resolving design problems related to steep slopes in the construction phase. It is impossible to overstate how flawed this approach is. We now have a “mature” proposal that is just now grappling with the reality of how to design and construct in the High Alleghenies. Absent the Forest Service demand for information about the site specific plans, it is clear that Atlantic would have postponed this analysis until a point well after approval and permitting. If this is allowed to occur, the Forest Service, responsible agencies and affected public would have no say in the methods chosen and could not make decisions based on the real risks associated with this terrain.

In the third enumerated key consideration, the language is telling. The report talks about “mitigation measures” and “threats to the pipeline”, words that reflect the reality of the problem and the focus of industry objectives. The reality of the problem is that you can evaluate the problem, chose what you think is an appropriate solution to an admittedly complex situation, and still only “mitigate” the situation. You cannot eliminate the risk or know for sure whether your selected solution will work, either in the short term during construction, or in the long term. “In some situations, the mitigation may not be intended to provide a long-term permanent mitigation and full elimination of the hazard” (page 20). The report acknowledges the need for long term

monitoring, identification of post construction landslides, and remediation. Little is said about how to quantify the damage from potential post-construction slippage, the remediation approach, or the impact of having to return to the site to implement that remediation. We know that Atlantic and other pipeline companies have a history of this occurring in West Virginia projects. In the context of the federal lands and Forest Service responsibility to protect them, these are important questions.

The language also suggests that the industry focus will be on protecting the pipe itself, not the land. It is understandable that a pipeline company wants to protect its asset. It would not be understandable for the agencies responsible for pipeline approval and operational oversight to adopt a similar focus. The landscape of the High Alleghenies has value, and a pipeline which continues to impact that value significantly over time, particularly when there are known risks, is unacceptable. In other words, the pipeline will be a permanent risk in the landscape, long after the construction phase is complete.

The report opens one's eyes to another reality about construction in the steep terrain in West Virginia and west of the Virginia piedmont. It appears that the choices for steep terrain construction include structural solutions that are more costly, more difficult to implement and may have increased environmental impacts. In the steepest and most slide susceptible areas, the report acknowledges that "Structural measures are available to address unstable slopes, such as retaining walls, soldier piles, sheet piles, wire mesh systems, mechanically stabilized earth systems and other mechanical structures" (page 20). Section 8.7.2 of the COM Plan also lists retaining structures, in addition to chemical stabilization, benching, slope geometry changes and geogrid reinforced slopes, as possible methods. While these measures are not the first choice of a company attempting to install a pipeline as quickly as possible, the ACP is crossing the steepest and most slide susceptible lands in the US. Can it really be expected that structural measures would not be needed here? And if they were needed, but not chosen for reasons of cost and timing, would there be catastrophic consequences? And the Forest Service may have its own views on whether any of these structural measures are compatible with the Forest Plans. It is hard to imagine retaining walls and terraces, chemicals, wire mesh or other physical structures on the crests of the High Alleghenies and the heart of these Forests.

I urge you to look closely at this industry report and consider the implications that it has for the ACP. Although I always suspected that the proposed route crossing the High Alleghenies would involve unacceptable impacts to this special area of our country, the report validates the difficulty of construction in the face of extreme slide susceptibility. All construction in this type of terrain is associated with high levels of risk.

The site-specific construction analyses requested by the Forest Service prior to review of the special use permit application is exactly what FERC, other State and Federal agencies, and all landowners of high risk property should have in hand before a decision is made about the pipeline application. To ensure that this information is available, I am asking FERC to review carefully the geo-hazard analysis that Atlantic has provided, as well as other independent information submitted about similar high risk areas on private lands. For these critical areas on private lands, please request that Atlantic develop and submit site-specific construction plans to the FERC docket.

It is your role to identify and consider how best to protect the public interest and the environment. Requesting this additional analysis of Atlantic is a fair requirement, and one that may help to ensure safety and protect the environment. It is not acceptable to leave the analysis and the determination of whether or not the risk of construction in critical areas is acceptable to Atlantic engineers or contractors in the field, after a certificate is issued. Your review of the critical areas and detailed construction plans may show that the risks are too high.

Sincerely,



Peggy Quarles

cc:

Clyde Thompson, Supervisor, Monongahela National Forest
Joby Timm, Supervisor, George Washington National Forest
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Tony Tooke, Regional Forester, US Forest Service
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