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First name: Tina

Last name: Smusz

Organization:

Title:

Comments: Comment to Forest Service re: MVP crossing the Jefferson National Forest

By Tina L. Smusz, MD, MSPH

The MVP crossing poses permanent threats to the forest, its wildlife, native flora, and people working or recreating in the JNF. The extremely steep denuded slopes allow incursion of invasive plant species which MVP plans to control with use of herbicides on the pipeline right-of-way. These applied toxins will leach into downstream waterways threatening native aquatic species including those that are classified as threatened and endangered. Persistent sedimentation of downstream waterways is inevitable. MVP's track record on similar slopes proves this point. Overall threats to the forest integrity and health are sobering.

-MVP gas will not contain any odorant, which typically serves as a critical safety feature for providing people with an early warning of a breach in gas pipelines (MVP FEIS page 848/930). Therefore, immediate rapid evacuation of people who might be hiking, working, or caving near the vicinity of the pipeline will be dangerously delayed. This unique and dangerous absence of odorant in the transported methane is likely attributable to industry plans for ultimately processing the methane into liquified natural gas which is not compatible with odorant. See page 4 of 415-liquifiednaturalgasawareness.pdf (mass.gov).

-MVP has chosen an exceptionally treacherous route given the combined threats of steep slopes and poor soil which jeopardize secure anchoring of pipe in the ground. Passage through the Giles County Seismic Zone also threatens pipe integrity through perpetuity.

-This ill-conceived and dangerous pipeline route constitutes an assault on the thoughtfully constructed existing Forest Plan. A prominent red flag in this whole scenario is the high number (eleven) of required changes to the existing Forest Plan that are needed to facilitate MVP's very singular needs.

National Forests are regarded by Americans as treasured, natural places that provide solace, adventure and beauty along with vital habitat for many wild creatures. Installation of permanent manmade hazards are not acceptable to the intent behind the development and preservation of these wild spaces. It is unconscionable for the Forest Service to make eleven changes in the existing Forest Plan to accommodate a private company's economic goals, which ultimately jeopardize the safety, integrity and health of the forest, its wild inhabitants, waterways, Forest Service workers, and people enjoying the forest.

It is critical to understand that allowing placement of a high pressure (1480 PSI) gas pipeline through the National Forest is a PERMANENT hazard that will have negative impacts through perpetuity. "Out of sight, out of mind" constitutes a dangerous attitude, as is strikingly apparent given the below information.

-Future fracturing of the pipe is to be anticipated due to the steep slopes that can torque pipes at their connections, especially as the covering soil begins eroding over time. This horrific scenario is a likely possibility given the poor soil and steep terrain along MVP's ill-chosen route.

-Two large diameter pipelines crossing hazardous terrain comparable to that within the Jefferson National Forest have ruptured within the last 5 years.

oThe Revolution Pipeline in Beaver County Pennsylvania exploded just a week into operation when a landslide along the route ruptured the pipeline. The ensuing fire burned down a house. Energy Transfer, the construction company was fined \$140K for construction violations along the Beaver County pipeline | StateImpact Pennsylvania (npr.org)

A Pennsylvania Public Utilities Commission investigation revealed the Revolution blast occurred in an area in the highest level of landslide risk that had seen "prior slide events."

oThe TransCanada Leach Express Pipeline in Marshall County West Virginia exploded in 2018 shortly after being put into service. An 83-foot section of pipe slid down a steep slope after a landside and exploded leaving a large crater.

This pipeline is a smaller diameter (36 inches) compared to the 48-inch MVP and has a lower operating pressure of 1440 psi. It crosses very steep terrain similar to that of the MVP route through the JNF.

Of note is the similarities in the terrain of the Leach Express explosion and MVP's crossings of the JNF - both contain steep slopes and "slips" (euphemistic term for small landslides).

-Any rupture in a high-pressure methane transmission line (1480 psi for the MVP) results in an unquenchable gas fire that cannot be put out via customary means using water hoses, fire beaters or trenching. The area surrounding the breach (including contiguous forest) will burn until all the methane between the pipeline shut off valves is consumed by the blaze. Shut off valves are 10.4 miles apart along this portion of the route that crosses the JNF. This mileage equates to a huge quantity of flammable methane.

-Allowing this methane pipeline to tunnel through the forest leaves a permanent toxic tube of radioactivity in our National Forest land. MVP's FEIS downplays the significance of this hazard with the word "radioactivity" found only ONCE in the FEIS pg. 798 in a footnote defining Curie measurement units.

-Transported methane from fracked gas contains highly radioactive particles: Lead210 and Polonium210 that are present in the gas extracted from deep underground in the Marcellus Shale formation. This intensely radioactive debris accumulates in a layer of sludge deposited on the pipe lining over time - becoming a permanent, highly potent toxin throughout the entire pipeline. Based on the characteristics of radioactive Lead and Polonium, the potency of this toxic sludge increases exponentially over the life of the pipeline. TENORM: Oil and Gas Production Wastes | US EPA

-The Mountain Valley Pipeline, if completed and put into operation, will become a 300-mile Superfund site due to permanent radioactive sludge deposited in the pipe lining.

-Per plans stated in MVP's FEIS, the pipeline could be "abandoned in place" or removed after a lifespan of approximately 50 years (FEIS page 162/930). What MVP's FEIS does not address is the fact that "abandonment" leaves a highly radioactive layer of sludge within the pipe and thereby, within the forest floor. It is inconceivable that a retired pipeline - essentially a linear Hazmat site - would ever be removed in its entirety.

-The lining sludge, euphemistically named "TENORM," i.e., technologically enhanced, normally occurring radioactive material, will remain highly radioactive into perpetuity - a threat to flora, fauna and humans who will be exposed to this toxic debris as the pipe deteriorates over time, gradually releasing its hazardous debris into the surrounding environment. Because the radioactivity in TENORM sludge exponentially increases in potency over time, the abandoned pipe leaves an ever-worsening toxic legacy beneath the forest floor.

-Once the pipeline is abandoned it will lack internal pressure, and the buried pipes will fracture over time due to the weight of covering soil. This disruption will allow leakage of radioactive debris into the forest soil, with eventual contamination of downstream and subterranean waterways that are ubiquitous in the surrounding karst terrain.

Household wells and livestock water sources of properties abutting National Forest land could be impacted in the future by this invisible, odorless, colorless, yet highly toxic radioactive contaminant in their water.

-This portion of the pipeline route in Virginia is its most treacherous, lying within both the Giles County Seismic

zone, and areas deemed to be highly susceptible to landslides. These threats to pipeline integrity are further compounded by poor soil and heavy rains on steep slopes which can potentiate pipe torquing. In fact, the portion of the MVP route through the Jefferson National Forest includes some of the steepest slopes along the entire pipeline route: ranging up to 77%, they pose very real threats to pipe stability and integrity.

-Application of permanent strain gauges on the pipe in this very steep terrain is a choice that MVP could and should make. Unfortunately, the Forest Service cannot mandate that MVP utilize this expensive safety measure. However, JNF officials should lobby diligently for these devices to be applied to pipes traversing some of the steepest terrain in the forest, e.g., the steep north slope of Peter's Mountain.

These devices monitor pipe strain and signal impending torquing of the pipe which can trigger devastating pipe rupture with accompanying explosion and forest fire. Strain gauges should be mandatory permanent devices placed for the safety of people and wild creatures using the corridor. Strain gauges are most effective if applied and monitored continuously, and not just intermittently "on a yearly basis" as stated in MVP's karst mitigation plan. Continuous monitoring is an expensive undertaking that MVP is likely trying to avoid.

-The final paragraph (pg. 18) of MVP's "karst mitigation" plan addresses issues for preempting pipe rupture:

Mountain Valley may also consider installing strain gauges on this pipeline during stress relief evacuation. The strain gauges would monitor potential accumulated pipeline strain in the future if land subsidence continues. Strain gauge monitoring would be conducted manually on a yearly basis (underlining is mine), unless LiDAR monitoring under the post-remediation timeframe continues to identify large-scale slope movement, in which case the strain gauges will be monitored on a six-month basis (underlining is mine). Strain gauges would only be contemplated for relatively large-scale movement scenarios. Attachment-K_Karst-Mitigation-Plan.pdf (mountainvalleypipeline.info)

-The MVP crossing is not consistent with the Jefferson National Forest Service Plan.

-In light of all the significant geophysical hazards threatening pipe integrity, the anticipated threats to viability of endangered species via habitat disruption, as well as the compounding future threats associated with a high pressure, combustible, and increasingly radioactive pipeline, the Forest Service's only judicious choice is to deny Mountain Valley Pipeline's intended crossing through our National Forest.

-I urge the Forest Service to Select Alternative 1 - NO Action

Respectfully,
Tina L. Smusz