

Tuesday, January 18, 2022

Mackinac Straits Corridor Authority

Michael Nystrom, Chair

Anthony England

Paul Novak

sent via electronic mail c/o MDOT Ryan Mitchell/MitchellR13@michigan.gov

Dear Commissioners:

Following recent financial and engineering revelations about the proposed Line 5 crude oil tunnel beneath the Straits of Mackinac, citizens groups are recommending that the Mackinac Straits Corridor Authority suspend all state involvement and financial support of the project pending new legal and independent engineering analysis.

We are writing to ask that you undertake specific measures in response to these significant developments consistent with your duty to see that the tunnel is safely constructed and operated as you oversee this massive, costly, and high-risk underwater hazardous liquids pipeline enclosure in the Great Lakes. The following three new developments require your immediate attention as members of the Mackinac Straits Corridor Authority:

- 1) **Significantly Reduced Economic Life of Pipeline:** Enbridge Energy has adopted a dramatic new depreciation schedule that estimates the economic life of its Line 5 pipeline and others in its Lakehead System will be reduced to just 20 years as a result of competition, climate change policies and other factors. This represents a material change from Enbridge's December 2018 [Tunnel Agreement](#) with the Corridor Authority, which is based on a minimum 99-year tunnel life and operation of the pipeline.
- 2) **Expert Testimony on the Likelihood of an Underground Line 5 Tunnel Explosion:** [Expert testimony to the Michigan Public Service Commission](#) (MPSC) submitted by a chemical engineer with nearly 50 years in the oil and gas industry, whose background includes extensive work in emergency response and pipeline incident command, warns of a potentially catastrophic underground Line 5 tunnel explosion.
- 3) **Anticipated Tunnel Maintenance and Oil Recovery Problems:** The federal Pipeline and Hazardous Materials and Safety Administration (PHMSA), in a [letter to the MPSC](#), warns of possible maintenance and oil recovery problems with Enbridge's proposed tunnel design.

Economic Life of Enbridge's Line 5 and the Risk to Michigan Taxpayers

It was recently publicly revealed that [in May 2021 Enbridge filed documents with federal regulators](#) that suggest the Line 5 oil pipeline operated in a tunnel in the Straits could become a stranded asset and a State of Michigan financial liability just 13 years after Enbridge's estimated completion date of 2028.

In its filing with the Federal Energy Regulatory Commission (FERC), Enbridge is seeking \$210 million in increased tariff charges to its customers because of rapidly depreciating pipelines. Enbridge's 2021 Depreciation Study Update cites the long-term impact of climate change policies, competition and other new factors to document their contention that Line 5 and other pipelines have only a 20-year economic life remaining.

As you know, the State of Michigan will assume ownership and financial responsibility for the proposed oil tunnel once construction is completed. In the [Second Agreement](#) between Enbridge and the state, Enbridge has the authority to unilaterally withdraw from using the tunnel, while the state must guarantee Enbridge its use of the tunnel for 99 years.

Enbridge, in adopting its new depreciation schedule for Line 5 and other pipelines, has undertaken a unilateral change in policy that materially alters the conditions under which the Mackinac Straits Corridor Authority would assume ownership of the Line 5 tunnel.

Tunnel Explosion Risks

In testimony submitted on December 14, 2021, on behalf of the Bay Mills Indian Community, Richard B. Kuprewicz, a chemical engineer with more than 50 years of experience in the oil and gas industry, warned of "a potential for a release into the Straits from the tunnel by way of a catastrophic explosion." Kuprewicz pointed to hazardous and volatile gases and crude oil in an enclosed tunnel that could ignite hydrocarbon vapors trapped within the infrastructure and be released into the Great Lakes. A leading Great Lakes regional tunnel expert, [Brian O'Mara](#), and retired Dow chemical engineer, [Gary Street](#), have also raised substantive concerns about the Enbridge tunnel design and the risk of an explosion that could threaten workers and the Great Lakes, both during tunnel construction and operation.

According to O'Mara, dissolved methane has been detected in groundwater samples collected by Enbridge, as reported in their Geotechnical Data Report. Groundwater containing dissolved methane will be encountered during tunnel construction and will likely continue to enter the tunnel after construction through construction joints and other discontinuities because it is impossible to eliminate groundwater intrusion to such a large and deep structure. When groundwater containing dissolved methane enters the tunnel, it will depressurize and off-gas from the groundwater and escape into the ambient air of the tunnel. In the confined space of the tunnel, the methane in the air could ignite, or if it accumulates, it could explode.

To our knowledge, there has been little to no public technical reporting or assessment of this tunnel explosion risk by Mackinac Straits Corridor Authority members. Moreover, Enbridge has not completed a Failure Mode and Effects Analysis (FMAE) to address the numerous risks

identified by Kuprewicz, Street, O'Mara and others. Completion of a FMEA is required since the Enbridge design of the tunnel and pipeline is radically different and considerably less safe than the design proposed in the 2017 Dynamic Risk Consultants Report, which became the basis for the State of Michigan's support for the Line 5 Replacement Tunnel and creation of the MSCA.

Enbridge plans to transport a mixture of propane and butane through the tunnel nearly 20 percent of the time. According to Street, during the 99-year life of the tunnel, it is highly likely a pipeline leak will occur, spewing this very flammable mixture inside the tunnel, a confined space. Both propane and butane are heavier than air so will collect at the lowest point in the tunnel, awaiting the inevitable source of ignition, causing a detonation/explosion.

In roughly 20 minutes, a 1/8 inch hole in the pipeline can release enough propane and/or butane to cause an explosion equivalent to 345 pounds of TNT. The result would be catastrophic. If the hole were 1/4 inch, the explosion would occur in roughly 5 minutes. Such scenarios tell us there would be no time to take corrective action. While the number of possible leaks may be difficult to accurately predict, the number never goes to zero.

For these reasons many underwater tunnels, which have a "low spot", prohibit propane tanks as small as 5 gallons in a tunnel.

Tunnel Concerns of Federal Pipeline Regulators

The [November 18, 2021, letter to the Michigan Public Service Commission](#) from the federal Pipeline and Hazardous Materials and Safety Administration should concern the Corridor Authority, which will own the Line 5 tunnel if it is completed. Although PHMSA has no specific jurisdiction over the tunnel, the agency nevertheless raises specific concerns about pipeline maintenance inside a tunnel and potential problems of recovering oil during a pipeline rupture.

Recommended Actions by the Mackinac Straits Corridor Authority

As citizens concerned about the financial, environmental, and cultural impact of the proposed oil pipeline tunnel, we request that the Mackinac Straits Corridor Authority undertake the following actions:

- Conduct an independent analysis of the proposed tunnel and pipeline's financial, legal, and practical implications for the State of Michigan and Michigan taxpayers in light of Enbridge's new Line 5 depreciation schedule;
- Request an opinion from the Michigan Attorney General on whether Enbridge's new depreciation schedule of 20 years for Line 5 is in conflict with, and therefore invalidates, its agreements with the state to operate Line 5 in a tunnel for 99 years;
- Pending the outcome of an independent analysis and an Attorney General Opinion on Enbridge's tunnel agreements with the state, suspend all activities involving the tunnel project that would incur any future liability for taxpayers and expenditure of taxpayer funds, including consulting fees and staff time;

- Request the National Transportation Safety Board conduct an investigation into the risks associated with operating a highly volatile, hazardous liquid pipeline within the proposed tunnel. With no agency adequately considering this risk, it is imperative that the MSCA join with citizens groups and others and support this investigation by independent experts;
- Request that officials with the federal Pipeline Hazardous Materials and Safety Administration appear before the Mackinac Straits Corridor Authority to present in more detail their concerns about the Enbridge oil tunnel project. PHMSA officials invited to a public presentation should include: Tristan Brown, Acting Administrator; Alan K. Mayberry, Associate Administrator for Public Safety; Greg Ochs, PHMSA Central Region Director; and Linda Daugherty, Deputy Associate Administrator for Field Operations.
- Request that Richard B. Kuprewicz of Accufacts Inc., a geological engineer with tunneling and methane hazard expertise, tunnel expert, Brian O'Mara, and chemical engineer Gary Street appear before the Mackinac Straits Corridor Authority to present details of their findings relative to Enbridge's Line 5 tunnel design and concerns regarding operation, safety, and maintenance of the tunnel.

Thank you in advance for your attention to these important emerging developments involving the tunnel project and your consideration of our requests. As the state's lead agency overseeing the Line 5 tunnel project, we anticipate you will take these measures as duties of that solemn responsibility.

Sincerely,
Sean McBrearty, Coordinator
Oil & Water Don't Mix

On behalf of the following:
Chippewa Ottawa Resource Authority (CORA)
Clean Water Action
FLOW (For Love of Water),
Groundwork Center for Resilient Communities
League of Women Voters of Michigan
Michigan Climate Action Network
Michigan Environmental Council
Northern Michigan Environmental Council
Sault Ste. Marie Tribe of Chippewa Indians
Sierra Club
Straits Area Concerned Citizens for Peace, Justice & the Environment
Straits of Mackinac Alliance
TC350

cc:
Gov. Gretchen Whitmer
Attorney General Dana Nessel

attachments:

2018 tunnel agreement

Dec. 14 MPSC Kuprewicz testimony

Tunnel Agreement

Tunnel Second Agreement

PHMSA letter to MPSC

Brian O'Mara bio

Gary Street bio