LINE 3 INTEGRITY
What You Need to Know

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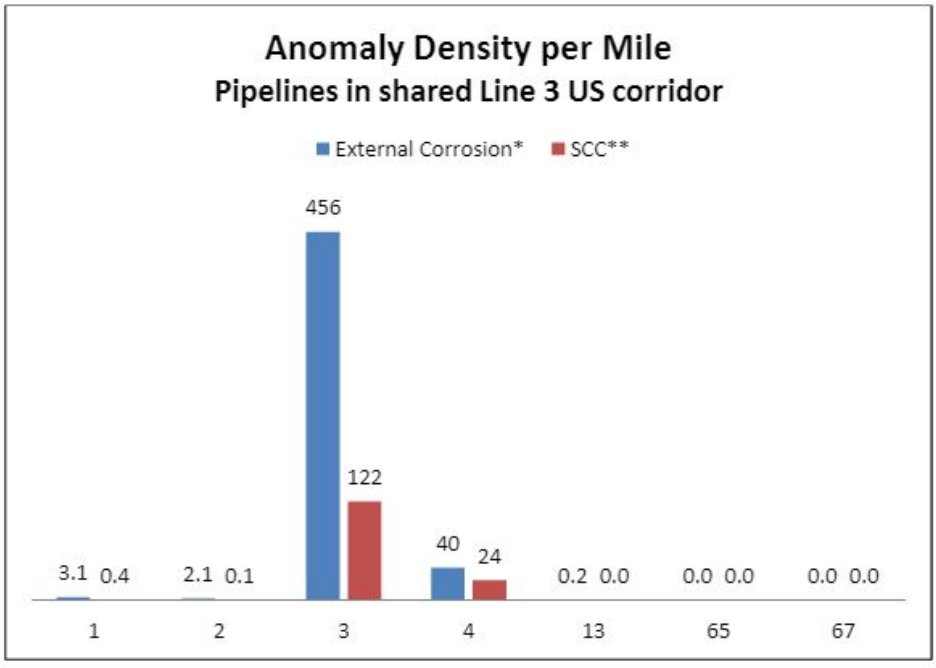
What do we know about the integrity of Line 3?
According to their most recent publicly disclosed inspection records:

- Over 70 percent of the 140,000 pipe sections between welds (referred to as "pipe joints") are experiencing external corrosion;
- Corrosion deeper than 50 percent of the pipe wall thickness would increase to affect over 3,000 of the pipe joints in 2016 – an increase from approximately 900 pipe joints in 2012; and
- Over 25,500 pipe joints will have a corrosion depth of 50 percent or greater by 2030 – an increase from approximately 18,000 pipe joints forecast for 2027
- Ten times as many corrosion anomalies per mile (with a depth of more than 20 percent of the pipe wall thickness) than any other Enbridge pipeline in the same corridor.
- SCC affecting over 15 percent of the pipe joints, and five times as many SCC anomalies per mile (with a depth of more than 10 percent of the pipe wall thickness) than any other Enbridge pipeline in the same corridor.

The figure below shows the density per mile of external corrosion and SCC anomalies for Line 3 compared to the other Enbridge pipelines located in the shared U.S. corridor.



*Corrosion over 20 percent of wall thickness; **crack-fields over 10 percent of wall thickness

Why is this pipeline in such bad condition?

Line 3 in the U.S. was built in 1962/1963 **with two characteristics that make this pipeline particularly susceptible to three integrity threats. First, on Line 3 in Minnesota,** 84 percent of the coating is Polyethylene ("PE") tape, which has been found to disbond from the pipe, making the pipeline more susceptible to both external corrosion and SCC. **Second, on Line 3 in the U.S.,** 53 percent of the longitudinal welds are flash welded ("FW"), which was a pipe manufacturing process that has an inherently higher susceptibility to the formation of defects along the long seam of the pipe. Although not all FW pipe contain manufacturing defects, there are FW segments of Line 3 where the combination of these defects and internal pipeline pressure developed into long-seam cracking and contributed to some of the historical failures, including the ***1991 1,700,000 gallon Grand Rapids Spill- the largest inland spill in history.***

How does Enbridge monitor Line 3?

According to recent testimony, Enbridge inspects the line every 12-18 months. They use a variety of inline inspection tools (ILI), including three corrosion detection technologies (magnetic flux leakage, axial magnetic flux leakage, and ultrasonic metal loss detection), a high resolution caliper (detecting geometric anomalies such as dents), and an ultrasonic crack detection tool.

Where have there been maintenance activities?