

**MP 608 – Marshall, Michigan Incident
NTSB/PHMSA Information Request No. 195**

195 Reference: Email direct from NTSB to Millan Sen & Tom Zimmerman

Preamble:

Request: Please provide any records of the procedures used to apply Polyken wrap coating to the pipe including the application equipment used (hand or machine), tension requirements, overlap requirements, pipe surface preparation, and any coating quality control and inspection documents relating to the pipe at the leak location

Response: Enbridge has conducted an extensive search for the coating application procedures implemented during installation of Line 6A and 6B. This included multiple weeks of coating records searching throughout the entire organization by several Enbridge records experts, consultation with coating specialists both within and outside of Enbridge, and direct discussions with Berry Plastics (owner of Polyken) in an effort to obtain the original manufacturer application procedures. This comprehensive search provided many of the details concerning the Line 6A and 6B coatings; however the specific coating application procedures could not be located.

Enbridge considers records maintenance as a critical component of pipeline operations. Enbridge maintains all original construction records as required by the DOT (such as material data, geometric properties, hydrotest pressures, appurtenance locations, etc); however prior to 1970 there were no requirements to maintain coating application records. While in many cases Enbridge maintains records over and above regulatory requirements, it appears that the original coating application procedures for Line 6A or 6B may not have been kept.

With respect to the integrity management of polyethylene tape coated lines, Enbridge has taken the conservative approach to assume that all such coatings are susceptible to disbondment, wrinkling, and cathodic protection shielding, regardless of the specific application procedure. Accordingly, ILI re-inspection intervals for polyethylene tape coated lines are generally less than the 5 year requirement specified in CFR Part 195. The management methodology for tape coated lines is documented in the Enbridge Integrity Management System.

The following details the available responses for this request:

- General coating information
 - Line 6A and 6B were coated using a Polyken #960 tape pipeline coating. The backing is comprised of 9 mil thick black polyethylene. The adhesive is a 4 mil thick synthetic rubber /synthetic resin.

- Application equipment used (hand or machine)
 - The tape coating used for the Line 6A and 6B pipe body was field applied, by machine.

- Tension requirements
 - The specified tensile strength of the tape is 30 lb/in width. The allowable elongation is 200%. The adhesion of strength of the backing to the primed steel is specified as 100 oz/in width.

- Overlap requirements
 - The specified minimum and maximum tape overlap was 0.5 and 1 inch respectively.

- Pipe Surface Preparation
 - The application procedure specified that, prior to tape coating application, a Polyken #919 primer be applied to the pipeline surface. This primer was specified to adhere the coating to the pipe surface developing a firm permanent bond. The primer was to be applied as delivered to a clean pipe surface in a thin, rapid drying film, and to be used in undiluted form after agitation to assure homogeneity.