Questions

1. Will there be any temperature monitoring units placed at the sites of the coating repairs to verify that the temperatures will not drop below the 40°F threshold specified in the work plan and lab simulations?

2. Will the Stricture Banding™ be removed from all of the repair locations after the hardness is verified?

3. Will the composite reinforcement have the epoxy applied on the barge? If so, how will this be transported down to the location of application to ensure the epoxy saturation has not been compromised?

4. How will the operator ensure that the composite reinforcement will be installed within 45 minutes after surface preparation?

5. How will the operator ensure that the Bio-Dur will be used within 20 minutes of being mixed?

6. Will the Stricture Banding™ be required to be perforated?

7. The Polatrak Cathodic Protection (CP) Gun manufacturer literature stated that two cathodic protection readings are provided and that "The two readouts should give a steady result and should be within 5 mV of each other." The provided External Pipeline Inspection Forms for the noted holidays do not show any two readouts that were within 5 mV of each other. Please explain this discrepancy.

8. Does the operator intend to collect samples of any of the "white deposits" for laboratory analysis or conducting any other examinations of the pipe or coating surfaces?

9. What effect will product flowing through the pipeline have on the coating cure rate?

10. What effect will the water current have on the coating cure rate?

11. How will debris from the lake floor be controlled so as to not become entrained in the coating, particularly if any excavation is required to fully expose the circumference of the pipe?

12. The laboratory analysis of the coating did not include an application test at the 6:00 (or 180°) position on the pipe. Will any applications at this position be required for these holiday repairs, and if so, are there any adjustments to the procedure that will have to be considered?

13. In the laboratory analysis of the coating, Table 3, indicates that there were several pull-off strength tests that ended up with "no valid result" or the "sample broke or cracked." Explain this data, and why the invalid results do not impact the expected performance of this coating.

14. The manufacturer data sheet specifies that hand held power tools are inadequate to use for large repairs. Additionally, the evaluation of the coating by the laboratory references a NACE 2 Finish ("Near-white metal abrasive blast cleaning"). As referenced in Section 3.1 of the application procedure, it states that "The repair area shall be abraded using either wet abrasive

blasting or pneumatic power wire wheel brush." Section 3.1 further states that "The method shall be capable of providing a surface profile of 2.5 – 5 mils." Please provide an explanation of how any pipe surface preparation method used will appropriately abraded the pipe surface to both the coating manufactures specifications and the techniques used by the laboratory while ensuring the integrity of the pipeline.

15. Segment EAS-3 had a CP reading of -848 mV CSE. Please describe how this level of CP is in compliance with 49 CFR 195.571.

16. Please provide further information regarding modified Method 2 for repairing EAS-4. Per EPA's Coating Work Plan approval letter, does Enbridge plan to demonstrate modified Method 2 to determine viability? If not, how does Enbridge plan to proceed with repairing EAS-4 without excavation of the lake bed?

Comments

1. Hardness testing should be performed at representative locations of the repair, such as near the transition to the existing repair and in the middle of the repair to determine uniform curing has occurred.

2. Regarding deviations from the coating repair work plan, notifications will also need to be made to the MDEQ if certain criteria are met that significantly alter the procedure and work plan.

3. Page 4 of the Coatings Repair Work Plan specifies wall thickness measurements that will be taken by the diver prior to recoating the pipeline. This section should explicitly call out that any pits will be measured and recorded.

4. Page 5 of the Coatings Repair Work Plan specifies that "Shore D measurements will be completed to confirm a value of 60 or greater." The manufacturer data sheet specifies "Low temperature curing at approximately 40°F will require approximately 7 days. Post cured Shore D scale hardness 70+". The plan should require that a Shore D hardness of 70, not 60, to be a successful application.

5. As referenced in Section 2.2 of the application procedure, the operator should provide a copy of all of the coating manufactures training materials given to the contractors to the MDEQ.

6. As referenced in Section 4.2.2 of the application procedure, the operator should specify how the BIO-DUR application will be applied to the pipe.