

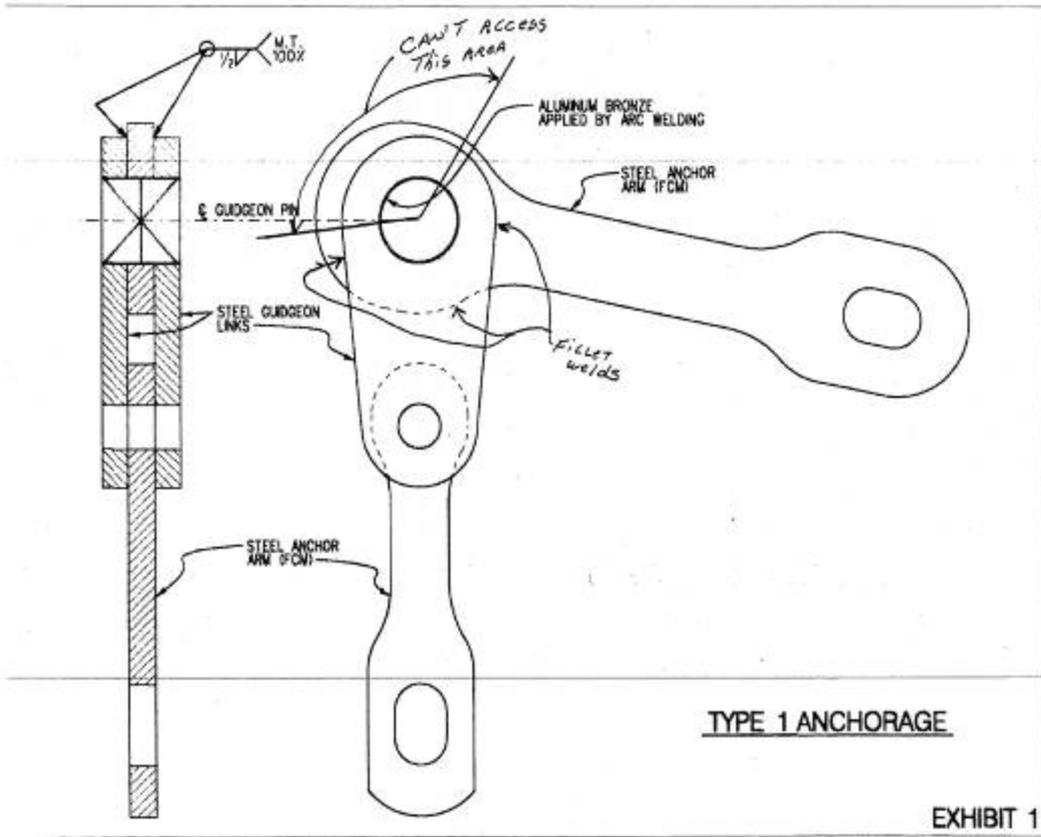
# MITER GATE ANCHOR ARM INSPECTIONS

Great Lakes and Ohio River Division issued Fragmentation Order 03 instructing all Districts to inspect their miter gate anchor arms after the failure of a miter gate anchor arm at Greenup Lock.

Operations Personnel and Engineering Personnel were directed to inspect each miter gate anchorage and conduct nondestructive tests on suspect anchor arms

Louisville District has three different designs of anchor arms.





This style of anchor arms were the original design installed at all our high lift lock and dams on the Ohio River and Green River in the 60s, 70s and 80s.





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We have this style of anchor arm where we have replaced some of our anchorages. On this style we did a visual inspection only. Note that no threads are exposed for us to use dye penetrant to inspect





We also have this design at the New McAlpine Chamber



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Magnetic Particle Inspection reveals Cracks in Green River Lock 2's Anchor Arm



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We rented a crane and sent a small crew to replace the Green River Lock 2 anchor arm since it was on the land wall and LRS had the new McAlpine chamber dewatered



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These anchor arms were removed from Green River Lock 2 after finding the cracks



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Magnetic particle inspection showing crack indication at Markland L&D





Crack indication at Markland was the result of cutting off a lifting lug. The indication ground out



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Magnetic particle showing indication at JT Myers L&D



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Same Crack at JT Myers with Dye Penetrant. The anchor arm was changed out





Older low lift lock anchor arms at L&D 52 and L&D 53





You can see in this photo where we had used dye penetrant to inspect the threads that were accessible on the L&D 52 arms



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This FRAGO 3 inspection was geared toward avoiding this

Markland L&D  
1,200' Chamber  
Lower Middle  
Wall Gate

Kevin Vessels  
Louisville District  
17 February 2011



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