

Ethanolamines/Glycol Ethers Tier 3 Procedure

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Title: Cleaning T-110, T-120 And T-130
References: Glossary Of Equipment Identification (Text # 114)

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1326. Cleaning T-110, T-120 And T-130

1.0 Objective:

1.1 To shutdown the distillation towers in the glycol ethers plant for interior cleaning without damage to the equipment involved or injury to personnel.

2.0 Responsibility:

2.1 It is the responsibility of operations to ensure that this procedure is fully complied with.

2.2 It is the responsibility of operations to ensure that this procedure is executed in a safe and efficient manner.

3.0 Safety Notations:

3.1 Special consideration should be given to wearing monogoggles when connecting or disconnecting hoses, removing plugs from bleeds, etc. During the process of boiling and flushing the towers in preparation for internal cleaning.

4.0 Special Notations:

4.1 Before water boil up begins, isolate the towers from the ejector system and open the 2" tower vent at the internal condenser.

4.2 It is important to flush all tower lines, bleeds, sample points, etc. (be sure to reflux condensate to the packing)

4.3 If the cleaning process involves more than just boiling the tower and will involve enclosure entry, a separate permit will be needed for each tower.

4.4 A safety observer must be stationed at each tower man way while someone is inside the tower.

4.5 A toxic limit valve (TLV) must be run on each tower prior to entry. An air mover must be placed on each tower and allowed enough time to cool down and remove all product vapor prior to the TLV analysis.

5.0 Procedure:

- 5.1 Shutdown the finishing end and pump all tower contents to DV-113 or DV-114.
- 5.2 Isolate the towers to be flushed with red tags to prevent water contamination of the rest of the system.
- 5.3 Connect a flexible hose (consider using 2" hose to make sure of enough water supply) to the feed line to T-110. Start a condensate flow to T-110.
- 5.4 When the level reaches 60% start a steam flow and start boil up. Continue to make up fresh condensate.
- 5.5 After boil up is established in T-110, put T-110 bottoms to T-120.
- 5.6 Establish a level in T-120, then start a steam flow.
- 5.7 Start a boil up on T-120. Level control the bottoms to T-130.
- 5.8 Establish a level in T-130 and start a recirculation flow through E-130. Start a boil up in T-130.
- 5.9 Put T-130 bottoms to the waste trailer.
- 5.10 Pull all plugs on bottoms, overheads, recirculation and any other control loop that should be flushed.
- 5.11 After boiling and flushing for about one hour, flush all bleed points of glycol ethers.
- 5.12 After bleed points are clear of glycol ethers, shutdown the towers and dump the condensate to area 1 sump. (Analyze contents for TOD prior to dump. Must be <10,000 ppm TOD before putting to sump)
- 5.13 Red tag the finishing system according to the jobs to be performed.

6.0 Revisions:
