

Ethanolamines/Glycol Ethers

Tier 3 Procedure

Section Number: 1120
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Title: Total Air Failure
References : Glossary Of Equipment Identifications (Text # 114)

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1120. Total Air Failure

1.0 Objective:

- 1.1 To provide a guide to the actions that should be taken in the event of a total air failure to prevent injury to personnel and release to the environment.

2.0 Responsibility:

- 2.1 It is the responsibility of the operations supervisor and the senior operations specialist to ensure that this procedure is utilized in the event of a plant emergency involving a total air failure.
- 2.2 It is the responsibility of the senior operations specialist and the operations specialist to ensure that this guide is used in an effective manner keeping in mind that safety is a number one priority.

3.0 Special Notations:

- 3.1 Emergency procedures are written with the intention of having in black and white what procedure should be followed under ideal circumstances. They do not take the place of common sense. If there is a fire, we have a fire department to handle it. Don't tackle something that could injury you because you don't have the experience or training to handle it. Small fires in trash cans or some insulation fires can be handled by most of us. Don't wind up making the problem worst by getting hurt or rushing in and doing the wrong thing. The same thing applies to spills and other emergencies.

-----use common sense-----

- 3.2 Amines valves that fail open in an air failure:

- 3.2.1 P-212 recirculation flow controller

3.2.2 P-201 total flow controller

3.2.3 Cooling tower water to E-201

3.0 Special Notations: Cont'd.

3.2.4 D-210 recirculation flow controller

3.2.5 E-211 recirculation flow controller

3.2.6 E-240 recirculation flow controller

3.2.7 T-250 feed temperature controller

3.2.8 E-250 recirculation flow controller

3.2.9 E-260 recirculation flow controller

3.2.10 E-270-1 recirculation flow controller

3.2.11 D-218 overhead valve

3.3 Ethers valves that fail open in an air failure:

3.3.1 R-101 feed temperature controller

3.3.2 P-101 total flow controller

3.3.3 R-101/102 shell pressure controller

3.3.4 P-104 total flow controller

3.3.5 AO-107 (cooling tower water out)

3.3.6 DO-109 (cooling tower water in)

3.4 Utility valves that fail open in an air failure:

3.4.1 D-510 level controller

3.5 Watch for excessively high pressure in the oxide line and any product lines that have been blocked in.

4.0 Lead Senior Operations Specialist Actions:

4.1 Coordinate a safe and complete shutdown of the plant.

4.2 Attempt to get several portable air compressors from plant security as time permits.

4.3 Call plant superintendent as time permits.

5.0 Senior Operations Specialist (Board Person):

- 5.1 Make the appropriate communications with the power plant to take division air if possible. If this cannot be done proceed with
- 5.2 Trip oxide to the glycol ethers and ethanolamines plants immediately. Keep ammonia and alcohol flowing as long as possible.
- 5.3 Announce the emergency over the intercom, stop all use of plant air (movers, impact wrenches, etc.) And sound the emergency horn.
- 5.4 Put the 30 pound steam controller in manual and close to prevent the valve from swinging open when air pressure returns.
- 5.5 Push total emergency trip for both amines and ethers plants.
- 5.6 Block in T-211 overheads.
- 5.7 Block in D-210 vent to E-211/T-211.
- 5.8 Oxide, ammonia, alcohol, catalyst and acid controllers in manual and close. Bypass condensate around E-218 and E-219.
- 5.9 Block in t-250 feed, all overheads, bottoms and steam to T-110, T-115, T-120, T-130, T-140, T-220, T-230, T-240, T-250, T-260, T-271 and close steam valves to R-101/102.
- 5.10 Block in all rerun and recycle flows.
- 5.11 Coordinate actions of both operations specialists.
- 5.12 Close pressure controllers on glycol ejectors.

6.0 Operations Specialist Actions:

- 6.1 Make sure all Sundyne pumps are down and blocked in.
- 6.2 Block in incoming ethylene oxide at D-101, propylene oxide at block limits (if we are on the pm series) and anhydrous ammonia makeup to D-210.
- 6.3 Block in all transfers.
- 6.4 Block in T-211 overheads flow controller.
- 6.5 Block in D-210 vent flow.

6.6 Call control room for further instructions.

6.0 Operations Specialist Actions: Cont'd.

- 6.7 Manually block in ejectors to columns.
- 6.8 Block in all bleeds on air system.
- 6.9 Manual block in overheads, bottoms and steam to all towers in the amines area.
- 6.10 Shutdown and block in all vacuum pumps.
- 6.11 With permission from the control room, prepare to add a small amount of nitrogen to the towers to reduce oxygen content.
- 6.12 Manually block in overheads, bottoms and steam to all towers in the ethers area. Block steam to R-101/102.
- 6.13 Open R-101/102 overheads steam to D-510. Block steam to E-110.

7.0 Revisions:

7.1	Revision #1	06-30-92	Section 1120.1.1 changed to reflect environmental concerns.
7.2	Revision #2	07-14-93	Yearly Review
7.3	Revision #3	12-22-94	Yearly Review
	Revision 4	12-11-95	Yearly Review