

Ethanolamines/Glycol Ethers Tier 3 Procedure

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References: Glossary Of Equipment Identification (Text # 114)

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1125. Prolonged Power Failure

1.0 Objective:

- 1.1 To provide a guide to the actions that should be taken in the event of a prolonged power failure to prevent damage or injury to the environment or personnel.

2.0 Responsibility:

- 2.1 It is the responsibility of the operations supervisor and the senior operations specialist to ensure that this guideline is used in the event of such an emergency.
- 2.2 It is the responsibility of the senior operations specialist and the operations specialist to ensure that this procedure is utilized in the event of a prolonged power failure.

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 injure you because you don't have to 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 Valves that fail open during a power failure:

3.2.1 Ethanolamines:

- 3.2.1.1 P-212 recirculation flow controller.

- 3.2.1.2 P-201 total flow controller.

- 3.2.1.3 Cooling tower water to E-201

- 3.2.1.4 D-210 recirculation flow controller.
- 3.2.1.5 E-211 recirculation flow controller.
- 3.2.1.6 E-240 recirculation flow controller.
- 3.2.1.7 T-250 feed temperature controller.
- 3.2.1.8 E-250 recirculation flow controller.
- 3.2.1.9 E-260 recirculation flow controller.
- 3.2.1.10 E-270-1 recirculation flow controller.
- 3.2.1.11 D-218 overhead valve.
- 3.2.1.12 EO Vent stack and ammonia vent stack steam and process water.

3.2.2 Glycol ethers valves that fail open:

- 3.2.2.1 R-101 feed temperature controller.
- 3.2.2.2 P-101 total flow controller.
- 3.2.2.3 R-101/102 shell pressure controllers.
- 3.2.2.4 P-104 total flow controller.
- 3.2.2.5 AO-107 (cooling tower water out).
- 3.2.2.6 DO-109 (cooling tower water in).
- 3.2.2.7 Glycol ethers towers cooling tower water air operated valves (aov).
- 3.2.2.8 Area i vent stack steam and process water.

3.2.3 Utility valve(s) that fail open:

- 3.2.3.1 D-510 level controller.

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

3.4 After the plant is down and secure, turn off any unnecessary lighting to prolong the time the battery system will supply power to operate intercoms and needed lights.

4.0 Procedure:

4.1 Board man actions:

- 4.1.1 Coordinate a safe and complete shutdown of the plant..
- 4.1.2 Monitor division situation with the emergency radio.
- 4.1.3 Call the plant superintendent as time permits.
- 4.1.4 Announce emergency over the intercom and sound the emergency horn.
- 4.1.5 Be prepared to trip the sprinklers and vent stacks.
- 4.1.6 Block in T-211 overhead flow controller.
- 4.1.7 Block in catalyst and acid flows, close all oxide, alcohol, and ammonia feed valves.
- 4.1.8 Close all overheads, bottoms and steam valves to T-220, T-230, T-240, T-250, T-260, T-271, T-110, T-115, T-120, T-130, T-140, R-101 and R-102.
- 4.1.9 Block any rerun and recycle flows.
- 4.1.10 Block Rr-201 shell pressure controller.
- 4.1.11 Close pressure controllers on glycol ethers ejectors.
- 4.1.12 Coordinate actions of both operations specialists.
- 4.1.13 Have someone check the discharge pressure gauges on all distillation columns for excessive pressure build up.
- 4.1.14 Close regen air valve on driers if we are regenerating (fic 5188).

4.2 Operations specialists actions:

- 4.2.1 Make sure vent stacks are tripped (board persons decision)
- 4.2.2 Open process water cross tie to E-201A.
- 4.2.3 Manually block incoming oxide (ethylene oxide at D-101 and propylene oxide at the block limits (north block limits).
- 4.2.4 Manually block in ammonia make up at D-210.
- 4.2.5 Block in all transfers that were in progress at the time of the power failure.
- 4.2.6 Put small nitrogen purge on all vacuum columns.
- 4.2.7 Call the control room for further instructions.
- 4.2.8 Manually block in ejectors to the columns.
- 4.2.9 Bypass condensate around E-218 and E-219.
- 4.2.10 Block in all overheads, bottoms and steam to distillation columns (T-110, T-115, T-120, T-130, T-140, T-220, T-230, T-240, T-250, T-260 and T-271.
- 4.2.11 Block in T-211 overhead flow controller.
- 4.2.12 Block in the aqua ammonia control valve at the outlet of R-202 and ethylene oxide feed at R-201.
- 4.2.13 Close all bleed on the air compressors and the air drier system.
- 4.2.14 Make sure all operations personnel have radios.

5.0 Revisions
