



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7
11201 RENNER BOULEVARD
LENEXA, KANSAS 66219

UNITED STATES
ENVIRONMENTAL PROTECTION
AGENCY-REGION 7

2013 NOV 21 PM 3: 52

EXPEDITED SETTLEMENT AGREEMENT (ESA)

DOCKET NO.: CAA-07-2013-0019

This ESA is issued to: Mid-Missouri Energy, LLC

At: 15311 North Saline 65 Highway, Malta Bend, Missouri 65339

for violating Section 112(r)(7) of the Clean Air Act.

The United States Environmental Protection Agency, Region 7 (EPA) and Mid-Missouri Energy, LLC (Respondent), have agreed to a settlement of this action before filing of a complaint, and thus this action is simultaneously commenced and concluded pursuant to Rules 22.13(b) and 22.18(B)(2) of the Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties, Issuance of Compliance or Corrective Action Orders, and the Revocation, Termination or Suspension of Permits (Consolidated Rules), 40 C.F.R. §§ 22.13(b), 22.18(b)(2).

The Complainant, by delegation of the Administrator of the EPA, is the Director of the Air and Waste Management Division. The Respondent is Mid-Missouri Energy, LLC, 15311 North Saline 65 Highway, Malta Bend, Missouri 65339.

This is an administrative action for the assessment of civil penalties instituted pursuant to Section 113(d) of the Clean Air Act (CAA). Pursuant to Section 113(d) of the CAA, 42 U.S.C. § 7413(d), the Administrator and the Attorney General jointly determined that cases which meet the criteria set forth in EPA's policy entitled "Use of Expedited Settlements in Addressing Violations of the Clean Air Act Chemical Accident Prevention Provision, 40 C.F.R. Part 68," dated January 5, 2004, are appropriate for administrative penalty action.

ALLEGED VIOLATIONS

On January 15 and 16, 2013, an authorized representative of the EPA conducted a compliance inspection of the Respondent's facility located at 15311 North Saline 65 Highway, Malta Bend, Missouri, to determine compliance with the Risk Management Plan (RMP) regulations promulgated at 40 C.F.R. Part 68 under Section 112(r) of the CAA. The EPA found that the Respondent had violated regulations implementing Section 112(r) of the CAA by failing to comply with the regulations as noted on the enclosed Risk Management Program Inspection Findings (RMP Findings), which is hereby incorporated by reference.

SETTLEMENT

In consideration of Respondent's size of business, its full compliance history, its good faith effort to comply, and other factors as justice may require, and upon consideration of the

entire record, the parties enter into the ESA in order to settle the violations, described in the enclosed RMP Findings, for the total penalty amount of **\$6,600**.

This settlement is subject to the following terms and conditions:

The Respondent by signing below waives any objections that it may have regarding jurisdiction, neither admits nor denies the specific factual allegations contained herein and in the RMP Findings, and consents to the assessment of the penalty as stated above. Respondent waives its rights to a hearing afforded by Section 113(d)(2)(A) of the CAA, 42 U.S.C. § 7413(d)(2)(A), and to appeal this ESA. Each party to this action shall bear its own costs and fees, if any. Respondent also certifies, subject to civil and criminal penalties for making a false submission to the United States Government, that the Respondent has corrected the violations listed in the enclosed RMP Findings and has sent a cashier's check or certified check (payable to the "United States Treasury") in the amount of **\$6,600** in payment of the full penalty amount to the following address:

U.S. Environmental Protection Agency
Fines and Penalties
Cincinnati Finance Center
P.O. Box 979077
St. Louis, Missouri 63197-9000

The Docket Number of this ESA is CAA-07-2013-0019, and must be included on the check.

This original ESA, a copy of the completed RMP Findings, and a copy of the check must be sent by certified mail to:

Christine Hoard (AWMB/CRIB)
U.S. Environmental Protection Agency, Region 7
11201 Renner Boulevard
Lenexa, Kansas 66219.

A copy of the check must also be sent to:

Kathy M. Robinson
Regional Hearing Clerk
U.S. Environmental Protection Agency, Region 7
11201 Renner Boulevard
Lenexa, Kansas 66219.

Upon Respondent's submission of the signed original ESA, the EPA will take no further civil action against Respondent for the alleged violations of the CAA referenced in the RMP

In the Matter of Mid-Missouri Energy, LLC
Docket No. CAA-07-2013-0019
Page 3 of 6

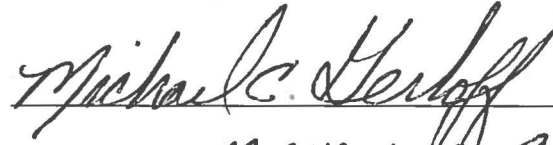
Findings. The EPA does not waive any other enforcement action for any other violations of the CAA or any other statute.

If the signed original ESA with an attached copy of the check is not returned to the EPA Region 7 office at the above address in correct form by the Respondent within 45 days of the date of Respondent's receipt of it (90 days if an extension is granted), the proposed ESA is withdrawn, without prejudice to EPA's ability to file an enforcement action for the violations identified herein and in the RMP Findings.

This ESA is binding on the parties signing below.

This ESA is effective upon filing with the Regional Hearing Clerk.

FOR RESPONDENT:



Date: 10-22-13

Name (print): MICHAEL C. GERLOFF

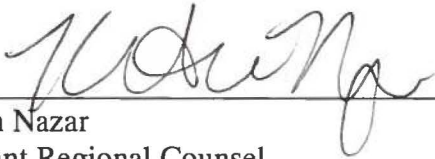
Title (print): ENVIRONMENTAL, HEALTH & SAFETY COORDINATOR
Mid-Missouri Energy, LLC

FOR COMPLAINANT:



Date: 11/19/13

for _____
Becky Weber
Director
Air and Waste Management Division
EPA Region 7



Date: 11/21/13

Kristen Nazar
Assistant Regional Counsel
Office of Regional Counsel
EPA Region 7

I hereby ratify the ESA and incorporate it herein by reference. It is so ORDERED.

Karina Borromeo
Karina Borromeo
Regional Judicial Officer

Date: 11-21-13

Risk Management Program Inspection Findings
CAA § 112(r) Violations

Mid-Missouri Energy, LLC
15311 North Saline 65 Highway
Malta Bend, Missouri 65339
Docket No. CAA-07-2013-0019

COMPLETE THIS FORM AND RETURN IT WITH THE ESA.

VIOLATIONS

PENALTY AMOUNT

Hazard Assessment

Defining Offsite Impacts-Population [§ 68.30(a)]

\$600

The owner or operator failed to estimate in the RMP the population within a circle with its center at the point of the release and a radius determined by the distance to the endpoint defined in § 68.22(a).

How was this addressed:

A NEW RADIUS OF IMPACT (ROI) WAS CALCULATED USING EPA'S
MARDIST SOFTWARE WITH CENTER OF ROI PLACED ON THE TANK
IN QUESTION INSTEAD OF THE CENTER OF THE FACILITY.

(RMP CHANGES MADE AND RMP RE-CERTIFIED AND
RE-SUBMITTED) VIA CDX

Hazard Assessment

Documentation [§ 68.39(e)]

\$300

The owner or operator failed to maintain records of the data used to estimate population and environmental receptors potentially affected on the offsite consequence analyses.

How was this addressed:

BASED ON RECALCULATION OF THE ROI ABOVE, THE 2010
CENSUS BLOCK DATA WAS UPLOADED AND UTILIZED FOR
POPULATION FINDINGS AND DOCUMENTATION OF THIS
CENSUS DATA HAS BEEN PLACED IN THE RMP BINDER.
(RMP CHANGES MADE VIA CDX AND RMP RE-SUBMITTED)

Prevention Program

Process Safety Information [§ 68.65(d)(1)(vii)]

\$600

The owner or operator failed to provide material and energy balances for processes built after June 21, 1999.

How was this addressed:

MATERIAL AND ENERGY BALANCE INFORMATION WAS
ADDED TO THE MME A+ID PROCESS FLOW
DIAGRAM IN FEBRUARY 2013.

(DIAGRAM ATTACHED)

VIOLATIONS

PENALTY AMOUNT

Prevention Program
Process Safety Information [§ 68.65(d)(2)]
The owner or operator failed to document that equipment complies with recognized and generally accepted good engineering practices.

\$1,500

How was this addressed:

ON 01-17-13, ICM, THE FACILITY DESIGNER, PROVIDED DOCUMENTATION THAT MME WAS DESIGNED AND BUILT USING RECOGNIZED AND GENERALLY ACCEPTED GOOD ENGINEERING PRACTICES. (COPY ATTACHED)

Prevention Program
Operating Procedures [§ 68.69(a)]
The owner or operator failed to develop and implement written operating procedures that provide clear instructions for safely conducting activities involved with each covered process consistent with the process safety information.

\$1,500

How was this addressed:

OPERATING PROCEDURES (SOP'S) FOR THE AMMONIA AND DENITRANT RELATED AREAS WERE RE-WRITTEN TO REFLECT THE "G" OPERATING PHASES AND INSTITUTED IN OCTOBER 2013 (COPY ATTACHED)

Prevention Program
Operating Procedures [§ 68.69(b)]
The owner or operator failed to have operating procedures readily accessible to employees who are involved in a process.

No Penalty Assessed

How was this addressed:

RE-WRITTEN SOP'S HAVE BEEN ADOPTED AND ARE AVAILABLE TO MME EMPLOYEES

Prevention Program
Operating Procedures [§ 68.69(c)]
The owner or operator failed to certify annually that the operating procedures are current and accurate and that procedures have been reviewed as often as necessary.

\$1,200

How was this addressed:

ALTHOUGH MME CERTIFIED OPERATING PROCEDURES ANNUALLY, THESE CERTIFICATIONS WERE DONE WITHOUT THE KNOWLEDGE THAT THE "G" PHASES WERE REQUIRED. THE NEW OPERATING PROCEDURES HAVE BEEN INSTITUTED AND CERTIFIED.

VIOLATIONS

PENALTY AMOUNT

Prevention Program

Operation Procedures [§ 68.69(d)]

\$900

The owner or operator failed to develop and implement safe work practices to provide for the control of hazards during specific operations, such as lockout/tagout.

How was this addressed:

LINE BREAKING WAS ADDED TO MME'S ARRAY OF SAFEWORK PERMITTING IN JULY 2013 IN ORDER TO AUGMENT LOCKOUT/TAGOUT.

(COPY ATTACHED)

Total Unadjusted Penalty

\$6,600

Calculation of Adjusted Penalty

1st Reference the multipliers for calculating proposed penalties for violations found during RMP inspection matrix. Finding the column for 10-100 employees and row for >10 times the threshold quantity amount in a process gives a multiplier factor of 1.0. Therefore, the multiplier for Mid-Missouri Energy, LLC = 1.0.

2nd Adjusted Penalty = \$6,600 (Unadjusted Penalty) X 1.0 (Size-Threshold Multiplier) = \$6,600.

3rd An Adjusted Penalty of \$6,600 would be assessed to Mid-Missouri Energy, LLC, for violations found during the RMP Compliance Inspection.

Total Adjusted Penalty

\$6,600

This section must be also be completed and signed by Mid-Missouri Energy, LLC:

The approximate cost to correct the above items: \$ 15,000

Compliance staff name: MICHAEL C. GERIOTT

Signed: Michael C. Geriott Date: 10-22-13



the energy of innovation™

January 17, 2013

310 North First Street
Cehwich Kansas 67030
Ph 316 796.0900
Fax 316 796 0570
www.icm.com

Mr. Tyler Edmondson
Plant Manager
Mid-Missouri Energy, LLC
15311 N. Saline 65 Highway
Malta Bend, MO 65339

By *Electronic Mail only* to jamesc@midmissourienergy.com

RE: ICM, Inc. Statement of Adherence to Recognized Good Engineering Practices

Dear Mr. Edmondson:

This letter is being provided in response to your request that Mid-Missouri Energy, LLC ("Mid-Missouri") be provided with documentation concerning ICM's compliance with recognized good engineering practices related to ICM's engineering and other services in connection with the design and construction of your plant facility in Malta Bend, MO.

As you are aware, Fagen, Inc. constructed your 40MMGPY dry-grind ethanol plant pursuant to a Design-Build Contract between Fagen, Inc. as Design-Builder and Mid-Missouri Energy, Inc. as Owner dated December 8, 2003. ICM directly granted a License Agreement to Owner effective December 8, 2003 for the ICM Proprietary Property included within the Plant design furnished by Fagen (See Exhibit D to the Design Build Contract).

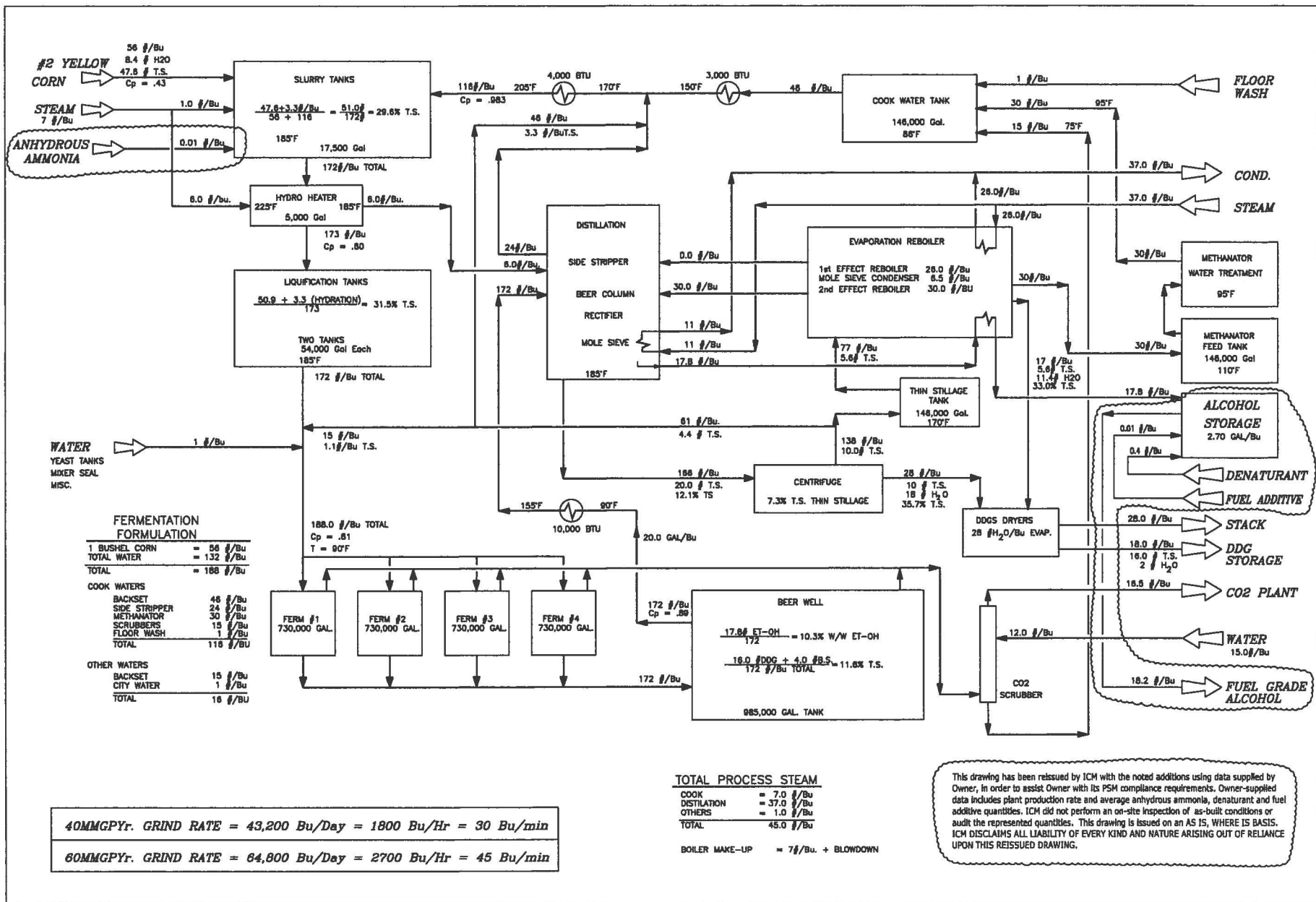
ICM, as a licensed professional engineering firm, follows and adheres to recognized good engineering practices in discharging its engineering design and related services for its clients. ICM's engineering work for the Plant was performed by ICM for Fagen, in our capacity as an engineering services subcontractor to Fagen, and accordingly, there is no legal or direct contractual relationship between ICM and Owner as to the services performed by ICM related to the original plant design and construction. ICM has reviewed the standard of care established under the Design-Build Agreement between Fagen and Owner. Fagen's work for Owner was required to meet a specific standard of care set forth in the Supplementary Conditions Section 2.3.1, which amended the Standard of Care for Design Professional Services at Section 2.3 of the General Conditions of the Design Build Contract. That standard is the following: "The standard of care for all design professional services performed to execute the Work shall be the care and skill ordinarily used by members of the design profession practicing under similar conditions at the same time and locality of the Project." This is to confirm that in our delivery of engineering services provided to Fagen with respect to your Plant, including in our preparation of drawings, and specifications for Equipment for the Plant, ICM, Inc. met or exceeded the above-described standard of care.

We understand our letter is intended to be included with the Plant's PSM compliance documentation that is required to be maintained pursuant to various regulations. ICM grants permission for this letter to be used for that purpose.

Sincerely,

Tony Sanders, Director of Engineering

cc: Mark Deschner



ICM
310 N. 1ST, Columbia, Arkansas
Phone: (501) 796-0000 Fax: (501) 796-0070

Flow Diagram
General Plant
40 MM GPYr. Ethanol Plant
Steam/Mass Flow Diagram

DATE: 03/07/13
BY: JC
CHECKED: 07/21/05
DATE: 12/15/05
BY: A
DATE: 12/19/05
BY: I

ADDED CHEMICALS TO BALANCE
ADDED BO MAKEUP RATE AND ITEM #
GENERAL REVISION
DESIGN FOR CONSTRUCTION

Mid Missouri Energy
Molva Bend, MO

Country: License: Equip ECCN: D161-1111-003







MME STANDARDS AND PROCEDURES FOR SAFETY & HEALTH

Section: Safety & Health

Topic: Line Breaking

Procedure: SHS 310b

Effective Date: June 1st 2013

Approved by: Michael C. Gerloff

Revised Date:

Applicable to: All MME and Contract Employees

Page: 1 of 3

I. INTRODUCTION

This standard provides information required for establishing a line breaking policy. In conjunction with other related safety procedures such as lockout-tagout, confined space entry, hot work permitting, process safety, and electrical work safety; combined with employee training, this standard constitutes our Line Breaking Policy. **It is the policy of Mid-Missouri Energy to work on equipment only when it is properly de-energized, isolated, locked out / tagged out, and verified; with all sources of hazardous energy relieved or restrained.** Line breaking is an important process that is at times required to properly clean, repair, maintain or extend the pipes and lines at the plant. This standard establishes the controls and safeguards for performing this process safely.

II. PURPOSE

The lockout-tagout permitting procedure provides essential protection for work performed at the plant which is subject to the release of hazardous energy. For work that involves breaking open a line, the line breaking permitting process affords an extra level of protection when combined with the lockout-tagout policy. The line breaking permit includes procedures necessary for safe work on the line, including preparation, isolation, depressurization, and precautions and controls. Disregarding any portion of the Line Breaking Policy could result in employee injury or equipment damage. Any violation of this standard will be cause for disciplinary action.

III. DESCRIPTION AND OBJECTIVES

This standard describes the proper method of obtaining and working under Line Break Permits on plant equipment, and establishes the authority and responsibility for issuing Line Breaking Permits. It is written to ensure that work performed on lines or pipes that are subject to the release of hazardous energy will have available a specific safety procedure for line breaking activities. The Line Breaking permit does not replace the Lockout-Tagout permit, but augments it.

IV. SCOPE AND APPLICATION

The Line Breaking Permit does not replace the Lockout-Tagout Permit, but augments it. The Line Breaking Permit should be used primarily when an SOP (Standard Operating Procedure) for a particular activity does not exist. If an SOP does exist, use of the Line Breaking Permit is optional; assuming the associated SOP adequately addresses all of the safety concerns involved with the work. Standard Operating Procedures should be established for individual pieces of equipment and should be used whenever possible.

V. DEFINITIONS

The Line Breaking Permit consists of a standard form (attached) and procedure used in conjunction with other safety precautions and controls to safely prepare and work on hazardous lines and pipes.

VI. REQUIREMENTS

1. Line Breaking Permits are issued under the same plant authority as are other safe work permits: Lockout-Tagout, Hot Work, and Confined Space Entry.

STANDARDS AND PROCEDURES FOR SAFETY & HEALTH

Section: Safety & Health	Topic: Line Breaking	Procedure: SHS 310b	Page: 2 of 3
------------------------------------	--------------------------------	-------------------------------	------------------------

2. Work on any plant equipment under a Line Breaking Permit, either by plant employees or by contractors, shall be under the jurisdiction of authorized plant employees
3. A Line Breaking Permit is an assurance issued by an authorized plant employee that equipment has been isolated and precautions taken to protect the worker. The line breaking permit will act as a safety checklist that must be completed in writing, signed off, and strictly adhered to.
4. The permit information and conditions will be discussed in detail with authorized and affected personnel, including such information as potential chemical hazards, personal protective equipment, required safety equipment, lockout-tagout procedures, emergency response information, and verification procedures.
5. The Line Breaking Permit integrity shall be continuously maintained as equipment is disassembled and reassembled.
6. Safe work methods must be practiced.
7. Only trained and authorized personnel are allowed to open a line. In addition to the skill required for the work involved, training also includes, where applicable, the use of scaffolds, ladders, alarms, fall protection equipment, air monitors, fire extinguishers, neutralizing agents, ventilation equipment, emergency response and evacuation, etc.
8. Before any equipment opening can occur, personnel must have proper training and knowledge of the chemicals that are involved. Material Safety Data Sheets/SDS of these chemicals must be referenced as they pertain to the work. Involved chemicals include not only those inside the line(s), but also consumables that may be involved in the repair procedure such as solvents and solutions, of which the wrong mixtures can be hazardous.
9. PPE (personal protective equipment) that may be needed for line breaking may include safety shoes, safety goggles, face masks, rubber or neoprene gloves, split palm or leather gloves, aprons, acid/caustic suits, respirators, and self-contained breathing apparatus; in addition to standard PPE (safety shoes, safety glasses with side shields, hardhats, etc.). Before donning any PPE, it must be checked to ensure its integrity.
10. Prior to opening a line the area must be cleared and any required warning signs and permits posted, proper flushing and drainage planned for; barricades placed, and affected personnel warned; and proper lockout-tagout applied.
11. Proper technique and care must be exercised for the following line breaking actions:
 - a. De-pressurizing and draining a line, equalizing pressure, washing, and purging, blinding, blanking, and removing pipes.
 - b. Bonding of pipe to funnels and containers to control flow and minimize spillage.
 - c. Clearing blockages.
 - d. Applying pressure agents safely, with consideration for any vents, drains, and relief or control devices that may be included on the isolated segment of the line.
 - e. Containment of hazardous residue.
12. If the line is part of the PSM (Process Safety Management) covered area of the plant, the PSM Management of Change procedure must be followed if it applies.

STANDARDS AND PROCEDURES FOR SAFETY & HEALTH

Section: Safety & Health	Topic: Line Breaking	Procedure: SHS 310b	Page: 3 of 3
------------------------------------	--------------------------------	-------------------------------	------------------------

13. Mechanical integrity of all lines, valves, and other component parts affected by the line break related work must be maintained.
14. Upon completion of the work, the line must be closed using approved materials and methods; permit(s) completed & released; affected personnel notified; leak check(s) performed; chemicals properly disposed; and work area neutralized and cleaned.

VII. RELATED REFERENCES

OSHA 1910.147Control of Hazardous Energy
Company Standard SHS #090Confined Space Entry
Company Standard SHS #130Electrical Work Safety Policy
Company Standard SHS #270Hot Work Permits
Company Standard SHS #310Lockout-Tagout Permits

VIII. SUMMARY

A Line Breaking Permit, along with associated safe work controls and practices, is an assurance that equipment has been isolated and precautions taken to protect the worker. Each affected employee must be trained on the Line Breaking Permit standard to assure proper application and use. Line Breaking Permits shall be audited by local management periodically to ensure compliance with the standard.

IX. ATTACHMENTS

Line Breaking Permit
Lockout-Tagout Permit

Mid-Missouri Energy, LLC LINE BREAKING PERMIT

WORK ORDER NUMBER: _____

LINE BREAKING PERMIT

DATE: _____

TIME: _____

LOCATION: _____

SPECIFY LINE: _____

CONTENTS OF LINE: _____

CHEMICAL MSDS REVIEWED: YES NO

MSDS ATTACHED: YES NO

LINE PREPARATION:

Can Line be Isolated with a valve: YES NO

Can line be depressured with a valve: YES NO

Can line be drained with a valve: YES NO

Material containment provided: YES NO

Flange break/threaded connection procedure: YES NO

Flushing Agent:

- Water
- Air
- Nitrogen
- Other (Specify) _____

Line Flushed: YES NO

Special protective equipment available? YES NO

Special safety procedures defined? YES NO

Atmospheric Test Results posted? YES NO

Are all NO's resolved and planned for? YES NO

EMPLOYEES INVOLVED WITH LINE BREAK

I understand the job requirements and potential hazards of work described on this permit.

1. _____

2. _____

3. _____

4. _____

ATMOSPHERIC TEST

	Maximum Allowed	Test Result	Instrument Used	Calibration Date
1. Flammability/LEL	0%			
2. Hydrogen Sulfide	10 ppm			
3. Chlorine	0.5 ppm			
	>19.5%			
4. Oxygen	<23.0%			
5. Chlorine Dioxide	0.1 ppm			
6. Sulfur Dioxide	2.0 ppm			
7. Mercapton	0.5 ppm			
8. Carbon Monoxide	35 ppm			
9. pH	6 to 8			
10. Other				

TEMPERATURE CHECK

Operating Temperature of Line: _____
Current Temperature of Line: _____

NOTE: ALL OPEN-ENDED PIPES LEFT ON LOCATION MUST IMMEDIATELY BE BLANKED

SPECIAL PROTECTIVE EQUIPMENT REQUIRED:

- S.C.B.A. Monogoggles
- Respirator Rubber Gloves
- Rubber Boots Chemical Suit
- Face Shield Other _____

SPECIAL SAFETY PROCEDURES REQUIRED:

- LO/TO Permit Hot Work Permit
- Valves LO Mat'ls Decontam.
- Electrical LO Waste Handling
- Pneumatics LO Barricade Area

LINE BREAK IS LOCATED IN PSM AREA OF PLANT

PERMIT APPROVED BY:

Shift Supervisor: _____

Date & Time: _____

AUTHORIZATION TO PUT LINE BACK INTO SERVICE:

Signature: _____

Date: _____

Any Deviations, Problems or Issues Noted During the Course of Work Should Be Noted on the Back of This Permit

Mid-Missouri Energy, LLC Lockout / Tagout Permit

Equipment Number and Description:

Work Being Performed: **Work Order #**

Time Issued: am/pm	Permit Requested By:	Energy Sources Locked/Tagged Out:	Initial:
Date Issued:		Electrical	
Issued By:		Mechanical	
	Employee(s) Affected & Notified:	Chemical	
		Hydraulic	
Time Transferred: am/pm		Pneumatic	
Date Transferred:		Gravity	
Transferred To:	Authorized Employees(s):	Thermal	
		Followed Shutdown Sequence	
Time Released: am/pm		Followed Procedure to Control Energy	
Date Released:	Permit Verified By:	Followed Procedure to Restore Energy	
Released By:			

Is a Line Breaking Permit also in use with this Lockout/Tagout Permit? Yes No Line Breaking Permit #:

PERSONAL PROTECTIVE EQUIPMENT			
GLOVES <input type="checkbox"/> Leather <input type="checkbox"/> Chemical	EYE, FACE & HEAD <input type="checkbox"/> Hard Hat <input type="checkbox"/> Safety Glasses <input type="checkbox"/> Goggles <input type="checkbox"/> Face Shield	FOOT PROTECTION <input type="checkbox"/> Steel Toe Work Boots <input type="checkbox"/> Rubber Boots	OTHER <input type="checkbox"/> Chemical Suit <input type="checkbox"/> Fall Protection

SEQUENCE	LOCK/TAG #	DEVICE DESCRIPTION	PLACED POSITION	RELEASED POSITION	LOCK/TAG PLACED	LOCK/TAG RELEASED
1						
2						
3						
4						
5						
6						
7						
8						

Hot Work Permit for Cutting and Welding With Portable Electric, Gas or Arc Equipment

Date:	Issued By: (Shift Supervisor or designee)
Building/Area:	Permit Expires: (Max. 12 Hours) Date Time
Work Dates:	Emergency Phone Number:

Object on which Hot Work is to be Done:	Work to be Done:
Type of Work: <input type="checkbox"/> Cutting <input type="checkbox"/> Welding <input type="checkbox"/> Brazing <input type="checkbox"/> Grinding <input type="checkbox"/> Burning <input type="checkbox"/> Other (identify)	
Work Performed By: <input type="checkbox"/> In House People <input type="checkbox"/> Outside Contractor(s)	Cutter/Welder Name:

PERSONAL PROTECTIVE EQUIPMENT			
GLOVES <input type="checkbox"/> Leather <input type="checkbox"/> Chemical	EYE, FACE & HEAD <input type="checkbox"/> Hard Hat <input type="checkbox"/> Safety Glasses <input type="checkbox"/> Goggles <input type="checkbox"/> Face Shield	FOOT PROTECTION <input type="checkbox"/> Steel Toe Work Boots <input type="checkbox"/> Rubber Boots	OTHER <input type="checkbox"/> Chemical Suit <input type="checkbox"/> Fall Protection

Is work to be done on ammonia/ethanol piping or equipment? <input type="checkbox"/> Yes <input type="checkbox"/> No	Is fire watch required? <input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, Name:
Is there overhead work? <input type="checkbox"/> Yes <input type="checkbox"/> No	Relocation of combustible materials? <input type="checkbox"/> Yes <input type="checkbox"/> No	Protective covering used? <input type="checkbox"/> Yes <input type="checkbox"/> No
DESCRIBE PRECAUTIONS REQUIRED WITH ANY COMBUSTIBLE MATERIALS:		
<input type="checkbox"/> Floors	<input type="checkbox"/> Walls	
<input type="checkbox"/> Ceilings	<input type="checkbox"/> Roof	

**Following this checklist will assist Supervisors and Employees
in the completion of the Line Breaking permit:**

1. Record the work order number corresponding to the request for the line break.
2. Record the date the permit was issued.
3. Record the time of day the permit was issued and whether it was am or pm.
4. Record the location of the line(s) on which work is to be performed.
5. Record what specific line to which work is to be performed.
6. Record the contents of the line to which work will be performed.
7. Has the Material Safety Data Sheet, which corresponds to the chemical in the line, been reviewed with all employees working under this permit?
8. Is the Material Safety Data Sheet/SDS, which corresponds to the chemical in the line, attached to this permit?
9. What type of preparation needs to be done to the line to render it safe for work to be performed?
10. Record whether or not the line can be isolated with a valve.
11. Record whether or not the line can be depressured with a valve
12. Record whether or not the line can be drained with a valve.
13. Have employees provided some means of containing the material inside the line after the line has been broken?
14. Have proper procedures been followed for a flange break or threaded connection to be un-done?
15. What type of flushing agent will be used to flush the line after it is broken but prior to having work being performed?
16. Has the line been flushed properly prior to work being performed?
17. Is special protective equipment needed to protect workers or machinery from being harmed by the contents of the line or by work being performed? If yes, list under number 25.
18. Have all special safety procedures been defined and are there other forms or permits which need to accompany this Line Breaking Permit? i.e. Hot Work, LO/TO, Confined Space, etc. If so, list under number 26.
19. Have the atmospheric test results been posted prior to work being performed?

20. Has anything marked "No" on the permit been resolved prior to work being performed? If not, make sure that it is before commencing.
21. List the names of all employees involved with this line break. By placing their name on this line, each employee is stating that they understand the job requirements and potential hazards of the work described on this individual permit prior to performing any work.
22. Record the readings from the atmospheric tests performed to the line prior to any work being performed. Record which instrument was used to perform the test and when that particular machine was last calibrated.
23. Record what the "Operating Temperature" of the line is under normal conditions.
24. Record what the "Current Temperature" of the line is now prior to work being performed.
25. Record what special protective equipment is required to prevent employees and equipment from being harmed during the job.
26. Record what special safety procedures are required to accompany this line breaking permit.
27. This line needs to be signed and dated by the shift supervisor to show that his/her permission was given for the work to proceed as planned.
28. The box for this line needs to be checked if the line break is located in the PSM (Process Safety Management) area of the plant.
29. This line needs to be signed and dated by a shift supervisor to show that permission was given to put the line back into service.
30. Record any deviations, problems or issues that came up during the course of work on the back of this permit.

PRODUCT STORAGE AND TRANSPORTATION

Denaturant

10/13 Rev 0

SAFETY NOTES:

- This is a hardhat and safety glasses area
- Never attempt to repair or replace any equipment in this area without following LOTO procedure
- Good housekeeping is VERY IMPORTANT, keep this area clean and free of debris
- This area has 190 and 200 proof Alcohol and is highly flammable
- Denaturant (gasoline) and denatured 200 proof alcohol and is highly flammable
- This area is also covered under the PSM program for Highly Hazardous Chemicals
- DCI-11 fuel additive is a corrosion inhibitor. Read MSDS.
- NO SMOKING

LEADTIME:

None

DENATURANT STORAGE TANK:

Denaturant is highly flammable. Read the MSDS before handling this product. The denaturant tank can hold up to 100,000 gallons of denaturant, about 13 truckloads of denaturant. TF-8306 should not be filled to more than 85% full, nor should the level be allowed to get below 10%. Going below a 10% level will cause the vent to open on the floating roof allowing VOC's to escape into the atmosphere. There is approximately 17 days of denaturant in the denaturant tank when it's full. Denaturant is a gasoline that is purchased by this company to be blended into the ethanol alcohol in the main denatured ethanol tank to render it undrinkable for shipment. The amount of denaturant to be used is **2.5%** of the total amount of alcohol or as otherwise directed by management.

Design pressure for the Denaturant Tank TF-8306 equivalent to the product head pressure at a specific gravity equal to 1.0. The operating pressure is equivalent to the product head pressure. Test pressure is equivalent to hydrostatic head pressure of the product. The design temperature for TF-8306 is 200F.

Standard Operating Procedures for Unloading a denaturant truck:

Startup:

1. Verify there is enough room in the tank for the load and the tank is not in use.
2. Verify the denaturant paper work to confirm the shipment.
3. Weigh the truck in and fill out the paperwork.
4. The next four steps are done by the truck driver, but verified by the operator:
 - a. Hook up the ground clamp to the truck.
 - b. Set the chocks in front of and behind one wheel. (To prevent motion of the truck).
 - c. Vent the tanker.
 - d. Hook up the hose from the denaturant truck to the denaturant pump.
5. The operator must verify the three 3" manual valves to the tank are open.

Normal Operation:

1. After verifying all manual valves between PG-8307 Truck denaturant offload pump and TF-8306 have been open, PG-8307 can be started and denaturant offload can begin. Maximum flow for pump PG-8307 is 200 gpm during which time normal operating pressure will be approximately 30 psi. As the level in TF-8306 increases, so will the pump psi. If the pressure gauge indicates no increase in psi, make sure you have the 3" offload supply valve to the pump open and have the driver make sure the trailer valves are set correctly for an offload. If all valves are set correctly and there is no increase in pressure this could also indicate an issue with the denaturant offload pump not pumping material. In this case, maintenance should be notified immediately. While the lines are charged during offload, walk the entire system checking for leaks on the pump, valves, flanges and the tank. If you notice a leak follow the emergency shutdown procedures.

1.

The driver must stay with his truck while offloading the denaturant.

Normal Shutdown:

When the truck is empty:

2. Shut off truck unloading pump PG-8307.

PRODUCT STORAGE AND TRANSPORTATION

Denaturant

10/13 Rev 0

3. You can shut the three 3" manual valves, bleed the air off the hose and remove the hose from the truck.
4. Unhook the ground clamp from the truck and remove the chocks from under the wheel.
5. The driver then returns to the scale house to be weighed out.

Emergency Shutdown:

1. In the event there is a leak or PG8307 pump pressure is 50 psi or higher at the beginning of denaturant offload, the pump should be shut down immediately and the startup sequence re-verified. If it is found that the startup procedures were followed correctly and all valves are in the correct position, maintenance should be informed immediately to investigate the problem. The pump should not be re-energized until the issue is resolved.
2. There are no Temporary Operations of this system. If normal operations cannot be achieved, the issues have to be resolved before the system is put back into operation.

Start-up after a Shutdown:

1. In order to re-start the Denaturant Truck Offload system after a shutdown, first notify the shift supervisor and then reference the startup procedure in the first part of this section.

Standard Operation Procedure for Unloading a Denaturant Railcar:

Startup:

1. Verify there is enough room in the tank TF-8306 for the load and the tank is not in use.
2. The next four steps are done by the operator:
 - a. Hook up the ground clamp to the railcar.
 - b. Set the chocks in front of and behind one wheel. (To prevent motion of the railcar).
 - c. Vent the tank.
 - d. Make sure bottom discharge valve is closed and remove cap. Hook up the hose from the denaturant railcar to the denaturant pump PG-8310 and open the manual valve on the railcar.
3. The operator must open the three 3" manual valves to the tank and start rail unloading pump PG-8310. The operator must stay with his railcar while offloading the denaturant.

Normal Operations:

2. After verifying all manual valves between PG-8310 Rail denaturant offload pump and TF-8306 have been open, PG-8310 can be started and denaturant offload can begin. Maximum flow for pump PG-8310 is 200 gpm during which time normal operating pressure will be approximately 30 psi. As the level in TF-8306 increases, so will the pump psi. If the pressure gauge indicates no increase in psi, make sure you have the 3" offload supply valve to the pump open and have the driver make sure the trailer valves are set correctly for an offload. If all valves are set correctly and there is no increase in pressure this could also indicate an issue with the denaturant offload pump not pumping material. In this case, maintenance should be notified immediately. While the lines are charged during offload, walk the entire system checking for leaks on the pump, valves, flanges and the tank. If you notice a leak follow the emergency shutdown procedures.

Normal Shutdown:

When the Railcar is empty:

1. Shut off rail unloading pump.
2. Then you can shut the three 3" manual valves, bleed the air off the hose and remove the hose from the Railcar.
3. Unhook the ground clamp from the railcar and remove the chocks from under the wheel.

Emergency Shutdown:

1. In the event there is a leak or PG-8310 pump pressure is 50 psi or higher at the beginning of denaturant offload, the pump should be shut down immediately, LOTO complete, repairs made and the startup sequence re-verified. If it is found that the startup procedures were followed correctly and all valves are in the correct position, maintenance should be informed immediately to investigate the problem. The pump should not be re-energized until the issue is resolved.
2. There are no Temporary Operations of this system. If normal operations cannot be achieved, the issues have to be resolved before the system is put back into operation.

PRODUCT STORAGE AND TRANSPORTATION

Denaturant

10/13 Rev 0

Start-up after a Shutdown:

2. In order to re-start the Railcar Denaturant Offload system after a shutdown, first notify the shift supervisor and then reference the startup procedure in the first part of this section.

~~3-2~~

PUMPING 200 PROOF AND DENATURANT TO THE DENATURED ETHANOL TANK:

With this procedure you are pumping both denaturant and 200 proof ethanol at the same time into the denatured ethanol tank. Depending on the fuel additive procedure used, you may be pumping it at the same time as well. This procedure is best done at one certain time each shift. Example 4:00pm & 4:00am. The plant manager should determine this time. You must fill out a 200 Proof Ethanol Transfer sheet for this procedure.

Initial Startup:

One operator must be at the process computer and one at the storage tanks.

1. Decide which denatured ethanol tank you will pump into, either Storage Tank TF-8308 or Storage Tank TF-8309.
2. Record the starting level of the denatured ethanol (TF-8308 or TF-8309), denaturant (TF-8306), fuel additive (TS-8305) and 200 proof day (TF-8303) tank (both the LT and level gauge) on transfer sheet.
3. **Ensure fusible links are open on all of these tanks.**
4. Now set up to pump the 200 proof tank to the denatured ethanol tank:
 - a. Open 4" manual valve into the denatured ethanol tank.
 - b. From the DCS open flow control valve FIC-8303, in manual, to around 40% open.
 - c. ~~b.~~ Mark down time.

This is now set up to pump ethanol to the denatured ethanol tank.

5. Now set up to pump denaturant to the denatured ethanol tank.
 - a. The 1-1/2" manual valve from denaturant line to the 200 proof line should already be open.
 - b. Open denaturant transfer block valve EV-8306.
 - c. Open two 3" manual valves to denaturant pump.
 - d. On the DCS verify the desired denaturant ratio is less than 0.025 or 2.5%

This is now also pumping denaturant to the denatured ethanol tank.

6. Now set up to pump DCI-11 (fuel additive) at the same time to the denatured ethanol tank.
 - a. Open 1 1/2" manual valve from fuel additive tank to fuel additive pump.
 - b. Open 1" manual valve to the 200 proof transfer line.

Normal Operations:

After verifying all manual valves between PG-8306 denaturant transfer pump to storage and PC-8303 have been open, Start ethanol transfer pump PC-8303 and adjust flow to around 500gpm and set FIC-8303 in auto. Start denaturant pump PG-8306 and adjust speed to approximately 12 gpm. **(This is 2.5% of the 500gpm)** and set in auto. Set the speed on the fuel additive pump, PG-8305, to pump desired amount and rate of DCI-11 and start timer. This will automatically start PG-8305 and shut it down after the proper amount of additive has been supplied. During normal operations PG-8306 pump pressure should range between 45-70 psi. If it is running 75 psi or higher shut PG-8306 down immediately

Normal Shutdown:

7. When you have pumped enough 200 proof to the denatured ethanol tank:
 - a. Shut off denaturant:
 - i. Shut off denaturant pump.
 - ii. Shut 3" manual valve to denaturant pump.
 - iii. Close discharge valve on denaturant pump.
 - b. Shut off DCI-11:
 - i. Shut off fuel additive pump.
 - ii. Close 1" manual valve to the 200 proof transfer line.
 - c. Shut off 200 proof transfer:
 - i. Shut off ethanol transfer pump.

PRODUCT STORAGE AND TRANSPORTATION

Denaturant

10/13 Rev 0

- ii. Close flow control valve.
- iii. Close 4" manual valve into the storage tank 8308 or 8309 tank.

Pump 200 Proof day tank down to 10% before shutting off.

- 8. Finish filling out the 200 Proof Ethanol Transfer sheet.

Emergency Shutdown:

In the event there is a leak, PG-8306, PC-8303 or PG-8305 pump pressure is high, or there is no flow, all pumps should be shutdown, LOTO complete, repairs made and the startup sequence re-verified.

There are no Temporary Operations of this system. If normal operations cannot be achieved, the issues have to be resolved before the system is put back into operation.

Start-up after a Shutdown:

In order to re-start the 200 proof, denaturant and fuel additive transfer to either TF-8308 or TF-8309 after a shutdown, first notify the shift supervisor and then reference the startup procedure in the first part of this section.

UTILITIES

Anhydrous Ammonia Operation

10/13 Rev 0

SAFETY NOTES:

- This is a hardhat and safety glasses area, hearing protection required in some areas.
- Never attempt to repair or replace any equipment in this area without following LOTO procedure.
- Good housekeeping is VERY IMPORTANT, keep all areas clean and free of debris.
- Anhydrous Ammonia is stored at 80-175 psi.
- Anhydrous Ammonia is a highly hazardous chemical and should be treated as such.
- Proper PPE must be worn when working with Ammonia.
- Always read the **MSDS** before handling chemicals.
- This area is also covered under the PSM program for Highly Hazardous Chemicals.
- Never attempt to work with Anhydrous Ammonia unless trained on its use.
- NO SMOKING.

SPECIAL NOTES REGARDING ANHYDROUS AMMONIA:

The boiling point is minus (-) 28 degrees F at atmospheric pressure. At higher pressures, the anhydrous ammonia will remain a liquid. As the pressure drops, it vaporizes and cools. Vaporizing ammonia can drop to below -100 degrees. As the ammonia flows from the tank (over 130 psi in summer) through the meter and flow control valve, a pressure drop will occur. At lower pressure, the temperature will be cooler. (Refer to Thermodynamic Properties of Saturated Ammonia) The outside of the ammonia pipe(s) will generally be wet, as the temperature of the lower pressure ammonia drops to below the atmospheric dew point. As the pressure and temperature drops further, ice will form on the outside of the pipes and this is normal. This observed moisture and ice provides a visual indication of where and when the ammonia is flowing.

Orange paint is recommended.

LEADTIME:

None

Overview Principles of Ammonia (NH₃) System

The Ammonia pump will probably only be used during cooler weather, when the vapor pressure is low in the ammonia tank. Always grease booster pump with 5-8 pumps and motor with 3-4 pumps using Mobile XP222 before operating.

- Anhydrous Ammonia draws heat to vaporize and will draw heat and water out of your skin, eyes or lungs and will instantly freeze your body tissue.
- When working with Anhydrous Ammonia the proper PPE needs to be worn:
 - * **Eyes** – use NON-vented safety goggles.
 - * **Hands** – use clean rubber gloves that are impervious to ammonia.
 - * **Body** – rubber boots and rain gear that is impervious to ammonia.
 - * **Emergency shower** – always get in the habit of checking the shower station before starting the procedure by opening and flushing the system.
- Emergency First Aid:
 - * **Eyes** - Hold eyelids open and flush eyes immediately with water for at least 15 minutes. Seek medical attention immediately.
 - * **Skin** - Start flushing with water immediately; do not remove contaminated clothing until flushing has begun and the skin has warmed up. Wash affected areas with plenty of soap and water. Seek medical attention immediately.
 - * **Inhalation** - Move exposed person to fresh air immediately (if safe to do so). If breathing has stopped, give artificial respiration. If breathing is difficult give oxygen (only if trained to do so). Keep person warm and quiet. Seek medical attention immediately.

AMMONIA TANK SAFETIES:

- Pressure safety valves (PSV) are placed on the tank and any pipe that can be totally blocked in. Hydrostatic PSV's located on the piping is rated for pressure of 350 psi. The relief manifold pressure rating is 250 psi.

UTILITIES

Anhydrous Ammonia Operation

10/13 Rev 0

- The PSV's are located high above the ground to reduce the amount of Ammonia that will vent near the ground.
- The Ammonia pump has an internal PSV that if over pressured will relieve back into the line to the slurry. There is a block valve on the Ammonia pump relieve that can be blocked in if the pump needs maintenance. **This valve must always be locked open to prevent it being closed while the pump is running.**
- Excess flow valves on the fill lines and pump out lines. These valves are to close if excess flow is sensed. Such as a broken pipe.
- Air operated emergency shut off valves. These valves are spring loaded to close and use plant air to keep the valves held open. When the air is removed from these valves, the valves will shut and the flow of ammonia is shut off. The hand valve to bleed the air off from the valves are located away from the tank incase of an ammonia release, so the valves can be shut while standing away from the tank.
- Internal design pressure for TP-12401 is 250 psi at 125F. External design pressure 14.7 psi at 125F.
- Minimum design metal temperature (MDMT) is -40F.

WORKING ON THE AMMONIA SYSTEM: Always complete and review LOTO & Line Break

You must obtain a safe work and line break permit from the control room to do any work on this system.

To work on the ammonia piping, you must remove the ammonia source, isolate the ammonia vessel and depressurize the system.

1. Put on PPE:
 - a. Use Non-vented safety goggles.
 - b. Use clean rubber gloves that are impervious to ammonia.
 - c. Use rubber boots and rain gear that is impervious to ammonia, if needed.
2. Isolate the ammonia vessel.
 - a. Shut off ammonia pump, if used.
 - b. Close, lock out and tag the 1½ inch outlet valves on the ammonia vessel.
 - c. Leave the control valve open to the slurry tank.
Note: This will allow the ammonia in the piping to depressurize into the slurry tank.
 - d. A vent pipe will have to be hooked up to the ¼ inch drain valve at the ammonia pump. After the vent pipe is attached stick the other end into the water tote. Now slowly open the valve to vent off the pressure out of the connections.
 - e. Close, lock out and tag the 1 inch hand valve after the control valve.
 - f. Bleed off all ammonia into the water tote.
Note: This should fulfill the lock-out tag-out of the ammonia system.
3. **When pulling fittings apart, be very careful to be sure that the pipe is fully depressurized of ammonia.**

OPERATION of the AMMONIA SYSTEM: Startup-Initial and after Shutdown unless directed otherwise

1. Starting the ammonia system:
 - a. Conduct a visual check of the ammonia system. If you have any concerns, stop immediately and contact your supervisor.
 - b. Ensure the ammonia tank TP-12401 has good operating level between 35% & 85% (if TP-12401 is 35% or below, immediately inform your supervisor)
 - c. Close all ¼ inch hand valve vent lines.
 - d. Open the 1 inch hand valves at the slurry tank.

UTILITIES

Anhydrous Ammonia Operation

10/13 Rev 0

- e. Open slurry pH control valve pHIC-2201 to 15%.
- f. Slowly open the 1½ inch hand valves for ammonia outlet on the ammonia vessel.
- g. Check piping system for any leaks.
- h. If no leaks, continue with normal operations.
- i. Start ammonia pump, if needed.

2. Shutting down the ammonia system: **Normal Shutdown**

When ammonia is not needed in the process, the ammonia should be blocked in at all root valves at the header. All ammonia lines to the process should be depressurized and blocked in at all block and ball valves (not needle valves). A designated operator must shut the air solenoid valves by dumping the air to the valves. These controls are located inside the north door of the process building and are clearly marked. The air solenoid valves should stay in the closed position until the system goes through startup procedures.

3.

- a. Shut off ammonia pump, if used.
- b. Close the 1½ inch hand valves for ammonia outlet on the ammonia vessel.
- c. Close the 1 inch hand valve after the control valve.
- d. Release air from air solenoid safety valves.
- e. Once ammonia pressure has been relieved as indicated by pressure indicator PI-12401, the operator controlling the DCS can now close Phic-12401 pH control valve.

Operation of portable Ammonia Nurse Tank – Temporary Operations

Connecting Nurse Tank to Ammonia System

1. Use proper PPE:
 - a. Use Non-vented safety goggles.
 - b. Use clean rubber gloves that are impervious to ammonia.
 - c. Use rubber boots and rain gear that is impervious to ammonia, if needed.
2. Isolate the ammonia vessel.
 - a. Shut off ammonia pump, if used.
 - b. Close, lock out and tag the 1½ inch outlet valves on the ammonia vessel.
 - c. Leave the control valve open to the slurry tank.

Note: This will allow the ammonia in the piping to depressurize into the slurry tank.

3. Attach hose from nurse tank to offload fitting designated specifically for this type of tank.
4. Ensure emergency valves are open.
5. Open isolation ball valve on booster pump supply line
6. Make sure bleeder valve to water barrel is closed.
7. Open ball valve on discharge line downstream of nurse tank connection.
8. Open valve on nurse tank to supply system with Ammonia.

Removing Nurse Tank from Ammonia System

1. This will require the use of the same PPE as mentioned above.
2. Shut down booster pump if in use.
3. Close isolation ball valve on discharge line downstream of nurse tank connection but before emergency valve.
4. Close discharge valve on nurse tank.

UTILITIES

Anhydrous Ammonia Operation

10/13 Rev 0

5. Open bleeder valve going to water barrel to relieve pressure from the piping.
6. After pressure has equalized close bleeder valve and disconnect hose from nurse tank fitting.

Normal Operations of Ammonia NH₃ System:

During normal operations the ammonia tank TP-12401 level is between 35% and 85%. These limits are based on operating experience and allows for a comfortable safety factor at the high and low levels.

During ammonia transfer to storage tank TP-12401, it is the operator's responsibility to ensure there is enough room for the entire amount by verifying TP-12401 is 40% or less and to monitor the level of TP-12401 during offload. A load of ammonia will increase the level of TP-12401 40%-45%. In the event TP-12401 reaches or exceeds 85% offloading should be stopped immediately.

The optimum upper and lower pH limits for the slurry tank are 5.0 to 6.0. This will optimize the use of alpha amylase enzyme and minimize viscosity to insure proper flowability as well as minimize the potential for ammonia vapor off-gassing. pH can adjust using the ammonia flow control valve Phic-2201 on the DCS. If the slurry pH is low, Phic-2201 can be opened which will increase flow of ammonia to the slurry tank and raise pH. If the pH is high, Phic-2201 percentage can be reduced to lower the slurry pH. During normal operations Phic-2201 will be in "auto" mode on the DCS and automatically make these percentage changes to control slurry pH. Phic-2201 should only be put in "manual" mode if slurry pH drifts outside the above ranges causing a process upset.

Emergency Shutdown of Ammonia System

In the event the ammonia system needs to go through an emergency shutdown, this can be done by first dumping the air on the emergency solenoid valves. The emergency shut off air dumps are located inside the north door of the process building and are clearly marked. After shutting the emergency valves, if possible close the isolation valves on the supply lines under the ammonia tank.

If an emergency ammonia release is identified call the supervisor immediately and describe the problem. The control operator should notify all operators to stay out of the emergency area with the base radio. In a major release the control operator shall actuate the evacuation alarm through the radio system and immediately reference the Emergency Reaction Plan (ERP).

UTILITIES

Anhydrous Ammonia Truck Unloading

10/13 Rev 2

SAFETY NOTES:

- This is a hardhat and safety glasses area, hearing protection may be required in some areas.
- Never attempt to repair or replace any equipment in this area without following LOTO procedures.
- Good housekeeping is VERY IMPORTANT, keep all areas clean and free of debris.
- Anhydrous Ammonia is stored at 80-175 psi.
- Anhydrous Ammonia is a highly hazardous chemical and should be treated as such.
- Proper PPE must be worn when working with Ammonia.
- Always read the MSDS before handling chemicals.
- This area is also covered under the PSM program for Highly Hazardous Chemicals.
- Never attempt to work with Anhydrous Ammonia unless trained on its use.
- NO SMOKING.

SPECIAL NOTES REGARDING ANHYDROUS AMMONIA:

The boiling point is minus (-) 28 degrees F at atmospheric pressure. At higher pressures, the anhydrous ammonia will remain a liquid. As the pressure drops, it vaporizes and cools. Vaporizing ammonia can drop to below -100 degrees. As the ammonia flows from the tank (over 130 psi in summer) through the meter and flow control valve, a pressure drop will occur. At lower pressure, the temperature will be cooler. (Refer to Thermodynamic Properties of Saturated Ammonia) The outside of the ammonia pipe(s) will generally be wet, as the temperature of the lower pressure ammonia drops to below the atmospheric dew point. As the pressure and temperature drops further, ice will form on the outside of the pipes and this is normal. This observed moisture and ice provides a visual indication of where and when the ammonia is flowing.

Orange paint is recommended.

LEAD TIME:

It could take 15 to 30 minutes to allow for operations to be ready.

Overview Principles for Anhydrous Ammonia Truck Unloading

- Emergency First Aid:
 - * **Eyes** – Hold eyelids open and flush eyes immediately with water for at least 15 minutes. Seek medical attention immediately.
 - * **Skin** – Start flushing with water immediately; do not remove contaminated clothing until flushing has begun and the skin has warmed up. Wash affected areas with plenty of soap and water. Seek medical attention immediately.
 - * **Inhalation** – Move exposed person to fresh air immediately (if safe to do so). If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen (only if trained to do so). Keep person warm and quiet. Seek medical attention immediately.
- Personal PPE:
 - * **Eye Protection Requirements** – Gas tight chemical safety goggles and a face shield must be worn if there is a likelihood of exposure. Additional eye protection is not required if full face respirator is used. Contact lenses should not be worn when working with this material.
 - * **Skin Protection Requirements** – Rubber or impervious gloves and boots, and a one or two piece impervious suit.
 - * **Respiratory Protection** – Wear approved respiratory protection such as a full face ammonia canister/cartridge mask or an approved air supplied respirator.
- The ammonia tank will hold 18,000 gallons or 3½ truckloads of ammonia.
- The ammonia tank is fitted with an internal overflow pipe which is connected to the vapor return line. The ammonia tank should not be filled more than 90% of the tank capacity.
- Excess flow valves are on the bottom of all connections to the tank. These valves will close if excess flow is sensed, such as a broken pipe.
- The excess flow valves are not a bubble tight shut off but will reduce the flow to a manageable level.

UTILITIES

Anhydrous Ammonia Truck Unloading

10/13 Rev 2

- The ammonia lines are also fitted with air operated emergency shut off valves. These valves are spring loaded to close and use plant air to keep the valves held open. When the air is removed from these valves, the valves will shut and reduce the flow to a manageable level.
- The emergency shut off valve is designed so that it cannot be reopened until the pressure is equalized on both sides of the valve. The idea is that the pressure can only be equalized if the line is closed downstream of the emergency shut off valve so that both sides of the emergency shut off valve see the same pressure, or the valve upstream is closed, and all the ammonia pressure has bled off.
- The air bleed valves for the emergency shut off valves are located away from the ammonia tank in case of an ammonia release, so the valves can be shut while standing away from the tank.

ANHYDROUS AMMONIA TRUCK UNLOADING SEQUENCE:

To offload an anhydrous ammonia truck into ammonia storage tank: Initial Startup

1. Before unloading the truck:
 - a. Verify the paper work to confirm the shipment.
 - b. Verify there is enough room in the ammonia tank.
 - c. Weigh the truck in at scale house, if required.
 - d. Fill out the unloading paperwork, if required.
2. The operator MUST show the truck driver where the emergency eyewash and shower is located and test the eyewash and shower.
3. The operator MUST show the truck driver where the air bleed valves for the emergency shut off valves are located and test their operation. This step is crucial because in the event of a leak the driver can perform an emergency shutdown by first shutting off flow from the truck and secondly shutting off air to the emergency shutoff valves. This way the only product that is not trapped in the truck or storage tank is located in the transfer hose which greatly reduces the chances of release. There are no Temporary Operations of this system. If normal operations cannot be achieved, the issues have to be resolved before the system is put back into operation.
- 4.
5. The operator MUST show the truck driver where the Control Room is located should any problems arise while offloading.
6. The next five steps are done by the truck driver, but verified by the operator:
 - a. The operator and truck driver shall inspect the vapor return and liquid unloading hoses for obvious defects.
 - b. Wheel chocks shall be set in front of and behind one wheel to prevent motion of the truck.
 - c. Ensure the valves for the liquid unloading and vapor return are closed at unloading connection before removing caps.
 - d. Hook up the 2 inch liquid unloading line to the truck and to the unloading connection.
 - e. Hook up the ¾ inch vapor return line to the truck and to the unloading connection.
7. Ensure that the bleed off valve is closed and the bleed off barrel has water in it. In cold weather conditions make sure water and the line in the barrel are not frozen.
8. Ensure the 2 inch liquid unloading valve is open at the tank.
9. Ensure the 1¼ inch vapor return valve is open at the tank.
10. Ensure the air operated emergency shut off valve on the 2 inch liquid unloading line is open.
11. Ensure the air operated emergency shut off valve on the 1¼ inch vapor return line is open.
12. Alert control room that you are going to start offloading ammonia.
13. Driver can now start to open valves on truck and unloading connections. The vapor connection shall be opened first.

UTILITIES

Anhydrous Ammonia Truck Unloading

10/13 Rev 2

14. Driver can now start his pump on the truck.

Note: The driver must stay with his truck while offloading Ammonia.

When the truck is empty: Normal Shutdown

15. Driver can now stop his pump on the truck.

16. Close valves at truck and at the unloading connections.

17. Slowly open bleed off valves to water barrel.

18. Bleed ammonia out of lines.

19. Unhook the hoses from the truck to the unloading connection.

20. Remove the chocks from under the wheel.

21. Weigh the truck at the scale house, if required.

22. Sign paperwork and get copies.

Start-up after a Shutdown:

In order to re-start the ammonia offload to TP-12401 after a shutdown, first notify the shift supervisor and then reference the startup procedure in the first part of this section.

IN THE MATTER OF Mid-Missouri Energy, LLC, Respondent
Docket No. CAA-07-2013-0019

CERTIFICATE OF SERVICE

I certify that a true and correct copy of the foregoing Order was sent this day in the following manner to the addressees:

Copy by email to Attorney for Complainant:

nazar.kristen@epa.gov

Copy by First Class Mail to:

Michael C. Gerloff
Environmental, Health and Safety Coordinator
15311 North Saline 65 Highway
Malta Bend, Missouri 65339

Dated: 11/25/13



Kathy Robinson
Kathy Robinson
Hearing Clerk, Region 7