

NSRC Conceptual Ethanol ONLY Transloading Facility, Alexandria, VA, June 2006

The following is a summary of requirements and "order of magnitude" cost estimates to ensure an ethanol transloading facility complies with applicable local, state and federal environmental regulations and codes.

Regulatory Compliance

Summary of Potentially Applicable Regulations and Codes

1. Federal

- a. OSHA Process Safety Management
 - i. Not currently a regulated chemical and as such the off loading of ethanol is not covered by these regulations.
- b. 40 CFR 112 (SPCC Regulations)
 - i. Ethanol is currently not defined as "oil" under 40 CFR 112. Therefore, SPCC regulations do not currently apply.
- c. National Emissions Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology (MACT)
 - i. Ethanol is not currently a listed Hazardous Air Pollutant (HAP) therefore, currently not applicable.
- d. International Fire Code (IFC) / NFPA. The following are applicable requirements.
 - i. IFC 3406.5 Governs Bulk Transfer and process Transfer Operations of Ethanol a Class IB Flammable Liquid.
 - ii. Must meet requirements for location of operation on property with respect to other structures. This design meets these requirements.
 - iii. Must be ventilated if enclosed. This project is not enclosed.
 - iv. No sources of ignition and no flammable materials in transfer area. Operating procedures and signage required.
 - v. Must have Spill Control and Secondary Containment for largest single vessel. This is determined to be single rail car of 24,000 gallons. Project conceptual design as described below meets this requirement.
 - vi. Storm water storage – While IFC language may be construed to not require storage, MM&A interpretation is that it does. Project conceptual design as described below meets this requirement.
 - vii. Static protection is required. Project conceptual design as described below meets this requirement.
 - viii. Fire Suppression required. Project conceptual design as described below meets this general requirement, but final design needs review/approval by M. L. Brookins (NS Safety) as well as other NS parties, and is subject to final approval and potentially additional requirements of Local Fire Marshall/Fire Chief.
 - ix. Fire Extinguishers required at each transloading location. Project conceptual design meets this requirement as described below.

- e. AREMA – Follow applicable building and fire codes. Project conceptual design reflects this.
- f. DOT – issued safety training guidance on April 26, 2006. Project conceptual design reflects guidelines. DOT safety training to be included for operators.

2. State

- a. NPDES Permitting Requirements
 - i. NPDES Individual Permit; although discharge from site will be to surface waters, the facility will not generate wastewater or process water. Therefore, NPDES Individual Permit is not currently required.
 - ii. NPDES Storm Water General Permit; Transloading activities will be classified under SIC code 5169. Under the Current NPDES General Permit regulations, activities classified under SIC code 5169 are not considered a regulated industrial activity. Therefore, currently a NPDES Storm Water General Permit is not currently required.
- b. Virginia Water Quality Standards
 - i. There are currently no existing water quality standards for ethanol in Virginia. However, an accidental release of ethanol to surface waters may result in a violation of other water quality standards (e.g. biochemical oxygen demand [BOD]). Secondary containment is recommended. Project conceptual design as described below meets this recommendation.
- c. Virginia Air Pollution Control Laws and Regulations and 40 CFR Part 68 and Section 112(r) of the Clean Air Act-Risk Management Programs
 - i. Ethanol is not currently a listed Hazardous Air Pollutant (HAP). However, a permit applicability determination is required. Northern Virginia recently was granted a lower Non-Attainment classification, in order to maintain this lower classification, the VDEQ is requiring any VOC-emitting source, be it mobile or stationary, to submit a request for permit applicability.

4. Local

- a. POTW Permitting Requirements
 - i. A POTW permit is currently not required.
- b. Local Building Code, typically uses International Building Code (IBC):
 - ii. Project does not contain an occupied structure, therefore, IBC currently does not apply.
- c. Fire Marshall/Fire Chief – Has final call on required fire protection.
 - i. The city of Alexandria's interim Fire Marshall will only provide comments following disclosure of proposed location and plans. However, conceptual design reflects water requirements for local department's needs, pending approval of M. L. Brookins (NS Safety) as well as other NS parties.

5. Other

- a. Industry Group-Renewable Fuels Association (RFA)
 - i. Provides industry guidelines, specifications and procedures. Provides detailed operating procedures for transfer operation, including venting and vapor recovery.

Implications of Applicable Regulations and Codes with Recommendations

6. Compliance Recommendations

- a. Secondary Containment
 - i. Project conceptual design as described below meets this recommendation.

- b. Water Treatment System
 - i. A treatment system is not recommended because of the current absence of existing water quality standards for ethanol and the low risk of a release using best management practices. However, ethanol should not be released to surface water. A contained release may require off-site treatment.

- c. Compliance Plans
 - i. A Storm Water Pollution Prevention Plan (SWPPP) is currently not required. However, the existing SWPPP (for intermodal activities) should be modified to include the transloading operations because an accidental release of ethanol could potentially impact storm water discharges.

- d. Air Requirements
 - i. Vapor recovery and air permit may be required based on air permit applicability review. Therefore the installation of a Stage I type control device (i.e. a vapor return line from the truck to the rail car) may be required. Costs of this system are not included and are assumed provided by the operators.

Design Considerations

1. Current NSRC Conceptual Design

- a. Re-pave entire area flush with top of rails. Drain area from south to north.
- b. Surround unloading area with concrete curb sized to contain 25 year / 24 hour storm plus a tank car spill. Piping and manual valves through containment allow for the release of accumulated storm water.
- c. Provide valves at outlets in curb to allow controlled discharge to storm drains located to north and outside of containment.
- d. Provide portable drain pans to catch small leaks.
- e. Fence unloading areas.
- f. Provide 2 fire hydrants and eye wash stations and associated water lines.
- g. NSRC estimated cost of **\$585,000**.

2. Comments on NSRC Current Conceptual Design

- a. Asphalt is chemically compatible with ethanol, but recognize it is more permeable than concrete.
- b. Minor potential for spill loss through four openings in curb exists where rails pass through.
- c. Fire hydrants and associated eight-inch water line may be an acceptable fire suppression system to local Fire Marshall/Fire Chief, if used by the local fire department in combination with their foam system.
- d. Eye wash stations per NS drawing.
- e. If major spill, ethanol would flow across wide area within containment possibly creating a safety concern.
- g. Area has general flooding during rain events, until valves opened and dried out. Not best situation for operation, safety and pavement life especially due to possible icing before draining.
- h. Asphalt is not chemically compatible with E85 or other blended fuels for secondary containment purposes.
- i. If E85 or other blended fuels are considered in future, increased concern exists over the minor potential for spill loss through four openings in curb where rails pass through.

Additional Construction Considerations Regarding NSRC Current Conceptual Design

1. Compliance Construction Requirements

- a. Add one additional fire hydrant (total of three) based on discussions with NSRC M. L. Brookins (NS Safety) as well as other NS parties and relocate further away from track to permit fire fighters to access without danger. **Added cost of about \$5,000.**
- b. Install type ABC fire extinguishers at each transloading location per the IFC, one every 20 feet about 60. **Added cost of about \$12,000.**

2. Improvements and E85 Handling Considerations

- a. Option 1 – Add swale for improved work area containment.
 - i. Include a three foot wide shallow swale running length of area located between truck parking and berm. Sized to hold one tank car spill. Control discharge from swale to storm drains using pipe/valve (valves normally closed). Contains large spill for safety, fire fighting and clean-up. Keeps work areas drier and, except for large rain events, allows workers to work without feet in standing water. **Added cost of about \$45,000.**
- b. Option 2 – Add permanent drain pans under rail cars if major spill or transferring a fuel blend like E85.
 - i. Cost would include Option 1 plus the addition drain pans piped to the swale. Avoids impact from drips and spills at rail car. Still relies on asphalt for spills at trucks. **Added cost of about \$106,000, including cost for Option 1.** Likely to require runoff treatment if used for blended fuel transfer, cost is not included in the price and depends on concentration and treatment requirements.
- c. Option 3-Concrete instead of Asphalt for Base
 - i. Concrete better for longevity, lower crack/leak potential, and wear. To change to 6" concrete paving would be about \$30/square yard extra or **\$180,000-\$200,000.**

Compliance Considerations Should Handling of E85 Blended Fuels be Considered in Future

1. Considerations of Handling E85 on Clean Water Act Compliance

- a. 40 CFR 112 (SPCC Regulations)
 - i. E85 blended fuel may be defined as "oil" under 40 CFR 112. However, the product is not stored in fixed aboveground storage containers. Therefore, SPCC regulations do not apply because the aggregate aboveground storage capacity is less than 1,320 gallons.
- b. NPDES Permitting Requirements
 - i. Transloading of E85 will be classified under SIC code 5172. Under the NPDES General Permit regulations, activities classified under SIC code 5172 are not considered a regulated industrial activity. Therefore, a NPDES Storm Water General Permit is not required for E85 transloading activities. However, the existing facility NPDES General Permit should be updated. **Added costs of about \$700**
- c. Water Quality Standards
 - i. There are existing water quality standards in Virginia for the petroleum constituents contained in E85. An accidental release of E85 to surface waters may result in a violation of water quality standards (e.g., petroleum constituents - BTEX, TPH, Naphthalene). Secondary containment is required and consistent with current conceptual model. On-site treatment or off-site disposal of spilled product is recommended because of the potential impact on existing water quality standards. See above, Option 2, Improvements and E85 Handling Considerations.

2. Effect of Handling E85 on Air Pollution Control Laws and Regulations and 40 CFR Part 68 and Section 112(r) of the Clean Air Act-Risk Management

- a. A permit determination would be required and is expected to result in a permit requirement. Project conceptual design as described above meets this requirement. Stage II vapor recovery system may be necessary. Costs of this system are not included and are assumed provided by the operators.

STANDARD OPERATING PROCEDURE FOR THE RAIL-TO-TRUCK TRANSFER OF ETHANOL

PURPOSE: The purpose of this procedure is to provide the operator with a step-by-step procedure for the rail-to-truck transloading of Ethanol

PROCEDURE:

DANGER: The SOP for transloading of Ethanol as well as the safe handling requirements and PPE requirements as prescribed in the MSDS for the product must be followed in order to avoid injury.

Upon arrival of the railcar at the terminal, the railcar must be inspected in accordance with FRA requirements and the inspection documented using the railcar inspection form. All fittings must be wrench tight and all placards in place on the car at all times. Hand brakes on the car should be set when the car is in the Terminal.

PREPARING THE RAILCAR

Using the appropriate wrench, loosen and remove the one-inch (1") plug from the vent valve on the top of the railcar. Slowly open the one-inch valve to vent any pressure that may be in the railcar.

Once ambient pressure has been achieved, attach the vapor recovery fitting by screwing the fitting into the one-inch valve. Attach the vapor recovery hose to the fitting and allow the hose to hang down the side of the railcar to ground level. **Insure that the vent valve is left in the open position.**

Insure that the bottom outlet valve is in the closed position and that the valve arm is locked, pinned, or otherwise secured. Remove the cap on the AAR fitting on the bottom of the car using the appropriate wrench. The cap is connected by a safety chain to the railcar and should be moved out of the way or otherwise positioned to allow for access to the fitting and valve.

Attach the AAR unloading fitting to the bottom of the car by tightening in a clockwise direction. Car must be taken so as not to over tighten the fitting, cutting the gasket.

Attach the unloading elbow to the AAR fitting using one of the cam-lock fittings secured to the elbow. Insure that the cam-lock fitting is tight and secure and that the locking ears are fully engaged be certain to position the elbow so that the discharge or other fitting is positioned in the desired direction for unloading.

PUMP AND METER

Position the pump/meter unit adjacent to the railcar with the inlet side of the pump facing the car. Connect the inlet hose to the railcar using the cam-lock fitting on the unloading elbow insuring that the connection is secure and that the locking ears are fully engaged.

Connect a grounding cable from the pump/meter unit to the railcar, preferably at the point of discharge from the car near the unloading fittings.

Connect a grounding cable from the pump/meter unit to the trailer.

Connect the outlet hose from the pump/meter to the desired tank trailer using dry break fittings. The truck must be turned off and the driver in attendance with the load during transfer.

Connect the vapor recovery hose to the trailer vapor recover lines.

When all hose connections have been made, start the diesel motor on the unit and allow to idle Set the meter to read zero (0000).

Open the bottom outlet valve on the railcar and allow product to flow into the intake hose. Check for leaks and secure as necessary. If no leaks are present, engage the PTO on the pump and increase rpm's on the motor in order to begin pumping product into the trailer. Check the meter to insure that it is recording the flow of product through the system.

When the desired amount or level of product has been achieved, disengage the PTO to stop pumping of the product. Close the bottom outlet valve on the railcar to prevent any accidental discharge when not involved in transfer.

Record the amount shown on the meter and use the calibration charts to determine gross and net gallons transferred.

When transfers have been finished or when the railcar is empty, close and remove all fittings and secure the railcar per FRA requirements.

BALTIMORE TERMINAL EMERGENCY RESPONSE PLAN

RSI Leasing Inc. takes a very responsible attitude toward safety. Proper emergency planning and response are important elements of every safety and health program, to help minimize employee exposure and injury. A number of regulations require that we develop and implement a written Emergency Response Plan to handle possible emergencies before it is necessary to perform emergency response operations.

Jim Weglicki is responsible for developing and maintaining the facility's emergency response plan. The plan is available for review and is kept at the Baltimore Terminal and at RSI Leasing Headquarters.

Our plan includes the following elements:

- Personnel roles, lines of authority, and communication procedures,
- Pre-emergency planning,
- Emergency recognition and prevention,
- Emergency medical and first aid treatment,
- Safe distances and places of refuge,
- Site security and control,
- Evacuation routes and procedures,
- Critique of response and follow-up, and
- Personal protective and emergency equipment.

General Information

In the event of an emergency, Terminal Manager Norm Stephenson will contact the City of Baltimore Fire Department via telephone. If necessary, Mr. Stephenson will contact IMS Environmental Services to facilitate containment and clean up of released material.

Should it be necessary to inform or evacuate the public or nearby businesses due to a release of material, these duties will be handled by the Baltimore Police Department.

The Fire Department is the local agency that is involved in emergency response. The Fire Department has visited the Terminal and is aware of the products being transferred and the location of the products.

Regular drills are conducted to test our emergency readiness.

The following is a listing of emergency telephone numbers to be used in the event of an emergency:

Baltimore Fire and Police	911
RSI Leasing, Inc.	517-349-7713
James Weglicki (home)	517-647-0118
(cell)	517-974-4478
IMS Environmental Services	800-229-4671

All notification to Federal and/or State agencies will be made by Jim Weglicki. Norm Stephenson has been trained with regard to these notifications and can make all notifications as needed.

Emergency Response

Norm Stephenson has been trained to recognize and respond to releases that would require emergency response. Mr. Stephenson and his employees have been trained to respond to small spills only. IMS Environmental Services will be contacted to respond to all other spills or emergency situations.

Response Actions

As in most industrial settings, spills can occur in a variety of locations at the Baltimore Terminal. Most spills are minor and require minimal but timely clean up. These are not emergency response situations and they can be taken care of by anyone that is familiar with the product and trained in the clean up of the product.

Our policy for small spills is:

- Identify and contain the source of the spill.
- Contain any spilled material.
- Take up any spilled product with absorbent material.
- Contact RSI Leasing Headquarters for handling and disposal information.

Large spills require much more concentrated action. In general, the prescribed response to a large spill is:

- Identify the source of the spill.
- Contain the source if possible without risking personal injury.
- Contact local emergency responder.
- Contact IMS Environmental Services.
- Contact RSI Leasing Inc.
- Coordinate and assist with clean up effort.

By knowing what to expect, we can be better prepared to handle the spill or leak that does occur. The types of emergency situations that are most likely to occur at the Baltimore Terminal are:

- Leaks from railcars.
- Leaks from trucks/trailers.
- Leaks from hoses/fittings.

Supplies

There are spill control supplies located at the facility. Absorbent material is located near the transfer area. Drain mats are available to cover all storm drains in the event of a release. A copy of the Emergency Response Guidebook is located in the Terminal Office.

Additionally, chemical resistant clothing, boots, and gloves along with chemical splash goggles and face shields are provided as PPE.

Blueprint for Response

Norm Stephenson has the responsibility for making all appropriate notification and has the authority to implement all resources available in responding to a spill or release of material. The Baltimore Fire Department has visited the Terminal site.

Recognizing an emergency situation before it becomes full-blown is important. In this regard we have evaluated hazards at the facility and trained Mr. Stephenson as to each of these. Mr. Stephenson has the authority to shut down any and all operations if he believes them to be unsafe or potentially dangerous.

The Baltimore Fire Department will provide first aid and emergency medical treatment if required during an emergency situation. All employees and visitors at the Terminal will be alerted of emergency situations through voice communication. The Terminal Office has been designated a "safe area" to be utilized by personnel during an emergency. Accounting of employees will be performed by Norm Stephenson when all employees have reached the safe area and have been properly evacuated from the area of the spill or release.

Areas surrounding the danger area or "hot zone" need to be controlled during emergencies by prohibiting unauthorized personnel from entering the area. All employees not trained in emergency response and who will not be needed during the response operation will be evacuated from the danger area. Securing and preventing unauthorized access will be the responsibility of the local Police Department.

Emergency Response Plans are based on site specific needs and experience. It is important to consider previous emergency incidents in preparing an ERP. It is just as important to consider new information, experience, and incidents with the goal of enhancing the effectiveness of the ERP and keeping it current.

We have formalized procedures for the critique of an emergency response. These are as follows:

- Debriefing with emergency responders and response personnel.
- Review of emergency and response with local agencies.
- Review of emergency and response within RSI Leasing, Inc.