Queens Library – Flushing Branch
Main St, Flushing, NY 11355

Generator - Field Report

JFK&M #16.0025

February 15, 2017
On August 15th, at 10AM, we met on site with; Alfredo Kapotis of Atomic Fuel Oil, Jay Maxwell of National Standby Repair, John Peligrino of Atomic Fuel Oil, and Edgar Ordonez the building engineer, to survey the fuel oil problems with the Flushing Library Life Safety Generator installation.

The fuel oil “day” tank is a base tank, under the generator enclosure, with secondary containment, and is served from an underground fuel oil storage tank, with a duplex pump-set in the basement, pumped to the day tank via a 1” supply line, and returned via a 1” return line.

A float switch controls the pumps’ starters in the pump controller, located in the basement with the pump set, to maintain a level in the day-tank.

The tank has a 2” vent line at the top or the generator enclosure, approximately eight feet above the tank.

The secondary containment tank has a 4” vent line at the top or the generator enclosure, approximately eight feet above the containment tank.

The tank and its containment vessel have ruptured.

The building engineer, Edgar Ordonez, witnessed the tank leaking under pressure, and saw oil spraying out of the leak from what appears to be a weldment that anchors one of the stations holding the fuel tank off the bottom of the containment tank.

Additionally, one of the power leads to a motor starter in the in the pump controller has burned out, rendering the pumping system inoperable.

We can surmise that the float switch(s) hung up running the pump set continuously, and since the return line was sized equivalent to the supply line (not common practice, as return lines should be sized larger than the supply line), the supply line under the pump set’s pressure provided more oil than the gravity return line could return to the underground storage tank, so pressure build up in the tank causing a leak at a weak point.

There was no evidence of oil having overflowed out the vent pipes, so maybe the pressure that built up in the tank, due to the “delta P” in the 1” gravity return line, never exceeded the 8’ of head on the vent pipes.

Fuel oil tanks are tested to a very low pressure, which would not be too much greater than eight feet of head, and maybe the tank had weakened when initially being rigged into place, or due to fatigue over time.
The pump controller’s starter’s power lead could have burned up due to the greater load on the pump, pumping against the aforementioned additional pressure.

Whet ever the ultimate cause of the failure was, the tank is an integral part of the generator enclosure and cannot economically be repaired, replaced or even removed.

We suggest the following course of action;

• Properly abandon the existing tank in place, pumping out any remnants of fuel oil and/or water from the day tank and the containment tank, and disposing of it properly.
• Filling the tank with a light weight foam, and sealing the fill, return and vent lines, so the tank can no longer be used.
• Providing a small (132 gallon) prefabricated, self-contained fuel storage cell with integral secondary containment, on the existing dunnage, and redirecting the supply and return lines, from both the underground fuel oil storage tank and the generator, to emanate from it.
• Adding extended vertical vent pipes to the tank and containment vessel, as well as a float switch system (multiple normally open switches in series to provide fail safe redundancy), and connecting the switches to the existing control wiring to the pump controller in the basement.
• Providing a 3 way metering valve on the discharge side of the pump set, with bypass to the underground storage tank in basement to limit supply flow to 1GPM (the 230KW generator consumes a maximum of 15GPH of fuel and its fuel injection system requires approximately three times the consumption in flow for less than 1GPM).

The 1” gravity return line should be able to handle more than the 1GPM supply without building up pressure in the tank, even if the float switches should fail in the closed position, avoiding any future ruptures or spills.

APPENDIX:

1. Images
2. Existing Drawing
3. Budget Estimate
4. Work Order
5. Cut Sheet of Transcube – Diesel Fuel Storage Tank
APPENDIX 1 – IMAGES

PUMP CONTROLLER
FUEL OIL PUMPS
INSIDE GENERATOR ENCLOSURE
GENERATOR SET “TAG”
FUEL OIL PUMP MOTOR “TAG”
FUEL OIL PUMP “TAG”
FUEL OIL LINES IN BASEMENT
APPENDIX 2:
Existing Drawings
APPENDIX 4:
Work Order
**BILLING**

**ATTN**
Queens Library

**STREET**
41-17 Main St

**CITY**
Flushing

**FILE NO**
658

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**TIME OUT**
12:30

**TIME RETURN**
4:30

**MILES**
S/A x 2 NYC

**DATE**
9/4/15

**TOTAL HRS**

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**REASON FOR CALL**
Fuel spill

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**TECHNICIAN REPORT**
Traveled to site, met with MES (Jim) and building tech, to go over problem. Found fuel to have spilled over site of base tank. Found Kupette basin tank filled with diesel. Found Kupette basin alarm switch to be bad in the closed position. Saw no alarm being generated. Found one burned wire in pump panel. Pump controller, all power is off to pump panel. Base tank needs to be pressure checked. Performed our regulars with MES. Building needs to get pump system and alarms inspected and repaired. Unit is off till issue is fixed.

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**PAYMENT**

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<th>DESCRIPTION</th>
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**TOTAL**

<table>
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<tr>
<th>SUB TOTAL</th>
<th>LABOR</th>
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<td>10 HRS</td>
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**DISCLAIMER**

All labor guaranteed for a period of 30 days from time of completion.

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The undersigned, acting as authorized representative for the above-named customer, hereby agrees that all work was satisfactorily performed. The customer accepts the work performed hereunder and agrees to pay the total expenses incurred. It is understood and agreed that payment within 30 days of the date on which services were rendered. Failure to make payment within the 30 day period will result in interest of 10% per month for the amount of the total invoice. The undersigned reserves the right to charge collection costs incurred for failure to remit payment will be borne solely by the customer.
APPENDIX 5:
Cut Sheet of Transcube Diesel Fuel Storage Tank
INDUSTRY SOLUTIONS

Construction
Fuel Distribution
Offshore
Mining
Agriculture

Power Generation
Oil & Gas
Rental
Logistics
Government & Military

PRODUCTS

PRODUCTS BY FLUID TYPE

Fuel Storage
- Fully Transportable
- Stationary Use Only
- Offshore Approved

Lubricant Storage
- Fully Transportable
- Stationary Use Only

DEF Storage
- Fully Transportable
- Stationary Use Only

Environmental Solutions
- Mud/Cuttings

Specialty Products
- Bulk Transfer Pumps

PRODUCTS BY BRAND

Abbi
Blue Pro
EnviroStax
FuelCube
Lube Pro
Mudbox Offshore
TransCube
TransferPod
TransTank

PARTS & SUPPORT

COMPANY

CONTACT

HOME / PRODUCTS / TRANSCUBE GLOBAL 05TCG
TRANSPORTABLE FUEL STORAGE TANK

TRANSCUBE GLOBAL

05TCG

The TransCube Global 05TCG is a fully transportable compact fuel storage tank.

With a compact and easy to maneuver design, the 132 gallon tank is your ideal solution for stand-by power applications and refueling for smaller equipment, such as industrial heaters, small generators, lighting towers and more.

REQUEST A QUOTE

ASK A QUESTION
FEATURES

TRANSPORTABLE
The TransCube is DOT approved to allow handling while the tank is full and features full load lifting eyes, forklift pockets and internal baffles.

ENVIRONMENTALLY SAFE
The TransCube is UL 142 approved, double-walled and 110% contained to eliminate the need for spill pans.

ACCESSIBLE
Access manway enables easy maintenance and inspection of inner tank. Removable inner tank allows for servicing and cleaning.

SECURE
Lockable equipment cabinet locks and secures fuel equipment and fuel ports to run up to 3 pieces of diesel-powered equipment and pump fuel all while the cabinet is locked.

STACKABLE
Easily stackable (2)-high full of fuel and (3)-high empty to reduce storage space requirements.

APPLICATIONS

ONSITE FUEL SUPPLY
Easily fuel machinery onsite when needed and cut back on fuel delivery wait times.

GENERATORS AND AUXILIARY EQUIPMENT
Providing back up fuel and extending run times on up to 3 pieces of diesel powered equipment.

LIMITED-ACCESS WORK SITES
For logistically challenging sites that require fuel, the TransCube can be safely lifted by crane or forklifted precisely and quickly.

FUEL TRANSPORT
Meeting multiple worldwide transport regulations, the TransCube can transport fuel safely anywhere you need it.

RELATED INDUSTRIES

- Construction
- Rental
- Oil & Gas
ACCESSORIES

**TRAILERS**
A range of highway trailers that are DOT approved and enable easy maneuvering/transportation of fuel on road or onsite.

**PUMP KITS**
Complete pump packages that are available in Manual and 12 to 230 voltage pumping anywhere from 8 GPM – 35 GPM.

**HOSE REELS**
Heavy duty hose reels that are equipped with to hold 25' – 100' of hoses 3/4" – 1".

**HOSES**
Offering fuel hoses from 12' – 100' ranging in thickness from 1/2" – 1". Artic hoses also available.

**METERS**
Mechanical and 3-4 digit digital meters ranging from 5 – 40 GPM.
APPROVALS

UL 142 LISTED FOR FUEL STORAGE

UN

CAN/ULC-S601-07.

Transport Canada

VLAREM

kiwa

NFPA 30A
# SPECIFICATIONS

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<th>METRIC</th>
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<td>Capacity</td>
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<tr>
<td>Weight</td>
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# DOWNLOADS

Thank you! Your download is unlocked.

- [05TCG Specification Sheet (PDF 228KB)](http://www.western-global.com/en-us/products/transcube-global-05tcg/?d=1)
- [05TCG with Trailer Specification Sheet (PDF 349KB)](http://www.western-global.com/en-us/products/transcube-global-05tcg/?d=1)
ALTERNATIVES

TRANSCUBE GLOBAL
10TCG

Transportable Fuel Storage Tank
258 Gallons
Fuel Storage

http://www.western-global.com/en-us/products/transcube-global-05tcg/?d=1
TRANSCUBE GLOBAL
20TCG
Transportable Fuel Storage Tank
552 Gallons
Fuel Storage

TRANSCUBE GLOBAL
30TCG
Transportable Fuel Storage Tank
793 Gallons
Fuel Storage

TRANSCUBE GLOBAL
50TCG
Transportable Fuel Storage Tank
1,198 Gallons
Fuel Storage
INDUSTRY SOLUTIONS
Construction
Power Generation
Fuel Distribution
Oil & Gas
Offshore
Rental
Mining
Logistics
Agriculture
Government & Military

PRODUCTS BY FLUID TYPE
Fuel Storage
Lubricant Storage
DEF Storage
Environmental Solutions
Specialty Products

PRODUCTS BY BRAND
Abbi
Blue Pro
EnviroStax
FuelCube
Lube Pro
Mudbox Offshore
TransCube
TransferPod
TransTank

PARTS & SUPPORT
Parts & Accessories
Warranty
Approvals & Standards

CONTACT
Request a Quote
Ask a Question
INNOVATIVE FUEL & FLUID STORAGE SOLUTIONS