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Interoffice Communication

To T. H. Martin
From G. G. Draper
Date August 27, 1975
Subject Loading of "City of Tampa" Barge on May 28, 1975

On May 28, 1975 the barge "City of Tampa" was loaded with VCM at the Refinery #3 Dock. In the initial phase of the loading operation, an unusually large amount of VCM was observed venting from the 148 foot vent recovery stack. The purpose of this letter is to outline in writing three potential causes for this VCM release. These potential causes have been previously reviewed in a meeting on July 10, 1975 with Messrs. Martin, Cowden and Jakes prior to a second loading of the "City of Tampa" barge on July 14, 1975 which was accomplished without incident. It should be noted that the ideas presented in this letter are purely speculative since there were no VCM Plant personnel at the dock when the incident occurred.

The first potential cause of the release is on the barge itself. The piping manifold is such that there is a block valve which separates the vent header from the liquid fill line. If this valve was inadvertently opened during the loading operation, it would provide a direct route for liquid VCM to reach the vent stack. However, a short time after the incident occurred, this valve was observed to be in a closed position. In addition, the liquid knockout pot (see attached sketch) in the vent recovery unit was observed to have a low level of liquid VCM a short time after the incident occurred. If the VCM release had occurred as a result of the opening of the valve on the barge, the knockout pot would have had to be completely full to allow liquid VCM to reach the stack.

A second potential cause is that the vent recovery compressor capacity was exceeded by a sudden surge of VCM vapors. The normal startup procedure for the vent recovery compressor, as observed on occasion by VCM Plant personnel, is to lower the discharge pressure controller on the Sundyne compressor until the compressor is on line and then gradually increase the back pressure. This procedure is utilized to keep the compressor from surging during the startup operation. The vast majority of the VCM ships loaded at the #3 Dock have been nitrogen purged and as a result the vent recovery compressor for the first few minutes of operation handles mostly nitrogen. This was not the case for the "City of Tampa" barge as it was under a VCM atmosphere and a pressure of 55-60 psig. Therefore, if the back pressure controller was set on a low pressure and the 6" vapor vent valve on the dock opened suddenly, the compressor capacity could be exceeded resulting in pure VCM vapors blowing past the compressor and out the vent stack. However, a short time after the incident occurred the back pressure controller was observed to be set on the normal operating pressure of 90 psig. It should be noted that later on in the loading operation the vent recovery compressor was put in operation with the barge tank pressure at 130 psig without incident.

VVC 000019464

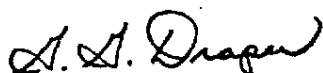
T. H. Martin

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The third potential is that one of the valves utilized for clearing the spool sections (see attached sketch) for blind removal on the liquid loading and vent line was inadvertently left open. This would provide a direct route for VCM to reach the vent stack. However, on inspection after the incident occurred these valves were observed to be in a closed position.

In summary, there is no conclusive evidence as to why the VCM release occurred on the first loading of the "City of Tampa" barge. However, one of the above mentioned three items appears to be the most likely cause. To minimize the potential of an accidental release of VCM occurring in the future, the independent cargo inspector will check each ship to determine if there are any interconnecting valves between the liquid fill and vent lines. If such a valve exists, the inspector will place a seal on the valve to insure that it remains closed during the loading operation. In addition, I would recommend that the dock operators take extra precaution to insure that the valves utilized in clearing the spool sections on the liquid loading and vent lines are closed tightly during the loading operation. Startup of the vent recovery compressor is also extremely critical when the compressor is taking suction on a tank which contains VCM vapor under pressure. Lowering the discharge pressure on the compressor and opening the suction valve suddenly may exceed the capacity of the compressor. The compressor can be made to operate correctly as was evidenced later in the loading operation of the "City of Tampa" when the compressor was placed on the line with the barge tank pressure at 130 psig.

If I can be of further assistance please advise.



G. G. Draper

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CC

JAD-CEG-JHM-REL-GAO-RHC

VVC 000019465

<u>1974</u>	
VCN Shipment	29
EDC Shipment	6
EDC recd.	13

<u>1975</u>	
VCN Shipment Jan. through July	15
VCN Shipment Aug - Dec. (est.)	11
EDC recd. (Vulcan)	1 or 2

UCM SHIPMENTS AT THE DOCK 1975

DATE	VESSEL	POUNDS LOADED
<u>JANUARY</u>		
1-2	ALPHA GAS	5,564,207
<u>FEBRUARY</u>		
2-15	ALPHA GAS	5,510,606
<u>MARCH</u>		
3-26	BETA GAS	5,102,587
<u>APRIL</u>		
4-15	SIGURD JORSALFAR	4,915,130
<u>MAY</u>		
5-21	MUNDO GAS BERMUDA	11,772,445
5-25	BETA GAS	5,495,892
5-27	CITY OF TAMPA - BARGE	3,254,602
<u>JUNE</u>		
6-8	ALPHA GAS	5,475,856
6-12	SIGURD JORSALFAR	4,981,126
6-27	NELIS HENRIK ABEL	4,950,337
<u>JULY</u>		
7-4	CITY OF TAMPA - BARGE	3,196,806
7-19	ALPHA GAS	5,456,983

DATE	VESSEL	POUNDS LOADED
7-25	BETAGAS	5,495,741
7-30	INGE MAERSIK	est. 22,660,000
7-31	DELTA GAS	est. 6,900,000

TOTAL UCM JAN - JULY 25, 1975 71,172,518#
 est. 29,560,000
100,732,518

VCM SHIPMENTS AT THE DOCK
1974

DATE	VESSEL	POUNDS LOADED
<u>JANUARY</u>		
1-22-74	BETAGAS	5,286,376
1-27-74	IRENE	10,339,661
<u>FEBRUARY</u>		
2-6	ALPHAGAS	5,511,507
2-23	BRASILIA	3,142,289
<u>MARCH</u>		
3-1	HOEGH SHIELD	15,791,898
3-4	CORAL OBELIA	5,860,888
3-9	GAMMAGAS	10,379,329
3-28	ALPHAGAS	5,569,083
<u>APRIL</u>		
4-14	BERMUDA	7,486,535
4-15	BRASILIA	3,133,858
4-22	GAMMAGAS	5,916,463
<u>MAY</u>		
5-1	HOEGH SHIELD	8,046,378
5-31	ALPHAGAS	5,501,031

VVC 000019470

DATE	VESSEL	POUNDS LOADED
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JUNE

6-14
6-22

HOEGH SHIELD
IRENE

11,935,053
10,129,084

JULY

7-15
7-24
7-28

NEILS HENRIK ABEL
HOEGH SHIELD
NEILS HENRIK ABEL

2,370,810
7,896,185
4,948,973

AUGUST

8-11
8-29

THOR HEYERDAHL
IRENE

6,441,597
10,217,834

SEPTEMBER

9-11
9-23

GAMMA GAS
GAMMA GAS

2,419,769
6,067,385

OCTOBER

10-19

IRENE

8,492,681

NOVEMBER

11-3
11-10
11-18
11-30

ALPHA GAS
GAMMA GAS
BETA GAS
BETA GAS

5,508,377
10,364,019
2,426,461
5,359,675

VVC 000019471

DATE	VESSEL	POUNDS LOADED
DECEMBER		
12-20	GAMMAGAS	2,405,826
12-27	SIGURD JORSALFAR	2,409,811

TOTAL UCM LOADED at DUCK 1974 - 191,357,036 #

VVC 000019472

EDC SHIPMENTS AT THE DOCK
1974

DATE	VESSEL	POUNDS LOADED
<u>ANUARY</u>	- O -	
<u>FEBRUARY</u>		
2-14	NMS 1316	2,919,719
2-24	SUN CHEM 1400	3,265,254
<u>MARCH</u>	- O -	
<u>APRIL</u>		
4-2	BOW CEDAR	6,774,650
4-23	CHOTIN 1216	2,693,720 - SHIPPED
<u>MAY</u>		
5-31	CABBO SIERRA	3,455,336
<u>JUNE</u>		
6-11	SUN CHEM 1600	3,476,521 SHIPPED
<u>JULY</u>	- O -	
<u>AUGUST</u>	- O -	
<u>SEPTEMBER</u>	- O -	

VVC 000019473

DATE	VESSEL	POUNDS LOADED
<u>OCTOBER</u>		
10-7	GRAN HEIM	5,556,482
10-20	SUN CHEM 1900	283,395
<u>NOVEMBER</u>		
11-3	ANCO SWIFT	10,510,416
11-11	FT-24	2,715,047 SHIPPED
11-19	NM'S 1404	2,397,650 ✓
11-21	ANCO SEPTRE	4,393,327
<u>DECEMBER</u>		
12-10	ANCO SOVEREIGN	2,237,443
12-16	POST ENERGIE	9,464,969
12-18	CHEM 303	4,014,484 SHIPPED
12-19	CHEMICAL VENTURE	4,529,602
12-21	NM'S 1404	2,221,444 SHIPPED
12-22	GRENNANGER	8,909,482
12-26	SUN CHEM 1800	3,571,636
TOTAL EDC LOADED 1974		65,877,710 #
✓ ✓ SHIPPED ✓		17,518,866 #
TOTAL EDC OVER THE DOCK		83,396,576 #

VVC 000019474

Business Area Production Forecast

	Europe	France	A-D	Europe	UK	Europe	Other	Canada	Total
July	18	1.5	2.0	10.0	2.0	2.0	2.0	10	54.5
Aug	13*	2.0	1.0	5.0	2.0	2.0	2.0	10	31.0
Sept	20*	2.5	2.0	5.0	10.0	-	-	10	49.5
Oct	23*	3.0	2.5	-	5.0	-	-	10	43.5
Nov	18*	3.0	2.5	5.0	5.0	10.0	-	10	43.5
Dec	18	3.0	2.0	5.0	5.0	-	-	10	43.0
	110	15	12.0	25.0	30.0	10.0	23.0	50	275.0

* approx 2mm³ of VCM will be supplied by BIC to Aberdeen in addition to these production figures