

CHEMICALS



file Garbeta (VCM ships)

INTEROFFICE / LAKE CHARLES

TO Distribution DATE October 5, 1982
FROM B.P. Bourgeois *BPB* SUBJECT October Mitsui Lifting *10/8*

The latest ETA on the "Garbeta" is now 10/7. Quantity to be loaded is 5000 MT $\pm$ 5%. The "Garbeta" is presently in the Gulf purging its tanks of Butane (last cargo). Its intentions upon arrival at our dock as relayed to me is as follows:

1. The ship will arrive with its tanks in air open for inspection.
2. Following inspection clearance, the ship will use its own inert gas generator to lower the oxygen content to approximately .5%.
3. Following this, a nitrogen purge is to be used to reduce the O_2 content below .1% (PPG Spec). During this time, the ship will be venting to the atmosphere.
Note: The "Garbeta" has four tanks which have a pressure rating (actually SRV setting) of .2 Kg/Cm² (2.9 psig). They will purge the tanks in series. The first two tanks will be loaded with PPG material.
4. Upon completion of the oxygen checks, VCM gassing will commence. The ship has 30-40 tons of VCM on board stored in a small pressurized vessel to be used for the gassing operation. The Captain has asked for an additional 40-80 tons to refill his small tank for future use. Should the ship run short of VCM, gassing will be discontinued long enough to refill his tank.
5. When the VCM gassing starts, the ship will need a shore vent. Since its tanks are low pressure, the vent compressor will be needed to get the vent stream into the incinerator. Everyone is aware that the venting rate will be limited to about 15,000 SCFH. The ship will want to continue gassing until the first two tanks are cooled sufficiently for liquid loading. Further purging of the remaining two tanks will be completed in route to Plaquemine.
6. The Captain or First Mate will inform shipping personnel when they are ready to begin liquid loading. Make sure this time is logged by the inspector since, as I see it, should be the start of PPG time. To load a maximum 5775 short tons, we have 14 hours. Demurrage is \$833/hour.

SL 102286

If there are any questions, please advise as soon as possible so that they may be resolved before the ship's arrival.

BPB /cp

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Plan for Inerting, Purging with Nitrogen, Purging with VCM & Loading VCM

The vessel will arrive alongside the PPG berth at Lake Charles with the tanks in the fresh air condition ready for inspection by the independent Surveyor. When the tanks have been passed as fit for carrying VCM the tanks are then to be Inerted, using the ship's IG Plant, then purged with Nitrogen supplied by road tankers, purged with VCM from the Stbd DPV and shore and the Nos 1 & 2 tanks cooled down for the loading of 5000MT VCM. The following is the sequence of events and the loading plan.

1. On Completion of Inspection

On the completion of the tank inspection by the Chas. Martin Surveyor all tanks are to be fully battened down and all lines set for a series purge using the ship's IG Plant. The IG will pass from the cooler to the bottom of No 1 tank, from the top of No 1 tank to the bottom of No 2 Tank, from the top of No 2 tank to the bottom of No 4 tank, from the top of No 4 tank to the bottom of No 3 tank and to the fore vent mast via the top of No 3 tank. During the time that the tanks are being purged all cargo lines and plant are to be fully purged. On the completion of this stage the oxygen content of the tanks should be 0.5%

2. Nitrogen Purge

On the completion of the IG Purge the vessel will be purged with Nitrogen from the shore using road tankers and shore supplied vaporiser. The lines will be set as follows to carry out a series purge with the nitrogen entering the tanks at the top;

Shore connection to Nos 1&4 Vapour line taking vapour to No 1 tank Vapour Inlet, out of the bottom of No 1 tank via Liquid loading line to manifold and cross over to Nos 2&3 Vapour line then to top of No 2 tank via Vapour Inlet, out the bottom of No 2 tank via Liquid loading line and aft to cross over from 2&3 liquid to 1&4 Vapour. The valve isolating aft part of 1&4 Vapour line to be shut. Into top of No 4 tank via Vapour line and out of bottom purge line via flexible hose to the IG header, along the IG header to No 3 tank and via flexible hose to Top purge grid. Out of bottom purge grid and via flexible hose to vent line and thence to Vent mast.

The nitrogen is to be supplied to the vessel as warm as possible to ensure that no condensation is formed in the tanks. A positive pressure is to be maintained in the tanks at all times to prevent the ingress of oxygen. During the Nitrogen purge all cargo lines and plant are to be fully purged to the satisfaction of PPG and the Independent Surveyor. The basic requirements are Oxygen content to be below 0.1 % and LPG below 0.5 % by volume. On the completion of the Nitrogen purge the tanks must have a good positive pressure to ensure that all lines are fully purged for the next stage.

3. VCM Purge

Prior to the VCM Purge the lines are to be set up as follows to allow liquid VCM from the Stbd DPV, which contains 34 MT of VCM, to enter the bottom of No 1 tank and then in series to the other tanks and then to the shore incinerator. Although only Nos 1&2 tanks are to be fully purged and cooled for loading at PPG the remaining tanks are also being purged in the series purge to prevent the loss of product and to help prepare them for loading at the next Port.

Liquid from Stbd DPV will be released slowly via the liquid filling line to Port DPV liquid line, the Port DPV containing Ammonia is entirely blanked and isolated from the whole cargo system, to Nos 1&4 condensate line then via X-over at No 1 to No 1 liquid line and so to bottom of No 1 tank. Out of No 1 tank via the Vapour line to manifold and cross over to Nos 2&3 liquid line to No 2 liquid inlet and bottom grid. Out of No 2 vapour line to manifold and cross over to 1&4 liquid line and into No 4 tank via liquid line. Valve isolating Fore and Aft sections of Nos 1&4 liquid line to be shut. Out of No 4 via vapour line to cross over to 2&3 liquid line into No 3 tank via liquid line.

The shore booster blower has a maximum capacity of 15000 cu ft/hr and the rate of boil off of the VCM in No 1 tank must not exceed this figure to avoid building up excessive pressure in the tanks. Attention must also be paid to the effect of this booster causing a vacume situation in the cargo tanks and a possitive pressure must be maintained at all times. The contents of the DPV should be enough to purge Nos 1&2 tanks. At this stage it is intended to load 40 MT of VCM into the DPV to complete the purge, if required, and to cool down Nos 1&2 tanks prior to loading

4. Loading VCM Coolant to DPV

The coolant will be loadad via Nos 2&3 loading line and will then pass to the condensate line via the X-over by No 2 Tank and thence to the Stbd DPV filling line. On the completion of loading the DPV the remains in the loading line should be allowed to boil off to No 4 tank via the condensate return. When the contents of the loading line have been cleared the purge of Nos 1&2 tanks may continue, if required, or the cooling down of nos 1&2 may commence using the same flow system as before. Any incondensibles from the LPG compressors should be sent to No 4 tank untill the DPV is MT when this may be used for this purpose.

5. Loading

On the completion of cooling down Nos 1&2 tanks the vapour return from the top of No 3 tank to the shore should be disconnected after purging with nitrogen The purge outlet pipe should be blanked and Nos 3&4 tanks isolated. For loading the loading line will be connected to the Nos 2&3 liquid loading line and the vapour return to Nos 1&4 vapour line. It is hoped that this line will not be required and is for emergency use only.

Loading Plan

The VCM will be loaded in the following order and amounts;

No 2 Tank	3998 MT	Final Sounding	9.10 M
No 1 Tank	1002		3.76