

**HINDUSTAN PETROLEUM CORPORATION LIMITED
VISAKHA -VIJAYAWADA-SECUNDERABAD PIPELINE**

VBS OPERATIONS MANUAL



**INTEGRATED MANAGEMENT SYSTEMS
(ISO 9001:2015, ISO 14001:2015, ISO 45001:2018)**

	HINDUSTAN PETROLEUM CORPORATION LIMITED VISAKHA-VIJAYAWADA-SECUNDERABAD PIPELINE VIJAYAWADA ANDHRA PRADESH	ISSUE NO: 2 REVISION NO.: 0 EFFECTIVE DATE: 01/01/2018 SHEET: 1 OF 1
INTEGRATED MANAGEMENT PROCEDURES		DOCUMENT NO.: IMP/OVJ
TITLE	INDEX	

S.No	Description
1	List of documents (IM Procedures/IM Instructions)
2	Amendment record Sheet
3	IM Procedures
4	List of Forms
5	IM Forms

Approved By	Issued By
	
OPERATIONS INCHARGE	IMS COORDINATOR

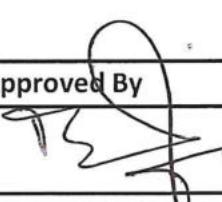
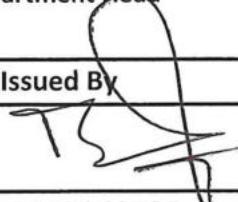
HINDUSTAN PETROLEUM CORPORATION LIMITED
VISAKHA-VIJAYAWADA-SECUNDERABAD PIPE LINE

LIST OF DOCUMENTS
(IM Procedures & IM Instructions)

Department/Section: Operations - Vijayawada

Sl. No.	IMP/IMI Title	IMP / IMI No.	Rev./Amend-ment No.	Rev./ Amend-ment Date
1	VIJAYAWADA CONTROL ROOM ACTIVITIES	IMP/OVJ/01	00	01/01/2018
2	SHUTDOWN AT VIJAYAWADA BOOSTER STATION	IMP/OVJ/02	00	01/01/2018
3	PRODUCT SAMPLING AND LABORATORY TEST REPORTS	IMP/OVJ/03	00	01/01/2018
4	CHECKS FOR TANKS TAKING OVER	IMI/OVJ/01	00	01/01/2018
5	LINE UP AND SWITCH OVER OF VIJAYAWADA TANKS	IMI/OVJ/02	00	01/01/2018
6	LINE UP OF STATION AND RECEIPT STARTING	IMI/OVJ/03	00	01/01/2018
7	INTERFACE CUTTING	IMI/OVJ/04	01	26/10/2019
8	SUMP TANK OPERATION	IMI/OVJ/05	00	01/01/2018
9	SLOP TANK OPERATION	IMI/OVJ/06	00	01/01/2018
10	PIG RECEIVING	IMI/OVJ/07	00	01/01/2018
11	PIG LAUNCHING	IMI/OVJ/08	00	01/01/2018
12	MAINLINE PUMPS OPERATION	IMI/OVJ/09	00	01/01/2018
13	ISSUE OF WORK PERMITS	IMI/OVJ/10	00	01/01/2018
14	LINING UP OF TANKS AT VJTL FOR EX-VJA PUMPING	IMI/OVJ/11	01	26/10/2019
15	LINING UP OF VIJAYAWADA STATION FOR EX-VIJAYAWADA PUMPING	IMI/OVJ/12	01	26/10/2019
16	CHECKS BEFORE OPERATIONS	IMI/OVJ/13	00	01/01/2018
17	PUMPING/RECEIPT OF ATF	IMI/OVJ/14	00	01/01/2018
COMMON OPERATIONAL PROCEDURES		00	01/01/2018	
1	START UP PROCEDURES FOR VVSPL	IMP/OPN/01	00	01/01/2018
2	SHUT DOWN PROCEDURES FOR VVSPL	IMP/OPN/02	00	01/01/2018
3	PROCEDURE FOR EMERGENCY SHUT DOWN OF VVSPL	IMP/OPN/03	00	01/01/2018
4	CALIBRATION OF THERMOMETER	IMI/OPN/01	00	01/01/2018
5	CALIBRATION OF HYDROMETER	IMI/OPN/02	00	01/01/2018

Signature of Department Head

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OPERATIONS INCHARGE	IMS COORDINATOR



HINDUSTAN PETROLEUM CORPORATION LIMITED
VISAKHA- VIJAYAWADA- SECUNDERABAD PIPELINE
VIJAYAWADA
ANDHRA PRADESH

ISSUE NO: 2
REVISION NO.: 0
EFFECTIVE DATE: 01/01/2018
SHEET: 1 OF 1

INTEGRATED MANAGEMENT PROCEDURE

DOCUMENT NO.: IMP/OVJ

TITLE

AMENDMENT RECORD SHEET

IMP/IMI/IMF No	Amendment/ Revision No	Effective Date	Brief Description of Changes
IMI/OVJ/04	Rev:01	26.10.2019	Addition of guidelines for HPCK quantity plugging & interface tracking at VBS during Ex-Vijayawada pumping under section 4.15 & 4.16
IMI/OVJ/11	Rev:01	26.10.2019	Addition of guidelines for SOP & instruction for lineup of Vijayawada Terminal tanks for MS, HSD and HPCK pumping through EX-Vijayawada facility towards VSPL.
IMI/OVJ/12	Rev:01	26.10.2019	Change of title "Lining up of Vijayawada station" to "Lining up of Vijayawada station for Ex-Vijayawada Pumping" and change of instructions for lineup of Vijayawada station for EX-Vijayawada pumping in IMI/OVJ/12.

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IMS COORDINATOR

	HINDUSTAN PETROLEUM CORPORATION LIMITED VISAKHA- VIJAYAWADA- SECUNDERABAD PIPELINE VIJAYAWADA ANDHRA PRADESH	ISSUE NO:2 REVISION NO.:00 EFFECTIVE DATE:01/01/2018 SHEET: 1 OF 8
INTEGRATED MANAGEMENT PROCEDURE		DOCUMENT NO.:IMP/OVJ/01
TITLE	VIJAYAWADA CONTROL ROOM ACTIVITIES	

1.0 PURPOSE

To lay down activities involved in operation of Vijayawada Control room involved for receipt of POL products and mainline pumps operations.

2.0 SCOPE

This is applicable to operation of Vijayawada Control Room facilities as per the pumping schedule in co-ordination with the following depts.

- (i) Vizag Control Room
- (ii) Vijayawada Terminal
- (iii) Rajahmundry Booster Station
- (iv) Suryapet booster station
- (v) Secunderabad Receiving station

3.0 REFERENCES

IM/MR/7.5

4.0 RESPONSIBILITY

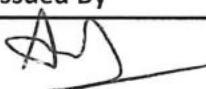
Shift In-charge/Location in charge

4.1 Location-in-Charge:

- 4.1.1 To Coordinate with Vizag Control Room regarding the pumping program.
- 4.1.2 To Coordinate with Vijayawada Terminal regarding stock and availability of tankage.
- 4.1.3 Overall responsibility of the station.

4.2 Shift-in-Charge:

- 4.2.1 To implement the pumping program in coordination with Vizag Control Room and Vijayawada Terminal.
- 4.2.2 To monitor the operations parameters (Annexure-I) in co-ordination with VDS, RBS, SBS & SRS and record the relevant parameters in operation log book (IMF/OVJ/01)

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OPERATIONS INCHARGE	IMS COORDINATOR

	HINDUSTAN PETROLEUM CORPORATION LIMITED VISAKHA- VIJAYAWADA- SECUNDERABAD PIPELINE VIJAYAWADA ANDHRA PRADESH	ISSUE NO:2 REVISION NO.:00 EFFECTIVE DATE:01/01/2018 SHEET: 2 OF 8
INTEGRATED MANAGEMENT PROCEDURE		DOCUMENT NO.:IMP/OVJ/01
TITLE	VIJAYAWADA CONTROL ROOM ACTIVITIES	

- 4.2.3 To carryout regular operational activities namely Interface cutting, lining up of tanks starting up of the station in coordination with Vizag, and subsequently with Rajahmundry Booster station and SBS/SRS and taking shutdown (both planned and emergency).
- 4.2.4 To carry out sampling and tests of product being received as per category A' (Appendex-2) of Industry Quality control Manual.
- 4.2.5 To receive the line walkers' reports (IMF/ROW/01) and security guards reports (IMF/ROW/02) and inform to ROW/Location Incharge in case of any abnormality (These formats are part of ROW manual).
- 4.2.6 **General Inspection Guidelines**
The Shift Officers carries out at least one General Inspection round during the shift and checks at least two areas. The inspection covers but not confined to below guidelines:
Checks for Sub Standard Conditions
1. Common for All areas
 - Sufficient Illumination
 - Housekeeping
 - Condition in structures
 2. Condition of Buildings
 3. Mainline Pump House& Piping
 - Abnormal Noises
 - Any Leaks through Pump's Mechanical Seal, body, Valves, piping, PTs, TTs etc.
 - Visually inspect HOT crane
 - Condition of Emergency Shower
 - Condition of Control Valves (FCVs & PCVs)
 - Condition of Surge Relief Valve or Rupture Discs
 - Condition of Pipe Supports
 - Condition & Status of critical Valves
 4. Manifold Area
 - Any leaks through Valves
 - Condition of NRVs
 - Status of Actuators & Valves
 - Condition of Culvert

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	HINDUSTAN PETROLEUM CORPORATION LIMITED VISAKHA- VIJAYAWADA- SECUNDERABAD PIPELINE VIJAYAWADA ANDHRA PRADESH	ISSUE NO:2 REVISION NO.:00 EFFECTIVE DATE:01/01/2018 SHEET: 3 OF 8
INTEGRATED MANAGEMENT PROCEDURE		DOCUMENT NO.:IMP/OVJ/01
TITLE	VIJAYAWADA CONTROL ROOM ACTIVITIES	

5. Sub Station

- Any alarms in panels & status of relays.
- Condition of Exhaust Fans
- Any spillages in Battery Bank
- Any Vapors in Battery Bank
- Condition of eyewash unit of battery bank
- Any alarms in VFD panel
- Condition of ACs in VFD room
- Cleanliness in substation & cellar
- Abnormal Noise from transformers
- Any leak through transformer oil tank

6. Sample Room

- Condition of Exhaust fan
- Any spillages
- Proper stacking of Samples

7. Scrapper Area

- If Scrapper barrel is pressurized
- Condition of valve pits
- Any leakages
- Any vapors

8. Field Piping Area

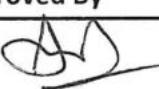
- Any Leakages through flanges, Valves, FCVs, PCVs, Sample Points, PTs, TTs etc.
- Abnormal Sounds from PCV & FCV
- Condition of Walkovers

9. Tank Farm

- Traces of Oil in the dyke
- Any leakages from the tank
- Condition of Tank Body valves & hammer blinds

10. In and Around C/R Building

- Any spillages in CI storage shed
- DG oil level & fuel tank condition

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INTEGRATED MANAGEMENT PROCEDURE		DOCUMENT NO.:IMP/OVJ/01
TITLE	VIJAYAWADA CONTROL ROOM ACTIVITIES	

- Any abnormality in C/R building, DG Room, CI storage shed, Scrap yard, Worker's amenities Room & Car Parking area
- Condition of Roads & Drains
- Condition of Worker's amenities Room
- Condition of PLC & SCADA Software & Hardware
- Whether Spark arrestors installed to vehicles

11.Examples of Above Standard Conditions:

- All exhaust fans found in working condition
- In Day time illumination is switched off wherever not required
- No Wild growth in the field is found
- Workers are using PPE even during idle time

The observations or findings during the above checks are recorded in shift log book (IMF/OPN/01) and the Location In charge reviews the log on daily basis and thereby assesses the condition of the plant.

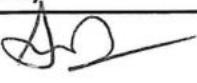
Any reported substandard condition is brought to notice of concerned departmental head through maintenance log book (IMF/OPN/02), which is reviewed by Location In charge at least once in a month and the departmental heads are advised in written for early rectification.

Any event observed during the inspection is recorded in Event Register kept in control room and dealt as per Event Management System.

Any substandard condition recorded more than once is treated as repetitive and necessary remedial actions are initiated to eliminate the root cause.

For any recorded above standard condition positive recognition is given verbally/e-mail on as and when required basis.

- 4.2.7 To issue Cold work permits (IMF/OPN/03).
- 4.2.8 To carry out necessary receipt quantity punching into ERP system.
- 4.2.9 To carry out periodical calibration of thermometers and hydrometers for own use.(IMF/OPN/05, IMF/OPN/06).
- 4.2.10 To record, at the end of the shift, all the relevant events occurred during the shift requiring the attention of the next shift incharge by preparing Handing over Note (HON) in IMF/OPN/01 and discuss briefly about the same.
- 4.2.11 To acknowledge the HON prepared by the previous shift incharge and discuss briefly about the same.

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INTEGRATED MANAGEMENT PROCEDURE		DOCUMENT NO.:IMP/OVJ/01
TITLE	VIJAYAWADA CONTROL ROOM ACTIVITIES	

5.0 PROCEDURE

- 5.1 To ensure safe operations of below mentioned activities, the details of activities are documented in respective IM Instructions.

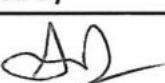
Title of IM Instruction	IM Instruction Number
Checks for tanks taking over	IMI/OVJ/01
Line up and Switchover of Vijayawada tanks	IMI/OVJ/02
Line up of station and receipt starting	IMI/OVJ/03
Interface cutting	IMI/OVJ/04
Sump tank operations	IMI/OVJ/05
SRV operations	IMI/OVJ/06
PIG Receiving	IMI/OVJ/07
PIG launching	IMI/OVJ/08
Mainline pumps operations	IMI/OVJ/09
ISSUE OF WORK PERMITS	IMI/OVJ/10

- 5.2 The co-ordination with Vizag Control Room Involves the following :

- 5.2.1 To inform the Vizag Control Room about the stock/ullage/of Vijayawada Terminal.
- 5.2.2 To obtain the detailed pumping program and noting down the same in the Shift log book (IMF/OPN/01).
- 5.2.3 To obtain the Laboratory test details of product received/ being received at Vijayawada.
- 5.2.4 To exchange the quantity of product being received in Vijayawada tanks vis-a-vis quantity of product being pumped from Vizag on hourly basis (IMF/OVJ/01).
- 5.2.5 To pass on the interface details to Vizag Control Room and any abnormality in the product specifications is to be investigated. Vijayawada officer should take the product switch over densities from Vizag control room which will act as a reference for them during cutting of interface.
- 5.2.6 Any other information or development regarding operation are to be intimated to Vizag Control Room immediately.

- 5.3 The Co-ordination with Vijayawada Terminal involves the following:

- 5.3.1 To obtain the stock / ullage position from Vijayawada Terminal.
- 5.3.2 To plan and finalise the receipt program in line with pumping schedule and Terminal requirements.

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INTEGRATED MANAGEMENT PROCEDURE		DOCUMENT NO.:IMP/OVJ/01
TITLE	VIJAYAWADA CONTROL ROOM ACTIVITIES	

- 5.3.3 To arrange for Gauging and lining up of nominated tanks and record in (IMF/OVJ/03).
- 5.3.4 To investigate any abnormal stock loss / gain with the help of Vijayawada Terminal.
- 5.3.5 To obtain the Laboratory test details of the product received at Vijayawada tank.
- 5.3.6 To ensure the safety and security of the station with the help of Vijayawada Terminal.
- 5.3.7 Any other assistance required for the smooth operation provided by Vijayawada Terminal.
- 5.4 The Co-ordination with RBS/SBS/SRS involves the following:
- 5.4.1 The RBS/SBS will inform Vijayawada about starting and Tripping of pumps so that the station parameters at Vijayawada could be adjusted.
- 5.4.2 The RBS/SBS/SRS will inform Vijayawada about starting and stopping of heart cut/receipt so that the station parameters at Vijayawada could be adjusted.
- 5.4.3 To obtain hourly receipt figures of RBS (When heart cut is ON).

6.0 RELEVANT RECORDS

Sl. No.	Format Title	Format No.	Location	Responsibility
1	Shift log book	IMF/OPN/01	Control Room	Shift In-charge
2	Critical behavior check list for PPE observation	IMF/OPN/12	Control Room	Shift In-charge
3	Maintenance Log Book	IMF/OPN/02	- Do -	- Do -
4	Cold Work Permit	IMF/OPN/03	- Do -	- Do -
5	Hot work permit	IMF/OPN/04	- Do -	- Do -
6	Daily Operations Log Sheet	IMF/OVJ/01	- Do -	- Do -
7	Tank Gauge Sheet	IMF/OVJ/03	- Do -	- Do -
8	Interface Log sheet	IMF/OVJ/05	-DO-	-Do-
9	Sample label	IMF/OVJ/02	-Do-	-Do-

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	HINDUSTAN PETROLEUM CORPORATION LIMITED VISAKHA- VIJAYAWADA- SECUNDERABAD PIPELINE VIJAYAWADA ANDHRA PRADESH	ISSUE NO:2 REVISION NO.:00 EFFECTIVE DATE:01/01/2018 SHEET: 7 OF 8
INTEGRATED MANAGEMENT PROCEDURE		DOCUMENT NO.:IMP/OVJ/01
TITLE	VIJAYAWADA CONTROL ROOM ACTIVITIES	

7.0 Performance indicators:

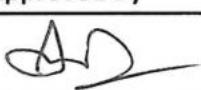
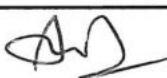
Efficient and safe pipeline operation (Pumping and receiving petroleum product)

8.0 Risks:

Refer Risk file IMS/RISK

9.0 Opportunities:

1. Leverage with technology
2. Training to employees and Contract workmen

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HINDUSTAN PETROLEUM CORPORATION LIMITED
VISAKHA- VIJAYAWADA- SECUNDERABAD PIPELINE
VIJAYAWADA
ANDHRA PRADESH

ISSUE NO:2
REVISION NO.:00
EFFECTIVE DATE:01/01/2018
SHEET: 8 OF 8

INTEGRATED MANAGEMENT PROCEDURE

DOCUMENT NO.:IMP/OVJ/01

TITLE

VIJAYAWADA CONTROL ROOM ACTIVITIES

ANNEXURE-1 : VIJAYAWADA CONTROL ROOM OPERATIONS KEY PARAMETERS

Parameters	Key Parameters		Action
	Instrument	Set Point	
Pump Low Suction Pressure	PAL-1508,09,10	2.30 Kg/Sq.Cm	Pump Trips
Pump High Discharge Pressure	PAH-1508,09,10	80.00 Kg/Sq.Cm	Pump Trips
Low Pressure Suction Header	PAL-1507	3.00 Kg/Sq.Cm	Alarm
Low-Low Pressure Suction Header	PSLL-1506	2.10 Kg/Sq.Cm	Pump Trips
High Pressure Discharge Line	PSH-1514	79.00 Kg/Sq.Cm	Alarm
High-High Pressure Discharge Line	PSHH-1506,07,08	83.00 Kg/Sq.Cm	Pump Trips
High Pressure Manifold Header	PAH-1501	5.00 Kg/Sq.Cm	Alarm
High-High Pressure Manifold Header	PSHH-1502	8.00 Kg/Sq.Cm	MOV 1528 closes
Low Level Sump Tank	LAL-1501	15.00 Cm	Alarm
High Level Sump Tank	LAH-1501	120.00 Cm	Alarm
Full Load Current-HT Motors		91 Amps	Flow rate to be reduced
Bearing Vibrations (MNDE,MDE,PNDE,PDE)		7.00 mm/Sec RMS 9.00 mm/Sec RMS	Alarm Pump Trips
Bearing Temp. (MNDE, MDE, PNDE, PDE)		85 deg C 95 deg C	Alarm Pump Trips
Casing Temp. (PDE & PNDE)		55 deg C 65 deg C	Alarm Pump Trips
Motor winding Temp. (Max.)		120 deg C 130 deg C	Alarm Pump Trips
Thrust Position		+/- 0.30 mm +/- 0.65 mm	Alarm Pump Trips
SRV set pressure		120 PSI	SRV operates

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INTEGRATED MANAGEMENT PROCEDURE		DOCUMENT NO.: IMP/OVJ/02
TITLE	SHUT DOWN AT VIJAYAWADA BOOSTER STATION	

1.0 PURPOSE

To describe the method of shut down taken at Vijayawada due to operational and/or maintenance necessity at Vizag, Rajahmundry, Vijayawada, Suryapet or Secunderabad.

2.0 SCOPE

The activity involves the following:

- a) Planned shutdown
- b) Emergency shutdown

3.0 REFERENCES

IM/MR/7.5.1
IMP/OPN/02 & IMP/OPN/03

4.0 RESPONSIBILITY

Shift In-charge

5.0 PROCEDURE

Planned Shutdown :

- 5.1 Refer IMP/OPN/02, for planned shut down of VVSPL

EMERGENCY SHUTDOWN :

When Vizag mainline pump trips :

- 5.3.1 Vizag informs about the pump/s tripping and advises Vijayawada to close the receipt, if any and stop pump/s, if running.
- 5.3.2 After closing the receipt and stopping the pump/s, Vijayawada confirms back to Vizag and informs to SBS & GRS.
- 5.3.3 Depending on VDS decision, entire line shut down may not be required, if VDS is able to restart the pump/s immediately. Line shut down to be initiated only on VDS advise, if required.

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INTEGRATED MANAGEMENT PROCEDURE		DOCUMENT NO.: IMP/OVJ/02
TITLE	SHUT DOWN AT VIJAYAWADA BOOSTER STATION	

5.4 Emergency shut down of VBS :

- 5.4.1 Press emergency push button (Through panel's ESD button at C/R or PLC or Field ESD button near pump house) in case of extreme emergency. If time is available, take a planned shutdown.
- 5.4.2 On activation of ESD button at VBS, following sequence of events occur.
- 5.4.3 All running pumps at VBS will stop.
- 5.4.4 Suction and discharge MOVs of pumps will close.
- 5.4.5 Receipt MOV 1528 will close.
- 5.4.6 Manifold MOV will close.
- 5.4.7 Station inlet MOV-1503 and station outlet MOV-1522 will close.
- 5.4.8 Station bypass MOV-1525 will open.

5.5 Emergency shut down of VVSPL

Refer IMP/OPN/03 for emergency shut down of VVSPL.

5.6 Precautions :

- 5.6.1 In case of shut down of longer duration close station limit valves, tank inlet valves and manifold valves.
- 5.6.2 The subject receipt tank can be handed over back to the Terminal.
- 5.6.3 If there is any abnormal fall in the station pressure during shutdown period, carryout investigation for any valve failure or leakage.
- 5.6.4 Monitor sump tank level in each shift.

6.0 RELEVANT RECORDS :

S. No	Format Title	Format No.	Location	Responsibility
1	Shift log book	IMF/OPN/01	Control Room	Shift In-charge
2	Daily Operations Log Book	IMF/OVJ/01	- Do -	- Do -

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	HINDUSTAN PETROLEUM CORPORATION LIMITED VISAKHA- VIJAYAWADA- SECUNDERABAD PIPELINE VIJAYAWADA ANDHRA PRADESH	ISSUE NO: 2 REVISION NO.: 00 EFFECTIVE DATE: 01/01/2018 SHEET: 1 OF 3
INTEGRATED MANAGEMENT INSTRUCTIONS		DOCUMENT NO.: IMP/OVJ/03
TITLE	PRODUCT SAMPLING AND LABORATORY TEST REPORTS	

1.0 PURPOSE

Documentation of laboratory test reports to ensure that only approved product conforming to specifications is received at Vijayawada.

2.0 SCOPE

This is applicable to all petroleum products received at Vijayawada terminal Tanks.

3.0 REFERENCES

- i) IM/MR/8.2.4
- ii) ASTM & QC Manuals for Non-aviation products.

4.0 RESPONSIBILITY

Shift in-charge assisted by Shift Engineer.

5.0 PROCEDURE

5.1 PRODUCT SAMPLING:

5.1.1 Take over the tank at least 4 hrs after last withdrawal from tank.

5.1.2 Before a pipeline receipt is effected through a multi product pipeline, a composite sample from the tank nominated for transfer is jointly taken and retained till the batch has been established by the receiving location.

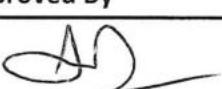
5.1.3 Sampling Apparatus and Containers are used separately product wise.

5.1.4 Precautions to be taken for sampling:

5.1.4.1 When samples are required from various levels in a tank, the order of sampling should be from the top downwards so that each sample is obtained before the liquid at that level is disturbed.

5.1.4.2 Careless pouring and splashing will cause loss of light fractions and the sample must be poured from the sampling can into the sample containers by making use of special funnels.

5.1.4.3 The sample should always be poured gently down the side of a funnel and never in a stream at the center.

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INTEGRATED MANAGEMENT PROCEDURE		DOCUMENT NO.: IMP/OVJ/03
TITLE	PRODUCT SAMPLING AND LABORATORY TEST REPORTS	

5.1.4.4 The sample containers shall be closed immediately after the sample has been taken (within one minute of drawing).

5.1.4.5 The apparatus should be rinsed with the material to be sampled at least twice (or adequately) and allowed to drain before drawing sample.

5.1.4.6 Safety precautions as stated in SAFETY Manual should be strictly observed while sampling.

5.1.5 Sample Containers : The sample container should never be a clear glass bottle, as the clean glass may permit the sun rays to change the composition of certain components particularly those found in MS and LAN, which may render the sample unsatisfactory for any future analysis. The recommended sample container is a metal can with a screw cap.

5.1.6 Sample labelling : Sample container is labeled immediately after a sample is obtained. Gummed labels shall be used on aluminum and glass sample bottles only (IMF/OVJ/02).

5.1.7 Sample Collection : In addition to the samples taken from the tanks, one liters of front, one liter of middle and one liters of rear samples are also be taken during the receipt of a batch. These samples are collected from sampling point of the pipeline. Sample are properly labeled and retained till the pumping batch is established in the receiving locations. Details of sample collection are recorded in QC Register (IMF/OVJ/04).

5.1.8 Sample Retention : For retaining the sample following steps are adopted.

5.1.8.1 Sample of materials which may be affected by light or heat are stored in a cool, dark place. Periodical examination is made for leakage.

5.1.8.2 Sample of product is kept in a separate chamber in order to prevent them from being misused. Adequate ventilation is provided in the chamber.

5.1.9 Sample disposal :

5.1.9.1 Hourly density figures are recorded by the receiving locations while receipt is on and any variations from the density range are investigated by the receiving location in coordination with the pumping location.

5.1.9.2 Once the product is received in the storage tanks of the receiving location, the receiving location carries out batch formation test as per Appendix 15 of Industry Quality control manual and then the product is reware-housed under specific batch No. as applicable

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	HINDUSTAN PETROLEUM CORPORATION LIMITED VISAKHA-VIJAYAWADA-SECUNDERABAD PIPELINE VIJAYAWADA ANDHRA PRADESH	ISSUE NO: 2 REVISION NO.: 00 EFFECTIVE DATE: 01/01/2018 SHEET: 3 OF 3
INTEGRATED MANAGEMENT PROCEDURE		DOCUMENT NO.: IMP/OVJ/03
TITLE	PRODUCT SAMPLING AND LABORATORY TEST REPORTS	

5.1.9.3 Any variation beyond the limits in receiving location test reports is investigated with help of pumping location. The sample retained is sent to the refinery or marketing laboratory for further investigations.

5.1.9.4 After ascertaining the above, the product sample is disposed off under the supervision of the shift in-charge. The sample thus collected is poured back into the respective sump tanks as applicable. While pouring the product back into the tank care is taken not to splash the product nor any plastic funnel is used for pouring. Details of sample disposed are entered in Quality Control register (IMF/OVJ/04).

5.1.9.5 The empty sample containers are cleaned and kept for future sampling.

5.2 Laboratory Test Reports:

5.2.1 Laboratory test reports are collected from VDS and Terminal

5.2.2 It is ensured by shift in-charge that test reports of products are available in control room. Specification of product is in line with Industry and ISI standards.

PRODUCT	IS SPECIFICATIONS
M. S.	IS - 2796 - 2014
S. K. O.	IS - 1459 – 1974 (Re-affirmed 2006)
H. S. D.	IS - 1460 - 2005
L.A.N.	As per customer requirements for his usage
ATF	IS - 1571 -2008

5.2.3 Tests such as flash point, pour point etc, which are susceptible for change depending upon the crude and production pattern are subject to review and deviation on Industry basis .

6. RELEVANT RECORDS

S. No	Format Title	Format No.	Location	Responsibility
1	Quality Control Register	IMF/OVJ/04	Control Room	Shift In-charge
2	Sample label	IMF/OVJ/02	- Do -	- Do -

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	HINDUSTAN PETROLEUM CORPORATION LIMITED VISAKHA- VIJAYAWADA- SECUNDERABAD PIPELINE VIJAYAWADA ANDHRA PRADESH	ISSUE NO:2 REVISION NO.:00 EFFECTIVE DATE:01/01/2018 SHEET: 1 OF 2
INTEGRATED MANAGEMENT INSTRUCTION		DOCUMENT NO.: IMI/OVJ/01
TITLE	CHECKS FOR TANKS TAKING OVER	

1.0 PURPOSE

To provide guidelines for checks to be carried out for taking over of tank from terminal.

2.0 REFERENCES

IM Procedure: IMP/OVJ/01

3.0 RESPONSIBILITY

Shift In-charge

4.0 INSTRUCTIONS

- 4.1 Decide the next tank to be taken for receipt in consultation with Terminal.
- 4.2 Arrange joint gauging of the tank with Terminal and check the following:
 - 4.2.1 Check the OIL & WATER level.
 - 4.2.2 Check the sample density and temperature.
 - 4.2.3 Check the product tank temperature. Draw UML composite sample from tank. Retain sample for future inspections till quality is passed.
 - 4.2.4 Check the roof condition of the tank.
 - 4.2.5 Carry out visual inspection of the tank site for any leak etc. Any leak observed should be reported to the Terminal. Close the inlet valves of other tanks of the same product.
 - 4.2.6 TSVs of tank inlet / outlet piping to be kept open.
 - 4.2.7 Record details of gauging in Tank gauge sheet (IMF/OVJ/03).
- 4.3 Ensure that the tank delivery line is positively isolated.
- 4.4 Ensure that water draw off valves are closed towards open area drain and roof drain valves are open.

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VIJAYAWADA
ANDHRA PRADESH

ISSUE NO:2
REVISION NO.:00
EFFECTIVE DATE:01/01/2018
SHEET: 2 OF 2

INTEGRATED MANAGEMENT INSTRUCTION		DOCUMENT NO.: IMI/OVJ/01
TITLE	CHECKS FOR TANKS TAKING OVER	

- 4.5 Line up the tank as per the instructions given in IM Instruction IMI/OVJ/02.
- 4.6 In case of abnormality in tank site, inform to Terminal and record in shift log book (IMF/OPN/01).

5.0 RELEVANT RECORDS

Shift log book IMF/OPN/01
Tank gauge sheet IMF/OVJ/03

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INTEGRATED MANAGEMENT INSTRUCTION		DOCUMENT NO.:IMI/OVJ/02
TITLE	LINE UP AND SWITCHOVER OF VIJAYAWADA TANKS	

1.0 PURPOSE

To provide guidelines for lineup and switch over of Vijayawada tanks.

2.0 REFERENCES

IM Procedure: IMP/OVJ/01.

3.0 RESPONSIBILITY

Shift In-charge

4.0 INSTRUCTIONS

4.1 Line up:

- 4.1.1 Ensure that inlet valves of other tanks of the same product are closed.
- 4.1.2 Ensure that the water draw off valves are closed towards open area drain and roof drain valves are open.
- 4.1.3 Ensure that the delivery and the bypass valves of the tank are closed.
- 4.1.4 Open the tank inlet MOV and other HOV enroute and ensure that the tank is lined up upto the respective product manifold.
- 4.1.5 Close and seal any bleeding point enroute (if any).

4.2 Tank switch over:

4.2.1 Switch over tank in following cases:

- a) When tank under receipt is going to be topped up.
- b) As per terminal requirement.
- c) Where product switch over takes place.

Tank switch over may be taken from one product to another or for the same product.

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ISSUE NO:2
REVISION NO.:00
EFFECTIVE DATE :01/01/2018
SHEET:2 OF 4

INTEGRATED MANAGEMENT INSTRUCTION

DOCUMENT NO.:IMI/OVJ/02

TITLE

LINE UP AND SWITCHOVER OF VIJAYAWADA TANKS

Refer to the following table regarding various valves to be opened for line up of any particular tank:

Tank To Be Lined Up	Product Name	Valve To Be Opened Sequentially		
		MOV Near Tank	HOV Near Tank	MOV Near VBS
TK3A	E III HSD	MOV-1401	HOV-1401	MOV-1103
TK3B	E III HSD	MOV-1402	HOV-1402	MOV-1103
TK3C	E III HSD	MOV-1403	HOV-1403	MOV-1103
TK2A	SKO	MOV-1301	HOV-1301	MOV-1102
TK2B	SKO	MOV-1302	HOV-1302	MOV-1102
TK4A	SKO	MOV-1501	HOV-1501	MOV-1102
TK1A	E III MS	MOV-1201	HOV-1201	MOV-1101
TK1B	E III MS	MOV-1202	HOV-1202	MOV-1101
TK1C	E III MS	MOV-1203	HOV-1203	MOV-1101
TK7D	E III MS	MOV-1407	HOV-1407	MOV-1101
TK7A	LAN	MOV-2201	HOV-2201	MOV-1529
TK7C	LAN	MOV-2203	HOV-2203	MOV-1011
TK4B	BONDED ATF	MOV-1502	HOV-1502	MOV-1104
TK4C	DUTY PAID ATF	MOV-1503	HOV-1503	MOV-1104

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INTEGRATED MANAGEMENT INSTRUCTION		DOCUMENT NO.:IMI/OVJ/02
TITLE	LINE UP AND SWITCHOVER OF VIJAYAWADA TANKS	

4.2.2 Follow below mentioned guide lines for switching over of tank:

- 4.2.3 In case of S/O from one product to another, keep the succeeding tank inlet MOV & HOV open and during S/O only open manifold valve of succeeding product. As per the interlock when one manifold MOV is opened the other manifold MOV (which is already open) will close automatically.
- 4.2.4 For HSD, MS and SKO tanks, switch over in the following manner i.e switchover of tanks of the same product.
- 4.2.5 Open the MOV of the succeeding tanks and then close the MOV of the preceding tank from the PLC or locally. Before closing MOV of preceding tank, at least 50% of succeeding tank valve opening should be confirmed from field.
- 4.2.6 In case tank switch over of same product, where manifold valves are different, S/O the tank as instructed in clause 4.2.3 above.

4.3 PRODUCT SWITCH OVER :

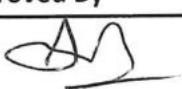
Carryout product switch over in the following cases during operation:

- i) Between SKO – MS
- ii) Between MS – SKO
- iii) Between SKO – HSD
- iv) Between HSD – SKO

4.4 In all the above mentioned cases, carryout switchover by operating the respective manifold valves, after ensuring that the nominated tank is properly lined upto the manifold as detailed above.

4.5 The following precautions are to be taken in each case:

- 4.5.1 Monitor Line pressure build up or flow reduction during the switchover.

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INTEGRATED MANAGEMENT INSTRUCTION		DOCUMENT NO.:IMI/OVJ/02
TITLE	LINE UP AND SWITCHOVER OF VIJAYAWADA TANKS	

- 4.5.2 In case of building up of pressure or reduction in flow, take necessary corrective actions as detailed below:
- 4.5.3 In case of same product switch over, revert back to the original tank. If the preceding tank is topped up, take receipt shut down in consultation with VDS.
- 4.5.4 In case of product to product switchover, take receipt shut down in consultation with VDS.

5.0 RELEVANT RECORDS

Shift Log Book IMF/OPN/01

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INTEGRATED MANAGEMENT INSTRUCTION		DOCUMENT NO.: IMI/OVJ/03
TITLE	LINE UP OF STATION & RECEIPT STARTING	

1.0 PURPOSE

To provide guidelines for lineup of station and receipt starting.

2.0 REFERENCES

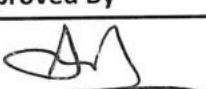
IM Procedure: IMP/OVJ/01.

3.0 RESPONSIBILITY

Shift Incharge

4.0 INSTRUCTIONS

- 4.1 Take information from Vizag for lining up of the station and tentative time of starting of pumping at Vizag.
- 4.2 Gauge the nominated tank and properly line up by opening all the valves upto the manifold and including the manifold valve as per tank lining up instructions IMI/OVJ/02 and record details in IMF/OVJ/03.
- 4.3 Line up the station limit valve MOV – 1501,station inlet MOV-1503 and including the manifold valve as per tank lining up instruction IMI / OVJ / 02.
- 4.4 Ensure that filter/s (101A or 101B) are online.
- 4.5 Ensure that HOV's on either side of the TURBINE FLOW METER (1501 or 1502), PCV-1501 and FCV-1501/FCV-1502 are lined up.
- 4.6 Ensure that by pass line for turbine flowmeter, PCV-1501 and FCV-1501/FCV-1502 are closed. Ensure that the SRV (Surge Relief Valve) is on line and is properly lined up upto the slop tank.
- 4.7 Switch on PCV-1501 and FCV-1501/FCV-1502 breaker, if not.
- 4.8 Open Receipt MOV-1528 and FCV-1501/FCV-1502.
- 4.9 Co-ordinate with Vizag shift officer and open PCV-1501 for starting product receipt. adjust the percentage opening of PCV and FCV suitably so that the back pressure as instructed by Vizag C/R is maintained.

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INTEGRATED MANAGEMENT INSTRUCTION		DOCUMENT NO.: IMI/OVJ/03
TITLE	LINE UP OF STATION & RECEIPT STARTING	

4.10 Down stream / Back Pressure Control is important in Receipt Terminals in order to have a packed line operation. This helps :

- i) To minimize the inter mixing of the products and keeps the inter face at minimum.
- ii) It prevents hydraulic surging by minimising the vaporisation of products in the tanks.

4.11 Check lining up of the station keeping product quality into consideration.

5.0 RELEVANT RECORDS

Tank gauge sheet	IMF/OVJ/03
Shift log book	IMF/OPN/01

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ISSUE NO:2
REVISION NO.:01
EFFECTIVE DATE :26/10/2019
SHEET: 1 OF 5

INTEGRATED MANAGEMENT INSTRUCTION

DOCUMENT NO.: IMI/OVJ/04

TITLE

INTERFACE CUTTING

1.0 PURPOSE

Interface cutting is done to receive a new batch of product by ensuring minimum down gradation within permissible limit, so that the both preceding & succeeding batch products received meets the specification and to provide guide lines for HPCK quantity plugging & interface tracking and sampling at Vijayawada Booster Station during EX-Vijayawada pumping

2.0 REFERENCES

IM Procedure: IMP/OVJ/01
QC Manual : IQCM 2019

3.0 RESPONSIBILITY

Shift In-charge

4.0 INSTRUCTIONS

- 4.1 Calculate expected time of Interface using the balance batch quantity in the line and current flow rate/expected flow rate.
- 4.2 Collect relevant details like rear density of the preceding product and front density of the succeeding product from Vizag. Note any other characteristic of the following product like unusually high/ low density, unusual color (especially yellowish SKO or light colored MS) to avoid any confusion and ensure accurate interface cutting in such cases.
- 4.3 Line up the tank assigned for receipt upto the manifold sufficient time before the expected time of interface.
- 4.4 Start periodic sampling of the line product, sufficient time before expected arrival time of interface and test for density on each sample. Colour & smell of product (visual clarity) also to be observed as an additional reference. Frequency of sampling is gradually increased as the interface approaches.
- 4.5 When the density of the product changes in the desired direction in the density indicator, this indicates the arrival of interface. Then start continuous sampling, along with recording of the details of each sample.
- 4.6 If the change in density is coupled with change in color and odour, assume it as the beginning of the interface.

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INTEGRATED MANAGEMENT INSTRUCTION		DOCUMENT NO.: IMI/OVJ/04
TITLE	INTERFACE CUTTING	

- 4.7 All through the interface cutting, carry out continuous sampling. When density nearly matches with that provided by Vizag, coupled with visual clarity and smell of the succeeding product whichever is applicable, interface is deemed to have ended.
- 4.8 Following minimum samples are collected during interface:
- a) Preceding batch clear sample.
 - b) Beginning of I/F.
 - c) Middle of I/F.
 - d) Towards end of I/F.
 - e) Succeeding batch clear sample.

Record details in format IMF/OVJ/04 (QC Register)

- 4.9 Switchover from one dedicated receipt line to another from the manifold as soon as interface begins in case of (i) SKO – MS, (ii) SKO – HSD interface and at the end of interface for (iii) HSD – SKO, (iv) MS-SKO.
- 4.10 Take interface for (i) & (ii) into respective MS/HSD tanks and for (iii) & (iv) take the interface in to HSD/MS tank.
- 4.11 For switching over from the manifold, open MOV of the following product and when this valve is 25% open, close MOV of the preceding product. However, in interlock logic system it is automatically taken care and confirm the same from field. Immediately after the switchover respective flow computer is reset for the fresh batch.
- 4.12 Record the details in format IMF/OVJ/05 (Interface Log Sheet) and advise details of interface (time of starting, time of ending duration, approximate quantity, tank no. in which interface was taken) to Vizag.
- 4.13 PRECAUTIONS: Follow below given sequence:
- 4.13.1 HSD – SKO interface i.e. HSD is followed by SKO
 - 4.13.2 SKO – MS interface i.e. SKO is followed by MS.
 - 4.13.3 MS – SKO interface i.e. MS is followed by SKO.
 - 4.13.4 SKO – HSD i.e. SKO is followed by HSD.

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INTEGRATED MANAGEMENT INSTRUCTION		DOCUMENT NO.: IMI/OVJ/04
TITLE	INTERFACE CUTTING	

4.13.5 Operate the manifold valves load on DG set during Interface cutting for avoiding unforeseen power failure during manifold switchover time. However, DG running is not required, (i) If manifold switchover is not involved, during interface. (ii) If interface receipt continues through the "fail safe" FCV, which closes automatically on power failure.

4.13.6 Take part of the interface into slop tank/s via, SRV bypass line, if required as per the decision taken by Manager – Operations/the Station Incharge. For that, open the MOV- 1532 provided at SRV bypass line and close the respective manifold valve or manifold header HOV.

4.14 When VSPL section is ON:

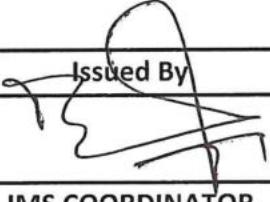
4.14.1 In case of VSPL section ON, part of interface can be received at VBS as heart cut, as per procedure described above or entire interface may be bypassed to VSPL section, based on pumping plan and/or Location in charge / Manager Operations decision.

4.14.2 In case interface is passed towards VSPL, trends of density change to be noted down and same to be passed to SBS/SRS whenever required.

4.15 BATCH FORMATION & HPCK INTERFACE PLUGGING

Following are the combination of EX-Vijayawada pumping to be carried out

Product in Common EXVJA M/F to 1202	VSPL line fill Product at VBS station outlet	Product to pump	HPCK plugging required (Y/N)	Flushing M/F to 1202 required (HSD IV) to VSPL line	HPCK Quantity to be plugged in Front including Interface in KL	HPCK Quantity to be plugged- Rear including Interface in KL
HSD IV	HSD IV	HSD IV	NO	NO	NA	NA
HSD IV	HSD IV	MS IV	YES	YES	*200	*250
HSD IV	MS IV	MS IV	NOT POSSIBLE -To be planned in advance			
HSD IV	MS IV	HSD IV	NOT POSSIBLE -To be planned in advance			

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INTEGRATED MANAGEMENT INSTRUCTION		DOCUMENT NO.: IMI/OVJ/04
TITLE	INTERFACE CUTTING	

*for a minimum batch size of MS IV to be pumped 20000KL.

4.15.1 Verify product at VBS outlet for HSD IV/MS IV/HPCK before planning the EX-Vijayawada pumping

4.15.2 Flush the line (common manifold to T junction point 1202) approximately 73 KL with HPCK in case to pump other product than VSPL product at VBS outlet

4.15.3 Sufficient quantity of HPCK to be pump based on batch size & refer with above table

4.15.4 Ensure plugging of HSD IV minimum 1500 KL after completion of every EX-Vijayawada product pumping other than HSD IV (to ensure every time Ex-VJA common manifold to 1202 T point, packed with HSD-IV)

4.16 INTERFACE TRACKING & SAMPLING DURING EX-VIJAYAWADA PUMPING

4.16.1 Keep ready the records of preceding and succeeding manifold product densities before switch over for reference.

4.16.2 Start taking samples from EX Vijayawada sample point 1503 immediately after pump starting. Check the density, color, appearance & smell of the product.

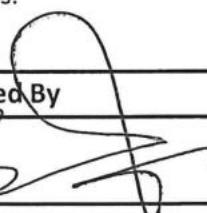
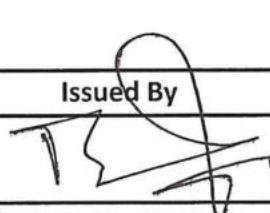
4.16.3 Compare the same with preceding and the succeeding product density, color and odor available in the manifold line. When density of the product changes in the desired direction, this indicates the change-over of product. The Lab density of succeeding and preceding products already available in the manifold may be referred for reference.

4.16.4 Start recording the details of each sample.

4.16.5 If the change in density is coupled with the change in the color & odor, assume it as the beginning of the Interface.

4.16.6 When the density finally stabilizes or nearly matches the density of succeeding manifold line, Interface deemed to have ended.

4.16.7 Record the details in format IMF/OVJ/05 (Interface Log Sheet) and communicate the Interface details to downward stations.

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INTEGRATED MANAGEMENT INSTRUCTION		DOCUMENT NO.: IMI/OVJ/04
TITLE	INTERFACE CUTTING	

4.16.8 Samples to be collected as per IQCM/as advised by instructions of Shift-In charge at appropriate time & retained till the batch is cleared for delivery at all receiving terminals.

4.16.9 Once Interface is completed, take 0-10-20-30 minutes and front samples to be taken and retained.

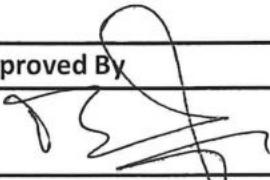
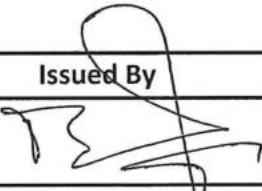
4.16.10 Sampling to be done at an interval of every 2 hours thereafter, in addition to middle and end line samples.

4.16.11 All sample to be retained till the batch formation of downstream location and QC clearance

5.0 RELEVANT RECORDS

Ex-VBS Pumping Operations Log Book: IMF/OVJ/06

Interface Log sheet	: IMF/OVJ/05
Sample label	: IMF/OVJ/02
Quality control register	: IMF/OVJ /04
Shift log book	: IMF/OPN/01

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INTEGRATED MANAGEMENT INSTRUCTION		DOCUMENT NO.: IMI/OVJ/05
TITLE	SUMP TANK OPERATION	

1.0 PURPOSE

To provide guide lines for operating sump tanks.

2.0 REFERENCES

IM Procedure: IMP/OVJ/01

3.0 RESPONSIBILITY

Shift In-charge

4.0 INSTRUCTIONS

Two sump tanks (No.1 for HSD, SKO, ATF & LAN and No.2 for MS) are provided to accommodate product coming out of priming of pumps, TRVs, leakages, pigging operation , draining, sample disposal etc.

4.1 Sump tanks are to be preferably kept at low level.

4.2 Monitor and record Sump tanks level in each shift in Operations Log book (IMF/OPN/01).

- 4.3 During HSD receipts keep sump tank-1 online, when I/F of SKO-MS touches VBS make Sump Tank-2 online and Sump Tank-1 offline. After I/F of MS-SKO, when pure SKO touches VBS make Sump Tank-1 online and Sump Tank-2 offline.
- 4.4 Ensure that Sump Tank-1 is emptied only during HSD receipt & Sump Tank-2 is emptied during MS receipt into respective receipt tanks. Inform VDS before emptying out the sump tanks.
- 4.5 Take One all level sample from sump tank before emptying.
- 4.6 If there is any abnormal increase in the level, investigate the reason and empty out the sump tanks per 4.4 in coordination with VDS.
- 4.7 In case of emergency, when receipt line contains other product than HSD or MS, sump tank can be emptied out in to the slop tank only after taking prior approval from LIC.
- 4.8 Whenever sump tank is emptied up to minimum level, ensure that the low level sump tank alarm reappears at control panel.
- 4.9 Note operation details of the sump tanks in the shift log book (IMF/OPN/01).

5.0 RELEVANT RECORDS

Shift log book IMF/OPN/01

Operations Log Book IMF/OVJ/01

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INTEGRATED MANAGEMENT INSTRUCTION		DOCUMENT NO.:IMI/OVJ/06
TITLE	SLOP TANK OPERATION	

1.0 PURPOSE

To provide guide lines for operation of SRV.

2.0 REFERENCES

IM Procedure: IMP/OVJ/01

3.0 RESPONSIBILITY

Shift In-charge

4.0 INSTRUCTIONS

- 4.1 Monitor and record level of slop tank in each shift. Monitor & record Nitrogen pressure and set pressure of SRV in each shift.
- 4.2 Whenever SRV opens and flow takes place into the slop, record time of opening of SRV, slop level, closing time of SRV and final level of slop in shift log book.
- 4.3 In case of continuous opening of SRV, close isolation valve of SRV immediately and depending on the reason for SRV opening, take receipt shut down in consultation with VDS.
- 4.4 Ascertain cause of opening of SRV every time, investigate the matter and take remedial measures as the case may be.

5.0 RELEVANT RECORDS

Shift log book	IMF/OPN/01
Operations Log Book	IMF/OVJ/01

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ISSUE NO:2
REVISION NO.:00
EFFECTIVE DATE:01/01/2018
SHEET: 1 OF 2

INTEGRATED MANAGEMENT INSTRUCTION

DOCUMENT NO.: IMI/OVJ/07

TITLE

PIG RECEIVING

1.0 PURPOSE

To provide guidelines for Pig receiving.

2.0 REFERENCES

IM Procedure: IMP/OVJ/01

3.0 RESPONSIBILITY

Shift In-charge

4.0 INSTRUCTIONS

4.1 When flow crossing through U-loop (inside the station) or VBS dedicated receipt is ON :

4.1.1 Co-ordinate with Vizag Control Room for obtaining hourly flow and pig tracking team, from which the location of the PIG will be calculated.

4.1.2 Open MOV-1502 and the 10" by pass line for the scrapper barrel and close the MOV-1503, sufficient time before the expected arrival time of the PIG.

4.1.3 Ensure that the flaps of the PIG indicator mounted on the scrapper barrel be in horizontal position. As the pig is received alarm for scrapper detected XXIS-1501 & received XXIS-1502 actuates in panel.

4.1.4 Once the PIG is received, open MOV-1503 and close MOV-1502 and 10" bypass line.

4.1.5 Drain the scrapper barrel by opening the 4" drain valve.

4.1.6 Take out the PIG and inspect visually for any dents or scratches and cups condition.

4.1.7 Collect Pig residue and retain for lab test.

4.2 When flow crossing through bypass line (MOV-1525)

4.2.1 Open MOV-1502, 10" bypass line gate valve and 10" ball valve, provided at the line connecting scraper receiver to the down stream of MOV-1525, sufficient time before expected arrival of pig.

4.2.2 Close bypass MOV-1525

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ANDHRA PRADESH

ISSUE NO:2
REVISION NO.:00
EFFECTIVE DATE:01/01/2018
SHEET: 2 OF 2

INTEGRATED MANAGEMENT INSTRUCTION

DOCUMENT NO.: IMI/OVJ/07

TITLE

PIG RECEIVING

4.2.3 Once the pig is received, open MOV-1525 and close MOV-1502, 10" bypass line gate valve and 10" ball valve, provided at the line connecting scrapper receiver to the down stream of MOV-1525.

4.2.4 Follow above procedures 4.1.5 to 4.1.7 for draining the barrel and obtaining pigging details.

5.0 RELEVANT RECORDS

Shift log book IMF/OPN/01
Pigging report IMF/OPN/08

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INTEGRATED MANAGEMENT INSTRUCTION		DOCUMENT NO.: IMI/OVJ/08
TITLE	PIG LAUNCHING	

1.0 PURPOSE

To provide guidelines for Pig Launching.

2.0 REFERENCES

IM Procedure: IMP/OVJ/01

3.0 RESPONSIBILITY

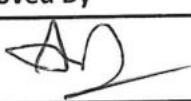
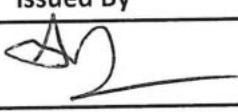
Shift In-charge

4.0 INSTRUCTIONS

- 4.1 After inserting the PIG in the launcher and ensuring closing of the barrel door properly, Open 8" kick off line valve of launcher.
- 4.1 Open MOV-1523 fully.
- 4.2 Close MOV-1522.
- 4.3 After conforming that pig has launched (XXIS-1503 activates), open MOV-1522.
- 4.4 Close barrel isolation MOV-1523 and 8" kick off line valve.
- 4.5 De pressurise / drain the launcher as decided by location in-charge.

6.0 RELEVANT RECORDS

Shift log book	IMF/OPN/01
Pigging Report	IMF/OPN/08

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ANDHRA PRADESH

ISSUE NO:2
REVISION NO.:00
EFFECTIVE DATE:01/01/2018
SHEET: 1 OF 3

INTEGRATED MANAGEMENT INSTRUCTION

DOCUMENT NO.: IMI/OVJ/09

TITLE

MAINLINE PUMPS OPERATIONS

1.0 PURPOSE

To provide guidelines for operations of Main line Pumps

2.0 REFERENCES

IM Procedure: IMP/OVJ/01

Standard operating procedure for pumps, supplied by M/s. Rockwell Automation.

3.0 RESPONSIBILITY

Shift Incharge

4.0 INSTRUCTIONS

4.1 Carry out following checks 4.2 to 4.5 before starting pumping operations.

4.2 AT SUBSTATION / ELECTRICAL ROOM:

4.2.1. Check the readiness of respective breakers/feeders/drives/other equipments at sub-station, as per standard operating procedure supplied by M/s. Rockwell Automation, either in VFD mode or DOL mode.

4.2.2. Ensure the PCV-1502 power supply is ON.

4.2.3. Ensure that the selected pumps suction and discharge MOVs supply are ON.

4.3. STATION LINE UP:

4.3.1. Open the inlet SLV MOV-1501, if not.

4.3.2. Open the station inlet MOV-1503, if not.

4.3.3. Line up the filter/s, if not.

4.3.4. Line up either of flow turbine (FT-1503 or 1504)

4.3.5. Ensure that isolation HOVs of PCVs are open and by pass valves are close.

4.3.6. When receipt is going on, ensure that flow is going through the remotely controllable FCV.

4.3.7. Open outlet SLV MOV-1524, if not.

4.3.8. Open station outlet MOV-1522, if not.

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INTEGRATED MANAGEMENT INSTRUCTION		DOCUMENT NO.: IMI/OVJ/09
TITLE	MAINLINE PUMPS OPERATIONS	

4.3.9. Check for any leakages in station pipings and pumps.

4.4. AT PUMP HOUSE

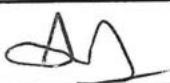
- 4.4.1. Check the bearing oil levels in the bottles at selected pumps and if low, arrange to top up.
- 4.4.2. Release the local stop button of the selected pumps.
- 4.4.3. Ensure that Suction MOVs of the selected pumps are open & discharge MOVs of the selected pumps are in remote mode and closed.
- 4.4.4. Do the priming of the pumps by proper venting.
- 4.4.5. Check for level of Cl dosing tank and if low, arrange to top up.
- 4.4.6. Ensure the compatibility of product to be pumped with that already existing in the suction and discharge header of the pumps.
- 4.4.7. Close the 2" gate valves of the line connecting suction and discharge header, if not.

4.5. AT CONTROL ROOM

- 4.5.1. Ensure the readiness of the system at control room, as per standard operating procedure supplied by M/s. Rockwell Automation, either in VFD mode or DOL mode.
- 4.5.2. Reset the pumped quantity batch in PLC, if necessary.
- 4.5.3. At unit control panel for selected pumps, turn the rotary switch to 'AUTO' mode, for pumps operation thru PLC, and reset all the alarms.

4.6 PUMPS OPERATIONS

- 4.6.1. Ensure the readiness of SBS and GRS stations and take clearance from VDS for pump start up.
- 4.6.2. Ensure suction header pressure sufficiently high, so that immediately on starting the pump, suction pressure should not fall to the pump tripping limit. If not, regulate the receipt flow rate suitably, when receipt is going on. When receipt is not going on, wait to reach the suction header pressure sufficiently high.
- 4.6.3. Open PCV-1502 sufficiently. (100% open in case pumps need to start in VFD mode).
- 4.6.4. Give start command to first pump and ensure that same has been started.
- 4.6.5. Operate PCV-1501, PCV-1502 and FCV, whichever are applicable, suitably to regulate the flow rate and other station parameters, if pump runs in DOL mode.

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ISSUE NO:2
REVISION NO.:00
EFFECTIVE DATE:01/01/2018
SHEET:3 OF 3

INTEGRATED MANAGEMENT INSTRUCTION

DOCUMENT NO.: IMI/OVJ/09

TITLE

MAINLINE PUMPS OPERATIONS

- 4.6.6 If pump runs in VFD mode, pumping flow rate can be regulated thru the flow rate set point in RS View PLC.
- 4.6.7 Start the second pump if required.
- 4.6.8 Monitor the running motors/pumps parameters as per Annexure I of IMP/OVJ/01.
- 4.6.9 As per Shift Incharge decision and approval from LIC ,some set alarms / interlocks may be temporarily bypassed in PLC, if suspected to be malfunctioning. This will be done strictly based on urgent requirement and the same to be logged in PLC bypass register.

5.0 RELEVANT RECORDS

Shift log book (IMF/OPN/01)
Operations Log Book (IMF/OVJ/01)
PLC Bypass Register (IMF/OPN/07)

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INTEGRATED MANAGEMENT INSTRUCTION		DOCUMENT NO.: IMI/OVJ/10
TITLE	ISSUE HOT/COLD/HEIGHT/ELECTRICAL ISOLATION WORK PERMITS	

1.0 PURPOSES : To provide guidelines for issue of hot, cold, Height & electrical isolation work permits to carry out M & R jobs of equipment.

2.0 REFERENCES : IM Procedure : IMP/OVJ/01 & OISD 105

3.0 RESPONSIBILITY

- (a)Shift In-charge & Officer In charge- Maintenance in case of Cold Work, Working at Height.
- (b)Shift In-charge/Officer In charge - Electrical in- case of Electrical Isolation and Energisation Permit.
- (c)Officer In-charge-Maintenance / Location Incharge-VVSPL Booster or receiving station / Terminal Incahrge in case of Hot work.

4.0 INSTRUCTIONS :

- 4.1 The Maintenance officer responsible for carrying out M&R job prepares the COLD/Working at Height work permits and approaches the Shift In-charge (Terminal Incharge incase of hot work permit) for his concurrence (IMF/OPN/03, IMF/OPN/04, IMF/OPN/09). In case of Electrical Isolation and Energization work permit (IMF/OPN/10) OIC-Electrical approaches the Shift In-charge for his concurrence. The work permit for Working at Heights is applicable to all the jobs to be carried out at any elevation more than 3 mts.
- 4.2 Ensure the proper shielding of the work site, degassing of the equipment, isolating the equipment and other necessary activities as detailed in the permits. Ensure that fire hydrant line and fire extinguishers are available at the site as detailed in respective work permits.
(Responsibility: Maintenance Officer In-charge)
- 4.10 Make an inspection of the site and if satisfied with the arrangement made by the Maintenance Officer In-charge, issue the work permit for a specified duration on a particular shift at a particular work location inside the station. Also verify required PPEs, FF equipments as detailed in respective work permits and PPE matrix as given below are compiled in totality before issuing the permit. Informal personal risk assessments prior to authorizing to undertake tasks is performed and logged in the respective permits, if any. Based on a practical approach "STAR - Stop, Think, Act, Review". All the permit details after issue shall be entered in Shift log book.

(Responsibility : Pipeline Shift In-charge for COLD/HEIGHT WORK PERMITS, Shift Incharge/Officer In charge - Electrical incase of Electrical Isolation and Energisation Permit & LIC/Terminal In charge for HOT work permits respectively).

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ISSUE NO:2
REVISION NO.:00
EFFECTIVE DATE:01/01/2018
SHEET:2 OF 2

INTEGRATED MANAGEMENT INSTRUCTION

DOCUMENT NO.: IMI/OVJ/10

TITLE

ISSUE HOT/COLD/HEIGHT/ELECTRICAL ISOLATION WORK PERMITS

- 4.4 After receiving the HOT work permit, inform over telephone to Fire & Safety Officer of Terminal about the location and duration of the HOT WORK being carried out at VVSPL station. (Responsibility : Shift In-charge & OIC).
- 4.5 During the course of execution of the job, shift officer to make at least one round of the job location per shift and verify for compliance status of the requirements for PPE and FFE (Fire Fighting Equipment) as given in work permit and PPE matrix as per Annexure A & log observations of the visit in respective work permits and/or critical behavioral check list, IMF/ OPN/12..

5. RELEVANT RECORDS :

- ❖ Cold work permit IMF/OPN/03
- ❖ Hot work permit IMF/OPN/04
- ❖ Working at Height Permit IMF/OPN/09
- ❖ Electrical Isolation & Energization Permit IMF/OPN/10
- ❖ Process Hazard Identification and Risk Assessment procedure.

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INTEGRATED MANAGEMENT INSTRUCTIONS		DOCUMENT NO: IMI/OVJ/11
TITLE	LINING UP OF TANKS AT VJTL FOR EX-VJA PUMPING	

1.0 PURPOSE

To provide guide lines for lining up of tanks at VJTL for Ex-VJA PUMPING.

2.0 REFERENCES

IM Procedure: IMI/OVJ/01.

3.0 RESPONSIBILITY

Shift-in-Charge

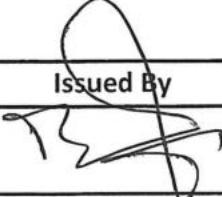
4.0 INSTRUCTIONS

- 4.1 Decide the next tank to be taken for pumping in consultation with VJTL (Vijayawada terminal) coordinator.
- 4.2 Confirm approval of tank in respect of product quality & obtain Lab test details/ report from VJTL prior to lineup for EX-Vijayawada Pumping
- 4.3 Arrange joint gauging of the tank with VJTL (refer IMS manual for "Checks for tank taking over"- IMI/OVJ/01). The details of the joint gauging to be recorded and maintained as per IMS format (Tank Gauge Sheet IMF/OVJ/03).

Following points to be checked during joint gauging:

- BS & W level (In case of higher BS & W level the water must be drained out by VJTL).
- Product temp. (Max. permissible temp is 49 deg.)
- Visual inspection of the site to observe any leak etc. Any abnormality observed must be informed to VJTL. It is to be ensured that the water draw off valves are closed.

- 4.4 Before every switch over, shift in charge/ shift engineer shall check the status of all valves of different tanks of the same product in PLC as well as in the field.
- 4.5 Ensure that the tank ROSOV is open and DBBV is open. Drain valve for all tanks taken for VVSPL transfer should be closed.
- 4.6 For Ex-Vijayawada HSD pumping, Tank 7C has direct Ex-Vijayawada line up to MOV 1161 (Common Ex-Vijayawada HSD manifold)
- 4.7 For Ex-Vijayawada HSD pumping, Tank 3B & 3C have direct Ex-Vijayawada line up to MOV 1154 (Common EX-Vijayawada HSD manifold)

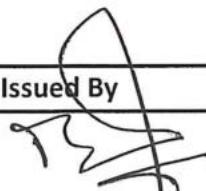
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INTEGRATED MANAGEMENT INSTRUCTIONS	DOCUMENT NO: IMI/OVJ/11	
TITLE	LINING UP OF TANKS AT VJTL FOR EX-VJA PUMPING	

- 4.8 Tank 3A don't have direct Ex-Vijayawada line, so they have to be routed via 14" OMC line to 18" Ex-VJA line to MOV 1154 (Common Ex-Vijayawada HSD manifold) Refer "Tank wise lineup schematic diagram" Annexure-EX VJA A
- 4.9 For Ex-Vijayawada MS pumping, Tank TK 1A and TK 1C having 28" direct Ex-Vijayawada line up to MOV 1153 (Common Ex-Vijayawada MS manifold)
- 4.10 TK7A, TK1C and 7D don't have direct Ex-Vijayawada line, so they have to be routed via other MS tanks (either TK1A or TK1B) to meet 28" Ex-Vijayawada line. Refer "Tank wise lineup schematic diagram" Annexure-Ex VJA A
- 4.11 Tank 2B is for Ex-Vijayawada HPCK pumping, there is direct line for Ex-Vijayawada pumping up to Ex-Vijayawada SKO manifold MOV 1154 (Common EX-Vijayawada SKO manifold)
- 4.12 Refer to the table (Annexure-EX VJA B) regarding various valves to be opened for line-up of any particular tank.
- 4.13 Shift officer will mention in the log book about such switchover giving tank no. and time. However, he is not required to write the full sequence of switchover in the log book as the same is described in this procedure.
- 4.14 Before taking over the shift status of all VJTL tanks, valves need to be verified physically by Shift incharge/ Shift officer.
- 4.15 Drain valve of tanks taken for Ex-VBS transfer should be closed/locked/blinded.
- 4.16 Separate new batch number to be given for Ex-VBS batch as advised by VDS.
- 4.17 Batch report to be forwarded to VDS, SBS and SRS.
- 4.18 JDE Booking & reconciliation of Ex-VBS Batch will be done by VBS

5.0 RELEVANT RECORDS

Shift log book : IMF/OPN/01
 Tank gauge sheet : IMF/OVJ/03
 Ex-VBS Pumping Operations Log Book: IMF/OVJ/06
 Tank wise lineup schematic diagram : Annexure-EX VJA A
 Valves for lineup of tank : Annexure-EX VJA B
 Interlocks for Ex Vijayawada Pumping: Annexure-EX VJA C

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INTEGRATED MANAGEMENT INSTRUCTIONS		DOCUMENT NO: IMI/OVJ/12
TITLE	LINING UP OF VIJAYAWADA STATION FOR EX-VIJAYAWADA PUMPING	

1.0 PURPOSE

To provide instructions for lining up of Vijayawada Station for Ex-Vijayawada pumping.

2.0 REFERENCES

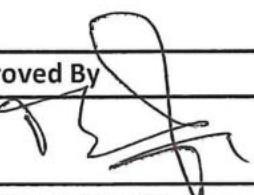
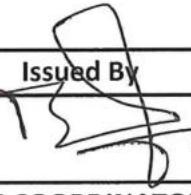
IM Procedure: IMP/OVJ/01

3.0 RESPONSIBILITY

Shift In-charge

4.0 INSTRUCTIONS

- 4.1.0 Line-up respective product tank up to manifold. Follow tank lining up procedure as per "Lining up of VJTL (Vijayawada terminal) tanks for EX-Vijayawada pumping" procedure/SOP IMI/OVJ/11. Open product manifold valve.
- 4.1.1 Open suction valve (s) of booster pump (s) and ensure pumps are vented.
- 4.1.2 Open MOV 1159
- 4.1.3 Line up Ex-VBS Basket filter (102 A/102 B)
- 4.1.4 Open MOV 1201
- 4.1.5 Close MOV 1202 (DBBV)
- 4.1.6 Check "LINE-UP READY FOR EX-VIJAYAWADA PUMPING" will appear in Booster pumps screen in VBS control room PLC screen.
- 4.1.7 Line up flow meter and PCV 1502.
- 4.1.8 Open suction valves of the mainline pumps to be operated.
- 4.1.9 Before starting mainline pump motor in VFD, Make sure the "PCV bypass" in PLC is enabled for manual control if required. In case of DOL operations, PCV manual control will get enabled as per interlock not required to bypass.
- 4.1.10 If motor started in DOL keep PCV open at 6-8 %. Throttle/open PCV 1502 to the required percentage based on flow rate required and other operating conditions. Note PCV % set value to be above 5 (PLC logic don't allow to start the pump if PCV % set value 5 or below 5).

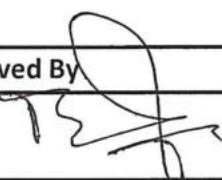
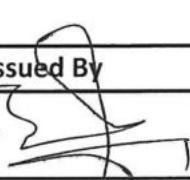
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INTEGRATED MANAGEMENT INSTRUCTIONS		DOCUMENT NO: IMI/OVJ/12
TITLE	LINING UP OF VIJAYAWADA STATION FOR EX-VIJAYAWADA PUMPING	

- 4.1.11 Open MOV 1522.
- 4.1.12 Make sure station limit valve is open. Ensure that the station is aligned in PLC i.e, Manifold, suction MOVs of BP and MP and MOV-1522, 1201 and MOVs of filter are opened and MOV-1202 is closed before starting of pumping.
- 4.1.13 Mainline pump to be vented after starting of Booster pump.
- 4.1.14 Check pump permissive in Index screen of PLC. Under "EX-VJW Lineup Open" All parameters in GREEN and "MP-1, MP-2, MP-3, BP-1 & BP-2 " all parameters in Green
- 4.1.15 Refer Annexure-EX VJA C for various Interlocks created for Ex-Vijayawada pumping before start the Ex Vijayawada operations
- 4.2.0 Before start the Ex-Vijayawada pumping required to change the operation mode in PLC from normal VVSPL pumping to EX-Vijayawada pumping mode Procedure for EX-Vijayawada pumping mode enable
- 4.2.1 Take shutdown for VVSPL Operations as per normal procedure.
- 4.2.2 Then change switch to Ex-Vijayawada mode in incomer panel in VBS control Room. "EX VJA OPERATION SELECTED" will appear in mainline pump screen in PLC
- 4.2.3 Then click on "ABORT VVSPL OPN" in main line pump screen in PLC. VVSPL OPERATION and EX-VJA OPERATION will appear in the same screen. Select EX-VJA OPERATION.
- 4.2.4 Then lined up the mainline pumps for pumping as per "Mainline pumps operation procedure" IMI/OVJ/09.
- 4.2.5 Then station is ready for Ex-Vijayawada pumping.

5.0 RELEVANT RECORDS

Ex-VBS Pumping Operations Log Book: IMF/OVJ/06
 Shift Log Book : IMF/OPN/01
 Quality control register : IMF/OVJ/04
 Tank gauge sheet : IMF/OVJ/03
 Interlocks for Ex Vijayawada Pumping : Annexure-EX VJA C

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INTEGRATED MANAGEMENT INSTRUCTIONS		DOCUMENT NO: IMI/OVJ/13
TITLE	CHECKS BEFORE OPERATIONS FOR PUMPING TO SECUNDERABAD	

1.0 PURPOSE

To provide instructions to carry out checks before operation .

2.0 REFERENCES

IM Procedures: IMP/OVJ/01.

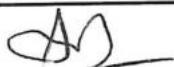
3.0 RESPONSIBILITY

Shift-in-Charge

4.0 INSTRUCTIONS

4.1 For pumping to Secunderabad (without heart cut at Suryapet)

- 4.1.1 Ensure that line is through at Suryapet preferably via station and all SVs in VSPL section are open.
- 4.1.2 Advise Secunderabad to line up receipt tank upto manifold.
- 4.1.3 Advise Secunderabad to line up station from station inlet MOV to manifold.
- 4.1.4 Advise Secunderabad to open manifold and then station inlet MOV/SLV and start receiving product.
- 4.1.5 Advise if required to line up pump at Suryapet(SBS Shift Incharge to refer check list for pump starting). Inform Vizag.
- 4.1.6 Advise Suryapet to start pumps in co-ordination with Vijayawada and Secunderabad

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HINDUSTAN PETROLEUM CORPORATION LIMITED
VISAKHA- VIJAYAWADA- SECUNDERABAD PIPELINE
VIJAYAWADA
ANDHRA PRADESH

ISSUE NO.:1
REVISION NO.:00
EFFECTIVE DATE :01/01/2018
SHEET: 01 OF 02

INTEGRATED MANAGEMENT INSTRUCTIONS

DOCUMENT NO:IMI/OVJ/13

TITLE

CHECKS BEFORE OPERATIONS

4.2 For pumping to Secunderabad (with heart cut at Suryapet)

- 4.2.1 Carry out checks for Secunderabad pumping as per 4.1
- 4.2.2 Advise Suryapet to line up receipt tank upto manifold.
- 4.2.3 Advise Suryapet to line up station from SLV to manifold.
- 4.2.4 Advise Suryapet to start receiving product after opening FCV.

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	HINDUSTAN PETROLEUM CORPORATION LIMITED VISAKHA- VIJAYAWADA- SECUNDERABAD PIPELINE VIJAYAWADA ANDHRA PRADESH	ISSUE NO:2 REVISION NO.:00 EFFECTIVE DATE :01/01/2018 SHEET: 1 OF 3
INTEGRATED MANAGEMENT INSTRUCTION		DOCUMENT NO.: IMI/OVJ/14
TITLE	PUMPING/RECEIPT OF ATF	

1.0 PURPOSE

To provide instructions to handle the ATF pumping & receipt in VBS.

2.0 REFERENCES

Aviation Quality Control Manual.

3.0 RESPONSIBILITY

Shift-in-Charge

4.0 INSTRUCTIONS

Activities required at VBS for receipt of ATF :

4.1

- 4.1.1 Calculate the expected arrival time of interface at Vijayawada.
- 4.1.2 Physical sampling to be carried out 2 hours before the expected arrival of interface at sample point and the densities are recorded using hydrometer.
- 4.1.3 Sampling initially can be taken at an interval of 15 minutes and the frequency of sampling should be increased as the expected arrival time of interface approaches.

- 4.2 All the following possible facilities in side receiving station need to be flushed initially with Zero SKO and later for 10 min with down graded ATF.

A) Station On line:-

- Ø Cartridge/Basket filters (one by one)
- Ø Receipt Flow turbines (one by one)
- Ø Density meter
- Ø FCV and bypass
- Ø Scrapper receiver
- Ø All possible vents, Drains, TSV's, PG/DPG etc.
- Any other bypass lines-where ever possible.

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OPERATIONS INCHARGE	IMS COORDINATOR

	HINDUSTAN PETROLEUM CORPORATION LIMITED VISAKHA- VIJAYAWADA- SECUNDERABAD PIPELINE VIJAYAWADA ANDHRA PRADESH	ISSUE NO:2 REVISION NO.:00 EFFECTIVE DATE :01/01/2018 SHEET: 2 OF 3
INTEGRATED MANAGEMENT INSTRUCTION		DOCUMENT NO.: IMI/OVJ/14
TITLE	PUMPING/RECEIPT OF ATF	

4.3.3 The ATF interface cutting is to be jointly done by terminal and pipeline. The joint check list is to be prepared as given in IMF/OPN/ 11

4.3.4 ATF Additive Dosing: ATF additive dosing facilities are provided and dosing to be done basis the advice from QC, VJTL during receipt of ATF at VBS.

4.4 Activities required at IPS1 & IPS2: In view of Safety & Security reasons, it is desirable to keep flushing of in bypass as it is while the ATF cycle passes through these stations thus avoiding station facilities by Zero rated SKO and ATF.

4.5 Pumping Sump product into mainline is to be avoided in all the locations while ATF cycle is passing through Station.

4.6 VBS taking heart cut during ATF:

4.6.1. After completion of HSD, while HPCK crossing VBS 25 kl line pushing to be done for flushing the HSD from receipt valve (MOV 1528) to manifold valves.

4.6.2. Station facilities to be flushed while '0' SKO crossing the station, 25 kl '0' SKO to be taken for line pushing HPCK in receipt line into HSD.

4.6.3 3. '0' SKO in receipt line to be pushed by downgrading 50 kl ATF into SKO tank and receipt line facilities to be flushed while line pushing '0' SKO/downgrading ATF.

4.6.4. After receiving planned quantity of ATF, heart cut to be stopped. 25 kl ATF in receipt line to be pushed into SKO tank during HPCK crossing by receiving 25 kl HPCK.

4.6.5. Once pure MS touches, 25 kl HPCK in receipt line to be pushed into MS tank and pure MS receipt to be continued.

4.7 VBS under bypass during ATF and MS cycle after ATF:

4.7.1. After completion of HSD, while HPCK crossing VBS 25 kl line pushing to be done for flushing the HSD from receipt valve (MOV 1528) to manifold valves.

4.7.2. All station facilities in the piping except receipt line to be flushed during '0' SKO.

4.7.3 Receipt to be started in pure MS and HPCK to be taken in MS tank.

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OPERATIONS INCHARGE	IMS COORDINATOR

	HINDUSTAN PETROLEUM CORPORATION LIMITED VISAKHA- VIJAYAWADA- SECUNDERABAD PIPELINE VIJAYAWADA ANDHRA PRADESH	ISSUE NO:2 REVISION NO.:00 EFFECTIVE DATE :01/01/2018 SHEET: 3 OF 3
INTEGRATED MANAGEMENT INSTRUCTION		DOCUMENT NO.: IMI/OVJ/14
TITLE	PUMPING/RECEIPT OF ATF	

4.8 VBS under bypass during ATF pumping VSPL

4.8.1. Heart cut to be stopped in HSD, all station facilities to be flushed during '0' SKO crossing. Again heart cut can be started in HSD/MS/SKO after completion of ATF cycle, receipt piping line pushing is not required in HSD but required if MS/SKO as per 4.7. Station lineup and pumping to be carried out as IMI/OVJ/13. No CI dosing or other Additive Dosing pumped along with the ATF during pumping towards VSPL.

4.9 Sample collection & Conductivity record during ATF cycle

4.9.1 Sample & Conductivity record to be collected as per annexure B & Annexure C during receipt or pumping to VSPL as required. Retention of sample and Record to be kept.

4.9.2 Number of sample carried out as per annexure B & Annexure C, two sample in same time could be referred but no of sample should match.

5.0 RELEVANT RECORDS

Shift log book IMF/OPN/01
Joint check list for activities at VDS/RBS/VBS during ATF Pumping & Receipt
IMF/OPN/11

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OPERATIONS INCHARGE	IMS COORDINATOR

Sr.No.	Activity	Personal Protective Equipments (PPE'S) to be used in operating area											
		Helmet	Safety Shoes	Gogoles	Hand Gloves Cot.	Hand Gloves PVC	Hand Gloves ASB	Ear Plugs	Canister	B. Apparatus	Gas Mask	Dust Mask	Safety Belt
1	Visitors / Employees in Plant Area	Yes	Yes	--	--	--	--	--	--	--	--	--	--
2	Taking Sample in Plant	Yes	Yes	Yes	Yes	--	--	--	--	--	--	--	--
3	Tank gauging	Yes	Yes	Yes	Yes	--	--	--	--	--	--	--	--
4	Mechanical /FAS jobs- Pigging/ valve maint/pump maint./FE maint.	Yes	Yes	--	Yes	--	--	--	--	--	--	--	--
5	Noisy Area - pump /DG shed	Yes	Yes	Yes	Yes	--	--	Yes	--	--	--	--	--
6	Welding	Yes	Yes	Yes	Yes	--	Yes	--	--	--	Yes	--	--
7	Grinding	Yes	Yes	Yes	Yes	--	--	Yes	--	--	--	Yes	--
8	Working at Height - Painting, crane maint. & b.filter	Yes	Yes	Yes	Yes	--	--	--	--	--	--	--	Yes
9	Chemicals Handling - Battery maint. & Cl handling	Yes	Yes	Yes	--	Yes	--	--	--	--	Yes	--	--
10	Electrical & Instrumentation Jobs	Yes	Yes	--	--	Yes	--	--	--	--	--	--	--
11	Working in shed/stores	Yes	Yes	Yes	Yes	--	--	--	--	--	--	--	--
12	Confined Space	Yes	Yes	Yes	Yes	--	--	--	--	Yes	--	--	--

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OPERATIONS INCHARGE	IMS COORDINATOR

**HINDUSTAN PETROLEUM CORPORATION LIMITED
VISAKHA-VIJAYAWADA-SECUNDERABAD PIPE LINE**

LIST OF FORMS

Department/Section : Operations - Vijayawada

SI No	Form No.	Form Title	IMP / IMI No.	Retention Period
1	IMF/OPN/01	Shift log book	IMP/OVJ/01	3 years
2	IMF/OPN/02	Maintenance log book	IMP/OVJ/01	3 years
3	IMF/OPN/03	Cold work permit	IMP/OVJ/01	1 year
4	IMF/OPN/04	Hot work permit	IMP/OVJ/01	1 year
5	IMF/OPN/05	Certificate for Thermometer calibration	IMI/OPN/01	1 year
6	IMF/OPN/06	Certificate for Hydrometer calibration	IMI/OPN/02	1 year
7	IMF/OPN/07	PLC by-pass register	IMI/OVJ/02	1 year
8	IMF/OPN/08	Pigging report	IMI/OVJ/07	3 years
9	IMF/OPN/09	Working at Heights Permit	IMP/OVJ/01	1 year
10	IMF/OPN/10	Electrical Isolation & Energization Permit	IMP/OVJ/01	1 year
11	IMF/OPN/11	ATF Checl list	IMP/OVJ/04	2 years
12	IMF/OPN/12	Critical behavior check list for PPE Observation	IMP/OVJ/01	1 year
13	IMF/OVJ/01	Daily Operations log book	IMP/OVJ/01	3 years
14	IMF/OVJ/02	Sample label	IMP/OVJ/03	Till Batch Formation
15	IMF/OVJ/03	Tank Gauge Sheet	IMP/OVJ/01 IMI/OVJ/01 IMI/OVJ/03	3 years
16	IMF/OVJ/04	Quality control register	IMI/OVJ/04	3 years
17	IMF/OVJ/05	Interface log sheet	IMI/OVJ/04	3 years
18	IMF/ROW/01	Daily linewalker's report	IMP/OVJ/01	1 years
19	IMF/ROW/02	Daily Security Guard's report	IMP/OVJ/01	1 years
20	IMF/OVJ/06	Ex-VBS Pumping Operations Log Book	IMI/OVJ/11, IMI/OVJ/12 & IMI/OVJ/13	1 year
21	Annexure 1	Format to monitor Booster pumps	IMI/OVJ/11, IMI/OVJ/12 & IMI/OVJ/13	1 year

Signature of Department Head

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IMF/OVJ/03
REV. 00

हिन्दुस्तानपेट्रोलियम कार्पोरेशन एसएमटेक
व्यापारिक प्रजयवाडा प्रकंदरावाद पाईपलाईन प्रशाखापटनम
HINDUSTAN PETROLEUM CORPORATION LIMITED
VISAKHA-VIJAYAWADA-SECUNDERABAD PIPELINE
टैक गेज एवम् जाँच सूची/TANK GAUGE CUM CHECKLIST

Vijayawada Booster Station

टैक संख्या/ TANK NO:	उत्पाद/PRODUCT :	बैच/BATCH:	
		आरेंग/OPENING	समापन/CLOSING
सीपीडब्ल्यूडी की ऊच्चाई /CPWD Height			
आर एच ओ/R.H.O.			
संशोधन /Correction			
प्राप्त इनेज/Innage Obtained			
सकल इनेज/Total Innage			
प्राप्त बीएस एवम् जल/BS & W Obtained			
संशोधन /Correction			
सकल बीएस एवम् जल/Total BS & W			
टैक तापमान/Tank Temperature			
नमुना तापमान/Sample Temperature			
घनत्व @ 15 C°/Density @ 15 C, if settling time >24 hrs			
घनत्व @ 15 C°/Density @ 15 C, if settling time <24 hrs			
Upper = Middle= Lower=			
Bottom=			
दिनांक/Date			
समय/Time			
विविएसपीएल का प्रतिनिधि/VVSPL Rep.			
साइट एवम् वाल्वो का निरीक्षण/ Inspection of Site and Valves			
Tank inlet and delivery valve isolated			
Whether Inlet DBBV/MOV and ROSOV of other tanks in the same manifold isolated or Not?			
Water drain valve in closed position			
Roof water drain valve in open position			
Whether tank inlet ROSOV working?			
Air pressure at Tank inlet ROSOV			
टैक घनत्व/Tank Density in TAS			
प्राप्त मात्रा/ Receipt Quantity	Qty. Details	JDE details	
Ambient QTY		XL No.:	
Standard QTY		YL No.:	
Weight (KG)		OV No.:	
Pाली प्रभारी/Shift Officer	Veeviespl/ VVSPL	टेर्मिनल//Termination	Veeviespl/ VVSPL
		टेर्मिनल/ Terminal	

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HINDUSTAN PETROLEUM CORPORATION LIMITED

OMC DIVISIONES				DIA	
DEPARTAMENTO	SECCION	TIPO	ESTADO	FECHA	HORA
CH - CMI	C	001	(349)	400	372
	VCS	FBS	VSI	385	383
FACTURACION					
	001				

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IMF/OVJ/04

Rev: 00

Rev. 00

हिन्दुस्टान पेट्रोलियम कॉर्पोरेशन लिमिटेड/HINDUSTAN PETROLEUM CORPORATION LIMITED

गणवाचा नियंत्रण पसिका/QUALITY CONTROL REGISTER

कार्यस्थल/Location:

 OPERATIONS INCHARGE	 IMS COORDINATOR
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IMF/OVJ/05
Rev: 00

हिन्दस्तान पेट्रोलियम कार्पोरेशन लिमिटेड

HINDUSTAN PETROLEUM CORPORATION LIMITED

विशाख विजयवाडा सिकन्दराबाद पाईप लाईन

VISAKHA-VIJAYAWADA-SECUNDERABAD PIPE LINE

इंटरफेस लॉग शीट/INTERFACE LOG SHEET

दिनांक/DATE:

कार्यस्थल/Location:

I/F TAKEN IN TANK NO:

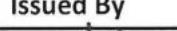
	उत्पाद Product	चक्र/बैच ::Cycle / Batch	घनत्व:Density @ 15°	टैंक संख्या/Tank No.
आगला/Preceding				
पीछला/Following				
डैजी शुरू D.G. Started at :		डैजी बन्द D.G. Stopped at :		

इंटरफेस शुरू समय I/F STARTED AT HRS अंतराल DURATION AT MN

अंतराल DURATION AT MN

समाप्ति समय OVER AT HRS अनुमानित मात्रा APPX. QTY KL @ KL/HR

प्रभारी अधिकारी /OFFICER-IN-CHARGE

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क्युएमएफ/ओवीजे/02::IMF/OVJ/02

संसोधन/:REV.00



नमूना पत्र : Sample Label

विविएसपीएल/VVSPL

कार्यस्थल/Location:

उत्पाद/PRODUCT _____

नमूना संख्या/SAMPLE No. _____

दिनांक/ DATE _____

समय/TIME (HRS.) _____

साइक्ल/बैच संख्या/:CYCLE/BATCH No. _____

श्रोत: Source: _____

बैच का अग्र/मध्य/अंत/ FRONT/MIDDLE-END OF BATCH/

टैंक संख्या/TANK No. _____

अन्य/Any other: _____

घनत्व/Density @15 Degree C= _____

पाली अधिकारी (विविएसपीएल)/SHIFT IN-CHARGE (VVSPL) _____

पाली अधिकारी (एटीपी/टर्मिन)/SHIFTIN-CHARGE (ATP/Terminal) _____

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OPERATIONS INCHARGE	IMS COORDINATOR



एटीएफ बैच संख्या / ATF Batch Number :
हिन्दुस्तान पेट्रोलियम कॉर्पोरेशन लिमिटेड द्वारा दिया गया तिथि व समय / Date & time pumping started at VDS:
हिन्दुस्तान पेट्रोलियम कॉर्पोरेशन लिमिटेड द्वारा दिया गया तिथि व समय / Date & time receipt completed at VBS:
अ) अंतिम पिगिंग की व्याख्यात्वित / Status of Last pigging done
पिगिंग का प्रकार / Type of pigging पिगिंग की तिथि / Date of pigging अभियुक्ति / Remarks
ब) मुख्य एसेमेंट - एटीएफ - मुख्य एसेमेंट यह की अनुसृति भाग :
/Quantity scheduled for ZeroSKO-ATF-ZeroSKO cycle :

ii. हिन्दुस्तान / आरवीएस में परिवर्तन परिचालन / Pumping Operations at VDS

	पाईपलाइन/Pipe line	Remark
1	बैच संख्या/Batch No : तिथि/ Date : भाग/Qty:	
2	इस एटीएफ बैच को पम्प करने से पूर्व के पम्प किए गए एमएस (बैच की बैच लम्बाई, बैच संख्या व परिवर्तन तिथि दर्शाएँ) Before Pumping this batch of ATF, previous batches of MS have been pumped (Batch No., Date of pumping and Batch length to be indicated)	
3	0-रेटेड एसेमेंट/पदावलित एटीएफ के परिवर्तन के दौरान निकल उपकरण यांत्रिक विधि गत्या- सभी युक्ति पम्प, कार्डिज/बासफेट फिल्टर, गाटर सेपरेटर, सभी फ्लॉट ट्रायार्स, प्रवाह गेटर, दोनों पुराने व नए मैटलाईंग पम्प, विग लाइर, सभी बैटर्स, ईल, ट्रीएसट्रीस, पीजी/हीडीजी, पोइंट अल्व घाईपास टाईन - जहाँ भी संभव हो (उपलब्ध स्लज की गुणवत्ता एमएस भाग को अलग रखते करे तथा स्लज के नमूने को संग्रहालय रखें). During pumping of '0' rating SKO/Down graded ATF the following station facilities were flushed: All Booster Pumps,Cartridge/Basket filters,Filter separator, All Flow turbines,Densitometer,Maintline pumps both Old set and New set, Scraper launcher,All possible vents, Drains, TSVs, PG/DPG, any other bypass lines-where ever possible.(The quality & quantity of sludges, if available are to be recorded separately for each point. The sludge sample to be preserved.)	हाँ/Yes नहीं/No
4	0-रेटेड एसेमेंट/पदावलित (डाइस्ट्रेटर) एटीएफ के परिवर्तन के दौरान विभिन्न भौ स्तरों पर स्ट्रोप/स्ट्रप टैंक या सीआई का पाईपलाइन स्थानक से अंतःशेषण नहीं किया गया. During pumping of ATF and '0' rating SKO, no stop/C/DRA/Sump Tank injection was done at the pipeline station	हाँ/Yes नहीं/No
5	एटीएफ परिवर्तन शुरू करने से पूर्व, निर्धारित एटीएफ टैंक के इन तथा ऊपरी/नीचे नमूनों को एकत्रित वर सुरक्षित रखा गया। Drain & TMB samples of nominated ATF tank were collected and preserved before introduction of ATF.	हाँ/Yes/नहीं/No
6	During pumping ATF, for first half an hour, for every 10 minutes interval water draining from water separator and at interval of every 1 hour after that. Mention quantity of water in liter.	Yes/No If yes, Quantity =
7	0-रेटेड एसेमेंट के दोनों अंग व अंतिम बैच के कम से कम 3 लाईन नमूने (प्रत्येक नमूना 2 ली. का) तथा एटीएफ के 5 लाईन नमूने (प्रत्येक 2 ली. के) सामान्य अंतराल पर साफ किए गए तथा अतिभित्र प्रचलित मानक डिप्लो/संग्रह बोतलों में पाईपलाइन स्थानक से एकत्रित किया तथा सुरक्षित रखा गया। Atleast 3 Line samples (every sample of 2 ltrs) each of front and rear batch of '0' rating SKO and 5 Line samples (2 ltrs each) of ATF was collected at regular intervals in standard clean and properly rinsed cans / colour bottles from pipeline station and preserved.	हाँ/Yes नहीं/No
8	अ) एटीएफ परिवर्तन के दौरान मैन या युक्ति स्टेशन पर कोई शर डाउन नहीं या तथा पुरुतया स्थायी बहाव सुनिश्चित किया गया। During ATF movement there was no S/D of main/booster station and steady flow maintained throughout. ब) यदि अवरोध करणी से कोई शर डाउन या (कारण, अधिक रिकार्ड करें) There was S/D which could not be avoided (Reason, duration should be recorded).	हाँ/Yes नहीं/No
9	Monitoring test of idle line ATF between Tank & Manifold and should be OK by QC.	हाँ/Yes, नहीं/No Test Certificate Number (If Applicable)

Prepared By

Reviewed by

OPERATIONS INCHARGE	IMS COORDINATOR

II. बीडीएस / आरबीएस में पंपिंग परिवालत / Pumping Operations at RBS/SBS

	पाईपलाईन/Pipe line	Remark
1	O-रेटेड एसकेओ / पदावनित एटीफ के पंपिंग के दौरान जिन्हें उपर्युक्त किया गया - सभी युस्टर पम्प, क्राइंज/बास्केट फिल्टर, ग्राटर सेपरेटर, सभी फले ट्रायाइस, घनत्व ग्राउंटर, दोनों पुराने व नए ग्रेनलाईन पम्प, पिंग लांचर, सभी वैट्स, ट्रैन, टीएसबीस, पीजी/ट्रीपीजी, कोई अन्य बाईपास लाईन - जहाँ भी संश्ल हों (उपलब्ध स्लज की गुणवत्ता एवं गारा को अलग रेकार्ड करे तथा स्लज के नमूने को संग्रहालयकर रखें). During pumping of 'O' rating SKO/Down graded ATF the following station facilities were flushed: All Booster Pumps,Cartridge/Basket filters,Filter separator, All Flow turbines,Densitymeter, All Mainline pumps,Scrapper launcher, All possible vents, Drains, TSV's, PG/DPG, any other bypass lines-where ever possible.(The quality & quantity of sludges, if available are to be recorded separately for each point.The sludge sample to be preserved.)	हाँ / Yes नहीं / No
2	O-रेटेड एसकेओ / पदावनित (डाउनग्रेडेड) एटीफ के पंपिंग के दौरान जिसी भी स्लाप/सम्प टैक या सीआई का पाईपलाईन स्थानक से अंतःक्षेत्र नहीं किया गया. During pumping of ATF and 'O' rating SKO, no stop/CI/DRA/Sump Tank injection was done at the pipeline station	हाँ / Yes नहीं / No
3	O-रेटेड एसकेओ के दोनों अंग व अंतिम बैच के कमसे कम 3 लाईन नमूने (प्रत्येक नमूना 2 ली. का) तथा एटीफ के 5 लाईन नमूने (प्रत्येक 2 ली. का) सामान्य अंतराल पर साफ किए गए तथा अलिंगोंति पच्छलित मानक डिव्हो/रेशिन बोतलों में पाईपलाईन स्थानक से एकवेत 3 गिरा तथा सुरक्षित रखा गया. Atleast 3 Line samples (every sample of 2 ltrs) each of front and rear batch of 'O' rating SKO and 5 Line samples (2 ltrs each) of ATF was collected at regular intervals in standard clean and properly rinsed cans/colour bottles from pipeline station samples and preserved.	हाँ / Yes नहीं / No

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III. बीवीएस में रेसिप्ट (प्राप्ति) के लिए / For receipt at VBS/SRS

	Piping/pipe line	विपणन / Marketing.	Remark
10 O-रेटेड एसकेओ/एटीफ के रेसिप्ट के दौरान बीवीएस के निम्न उपकरणों को प्रवाहित किया गया- कार्टिज/बास्केट फिल्टर, रेसिप्ट फ्लो ट्रावाईन, पतन्त्र गोटर, एफनीटी और बायपास स्लॉपर रिसिवर, सभी वेट्स, ड्रेन ट्रीएसडीस, पीजी/डीपीजी, लोइ अन्य बाइपास लाईन - जहाँ भी संभव हो (उपतव्ध स्लज की गुणवत्ता एवं मात्रा को अवग रेसाई एवं तथा स्लज के नमुने को संभालकर रखें).	हाँ/Yes नहीं/No		
11 O-रेटेड एसकेओ / द्रामनिट (डाउनग्रेड) एटीफ के प्राप्ति के दौरान किसी भी स्लॉपर / स्लॉप टैंक या सीओए का पाइपलाईन स्थालक से अंतःक्षेत्र नहीं किया गया . During pumping of ATF and 'O' rating SKO, no sump/C/DRA/Sump Tank injection was done at the pipeline station	हाँ/Yes नहीं/No		
12 एटीफ टैंक के लिकास लाईन को पथक किया/ ATF tank outlet line was isolated & locked.	हाँ/Yes नहीं/No		
13 एटीफ रेसिप्ट(प्राप्ति)युह करते से पूर्ण, निपरित एटीफ टैंक के ड्रेन तथा ऊपरी/मध्य/नीचे नमुनों को एकक्षित कर सुरक्षित रखा गया	हाँ/Yes नहीं/No	हाँ/Yes नहीं/No	
14 0-एसकेओ/ एटीफ पानव्यूअंतरेक आधारपर युह एटीफ पद्धतिनिट(डाउनग्रेड)मात्रावालीकृत किया जाता चाहिए, निपरित पद्धतिनिट(डाउनग्रेड)मात्रा 150 किलो से अधिक नहीं होना चाहिए. Basis density difference between 'O' SKO/ATF, quantity of ATF to be downgraded as SKO to be established. However the same shall not exceed 150 KL.	पद्धतिनिट(डाउनग्रेड)मात्रा: Quantity Downgraded::	हाँ/Yes नहीं/No	हाँ/Yes नहीं/No
15 एटीफ प्राप्त करनेवाले टैंक के प्रवेश लाईन कारब्योडी (टैंक के प्रवेश एमओवीसी तुरंत पहले) एटीफ प्राप्ति से कुछ पुर्व ई खोल गया. The HOV in the inlet line of ATF receiving tank (just before inlet MOV of the tank) was opened just before the receiving of ATF in the tank.	हाँ/Yes नहीं/No		
16 एटीफ को निपरित टैंक या जिस टैंक में स्टेप एटीफ या मै प्राप्ति (रिसेप्ट) किया गया (टैंक संख्या, टैंक समाई की आवशी की आवशी दर्शाएं) ATF was received into the scheduled cleaned tank or in the tank having on spec. ATF (Tank No. and last date of cleaning of the tank to be indicated).	पुर्व दैर्घ्य संख्या/ Previous Batch No.:मात्रा/ Quantify:	Tank No: Date Of Cleaning:	
17 एटीफ/0-एसकेओके पानव्यूअंतरेक आधारपर युह एटीफ पद्धतिनिट(डाउनग्रेड)मात्रावालीकृत किया जाता चाहिए, तथापि पद्धतिनिट(डाउनग्रेड)मात्रा 150 किलो से अधिक नहीं होना चाहिए. Basis density difference between ATF/ 'O' SKO quantity of ATF to be downgraded as SKO to be established. However the same shall not exceed 150 KL.	पद्धतिनिट(डाउनग्रेड)मात्रा: Quantity Downgraded::		
18 एटीफ प्राप्ति से पूर्ण, निपरित एटीफ टैंक के इन तथा ऊपरी/मध्य/नीचे नमुनों को एकक्षित कर सुरक्षित रखा गया	हाँ/Yes नहीं/No		
19 During pumping ATF, for first half an hour, for every 10 mints interval and at interval of every 1 hour after that. Observe for Test 'H' of AQCM	Yes/No		
20 0-रेटेड एसकेओ/पद्धतिनिट(डाउनग्रेड) एटीफ की प्राप्ति के दौरान किसी भी स्लॉप/स्लॉप टैंक या सीओए का अंतःक्षेत्र नहीं किया गया.	हाँ/Yes नहीं/No		
21 O-रेटेड एसकेओ/पद्धतिनिट(डाउनग्रेड) एटीफ की प्राप्ति के दौरान किसी भी स्लॉप/स्लॉप टैंक या सीओए का अंतःक्षेत्र नहीं किया गया। तथा एटीफ के 5 लाईन नमुने (प्रत्येक 2 ली. के) सामान्य अंतराल पर सामान किया गए तथा भरिसाती उचितलियत गारंटी दिया/रेजिन बोतलों में पाइपलाईन स्थालक से एकक्षित किया गया तथा सुरक्षित रखा गया। At least 3 Line samples (2 ltrs each) of front and rear batches of 'O' rating SKO and 5 Line samples (2 ltrs each) of ATF were collected at regular intervals in standard clean and properly rinsed cans/bottles and preserved.	हाँ/Yes नहीं/No		
22 रेसीफ/ समाप्त के प्राप्ति संरक्षित टैंक से, बच फार्मेशन ट्रैट है सामुद्रिक (संयुक्त) एटीफ नमुना लिया गया.	हाँ/Yes नहीं/No	हाँ/Yes नहीं/No	
23 Monitoring test of idle line ATF between Tank & Manifold and should be OK by QC.	Certificate Number:		

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Reviewed by

OPERATIONS INCHARGE

IMS COORDINATOR



हिन्दुस्टान पेट्रोलियम कारपोरेशन लिमिटेड
HINDUSTAN PETROLEUM CORPORATION LIMITED
विशाखा-विजयवाडा सेकंडराबाद पाइपलाइन, विजयवाडा
VISAKHA-VIJAYAWADA-SECUNDERABAD PIPELINE, VIJAYAWADA
एक्स-विजयवाडा अभियान लोगो चुक्क
EX-VIJAYAWADA OPERATIONS LOG BOOK

QWV/DV/13/V1A/2

DATE:

CH (Km)	VBS (349 Km)	SBS (450 Km)	SPS (572 Km)
PROD BA TCH			
QTY			

Time	VBS DESPATCH DETAILS										LINE SAMPLE					VBS PRESSURE DETAILS					SBS PARAMETERS					SRS PARAMETERS											
	PROD BATCH	TANK NO.	DP	HRLY. RECEI PT	TANK TOTAL	BATCH QTY. (FC)	DP/FC- DP	Flow meter reading (Instantaneous out)	Running BP No.	BP Current	Running Mainline pump No.	VFD DOL	PCV ByPass	PCV %	DENSITY	TEMP	15 DEG. DENSITY	Remarks (OFF in density colour out)	BP Suction Pressure	BP Discharge Pressure	P11202	MLP Suction Pressure	MLP Discharge Pressure	VBS Outlet Pressure	SBS Net Pressure	SBS Outlet Pressure	PROD BATCH	TANK NO.	HRLY. RECEIPT	BATCH	BATCH CITY (FC)	SRS INL PRESSURE	PROD BATCH	TANK NO.	HRLY. RECEIPT	BATCH	BATCH QTY (FC)
10AM																																	0600				
0100																																0100					
0200																																0200					
0300																																0300					
0400																																0400					
0500																																0500					
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2400																																2400					

Important Events at VBS:

Important Events at SBS:

Important Events at SRS:

PUMP RUNNING HOURS			
PUMP	Day/Hr	CLMM (Hr)	PPW
BP1			
BP2			
MP1			
MP2			
MP3			
DRP-A			
DRP-B			

CORROSION INHIBITOR DETAILS				
SHIFT	INITIAL DP	FINAL DP	DIFF	QUANTITY (L)

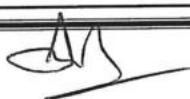
SHIFT OFFICER DETAILS		
SHIFT	SH INCHARGE NAME	SH INCHARGE SIGN

Approved By		Issued By	
	OPERATIONS INCHARGE		IMS COORDINATOR

Annexure 1

**Routine Check List For Booster Pump 7A and 7B
working condition and monitoring.**

Sr no	Check list										
1	Suction valve to be in open condition										
2	Discharge valve to be in closed condition in Local Mode										
3	Stop feed back (red indication) to be checked and ensured in PLC Screen "Booster pump"										
4	Stop lock push button to be released in field if found in pushed condition										
5	All fuse to be checked for continuity inside power module 7A & 7B at VJTL Substation										
6	Power supply to be switched on for 7A & 7B module in VJTL substation										
7	With one manpower in VJTL pump house start pump 7A & 7B in remote mode from PLC Booster pump screen Note the time										
8	After 5 minutes stop the pump										
9	Remarks If any										
OPERATIONS INCHARGE				IMS COORDINATOR							




ANNEXURE-B

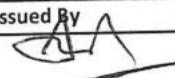
Conductivity Details of ATF Receipt at VBS

Date of Receipt:-

Batch No: -

SR NO	Date	Time	Density @ 15C	Conductivity(ps/m)	Quantity Receipt (KL)	Appearance/Remark

Name of the Shift officer & Signature

Approved By 	Issued By 
OPERATIONS INCHARGE	IMS COORDINATOR

Sample Collection Details of ATF Receipt ANNEXURE -C									
IN FRONT O'SKO RECEIPT									
Batch No:-			Date of Receipt:-						
SR No	TYPE OF	Date	Time	Density	Temp	Density @ 15C	SAMPLE NO	QTY TO BE	Appearance/Remark
1	STARTING							2 LTR	
2	MIDDLE							2 LTR	
3	END							2 LTR	
IN ATF RECEIPT									
Batch No:-			Date of Receipt:-						
SR No	TYPE OF	Date	Time	Density	Temp	Density @ 15C	Conductivity (ps/m)	QTY TO BE	SAMPLE NO
1	00:00 MIN							1 LTR	
2	10 MIN							1 LTR	
3	20 MIN							1 LTR	
4	30 MIN							1 LTR	
5	Every HR							1 LTR	
IN ATF RECEIPT/LINE SAMPLE									
Batch No:-			Date of Receipt:-						

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SR No	TYPE OF	Date	Time	Density	Temp	Density @ 15C	Conductivity (ps/m)	QTY TO BE	SAMPLE NO	Appearance/Remark
1	IN EQUAL INTERVALS							2 LTR		

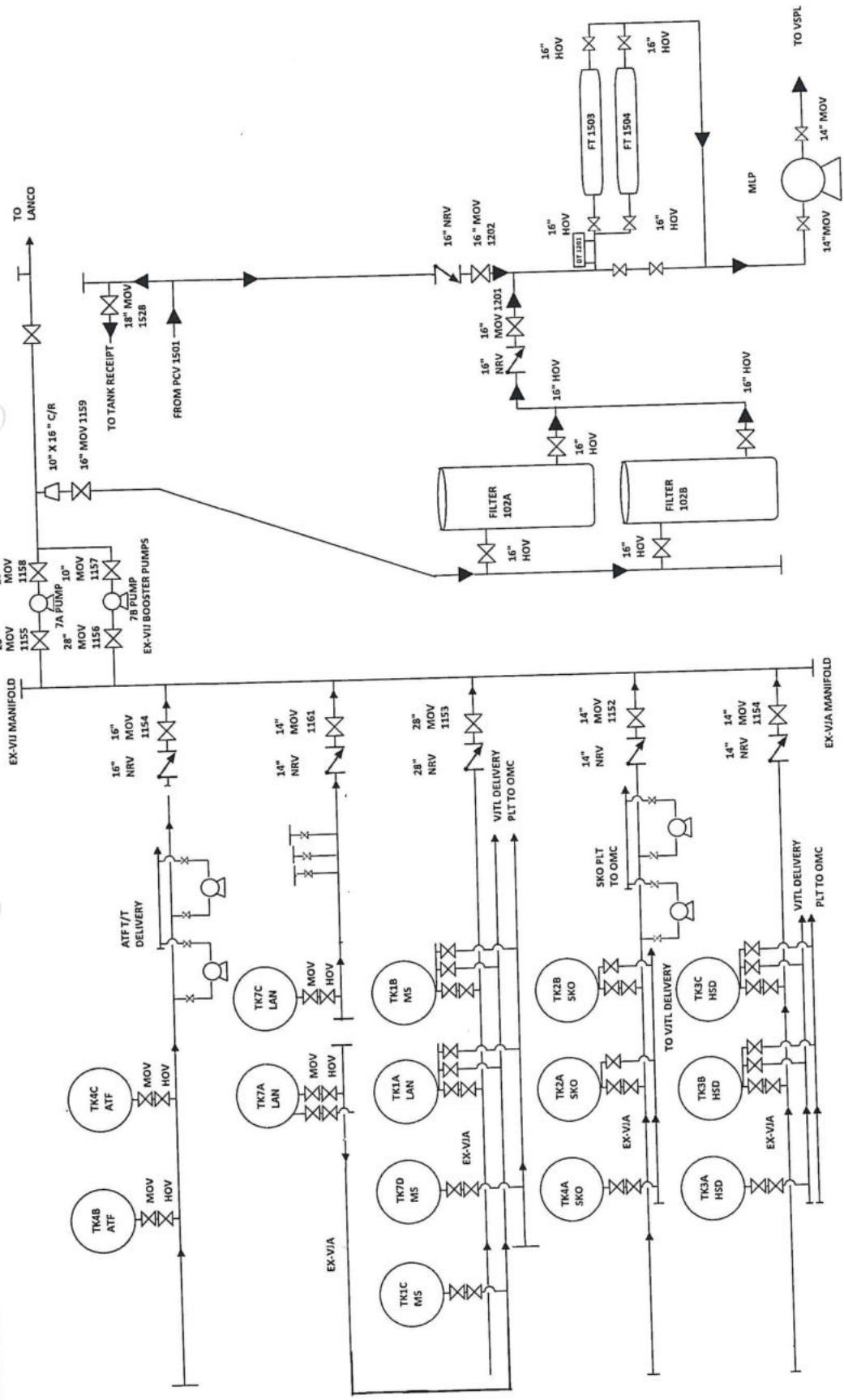
IN ATF RECEIPT AS PER AQCM LINE SAMPLE

SR No	TYPE OF	Date	Time	Density	Temp	Density @ 15C	Conductivity (ps/m)	QTY TO BE	SAMPLE NO	Appearance/Remark
1	STARTING							4 LTR		
2	MIDDLE							4 LTR		
3	END							4 LTR		

IN REAR O'SKO RECEIPT LINE SAMPLE

Batch No: -			Date of Receipt:-					-		
SR No	TYPE OF	Date	Time	Density	Temp	Density @ 15C	SAMPLE NO	QTY TO BE	Appearance/Remark	
1	STARTING							2 LTR		
2	MIDDLE							2 LTR		
3	END							2 LTR		

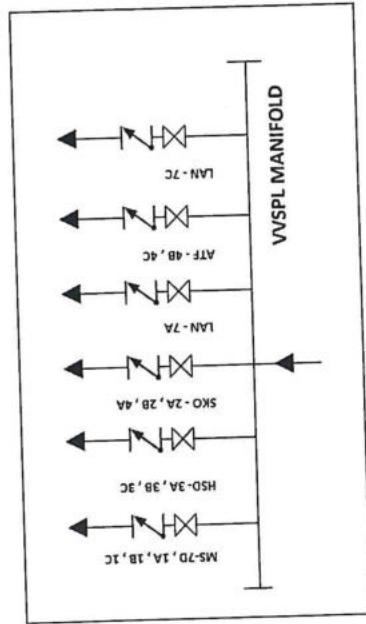
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ANNEXURE - EX VIJA A

EX-VIIAYAWADA PUMPING FACILITY SCHEMATIC LAYOUT

(ATTACHMENT-2)

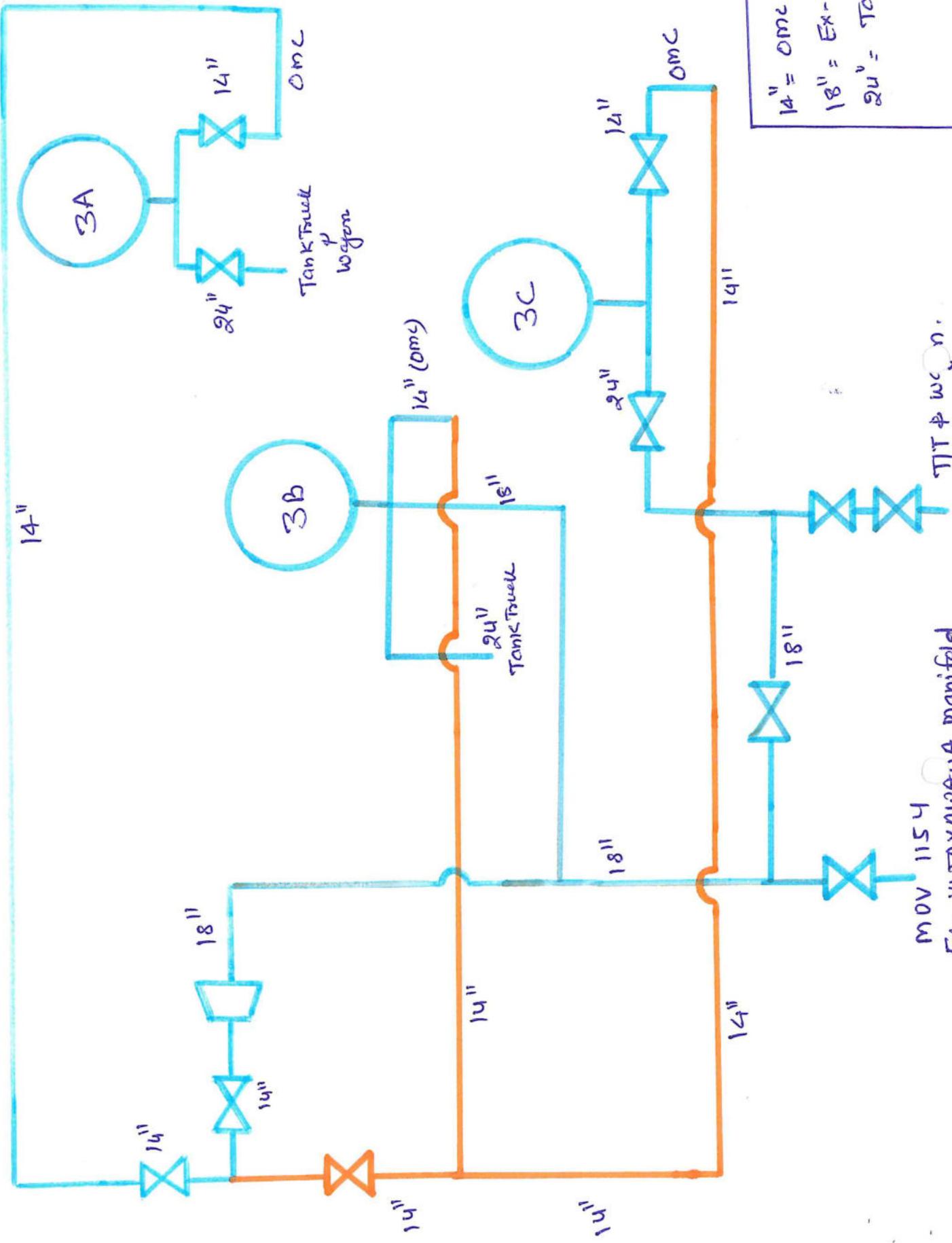


NOT TO SCALE

ATTACHMENT 2

Tank 3A

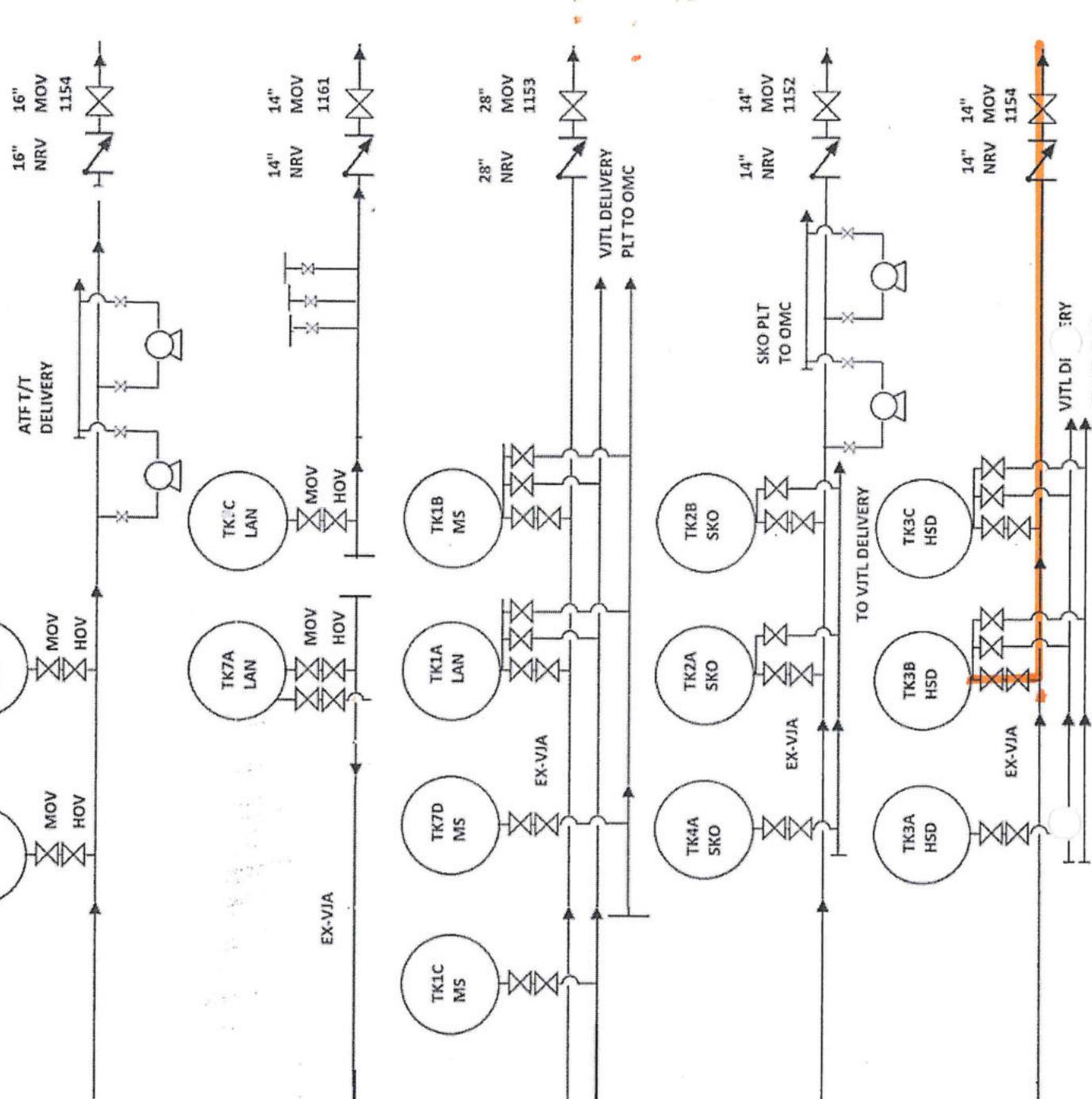
ANNEXURE Ex vJ-A



$14''$ = one line
 $18''$ = Ex - very good
 $24''$ = tank - true
 water

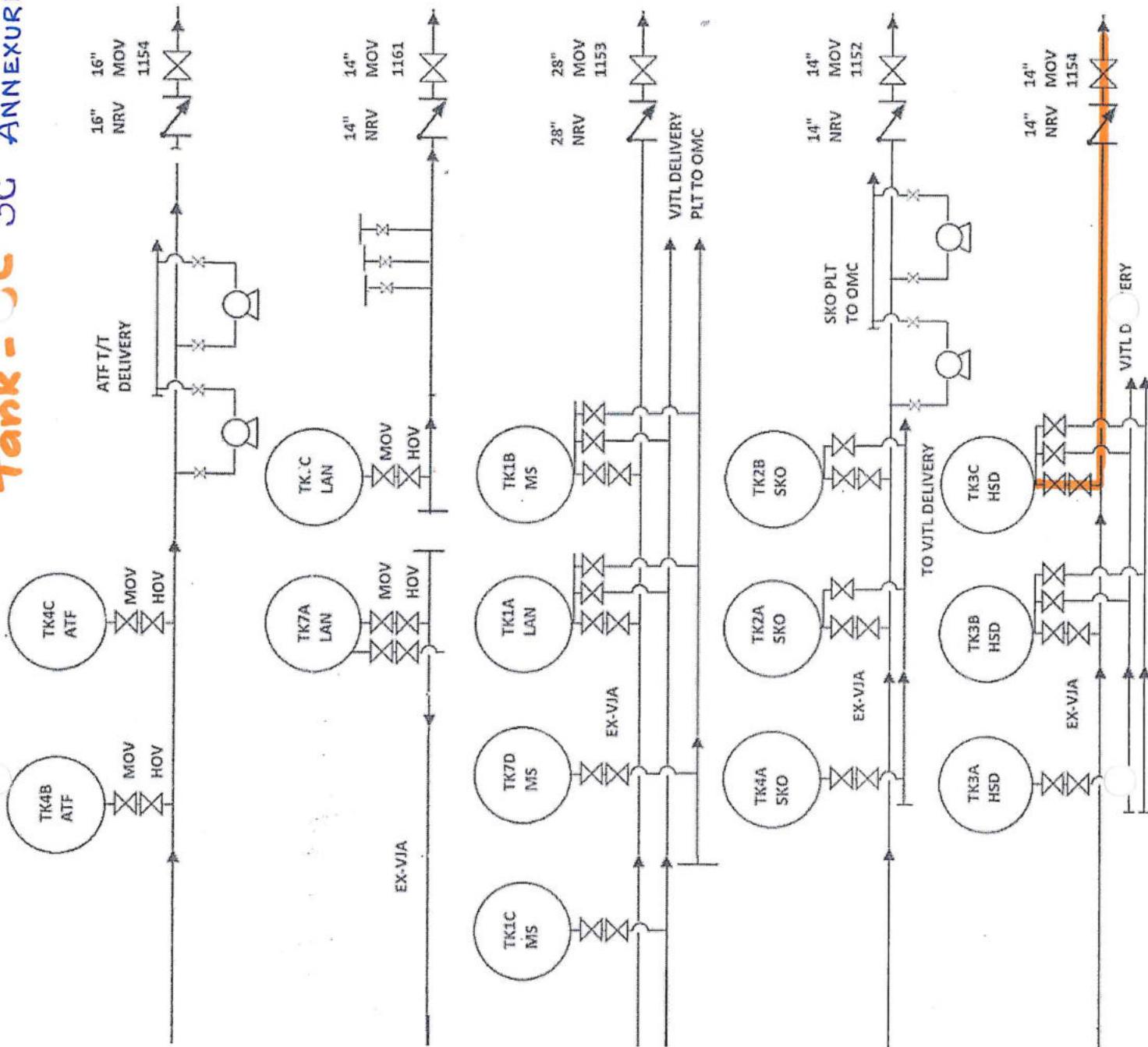
Tank - TB 3B

ANNEXURE EX VJA-A

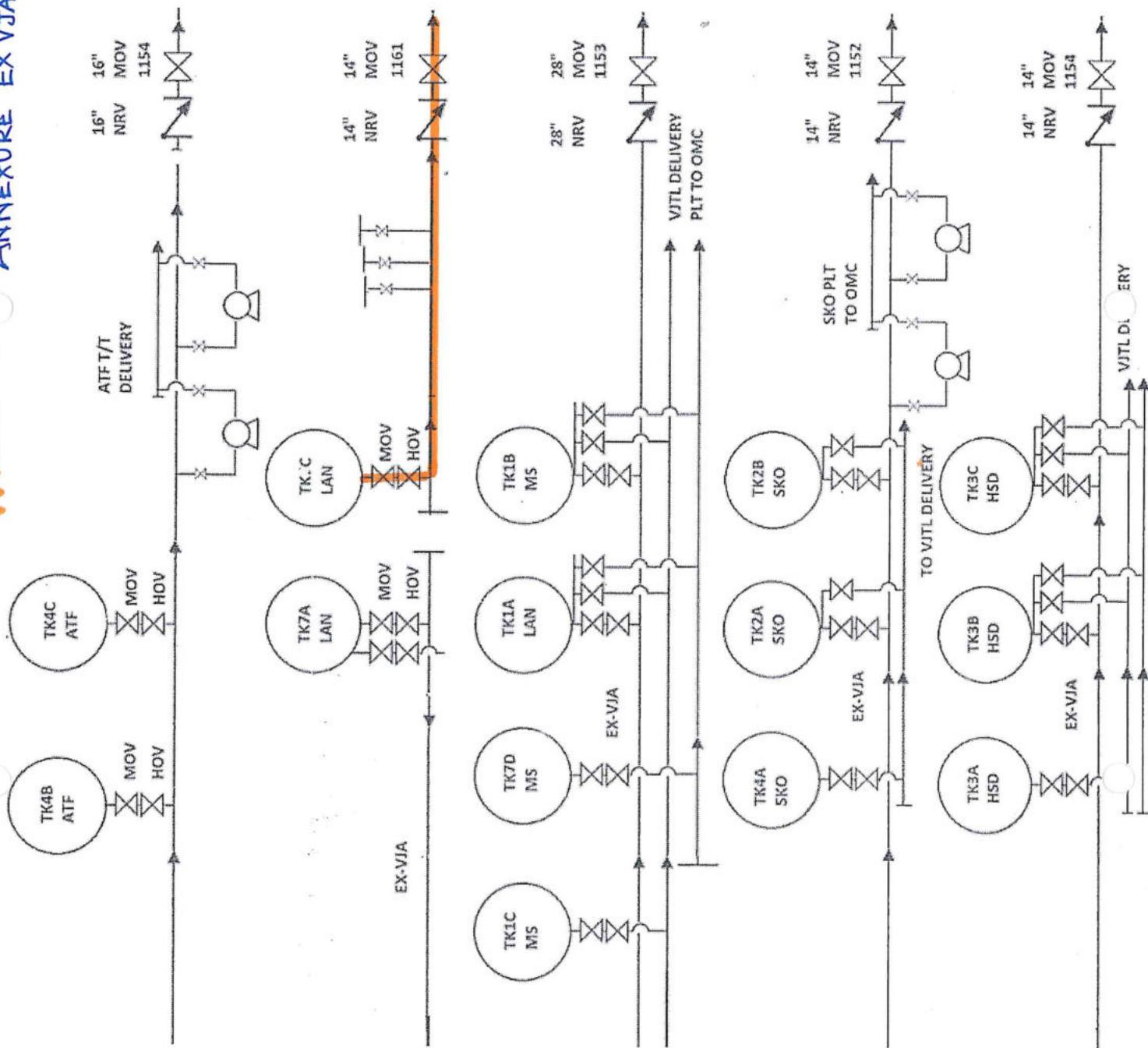


125

Tank - C CC ANNEXURE EX-VJA-A



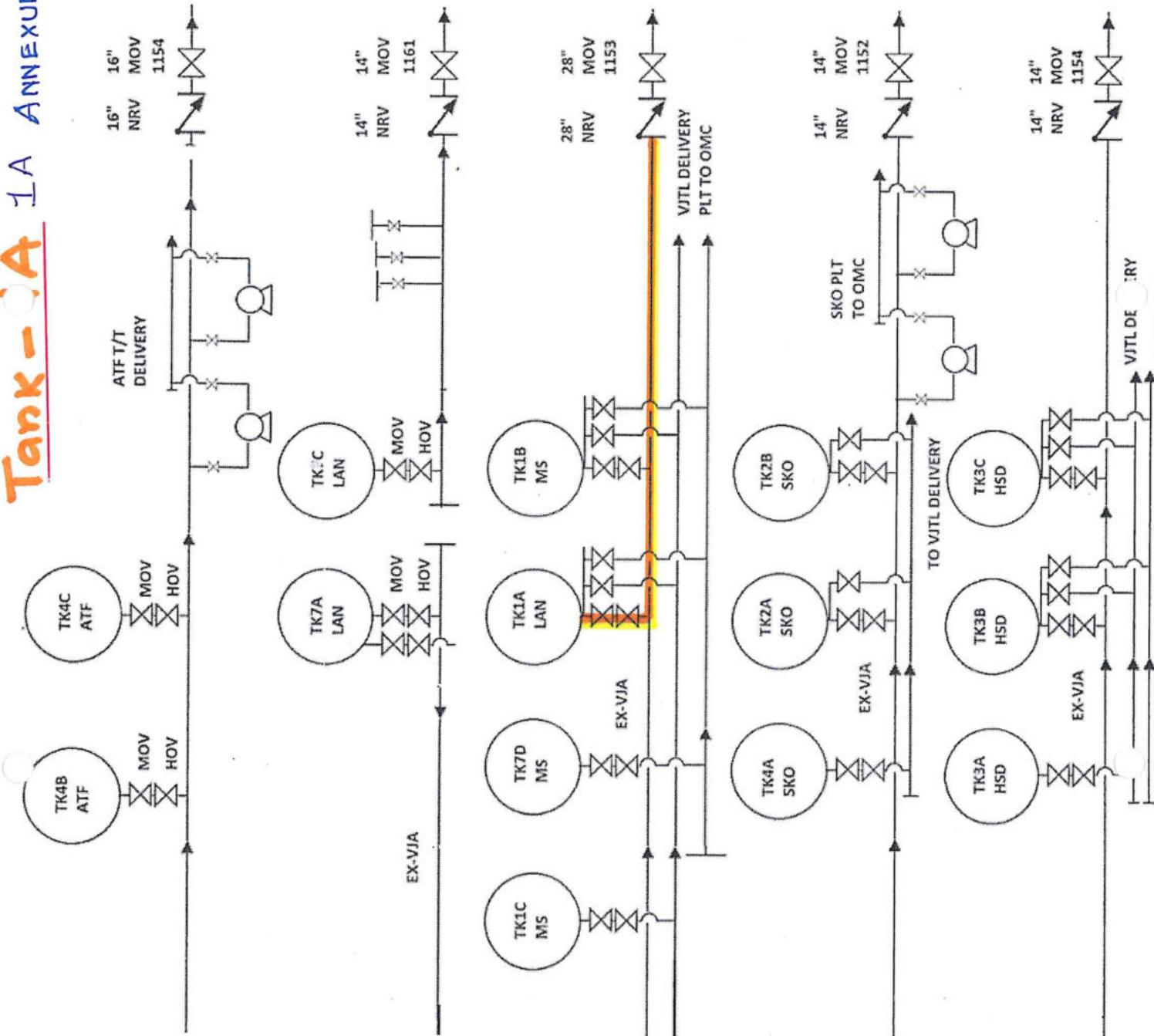
TANK - 7C ANNEXURE EX VJA-A



X-25

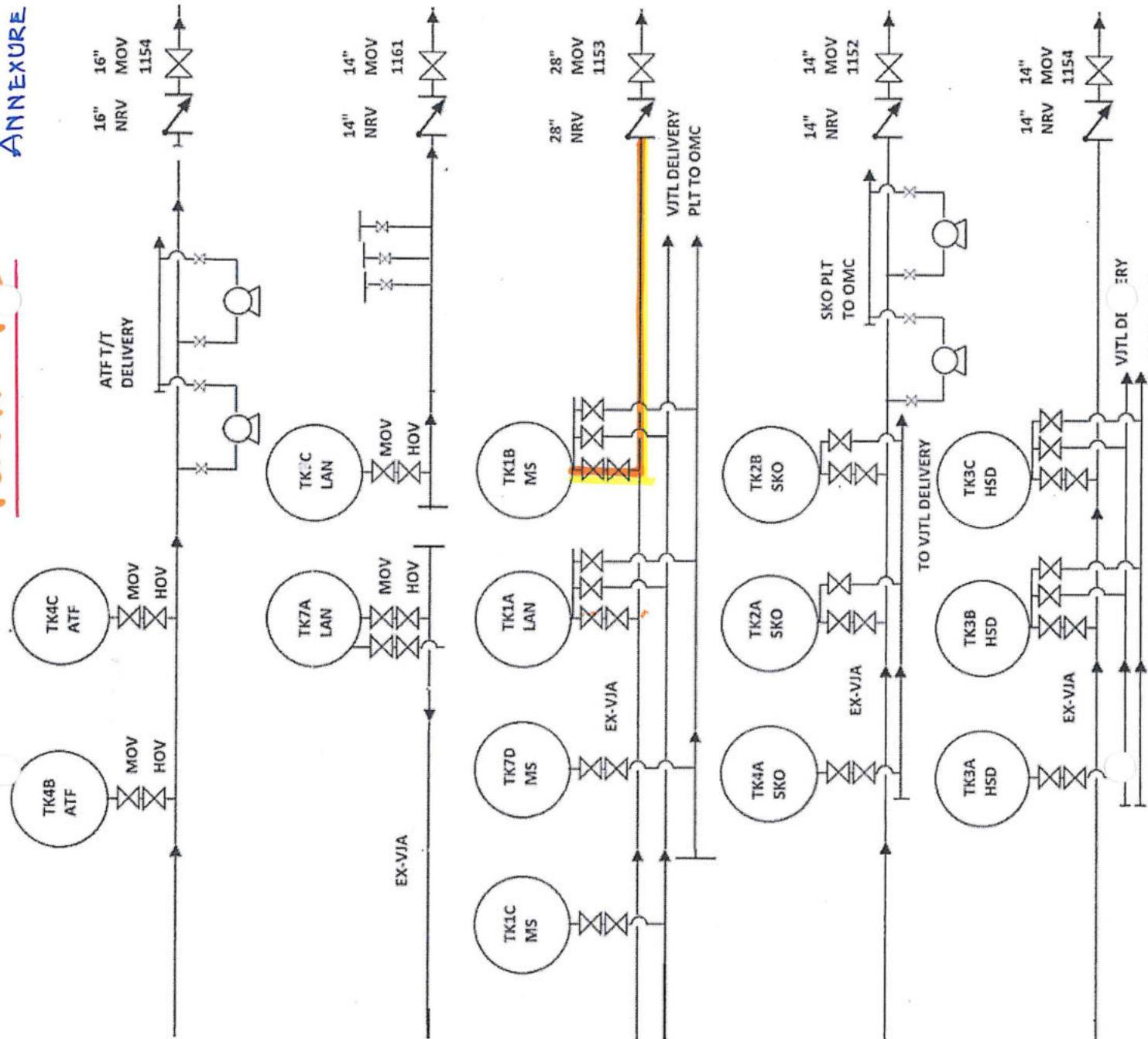
Tank - A

1A ANNEXURE EX VIA-A



Tank- 1B

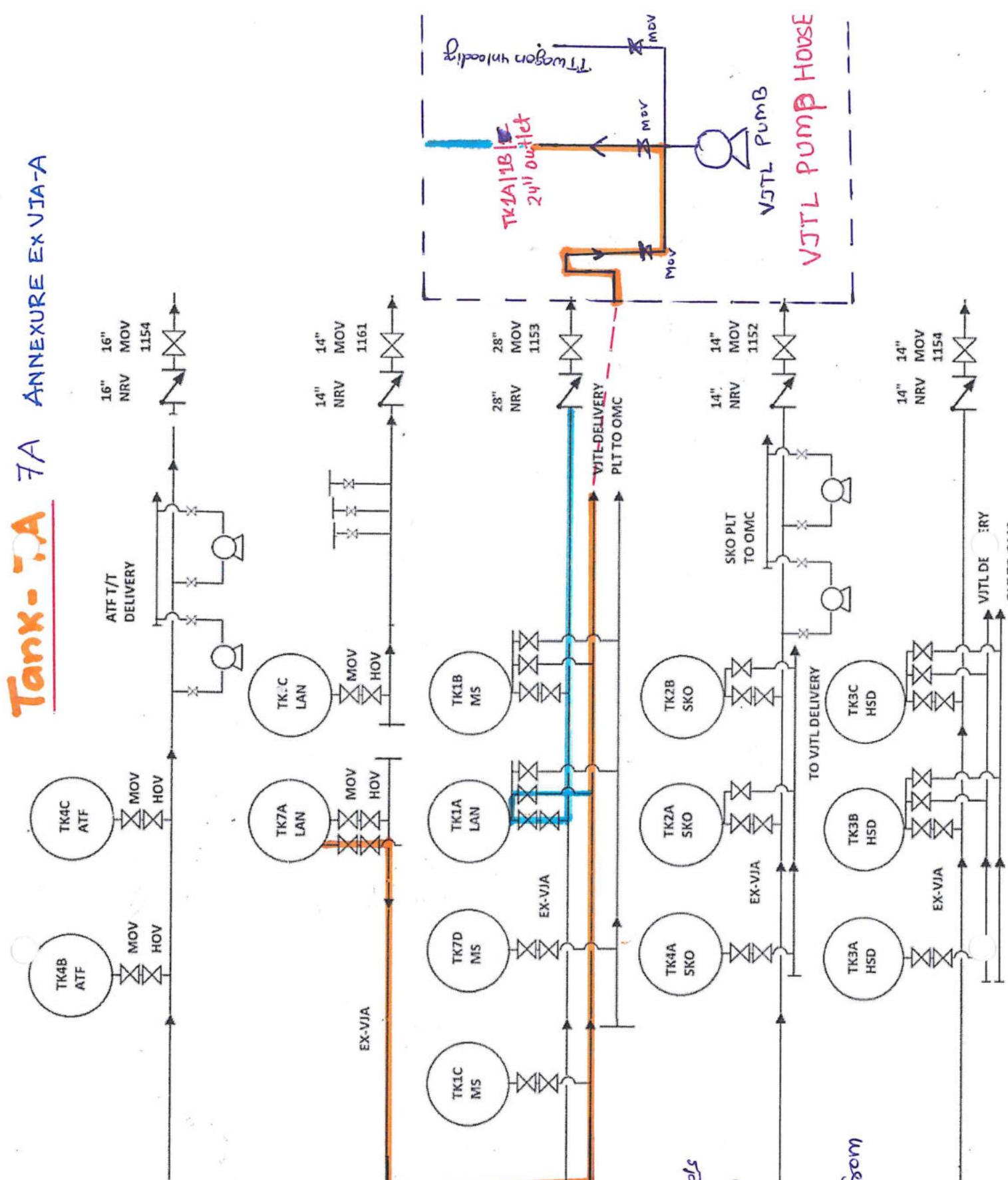
ANNEXURE EX-VIA-A



Note :-
Direct Line from
Tank 1B for Ex-
VJA .

Tank - A

ANNEXURE EX-VITA-A



Tank TA - No direct Ex-USA line from TK

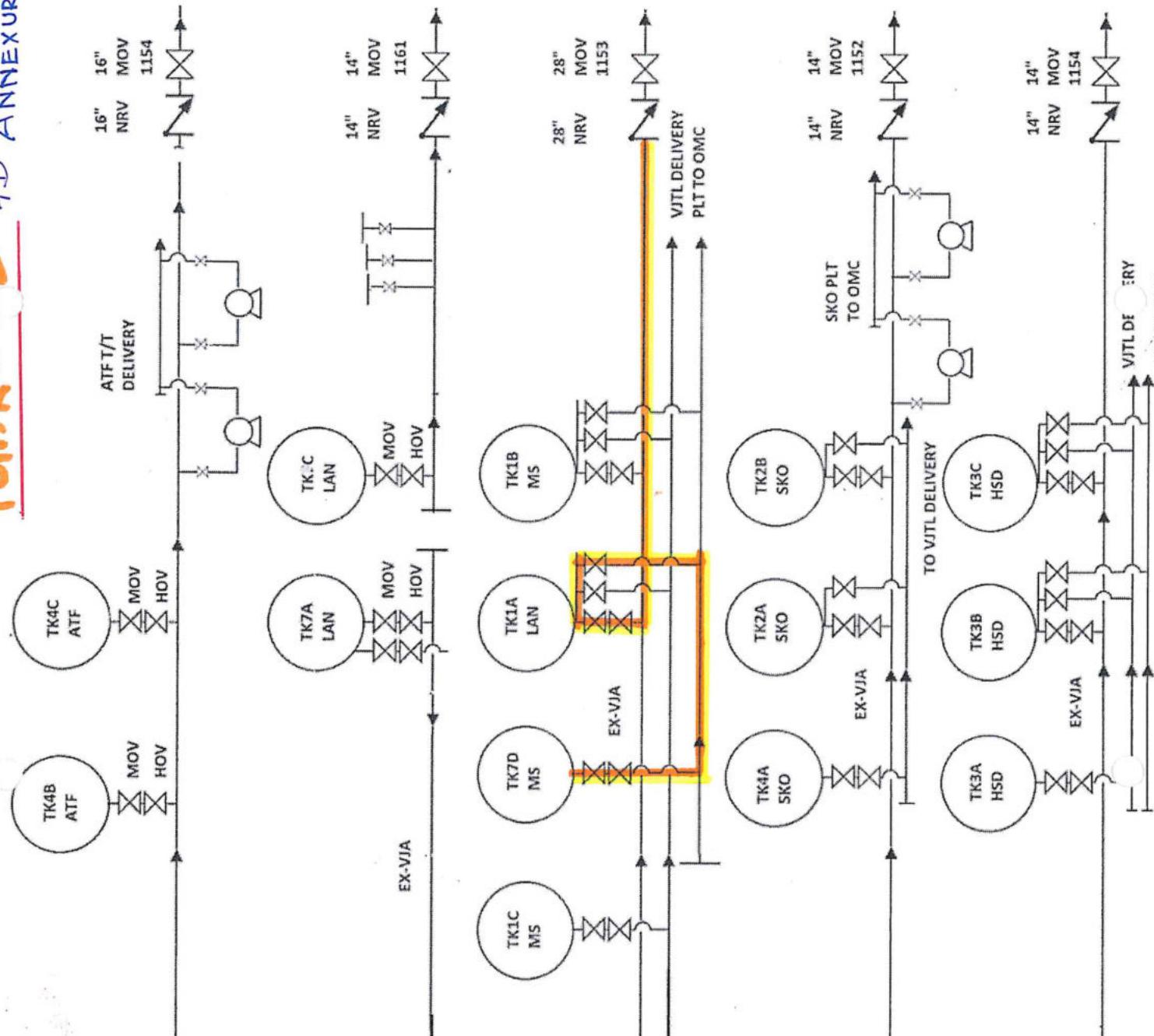
7A: Line to be routed via VJTL pump houses pump and via then tank —

outlet and then
28" Ex-VTA line from

tank 1A, 1B.

Tank - 7D

7D ANNEXURE EX-VJA-A

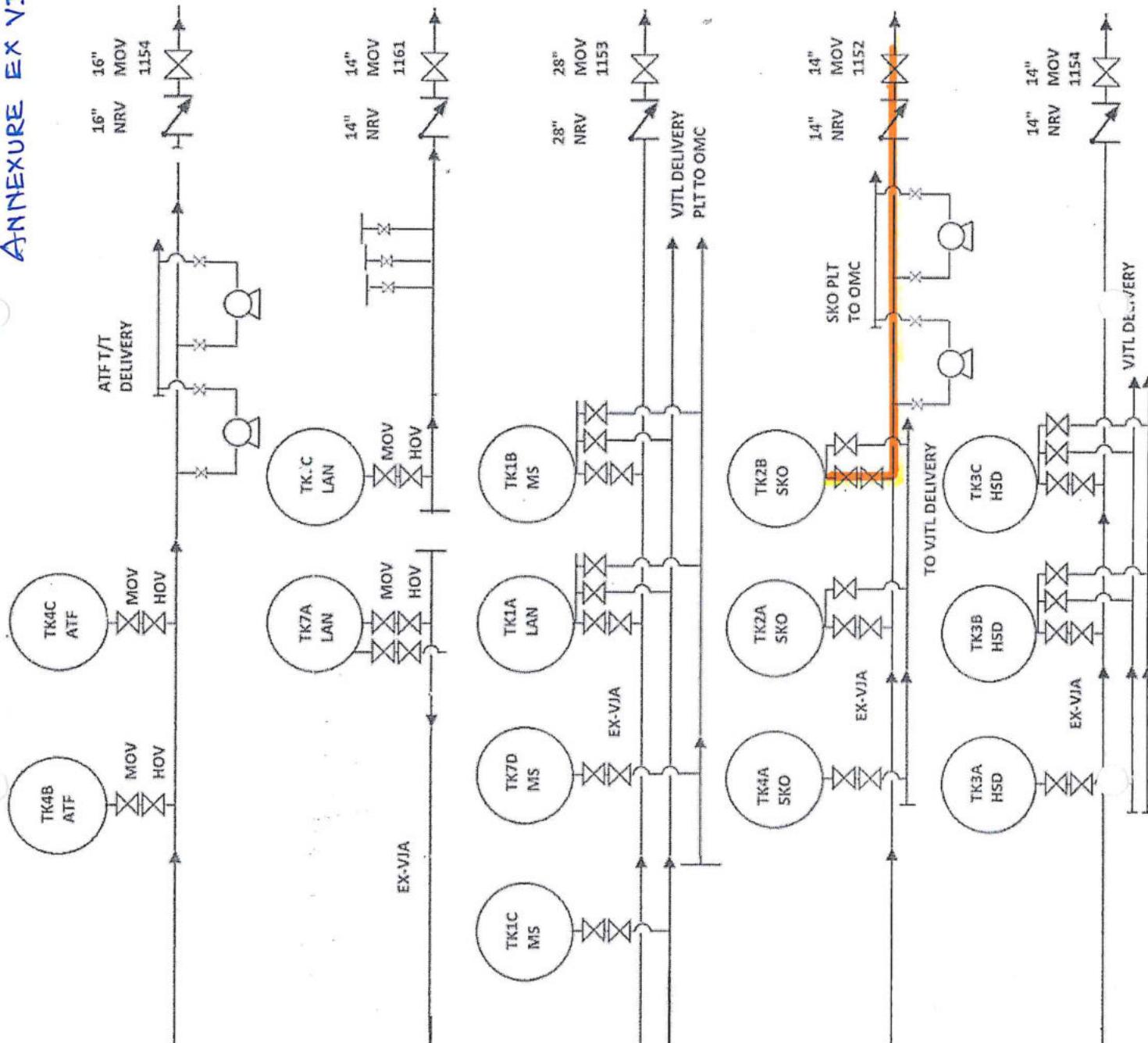


Note!:- No direct line for EX-VJA from tank 7D, to be routed thru tank 1A or 1B PLT line and then 1A or 1B EX-VJA 28" line.

TANK 2R

(HPC(k)) 2B
ANNEXURE EX VIA-A

ANNEXURE EX VIA-A



Annexure-EX VJA B

TANK TO BE LINED UP	PRODUCT NAME	VALVES NEAR PUMPING TANK		OTHER TANK VALVES		OTHER ENROUTE VALVES	EX-VBS MANIFOLD VALVE
		OPEN	CLOSE	OPEN	CLOSE		
TK:1A	E4MS	ROSOV AND EX-VBS DBBV	TT and OMC DBBV	NA	1B-ROSOV, EX-VBS DBBV	NA	Nil
TK:1B	E4MS	ROSOV AND EX-VBS DBBV	TT and OMC DBBV	NA	1A-ROSOV, EX-VBS DBBV	NA	MOV 1153
TK:1C	E4MS	ROSOV AND TT DBBV	NA	TK:1A-EX-VBS DBBV, TT DBBV	OMC DBBV	AT VJTL TT Pump house: HOV: NO: 69,70,71,72,73,78,79,80,81,149,86,87,88	MOV 1153
TK:7D	E4MS	ROSOV AND OMC DBBV	NA	TK:1A-EX-VBS DBBV, TT DBBV	TK: 7A ROsov, TT DBBV	NA	AT VJTL OMC Pump house: MS pumps Inlet, Outlet and Bypass Valves
TK:7A	E4MS	ROSOV AND TT DBBV	NA	TK:1A-EX-VBS DBBV, OMC DBBV	TK: 1A-ROSOV, OMC DBBV.	NA	MOV 1153
TK:2B	HPCK	ROSOV AND OMC DBBV	TT DBBV	TK:1A-EX-VBS DBBV, TT DBBV	TK: 1B-ROSOV, EX-VBS DBBV, TT DBBV, OMC DBBV.	AT VJTL TT Pump house: HOV: NO: 71 and 72	AT VJTL TT Pump house: HOV: NO: 63,64,65,66,67,68,69,70,73,74,75,76,77,78,80,81,149,79,82,83,84,85,86,88,87
TK:3A	E4HSD	ROSOV AND OMC DBBV	TT DBBV	TK:1C-ROSOV, TT DBBV	TK: 1A-ROSOV, OMC DBBV.	AT VJTL OMC Pump house: MS pumps Inlet, Outlet and Bypass Valves	MOV 1153
TK:3B	E4HSD	ROSOV AND EX-VBS DBBV	OMC DBBV, TT DBBV	NA	TK:2A-ROSOV, TT DBBV and OMC DBBV	NA	MOV 1152
TK:3C	E4HSD	ROSOV AND EX-VBS DBBV	OMC DBBV, TT DBBV	NA	TK:3B-ROSOV, TT DBBV, EX-VBS TK:3C ROsov, TT DBBV, EX-VBS route HOV: NO: 177.1	Enroute HOV: NO: 178,302	MOV 1151
TK:7C	E4HSD	ROSOV AND OMC DBBV	NA	TK:3A-ROSOV, TT DBBV, OMC DBBV	TK:3A-ROSOV, TT DBBV, OMC DBBV	NA	Enroute HOV: NO: 177,179
		ROSOV AND Outlet MOV	NA	TK:3B-ROSOV, TT DBBV, EX-VBS DBBV, OMC DBBV	TK:3B-ROSOV, TT DBBV, EX-VBS DBBV, OMC DBBV	NA	HOV: NO: 43,50,57 (Near VJTL Pump house)
						NA	MOV 1161

Interlocks created for EX-VIJAYAWADA pumping

S No.	Interlock	Actuated by	Action	Remarks
1		Open status from MOV 1201, MOV 1159, MOV 1522, MOV 1524 and one manifold Valve. Close Status from MOV 1202.	"LINE-UP READY FOR EX-VIJAYWDA PUMPING" will appeared on PLC mimic.	This interlock will not start booster pumps for EX-Vijaywda pumping if LINE-UP NOT READY FOR EX-VIJAYWDA PUMPING.
2		Start Command for Booster pumps 7A/7B	Bring suction MOV's to open position and bring discharge MOV's in closed position.	This interlock will check open status of suction MOV and close status of discharge MOV.
3		Booster pump discharge MOV open command. Discharge and suction MOV close command.	Once Booster pump start discharge MOV will open. Booster pump trip suction and discharge MOVs will close.	This interlock will not allow passage of product if booster pump trips.
4		Main line pump trips.	Booster pump trip immediately	This interlock will not allow running of booster pumps without mainline pumps.
5		Terminal ESD activate.	Booster pumps will trip immediately.	Once terminal ESD activate all tank outlet ROSOVs will close immediately (2minutes Reject/Accept time is only for PLT operations and Tank inlet ROSOVs)
6		Suction or discharge MOV's goes to travelling position from open position, Booster pump will trip.	Booster pumps will trip immediately.	During closer of suction and discharge MOV booster pumps will trip.
7		Open Command for any one of the manifold valves (MOV 1151,1152,1154,1161)	Open desired product manifold valve and close all other opened manifold valves.	This interlock will not allow any two valves to be opened at one time.
8		Open status of any two manifold valves.	Trip command will be sent to Booster pumps.	This interlock will not allow pumping two product