

HINDUSTAN PETROLEUM CORPORATION LIMITED
VISAKHA -VIJAYAWADA-SECUNDERABAD PIPELINE

VDS OPERATIONS MANUAL



INTEGRATED MANAGEMENT SYSTEMS
(ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007)



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

**ISSUE NO: 2
REVISION NO.: 0
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SHEET: 1 OF 1**

INTEGRATED MANAGEMENT PROCEDURES

DOCUMENT NO.: IMP/OVZ

TITLE

INDEX

S.No	Description
1	List of documents (IMS Procedures/IMS Instructions)
2	Amendment record Sheet
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6	Annexure I – SOPs and Dos & Don'ts

HINDUSTAN PETROLEUM CORPORATION LIMITED
VISAKHA-VIJAYAWADA-SECUNDERABAD PIPE LINE

LIST OF DOCUMENTS

(IMS Procedures & IMS Instructions)

DEPARTMENT/SECTION: OPERATIONS - VIZAG

SI No	IMP/IMI Title	IMP / IMI No.	Rev. No./ Amendment No.	Effective Date
1	VIZAG CONTROL ROOM ACTIVITIES	IMP/OVZ/01	01	17/11/2021
2	AUTHENTICATION OF TANK GAUGE CUM CHECKLIST FROM ATP	IMP/OVZ/02	00	01/01/2018
3	PRODUCT SAMPLING AND LABORATORY TEST REPORTS.	IMP/OVZ/03	00	01/01/2018
4	MONITORING STOCK LOSS/GAIN	IMP/OVZ/04 PAGE 1	00	01/01/2018
5	CHECKS BEFORE OPERATION	IMI/OVZ/01	01	13/04/2019
6	LINING UP OF TANKS AT ATP & VWOT TANKS	IMI/OVZ/02	02	15/07/2019
7	LINING-UP OF VIZAG STATION	IMI/OVZ/03	00	01/01/2018
8	OPERATION OF VIZAG STATION UNDER EMERGENCY CONDITIONS	IMI/OVZ/04	00	01/01/2018
9	SYSTEM FAILURES(PUMP TRIPPING)	IMI/OVZ/05	00	01/01/2018
10	SUMP TANK OPERATION	IMI/OVZ/06	00	01/01/2018
11	PIG LAUNCHING	IMI/OVZ/07	00	01/01/2018
12	TO ISSUE WORK PERMITS TO MAINTENANCE OFFICER FOR CARRYING OUT M&R JOBS	IMI/OVZ/08	00	01/01/2018
13	START-UP OF VIZAG STATION	IMI/OVZ/09	00	01/01/2018
14	SHUT DOWN OF VIZAG STATION	IMI/OVZ/10	00	01/01/2018
15	INTERFACE TRACKING	IMI/OVZ/11	00	01/01/2018
16	DRA Dosing procedure	IMI/OVZ/12	00	01/01/2018
17	Series Pumping Procedure	IMI/OVZ/13	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
6	DEGASSING OF CORROSION INHIBITOR DRUMS	IMI/OPN/03	00	01/01/2018
7	PUMPING /RECEIPT OF ATF	IMI/OPN/04	00	01/01/2018

 Signature of Department Head



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AMENDMENT RECORD SHEET

IMP/IMI/IMF No	Amendment/ Revision No	Effective Date	Brief Description of Changes
IMI/OVZ/02	Rev:01	10.05.18	Addition of VWOT procedures for lining-up of tanks under section 4.7
IMF/OPN/07	Rev:01	01.07.18	The existing name of the format “PLC BY PASS REGISTER” has been changed to “PLC & SAFETY BYPASS REGISTER”
IMI/OVZ/01	Rev:01	13.04.19	Surprise check findings to be mentioned in Shift log book instead of surprise check register
IMI/OVZ/02	Rev:02	15.07.19	Addition of line up procedure for MS Pumping through VWOT tanks under section 4.8
IMF/OVZ/06	NA	03.09.19	Format “Batch Product Details” has been removed which is repetitive as these details are available in IMF/OVZ/08 (Tank gauge cum checklist).
IMF/OVZ/13	Rev:01	15.11.19	Addition of column in the Quality Control Register to capture color visual of the sample
IMF/OPN/01	Rev:01	21.03.20	Addition of newly commissioned booster stations under VREEP in existing IMF/OPN/01 (shift log book) to record the shift operation details of IPS1, IPS2 and IPS3 stations and to and fro communications across VVSPL locations.
IMF/OVZ/03	Rev:01	10.04.20	Addition of instructions in existing IMF/OVZ/03 (Operations log book Register) to incorporate operational events of ‘IPS1, IPS2, IPS3 stations under “remarks” column and new pump at VDS (MP7)-‘pumping running hours’ & “product in equipment” details. Sump tank level of IPS1 recorded in existing format to be removed as it will be taken care in IPS1 operation logbook.
IMP/OVZ/01	Rev:01	17.11.2021	1. Capturing various standalone & group-wise pumping combinations at Vizag Despatch Station after commissioning of MP-07 installed under VREEP. 2. Emergency Shutdown Procedure (VVSPL).

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	INTEGRATED MANAGEMENT PROCEDURE	DOCUMENT NO: IMP/OVZ/01
TITLE	VIZAG CONTROL ROOM ACTIVITIES	

1.0 PURPOSE

To lay down the activities in operation of Vizag control room to ensure safe operations and to obtain the results of planned activities.

2.0 SCOPE

This is applicable to operations of VIZAG facilities on a continuous basis in coordination with the following departments.

VVSPL Maintenance

HQO-S&D / Product Co-Ordinator (Vizag Terminal)

VIZAG Refinery / ATP

Rajahmundry Booster Station/ Vijayawada Booster Station/Suryapet Booster Station/ Secunderabad Receiving Station

3.0 REFERENCES

IMS/MR/7

4.0 RESPONSIBILITY

4.1 MANAGER OPERATIONS

To coordinate with

4.1.1. (a) HQO-S & D / Product Co-Ordinator (Vizag Terminal) - For finalisation of pumping program

(b) ATP - For Lab Reports / Tank Requirement

(c) VR - Planner - For Product requirement.

4.1.2 To review the Control Room operations on a regular basis and to initiate & implement the corrective action as and when required.

4.1.3 Quality/Quantity of product delivered and handing over/taking over of tanks for receipt at receiving locations. (Secondary responsibility)



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4.2 SHIFT-IN-CHARGE

- 4.2.1 Implementation of the finalized pumping programme, involving coordination with, Rajahmundry Booster station, Vijayawada Booster station, Suryapet Booster Station, Secunderabad Receiving Station and ATP.
- 4.2.2 To ensure safe operation of Vizag control room facilities by closely monitoring / maintaining all 'Operating Parameters (Annexure I)'
- 4.2.3 To coordinate for the safe operation at Rajahmundry, Vijayawada, Suryapet, Secunderabad .
- 4.2.4 To coordinate with maintenance department for availability of the facilities.
- 4.2.5 To monitor the line walkers Report upto Chintaluru and bring to the attention of ROW Officer in case of any abnormality.
- 4.2.6 To monitor the report of security guards upto CP-7 and bring it to the notice of maintenance department for attending maintenance jobs, if any in C.P. stations.
- 4.2.7 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.
- 4.2.8 To acknowledge the HON prepared by the previous shift incharge and discuss briefly about the same.

4.3 SHIFT ENGINEERS

- 4.3.1 To assist the Shift in-charge in carrying out the activities as listed in 4.2.

5.0 PROCEDURE

- 5.1 To ensure safe operations the activities as detailed in the following integrated management instructions are carried out :

TITLE OF IMS INSTRUCTION	IMS INSTRUCTION No.
Checks before operation	IMI/OVZ/01
Lining up of tanks at ATP	IMI/OVZ/02
Lining-up of Vizag station	IMI/OVZ/03



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Operation of Vizag Station under emergency conditions	IMI/OVZ/04
System failures(pump Tripping)	IMI/OVZ/05
Sump tank operation	IMI/OVZ/06
Pig launching	IMI/OVZ/07
To issue cold/Hot work permits to maintenance officer for carrying out M&R jobs	IMI/OVZ/08
START UP OF Vizag station	IMI/OVZ/09
Shut down of Vizag station	IMI/OVZ/10
Interface Tracking	IMI/OVZ/11

5.2 The co-ordination with VVSPL Maintenance group involves the following:

5.2.1 Every hour the shift personnel (except during any emergency as deemed fit by shift-in-charge) take rounds of the station.

5.2.2 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
- Condition of Buildings



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VIZAG CONTROL ROOM ACTIVITIES

2. 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

3. Manifold Area

- Any leaks through Valves
- Condition of NRVs
- Status of Actuators & Valves
- Condition of Culvert

4. 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

5. Sample Room

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



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6. Scrapper Area

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

7. Field Piping Area

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

8. Tank Farm

- Traces of Oil in the dyke
- Any leakages from the tank
- Condition of Tank Body valves & hammer blinds
- All MOV of under operation tank should be in closed condition. All HOV status should locked and closed condition only.

9. In and Around C/R Building

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

10. 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



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VIZAG CONTROL ROOM ACTIVITIES

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.

5.2.3 In case of above mentioned abnormalities, if any corrective actions other than the maintenance activity are required, the same is initiated by the shift in-charge on advise by the concerned Manager. This advise can also be accepted telephonically with a corresponding note in the maintenance log book (IMF/OPN/02).

5.2.4 The impugned facility is isolated and the same is accepted back only on advise of the concerned Manager with the corresponding note on the maintenance log book. (IMF/OPN/02).

5.3 The Co-ordination with HQO-S&D / Product Coordinator (Vizag-terminal) involves the following:

5.3.1 To advise the tankwise product availability in ATP tanks.

5.3.2 To advise the stock/ullage/offtake of Rajahmundry/Vijayawada/ Suryapet/ Secunderabad through daily operating report.

5.3.3 To finalize the pumping programme in consultation with Product Coordinator (VIZAG Terminal) based on the stock ullage position as detailed in points 5.3.1 & 5.3.2.

5.4 The coordination with ATP involves the following activities:

5.4.1 To obtain the tank-wise product availability in ATP Tanks and update the DOR.

5.4.2 To obtain the information regarding future availability of product by way of refinery production, receipt from tanker and to log the same in the shift log book (IMF/OPN/01).

5.4.3 To obtain the test results of the product in the nominated tanks in the form of Finished Product Inspection Report 8hrs before the switchover

5.4.4 To ensure that water draining till Zero water cut is obtained, is done by ATP after giving min. 6-8 hrs of settling time after re-circulation/run-down.



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5.4.5 To arrange for the gauging of the tanks prior to lineup vide IMS Instruction IMI/OVZ/02 and record in IMF/OVZ/08.

5.4.6 All the lines of the tank designated for pumping to VVSPL, except the line to VVSPL manifold, shall be positively segregated. Likewise, the receipt lines to VVSPL manifold, of all other same product tanks shall be positively segregated, to permit operation by VR.

5.4.7 To take clearance and witness by ATP personal during lining up of the tank & record in the log book.

5.4.8 To inform ATP immediately after switch over to the nominated tank so that joint closing gauge of the previous tank can be taken accordingly and quantity can be calculated and noted in IMF/OVZ/08.

5.5 The coordination with Rajahmundry/ Vijayawada /Suryapet / Secunderabad Control Rooms involves the following activities:

5.5.1 To obtain the stock / ullage / offtake of the respective locations every day at the start of the 1st shift. (IMF/OPN/01) and prepare DOR based on the feedback from Receiving Locations.


5.5.2 To intimate the pumping programme alongwith linefill to Rajahmundry/Vijayawada/ Suryapet / Secunderabad control room.

5.5.3 To advise the receiving locations Rajahmundry/ Vijayawada /Suryapet / Secunderabad control room about the various operating parameters when the pumping is 'ON' and also to exchange the pumping figures on hourly basis. If there is any variation in the quantity pumped and quantity received the same is investigated and the variations are reconciled. To record relevant details in IMF/OVZ/03.

5.5.4 To coordinate with Rajahmundry/ Vijayawada /Suryapet for Line Pushing and startup of the booster Pumps as per requirement.

5.5.5 To advise the receiving locations about the nature of the product whether it is Indigenous or imported through Purchase order in JDE to enable them to handle the product for delivery to their customers.

5.5.6 To obtain the quantity received by the receiving locations and work out the stock loss / gain on the basis of quantity pumped at 15 Degree Celsius. Any abnormal variations are to be investigated.

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5.5.7 To obtain the interface quantity from the receiving location and monitor for the sample testing of the tanks and off - specifications / on-specifications status.

5.5.8 To get the ROW reports (IMF/ROW/01 & IMF/ROW/02). In case of any abnormality, report to Manager - Operations and Manager - Maintenance.

6.0 PUMP COMBINATIONS AT VIZAG DESPATCH STATION

6.1 PURPOSE

To provide instructions for various pumping operations at Vizag Despatch Station (VDS)

6.2 TITLE

IM Procedure: IMP/OVZ/01

6.3 RESPONSIBILITY: Shift In-charge

6.4 INSTRUCTIONS:

6.4.1 Line-up respective product tank upto VVSPL manifold by opening tank gate valve & plug valve in coordination with VR/ATP.

6.4.2 Inform IPS1, Rajahmundry, IPS2, Vijayawada, Suryapet, IPS3 and Secunderabad before starting pumping operation.

6.4.3 Open product manifold valve.

6.4.4 Open suction valves of booster and mainline pumps and ensure pumps are primed.

6.4.5 Ensure following START PERMISSIVES in HEALTHY status for starting booster pump/s (BP-1/2/3):

- Master ESD
- Station Alignment
- Suction Opened
- Discharge Closed
- Mechanical Seal Healthy
- Hot Start Permit
- Field Stop Active

GROUP WISE DESCRIPTION OF PUMP OPERATION:

1. GROUP-01 i.e. MP-1, MP-2 & MP-3.
2. GROUP-02 i.e. MP-4, MP-5 & MP-6.
3. GROUP-03 i.e. MP-7

START PERMISSIVES in HEALTHY status for GROUP-1 & GROUP-2 PUMPS:



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- Master ESD
- Station Alignment
- Suction Opened
- Discharge Closed
- Mechanical Seal Healthy
- Hot Start Permit
- Suction Healthy
- Discharge Healthy
- Temperature High
- PSL-1101 Healthy
- Atleast one Booster ON
- Field Stop Active
- VFD Mode ON
- VFD Ready.
- MOV-1138 & 1139 Opened (Only for standalone Group-2)

START PERMISSIVES in HEALTHY status for GROUP-3 PUMP:

- Ready to Start (From UCP)
- Master ESD
- Station Alignment
- Suction Opened
- Discharge Closed
- Mechanical Seal Healthy
- Hot Start Permit
- Suction Healthy
- Discharge Healthy
- Temperature High
- PSL-1101 Healthy
- Atleast one Booster ON
- MPV-1138 opened
- Field Stop Active
- Pump LCP ESD
- Group1/Group2 running.
- Seal Fan Running (Either A,B OR C,D)
- Cooler Fan Running (Either A OR B)
- Auxiliary Lube Oil Pump Running.



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VIZAG CONTROL ROOM ACTIVITIES

PUMP WITH VFD CONNECTION:

1. MVD-01 (MP-2, MP-3 & MP-6)
2. MVD-02 (MP-1, MP-4 & MP-5)
3. MVD-03 (MP-7).

Note: Only one pump under each MVD will be in DRIVE mode at any given time. While starting second pump under same MVD in DRIVE mode, existing (first) pump will automatically get converted to DOL status OR user can convert to DOL by checking the “MP- (*Pump Name*) to DOL” checkbox in BYPASS list in PLC.

6.5 GROUP-1 STANDALONE COMBINATION:

- I. Ensure that the station is aligned in PLC i.e., manifold, filter water separator (for ATF only), one cartridge/basket filter, one flow meter, PCV, MOV – 1117 & 1118 are open before starting of pumping. Ensure MOV-1138 & 1139 are in CLOSED condition.
- II. Check the readiness of respective breakers/feeders/drives in VFD mode.
- III. Check the toggle switch setting in C/R room panel – whether in VFD/DOL mode as required.
- IV. Check isolation of APEPDCL supply from any other source of power supply.
- V. Select GROUP-1 in BYPASS list screen in PLC.
- VI. Set VFD toggle switch in PARALLEL/FLOW control mode in VFD panel (for 2 pump operation) & in SERIES/PRESSURE control mode (for 3 pump operation)
- VII. Set Discharge line pressure at 45 kg/cm² OR as per flow requirement.
- VIII. Ensure all permissive in healthy status as mandated above.
- IX. Start MP-1 in VFD or DOL mode after confirming VFD/DOL status from electrician.
- X. Set PCV initially @ 30 % in case pump is started in DOL mode for better control & to avoid sudden/abrupt rise in RPM. Gradual increase of PCV to be ensured. In case of VFD start, increase RPM in steps.
- XI. Similarly, start MP-2 and/or MP-3 in PARALLEL as per required/planned flow rates & stabilize operation.

6.6 GROUP-2 STANDALONE COMBINATION:

- I. Ensure that the station is aligned in PLC i.e., manifold, filter water separator (for ATF only), one cartridge/basket filter, one flow meter, PCV, MOV – 1117 & 1118 are open before starting of pumping. Ensure MOV-1138 & 1139 are in OPEN condition.
- II. Check the readiness of respective breakers/feeders/drives in VFD mode.
- III. Check the toggle switch setting in C/R room panel – whether in VFD/DOL mode as required.
- IV. Check isolation of APEPDCL supply from any other source of power supply.
- V. Select GROUP-2 in BYPASS list screen in PLC.
- VI. Set VFD toggle switch in PARALLEL/FLOW CONTROL mode in VFD panel.
- VII. Set Discharge line pressure at 50 kg/cm² OR as per flow requirement.



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- VIII. Ensure all permissive in healthy status as mandated above.
- IX. Start MP-4 in VFD or DOL mode after confirming VFD/DOL status from electrician.
- X. Set PCV @ 30 % in case pump is started in DOL mode for better control & to avoid sudden/abrupt rise in RPM. Gradual increase of PCV to be ensured. In case of VFD start, increase RPM in steps.
- XI. Similarly, start MP-5/6 in PARALLEL as per required/planned flow rates. This is a 2W + 1S scheme & stabilize operation.

6.7 GROUP-3 STANDALONE COMBINATION:

- I. Ensure that the station is aligned in PLC i.e., manifold, filter water separator (for ATF only), one cartridge/basket filter, one flow meter, PCV (main PCV & MP7 PCV), MOV – 1117 & 1118 are open before starting of pumping. Ensure MOV-1138 in OPEN & 1139 in CLOSED condition.
- II. Check the readiness of respective breakers/feeders/drives in VFD mode.
- III. Check isolation of APEPDCL supply from any other source of power supply.
- IV. Select GROUP-3 in BYPASS list screen in PLC.
- V. Set MP-7 VFD @ 40 % before starting.
- VI. Ensure all permissive in healthy status as mandated above (GROUP-3)
- VII. Start MP-7 in VFD or DOL mode after confirming VFD/DOL status from electrician.
- VIII. Set PCV @ 30 % in case pump is started in DOL mode for better control & to avoid sudden/abrupt rise in RPM. Gradual increase of PCV to be ensured. In case of VFD start, increase RPM in steps through % & stabilize operation.

6.8 GROUP-1 & GROUP-2 IN COMBINATION:

- I. Ensure that the station is aligned in PLC i.e., manifold, filter water separator (for ATF only), one cartridge/basket filter, one flow meter, PCV, MOV – 1117 & 1118 are open before starting of pumping. Ensure MOV-1138 & 1139 are in CLOSED condition.
- II. Check the readiness of respective breakers/feeders/drives in VFD mode.
- III. Check the toggle switch setting in C/R room panel – whether in VFD/DOL mode as required.
- IV. Check isolation of APEPDCL supply from any other source of power supply.
- V. Select (2+2) OR (3+2) in BYPASS list screen in PLC. *The first digit indicates no. of pumps in GROUP-1 & second digit indicates no. of pumps in GROUP-2.*
- VI. Set VFD toggle switch in SERIES/PRESSURE CONTROL mode in VFD panel.
- VII. Set Discharge line pressure initially at 45 kg/cm² OR as per flow requirement.
- VIII. Ensure all permissive in healthy status as mandated above.
- IX. **(2+2):** Start MP-1 in VFD or DOL mode after confirming VFD/DOL status from electrician. Start MP-2 OR MP-3 & once maximum RPM of 2976 is attained, convert both the pumps in DOL mode. Similarly, start MP-1, MP-2 & MP-3 for **(3+2)** combination & once maximum RPM of 2976 is attained, convert all the 3 pumps in DOL mode.



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- X. Then, put "SPEED REFERENCE MAX IN SERIES (RPM)" in BYPASS list in PLC @ 1600 RPM & start MP-4/5 & MP-6 one by one in VFD mode. Gradually increase the discharge/line pressure (max 69.4 KG/CM²) & GROUP-2 pumps RPM as per desired flow rate & stabilize operation.

6.9 GROUP-1, GROUP-2 & GROUP-3 IN COMBINATION:

- I. Ensure that the station is aligned in PLC i.e., manifold, filter water separator (for ATF only), one cartridge/basket filter, one flow meter, PCV, MOV – 1117 & 1118 are open before starting of pumping. Ensure MOV-1138 is OPEN & 1139 is in CLOSED condition.
- II. Check the readiness of respective breakers/feeders/drives in VFD mode.
- III. Check the toggle switch setting in C/R room panel – whether in VFD/DOL mode as required.
- IV. Check isolation of APEPDCL supply from any other source of power supply.
- V. Line up MP-7 dedicated breaker/VFD
- VI. Select (3+2) + MP-7 in BYPASS list screen in PLC.
- VII. Set VFD toggle switch in SERIES/PRESSURE CONTROL mode in VFD panel.
- VIII. Ensure all permissive of MP-7 in healthy status as mandated above.
- IX. Start any one pump out of MP-1/2/3 in VFD or DOL mode after confirming VFD/DOL status from electrician & once maximum RPM of 2976 is attained, convert the pump into DOL mode.
- X. Then, put "SPEED REFERENCE MAX IN SERIES (RPM)" in BYPASS list in PLC @ 1600 RPM & start any one pump out of MP-4/5/6 in VFD.
- XI. Then, start MP-7 with initial VFD @ 40 % & gradually increase to the desired pressure/flow rate. RPM of GROUP-2 pump, which was initially set at 1600 RPM to be increased simultaneously keeping a check on MP-7 suction & line pressure. Stabilize operation accordingly.

Note: The usual configuration of VVSPL booster pumps is (2+1). However, C/R officer has the option of operating all 3 no. of booster pumps simultaneously for improved suction to mainline pumps during high flow operation.

6.10 VWOT OPERATION

Visakh White Oil Terminal (VWOT) is an additional source of product supply for VVSPL apart from VR. The transfers are executed between VWOT & VVSPL during product shortfall at VR & to create ullage in VWOT tanks to receive coastal tankers.

The mainline pump groupings will remain identical as mentioned in point no. 5.0 to 9.0 above. Depending upon pumping plan & flow rates envisaged, appropriate group/pump combination can be planned.

6.10.1 HSD Pumping from VWOT to VVSPL

Following steps to be executed for HSD pumping from VWOT:

- I. Nominate the tank in coordination with Product Coordinator and finalize quantity to be transferred to VVSPL.



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- II. Nominated Tank to be isolated from other operations.
- III. Once gauging is done, line up 16" butterfly valves in VWOT-VVSPL line & isolate ATP-VWOT line with prior intimation to ATP C/R & VWOT C/R.
- IV. Confirm tank line up at VWOT end & take VVSPL S/D (from VR)
- V. Close manifold valve of corresponding VR tank.
- VI. Open VWOT 16" plug valve in our manifold header.
- VII. Once line up is through till suction of VVSPL mainline pumps, ask VWOT C/R to start 1 booster pump. (VVSPL boosters are not is use during VWOT HSD pumping as VWOT hook up is at booster discharge side)
- VIII. On getting needed suction at VVSPL mainline pumps, start required pump.
- IX. Ask VWOT to start second and third pump, if required & accordingly plan for VVSPL mainline pumps depending on flow requirement. Stabilize operation accordingly.

6.10.2 MS Pumping from VWOT to VVSPL (With VVSPL Booster Pumps)

Following steps to be executed for MS pumping from VWOT:

- I. Nominate the tank in coordination with Product Coordinator and finalize quantity to be transferred to VVSPL.
- II. Nominated Tank to be isolated from other operations.
- III. Confirm tank line up at VWOT end & take VVSPL S/D (from VR)
- IV. Open 2 no. of butterfly valves & 1 no. of plug valve in 12" VWOT-VVSPL line.
- V. Once line up is through till suction of VVSPL booster pumps, ask VWOT C/R to start 1 booster pump.
- VI. On getting needed suction at VVSPL booster pumps, start 1 no. of booster pump & 1 no. of mainline pump.
- VII. Ask VWOT to start second pump if required & accordingly plan for VVSPL mainline pumps depending on flow requirement. Stabilize operation accordingly.

6.10.3 MS Pumping from VWOT to VVSPL (Without VVSPL Booster Pumps)

- I. Nominate the tank in coordination with Product Coordinator and finalize quantity to be transferred to VVSPL.
- II. Nominated Tank to be isolated from other operations.
- III. Confirm tank line up at VWOT end & take VVSPL S/D (from VR)
- IV. Open 1 no. of butterfly valve (VWOT side) & 2 no. of plug valves in 12" VWOT-VVSPL line.
- V. Once line up is through till suction of VVSPL mainline pumps, ask VWOT C/R to start 1 booster pump. (VVSPL boosters are not in use during this scheme as VWOT hook up is at booster discharge side)
- VI. On getting needed suction at VVSPL mainline pumps, start required pump.



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- VII. Ask VWOT to start second and third pump, if required & accordingly plan for VVSPL mainline pumps depending on flow requirement. Stabilize operation accordingly.

Note:

- VWOT has the option of operating 2 no. of wagon pumps for MS PLT, during night time. VVSPL SIC may review the flow requirement & ask VWOT to operate wagon pumps as needed to get better suction & flow rates.
- Scheme 10.3 as mentioned above (without VVSPL booster pumps) is NOT in use due to reduced suction at mainline pumps.
- VVSPL & VWOT mutually exchange hourly Mass Flow Meter readings of both ends & compare. In case of any variation in hourly pumping/receipt flow rates, PLT to be stopped immediately & reasons to be investigated.

6.11 Relevant Record:

- IMF/OVZ/03 (Operations Log Book – VDS)
- IMF/OPN/01 (Shift Log Book)

Following pressure set points to be adhered to during planning of pump operation.

S.No	Parameters	Description	Set Points	Action
1	Pump Low Suction Pressure	Booster Pumps	-0.102 Kg/Cm2 (MS)	Trip
			-0.390 Kg/Cm2 (SKO)	Trip
			-0.400 Kg/Cm2 (HSD)	Trip
		MP-1,2,3,4,5,6	1.5 Kg/Cm2	Alarm
		MP-7	1.7 Kg/cm2	Alarm
2	Pump High Discharge Pressure	Main Pump	1.2 Kg/Cm2	Trip
		Booster Pumps	9 Kg/Cm2	Trip
		MP-1,2,3	63 Kg/cm2	Alarm
		MP-4,5,6	69.5 Kg/Cm2	Alarm
		Main Pump	70 Kg/Cm2	Trip
		MP-7	75 Kg/cm2	Alarm
		MP-7	85 Kg/Cm2	Trip



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RELEVANT RECORDS

Sl. No	Format Title	Format No.	Location	Responsibility
1	Shift log book	IMF/OPN/01	Control Room	Shift In-charge
2	Maintenance log book	IMF/OPN/02	Control Room	Shift In-charge
3	Cold work permit	IMF/OPN/03	Control Room	Shift In-charge
4	Hot work permit	IMF/OPN/04	Control Room	Shift In-charge
5	Certificate for Thermometer calibration	IMF/OPN/05	Control Room	Shift In-charge
6	Certificate for Hydrometer calibration	IMF/OPN/06	Control Room	Shift In-charge
7	PLC & Safety by-pass register	IMF/OPN/07	Control Room	Shift In-charge
8	Pigging report	IMF/OPN/08	Control Room	Shift In-charge
9	Working at heights permit	IMF/OPN/09	Control Room	Shift In-charge
10	Electrical isolation & energisation permit	IMF/OPN/10	Control Room	Shift In-charge
11	Checklist – Pumping of ATF	IMF/OPN/11	Control Room	Shift In-charge
12	Operation log book	IMF/OVZ/03	Control Room	Shift In-charge
13	Product Availability /Pumping programme and Daily Operating Report(DOR)	IMF/OVZ/05	Control Room	Shift In-charge
14	Tank gauge cum check list	IMF/OVZ/08	Control Room	Shift In-charge
15	Quality Control Register	IMF/OVZ/13	Control Room	Shift In-charge
16	Product sample label - VDS	IMF/OVZ/14	Control Room	Shift In-charge
17	Interface tracking log sheet	IMF/OVZ/15	Control Room	Shift In-charge
18	Daily line walkers report	IMF/ROW/01	Control Room	Shift In-charge
19	Report from security guards	IMF/ROW/02	Control Room	Shift In-charge

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VIZAG CONTROL ROOM OPERATION KEY PARAMETERS - ANNEXURE -1

PARAMETERS	VALUES	STATUS
Low Suction Pressure Booster Pump	-0.1 Kg/Sq.cm	Tripping
High Discharge Pressure Booster Pump	9.0 Kg/Sq.cm	Tripping
Low-Low Pressure Suction Header	1.2 Kg/Sq.cm	Tripping
High Pressure Suction Header	8.8 Kg/Sq.cm	Alarm
Low Suction Pressure Mainline Pump	1.5 Kg/Sq.cm	Alarm
High Pressure Discharge Header	70.0 Kg/Sq.cm	Alarm
Low Pressure Discharge Line	43.0 Kg/Sq.cm	Alarm
High Pressure Discharge Line	70.0 Kg/Sq.cm	Alarm
High-High Pressure Discharge Line	83.0 Kg/Sq.cm	Tripping
Minimum Flow Booster Pump	210Cu. M/Hr	Alarm/To be stopped
Minimum Flow Mainline Pump	100 Cu m/Hr	Alarm/ To be stopped
Maximum Current Booster Pump	192 Amps	Alarm/ To be stopped
Maximum Current Mainline Pump	72 A (MP 1/2/3)	Alarm/ To be stopped
	82A (MP 4/5/6)	Alarm/ To be stopped
Maximum Drive End Temperature(Motor)	85 deg c	Tripping
Maximum Non-Drive End Temperature (Motor)	85 deg c	Tripping
Maximum Vibration Mainline Pump		
Horizontal (PEAK)	9.0 mm/sec	Alarm/ To be stopped
Vertical (PEAK)	9.0 mm/sec	Alarm/ To be stopped
Axial (PEAK)	9.0 mm/sec	Alarm/ To be stopped
Maximum Vibration Booster Pump		
Horizontal (PEAK)	3.0 mm/sec	Alarm/ To be stopped
Vertical (PEAK)	3.0 mm/sec	Alarm/ To be stopped
Axial (PEAK)	3.0 mm/sec	Alarm/ To be stopped
Low Level Sump Tank	35.0 cm	Tripping
High Level Sump Tank	120.0 cm	Alarm

EMERGENCY SHUTDOWN PROCEDURE OF VVSPL (Thru SCADA)-ANNEXURE: 02

By clicking the button available at the SCADA screen ‘‘ESD’’, SCADA-HMI will prompt following two options:

1. Emergency Shutdown of Pipeline
2. Custom Shutdown of Pipeline.

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Emergency Shutdown of Pipeline:

- I. Sequence of activities after executing ESD are as follows:
- II. All below mentioned events are one-shot commands issued from SCADA system.

At VDS (Dispatch station):

- I. Activation of station PLC ESD command irrespective of status of "SCADA ENABLED BIT" in PLC
- II. Stop All pumps 10-PA-CF-101A, B, C, 10-PA-CF-102A,B,C, 10-PA-CF-103A,B,C, 10-PA-CF-104
- III. Close SLV and SIV valves, 10-MOV-1117, 10-MOV-1118 even "SCADA ENABLED BIT" is low at station PLC

At IPS1 (Intermediate Pumping Station):

- I. Activation of station PLC ESD command irrespective of status of "SCADA ENABLED BIT" in station PLC
- II. Stop all pumps 15-PA-101A,B,C
- III. Close Station Limit valves 15-MOV-1201, 15-MOV-1205 & close bypass valve 15-MOV-1203 & close station inlet and station out valves 15-MOV-3018, 15-MOV-3019.

At RBS (Intermediate pumping & receipt station):

- I. Activation of station PLC ESD command irrespective of status of "SCADA ENABLED BIT" in station PLC
- II. Stop All pumps 20-PA-CF-101A, B, C, 20-PA-CF-102A,B,C, 10-PA-CF-103
- III. Close Station Limit valves 20-MOV-1301, 20-MOV-1303 bypass valve 20-MOV-1313
- IV. Close Station Inlet valves 20-MOV-1311, 20-MOV-1314
- V. Close command to 20-MOV- 1312 for stopping of receipt shall indirectly take over by station PLC.

At IPS2 (Intermediate Pumping Station):

- I. Activation of station PLC ESD command irrespective of status of "SCADA ENABLED BIT" in station PLC
- II. Stop All pumps 25-PA-CF-101A, 25-PA-CF-101B
- III. Close station limit valves 25-MOV-1201, 25-MOV-1205 and bypass valve 25-MOV-1203
- IV. Close station inlet valves 25-MOV-3018, 25-MOV-3019

At VBS (Intermediate pumping & receipt station):

- I. Activation of station PLC ESD command irrespective of status of "SCADA ENABLED BIT" in station PLC



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- II. Stop all pumps 30-PA-CF-101A,B,C,D, 30-PA-CF-7A,7B
- III. Close station limit valves 30-MOV-1501, 30-MOV-1503 and bypass valve 30-MOV-1525
- IV. Close station inlet valves 30-MOV-1522, 30-MOV-1524
- V. Close command to 30-MOV- 1525 for stopping of receipt shall indirectly taken over by station PLC.

At SBS (Intermediate pumping & receipt station):

- I. Activation of station PLC ESD command irrespective of status of "SCADA ENABLED BIT" in station PLC
- II. Stop all pumps 40-PA-CF-101A, B, C, D
- III. Close station Limit valves 40-MOV-1601, 40-MOV-1603 and bypass valve 40-MOV-1604
- IV. Close station inlet valves 40-MOV-1613, 40-MOV-1615
- V. Close command to 40-MOV-1625 for stopping of receipt shall indirectly taken over by station PLC.

At IPS3 (Intermediate Pumping Station):

- I. Activation of station PLC ESD command irrespective of status of "SCADA ENABLED BIT" in station PLC
- II. Stop all pumps 10-PA-CF-101A, B
- III. Close station inlet valves 45-MOV-8020, 45-MOV-8022 and bypass valves 45-MOV-8021, 45-MOV-1017
- IV. Close station limit valves 45-MOV-8022, 45-MOV-8025

At SRS station (End Receipt station):

- I. Activation of station PLC ESD command irrespective of status of "SCADA ENABLED BIT" in station PLC
- II. Close Station limit and inlet valve 50-MOV-1701,1703


Close all SVs in the line which are mentioned below:

SV1, SV1A, SV1B, SV2, SV3, SV4, SV4A, SV4B, SV5, SV6, SV7, SV8, SV9, SV10, SV11, SV12, SV13, SV14, SV15, SV16, SV18, SV19, SV20 & SV21.

Custom Pipeline Shutdown through SCADA

For VSPL section:

- Step 1: Check whether IPS3 is running: Display pops up asking to trip pumps.
- Step 2: Check whether SBS is running: Display pops up asking to trip pumps, action as per the user selection.
- Step 3: Check for VBS pumps running: Display pops up asking to trip pumps and action as per the user selection.
- Step 4: Ask GRS whether to close the SIV after reading the pressure above 20 kg/cm².
- Step 5: Ask VBS to trip the remaining pumps, action as per the user selection.

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Close the all SVs mentioned below.

SV6, SV7, SV8, SV9, SV10, SV11, SV12, SV13, SV14, SV15, SV16, SV18, SV19, SV20 & SV21.

For VVPL section:

Step 1: Check whether IPS1 is running: Display pops up asking for selection of pumps to trip.

Step 2: Check whether IPS2 is running: Display pops up asking for selection of pumps to trip.

Step 3: Check for RBS pumps running: Display pops up asking for selection of pumps to trip and stop the H/C.

Step 4: Stop command to VBS H/C.

Step 5: Ask VDS to select suitable pumps to trip initially.

Step 6: Check whether inlet pressure at VBS is above 20 kg/cm² and ask VBS, whether to close the SLV.

Step 7: Ask VDS for selection to trip the remaining pumps.

Close all the SVs mentioned below.

SV1, SV1A, SV1B, SV2, SV3, SV4, SV4A, SV4B, SV5.



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DOCUMENT NO: IMP/OVZ/02

TITLE

AUTHENTICATION OF TANK GAUGE CUM CHECKLIST FROM ATP

1.0 PURPOSE

Authentication of tank gauge cum checklist by Visakh refinery (ATP officials) to ascertain tank wise Quantities received from VR-ATP tanks.

2.0 SCOPE

Tank Gauging cum checklist: This document is required to be authenticated by VR-ATP shift officer/in-charge and VVSPL shift officer/Incharge to certify Opening DIP, BS&W, TEMP. & Density before tank is taken over by VVSPL for pumping and Closing DIP, BS&W, TEMP & Density after completion of pumping from that tank to ascertain Ambient, Standard and MT quantities withdrawn by VVSPL for pumping into pipeline. This contains Batch wise/ product wise /Tank wise pumping details.

3.0 REFERENCES

IMS/MR/7.5.1

4.0 RESPONSIBILITY

Shift in-charge assisted by Shift Engineer.

5.0 PROCEDURE

5.1 Tank Gauging cum checklist:

5.1.1 Gauging cum checklist is authenticated by VR-ATP shift officer/Incharge is checked for the following:

- A. Tank no. / Product / date of pumping
- B. Quantity of product Received by VVSPL.



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AUTHENTICATION OF TANK GAUGE CUM CHECKLIST FROM ATP

- 5.1.2 In JDE package Sales order/ Purchase order are generated and Ship confirmed by VR for the quantity pumped by VDS. For every order, Lot removal/Batch entry is done and order is received into VVSPL dummy tank created in JDE. From this dummy tank, receiving locations receive the Qty in Terminal tank @ 15 deg.C in JDE and the same is cross checked and reconciled by Vizag C/R officers and data is passed on to VVSPL Finance department for further processing.

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	Tank gauge cum check list	IMF/OVZ/08	Control Room	Shift In-charge



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DOCUMENT NO: IMP/OVZ/03

TITLE

PRODUCT SAMPLING AND LABORATORY TEST REPORTS

1.0PURPOSE

Documentation of laboratory test reports to ensure that only approved product conforming to specifications is pumped.

2.0SCOPE

This is applicable to all petroleum products pumped by VVSPL - Vizag to Rajahmundry, Vijayawada, Suryapet and Secunderabad.

3.0REFERENCES

- i) IMS/MR/7.5, IMS/MR/8.2.4
- ii) ASTM& QC Manuals for Non-aviation products.

4.0RESPONSIBILITY

Shift in-charge assisted by Shift Engineer.

5.0PROCEDURE

5.1PRODUCT SAMPLING:

- 5.1.1 The next tank to be taken for pumping as per programme is decided at least eight hours before the running tank is over in consultation with ATP control room.
- 5.1.2 Before a pipeline transfer is effected through a multi-product pipeline, four different level samples (upper, middle, lower & bottom) from the tank nominated for transfer is jointly taken and retained till the batch has been established by the receiving location (as per Quality Control Manual article 3.3.3). Further Laboratory test report of the nominated tank is made available to VVSPL at least eight hours before pumping. Pumping is started only after getting the Lab Report (On-Specifications) / details. In case the density variation of pipeline product w.r.t tank is outside the permissible limit (+/- 0.003), investigation is to be carried out for continuing pumping from the same tank. Density of various levels of the tank (upper, middle, lower & bottom) to be checked with Portable Density Meter during sample collection and same shall be recorded in Quality Control register (IMF/OVZ/13).
- 5.1.3 Sampling Apparatus and Containers are used separately product wise.



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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 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.

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 recommended sample container is a metal can with a screw cap.

5.1.6 Sample labelling: Sample container is labelled immediately after a sample is obtained. Gummed labels shall be used on aluminum and glass sample bottles only (IMF/OVZ/14).

5.1.7 The sample tag for the samples collected during joint gauging/sampling should be signed by both ATP/NWOT & VVSPL in charges.

5.1.8 Sample Collection : In addition to the samples taken from the tanks, samples are to be collected as per the Latest Industry quality control manual. Samples are properly labelled and retained till the pumping batch is established in the receiving locations. Details of sample collection are recorded in QC Register (IMF/OVZ/13).

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

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



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

5.1.10 Sample disposal :

5.1.10.1 Critical tests are carried out by the receiving locations as per test category 'A' of Industry Quality Control manual while receipt is on and any variations from the mother sample, specifications are investigated by the receiving location in coordination with the pumping location.

5.1.10.2 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 re-warehoused under specific batch No.

5.1.10.3 Any variation beyond the limits with the mother sample vis-à-vis is investigated by the pumping location. The sample retained is sent to the refinery or marketing laboratory for further investigations.

5.1.10.4 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 in the sump tank or slop tank. 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/OVZ/13).

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

5.2 LABORATORY TEST REPORTS:

5.2.1 Laboratory test reports are submitted by ATP to VVSPL.

5.2.2 It is ensured by shift in-charge that test report/details of products is available before pumping is on and specification is in line with Industry/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

For BS & Euro grade product specifications refer to common manual document no: IMP/I&T/01, sheet no. 5 of 5.



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DOCUMENT NO: IMP/OVZ/03

TITLE

PRODUCT SAMPLING AND LABORATORY TEST REPORTS

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 .

6.0 RELEVANT RECORDS

Quality Control Register	IMF/OVZ/13
Sample Label	IMF/OVZ/14



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INTEGRATED MANAGEMENT PROCEDURE

DOCUMENT NO: IMP/OVZ/04

TITLE

MONITORING STOCK LOSS/GAIN

1.0 PURPOSE

To lay down the method of stock loss/ gain to minimise the operation losses involved in delivery of product to receiving locations Rajahmundry, Vijayawada, Suryapet and Secunderabad .

2.0 SCOPE

This is applicable to quantity of difference (loss/gain) of all products pumped at Vizag and received at Rajahmundry, Vijayawada, Suryapet and Secunderabad at 15 deg C.

3.0 REFERENCES

IMS/MR/7.5

4.0 RESPONSIBILITY

Manager (O) assisted by Shift Engineer.

5.0 PROCEDURE

5.1 In order to calculate stock loss / gain , following steps are adopted :

5.1.1 The quantity pumped at 15 deg.. from Vizag is taken from **JDE shipment confirmed** by the VR Finance on the basis of the opening and closing gauges of the subject tank. The same is being cross checked at VVSPL Vizag end.

5.1.2 The quantity received at 15 deg. C. at Rajahmundry, Vijayawada, Suryapet, Secunderabad are received from the respective locations.

5.1.3 The difference of the above (5.1.2. - 5.1.1) gives the loss / gain incurred while pumping the product and is calculated in terms of % age of quantity pumped at 15 deg.C.

5.1.4 Stock variation is calculated on completion of each batch and incase of abnormal variation if any, same is investigated.

6.0 RELEVANT RECORDS

Tank gauge cum checklist IMF/OVZ/08



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INTEGRATED MANAGEMENT INSTRUCTIONS

DOCUMENT NO: IMI/OVZ/01

TITLE

CHECKS BEFORE OPERATIONS

1.0 PURPOSE

To provide instructions to carry out checks before operation.

2.0 REFERENCES

IMS Procedures: IMP/OVZ/01.

3.0 RESPONSIBILITY

Shift-in-Charge

4.0 INSTRUCTIONS

4.1 Checks to be carried out along the VVSPL pipeline route:

For pumping to Vijayawada (with out Heart Cut to Rajahmundry):

- 4.1.1 Advise to make line through at Rajahmundry preferably via station and ensure that all SVs upto SV5 are in open condition.
- 4.1.2 Line up Receipt Tank to manifold at Vijayawada.
- 4.1.3 Advise Vijayawada to lineup station from station inlet MOV to manifold.
- 4.1.4 Open SLV (MOV 1501) and SIV (MOV 1503) at Vijayawada and maintain back pressure around 7 kg per sq.cm. by operating PCV.

4.2 For pumping to Vijayawada (with Heart Cut to Rajahmundry):

- 4.2.1 Carry out checks for pumping to Vijayawada as mentioned above.
- 4.2.2 Advise Rajahmundry to lineup Receipt tank upto manifold.
- 4.2.3 Advise Rajahmundry to line up station from SLV to manifold.
- 4.2.4 Advise Rajahmundry to open the FCV and start taking product after pumping is started at Vizag.



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DOCUMENT NO: IMI/OVZ/01

TITLE

CHECKS BEFORE OPERATIONS

- 4.3 For pumping to Secunderabad (without heart cut at Suryapet)
- 4.3.1 Carry out checks for pumping to Vijayawada as per 4.1 and 4.2.
- 4.3.2 Ensure that line is through at Suryapet preferably via station and all SVs in VSPL section are open.
- 4.3.3 Advise Secunderabad to line up receipt tank upto manifold. Inform Vijayawada.
- 4.3.4 Advise Secunderabad to line up station from station inlet MOV to manifold.
- 4.3.5 Advise Secunderabad to open manifold and then station inlet MOV/SLV and start receiving product in co-ordination with Vijayawada.
- 4.3.6 Advise if required to line up pump at Suryapet(SBS Shift Incharge to refer check list for pump starting). Inform Vijayawada.
- 4.3.7 Advise Suryapet to start pumps in co-ordination with Vijayawada and Secunderabad.
- 4.4 For pumping to Secunderabad (with heart cut at Suryapet)
- 4.4.1 Carry out checks for Secunderabad pumping as per 4.3.
- 4.4.2 Advise Suryapet to line up receipt tank upto manifold. Inform Vijayawada.
- 4.4.3 Advise Suryapet to line up station from SLV to manifold.
- 4.4.4 Advise Suryapet to start receiving product after opening FCV in co-ordination with Vijayawada.
- 4.5 Routine Checks for Smooth Operation:
- 4.5.1 Every shift check the level in the separator filter (in case of ATF) and drain the water manually.



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TITLE

CHECKS BEFORE OPERATIONS

- 4.5.2 Every shift check the differential pressure across the cartridge filter and basket filter under operation and inform M&R (Mech) to clean the filter element when pressure drop exceeds 0.7 Kg / cm².
- 4.5.3 In each shift check the level in the corrosion inhibitor tank and top up the tank as and when necessary.
- 4.5.4 VDS to ensure CI dosage @ 6ppm always whenever pumping is on except for ATF cycle. Also, VBS to start CI pump whenever VSPL pumping is going on @ 6 ppm.
- 4.5.5 Whenever, PIG is launched, CI dosage shall be increased to 9 ppm and shall continue until PIG reaches the next dozing location.
- 4.5.6 Put stand by pumps in line alternatively.
- 4.5.7 Carryout monthly inspection of fire siren equipment in co-ordination with F&S Officer.
- 4.5.8 Surprise checks to be carried out by C/R shift officers to ensure alertness of Security Guards, proper gaugings of tanks by surveyors, proper readings given by valve operators and identification/correction of any abnormality in station and tank farm area. Findings to be recorded in the surprise check register of C/R.

5.0 RELEVANT RECORDS

Shift log book IMF/OPN/01



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INTEGRATED MANAGEMENT INSTRUCTIONS

DOCUMENT NO: IMI/OVZ/02

TITLE

LINING UP OF TANKS AT ATP & VWOT TANKS

1.0 PURPOSE

To provide guide lines for lining up of tanks at ATP & VWOT tanks.

2.0 REFERENCES

IMS Procedure: IMP/OVZ/01.

3.0 RESPONSIBILITY

Shift-in-Charge

4.0 INSTRUCTIONS

4.1 Decide the next tank to be taken for pumping in consultation with ATP/Product Coordinator.

4.2 Confirm approval of tank in respect of product quality & obtain Lab test details/ report from ATP.

4.3 Arrange joint gauging of the tank with ATP for which record is maintained in ATP and check the following.

(a) BS & W level (In case of higher BS & W level the water must be drained out).

(b) Product temp. (Max. permissible temp is 49 deg)

(c) Visual inspection of the site to observe any leak etc. Any abnormality observed must be informed to ATP. It is to be ensured that the water draw off valves are closed.

(d) 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

4.4 (a) Ensure that the tank body valve is open along with the two valves enroute (Gate and Plug). The valves, VVSPL side of the other tanks of the same product should be closed. The recirculation valve of the tank taken for VVSPL transfer should be closed. Drain valve for all tanks taken for VVSPL transfer should be closed.
(b) After switch over to the next tank, valve of the previous tanks shall be closed immediately by physical verification of field as well as in PLC by Shift In charge/ Shift engineer

4.5 Inform ATP after switchover.



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LINING UP OF TANKS AT ATP & VWOT TANKS

- 4.6 Switchover of tanks indicate any one of the following two conditions:
- (a) Change over from one tank to another having same product.
 - (b) Change over from one tank to another having different products.

Refer to the following table regarding various valves to be opened for lineup of any particular tank.

Tank to be lined up	Product Name	Valves to be Opened sequentially		
		HOV near Tank	MOV near Tank	MOV near VDS Manifold .
202A	E III HSD	HOV-202A	MOV-202A	MOV-1103
202B	E III HSD	HOV-202B	MOV-202B	MOV-1103
202C	E III HSD	HOV-202C	MOV-202C	MOV-1103
209A	E III HSD	HOV-209A	MOV-209A	MOV-1103
209B	E III HSD	HOV-209B	MOV-209B	MOV-1103
211	E IV HSD	HOV-211	MOV-211	MOV-1134
214	E IV HSD	HOV-214	MOV-214	MOV-1134
209A	E IV HSD	HOV-211	MOV-209AI & 211I	MOV-1134
209B	E IV HSD	HOV-211	MOV-209BI & 211I	MOV-1134
204A	SKO	HOV-204A	MOV-204A	MOV-1102
205B	SKO	HOV-205B	MOV-205B	MOV-1102
210	SKO	HOV-210	MOV-210	MOV-1102
212	SKO	HOV-212	MOV-212	MOV-1102
212	Sweet SKO	HOV-212S	MOV-212S	MOV-1140
203C	E III MS	HOV-203C	MOV-203C	MOV-1101
205A	E III MS	HOV-205A, 205AP & 206B	MOV-205A	MOV-1101
206A	E IV MS	HOV-206A	MOV-206A	MOV-1121
206B	E IV MS	HOV-206BP	MOV-206BP	MOV-1121
204B	ATF	-	MOV-204B	MOV-1104A
204C	ATF	HOV-204C	MOV-204C	MOV-1104A

In case of (a), operation involves opening of HOV and MOV of VVSPL suction line (as per above list) of the succeeding tank followed by closing of HOV and MOV of VVSPL suction line of the running tank after noting increase / decrease in manifold pressure.



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In case of (b), operation involves opening of the manifold MOV of succeeding product after opening of HOV and MOV of VVSPL suction line (as per above list) of the succeeding tank. Manifold MOV of running product automatically closes. However, if this valve do not close and both manifold MOV's are in open condition, S/D to be taken and pumping to be resumed only after closing running manifold MOV in local mode. Closing of HOV and MOV of VVSPL suction line of the running tank can be done later not exceeding 2 hrs. after switchover.

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.

Before taking over the shift status of all ATP tanks, valves need to be verified by Shift in-charge/ Shift officer in the PLC.

4.7 THE COORDINATION WITH VWOT FOR LINING UP OF TANKS FOR PUMPING HSD:

- 1) To intimate product requirement from VWOT through email to Product Coordinator.
- 2) To coordinate with VWOT C/R for Lab Test Report (LTR) of the nominated tank.
- 3) To check & confirm if LTR is as per IQCM norms.
- 4) To send surveyor at least 2 hours before start of PLT to carry out opening gauge of nominated tank.
- 5) To collect required samples from nominated tank in line with IQCM norms.
- 6) To note down VWOT PLT opening MFM reading.
- 7) To confirm VWOT for lining up tank ROSOV & other valves till booster pumps.
- 8) To close butterfly valve in VWOT-ATP line, with an information to ATP shift in-charge.
- 9) To open butterfly valve in VWOT-VVSPL 16" line & open plug valve (near manifold) in the same line. It is to be ensured that VVSPL booster pumps are stopped prior to opening valves as mentioned in point no. 8.
- 10) To confirm VWOT Shift in-charge to start 1 booster pump.
- 11) To start operation of 1 mainline pump when suction at mainline reaches 5 kg/cm².
- 12) To inform VWOT to start second booster pump after flow is stabilized with single booster/mainline operation.
- 13) To resume second/third mainline pumps & maintain desired flow rate.
- 14) To monitor mainline suction & ask VWOT for third booster operation as the case may be.
- 15) To exchange hourly MFM readings of both ends & compare. In case of any variation in hourly pumping/receipt flow rates, PLT to be stopped immediately & reasons investigated.
- 16) After PLT for the approved quantity, VVSPL to intimate VWOT & stop their pumps accordingly. Then VWOT to stop their booster pumps immediately & ensure line is packed.
- 17) To open VWOT-ATP butterfly valve, with a confirmation to ATP SIC & close butterfly valves/plug valves in VWOT-VVSPL 16" HSD line & S/O to VR mode pumping.



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DOCUMENT NO: IMI/OVZ/02

TITLE

LINING UP OF TANKS AT ATP & VWOT TANKS

Various valves to be opened for VWOT lining up for pumping & **record in VVSPL operation logbook:**

Tank to be lined up	Product Name	Valves to be Opened sequentially by WOT control room & confirmation to VVSPL Control room		
		ROSOV near tank	MOV near tank	MOV near VWOT manifold
101	E IV HSD	ROSOV-4005	HV-4016	HV-7118
102	E IV HSD	ROSOV-4002	HV-4010	HV-7118
103	E IV HSD	ROSOV-4102	HV-4107	HV-7718
104	E IV HSD	ROSOV-4105	HV-4113	HV-7718

4.8 THE COORDINATION WITH VWOT FOR LINING UP OF TANKS FOR PUMPING MS:

I) PRE PRODUCT TRANSFER ACTIVITIES

A) VWOT Role:

- Nominate the tank in coordination with Product Coordinator and finalization of quantity to be transferred to VVSPL.
- Nominated Tank to be isolated from other operations.
- Lab Test Report (LTR) of the nominated MS tank to be sent to VVSPL prior to gauging of nominated tank.
- After getting approval from VVSPL shift in-charge for transfer of product from nominated tank, nominated tank to be lined up and jointly gauged by VVSPL surveyor and VWOT technician at least 2 hours before start of PLT from nominated tank.
- Line up of nominated tank to VVSPL to be done by VWOT technician until valve no:13 (as shown in the Annexure:01 layout diagram) in coordination with VWOT shift in-charge and confirm the same to VVSPL shift in-charge
- Opening Mass Flow Meter reading of the nominated tank to be given to VVSPL shift in-charge and opening gauge of the nominated tank to be taken from VVSPL shift in-charge for cross checking of the quantity subsequent to transfer of product to VVSPL.

B) VVSPL Role:

- Check the LTR of the nominated tank as per the IQCM norms and confirm to VWOT for lineup of nominated tank.
- VVSPL surveyor to be sent to VWOT at least 2 hours before start of PLT to carry out opening gauge of nominated tank in coordination with VWOT shift in-charge.
- Collect required samples from nominated tank in line with IQCM norms and check for density variation.



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TITLE

LINING UP OF TANKS AT ATP & VWOT TANKS

- iv) VVSPL shift in-charge to lineup from valves 14 to 17 (as shown in the Annexure:01 layout diagram) and confirm the same to VWOT shift in-charge

MANUAL COMMUNICATION PROTOCOL

All primary communication to be done through walkie talkie

1) VVSPL walkie talkie NO:701175

2) VWOT walkie talkie NO:702539

Secondary communication has to be done through landlines of VVSPL and VWOT until intercom Communication is established

1) VVSPL landline No 1: 0891-2858900

2) VVSPL landline No 2: 0891-2858903

3) VVSPL Mobile No: 9963977900

4) VWOT landline No: 0891-2826913

II) PRODUCT TRANSFER ACTIVITIES

- a) VWOT shift in-charge to confirm lineup of nominated tank and inform VVSPL shift in-charge through walkie talkie
- b) VVSPL to take station shutdown and lineup from valves 14-17 (as shown in the Annexure:01 layout diagram) and inform the same to VWOT shift in-charge
- c) VVSPL shift in-charge to confirm tank gravity Pressure at booster pumps (around 1 Kg/cm²) to VWOT shift in-charge
- d) After confirming line up from both sides, VWOT shift in-charge will start 1 pump and inform the same to VVSPL shift in-charge
- e) After confirming suction pressure at VVSPL booster header, VVSPL shift in-charge to start one booster pump followed by one mainline pump
- f) VVSPL shift in-charge to inform VWOT shift in-charge to start second pump and VWOT to confirm the same to VVSPL shift in-charge
- g) VVSPL shift in-charge to start another booster pump by monitoring the suction Pressure at booster pumps followed by other mainline pumps
- h) VVSPL & VWOT mutually exchange hourly Mass Flow Meter readings of both ends & compare. In case of any variation in hourly pumping/receipt flow rates, PLT to be stopped immediately & reasons to be investigated.
- i) After completion of PLT of the planned quantity, VVSPL shift in-charge to inform VWOT shift in-charge about the stoppage of operation at VVSPL.
- j) VVSPL shift in-charge to reduce flow rate and increase suction Pressure at mainline pumps to 7 Kg/cm² and inform VWOT shift in-charge to stop one pump at VWOT.
- k) VWOT shift in-charge to confirm stoppage of one pump to VVSPL shift in-charge
- l) VVSPL shift In-charge to stop mainline and booster pumps and inform VWOT Shift In-charge to stop second pump at VWOT
- m) After stopping all mainline pumps and booster pumps at VVSPL, valves 14-17 (as shown in the Annexure:01 layout diagram) has to be closed and same has to be informed to VWOT Control room.



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TITLE

LINING UP OF TANKS AT ATP & VWOT TANKS

- n) Final gauging of the tank shall be done jointly by VWOT technician and VVSPL surveyor. All precautions shall be taken to ensure the recording of correct gross dip, water dip, product density and temperature.
- o) After completion of pumping from nominated tank, final Mass Flow Meter reading to be given to VVSPL shift in-charge by VWOT shift in-charge and final quantity has to be compared with JDE figures of manual gauging values. In case of abnormal variation, investigation has to be done.

INCASE OF POWER FAILURE/FLUCTUATION AT VVSPL

- a) In case of power failure at VVSPL, all pumps at VVSPL gets tripped automatically. VVSPL to stop VWOT pumps through VVSPL PLC and inform to VWOT shift in-charge (Interlock Provision made in VVSPL PLC to stop VWOT MS Pumps also)
- b) When power resumes at VVSPL, VWOT shift in-charge to be informed to start pump and same procedure as above will be followed for resumption of pumping
- c) In case of power fluctuation at VVSPL (stoppage of pump from the running pumps), same to be informed to VWOT shift in-charge and remaining pumps to be started at VVSPL without stopping VWOT pumps basis available suction pressure to VVSPL-Booster pumps.

INCASE OF POWER FAILURE/FLUCTUATION AT VWOT

- a) In case of power failure at VWOT, mainline pumps at VVSPL gets automatically tripped at VVSPL due to low suction Pressure at mainline pumps and VVSPL shut down to be taken after confirmation from VWOT shift in-charge. VWOT shift in-charge has to confirm status on resumption of power to VVSPL shift in-charge from time to time basis till power resumes.
- b) In case of power fluctuation at VWOT (stoppage of pump from the running pumps), VVSPL pumps may get tripped due to low suction and VWOT shift in-charge to start pump without any delay (Any delay in starting of pumps may lead to VVSPL Shutdown) and once started, same to be informed to VVSPL Control room after resumption of pumping.

INTERLOCKS MADE AT VVSPL PLC DURING VWOT MS PUMPING TO AVOID SURGES

Whenever MS pump is on from VWOT, emergency stop bit to MS pumps at VWOT through their PLCs will go under following conditions:

- i) Whenever VVSPL Manifold pressure exceeds 8 Kg/cm²
- ii) Manual Emergency Stop command provision made in VVSPL PLC MMI

It may be noted that emergency stop command are latched continuously and same will be released only upon

1. When manifold pressure goes below 8 Kg/cm²
2. Manual reset provision available in VVSPL PLC.



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TITLE

LINING UP OF TANKS AT ATP & VWOT TANKS

Various valves to be opened for VWOT lining up for pumping MS & record in VVSPL operation logbook:

Tank to be lined up	Product Name	Valves to be Opened sequentially by VWOT control room & confirm to VVSPL Control room		
		ROSOV near tank	Valves near Tank	Valves near VWOT manifold
203	EIV MS	ROSOV-4402	HV-4407,4402,4412	Refer Annexure: 01 of SOP for lineup of MS pumping with VWOT Tanks
204	EIV MS	ROSOV-4405	HV-4413,4418	Refer Annexure: 01 of SOP for lineup of MS pumping with VWOT Tanks
205	EIV MS	ROSOV-4302	HV-4307,4302,4312	Refer Annexure: 01 of SOP for lineup of MS pumping with VWOT Tanks
206	EIV MS	ROSOV-4305	HV-4313,4305,4318	Refer Annexure: 01 of SOP for lineup of MS pumping with VWOT Tanks

5.0 RELEVANT RECORDS

Shift log book	IMF/OPN/01
Tank Gauge-cum-Check list	IMF/OVZ/08



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DOCUMENT NO: IMI/OVZ/03

TITLE

LINING UP OF VIZAG STATION

1.0 PURPOSE

To provide instructions for lining up of Vizag Station.

2.0 REFERENCES

IMS Procedure: IMP/OVZ/01 and Standard operating procedure for pump in VFD.

3.0 RESPONSIBILITY

Shift In-charge

4.0 INSTRUCTIONS

4.1 Line-up respective product tank upto manifold. Follow tank lining up procedure no. IMI/OVZ/02.

4.2 Open product manifold valve.

4.3 Open suction valve (s) of booster pump (s) and ensure pumps are vented.

4.4 Make sure one filter water separator (for ATF only) and one cartridge/basket filter are lined-up.

4.5 Line – up flow meter and PCV.

4.6 Open suction valves of the mainline pumps to be operated.

4.7 If motor started in DOL keep PCV open at ~ 10 %. Throttle/open PCV to the required percentage based on flow rate required and other operating conditions If motor is started in VFD control pump flow with drive

4.8 Open MOV 1117 & 1118.

4.9 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 – 1117 & 1118 and MOVs of filter are opened before starting of pumping.



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LINING UP OF VIZAG STATION

- 4.10 Check the readiness of respective breakers/feeders/drives either in VFD mode or DOL mode.
- 4.11 Make sure all the relays are reset in the breaker.
- 4.12 Make sure priming of mainline pumps before starting.
- 4.13 Inform Rajahmundry, Vijayawada, Suryapet and Secunderabad before starting pumping operation.
- 4.14 Make sure the pipeline is made through at Rajahmundry for Vijayawada pumping.
- 4.15 Make sure line is made through at Rajahmundry, Vijayawada and Suryapet for Secunderabad pumping.
- 4.16 Take clearance from Vijayawada before start-up of pumps of Vizag.
- 4.17 As deemed fit by the shift in-charge, some set alarms may be temporarily by passed in PLC Input if suspected to be malfunctioning. This will be done strictly based on urgent requirements and the same to be logged in PLC Bypass Register (IMF/OPN/07) for the intimation of the concerned maintenance officer. Shift in-charge to modify set pressures, if required, keeping the same within station parameters and the same to be entered in Shift log book.
- 4.18 Check lining up of the station keeping product quality into consideration.

5.0 RELEVANT RECORDS

Shift log book	IMF/OPN/01
PLC & Safety By-pass register	IMF/OPN/07



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INTEGRATED MANAGEMENT INSTRUCTIONS

DOCUMENT NO: IMI/OVZ/04

TITLE

OPERATION OF VIZAG STATION UNDER EMERGENCY CONDITIONS

1.0 PURPOSE

To provide guidelines for operation of Vizag station under emergency conditions.

2.0 REFERENCES

IMS Procedures : IMP/OVZ/01 & IMP/OPN/03

3.0 RESPONSIBILITY

Shift In-charge

4.0 INSTRUCTIONS

4.1 In case of power failure while pumping is 'ON' follow below guidelines :

4.1.1 Inform Rajahmundry, Vijayawada, Suryapet and Secunderabad.

4.1.2 Start DG Set.

4.1.3 Close PCV fully with residual hydraulic pressure or through power from DG along with both Suction and Discharge MOVs of Booster and mainline pumps. And also close Station outlet valve (MOV 1117)

4.1.4 Once supply resumes, start operations.

4.2 In case of pipeline failure, follow below guidelines:

4.2.1 Any leakage in the pipeline can be detected by comparison of (i) mass flow rate of despatch at Vizag and receipt at Rajahmundry, Vijayawada, Suryapet and Secunderabad, (ii) increase in flow and drop in pressure and (iii) site report. This may be reconfirmed by leak alarms in SCADA.

4.2.2 Inform all concerned receiving location C/R's, Chief Manager, Maintenance In- charge and Manager - Operations. Actuate ESD through SCADA. Ensure closure of SVs on both the sides of the leak both from SCADA as well as Security Guard of concerned SV/IP station.

4.2.3 Follow procedure of Emergency Control Plan (OFF SITE/ON SITE) as the case may be.

4.2.4 Clear the spillage.



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4.2.5 Arrange for the repairs.

4.3 In case of Major Spillage in Pumping Station, follow below guidelines:

It may be due to Joint Failure or gasket failure.

4.3.1 Take shutdown of the system by informing the other stations, or activate the 'ESD' button depending upon the gravity of the situation.

4.3.2 Inform Manager – Operations and HEAD – Maintenance.

4.3.3 Co-ordinate with Maintenance group for attending the job.

4.3.4 Record report of operation under emergency conditions in Shift log book (IMF/OPN/01), Maintenance log book (IMF/OPN/02) and Operation log book (IMF/OVZ/03) as applicable.

5.0 RELEVANT RECORDS

Shift log book	IMF/OPN/01
Maintenance log book	IMF/OPN/02
Operations log book	IMF/OVJ/03



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INTEGRATED MANAGEMENT INSTRUCTIONS

DOCUMENT NO: IMI/OVZ/05

TITLE	SYSTEM FAILURES (PUMP TRIPPING)
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1.0 PURPOSE

To provide guidelines for operation of Vizag station under system failures due to pumps tripping.

2.0 REFERENCES

IMS Procedure: IMP/OVZ/01

3.0 RESPONSIBILITY

Shift In-charge

4.0 INSTRUCTIONS

4.1 Incase of tripping of pump at Vizag, follow below mentioned instructions.

4.1.1 Check the display on Control Panel to know whether all pumps are tripped.

4.1.2 Ensure the tripping of the pump (s) in the field also.

4.1.3 If Rajahmundry, Vijayawada and Suryapet pumps are running, ask them to stop the pumps and close the PCV.

4.1.4 Inform Secunderabad to close SLV and PCV.

4.1.5 If heart cut is on then inform Rajahmundry, Vijayawada and Suryapet to close FCV and other related valves.

4.1.6 Immediately close both Suction and Discharge MOVs of Booster and Mainline pumps and also close Station outlet Valve (MOV 1117).

4.2 Incase of tripping of pumps at Rajahmundry, Vijayawada, and Suryapet follow below mentioned guidelines:

4.2.1 All locations to control their station and line parameters within set limits and flow rate to be controlled immediately in accordance with flow rate at Heart Cut location and receiving location. In case of VFD, flow rate can be set thru flow set point in PLC.



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DOCUMENT NO: IMI/OVZ/05

TITLE	SYSTEM FAILURES (PUMP TRIPPING)
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4.3 In case Heart Cut stops at Rajahmundry, Vijayawada and Suryapet, follow below mentioned guidelines.

4.3.1 Inform all locations, especially down stream locations where heart cut has to be increased.

4.3.2 All locations to control their station and line parameters within set limits and Flow rate to be controlled immediately in accordance with flow rate at Heart Cut location and receiving location. In case of VFD, flow rate can be set thru flow set point in PLC.

4.3.3 Record report of system failures in Shift log book (IMF/OPN/01) and Operations log book (IMF/OVZ/03) as applicable.

5.0 RELEVANT RECORDS

Shift log book IMF/OPN/01

Operations log book IMF/OVZ/03



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INTEGRATED MANAGEMENT INSTRUCTIONS

DOCUMENT NO: IMI/OVZ/06

TITLE

SUMP TANK OPERATION

1.0 PURPOSE

To provide instructions for operation of Sump tank.

2.0 REFERENCES

IMS Procedure: IMP/OVZ/01

3.0 RESPONSIBILITY

Shift In-charge

4.0 INSTRUCTIONS

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

4.2 Sump tank level to be brought down to 35 cm. as and when it reaches 120 cm.

4.3 Monitor Sump tanks level at the start of each shift.

If there is any abnormal increase in the level, investigate the reason and empty out tank. Care is to be taken that sump tank no.1 is emptied out only when HSD pumping is on and sump tank no.2 when MS pumping is on.

4.4 High level sump tank alarm is set at 120 cm.

4.5 After emptying out the sump tanks, ensure that the low level sump tank alarm reappears at control panel.

4.6 Record details of operation of sump tank in the operations log book (IMF/OVZ/03).

5.0 RELEVANT RECORDS

Operations log book IMF/OVZ/03



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INTEGRATED MANAGEMENT INSTRUCTIONS

DOCUMENT NO: IMI/OVZ/07

TITLE

PIG LAUNCHING

1.0 PURPOSE

To provide guidelines for Pig Launching

2.0 REFERENCES

IMS Procedure: IMP/OVZ/01

3.0 RESPONSIBILITY

Shift In-charge

4.0 INSTRUCTIONS

4.1 Close 10", 2" and 18" (MOV-1116) Valves.

4.2 Open Drain to ensure total draining.

4.3 Remove Locknut and hatch.

4.4 Place the pig on the tray and push it inside the barrel after opening the sliding door with the help of lifting arrangement.

4.5 Close hatch and check for the signaller working.

4.6 Open 2" valve of kicker line and vent the launcher. Take product inside the barrel and check for any leak from 'O' ring. Close 2" valve after pressurisation.

4.7 Open 10" HOV, MOV 1116 & Close MOV 1117.

4.8 Ensure launching by checking pig signaler and sound.

4.9 Open MOV 1117.

4.10 Close 10" HOV and MOV-1116.

4.11 Drain the product into sump tank.



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DOCUMENT NO: IMI/OVZ/07

TITLE

PIG LAUNCHING

4.12 Record details of Pig launching in Shift log book (IMF/OPN/01) & IMF/OPN/08.

5.0 RELEVANT RECORDS

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



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INTEGRATED MANAGEMENT INSTRUCTIONS

DOCUMENT NO: IMI/OVZ/08

TITLE

ISSUE HOT/ COLD/ Height/ Electrical Isolation WORK PERMITS

1.0 PURPOSE

To provide guidelines for issue of Cold work, Hot work, work in confined spaces & Working at Height, Electrical Isolation and Energisation Permit to carryout M & R jobs in VVSPL

2.0 REFERENCES

IMS Procedure: IMP/OVZ/01, OISD-STD-105, Process Hazard Identification and Risk Assessment Procedure

3.0 RESPONSIBILITY

For Cold Work Permit: (Station)

Receiver - Job Engineer
Issuer - Shift - In-Charge

For Cold Work Permit: (ROU)

Receiver - Job Engineer
Issuer - Maintenance-In-Charge/Location-In-Charge

For Hot Work/Work in Confined space/Working at Heights Permit

Receiver - Job Engineer
Concurred - Shift - In-Charge
Issuer - Maintenance-In-Charge for Maintenance Dept. related works @ VDS
- Operations-In-Charge for Maintenance Dept. related works @ VDS
- Location-In-Charge/ Terminal-In-Charge at other Locations of VVSPL

Electrical Isolation and Energisation Permit

Receiver - Job Engineer
Concurred - Shift - In-Charge
Issuer - Maintenance-In-Charge/Electrical-In-Charge

4.0 INSTRUCTIONS

4.1 Generally Online work permit system shall be adopted for issuing/receiving of work permits. In case of jobs on ROU and failure of on line system, manual permit to be issued.



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TITLE	TO ISSUE WORK PERMITS TO MAINTENANCE OFFICER FOR CARRYING OUT M&R JOBS
-------	--

4.2 The job engineer responsible for carrying out jobs apart from regular activities initiates the work permit and approaches the Shift In-charge for his concurrence (IMF/OPN/03, IMF/OPN/04, IMF/OPN/09).

4.3 In case of Electrical Isolation and Energization work permit (IMF/OPN/10) OIC-Electrical approaches the Maintenance In-charge for his concurrence.

4.4 The work permit for Working at Heights is applicable to all the jobs to be carried out at any elevation **more than 2 mts.**

4.5 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: Job Engineer)

4.6 Make an inspection of the site and if satisfied with the arrangement made by the Job engineer, issue the permit for a specified duration on a particular working day at a particular work location inside Vizag station. Also verify required PPEs, FF equipment 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"

(Responsibility : Permit Issuer) .

4.7 After issuing the work permit, inform over telephone to Fire & Safety Department of ATP Area about the location and duration of the HOT WORK being carried out at Vizag station. All permits issued will be entered in Shift log book in Control room before starting the actual job.

[Responsibility: Shift In-charge/ OIC]

4.8 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 enclosed & log observations of the visit in respective work permits and/or critical behavioral check list (IMF/OPN/12).



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TO ISSUE WORK PERMITS TO MAINTENANCE OFFICER FOR CARRYING OUT M&R JOBS

4.9 On completion of job, receiver of the permit shall approach the issuer for closure of the permit and hard copy of closed permit shall be submitted to shift-in-charge for records.

5.0

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 |
| ○ PPE Matrix – Annexure-I | IMP/OVZ/01 |
| ○ Critical Behavioral check list | IMF/OPN |

Annexure A

Sr.No.	Activity	Personal Protective Equipments (PPE'S) to be used in operating area											
		Helmet	Safety Shoes	Goggles	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. & CI 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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INTEGRATED MANAGEMENT INSTRUCTIONS

DOCUMENT NO: IMI/OVZ/09

TITLE

START UP OF VIZAG STATION

1.0 PURPOSE

To provide guide lines for starting of pumps at Vizag.

2.0 REFERENCES

Manual : IMSM/HPCL-VVSPL- Section : 7.5 Standard Operating Procedure for pump in VFD

3.0 RESPONSIBILITY

Shift In-charge

4.0 INSTRUCTIONS

- 4.1 Open MOV and Gate valve of VVSPL suction line at the discharge side of tank once joint gauging is completed.
- 4.2 Line up the station as follows :
- 4.2.1 Open manifold valve of the product to be pumped.
- 4.2.2 Open suction valve of Booster and main line pumps to be operated and venting of booster pumps to be done.
- 4.2.3 Line up one filter by opening both side valves.
- 4.2.4 Keep water separator online (in case of ATF) or else same is to be bypassed.
- 4.2.5 Keep one flow meter on line by opening both side valves.
- 4.2.6 Open MOV 1117 and 1118.
- 4.1 Open PCV 2 to 3% manually in case of DOL (In case of VFD, PCV will be opened fully)



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DOCUMENT NO: IMI/OVZ/09

TITLE

START UP OF VIZAG STATION

- 4.4 Start booster pump
- 4.5 Carry out venting of mainline pumps to be operated.
- 4.6 Start one mainline pump and inform Vijayawada to open SLV and PCV and start receiving product.
- 4.7 If pumps are in DOL, open PCV suitably to control the low rate and discharge pressure. In case of VFD, pumping flow rate can be regulated thru flow set point in PLC.
- 4.8 If required start second pump after carrying out the venting. In case of VFD, if second pump is in same VFD drive as of first pump, then first pump will go in DOL and second pump will be in VFD.
- 4.9 In case of DOL, PCV can be put in auto mode depending on the requirement.

5.0 RELEVANT RECORDS

Operations log book IMF/OVZ/03



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INTEGRATED MANAGEMENT INSTRUCTIONS

DOCUMENT NO: IMI/OVZ/10

TITLE

SHUT DOWN OF VIZAG STATION

1.0 PURPOSE

To provide guide lines for stopping of pumps at Vizag.

2.0 REFERENCES

IMS/MR/7.5

3.0 RESPONSIBILITY

Shift In-charge

4.0 INSTRUCTIONS

4.1 Stop mainline pumps.

4.2 Stop booster pumps.

4.3 Put PCV in manual mode and close gradually to zero %

4.4 Close MOV 1117 & 1118

4.5 Close suction valves of mainline and booster pumps

4.6 Close manifold valve.

4.7 Close both gate valve and MOV of the tank under operation.

5.0 RELEVANT RECORDS

Operations log book IMF/OVZ/03



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INTEGRATED MANAGEMENT INSTRUCTION

DOCUMENT NO.: IMI/OVZ/11

TITLE

INTERFACE TRACKING

1.0 PURPOSE

To provide guide lines for interface tracking and pumping operations at Vizag pumping station

2.0 REFERENCES

IMS Procedure: IMP/OVZ/01.

3.0 RESPONSIBILITY

Shift In-charge

4.0 INSTRUCTIONS

- 4.1.1 Keep ready the records of preceding and succeeding manifold product densities before switch over for reference.
- 4.1.2 Start taking samples immediately after manifold Switchover. Check the density, color, appearance & smell of the product.
- 4.1.3 Compare the same with proceeding and the succeeding product density, color and odour 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.
- 4.1.4 Check PLC density indicator also, for change in density. Start recording the details of each sample.
- 4.1.5 If the change in density is coupled with the change in the color & odour, assume it as the beginning of the Interface.
- 4.1.6 When the density finally stabilizes or nearly matches the density of succeeding manifold line, Interface deemed to have ended.
- 4.1.7 Record the details in format IMF/OVZ/15 (Interface Log Sheet) and communicate the Interface details to downward stations.
- 4.1.8 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.
- 4.1.9 Once Interface is completed, take 0-10-20-30 minutes and front samples.
- 4.1.10 Communicate the Interface details to all downward stations.
- 4.1.11 Sampling to be done at an interval of every 2 hours thereafter, in addition to middle and end line samples.

5.0

RELEVANT RECORDS

Interface log sheet

IMF/OVZ/15
Shift log book
QC Register

IMF/OPN/01
IMF/OVZ/13



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INTEGRATED MANAGEMENT INSTRUCTIONS

DOCUMENT NO.: IMI/OVZ/12

TITLE

DRA Dosing Procedure

1.0 PURPOSE

Inject DRA (Drag Reducing Agent) at downstream of SLV of station ensuring safe operations.

2.0 REFERENCES

IMP/OVZ/01

3.0 RESPONSIBILITY

- Shift In-charge

4.0 Instructions:

- Opening of all the ¾" valve connected to DRA injection line.
- Set the stroke length and VFD RPM as per the required ppm dosing.
- Line up the tank to pump suction. Start the injection pump.
- Vent the line by opening the ¾" side ball valve connected for venting purpose.
- Once venting completed, the line connected to valve is made through by opening main line connection valve.
- Monitor the pressure at discharge side of Reciprocating pump.
- Injection of DRA starts once pressure at discharge reaches more than the Main Line discharge pressure.
- Gauge the DRA tank: Every three hour gauge to be checked to calculate the injection rate and record the same in IMF/OPN/13
- In case of S/D, the injection of DRA to be stopped by switching off the pumps.
- The increase in flow and drop in pressure of the line shall be monitored continuously & shall be recorded in IMF/OPN/13



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TITLE

DRA Dosing Procedure

- During no-dosing period, the DRA injection to be done once a day for 5 mins to avoid any coagulation in the piping of DRA. The injection to be done at 0900 hrs in the morning.
- The circulation pump need to run continuously to keep the product homogenized. Stirrer shall be operated as and when required for homogenization.
- Gauge the tank and calculate the ppm dozed.
- Dosing shall be stopped and isolated during SKO and ATF batches.

5.0 SAFETY REQUIREMENTS

- Ensure all safety requirements are complied as per procedures mentioned in relevant OISD & IS standards.

6.0 RELEVANT RECORDS

IMI/OPN/13



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INTEGRATED MANAGEMENT INSTRUCTIONS

DOCUMENT NO.: IMI/OVZ/13

TITLE

SERIES PUMPING OPERATION

1.0 PURPOSE

To provide instructions for series pumping operations at vizag Station.

Available combinations in series pumping:

- 1.1 2+2 Series Pumping Operation
- 1.2 3+2 Series Pumping Operation

2.0 REFERENCES

IM Procedure: IMP/OVZ/01 and Standard operating procedure for pump in VFD.

3.0 RESPONSIBILITY

Shift In-charge

4.0 INSTRUCTIONS

- 4.1 Line-up respective product tank upto manifold. Follow tank lining up procedure no. IMI/OVZ/02.
- 4.2 Inform Rajahmundry, Vijayawada, Suryapet and Secunderabad before starting pumping operation.
- 4.3 Open product manifold valve.
- 4.4 Open suction valves of booster and mainline pumps and ensure pumps are primed.
- 4.5 Ensure that the station is aligned in PLC i.e., Manifold, one filter, water separator (for ATF only), one cartridge/basket filter, flow meter, PCV, MOV – 1117 & 1118 are open before starting of pumping.
- 4.6 Check the readiness of respective breakers/feeders/drives in VFD mode.
- 4.7 Check isolation of APEPDCL supply from any other source of power supply.
- 4.8 Select series 2+2 and Pressure Control (PC) mode through switch operation provided on PLC Panel.
- 4.9 Select Group series 2+2 or series 3+2 option in PLC as required.
- 4.10 Set Discharge line pressure at 45kg/cm².



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TITLE	SERIES PUMPING OPERATION
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- 4.11** Start two Booster pumps in VFD or DOL mode
- 4.12** Start two old pumps (MP1 and MP2/MP3) in VFD for series 2+2 operation or start three old pumps one by one in VFD for series 3+2 operation
- 4.13** Once two/three old pumps started in VFD stabilizes, convert the same to DOL using bypass checkbox given in 'BYP LIST' in PLC
- 4.14** After flow stabilizes, PCV to be set at ~ 30%
- 4.15** Set maximum 2000rpm of new pumps in PLC logic while starting pumps. Same can be changed afterwards as per pumping flow requirement.
- 4.16** New set of pumps (MP4/MP5 and MP6) to be started. Discharge Line Pressure to be set at 60kg/cm².
- 4.17** Once flow stabilizes, PCV to be gradually opened based on required flow rate and other operating conditions.
- 4.18** Vary Discharge line pressure and rpm of new pumps as per required pumping flow rate.
- 4.19** As deemed fit by the shift in-charge, some set alarms may be temporarily by passed in PLC Input if suspected to be malfunctioning. The same to be logged in PLC & Safety Bypass Register (IMF/OPN/07) for the intimation of the concerned maintenance officer. Shift in-charge to modify set pressures, if required, keeping the same within station parameters and the same to be entered in Shift log book.
- 4.110** Check lining up of the station keeping product quality into consideration.

5.0 RELEVANT RECORDS:

S. No	Format Title	Format No.	Location	Responsibility
1	Operations log book	IMI/OVZ/03	Control Room	Shift In-charge



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INTEGRATED MANAGEMENT PROCEDURES

DOCUMENT NO.: IMP/OPN/01

TITLE

START-UP PROCEDURES FOR VVSPL

1.0 PURPOSE

To lay down the procedure for start-up of VVSPL operations.

2.0 SCOPE

This is applicable to start-up of VVSPL operations.

3.0 REFERENCE

IMS/MR/7.5

4.0 RESPONSIBILITY

Shift In-charge

5.0 PROCEDURE

5.1 Start-up procedure for VVSPL section

5.1.1 GRS to open SLV and bring down back pressure to 2.0 kg/sq.cm.

5.1.2 SBS to open SLV.

5.1.3 VDS to start Booster pump after opening SLVs at VDS, RBS and VBS.

5.1.4 SBS to start one pump in co-ordination with VDS and VBS.

5.1.5 VDS to start one pump.

5.1.6 VBS to start one pump and H/C if required.

5.1.7 VDS to start second pump.

5.1.8 RBS to start H/C and pump depending on pumping schedule.



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DOCUMENT NO.: IMP/OPN/01

TITLE

START-UP PROCEDURES FOR VVSPL

5.2 Start-up procedure for VVPL section

5.2.1 VDS to start Booster pump after opening SLV.

5.2.2 VDS to start one mainline pump.

5.2.3 VBS to open SLV and PCV and start receiving product.

5.2.4 VDS to start second mainline pump.

5.2.5 RBS to start H/C and pump depending on pumping schedule.

6.0 RELEVANT RECORDS:

S. No	Format Title	Format No.	Location	Responsibility
1	Operations log book	IMF/OVZ/03	Control Room	Shift In-charge



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DOCUMENT NO.: IMP/OPN/02

TITLE

SHUTDOWN PROCEDURES FOR VVSPL

1.0 PURPOSE

To lay down the procedure for shut down of VVSPL.

2.0 SCOPE

This is applicable for shutdown of VVSPL operations.

3.0 REFERENCES

IMS/MR/7.5.1

4.0 RESPONSIBILITY

Shift In-charge

5.0 PROCEDURE

5.1 For shutdown of VVPL Section :

5.1.1 Stop Rajahmundry Heart cut and RBS Pumps, if on

- 5.1.2 a) If VDS pumps are running in Series mode Then stop all pumps in second set (MP4/5/6) and stop one of the first set pumps if two are running.
b) If VDS pumps are running in Parallel mode then Stop one pump at VDS, if two are running:

5.1.3 Close FCV, Station Inlet Valve 30-MOV 1503 at VBS.

5.1.4 Stop pumps at VDS once VBS inlet pressure raises upto 20 Kg/Cm².

5.1.5 Close Station Inlet Valve 10-MOV 1117 at VDS.

5.1.6 For long shutdown SLV, manifold valve and tank inlet valve at all locations to be closed.



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SHUTDOWN PROCEDURES FOR VVSPL

5.1.7 Sectionalizing valve at SV1, SV2, SV3, SV4, SV5 and valves at Intermediate Pigging Station IP1, IP2 can be closed if required.

5.2 For shutdown of VSPL Section :

5.2.1 Stop Suriapet Heart cut, if on

5.2.2 (a) If VBS pumps are running then

5.2.2.1 Stop one pump at VBS, if two are running.

5.2.2.2 Close PCV, Station Inlet Valve 50-MOV-1703 at GRS.

5.2.2.3 Stop Pumps at SBS, if running and then second pump at VBS once Ghatkesar pressure raises upto 20 Kg/CM².

5.2.2.4 Close down stream Station Limit Valve 30-MOV-1524 at VBS immediately.

5.2.2.5 For long shutdown Close Station Limit Valve at SBS, GRS, manifold valve at SBS, GRS and pumping manifold valve at VBS, Tank inlet valve at SBS/GRS and Tank outlet valve at VBS.

(b) If VBS pumps are not running :

5.2.2.6 Close PCV, Station Inlet Valve 50-MOV-1703 at GRS.

5.2.2.7 Stop Pumps at SBS once Ghatkesar pressure raises upto 20 Kg/Cm².

5.2.2.8 Close Upstream Station Limit Valve 40-MOV-1601 and Downstream Station Limit valve 40-MOV-1615 at SBS.

5.2.2.9 Close VBS heart cut temporarily, if ON

5.2.2.10 Close VBS downstream Station Limit Valve 30-MOV-1524 once Inlet pressure at SBS raises upto 40 Kg/Cm².

5.2.2.11 Close VBS station outlet valve 30-MOV-1522

5.2.2.12 For long shut down close SLV at GRS, Close manifold valve at SBS, GRS, Tank inlet valve at SBS/GRS.

5.2.2.13 Sectionalizing valve SV6, SV7, SV8, SV9, SV10, SV11, SV12, SV13, SV14, SV15, SV16, SV17, SV18, SV19, SV20, SV21 can be closed if required.



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TITLE

SHUTDOWN PROCEDURES FOR VVSPL

5.3 For shutdown of VVSPL Section :

5.3.1 Take VSPL shutdown first as per procedure mentioned in For Shutdown of VSPL Section (Refer 5.2)

5.3.2 Then take VVPL shutdown as per procedure mentioned in For shutdown of VVPL Section (Refer 5.1)

5.4 VSPL shutdown as mentioned in procedure 5.2 will be controlled by VBS.

5.5 Shutdown procedure mentioned in 5.1, 5.2, 5.3 are available through SCADA as VVPL Custom shutdown, VSPL custom shutdown, VVSPL custom shutdown respectively. VVPL, VSPL, VVSPL custom shutdown can be initiated by VDS control room, whereas VSPL custom shutdown can be initiated either by VBS control room or VDS control room.

6.0 RELEVANT RECORDS

S. No	Format Title	Format No.	Location	Responsibility
1	Operations log book	IMF/OVZ/03	Control Room	Shift In-charge



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INTEGRATED MANAGEMENT PROCEDURES

DOCUMENT NO.: IMP/OPN/03

TITLE

PROCEDURE FOR EMERGENCY SHUTDOWN OF VVSPL

1.0 PURPOSE

To lay down procedure for Emergency Shut down of VVSPL.

2.0 SCOPE

This is applicable for Emergency Shut down of VVSPL through SCADA.

3.0 REFERENCE

IMS/MR/7.5.1

4.0 RESPONSIBILITY

Shift In-charge

5.0 PROCEDURE

5.1 Conditions when Emergency shut down to be taken.

5.1.1 Major leakage or rupture in the pipeline.

5.1.2 Any major incident like fire in any station along the pipeline.

5.1.3 Any other undesirable situation which calls for immediate shut down of pipeline operation.

5.2 Confirm the authenticity of any such situation from the right source.

5.3 Actuate ESD through SCADA of VVSPL which will take following step as multicast message to all locations including Sectionalizing valve & IP station.

Multicast message to OS :

5.3.1 Sequence at Vizag Despatch :

5.3.1.1 Activate Station PLC ESD point.



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PROCEDURE FOR EMERGENCY SHUTDOWN OF VVSPL

5.3.1.2 Stop all pumps 10-PA-CF-101A,B,C (BP-1/2/3), 10-PA-CF-102A,B,C(MP-1/2/3), 10-PA-CF-103A,B,C(MP-4/5/6)

5.3.1.3 Close SOV & SLV 10-MOV-1117, 1118

5.3.2 Sequence at OS Rajahmundry Intermediate

5.3.2.1 Activate Station PLC ESD point

5.3.2.2 Close 20-MOV-1304

5.3.2.3 Stop all pumps 20-PA-CF-101A,B,C (MP-1/2/3)
20-PA-CF-102A,B,C (MP-4/5/6)

5.3.2.4 Close SLV and SIV and Bypass valve 20-MOV-1301,1303,1311, 1313, 1314

5.3.3 Sequence at OS Vijayawada Intermediate

5.3.3.1 Activate Station PLC ESD point

5.3.3.2 Close 30-MOV-1528

5.3.3.3 Stop all pumps 30-PA-CF-101A,B,C (MP -1/2/3) ,30-PA-102A,B (BP- '1/2)

5.3.3.4 Close SLV, SIV and By pass valve 30-MOV-1501,1503, 1525, 1522, 1524

5.3.4 Sequence at OS Suriapet Intermediate

5.3.4.1 Activate Station PLC ESD points

5.3.4.2 Close 40-MOV-1620

5.3.4.3 Stop all pumps 40-PA-CF-101A,B

5.3.4.4 Close SLV, SIV, Bye pass valve 40-MOV-1601, 1603, 1604, 1613, 1615



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PROCEDURE FOR EMERGENCY SHUTDOWN OF VVSPL

5.3.5 Sequence at OS Ghatkesar Intermediate

5.3.5.1 Activate Station PLC ESD points.

5.3.5.2 Close SLV, SIV valve 50-MOV-1701, 1703

5.3.6 CLOSE ALL SV's and IP's valve :

Sectionalizing valve of SV1(10-MOV-1001),SV2(10-MOV-1002),SV3(10-MOV-1003),SV4(10-MOV-1004),SV5(10-MOV-1005),IP1(15-MOV-1201,15-MOV-1205),IP2(25-MOV-1401,25-MOV-1405),SV6(30-MOV-1006),SV7(30-MOV-1007),SV8(30-MOV-1008),SV9(30-MOV-1009),SV10(30-MOV-1010),SV11(30-MOV-1011),SV12(30-MOV-1012),SV13(30-MOV-1013),SV14(40-MOV-1014),SV15(40-MOV-1015),SV16(40-MOV-1016),SV17(40-MOV-1017),SV18(40-MOV-1018),SV19(40-MOV-19),SV20(40-MOV-1020),SV21(40-MOV-1021)

5.4 For all pipeline emergencies, Emergency Shutdown sequence in SCADA shall only be initiated by SMCS at VDS control room. If any pipeline emergencies are noted at RBS,VBS,SBS,GRS control rooms they shall advise VDS to initiate Pipeline ESD thru SCADA.

5.5 However, Station emergency shutdown initiated from station PLC at RBS/VBS/SBS shall not give any command to station limit valves and open station Bye pass valve. The PLC shall trip all the pumps, close all the suction discharge valves of all the pump, station inlet/outlet valve, h/c receipt valve, all manifold valves and any other MOV's controlled from PLC. If bye pass valve fails to open due to any reason, respective stations shall advise VDS control room to initiate Pipeline ESD.

5.6 While VVSPL is in operation, for any station emergencies at GRS, before activating their station ESD, GRS shall advise VDS control room to initiate pipeline Emergency shutdown. After advising VDS, concurrently GRS shall activate their Station PLC shutdown.

5.7 While VVPL is in operation, for any station emergencies at VBS, before activating their station ESD, VBS shall advise VDS control room to initiate pipeline Emergency shutdown, After advising VDS, concurrently VBS shall activate their Station PLC shutdown.



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INTEGRATED MANAGEMENT PROCEDURES

DOCUMENT NO.: IMP/OPN/03

TITLE

PROCEDURE FOR EMERGENCY SHUTDOWN OF VVSPL

- 5.8 ESD of pipeline when activated from VDS, it shall be intimated to all control rooms. All the control rooms shall immediately switch over to monitoring the ESD sequence screen in SCADA and ensure that their respective station related shut down activities are occurring through SCADA. For any reason, if they don't take place they shall do so from their station PLC.

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	Operations log book	IMF/OVZ/03	Control Room	Shift In-charge



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INTEGRATED MANAGEMENT INSTRUCTIONS

DOCUMENT NO.: IMI/OPN/01

TITLE

CALIBRATION OF THERMOMETER

1.0 PURPOSE

To provide instructions for calibration of thermometer.

2.0 REFERENCES

IMP/OVZ/01

3.0 RESPONSIBILITY

Shift In-charge

4.0 PROCEDURE

4.1 Product sample is collected in a measuring glass cylinder.

4.2 Temperature of the sample is measured with the Calibrated thermometer (having valid calibration certificate) and reading is recorded.

4.3 Temperature of the sample is again measured with the Thermometer which is to be calibrated and the reading is recorded. The difference of the above two reading is taken as the correction (if any) to be applied to the uncalibrated Thermometer.

4.4 Items described in 4.2 & 4.3 to be repeated for at least five readings within the specified range and record the same in IMF/OPN/05.

5.0 RELEVANT RECORDS

Calibration Report IMF/OPN/05



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INTEGRATED MANAGEMENT INSTRUCTIONS

DOCUMENT NO.: IMI/OPN/02

TITLE

CALIBRATION OF HYDROMETER

1.0 PURPOSE

To provide instructions for calibrating Hydrometer

2.0 REFERENCES

IMS Procedure : IMP/OVZ/01

3.0 RESPONSIBILITY

Shift In-charge

4.0 PROCEDURE

4.1 Product sample of relevant density is collected in a measuring glass cylinder.

4.2 Density of the sample is measured with the hydrometer (having valid calibration certificate) and reading is recorded.

4.3 Density of the sample is again measured with the hydrometer which is to be calibrated and the reading is recorded. The difference of the above two reading is taken as the correction (if any) to be applied to the uncalibrated hydrometer.

4.4 Items described in 4.2 & 4.3 to be repeated for at least five readings at different mixture of products within the specified range and record the same in IMF/OPN/06

5.0 RELEVANT RECORDS

Calibration Report IMF/OPN/06



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INTEGRATED MANAGEMENT PROCEDURES

DOCUMENT NO.: IMI/OPN/03

TITLE

DEGASSING OF CORROSION INHIBITOR DRUMS

1.0 PURPOSE

To provide guidelines for degassing of Corrosion Inhibitor drums.

2.0 REFERENCES

Guidelines of M/s Dorf Ketel Chemicals Pvt. Ltd. vide e-mail dt. 23.03.04

3.0 RESPONSIBILITY

Shift - in - Charge

4.0 INSTRUCTIONS

- 4.1 Ensure C.I. Drum is empty without any traces of product in it. Note down disposal details in the register maintained in Control Room.
- 4.2 Fill the drum with a mix of NaOH / KOH and water in the ratio of 1:99 and ensure same has been kept for 24 hrs.
- 4.3 Keep the drum upside down and ensure that the drum is completely emptied with no water in it.
- 4.4 Ensure that the degassed water from the drum is emptied out in OWS in our station .
- 4.5 Take Explosive gas detector reading of empty drum and ensure that 0 % LEL reading is obtained.
- 4.6 Ensure that the empty drum (gas free) is taken to the CI drum shed and stacked properly in a separate place for disposal purpose (with a board “ Material ready for disposal ”).

5.0 RELEVANT RECORDS

CI drums inventory register



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QUALITY MANAGEMENT INSTRUCTIONS

DOCUMENT NO: IMI/OPN/04

TITLE

PUMPING/RECEIPT OF ATF

1.0 PURPOSE

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

2.0 REFERENCES

Aviation Quality Control Manual.

3.0 RESPONSIBILITY

Shift-in-Charge

4.0 INSTRUCTIONS

4.1 Activities required at VDS:

4.1.1 ATF is always to be sandwiched between Zero rated SKO. The Zero SKO is SKO passing silver strip corrosion with "0" test result (4 hrs@ 50 deg.C) at Refinery.

A cycle of **HSD – HPCK – ZeroSKO – ATF - ZeroSKO – HPCK – MS - HPCK - NSKO – HPCK - HSD** or **HSD – HPCK – ZeroSKO – ATF – ZeroSKO – HPCK - HSD** will be adopted in this pipeline.

4.1.2 Ensure Density difference between Zero SKO and ATF for appropriate cutting of I/F.

4.1.3 On either side (front and rear) 150-200 KL of ATF is to be downgraded to Normal SKO at the receiving location in addition to interface quantities.

4.1.4 ATF nominated tank shall be offered to VVSPL one day in advance before cycle, so that three tank samples (Top, middle & bottom samples) along with one bottom drain sample can be collected for density & conductivity testing and other checks as per AQCM. Density of various levels of the tank (upper, middle, lower & bottom) to be checked with Portable Density Meter during sample collection and same shall be recorded in Quality Control register (IMF/OVZ/13).

4.1.5 Filter separator shall be made online during zero SKO pumping and same need to be checked/drained at every hour during the zero SKO – ATF – zero SKO pumping & receipt.



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QUALITY MANAGEMENT INSTRUCTIONS

DOCUMENT NO: IMI/OPN/04

TITLE

PUMPING/RECEIPT OF ATF

- 4.1.6 Corrosion Inhibitor injection shall be withdrawn in the entire cycle of Zero SKO-ATF-Zero SKO and DRA injection shall be withdrawn 8 hours before pumping ATF, which shall be resume again (if require), 4 hours after ATF pumping is complete.
- 4.1.7 The drain sample of FWS at Visakh shall be checked for water as per existing SOP, at zero, 10, 20 and 30 minutes of end of interface. If, the water collection at 10, 20 & 30 minutes shows increasing trend and is more than 500 ml each time; the drain sample shall be observed for further half hour at 10 minutes interval. In case, the drain water is not coming down in this period, shutdown to be taken and analyzed with QC-Mktg and VR operations. Pumping can be resumed with QC clearance only. However, the appearance in sample point should also be bright & clear as per CI. No 3.9.4 of AQCAM, during such resumption.
- 4.1.8 Steady operation of Pipeline without interruption, Shutdown, pump change over, equipment change over shall be ensured.
- 4.1.9 The following facilities need to be flushed half an hour before initially with Zero SKO and later for 10 min with downgraded ATF.
- Ø All three Booster Pumps (one by one)
 - Ø Cartridge/Basket filters (one by one)
 - Ø Filter separator
 - Ø All Flow turbines (one by one) & Flow turbine by pass line
 - Ø Density meter
 - Ø All Mainline pumps (one by one), Both Old set and New set of mainline pumps to be flushed with zero SKO & either set with ATF
 - Ø Scraper launcher
 - Ø All possible vents, Drains, TSV's, PG/DPG etc.
 - Ø All PTs to be flushed
- 4.2 **Activities required at RBS/SBS :**
- 4.2.1 Calculate the expected arrival time of interface at Rajahmundry/Suriapet. Physical sampling to be carried out an hour before the expected arrival of interface Zero SKO/ATF at sample point and the densities are recorded using hydrometer. Sampling initially to be taken at an interval of 15 minutes and the frequency of sampling should be increased as the expected arrival time of interface approaches. The obtained density trend & visual appearance of the ATF throughout crossing to be recorded & intimated to VDS



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QUALITY MANAGEMENT INSTRUCTIONS

DOCUMENT NO: IMI/OPN/04

TITLE

PUMPING/RECEIPT OF ATF

- 4.2.2 DRA injection shall be withdrawn at both RBS/SBS, 8 hours before expected time of interface at the location, which shall be resume again (if require), 4 hours after ATF pumping is complete.
- 4.2.3 Hourly ATF line sample of 2 liter each to be collected during ATF crossing and same to be retained in color glass bottle till the batch is received/approved
- 4.2.4 All the following possible facilities at Rajahmundry/Suriapet need to be flushed half an hour before initially with front parcel of Zero SKO and later for 10 min with front downgraded ATF to make free from any pockets of other products.

A) With Station Bypassed:-

- Ø Scrapper launcher/receiver
- Ø Density meter
- Ø All vents, Drains, TSV's, PG/DPG etc.
- Ø Any other bypass lines

Note: Batch tracking is not possible in this case.

B) With Station On line:-

- Ø Cartridge/Basket filters (one by one)
- Ø Pumping Flow turbines (one by one)
- Ø Density meter
- Ø Mainline pumps (one by one) either old or new sets if pumps are required to be run
- Ø PCV and bypass line
- Ø Scrapper launcher/receiver
- Ø All possible vents, Drains, TSV's, PG/DPG etc.
- Ø Any other bypass lines-where ever possible

4.3 Activities required at VBS/SRS for receipt of ATF:

- 4.3.1 Calculate the expected arrival time of interface at Vijayawada/Secunderabad. Physical sampling to be carried out 2 hours before the expected arrival of interface at sample point and the densities are recorded using hydrometer. 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.



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DOCUMENT NO: IMI/OPN/04

TITLE

PUMPING/RECEIPT OF ATF

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

- 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 & I PS2: In view of Safety & Security reasons, it is desirable to keep in bypass as it is while the ATF cycle passes through these stations thus avoiding flushing of 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.

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

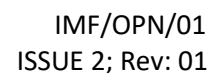
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LIST OF FORMS

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Sl. No.	Form No.	Form Title	Reference IMP/IMI No.	Retention Period
1	IMF/OPN/01	Shift log book	IMP/OVZ/01	3 years
2	IMF/OPN/02	Maintenance log book	IMP/OVZ/01	1 year
3	IMF/OPN/03	Cold work permit	IMI/OVZ/08	1 year
4	IMF/OPN/04	Hot work permit	IMI/OVZ/08	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 & Safety by-pass register	IMI/OVZ/03	1 year
8	IMF/OPN/08	Pigging report	IMI/OVZ/07	3 years
9	IMF/OPN/09	Working at heights permit	IMI/OVZ/08	1 year
10	IMF/OPN/10	Electrical Isolation & Energization Permit	IMI/OVZ/08	1 year
11	IMF/OPN/11	Check list for ATF pumping	IMI/OPN/04	2 years
12	IMF/OVZ/03	Operations log book	IMP/OVZ/01	2 years
13	IMF/OVZ/05	Product Availability /Pumping programme and Daily Operating Report (DOR)	IMP/OVZ/01	1 year
15	IMF/OVZ/08	Tank gauge cum check list	IMI/OVZ/02	1 year
16	IMF/OVZ/13	Quality Control Register	IMP/OVZ/03	1 year
17	IMF/OVZ/14	Sample label	IMP/OVZ/03	Till batch clearance at receiving locations
18	IMF/OVZ/15	Interface log sheet	IMI/OVZ/11	2 year
19	IMF/ROW/01	Daily line walkers report	IMP/OVZ/01	1 year
20	IMF/ROW/02	Report from security guards	IMP/OVZ/01	1 year
21	IMF/OPN/13	Monitoring of DRA dosing	IMP/OPN/04 & IMI/OVZ/12	1 year

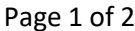
**Signature of
Department Head**



पाली लाग पुस्तिका/SHIFT LOG BOOK

दिनांक/Date _____ पाली/Shift _____ स्टेशन/Station _____
विशाखापटनम/Visakhapatnam _____ आईपीएस-1 (एम बी पाटनम)/IPS1 (M B
Patnam) _____ राजमन्ड्री/Rajahmundry _____ आईपीएस-2 (जे के गुडेम)/IPS2 (J K
Gudem) _____ विजयवाडा/Vijayawada _____ सुर्यापेठ/ Suryapet _____
_____ आईपीएस-3 (बोगाराम)/ IPS3 Bogaram) _____
सिकन्दराबाद/Secunderabad _____

[illegible]



अनुरक्षण लाग पुस्तिका/MAINTENANCE LOG BOOK

[illegible]

अनुरक्षण लाग पुस्तिका / MAINTENANCE LOG BOOK

[illegible]



हिन्दुस्तान पेट्रोलियम कार्पोरेशन लिमिटेड
विशाख विजवाडा सिकंदराबाद पाईपलाइन विशाखापटनम
HINDUSTAN PETROLEUM CORPORATION LIMITED
VISAKHA-VIJAYAWADA-SECUNDERABAD PIPELINE

IMF/OPN/03
 ISSUE 2 ; REV. 00

कार्यस्थल/LOCATION:

क्रम संख्या/SI. No. _____

शीत कार्य अनुज्ञप्ति/ COLD WORK PERMIT

कार्यानुज्ञप्ति/WORK CLEARANCE _____ दिनांक के / of date _____ समय से /FROM hrs _____ दिनांक के / of date _____ समय

तक /TO hrs. (पाली के लिए वैध यदि पुनः नुतनीकृत न किया जाए /valid for the shift unless renewed)

(विभाग/शाखा/ठेकेदार) के लिए जारी/ ISSUED TO : DEPARTMENT/SECTION/CONTRACTOR) : _____

कार्य का सही स्थान (क्षेत्र/इकाई/उपकरण संख्या) /EXACT LOCATION OF WORK (AREA/UNIT/EQUIPMENT NO. etc): _____

कार्य-विवरण/DESCRIPTION OF WORK: _____

अनुज्ञप्ति देने से पूर्व निम्नलिखित मदों की जाँच सुनिश्चित करें /THE FOLLOWING ITEMS SHALL BE CHECKED BEFORE ISSUING THE PERMIT

उचित खानों में सही (✓) का निशान लगाएँ. (*) निशान वाले खानों की पालना प्राप्तकर्ता सुनिश्चित करें. / {Tick (✓) mark in the appropriate box. Checklist items marked with asterisk (*) shall be complied by receiver }

क्रम संख्या I. No.	मद/Item	किया / Done	आवश्यक नहीं/Not Reqd.
1	उपकरण/कार्यक्षेत्र का निरीक्षण किया /Equipment / work Area Inspected		
2	आसपास की जगह जाँची, साफ की और ढक दिया /Surrounding area checked, cleaned and covered		
3	उपकरण ढका/बिच्छेदित/बंद/ पृथकीकृत / जड़ किया हुआ है. / Equipment / blinded/ disconnected /closed / isolated/wedge opened .		
4	उपकरण को भलिभाँतिरूप से निर्गमित/ दबावमुक्त किया/ Equipment properly drained and depressurized		
5	उपकरण को विद्युत बिच्छेदित किया गया/ Equipment electrically isolated तथा परमिट संख्या _____ द्वारा टैग किया गया /and tagged vide permit No.....		

क्रम संख्या □ SI. No.	मद/Item	किया / Done	आवश्यक नहीं/No t Reqd.
6	उपकरण पानी से साफ किया / Equipment water flushed		
7	उपकरण को वाष्प से भलिभाँति साफ किया /Equipment properly steamed/ purged		
8	हवा एवम प्रकाश की उचित व्यवस्था की /Proper ventilation and lighting provided		
9	क्षेत्र हदबंदी की तथा सावधानी बोर्ड लगाए गए/ Area cordoned off & caution boards / tags provided		
10	गैस टेस्ट : Gas test : HCs/Toxic etc. हाइड्रोकार्बन HCs = %एलईएल/LEL जहरिली गैस Toxic gas = पीपीएम/ppm		

अभियुक्तियाँ/Remarks: _____

1) गतिविधि से निम्नलिखित अवशिष्टात्मक खतरा अपेक्षित है. (उपयुक्त मद पर निशान लगाएँ) : आक्सीजन की कमी/एच₂एस, विषैली गैस/ज्वलनशील गैस/पेरोफेरिक लौह/क्षयकारी रसायन/वाष्प संक्षेपण/कोई अन्य/The activity has the following expected residual hazards (Tick the relevant items)Lack of Oxygen / H₂S, Toxic Gases / Combustible gases/ pyro-phoric Iron / Corrosive Chemicals / Steam – condensate / Others

2) सामान्य संरक्षी उपकरण के अतिरिक्त निम्नलिखित अतिरिक्त स्वयम् सुरक्षा उपकरणों का उपयोग करें (सुरक्षा टोपी/ सुरक्षा बूट / .दस्ताने/ब्याईलर सुट/चेहरे का कवच/एपरन/धूप-चस्में/घुल से वचाव के लिए श्वास यंत्र. /शुद्ध हवा मुखवटा/जीवन रेखा/ सुरक्षा पेटी/हवा की लाईन / कर्ण गुलबंद इत्यादी/ Following additional PPE to be used in addition to standards PPE (Helmet, Safety Shoes, Hand gloves, Boiler suit)Face shield / Apron / Goggles / Dust Respirator / Fresh Air Mask / Life line / Safety Belt / Airline / Earmuff etc.

3) यदि कोई अतिरिक्त सावधानी /Additional precaution if any: _____

4) सामान्य निर्देश निम्नलिखित है. /General Instructions are overleaf

परमिट देने वाले का नाम तथा पदनाम Issuer Name & Designation	परमिट देने वाले के हस्ताक्षर Issuer Signature	प्राप्तकर्ता का नाम तथा पदनाम Receiver Name & Designation	प्राप्तकर्ता के हस्ताक्षर Receiver's Signature

नूतनीकृत अनुज्ञप्ति / CLEARANCE RENEW[illegible]

8) कार्य पूर्ण होने पर अनुज्ञप्ति को बंद करें/On completion of the work, the permit shall be closed.

प्राप्तकर्ता: कार्य पूर्ण किया/ रोक दिया/स्थल साफ किया/Receiver: Certified that the subject work has been completed / stopped and area cleared			जारीकर्ता: सुत्यापत् किया कि कार्य पूर्ण किया/ रोक दिया तथा स्थल साफ और दुर्घटनारहित है /Issuer: Verified that the job has been completed and area cleared and is safe from any hazard.		
दिनांक व समय Date & Time	नाम व पदनाम Name & Designation	हस्ताक्षर Signature	दिनांक व समय Date & Time	नाम व पदनाम Name & Designation	हस्ताक्षर Signature

(कृपया अनुज्ञप्ति जारीकर्ता को वापस करें/PLEASE RETURN PERMIT TO ISSUER)

**HINDUSTAN PETROLEUM CORPORATION LIMITED
VISAKHA VIJAYAWADA SECUNDERABAD PIPELINES**

LOCATION:

**WORK PERMIT
FOR
HOT WORK / ENTRY TO CONFINED SPACE**

Sl. No. _____

WORK CLEARANCE FROM _____ hrs of date _____ TO _____ hrs of date _____ (valid for the shift unless renewed)

ISSUED TO : (DEPARTMENT/SECTION/CONTRACTOR) : _____

EXACT LOCATION OF WORK (AREA/UNIT/EQUIPMENT NO., etc) _____

DESCRIPTION OF WORK _____

THE FOLLOWING ITEMS SHALL BE CHECKED BEFORE ISSUING THE PERMIT
(Tick mark in the appropriate box. Checklist items marked with asterisk (*) shall be complied by receiver)

Sl. No.	Item	Done	Not Reqd.
A.	General Points		
1	Equipment / work Area Inspected		
2	Surrounding area checked, cleaned and covered		
	Sewers, manholes, CBD etc and hot surfaces nearby covered		
3	Considered hazard from other operations and concerned persons alerted.		
4	Equipment /blinded/disconnected/ closed/isolated/wedge opened		
5	Equipment properly drained and depressurized		
6	Equipment properly steamed / purged		
7	Equipment water flushed		
8	Iron sulfide removed / kept wet		
9	Equipment electrically isolated and tagged vide permit No.....		
10	Gas test : HCs = % LEL Toxic gas = ppm, O2 = %		
11	Running water hose / Fire extinguisher provided Fire Water system available		
12*	Area cordoned off and precautionary tags / boards provided		

Sl. No.	Item	Done	Not Reqd.
B	For Hot work / Entry to confined Space		
1	Proper ventilation and lighting provided		
2	Proper means of exit / escape provided		
3	Standby personnel provided from process/maint/contractor/Fire/Safety dept.		
4	Checked for oil and Gas trapped behind the lining in equipment		
5*	Shield provided against spark		
6*	Portable equipment/nozzles properly grounded		
7*	Standby persons provided for entry to confined space		
C	For vehicle Entry		
1	Spark Arrestor on the mobile equipment/vehicle provided		
D	For Excavation works		
1	Clearance obtained for excavation / road cutting/Dyke cutting from concerned depart.		

Remarks:

- The activity has the following expected residual hazards (Tick the relevant items)** Lack of Oxygen / H2S, Toxic Gases / Combustible gases / pyrophoric Iron / Corrosive Chemicals / Steam – condensate / Others _____
- Following PPE to be used in addition to standards PPE (Helmet, Safety Shoes, Hand gloves, Boiler suit)** Face shield / Apron / Goggles / Dust Respirator / Fresh Air Mask / Life line / Safety Belt / Airline / Earmuff etc.
- Additional precaution if any:** _____
- General Instructions are overleaf**

Issuer Name & Designation	Issuer Signature	Concurred by Name & Designation	Signature	Receiver Name & Designation	Receiver Signature

RECEIVER COPY /FIRE SECTION COPY/SAFETY COPY/ LOCATION COPY

CLEARANCE RENEWAL

Date	Time		Gas Test Values for HC's Toxic, O2 etc.	Additional Precautions if	Issuer's Name, Designation & Signature	Concurred by Name,	Receiver's Name,
	From	To					

				any, Otherwise mention "NIL"		Designation & Signature	Designation & Signature

General Instructions:

1. The work permit shall be filled up carefully and accurately in clear handwriting ensuring that complete information is provided in all the sections/ subsections and none of column is left blank. Sketches should be provided wherever possible to avoid miscommunication.
2. Appropriate safe guards and required personnel protective equipment (PPEs) shall be determined by a careful analysis of the potential hazards and the operations to be performed prior to starting the work.
3. In case of fire alarm / siren, all work must immediately be stopped.
4. Only certified vehicle / engines and permitted type of electrical equipment and tools are allowed in operating areas.
5. Welding machines should be located in non-hazardous and ventilated areas.
6. No hot work should be permitted unless the explosive meter reading is zero.
7. When a person is entering confined space, the receiver must keep minimum two standby – designated persons at the manhole or entry point.
8. Before box up of any vessel manhole cover, ensure that no men / materials are inside the vessel.
9. For renewal of work clearance, the issuer shall ensure that the conditions are satisfactory for the work to continue. If the conditions have changed, it may be necessary to issue a new permit or amend the existing permit.
10. This clearance on the same permit can be renewed/extended upto a maximum of seven calendar days.
11. This permit must be available at work site at all times.
12. On completion of the work, the permit must be closed and kept as record.

Closing of the Permit:

Receiver: Certified that the subject work has been completed / stopped and area cleared		
<i>Date & Time</i>	<i>Name & Designation</i>	<i>Signature</i>

Concurred By		
<i>Date & Time</i>	<i>Name & Designation</i>	<i>Signature</i>

Issuer: Verified that the job has been completed and area cleared and is safe from any hazard.		
<i>Date & Time</i>	<i>Name & Designation</i>	<i>Signature</i>

(PLEASE RETURN PERMIT TO ISSUER)



IMF/OPN/05
ISSUE 2; REV.00

हिन्दुस्तान पेट्रोलियम कॉर्पोरेशन लिमिटेड
विशाख विजयवाडा सिकंदराबाद पाईपलाईन विशाखापटनम
HINDUSTAN PETROLEUM CORPORATION LIMITED
VISAKHA-VIJAYAWADA-SECUNDERABAD PIPELINE

थर्मामीटर का कैलिब्रेशन सर्टिफिकेट / CERTIFICATE FOR THERMOMETER CALIBRATION

कार्य स्थल/Location :

क्रम संख्या Sl. No	मास्टर थर्मामीटर की रीडिंग Master Thermometer Reading	कैलिब्रेशन किए जा रहे थर्मामीटर की रीडिंग Thermometer Reading Under Calibration	अंतर Difference	अभियुक्ति (सुधारक) <input type="checkbox"/> Remarks (Correction to be applied)

वदि सुधारक $\pm 1^\circ \text{C}$ से अधिक हो तो सेवा से निष्कासित करें

If correction is $> \pm 1^\circ \text{C}$, same to be discarded.

1. सर्टिफिकेट संख्या / CERTIFICATE NO. :
2. थर्मामीटर की पहचान संख्या / THERMOMETER IDENTIFICATION NO. :
3. थर्मामीटर की बनावट / THERMOMETER MAKE :
4. परिसीमा / RANGE :
5. सुधारक / CORRECTION TO BE APPLIED :

नोट: उपर्युक्त थर्मामीटर को _____ के कैलिब्रेट किए हुए थर्मामीटर संख्या _____ जो _____ बनावट का है, के साथ तुलना किया गया, जिसको नेशनल स्टैंडर्ड से अनुरेखण एवम कैलिब्रेशन की वैधता दिनांक _____ से _____ तक प्राप्त है. उपर्युक्त थर्मामीटर उपयोग के लिए सही पाया गया.

NOTE: The above thermometer has been compared with calibrated thermometer No. _____ of _____ make received from _____ having traceability to National Standards with calibration validity from _____ to _____. Above thermometer is found fit for use.

अगले कैलिब्रेशन की तिथि / Next Calibration due on _____ :

दिनांक / Date:

पाली

अधिक्षक / Shift In-charge



IMF/OPN/06
ISSUE 2; REV.00

हिन्दुस्तान पेट्रोलियम कॉर्पोरेशन लिमिटेड
विशाख विजयवाडा सिकंदराबाद पाईपलाइन विशाखापटनम
HINDUSTAN PETROLEUM CORPORATION LIMITED
VISAKHA-VIJAYAWADA-SECUNDERABAD PIPELINE

हाईड्रोमीटर का कैलिब्रेशन सर्टिफिकेट / CERTIFICATE FOR HYDROMETER CALIBRATION

कार्य स्थल / Location :

क्रम संख्या □ SI. No	मास्टर हाईड्रोमीटर की रीडिंग Master Hydrometer Reading	कैलिब्रेशन किए जा रहे हाईड्रोमीटर की रीडिंग Hydrometer Reading under Calibration	अंतर Difference	अभियुक्ति (सुधारक) □ Remarks (Correction to be applied)

वदि सुधारक ± 0.001 ग्राम/मीली. से अधिक हो तो सेवा से निष्कासित करें

If correction is $> \pm 0.001$ gm/ml, same to be discarded.

1. सर्टिफिकेट संख्या / CERTIFICATE NO. :
2. हाईड्रोमीटर की पहचान संख्या / HYDROMETER IDENTIFICATION NO. :
3. हाईड्रोमीटर का बनावट / HYDROMETER MAKE :
4. परिसीमा / RANGE :
5. सुधारक / CORRECTION TO BE APPLIED :

नोट: उपर्युक्त हाईड्रोमीटर को _____ के कैलिब्रेट किए हुए हाईड्रोमीटर संख्या _____ जो _____ बनावट का है के साथ तुलना किया गया, जिसको नेशनल स्टैंडर्ड से अनुरेखण एवम कैलिब्रेशन की वैधता दिनांक _____ से _____ तक प्राप्त है. उपर्युक्त हाईड्रोमीटर उपयोग के लिए सही पाया गया.

NOTE : The above hydrometer has been compared with calibrated hydrometer No. _____ of _____ make received from _____ having traceability to National Standards with calibration validity from _____ to _____. Above hydrometer is found fit for use.

अगले कैलिब्रेशन की तिथि / Next Calibration due on :

दिनांक / Date:

पाली अधीक्षक / Shift In-charge



हिन्दुस्तान पेट्रोलियम कार्पोरेशन लिमिटेड
विशाख विजवाडा सिंकंदराबाद पाईपलाइन विशाखापटनम
HINDUSTAN PETROLEUM CORPORATION LIMITED
VISAKHA-VIJAYAWADA-SECUNDERABAD PIPELINE

IMF/OPN/08
ISSUE 2 ; REV. 00

पिगिंग रिपोर्ट / PIGGING REPORT

कार्यस्थल/Location:

दिनांक/Date:

खण्ड/Section:

पिगिंग का प्रकार/Type of pigging:

छोड़ा गया पिग PIG Launched		गड्ढा संख्या Pit No.	गड्ढा चैनेज Pit Chainage	पिग का संभावित आगमन Expected PIG arrival		पिग का वास्तविक आगमन Actual PIG arrival		विलंब घंटों में Delay in (hrs)	आयतन Volume (KL)	वास्तविक आयतन Actual Volume (KL)	आयतनों में अंतर Difference in Volume (KL)	अभियुक्ति Remarks
दिनांक Date	समय Time			दिनांक Date	समय Time	दिनांक Date	समय Time					

अ) पिग और पिग कप/डिस्क/ब्रश की स्थिति/Conditions of PIG & PIG Cups/Discs/Brushes

क्र. सं ख्या Sr. No.	मद का विवरण Item Description	पिग छोड़ने से पहले Before PIG Launch			पिग छोड़ने के बाद After PIG Launch			
1	पिग का अंग PIG Body	अच्छा Good	हाँ Yes	नहीं NO	अच्छा/ खराब/पुनः उपयुक्त Good/Bad/Reusable			
2	पिग का गाइड डिस्क PIG Guide Discs	आयाम Dimension:		सहनशील ता Tolerance :	आयाम Dimension		पुनः उपयुक्त Reusable	पुनः उपयुक्त नहीं Not Reusable
3	पिग का सिलिंग डिस्क PIG Sealing Discs	आयाम Dimension:		सहनशील ता Tolerance	आयाम Dimension		पुनः उपयोग योग्य Reusable	पुनः उपयोग योग्य नहीं Not Reusable
4	पिग के ब्रश PIG Brushes	पिग के ब्रशों का बाह्य ब्यास Outer Dia of brushes on the PIG आयाम Dimension:		सहनशील ता Tolerance :	पिग के ब्रश का बाह्य ब्यास Outer Dia of brushes on the PIG आयाम Dimension		पुनः उपयुक्त Reusable	पुनः उपयुक्त योग्य नहीं Not Reusable

एकत्रित अवशेष का विवरण/Details of residue collected

वजन/weight _____ कि. ग्राम में/In Kgs

पाली प्रभारी/Shift In-charge

लौह अंश/Ferrous content _____%

समीक्षा/Reviewed by:

व. प्रबंधक परिचालन/Sr. Mgr. Opns.

HINDUSTAN PETROLEUM CORPORATION LIMITED
PERMIT FOR WORKING AT HEIGHT

Sl. No. _____

LOCATION:

VALID FROM _____ TO _____

PERMISSION IS GRANTED TO : SECTION / CONTRACTOR _____ NAME _____

NATURE OF WORK _____

LOCATION OF WORK _____

IF HOT WORK IN CONFINED SPACE IS AT ELEVATION A SEPARATE HOT WORK PERMIT SHOULD BE ISSUED FOR IT ALONG WITH THIS PERMIT. THE FOLLOWING ITEMS SHALL BE CHCKED BEFORE ISSUING THIS PERMIT.

Sl. No.	Item	Done	Not Reqd.
1	Equipment / work area inspected / area kept clear		
2	Surrounding area checked / cleaned up		
3	Sewers, man holes, drains etc and hot surfaces nearby covered		
4	Scaffolds / Ladders checked by concern job supervisors		
5	Ensure all material carried up at elevation are fall protected		
6	ISI marked safety belts & helmets are provided for contractor workers		
7	Contractor certified that his crew is fit for working at height		
8	Instructions are given to workmen to tie the life lines of safety belt properly		
9	Proper illumination provided		
10	Adequate working platform & space is provided		

(PLEASE PUT (✓) MARK IN THE APPROPRIATE BOX)

Sl. No.	Item	Done	Not Reqd.
11	Proper means of exit provided		
12	Precautionary tags / boards provided		
13	Portable electrical equipment properly earthed and provided with ELCB switches.		
14	Standby contractor personnel provided for supervision		
15	Workers are trained in use of safety belts		
16	Operations in –charge kept informed		
17	Area cordoned off		
18	Precautions against public traffic taken		
19	Weather conditions are favourable for elevation work		
20	Additional safety measures double life lines safety nets roof ladder / crawlink board (in case working on fragile roof)		

Permit issued by

Name _____

Signature of issuer _____

Telephone Extn _____

Permit concurred by

Name _____

Signature of issuer _____

Telephone Extn _____

Permit received by

Name _____

Signature of Receiver _____

Telephone Extn _____

(Note: Pink colour – First Copy – Contractor copy, Blue colour – 2 nd copy – Location copy, White Colour – 3rd Copy – Safety inspection copy)

SPECIAL INSTRUCTIONS

1. The permit is applicable to all jobs to be carried out at elevation more than 3 meters, like painting, scrapping, cleaning instrument checks, working on scaffolds etc.
2. Check all personal protective equipment required such as : Safety helmet/Gloves/Goggles/Proper foot wear/Boiler suit/Dust respirator/Life line/Safety belts are provided.
3. In case of fire alarm, all work must be stopped. Running fire water must be closed. All personnel must leave work site and proceed to designated areas.
4. In case of liquid/gas release, stop work and immediately advise concerned operation personnel.
5. Only certified vehicles/engines and permitted type of electrical equipment and tools are allowed in operation areas.
6. Ensure proper grounding/earthing/insulation of cables.
7. If the job involves working on equipment, which are in service concerned person should be kept informed.
8. Contractor must give assurance that all his worker are physically and psychologically fit for working at elevation.
9. Work at heights should not be permitted in extreme weather conditions such as high wind, heavy rains, storms etc.
10. This permit should be available at the work sit eat all times.
11. Additional remarks, if any:

PERMIT RENEWAL RECORD

[illegible]

Condition for job completion

Time _____ a.m / p.m Date _____

Work completed / Stopped at _____

Scaffolding pipes and other materials removed and area house keeping done _____

By _____ By _____ By _____

Name of Issuer

Concurred By

Name of Receiver

**HINDUSTAN PETROLEUM CORPORATION LIMITED
VISAKHA VIJAYAWADA SECUNDERABAD PIPELINES**

LOCATION

Sl. No.

Electrical Isolation / Energisation Permit

Section – A : Isolation Permit.

Request for Isolation

Date: _____ Time: _____

Department / Section / Area issuing the permit _____

Equipment number to be isolated : _____

Name of the equipment / circuit to be isolated _____

The above-mentioned equipment / circuit shall be de-energized and isolated from all live conductors to carry out the maintenance work by _____ section / for operational requirement.

Issuer Name

Designation

Signature

Certificate of Isolation:

Date: _____ Time _____

Certificated that Equipment / Circuit no. _____ of _____ plant has been electrically isolated by switches / isolators / links / fuses (tick as applicable) and the danger tag is put on the supply panel. Actions in respect of electrical isolation have been recorded in the electrical shift logbook.

Issuer Name

Designation

Signature

RECEIVER'S COPY / LOCATION COPY

.....

Section – B Energisation Permit:

Sl. No. _____

Request for energisation

Department / Section / Area issuing the permit _____

Equipment number to be energized _____

Name of the equipment / circuit to be energized _____

Work on the above mention equipment / circuit has been completed and all the applicable permits closed. This equipment / circuit may be energized.

_____	_____	_____
Issuer Name	Designation	Signature

Certificate of Energisation: Date: _____ Time _____

Certificated that Equipment / Circuit no. _____ of _____ plant has been electrically energized and the danger tag removed form the supply panel. This is also recorded in the electrical shift log book.

_____	_____	_____
Name of Authorized person	Designation	Signature

Critical Behavior Checklist for Personal Protective Equipment Observation	
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[illegible]



एटीएफ बैच संख्या / ATF Batch Number : पार्सल का आकार / Parcel size :
वीडीएस में पंपिंग की तिथि व समय / Date & time pumping started at VDS:
वीबीएस में रेसिप्ट समापन की तिथि व समय / Date & time receipt completed at VBS:
अ) अंतिम पिपिंग की यथास्थिति / Status of Last pigging done
पिपिंग का प्रकार / Type of pigging : पिपिंग की तिथि / Date of pigging : अभियुक्ति / Remarks
ब) शुन्य एसकेओ-एटीएफ-शुन्य एसकेओ चक्र की अनुसूचित मात्रा :
/ Quantity scheduled for ZeroSKO-ATF-ZeroSKO cycle :

II. वीडिएस / आरबीएस में पंपिंग परिचालन / Pumping Operations at VDS

	पाईपलाइन / Pipe line	Remark
1	इस एटीएफ बैच को पम्प करने से पूर्व के पम्प किए गए एमएस (बैच की बैच लम्बाई, बैच संख्या व पंपिंग 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)	बैच संख्या / Batch No : तिथि / Date : मात्रा / Qty:
2	0-रेटेड एसकेओ/ पदावनित एटीफ के पंपिंग के दौरान निम्न उपकरणों को प्रच्छालित किया गया- सभी बुस्टर पम्प, कार्ट्रिज/ बास्केट फिल्टर, वाटर सेपरेटर, सभी फ्लो टरबाईंस, घनत्व मीटर, दोनो पुराने व नए मेनलाइन पम्प, पिग लांचर, सभी वेंट्स, ड्रेन, टीएसवीस, पीजी/ डीपीजी, कोई अन्य बाईपास लाइन – जहाँ भी संभव हो (उपलब्ध स्लज की गुणवत्ता एवम मात्रा को अलग रेकार्ड करें तथा स्लज के नमूने को संभालकर 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, Mainline 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
3	0-रेटेड एसकेओ/ पदावनित (डाउनग्रेडेड) एटीफ के पंपिंग के दौरान किसी भी स्लाप / सम्प टैंक या सीआई का पाईपलाइन स्थानक से अंतःक्षेपण नहीं किया गया. During pumping of ATF and 'O' rating SKO, no slop/CI/DRA/Sump Tank injection was done at the pipeline station	हाँ/ Yes नहीं/No
4	एटीफ पंपिंग शुरू करने से पूर्व, निर्धारित एटीफ टैंक के ड्रेन तथा ऊपरी/ मध्य / नीचले नमूनों को एकत्रित कर सुरक्षित रखा गया Drain & TMB samples of nominated ATF tank were collected and preserved before introduction of ATF.	हाँ/ Yes हाँ/No
5	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 =
6	0-रेटेड एसकेओ के दोनो अग्र व अंतिम बैच के कमसे कम 3 लाइन नमूने (प्रत्येक नमूना 2 ली. का) तथा एटीफ के 5 लाइन नमूने (प्रत्येक 2 ली. के) सामान्य अंतराल पर साफ किए गए तथा भलिभाँति प्रच्छालित मानक डिब्बो/ रंगिन 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 '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 and preserved.	हाँ/ Yes नहीं/No
7	अ) एटीफ पंपिंग के दौरान मेन या बुस्टर स्टेशन पर कोई शट डाउन नहीं था तथा पूर्णतया स्थायी बहाव सुनिश्चित किया गया During ATF movement there was no S/D of main/booster station and steady flow maintained throughout.	हाँ/ Yes नहीं/No
8	ब) यदि अपरिहार्य कारणों से कोई शट डाउन था (कारण, अवधि रिकार्ड करें) There was S/D which could not be avoided (Reason, duration should be recorded).	
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

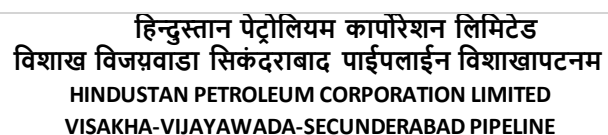
III. वाबाएस म रासष्ट (प्राप्त) क लिए/ For receipt at VBS/SRS

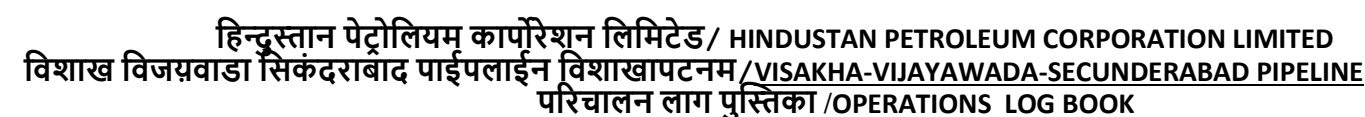
Page 3

		पाईपलाईन / Pipe line	विपणन / Marketing.	Remark
10	0-रेटेड एसकेओ/ एटीफ के रसिष्ट के दौरान वीबीएस के निम्न उपकरणों को प्रच्छालित किया गया- कार्टिज/ बास्केट फिल्टर, रसिष्ट फ्लो टरबाइन, घनत्व मीटर, एफसीवी और बाईपास स्केपर रिसिवर. सभी वेंट्स, ड्रेन टीएसवीस, पीजी/ डीपीजी, कोई अन्य बाईपास लाईन – जहाँ भी संभव हो (उपलब्ध स्लज की गुणवत्ता एवम मात्रा को अलग रेकार्ड करें तथा स्लज के नमूने को संभालकर रखें). During 'O' rated SKO/ATF receipt VBS side following station facilities were flushed : Cartridge/Basket filters, Receipt Flow turbines, Densitymeter, FCV and bypass, Scraper receiver, All possible vents, Drains, TSVs, PG/DPG, Any other bypass lines-where ever possible. (The quality and quantity of sludges if available are to be recorded separately for each point to be preserved)	हाँ/ Yes नहीं/No		
11	0-रेटेड एसकेओ/ पदावनित (डाउनग्रेडेड) एटीफ के पंपिंग के दौरान किसी भी स्लाप / सम्प टैंक या सीआई का पाईपलाईन स्थानक से अंतःक्षेपण नहीं किया गया . During pumping of ATF and 'O' rating SKO, no slop/CI/DRA/Sump Tank injection was done at the pipeline station	हाँ/ Yes नहीं/No		
12	एटीफ टैंक के निकास लाईन को पृथक किया/ ATF tank outlet line was isolated & locked.	हाँ/ Yes नहीं/No		
13	एटीफ रसिष्ट (प्राप्ति)शुरू करने से पूर्व, निर्धारित एटीफ टैंक के ड्रेन तथा ऊपरी/ मध्य / नीचले नमूनों को एकत्रित कर सुरक्षित रखा गया Drain & TMB samples of nominated ATF tank were drawn, tested for water and sediment prior to just before receipt of ATF.	हाँ/ Yes नहीं/No	हाँ/ Yes नहीं/No	
14	0-एसकेओ/ एटीफके घनत्वअंतरके आधारपर शुद्ध एटीफ पदअवनित (डाउनग्रेड)मात्रास्थापित किया जाना चाहिए, तथापि पदअवनित (डाउनग्रेड)मात्रा 150 किली 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.	पदअवनित (डाउनग्रेड)मात्रा : Quantity Downgraded::		
15	एटीफ प्राप्त करनेवाले टैंक के प्रवेश लाईन काएचओवी (टैंक के प्रवेश एमओवीसे तुरंत पहले) एटीफ प्राप्ति से कुछ पूर्व ही खोला 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	हाँ/ Yes नहीं/No	
16	एटीफ को निर्धारित टैंक या जिस टैंक में स्पेक एटीफ था में प्राप्ति (रिसीट) किया गया (टैंक संख्या, टैंक सफाई की आखरी तिथि दर्शाएँ)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).	पूर्व बैच संख्या / Previous Batch No:मात्रा / Quantity:	Tank No: Date Of Cleaning:	
17	एटीफ/ 0-एसकेओके घनत्वअंतरके आधारपर शुद्ध एटीफ पदअवनित (डाउनग्रेड)मात्रास्थापित किया जाना चाहिए, तथापि पदअवनित (डाउनग्रेड)मात्रा 150 किली 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.	पदअवनित (डाउनग्रेड)मात्रा : Quantity Downgraded::		
18	एटीफ प्राप्ति से पूर्व, निर्धारित एटीफ टैंक के ड्रेन तथा ऊपरी/ मध्य / नीचले नमूनों को एकत्रित कर सुरक्षित रखा गया Drain & TMB samples of nominated ATF tank were collected and preserved before Receipt of ATF.	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/ पदावनित (डाउनग्रेडेड) एटीफ की प्राप्ति के दौरान किसी भी स्लाप / सम्प टैंक या सीआई का अंतःक्षेपण नहीं किया गया . Injection of slop tank/ sump tank product was not done during receiving of 'O' rating SKO and ATF.	हाँ/ Yes नहीं/No		
21	0-रेटेड एसकेओ के दोनो अग्र व पार्श्व बैच से कमसे कम 3 लाईन नमूने (प्रत्येक नमूना 2 ली. का) तथा एटीफ के 5 लाईन नमूने (प्रत्येक 2 ली. के) सामान्य अंतराल पर साफ किए गए तथा भलिभाँति प्रच्छालित मानक डिब्बो/ रगिन बोतलों में पाईपलाईन स्थानक से एकत्रित किया 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	रसिष्ट समापन के पश्चात संबंधित टैंक से, बैच फॉर्मेशन टेस्ट हेतु सामुहिक (संयुक्त) एटीफ नमूना लिया गया . Joint ATF samples from the tank to be taken after the receipt is over for batch formation test.	हाँ/ Yes नहीं/No	हाँ/ Yes नहीं/No	
23	Monitoring test of idle line ATF between Tank & Manifold and should be OK by QC.	हाँ/ Yes, नहीं/No Certificate Number:		

Prepared By

Reviewed by

[illegible]



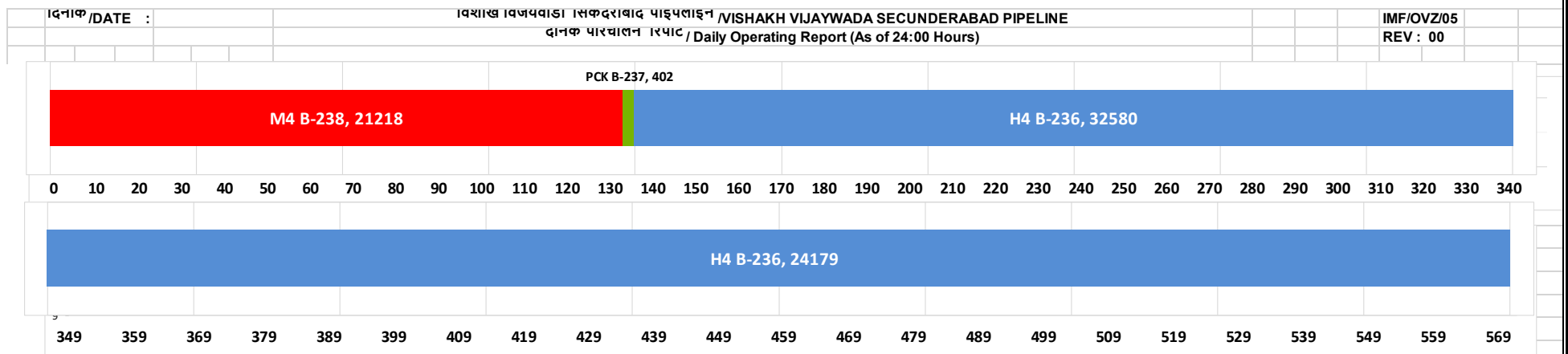
कार्यस्थल/Location: विशाख/Vizag

दिनाँक/Date: : 00:00 बजे से/From Hrs दिनाँक/Date:

24:00 बजे तक/Hrs

समय Hours	उत्पा द Prod.	चक्र/ बैच सं ख्या Cycl e/ Batc h No.	टैंक सं ख्या Tank No.	टैंक लेवल Tank Level	घनत्व 15 @ C° Density 15@ C°		वीडीएस VDS - A			उत्पाद/ बैच Produ ct/ Batch	आरबीएस RBS - B			उत्पाद/ बैच Product/ Batch	वीबीएस VBS - C			उत्पाद / बैच Produ ct/ Batch	एसबीएस SBS - D			उत्पाद / बैच Produ ct/ Batch	जीआरएस SRS -E			रिकासिले सन Reconcili atio (B+C+D+E) - A	ग्राही टैंक Tanks U/R				
					फी ल्ड Field	पैनेल pane l	पम्प की गयी मात्रा Pumped Quantity				प्राप्त की गयी मात्रा Receipt Quantity				प्राप्त की गयी मात्रा Receipt Quantity				प्राप्त की गयी मात्रा Receipt Quantity				प्राप्त की गयी मात्रा Receipt Quantity				आर बीए स RBS	वी बीए स VBS	एस बीए स SBS	जीआरएस SRS	
							एफसी FC	डी प DIP	फ्लो रेट F/R		एफ सी FC	डी प DIP	फ्लोरेट F/Rate		ए फ सी FC	डी प DIP	फ्लोरेट F/Rate		एफ सी FC	डीप DIP	फ्लोरेट F/Rate		एफ सी FC	डीप DIP	फ्लोरेट F/Rate						
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उपकरण संचालन घंटों में / Equipment Running Hrs															अभियुक्ति / Remarks																
पाली/ Shift	सीआई CI-1	सीआई CI-2	बीपी-1 BP-1	बीपी-2 BP-2	बीपी-3 BP-3	एमपी-1 MP-1	एमपी-2 MP-2	एमपी-3 MP-3	एमपी-4 MP-4	एमपी-5 MP-5	एमपी-6 MP-6	एमपी-7 MP-7	वीडि यो कांफ्रें सिंग / VC. Y/N	पाली प्रभा री Shift - I/C	पाली अभि यंता Shift Engi neer	वीडीएस/VDS	IPS1/ आईपीएस-1	आरबीएस/ RBS	IPS2/ आईपीएस-2	वीबीएस/VBS	एसबीएस/ SBS	IPS3/ आईपीएस-3	जीआरएस/SRS								
B/F																															
07-15hr																															
15-22hr																															
22-07hr																															
सकल/ Cumm.																															
उपकरण में उत्पाद / Product in the equipment.										सीआई/C		सम्प टंक लेवल / Sump Tank Level (in Cm)																			

[illegible]



उत्पाद / Product	पम्पड मात्रा / Qty. Pumped(KL)				प्राप्तमात्रा /Quantity Received (KL)								स्थल / Locn	बन्द / Shutdown	
	Ex VDS		Ex VBS		राजमुन्दरी /Rajamundry		विजयवाडा /Vijayawada		सुर्यपेट /Suryapet Terminal		सिकंदराबाद /Secunderabad Terminal			दैनिक/ Day's	सकल/ Cum.
	दैनिक/Days	सकल/cum (KL)	दैनिक/Days	सकल/cum (KL)	दैनिक/Days	सकल/cum (KL)	दैनिक/Days	सकल/cum (KL)	दैनिक/Days	सकल/cum (KL)	दैनिक/Days	सकल/cum (KL)			
M4															
H4															
SKO															
ATF															
HPCK															
योग /Total															
Total (MT)															

वीडीएस/VDS		
आरवीएस /RBS		
आरवीएस /VBS		
आरवीएस/SBS		
Reason for VVSPL Shutdown		
-		

उत्पाद / Product	पापग योग्य भंडारण का स्थिति / Pumpable stock position (KL)																			
	राजमुन्दरी टर्मिनल /Rajamundry Terminal					विजयवाड़ा टर्मिनल /Vijayawada Terminal					सुर्यापेट /Suryapet Terminal					सिकंदराबाद /Secunderabad Terminal				
	भंडार/Stock	रिक्तता/Ullage	Day's Offtake	Cum. Offtake	Cover	भंडार/Stock	रिक्तता/Ullage	Day's Offtake	Cum. Offtake	Cover	भंडार/Stock	रिक्तता/Ullage	Day's Offtake	Cum. Offtake	Cover	भंडार/Stock	रिक्तता/Ullage	Day's Offtake	Cum. Offtake	Cover
M4																				
H4																				
SKO																				
ATF																				

एमडीपीनम्बर के अनुसार दैनिक आपटेक /Daily Offtake based on MDP No-31 Days/Month					पम्पिंग प्लान / Pumping Plan	
Locn	M4	H4	SKO	ATF	MS4(17-238) pumping to continue. RBS has 4 days cover in MS4	
RBS					Remark	
VBS					Nil incidents/accidents	
SBS						
SRS						
MDP for Mar 2017				TMT		

पंपिंग ब्यौरा /Pumping Details							
स्थल /Location		दानक /Day (MT)		माह /Month (TMT)		सकल /Cum (MMT)	
वाडाएस /VDS		16426		485.580		5.718	
Receipt		18081		480.414		5.711	
MDP prorata		16932		491.034		5.841	
DRA Consumption Details		Loc	Day's cons (ltrs)	PPM	Stock (Lts)		
		VDS					Prepared By: Reviewed By:
		RBS					
		SBS					



IMF/OVZ/08
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हिन्दुस्तानपेट्रोलियम कार्पोरेशन लिमिटेड
विशाख विजयवाडा सिंकदराबाद पाईपलाईन विशाखापटनम
HINDUSTAN PETROLEUM CORPORATION LIMITED
VISAKHA-VIJAYAWADA-SECUNDERABAD PIPELINE
टैंक गेज एवम् जाँच सूचि/TANK GAUGE CUM CHECKLIST

Visakh Dispatch Station

टैंक संख्या/TANK NO:		उत्पाद/PRODUCT :		बैच/BATCH:	
		आरंभ/OPENING		समापन/CLOSING	
सीपीडब्ल्यूडी की ऊँचाई /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					
टैंक 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					
गेजर/VR-ATP Gauger					
विविएसपीएल का प्रतिनिधि/VVSPL Rep.					
फ्लैश प्वांट औक्तेन संख्या/Flash Point / Octane Number					
साइट एवम् वाल्वो का निरीक्षण/ Inspection of Site and Valves					
ओएमसीसी/ कस्टम की स्वीकृति/ OMCC / Custom Clearance Obtained		दिनांक Date			
		समय Time			
वीआरएफ/VRF at Natural					
टैंक घनत्व/Tank Density					
प्राप्त मात्रा/ Receipt Quantity		आरंभ/OPENING		समापन/CLOSING	
@ Natural					
@ 15 C° (KL)					
MT					
पाली प्रभारी/Shift Officer					
		वीवीएसपीएल/ VVSPL	वीआर-एटीपी/ VR – ATP	वीवीएसपीएल/ VVSPL	वीआर-एटीपी/ VR – ATP



आईएमएफ/ओविजेड/14::IMF/OVZ/14

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नमुना पत्र : Sample Label

विविएसपीएल/VVSPL

कार्यस्थल/Location:

उत्पाद /PRODUCT _____ नमुना संख्या /SAMPLE No. _____

दिनांक / DATE _____ समय /TIME (HRS.) _____

साईकल/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 अधिक्षक (विविएसपीएल) /SHIFT IN-CHARGE (VVSPL) _____

पाली अधिक्षक (एटीपी/ टर्मिनल) /SHIFTIN-CHARGE (ATP/Terminal)



हिन्दुस्तान पेट्रोलियम कॉर्पोरेशन लिमिटेड
HINDUSTAN PETROLEUM CORPORATION LIMITED
विशाख विजयवाडा सिकन्दराबाद पाईप लाईन
VISAKHA-VIJAYAWADA-SECUNDERABAD PIPE LINE
इंटरफेस लॉग शीट / INTERFACE LOG SHEET

IMF/OVZ/15
ISSUE 2; REV: 00

दिनांक / DATE:

कार्यस्थल / Location:

I/F TAKEN IN TANK NO:

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

समय Time	घनत्व Density	तापमान Temperature (°C)	घनत्व Density @ 15°	टिप्पणी Remarks

इंटरफेस शुरू समय I/F STARTED AT HRS अंतराल DURATION AT MN
समापन समय OVER AT HRS अनुमानित मात्रा APPX. QTY KL @ KL/HR

प्रभारी अधिकारी / OFFICER-IN-CHARGE



IMF/ROW/01
ISSUE 2; REV: 00

दैनिक पथ भ्रमणकारी से प्राप्त रिपोर्ट / DAY LINE WALKERS' REPORT

प्रतिवेदित स्थल:
REPORT LOCATION:

दिनांक :
DATE :

[illegible]

समीक्षात्मक प्रतिवेदन :: CRITICAL REPORT:



हिन्दुस्तान पेट्रोलियम कार्पोरेशन लिमिटेड
विशाख विजयवाडा सिकन्दराबाद पाईपलाईन
सुरक्षा कर्मियों से प्राप्त रिपोर्ट

HINDUSTAN PETROLEUM CORPORATION LIMITED
VISAKHA VIJAYAWADA SECUNDERABAD PIPELINE
REPORT FROM SECURITY GUARDS

IMF/ROW/02
ISSUE 2 ;REV : 00

प्रतिवेदित स्थल :
REPORT LOCATION :

दिनांक :
DATE :

स्थल LOCATION	पाली SHIFT S	सुरक्षा कर्मियों के नाम NAME OF THE SECURITY GUARDS	समय (घंटों मे) TIME (Hr)		बैटरी वोल्टे ज BATT VOLT	पावर की स्थिति POWER STATUS	रिपोर्ट REPORT	हस्ताक्षर SIGNATU RE
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लाईन पर्यवेक्षकों द्वारा प्राप्त रिपोर्ट / LINE
SUPERVISORS' REPORT

क्रम संख्या Sr. No.	विस्तार SPREAD	नाम NAME	आरंभ समय START TIME	अंत समय END TIME	क्षेत्र का दौरा AREA VISITED	रिपोर्ट REPORT	हस्ताक्षर SIGNATU RE

समीक्षात्मक प्रतिवेदन : CRITICAL REPORT