**TITLE: - SOP FOR PIG RETRIEVAL AT HATHIDAH T-POINT.**

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| **SL. NO.** | **ACTIVITY** | **RESPONSIBILITY** |
|  | Expected pig receiving time is collected from the ERPL, Banka Station (upstream station). | Shift In-Charge |
|  | Pigging activities are also required to be tracked using the PIDWS by the control room, Barauni or with help of the Central PIDWS Monitoring control room, Barauni. | -Do- |
|  | The Scrapper Receiving Barrel (SRB-2001) should be charged up at least four hours before its scheduled arrival. | Maintenance In-charge |
|  | Take Hot work permit & Electrical Isolation Permits for Barrel line-up & PIG retrieval. Job Safety Analysis (JSA) to be done. Toolbox talk to be conducted. | -Do- |
|  | Before charging Scrapper Receiving Barrel (SRB-2001), it is needed to be ensured that all the drain and vent valves are closed. | -Do- |
|  | Purge Nitrogen into SRB-2001 and pressurize the SRB to 7.0 kg/cm2.  This is to be followed by pressurization / Charging of Scrapper Receiving Barrel (SRB-2001) with LPG by using 2’’ Bypass line of SRB inlet MOV (MOV-2002) & its adjoining HOV (barrel isolation valves). First, 2” ball valve installed on “MOV-2002 bypass line” is to be fully opened and then flow of LPG into barrel is to be controlled through 2” Globe valve installed on “MOV-2002 bypass line”. | -Do- |
|  | Upon completion of Pressurization of Scrapper Receiving Barrel (SRB-2001) up to station inlet pressure, air venting of SRB is to be done through venting line (Cold Flaring). | -Do- |
|  | Divert the flow of LPG through the SRB at least two hours before the estimate time of arrival (ETA) of PIG. For this, MOV (MOV-2002) & its adjoining HOV at SRB inlet, HOV and Globe valve in 6’’ Kicker line is to be opened followed by closing of SRB Bypass MOV (MOV-2003). | Shift In-Charge |
|  | Ensure complete closure of MOV-2003. Now the flow of LPG has been completely diverted through the SRB. | -Do- |
|  | MFM-2001 / MFM-2002 (depending on which direction delivery is being given) is to be kept online. | -Do- |
|  | Observation of differential pressure across the operational strainer (DPT-2001/ DPT-2002) should be initiated half an hour before ETA of PIG. | -Do- |
|  | As the PIG nears the station, observe vibration / sound near station inlet limit valve (MOV-2001). | -Do- |
|  | As soon as the PIG alert signal operates on receiving the PIG, the time is to be noted. The Pressure of that instant is also to be noted. | -Do- |
|  | Once it’s ensured that PIG is inside SRB-2001, Open MOV-2003 immediately.  After MOV-2003 is fully opened, close MOV-2002 & adjacent HOV (to restore normal delivery). Ensure the following prior to be opening of SRB door:   1. The electrical isolation of MOV-2002 has been done. 2. SRB inlet valves: MOV-2002 & its adject HOV is fully closed and hand tightened.   HOV and globe valve on 6’’ kicker line of SRB are fully closed and hand tightened. | -Do- |
|  | All the facilities that were bypassed before PIG receipt are to be taken back into the line once clear product is observed. | -Do- |
|  | Informed to Central Dispatch Paradip, Haldia pump station, Durgapur pump station, immediate upstream PIG launching station (Banka) about pig receipt. | -Do- |
|  | Prior to opening the door of SRB-2001, ensure that LPG specific PPEs, non-sparking pulling rod, shovel, tools & tackles, running water, tub for collecting muck are available near the SRB. Dispersion of gases as per site conditions may be carried out by using the running water spray system near the SRB. | -Do- |
|  | Depressurize the SRB-2001 by drain line through cold flare. Ensure that pressure drop observed in both Pressure indicators (PI-2002 & PI-2003) installed in SRB and evacuate LPG until the pressure of SRB reaches zero. This is to prevent any pressure build up behind the PIG in neck of SRB and accidental shooting out of PIG from SRB during opening of closure door. | -Do- |
|  | Open both the venting points of SRB to evacuate LPG fumes. | Maintenance In-charge |
|  | For nitrogen purging in the SLB, Close all the drain and vent points of SLB. Purge Nitrogen up to 4-5 kg/cm2 into SLB through 1 inch flange connection in vent line of major barrel and then vent the nitrogen towards cold flare. | -Do- |
|  | Repeat step – 20 at least three times so that LPG vapor content in the SRB approaches NIL. Then close all the vent and drain valves. | -Do- |
|  | Once the Nitrogen purging is completed, unscrew the bleed screw of closure door and observe if pressure is still left inside the SRB (by observing the flow of vapor from inside, if any). | -Do- |
|  | If no significant amount of vapor is detected, open the closure door of SRB-2001 and pull out the PIG with the pulling rod.  Care must be taken by maintenance personnel to avoid coming in front of SRB closer door (as it is being opened) to prevent injury caused by sudden splashing of liquid LPG, if any.  Collect the muck received in a tub and immediately take it away from sunlight or pour water onto it to prevent auto ignition of pyro ferric iron present in the muck. | -Do- |
|  | Some of the muck samples may be kept in an airtight jar for sending over to Lab for testing. | -Do- |
|  | After successfully extracting the PIG, clean the SRB internally with water and close the Quick opening closure door. Also purge the SRB with Nitrogen up to 2 kg/cm2 for safety.  PIG / Scrapper detectors (SD-2002 & SD-2001) are required to be set to normal position after retrieval of the pig. | -Do- |
|  | Energize and Put SRB inlet MOV (MOV-2002) in remote. All work permits taken for this job are to be closed. | -Do- |
|  | During non-pigging operation, if the flow through Barrel is required, all the Barrel valves to be kept in Remote for closure of the valves during actuation of the ESD. | -Do- |
|  | The following parameters of PIG / muck should be noted:   * Dimensions of received PIG * Any visible damage like cuts, abnormal abrasion on PIG * Quantity / type of muck   Receipt of any foreign item in muck. | -Do- |

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| RECORDS GENERATED : | 1) | SHIFT LOGBOOK SHEET |
|  | 2) | SHIFT HANDING OVER REGISTER |
|  | 3) | PIGGING REPORT & JOB SAFETY ANALYSIS |