**TITLE: - SOP FOR PIG LAUNCHING FROM HATHIDAH STATION TOWARDS MUZZAFARPUR STATION.**

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| **SL. NO.** | **ACTIVITY** | **RESPONSIBILITY** |
|  | PIG launching activity is to be planned keeping Central Dispatch Paradip/Haldia pump station / Durgapur pump station/Barauni Pump station/upstream and downstream station well informed and coordinated. |  |
|  | HOT work permit must be taken, prior to commencement of launching activities as per OISD-105. Job Safety Analysis is to be carried out. Toolbox talk is to be conducted. Please note that the Electrical Isolation of Scrapper Launching Barrel (SLB) MOVs must be done prior to be opening of SLB door. | Maintenance In-Charge |
|  | Ensure that LPG specific PPEs, non-sparking pig inserting rod, shovel, tools & tackles, running water, are available near the SLB during the entire scrapper launching process. | -Do- |
|  | SLB is to be isolated from the station piping and Mainline by ensuring hand tightened closing of the following:   1. Globe & Ball valve assembly in 6’’ kicker line of SLB-2002, 2. Barrel Outlet MOVs [MOV-2024 & its HOV adjacent (downstream)]. 3. Globe & Ball valve assembly in Barrel Outlet MOV’s bypass line (2’’ line). |  |
|  | Depressurize the SLB by drain line through cold flare. Cold flaring must be done in line with extant SOP.  Ensure evacuating LPG inside the SLB up until the pressure of SLB is reaches zero as indicated by both the Pressure indicators (PI-SLB-01 & PI-2008(PI-SLB-02)) installed on SLB.  This is to evacuate Nitrogen-LPG mixture available in barrel. Nitrogen was filled after last pigging and there may be possibility that minor LPG that might have passed into barrel. |  |
|  | Depressurization is to be carried out by opening the drain line valve (2" ball valve and 2" globe valve) at the bottom of SLB & by opening 1’’ vent line valves and cold flaring it to atmosphere by continuous dispersing the LPG by formation of water mist on cold flare unit by operating nearby Water Monitor/Hydrant. |  |
|  | After successful depressurization of SLB, close the 2" drain valves and vent line valves, prepare for the Nitrogen purging of SLB. |  |
|  | 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. |  |
|  | If LEL is not Zero, proceed to Step No. 8.  Check if LEL has reached "Zero". Incase of Zero LEL proceed to Step No. 10. |  |
|  | Once the Nitrogen is completely flushed and SLB is finally depressurized to 0 kg, ensure the closing of 2" drain valves and 1" vent line valves connected to SLB so that SLB remains fully isolated during insertion of pig. Ensure LEL level is ZERO inside the scraper barrel. Now carefully open the SLB pig Launching Door and insert the intended pig into minor portion of SLB cautiously. |  |
|  | Once PIG is inserted into minor of SLB, close the pig inserting door of SLB & again ensure that mainline section intended for pigging is ready for pigging i.e. all SV stations are having their respective MOVs in FULLY OPEN (100% open) state. |  |
|  | Purge the barrel with nitrogen up to 7.0 kg/cm2. |  |
|  | Pressurization/ Charging of Scrapper Launching Barrel (SLB) is to be started through 2" Bypass line connected with Kicker Line. First fully open 2" ball valve and then flow of LPG into barrel is to be controlled through 2" Globe valve. In parallel, charge the major barrel of SLB through 6" kicker line by crack opening 6" ball valve and globe valve to prevent back movement of pig in SLB. |  |
|  | After the Pressurization of Scrapper Launching Barrel (SLB) up to station Outlet/Discharge pressure, nitrogen venting of SRB is to be done through venting line of SLB (cold flaring). After venting, close the vent line connected to SLB.  The presence of pure LPG inside the barrel can be ascertained by extreme cooling effect/icing on vent pipe. |  |
|  | Now close the 2" bypass line valves connecting kicker line and SLB. |  |
|  | Fully open the 6" kicker line into SLB by opening 6" ball valve first then opening 6" globe valve in a controlled manner. |  |
|  | Open the MOV-2024 and Its Adjacent HOV locally (barrel isolation valve). So that the SLB is lined up with the Hatidah -Muzaffarpur Section of mainline. |  |
|  | Close MOV-2023 locally, Now the flow of LPG is completely diverted through the SLB. |  |
|  | SD-2005 installed in SLB shall activate once pig passes through it, consequently, SD-2006 gets activated and a signal is received in SCADA HMI, record the Time as time of Launching the pig and corresponding Mass & volume totalizer readings (in MT & KL respectively) of MFM-2001. Now Pig is successfully launched from Hathidah into Hatidah-Muzaffarpur Section. |  |
|  | Open SLB Bypass MOV -2023, locally to normalize the flow. |  |
|  | Isolate the SLB from station piping & 12" mainline by closing the 6" kicker line's globe and ball valve assembly and Closing MOV -2024 & its adjoining HOV respectively (barrel isolation valve). |  |
|  | After isolating the SLB, depressurize it by opening 2" ball valve and 2 inch globe valve in SLB drain line to achieve minimum possible pressure inside the SLB (cold flaring). |  |
|  | Prepare for Nitrogen Purging, and do it at least twice (each time purge the SLB to 4-5 kg/cm2 of nitrogen. During purging, close all the drain and vent points of SLB then vent it to remove any LPG vapor pressure build up/presence of air inside the SLB by opening vent line. |  |
|  | After venting the SLB, flush the Nitrogen purged. |  |
|  | After Nitrogen purging is completed, unscrew the bleed screw (at the top of closure door) and observe if pressure is still left inside the SLB (by observing the flow of vapor from inside, if any). |  |
|  | Screw the bleed screw back in position. Then, purge the SLB with nitrogen up to 2 kg/cm2 for safety. |  |
|  | Finally ensure that SLB is again fully isolated from station piping and mainline piping by closing the vent line valves, drain line valves, kicker line valves & MOV-2024 & its adjoining HOV (barrel isolation valve). |  |
|  | Inform Central Dispatch Paradip/Haldia pump station/ Durgapur pump station/Barauni Pump station/upstream and downstream station about pig launch. |  |
|  | The energization of all MOVs is done and permits are closed. Facility is to be handed over to operations. |  |
|  | Prepare ETA of pig at SV stations between Hatidah – Muzaffarpur Section as per the flow rate and line fill data and communicate this to downstream station & SV technician for proper Pig tracking. |  |
|  | Following parameters of PIG should be recorded:  Dimensions of Launched PIG  Any visible damage like cuts, abnormal abrasion on PIG prior to launch |  |

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| RECORDS GENERATED : | 1) | SHIFT LOGBOOK SHEET |
|  | 2) | SHIFT HANDING OVER REGISTER |
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