Taganito HPAL Nickel Corporation	H1, H0, L0, L1, HHH, LLL SETPOINT DCS Manual				
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I. General Description

The H1, H0, L0, L1, HHH, LLL Set Point DCS Graphics is a common screen for Process A and B which shows a tabulation of critical set points (H1, H0, L0, L1, HHH, LLL) of instruments in the Plant. This graphics screen provides operator access on changing the instrument set points based on operation requirements because each instrument's DETAIL parameter doesn't have them. The critical points inputted must be within normal operating range to ensure safe and efficient process.

This graphic screen shows four (4) tables of instrument set points. The first table contains instruments having set point values from H1, H0, L0 and L1 for level indicator (LI), level indicator controller (LIC) and pressure indicator (PI). The second table contains level indicators for sump and sump pump operation. The third table contains instrument having LLL set point. Lastly, the fourth table contains instruments having HHH set point. Refer to ***Annex 1*** for H1, H0, L0, L1 SETPOINT Graphics.

H1, H0, L0, L1 set points are usually used in LI and LIC to initiate pump start and stop, or valve open/close status. It is also used in PI of strainers to determine if it is already blinded/clogged (PI value ≥ H0) and if the strainer is damaged (PI ≤ L0).

HHH and LLL set points for H2S Plant area (109/209) are also present in this screen. These set points are provided in order to activate the corresponding interlocks for equipment protection during abnormal conditions (when the HH and LL interlock does not work). For instance in Dirty Sulfur Tank (109TK02) if the level reaches the LLL set point of 20 %, then the Sulfur Filter Operational Sequence will automatically change the direction of the filtered sulfur back to the Dirty Sulfur tank and stop the forward to Clean Sulfur tank, 109TK03. (For HHH and LLL detailed discussion refer to ***TNH-209-103 H2S DCS Manual***).

Additionally, H and L set points are the high and low level alarm set points of the tank. Once the Present Value (PV) reaches H or L set points, DCS alarm will be activated at the control room. This DCS alarm is used to alert the DCS operator of the upset condition.

Table 1-1: Difference Between Instrument Set Points

Set Points	Function
H, L	Alarm Function in DCS
H1, H0, L0, L1	Interlock Action (within normal condition)
HHH, LLL	Interlock Action (abnormal condition)

Also included in this screen is the link button for Graphics Overview which provides faster access to other process/sequence screens.

II. Important Monitoring Items

None

III. Interlocks/Controls

None

IV. Control Sequences

None

V. Alarms

None

VI. DCS Emergency Shutdown

None

VII. Trend Graphs Grouping

None

Annex 1: H1, H0, L0, L1, HHH, LLL SETPOINT DCS Graphics