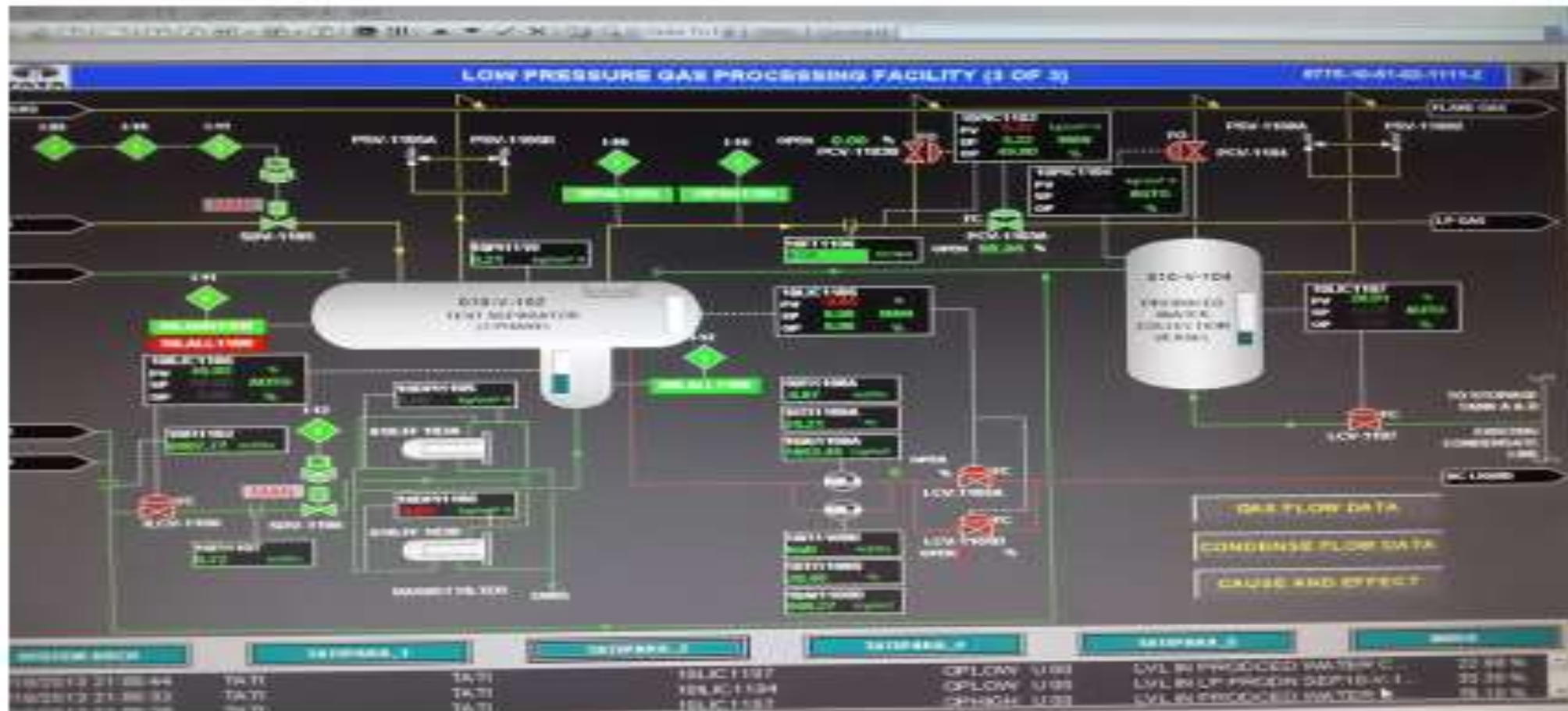


Unit-4

- DIGITAL CONTROL SYTEMS (DCS)



MAN MODE

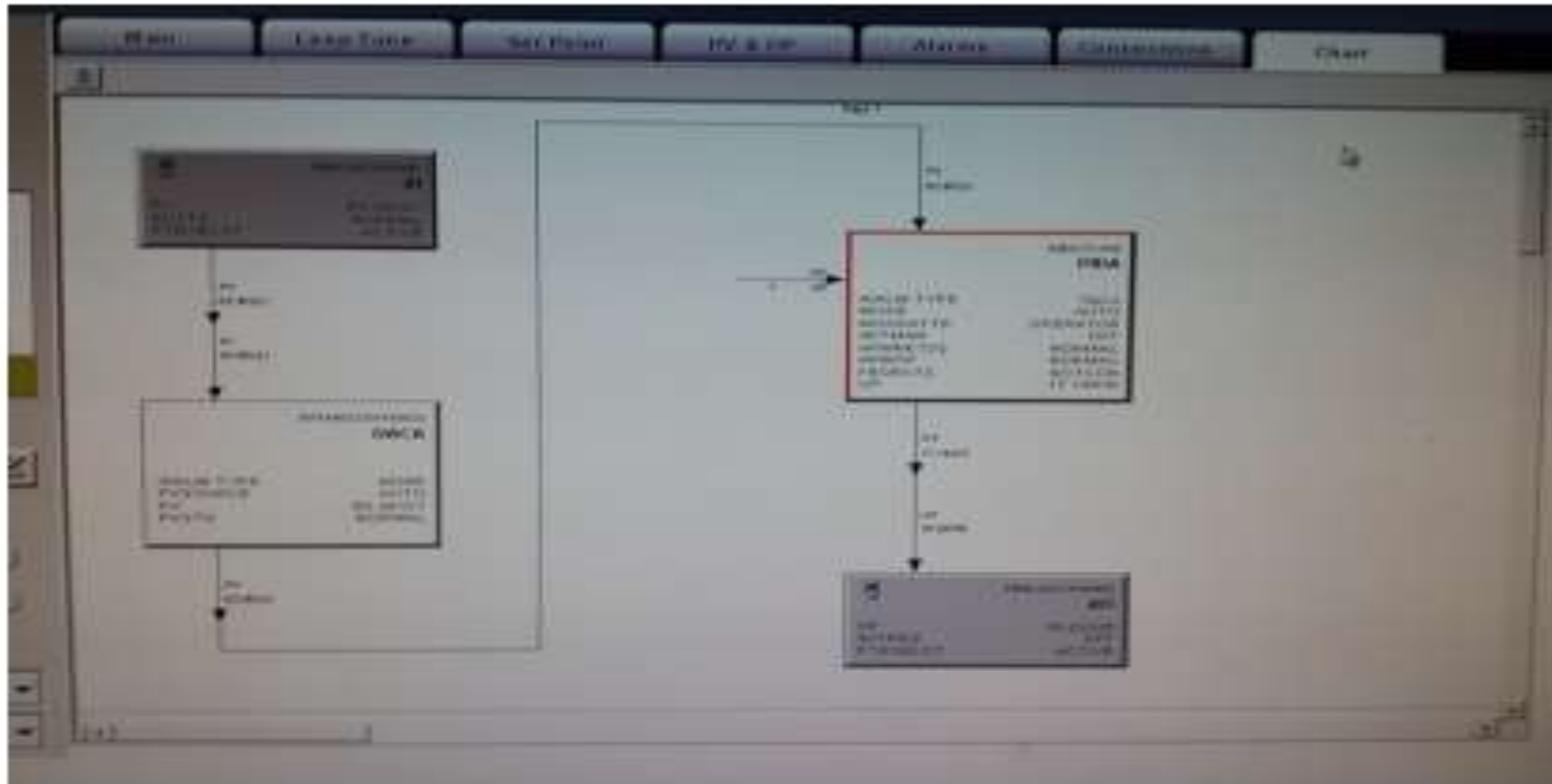
The image displays a SCADA interface for a water treatment plant. The main window shows a process flow diagram with various tanks, pumps, and control valves. A central data window is open for '10PIC1102', showing the following information:

- Process Name:** LP PRD SEP 010-V-101B TO FLTR SEP 010-FF-104A/B
- Unit:** kg/dm³ G
- Scale:** 25.0
- Current Value:** 49.00
- Setpoint (SP):** 5.3 EU
- Process Value (PV):** 5.3 EU
- Control Point (CP):** 49.00
- Mode (MO):** MAN
- Operator (MO):** OPERATOR

At the bottom of the interface, there is a status bar with the following text:

10-04-10 21:07:11 TATI 10LIC110Y OFLOW U 00 LVL IN PRODUCED WATER COLLV VRL 010-0-004 24.1001 %

CLOSED LOOP SYSTEM USING FUNCTION BLOCKS



PID CONTROLLER TUNING PARAMETERS SETTING



The screenshot displays a software interface for PID controller tuning. At the top, there are several tabs: "Main", "Loop Tune", "Axis Point", "PV & SV", "MODE", "CONNECTING", and "Chart". The "Loop Tune" tab is currently selected.

The central part of the interface is a large graph showing a signal over time. The signal starts at a steady state, then exhibits a step change, followed by a series of oscillations that gradually dampen, indicating the controller's response to a disturbance.

Below the graph, there are two main sections for parameter configuration:

- Tuning - General:**
 - Control Equation:
 - Control Action:
 - Integral Time T_I (minutes):
 - Derivative Time T_D (minutes):
 - Filter Time (minutes):
- Gain Options:**
 - Gain Option:
 - Control Gain:
 - Upper Gain Factor:
 - Gain Factor:
 - Lower Gain Factor:
 - Reset Linear Gain Factor:
 - Reset Linear Gain Factor:
 - Legacy Det.

At the bottom right, there are several small icons for window management and help.