

Paperless Procedures (PLP) is a combination of software and services that integrate process control, operator training, documentation and compliance needs into a robust knowledge-retention architecture.

Standard Operating Procedures (SOPs) represent a significant intellectual investment and are a source of both competitive advantage and higher levels of safety - but only when they're followed.

PLP converts Microsoft® Word® SOPs into a custom Visio® toolkit that can be used to generate:

- An intuitive electronic checklist interface that quickly trains new operators on procedures developed by more experienced personnel
- Time-stamped, authorized, secure and searchable PDF records of every executed procedure for documentation and compliance programs
- Automation code for the D/3® DCS
- Alarm Response Procedures automatically opened in response to alarm conditions
- Word® SOPs automatically reflecting changes to automation code

Key Benefits

Knowledge Transfer

Bridging the gap between outgoing, experienced personnel and new operators is a constant challenge for plant managers. SOPs are a great tool to transfer knowledge between personnel, but are typically only viewed during initial training and periodic reviews.

The power of SOPs is greatly magnified when they become the operator's daily window into the process. The PLP Procedure Overview Display (POD - see reverse) trains operators on existing procedures with every manual execution (procedures can also run automatically), and new procedures can be instantly deployed across the enterprise.



Visio® Procedure Design Toolkit

Faster Automation Development

PLP converts Visio® procedural flowcharts into Sequence and Batch Language (SABL) automation code for the D/3® DCS (Standard OPC outputs available soon). Users can further customize the SABL output with drop-down menus and input strings to create more intricate control routines. In addition, when new automation routines are developed, the corresponding SOP documentation can be automatically generated through the same procedural flowcharts.

Improved Safety and Accountability

PLP can automatically deploy Alarm Response Procedures when alarm conditions are detected, presenting operators with the right steps to take to correct the problem. Completed procedures are converted to secure, time-stamped PDFs for documentation and compliance requirements.



The screenshot shows a software window titled 'Refrigeration Machine #5 Procedure' within the 'IPS Manager' application. The interface is organized into sections: 1.0 PURPOSE, 2.0 SCOPE, 2.1 Responsibilities, 2.2 Background, and 3.0 PRECAUTIONS & LIMITATIONS. Each section contains detailed text and bullet points. At the bottom of the window, there are two buttons: 'Load Procedure' and 'Start Procedure'. The NovaTech logo is visible in the bottom left corner of the window.

IPS Procedure Overview Display

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382 ;Step description:
383 ;*****
384 MARK STEP "SLOWDOWN", 0, 0
385 PHASE_RUN_STATUS = "RUNNING"
386 PHASE_STEP_NAME = "SLOWDOWN"
387 PHASE_MESSAGE = ""
388
389
390 OPERATION_MSG = "SLOWING BLEND FLOW RATES"
391 OVERFLOW_MSG = ""
392 MSG_ACK_REQ_FG = 0
393 GOSUB POSTMESSAGE
394 MSG1_LOCATION = MESSAGE_LOCATION
395
396 ;start slowing drain flows
397 CLOSASC PREMIX_FLOW_CNTRL
398 PREMIX_FLOW_CNTRL:RMP_ICUL:1 = MAX_FLOW/100
399 PREMIX_FLOW_CNTRL:CB_INUL:1 = 30
400 PRINT BATCH_ADI,"SLOWING BLEND FLOWS"
401
402 ;wait for the premix tank to drain dry
403 WAITUNTIL (FLAVOR_LVL:AT_INUL <= 0.5)
404 WAITUNTIL (PREMIX_FLOW_CNTRL:AT_INUL:0 <= 0.1)
405
406 ASSIGN DEV_PTR = BLENDER ;stop the blender
407 GOSUB STOPDEV
408 PRINT BATCH_ADI,"BLENDER STOPPED"
  
```

SABL code for the D/3 DCS is automatically generated by flowcharts

Use Every Time (UET)	Procedure:	SOP
DEMO R21...Receiving Gas ELP 1.2...R21	Revision:	2
	Effective Date:	8/2/2003
Executed (Manual) on 2004/01/23 10:45:59 Eastern Standard Time	Manual:	
	Page:	7 of 12
5.1.8 ENSURE N2 Header Valve IS-M1500 is closed		10:47:48
5.1.9 ENSURE A Header Valve IS-M1600 is closed		10:47:48
5.1.10 ENSURE B Feed Header Valve IS-M1700 is closed		10:47:49
5.1.11 ENSURE By-Product Feed From Other Unit Valve IS-M1800 is closed		10:47:53
5.1.12 ENSURE P-Evac Header Valve IS-M1900 is closed		10:47:54
5.1.13 ON SCREEN MESSAGE Evacuate A and B Feed Headers		10:47:55
5.1.14 EVACUATE "A" feed header A-HDR-PRES and "B" feed header B-HDR-PRES to less than 3000 microns, EVAC Headers A and B Manual Operation.		10:47:55
Evacuate: Now have the DCS Check "A" feed header A-HDR-PRES and "B" feed header B-HDR-PRES to less than 3000 microns, EVAC Headers A and B Manual Operation.		
5.1.15 WAIT for A-HDR-PRES less than 3000 microns - [A-HDR-PRES < 3000,15m] Less Than 3000		10:47:56
Note 1: The following step initiates a time limited sequence. The time limit for performance of this Step is 5 minutes.		
5.1.16 ON SCREEN MESSAGE ROR on Header		10:47:57
Note 2: The rate of rise (ROR) limit is 100 microns in 5 minutes or 20 microns per minute		
5.1.17 WHEN header evacuation is less than 3000 units - [A-HDR-PRES < 3000] THEN		10:47:58
Note: Perform a ROR in the following steps.		
5.1.18 IF ROR on Header Evacuation [Waits 5 sec for A-HDR-PRES < 100] THEN		
WARNING: ROR		
The ROR will be performed by the DCS, if the ROR is within limits, the control will move on to		

Secure PDF Execution Record

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