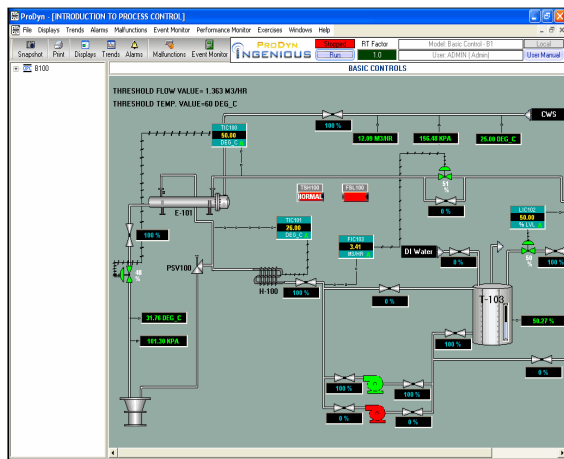


## ProDyn

Dynamic Simulation has always been an essential tool for all new and existing process plants in order to ensure properly trained operators, plant safety management procedures and safe and efficient plant operation.

**ProDyn** is a powerful dynamic tool. A user-friendly interface imparts the user the capability to train, learn and test the various dynamic operations of a process model. These tools are **Web Enabled** and **OPC compliant** and hence allow direct connection with DCS systems, SCADA/HMI interfaces, reactor algorithms and other third party packages.



Typical ProDyn Graphic

## Applications

- Operator training and learning systems
- Abnormal situation management
- Process Troubleshooting
- Resolving unstable operations
- Revamp studies
- What-if studies
- Technology Showcasing
- DCS/Logic testing
- Equipment evaluation
- Develop and test plant procedures

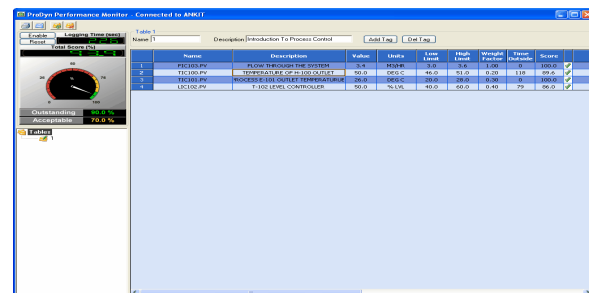
Version: 02-26-2009

*“ProDyn is web-enabled; meaning any user has the ability to access the software via an Internet connection. ProDyn would allow KBR to offer state-of-the-art simulation solutions for their clients. KBR intends to use the software for operator training projects and also integrate the ProDyn software interface with other simulation engineers to improve the flexibility of our training solutions”.*

*Surajit Dasgupta, Technology Manager  
Advanced Process Automation*

## Solutions

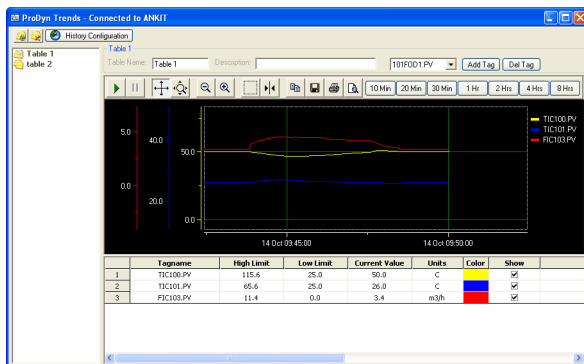
- Custom dynamic simulation models
- Standard (off-the-shelf) dynamic models
- Flare relief analysis and safety design
- Engineering and operability studies
- Training needs analysis



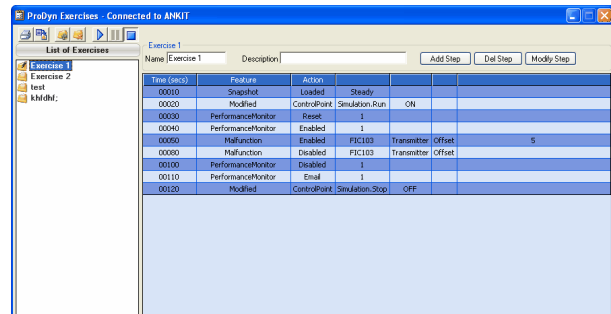
Performance Monitor

## Web Hosting

This is a powerful & unique feature in **ProDyn** that allows the user to connect to the model as an operator from any location by simply having an Internet connection. In this scenario, operators can be trained anywhere in the world with the instructor sitting in one location and monitoring the performance of the operators. All models are based on first principles of engineering with a physical component properties database.



Real Time Trends



Time (secs)	Feature	Action	Loaded	Steady	Simulation Run	ON	Offset
00010	Snapshot	Loaded					
00020	Modified	ControlPoint					
00030	PerformanceMonitor	Reset	1				
00040	PerformanceMonitor	Enabled	1				
00050	Malfunction	Enabled	PIC103	Transmitter	Offset		5
00060	Malfunction	Disabled	PIC103	Transmitter	Offset		
00100	PerformanceMonitor	Disabled	1				
00110	PerformanceMonitor	Email	1				
00120	Modified	ControlPoint	Simulation Stop			OFF	

Training Exercises

## Technology

Dynamic Simulation (DS) simulates the process in the real-time "unsteady" state. The DS technology includes standard features such as:

- Rigorous process simulation
- Freeze/Unfreeze operation
- Faster/slower than real time
- Malfunctions
- Trend displays in 2D and 3D
- Trends in exportable spreadsheet format
- Start-up and shutdown scenarios
- Alarm management system
- Automatic training exercises
- Trainee performance evaluation
- Multiple access levels
- Exporting to third party applications
- Direct connect with DCS/Emulators

*“What’s really great about this program is we can alter the scenario for each operation. For instance, we can configure the programs to mock a cold startup with no equipment running, as well as situations where the entire plant had to be shutdown. We can also add in ‘what-if’ scenarios that teach students how to troubleshoot abnormal plant processes or emergency situations.*

*The ProDyn system is especially important in keeping the IPOP training up to the industrial standards. We all know that Technology is changing at a fast pace, and in making sure our students succeed in the job market, it’s vital that we train them with the same equipment used in the industry.”*

**Tony Otero, IPOP Coordinator, San Juan College Industrial Process Operator Program (IPOP)**