



4.5.1 Commands

The following commands are available for each ATMOS PIPE™ on the LDS PC. They are accessed via the ATMOS PIPE™ Command Panel from the menu bar in the running application. Accessing the Command Panel is explained earlier in this section.

4.5.1.1 Initialize

This command is issued when the maintenance engineer wishes to restart ATMOS PIPE™ from the default values, which are normally set during commissioning. This action should not be taken lightly, because the default settings might be different from the current ones. It is recommended to issue a 'Retune' command, so that ATMOS PIPE™ can tune into the current operational envelope of the pipeline. Initialize is a one-shot command. Once set ATMOS PIPE™ will reset to default values automatically. Note that Initialize is similar to Restart, except that Restart will not load the parameters from the Default Runtime table within the database.

The initialize command does two things:

1. It resets the Mean Corrected Flow Difference; learn count and all the other learned parameters to the RELI factory defaults. The learn count will typically be set to 2●● samples.
2. A restart is then initiated with these default values and the system is restarted in 'Tuning' mode.

This is quite a major change to the line parameters and should only be issued if the ATMOS PIPE™ settings (Flow difference, Mean Flow difference etc) are corrupted.

Leak detection will not take place until the system comes out of learn mode i.e. 2●● samples.

4.5.1.2 Restart

The Restart command basically just stops and starts the ATMOS PIPE™ application. All the learned parameters are kept as they were, prior to the command being issued.

4.5.1.3 Retune

This command causes the leak detection software to go into rapid learn mode, it is used to rapidly adapt the on-line parameters to the current pipeline operating condition. This mode is used when the pipeline is first commissioned, and subsequently when it is proven necessary to retune the system to adapt to new operating and instrument conditions e.g. after instrument maintenance. The leak detection functions are not available when ATMOS PIPE™ is in tuning mode. ATMOS PIPE™ will exit tuning mode automatically when the tuning process is complete. On completion of tuning the system automatically reverts to running mode. Retune lasts for 2●● samples of 'steady operation' (Operational Status ●).

4.5.1.4 Sleep

The Sleep control is intended for use during instrument maintenance or other such cases where the system is liable to see large changes for no operational reason. It causes leak detection to be disabled and inhibits the alarms.

This command will disable ATMOS PIPE™ leak detection capability. It should be issued only if maintenance work is being carried out on the instrumentation system and false leak alarms may be generated. When ATMOS PIPE™ is sent to sleep, it will continue to log the data. As soon as the maintenance operation is completed, the sleep mode must be reset by pressing the button once again.

4.5.1.5 Test

The Test button is no longer used and is disabled in this version of ATMOS PIPE™.

The correct leak detection system operational status will be displayed following operation of each control. It should be noted that Initialize and Restart will override all other modes of control.

5. OPERATIONAL CONSIDERATIONS

This Section also discusses the actions to take when ATMOS PIPE™ reports a leak alarm or a data/instrument fault.

5.1 Leak Alarms

When ATMOS PIPE™ detects a leak it sends a leak alarm signal to InTouch :-

1 = Leak Warning, 2 = Leak Detected if status is 1 for 5 scans

ATMOS PIPE™ displays 'LEAK DETECTED' in bold red letters on the ATMOS PIPE™ Overview Display. The actions to be taken by the operators when such an event arises should be defined in the client's own plant and pipeline operations manual. The information within this Operation and Maintenance Manual is intended to only supplement any of the client's plant manuals.

When ATMOS PIPE™ detects a leak condition, it will start to estimate the leak size and location. These estimates will converge to a narrow range of values (Figure 5.1 & Figure 5.2). The rate of convergence depends on the size of the leak and the operating conditions along the pipeline when the leak occurs. Large leaks occurring during steady state operating conditions generally produce the most rapidly converging estimates.

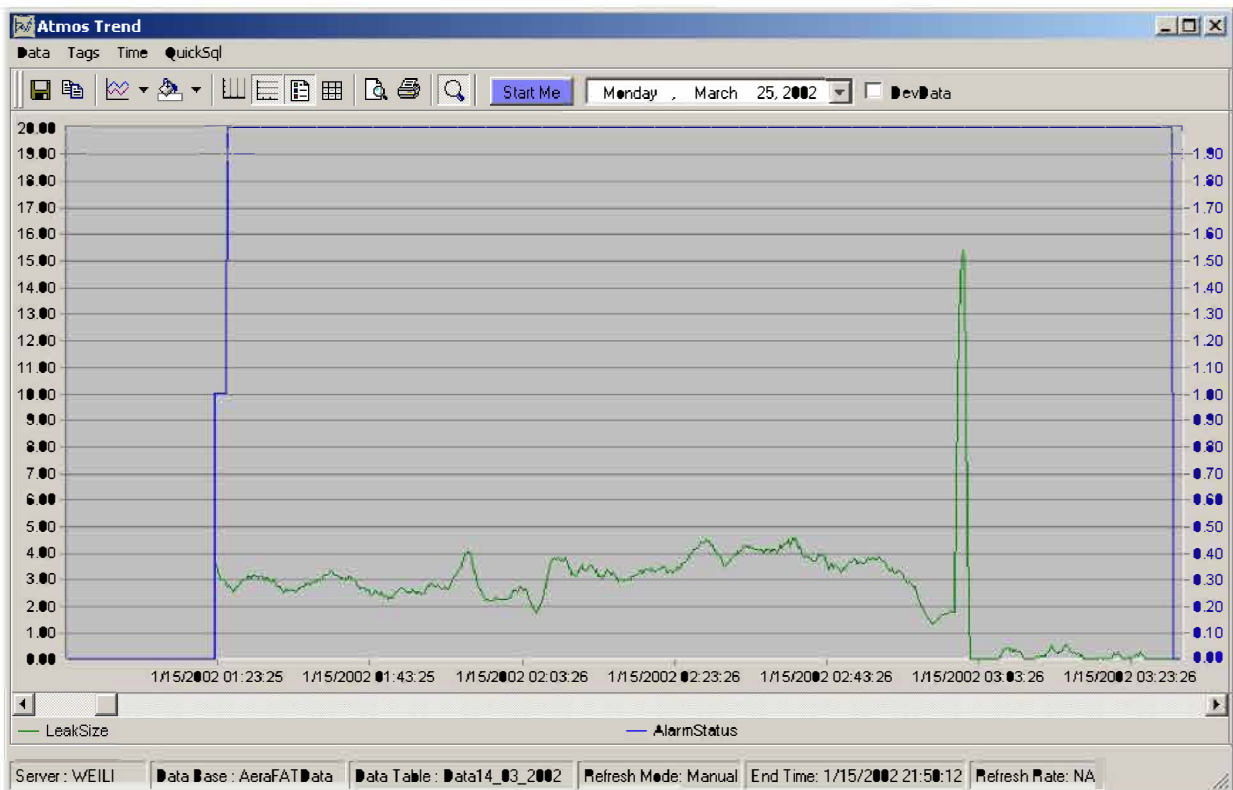


FIGURE 5.1 – LEAK SIZE ESTIMATE