

The instruments themselves serve a key role in process monitoring, but also in situation-dependent and various ways. For example, in a former production facility it is likely that instruments will collect such data as reactor or steam line temperature, vibrations in pipes, utility usage, valve body position, etc--minimal, essential data to confirm that chemical production has not resumed.

In a plant that is operating, on the other hand, it may be necessary to monitor process parameters such as reactant quantities, reaction temperature, pressure and flow, etc, in addition to the variables mentioned above. Further, if the plant is capable of producing CW agent or key precursors, more extensive instrumentation may be required as well as on-site inspection personnel. Both on-line and in-line instruments may be utilized to determine composition of key components, as well as temperatures and pressures of reactor vessels. In the case of CW agent disposal, analytical instruments may be necessary to identify input agents or destruction products, composition of effluent streams, environmental emissions, etc.

Before monitoring instruments can be selected, it will be necessary to study the specific process employed at a particular facility--something that is to be described and declared under terms of the CW Convention. Here also, well trained professionals who are knowledgeable of the process are required to select and install instrumentation appropriate to the process. A good quality instrument, well-designed for the application at hand, properly located and installed, and adequately maintained, should provide accurate, consistent, and reliable data.

To maximize the credibility of the data produced from any monitoring system, it may be necessary to incorporate tamper-resistant features. Some would make it very difficult for someone to gain access to the sensor or its data, while others would simply leave tell-tale marks if such tampering were to be attempted.