

# Environmental

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## PROTECTION

# A Breath of Fresh Air

*Automated electronic recordkeeping and reporting can streamline compliance efforts related to Clean Air Act Title V permits*

*By P. H. Haroz and LeRoy Bishop, PE*

All facilities that operate under the Clean Air Act Amendments' Title V Operating Permit understand that the recordkeeping and reporting required by the permit is a very labor-intensive process. These permit requirements place significant pressure on the plant personnel assigned with environmental responsibilities such as daily, weekly or monthly recordkeeping, and the environmental professionals responsible for compiling all these records and preparing the reports (quarterly and/or semiannual). It also places pressure on the "responsible official," the signing authority for the Title V permit application. The first Title V certification can be a problem for many facilities. For the year of issuance of a Title V permit, the facility is required to complete a compliance certification for the period from permit issuance through December 31. If a permit is issued in December, your facility is required to provide a compliance certification covering this period. This often sends facilities scrambling to prepare and submit the report and cross their fingers that the information that was submitted is

sufficient for state officials.

Although the general format of the Title V permit is relatively uniform, the recordkeeping requirements vary for each facility depending on the type of facility, the type of emission sources and the pollution control equipment that is in use at the facility. The "who" and "how" of obtaining and maintaining the required records falls into the facility's environmental professional's lap. Many facilities accomplish the task through manual tracking and hand calculations (using multiple spreadsheets or notepads). An automated electronic recordkeeping and reporting system that will interface the signals from the process and pollution control equipment monitors to gather the necessary information for you is an optimal solution. This type of system will minimize time requirements and optimize accuracy for complying with the conditions of your Title V Permit.

#### **Recordkeeping Requirements**

Maintaining compliance with the recordkeeping requirements of the Title V Permit

is very labor-intensive. Requirements vary for each facility, depending on the type and

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**Figure 1. Custom interface electronics, networked controller and automated on-screen indicators.**

amount of emissions, as well as on the control equipment used. **Table 1** provides examples of typical recordkeeping requirements for various emission units.

### **Reporting Requirements**

In addition to the cumbersome recordkeeping requirements of Title V, a substantial number of reports must also be filed with state offices. These include quarterly and/or semiannual reports, annual compliance certifications, annual emission fees and notices of emission limit exceedances.

*Out of Compliance Notification Reports:* Facilities operating under a Title V permit are required to submit to the state in writing, within seven days, any deviations from applicable requirements associated with any malfunction or breakdown of process, fuel burning or emission control equipment for a period of four hours or more that results in excessive emissions. The written report must contain the probable cause of the deviation(s), duration of the deviation(s) and any corrective actions or preventive

measures taken.

*Semiannual Reports:* Facilities are required to submit written reports of any failure to meet an applicable emission limitation or standard contained in the permit and/or any failure to comply with or complete a work practice standard or requirement contained in the permit.

*Annual Compliance Certification:* All reports that are submitted for operation under a Title V permit must be certified by a "responsible official" within the company that the statements and information in the report are true, accurate and complete based on information and belief formed after reasonable inquiry.

*Annual Emission Fees:* Companies operating under a Title V permit must calculate their annual emissions of criteria pollutants and multiply it by the fee rates to determine their annual emission fees.

### **Maintaining Records**

Facilities are required to maintain records of all required Title V recordkeeping and reporting for a minimum of five years.

## Problems Encountered With Recordkeeping and Preparing Reports

**Missing Data:** In addition to paper records being lost or misplaced, personnel assigned to recordkeeping responsibilities may miss a record. Missing records may be due to forgetfulness or to an employee being out on vacation and the backup personnel may not record the necessary information. Another common reason for missing data is malfunctioning equipment, such as strip recorders. Malfunctions can be caused by as simple a problem as pens running out of ink. The missing data is often not discovered until the required semiannual report is in the process of being prepared. Each instance of missed data may result in violations and fines that are in many cases very substantial.

**Erroneous Data:** Personnel may record data erroneously and the errors are not discovered until the semiannual reports are being prepared.

**Late Discovery of Excursions:** Data is recorded by personnel or strip recorders to ensure there are no excursions, but many times the excursions are not discovered until it is time to prepare the semiannual report. Then, during preparation of the report, the facility finds that the percentage of time the facility was not within its operating limits is far greater than what it should have been. Often times, corrective action is taken in response to an excursion and it is not properly documented or worse, required corrective action is not taken.

The items above can be avoided with an electronic recordkeeping system that automatically records data and provides alarms when excursions are approached. Even if data is still recorded by personnel, maintaining the records in an electronic recordkeeping system identifies problems early when they can be corrected, not six months later when it is too late to take corrective action.

### The Challenge

Above are only a few examples of many different Title V permit conditions for maintaining compliance with emission limits, testing, monitoring, recordkeeping and reporting requirements. It seems impossible for one person to handle them all. In addition, the responsible person for the Title V at the facility is dependant on operator and maintenance personnel to conduct periodi-

Table 1.

Emission Unit	Recordkeeping Requirements
Boiler	Record daily steam usage Record, on daily basis, percent oxygen at the stack exit Routine maintenance Shut down/Start up time
Venturi Scrubbers Controlling Particulate Matter (PM)	Record pressure drop Record scrubbant flow rate Routine maintenance Shut down/Start up time
Electrostatic Precipitator (ESP) Controlling PM	Record secondary voltage and amperage Routine maintenance Shut down/Start up time
Baghouses	Record if visible emissions are present. If visible emissions are present, the permittee shall record the cause of the visible emissions, pressure drop any other pertinent operating parameters, and the corrective action taken. Record pressure drop across the baghouse and ensure that it is within the appropriate range. Routine maintenance Shut down/Start up time
Cyclones and/or Multiclones	Record results of inspections for holes in the equipment or evidence of malfunction in the interior of the cyclones and/or multiclones. Pressure drop across the multiclone Routine maintenance Shut down/Start up time
Regenerative Thermal Oxidizers	8-hour average of combustion zone temperatures 12-hour average of gas stream pressure in the plenum 12-hour average of ID fan motor speed 24-hour average ID fan static pressure Routine maintenance Shut down/Start up time
Fugitive Dust	Maintain a record of all actions taken to suppress fugitive dust from roads, storage piles or any other source of fugitive dust. Such records shall include the date and time of occurrence and a description of the actions taken.

cal activities required by the conditions of the Title V permit and on top of that they must record necessary parameters correctly.

### The Solution

The optimal solution for maintaining compliance with a facility's Title V Permit is an electronic recordkeeping and reporting system. A successful system should be user-

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Figure 2.

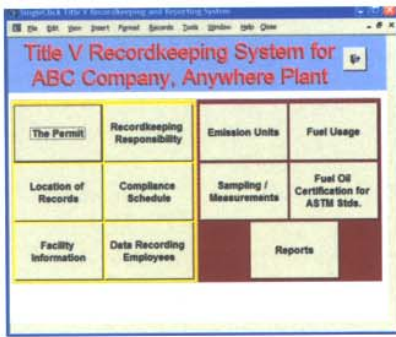


Figure 3.

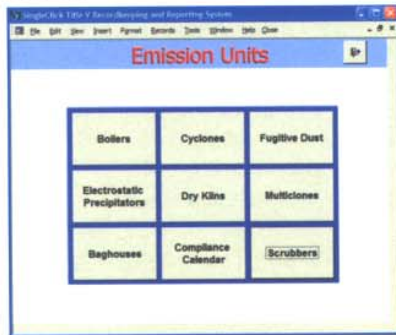
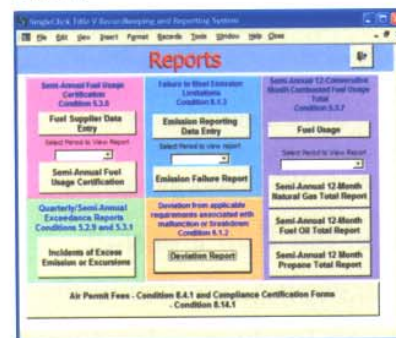


Figure 4.



Figure 5.



friendly, so that all employees responsible for upkeep of the Title V permit can easily use it. It should be customized to address

the facility's specific Title V permit conditions, and it must allow for simple user input of the required data such as pressure drops, visible emissions, etc. However, this manual process can be completely automated by installing a continuous monitoring system (CMS), which will log the data directly into the Title V recordkeeping and reporting software. The system should also generate all required reports and enable the responsible official to review the data electronically in a very friendly mode. It should alert the user to any non-compliance issues, help prevent the facility from being in non-compliance, minimize the recordkeeping time requirements and maximize the accuracy of the reports. It should also be affordable.

One example of a software system that simplifies the compliance process is the SingleClick™ Title V Automated Electronic Recordkeeping and Reporting System. The system is fully automated and requires minimal user interaction (Figure 1), offers custom interface electronics, networkable controller, automated on screen indicators to show over range, under range and standard operating conditions, e-mail notification of alarm or out of range conditions if needed and an automated audible alarm for extreme out of tolerance conditions. The main screen provides buttons to access all recordkeeping and reporting requirements (Figure 2). A "Permit" button opens the Title V Permit, and an "Emission Units" button opens the emission units that have operating conditions (Figure 3). Clicking on the "Baghouses" button, for example, opens a screen that shows all of the facility's baghouse systems, and each baghouse has its own buttons for the required recordkeeping, such as visible emissions, shut down and startup times and preventive maintenance. The "Scrubbers" button opens a screen with all scrubbers and the buttons for their required conditions (Figure 4), while the "Reports" button provides access to all of the reporting requirements (Figure 5). All of the required reports are automatically generated from the recordkeeping database.

The system features extensive drop-down menus that enable the selection of entries from a pre-selected list. The system also features out of compliance warnings that are automatically activated during certain events.

All electronic records are stored in an easily accessible database. Included in the database is a tracking system with the location

of all paper records required for Title V permitting. A compliance schedule automatically keeps track of compliance due dates, as well as a list of actions that need to be done on hourly, daily, weekly, etc., basis for the facility to stay in compliance with the Title V operating conditions. Additionally, the Title V recordkeeping system calculates emission fees.

The complexity of the recordkeeping and reporting requirements of most Title V operating permits is overwhelming. An automat-

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ed electronic recordkeeping and reporting system can ease the operator's task of inputting the data, help environmental managers report the necessary information and provide alarms when violations of permit conditions are approached. It will also prepare the required reports and provide responsible officials a better comfort level prior to compliance certification of the annual reports. With electronic recordkeeping and reporting, manufacturers can successfully meet Title V operating conditions while minimizing labor requirements. **EP**

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