



# **STACK TESTING GUIDELINES**

## **Instructions for Conducting and Reporting Stack Tests**

Division of Environmental Quality

Office of Air Quality, Compliance Branch

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## **Stack Testing Guidelines**

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A stack test, also referred to as a performance or source test, measures the amount of a specific regulated pollutant, pollutants, or surrogates being emitted; demonstrates the capture efficiency of a capture system; or determines the destruction or removal efficiency of a control device used to reduce emissions at facilities subject to the requirements of the Clean Air Act (CAA or Act). Stack testing is an important tool used to determine a facility's compliance with emission limits, or capture or control efficiencies established pursuant to the CAA. This guidance is to address stack tests performed to determine both initial and on-going compliance with the CAA requirements.

For the purposes of this guidance, stack testing is more narrowly defined as:

Any performance testing conducted for the purposes of determining and demonstrating compliance with permitted limits using promulgated test methods, or Environmental Protection Agency (EPA) approved alternate test methods. Any stack test that is conducted within the scope of this guidance must demonstrate that a facility is capable of complying with the applicable emissions standards at all times.

Facilities, if necessary, must receive approval from the EPA prior to the required protocol date. These include alternative test methods not approved as an alternate by the EPA, "Major Change to Test Methods" and "Major changes to Emission Limits" will have to be reviewed and approved by EPA.

## **1. TIME FRAME FOR CONDUCTING STACK TESTS**

The time frame for conducting initial stack tests is established in 40 C.F.R. § 60.8 for NSPS; and 40 C.F.R. §§ 61.13 and 63.7 for NESHAP and MACT. Both the NSPS and MACT regulations regarding performance tests include provisions under which owners or operators of facilities shall notify appropriate authorities in the event that the scheduled test must be delayed. This notification of delay in conducting the performance test does not relieve the owner or operator of the legal responsibility for compliance with any applicable provisions of said part or with any other applicable Federal, State, or local requirement, nor will it prevent the EPA or the Division of Environmental Quality (DEQ) from implementing or enforcing said part or taking any other action under the Act.

A Force Majeure is defined by the applicable regulations as an event that will be or has been caused by circumstances beyond the control of the affected facility, its contractors, or any entity controlled by the affected facility that prevents the owner or operator from complying with the regulatory requirement to conduct performance tests within the specified time frame despite the affected facility's best efforts to fulfill the obligation. Examples of such events are acts of nature, acts of war or terrorism, or equipment failure or safety hazard beyond the control of the affected facility.

If a claim of Force Majeure is to be asserted, the facility shall provide written notification to DEQ in accordance with the applicable regulations. The performance test should be conducted as soon as practicable after the Force Majeure occurs. Whether to grant an extension to the performance test deadline is solely within the discretion of DEQ for a state required stack test or the EPA for a federal required stack test. Until an extension has been approved, the facility remains strictly subject to the performance test requirements of the applicable regulations.

Because the applicable regulations governing initial stack tests do not provide for extensions of the performance test deadline except in the event of a Force Majeure, a facility that has not completed a stack test within the requisite time frame or has not received approval of an extension due to Force Majeure would not be in compliance with the regulatory provisions to stack test and demonstrate compliance within the required time period.

Except for the circumstance whereby a claim of Force Majeure has been asserted, DEQ is constrained by the fact that the General Provisions do not provide for an extension of the initial performance test deadline. However, in the exercise of its enforcement discretion, additional time beyond the regulatory deadline within which the facility must perform the test may be granted. This ensures that a stack test is conducted as expeditiously as possible in order for the facility to demonstrate that it is capable of complying with the underlying regulatory requirements. In reviewing a request for additional time, DEQ will review the circumstances that are preventing the test from being conducted by the regulatory deadline, including any explanation by the facility, before deciding the appropriate course. The request should contain at the least the reason the test cannot be completed within the regulatory timeframe facilities, any

actions the facility has taken to remedy the situation that is preventing the test from being completed. Also, what will be done to remedy the problem and when will the actions be completed that will allow for a test to be completed.

## **2. STACK TEST NOTIFICATIONS (PROTOCOLS)**

A protocol is to be received by the DEQ no later than fifteen (15) **working** days in advance of a stack test. A copy of the form is on the DEQ website and may be submitted electronically or by mail to:

Division of Environmental Quality  
Attn: Office of Air Quality/Compliance Branch  
5301 Northshore Drive  
North Little Rock, AR 72118-5317

A test date should be acceptable to both DEQ and the facility. This affords DEQ an opportunity to observe the test, if desired. If timely notification is not provided, the test results may be deemed unacceptable, and the source may be required to test again. Stack tests should avoid being scheduled for weekends and State holidays if possible. As well, tests should be scheduled to start at such a time that does not require the Division of Environmental Quality to incur overtime situations if at all possible.

The Compliance Test Protocol should be completed with all of the required information. In addition:

- Describe normally scheduled periodic maintenance that may occur in the normal course of operation and maintenance of a unit. If a Division of Environmental Quality representative is present to observe the test, the facility also should notify the observer of such adjustments before the test begins and when they are being made throughout the test.
- Serial numbers of the equipment to be tested.

### **3. DEVIATIONS AND REPRESENTATIVE TESTING CONDITIONS**

If a facility wishes to deviate from a required test method, the facility would need to gain approval from DEQ in advance of the test if it is an EPA approved alternate method. This request should be sent as part of the protocol to DEQ as soon as possible, but not later than the protocol requirements of fifteen (15) work days. If it is a major change to test plans, the facility is responsible for receiving the approval by the EPA prior to the 15 day protocol being submitted and EPA approval needs to be attached to the protocol. DEQ will not act as an intermediary between the facilities and the EPA.

If a deviation from a test method has not been approved and the test is performed, the test results may be deemed unacceptable, and the source may be required to test again.

If DEQ was not provided timely notification and an opportunity to observe the stack test the resulting test data may be rejected and a new stack test may be required. If this situation prevents the facility from completing a valid stack test within the requisite time frame, the facility could be in violation of the requirement to conduct a stack test and demonstrate compliance. However, if the facility provided timely notice and the test method is approved and the Division of Environmental Quality did not respond or declined to observe the test, the test results should not be rejected solely because the test was not observed by agency personnel.

Any stack test that is conducted within the scope of this guidance must demonstrate that a facility is capable of complying with the applicable emissions standards at all times.

The facility generally should use the fuel material that is likely to cause the greatest challenge in meeting applicable emissions standards. For concentration and emissions rates standards, the facility generally should process the material that it expects to use during future operations that is likely to cause the highest emissions. For control or removal efficiency standards, other factors may apply such as using fuels or raw materials that contain or produce pollutants that are more difficult to combust or otherwise remove.

A facility is not required automatically to retest if the initial test does not represent the range of at least ninety percent (90%) of combined process and control measure conditions under which the facility expects to operate. The testing range which the test is accomplished will become the new (90%) operating parameters for the facility. Should the facility exceed that new limit plus ten percent (10%) they will be required to conduct a new stack test to establish rates.

#### **4. STOPPAGES**

Stoppages of a stack test that is being conducted to determine and demonstrate compliance once it has been started may require a new stack test be performed. However, at the discretion of DEQ some circumstances may be allowable.

Depending on the circumstances surrounding the stoppage, the facility may be found in violation of the requirement to conduct a stack test.

If a stack test is stopped for any reason, in accordance with Reg.19.705(B)(2) Record Keeping and Reporting Requirements, emissions data obtained through sampling or continuous emissions monitoring, any test results collected during any partial or complete runs will be submitted to DEQ, regardless of whether the test was completed. Once any testing has started, all records must be sent to DEQ. If the tested equipment would have failed because applicable emission standards were exceeded, this will be considered a failed test and proper action will be taken. The facility will be considered in violation of both the requirement to conduct a stack test (if it does not complete a performance test by the applicable deadline) and to comply with the underlying regulatory requirement or permit condition. Any credible evidence may be used to demonstrate non-compliance. If a facility is forced to stop a test due to a Force Majeure Event, the facility shall provide written notification to DEQ.

The results of a test run may, upon approval from DEQ, be replaced with the results of an additional test run in the event that a test run is discontinued because of forced shutdown or other circumstances. If a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued for certain types of circumstances beyond the owner or operator's control, the results of two runs may be used with the approval from DEQ.

If a test is stopped or postponed due to Force Majeure the performance test shall be conducted as soon as practicable after the Force Majeure occurs. Whether to grant an extension to the performance test deadline is solely within the discretion of DEQ. Until an extension has been approved by DEQ, the facility remains strictly subject to the performance test requirements of the applicable regulations.

## **5. POSTPONEMENTS**

Postponements should be treated similar to stoppages. If a postponement results in the facility failing to complete the test within the required time frame, the facility is in violation of the requirement to test. Regardless of whether the postponement affects a facility's ability to test in a timely manner, careful scrutiny of the circumstances surrounding the postponement will be made to determine whether the facility was in violation of the underlying emission limitations, and therefore, postponed the test to avoid a documented violation.

Notification of postponement of a scheduled stack test should be received by the DEQ Stack Test Inspector Supervisor at least five (5) workdays prior to the scheduled test date if possible. Until a postponement has been approved by DEQ, the facility remains strictly subject to the performance test requirements of the applicable regulations.

## **6. TEST REPORTS**

The written test report should be sufficient to assess compliance with the underlying regulatory requirements, permit conditions, or enforcement order, and adherence to the test requirements.

If the test report does not contain sufficient information with which to adequately review the testing process and data results, DEQ may request additional information or require another test if appropriate.

It also should include sufficient raw data and cross correlations in the appendices such that a new set of calculations including statistics could be independently generated from the raw data if necessary (e.g., median versus geometric-mean). The test report is to be



submitted to DEQ Air Compliance Branch as soon as possible but not later than sixty (60) calendar days after completion of the stack test. The facility is required to supply the reports necessary to the EPA if required.

The preferred method of submittal of a Stack Test Reports is made through ePortal ([https://eportal.adeg.state.ar.us/?FormTag=Air\\_Reports](https://eportal.adeg.state.ar.us/?FormTag=Air_Reports)). Alternatively, you may mail the test results to:

Division of Environmental Quality  
Attn: Office of Air Quality/Compliance Branch  
5301 Northshore Drive  
North Little Rock, AR 72118-5317