

REVISIONS TO THE STATE IMPLEMENTATION PLAN (SIP)  
FOR THE CONTROL OF OZONE AIR POLLUTION

STAGE II VAPOR RECOVERY PROGRAM SIP REVISION

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
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## SECTION VI. CONTROL STRATEGY

A. Introduction (No change.)

B. Ozone (Revised)

1. *Dallas/Fort Worth* (No change.)
2. *Houston/Galveston* (No change.)
3. *Beaumont/Port Arthur* (No change.)
4. *El Paso* (No change.)
5. *Regional Strategies* (No change.)
6. *Stage II Vapor Recovery Program* (New)

C. Particulate Matter (No change.)

D. Carbon Monoxide (No change.)

E. Lead (No change.)

F. Oxides of Nitrogen (No change.)

G. Sulfur Dioxide (No change.)

H. Conformity with National Ambient Air Quality Standards (No change.)

I. Site Specific (No change.)

J. Mobile Sources Strategies (No change.)

**THE STAGE II VAPOR RECOVERY PROGRAM  
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## **THE STAGE II VAPOR RECOVERY PROGRAM DEFINITIONS**

**Motor vehicle refueling facility** - Any site where gasoline is transferred from a stationary storage tank to a motor vehicle fuel tank used to provide fuel to the engine of that motor vehicle.

**Onboard refueling vapor recovery (ORVR)** - A system on motor vehicles designed to recover hydrocarbon vapors that escape during refueling.

**Onboard refueling vapor recovery (ORVR) compatible** - A vacuum assist Stage II vapor recovery system designed to prevent the ingestion of ambient air during the fueling of motor vehicles with ORVR.

**Owner or operator of a motor vehicle fuel dispensing facility** - Any person who owns, leases, operates, or controls the motor vehicle fuel dispensing facility.

**Vapor recovery systems** - Systems designed to control the vapors generated during the vehicle refueling process.

## CHAPTER 1: GENERAL

### 1.1 BACKGROUND

The 1990 Amendments to the Federal Clean Air Act (FCAA) authorized the U.S. Environmental Protection Agency (EPA) to designate areas failing to meet the national ambient air quality standard for ozone as nonattainment and to classify them according to degree of severity. There are four such areas in Texas, including Houston/Galveston, Beaumont/Port Arthur, El Paso, and Dallas/Fort Worth ozone nonattainment areas. States were required to submit a revision to the SIP no later than November 15, 1992, which includes a Stage II vapor recovery program to control gasoline vapors from the refueling of motor vehicles.

The Stage II vapor recovery program involves use of technology that prevents gasoline vapors from escaping during refueling. Gasoline vapors are volatile organic compounds which react with nitrogen oxides in the presence of sunlight to form ozone. As part of the control strategy for ozone attainment, the EPA mandates that Stage II refueling requirements apply to all public and private refueling facilities dispensing 10,000 gallons or more of gasoline per month. The federal throughput constitutes a minimum threshold, but a state may be more stringent in adopting a throughput standard. The Texas Commission on Environmental Quality (TCEQ or commission) applies a more stringent throughput standard in the sixteen ozone nonattainment counties by requiring all facilities constructed after November 15, 1992 to install Stage II vapor recovery regardless of throughput.

In compliance with the FCAA, EPA issued enforcement guidance dated October 1991 and technical guidance dated November 1991. EPA published the following technical guidance documents for states to use in developing their Stage II program:

- a. Technical Guidance - Stage II Vapor Recovery Systems for Control of Vehicle Refueling Emissions at Gasoline Dispensing Facilities, Volume I: Chapters (EPA-450/3-91-022a).
- b. Technical Guidance - Stage II Vapor Recovery Systems for Control of Vehicle Refueling Emissions at Gasoline Dispensing Facilities, Volume II: Appendices (EPA-450/3-91-022b).

A Stage II vapor recovery SIP was first approved in Texas on October 16, 1992, and later revised on November 10, 1993. These SIP revisions satisfied requirements outlined in the aforementioned EPA guidance documents.

The original Stage II vapor recovery rules relied upon the California Air Resources Board (CARB) certification procedures for vapor recovery equipment. The CARB is currently implementing an enhanced vapor recovery (EVR) program with a completion date of April 2003, after which they will no longer certify non-EVR systems. In response, the current SIP revision enacts a requirement for more frequent testing of vapor recovery systems at gasoline dispensing facilities as well as a phase-in schedule to retrofit and/or install ORVR compatible Stage II vapor recovery systems, in lieu of the CARB EVR program.

When unannounced investigations are performed, the proper operation and maintenance of Stage II vapor recovery has demonstrated an in-use efficiency of approximately 84% for the 10,000 gallon/month exemption level of the commission's Stage II rules. Therefore, these controls are expected to result in significant reductions in VOC emissions from gasoline refueling facilities, as well as reduced public

exposure to known human carcinogens such as benzene and other toxic emissions. Estimates of actual emission reductions are included in the Rate-of-Progress SIP adopted on November 10, 1993 and the updated Rate-of-Progress SIP adopted on July 24, 1996.

## **1.2 PUBLIC HEARING INFORMATION**

The commission held a public hearing at the following time and location:

<b>CITY</b>	<b>DATE</b>	<b>TIME</b>	<b>LOCATION</b>
Austin	August 8, 2002	2:00 p.m.	Building F, Room 2210 12100 Park 35 Circle

Written comments were also accepted via mail and fax through August 12, 2002.

## **1.3 SOCIAL AND ECONOMIC CONSIDERATIONS**

For a detailed explanation of the social and economic issues involved please refer to the preamble that precedes the rule package accompanying this SIP.

## **1.4 FISCAL AND HUMAN RESOURCES**

The state has determined that its fiscal and human resources are adequate and will not be adversely affected through implementation of this plan.

## **CHAPTER 2: APPLICABILITY**

EPA guidelines require applicability to be determined by calculating the average monthly volume of gasoline dispensed at a facility over the two-year period prior to the state's adoption of Stage II requirements. In the event a facility has been inactive for any period during the proposed calculation period, the state shall extend the period to include two full years of data.

For improved enforceability, the commission has opted to determine the monthly throughput based upon the maximum monthly gasoline throughput for any calendar month after January 1, 1991. The commission shall determine as accurately as possible which facilities must comply with Stage II program requirements. When needed, the commission will coordinate with other state agencies involved in regulating refueling facilities to ensure an accurate identification of all such facilities. Next, the commission shall develop and maintain a computerized database to track facilities in the regulated community. Finally, the commission shall establish a method for ensuring that facilities, which were initially exempt from these regulations due to low throughput, are in compliance with Stage II requirements at such time that their gasoline throughput exceeds the exemption level specified in §115.247, based upon either facility investigations or emissions inventory data.

### **CHAPTER 3: CERTIFICATION OF APPROVED VAPOR RECOVERY SYSTEMS**

The EPA requires that all Stage II vapor recovery systems be capable of achieving at least 95 percent vapor control efficiency. The commission believes that verification of proper operation of Stage II equipment every 12 months (rather than five years) will increase the actual in-use efficiency of vapor recovery systems and better ensure a vapor recovery rate of 95 percent. However, the commission also believes that the TXP-101 vapor space manifold test and the TXP-103 dynamic back-pressure test in the Vapor Recovery Test Procedures Handbook (test procedures handbook) should be required every 36 months. Furthermore, the state will continue to ensure that each system is tested for proper installation. The commission will not approve vapor recovery systems which include remote vapor check valves in balance systems. In addition, all balance vapor recovery systems must include coaxial hoses. The commission will only approve original equipment manufacturer (OEM) rebuilt nozzles, and all existing dispenser pumps shall be retrofit with OEM parts or agency approved, third-party certified non-OEM aftermarket parts. Only Stage II vapor recovery systems that are onboard refueling vapor recovery (ORVR) compatible will be approved for Stage II vapor recovery systems installed after April 1, 2005 and all existing Stage II vapor recovery systems must be ORVR compatible no later than April 1, 2007.

## CHAPTER 4: TRAINING

EPA guidelines require the state to provide or approve training for Stage II investigators and at least one owner/operator from each facility. Investigator training must be effective in presenting all Stage II requirements and procedures. As needed, periodic updates to the training will be provided in order to reflect all technological and programmatic changes. The training program for investigators shall consist of classroom and practical training and shall include information on the purpose and effects of Stage II, the types of Stage II systems, acceptable components, methods for identifying system configurations, and how to identify failures. A written and practical test to verify proficiency will be required for investigators. Each investigator must meet a minimum standard of proficiency on each test in order to successfully complete the training course.

Owner/operator training must provide instruction on the proper operation and maintenance of Stage II equipment. Literature and equipment necessary to facilitate training will be provided by an approved training provider. As needed, periodic updates to the training will be provided in order to reflect all technological and programmatic changes. At least one owner/operator from each regulated facility shall be required to successfully complete a training course.

An approved training course will include the following elements in all training programs offered to facility owners/operators:

- 1) federal and state Stage I and Stage II statutes, regulations (including enforcement consequences of noncompliance), and vapor recovery health effects and benefits;
- 2) equipment operation and function of each type of vapor recovery system;
- 3) general overview of maintenance schedules and requirements for Stage II vapor recovery equipment;
- 4) general overview of structure and content of CARB Executive Orders and approved third-party certifications; and
- 5) recordkeeping and investigation requirements for Stage I and Stage II vapor recovery systems.

## **CHAPTER 5: PUBLIC INFORMATION**

The commission shall develop and provide information to regulated facilities stating the general purpose and benefit of the Stage II vapor recovery program; specific program requirements; enforcement consequences of noncompliance; and information about the commission, such as office address (regional and headquarters) and phone numbers.

The commission shall establish public awareness information for general distribution to the public stating the purposes and benefits of the Stage II program, including those benefits to human health, the environment, and safety. The information shall include a basic description of how the vapor recovery system functions, operational procedures for refueling, and information about the commission, such as office address (regional and headquarters), phone numbers, and any other information that will facilitate the public's comments, questions, or complaints about the program or a particular facility.

## **CHAPTER 6: FACILITY RECORDKEEPING**

The commission shall provide guidance to facilities regarding all recordkeeping requirements. All facilities will be required to maintain Stage II vapor recovery records for the purpose of verifying compliance. The commission will review each facility's records to ensure that all initial and annual testing was successfully completed and that all maintenance, investigation, and training records are properly documented and available for review. The presence of applicable vapor recovery system certification documentation (CARB Executive Order or approved third-party certification) will also be ensured. The commission will develop examples of the necessary forms each facility owner or operator will need in order to comply with all recordkeeping requirements.

## **CHAPTER 7: TCEQ RECORDKEEPING**

The commission shall maintain a general station file (compliance file) denoting the facility name, address, phone number, owner/operator names, a commission assigned account number, system installation date, and other relevant information. In the case of facilities which are exempt, monthly gasoline throughput records shall also be kept. The commission shall maintain a file on all station investigations by assigned account number. In compliance with EPA guidelines, the reports will be filed in each facility's compliance file in chronological order and will include the date of investigation; the investigator's name, identification number, and signature; findings at investigation; follow-up action to be performed; and a notation of violations. Documentation of all enforcement action taken against each facility will be maintained in the commission compliance file for each facility. The compliance files may be kept electronically. All station records maintained by the commission shall be made available to the public upon request.

## **CHAPTER 8: EQUIPMENT INSTALLATION AND TESTING**

Each facility must install equipment that meets all Stage II and other related regulations. The commission shall verify that each facility complies with these regulations:

- a. Functional testing shall be performed at the facility's expense.
- b. The owner or operator shall successfully complete all tests required to determine compliance upon initial system startup and every twelve months thereafter, with the exception of the TXP-101 vapor space manifold test and the TXP-103 dynamic back-pressure test which will be required every 36 months. System testing will also be required following major system replacement or modification. All tests shall be conducted according to the applicable portions of The Texas Commission on Environmental Quality Vapor Recovery Test Procedures Handbook. Any new, alternative, or equivalent testing methods and procedures, not approved by CARB, which are developed or approved by the commission shall be submitted to EPA for approval in the SIP or other EPA concurrence procedure.
- c. The owner or operator required to conduct test(s) on the system or system components shall notify the appropriate regional office and any local air pollution program with jurisdiction in writing at least ten working days in advance of the test of when, where, by whom, and which tests will be conducted. The owner or operator shall submit the results of the test(s) to the appropriate regional office and any local air pollution program with jurisdiction within ten working days of completion of the tests.
- d. The commission shall allow only OEM parts or CARB-certified or agency approved third-party certified non-OEM aftermarket parts to be used as replacement parts.

## CHAPTER 9: TCEQ INVESTIGATIONS

The commission shall perform on-site investigations in conjunction with an annual system test at each regulated facility at least once in every five year period. At such time, the commission shall verify that all equipment meets configuration requirements and that the system operates within parameters established during certification. Based on data gathered during a pilot program conducted in the Houston-Galveston and Dallas-Fort Worth non-attainment regions and summarized in a final report dated October 30, 2001, it is evident that investigations conducted in conjunction with a vapor recovery system testing event better enable investigators to evaluate the performance of each individual system.

In addition, routine investigations of record-keeping and above-ground equipment shall also be conducted at between five and twenty-five percent of all facilities each year. These unannounced, routine investigations will serve to maintain the element of surprise and to provide a mechanism for investigating citizen complaints. During an investigation, the commission investigator, at a minimum, shall:

- a. verify compliance with all Stage I equipment requirements regarding control of vapors from the filling of storage tanks at motor vehicle refueling facilities;
- b. observe the use of the equipment by either the facility operator or the general public;
- c. inspect facility files to ensure they comply with all recordkeeping requirements; and
- d. review the required results of testing conducted on the vapor recovery system.

If a nonclerical violation is detected at any facility, the commission shall conduct a follow-up investigation as needed.

## CHAPTER 10: PROGRAM PENALTIES

The commission shall establish a penalty schedule, as required by EPA, designed to deter noncompliance. Violations of these regulations may result in administrative penalties of up to \$10,000 per day per violation and civil penalties of up to \$25,000 per day per violation. The commission shall:

a. issue a notice of violation to the owner/operator of a refueling facility upon confirmation of a violation of any rule related to Stage I or II vapor recovery. A follow-up investigation shall be conducted as necessary;

b. prohibit the continued dispensing of fuel, if the violation is equipment related, until such time any violation is corrected and the commission notified of the correction;

c. not consider any equipment clearly tagged by the owner/ operator as out-of-order as a violation; and

d. have the authority to label any noncompliant equipment as "out of order" until necessary repairs are made.