

The commission proposes new §114.410 (Definitions), §114.412 (Control Requirements), §114.416 (Reporting and Recordkeeping Requirements), §114.417 (Exemptions), and §114.419 (Affected Counties). The commission proposes these revisions to new Division 2 (Heavy Equipment Fleets - Compression-Ignition Engines), Subchapter I (Non-Road Engines), Chapter 114 (Control of Air Pollution from Motor Vehicles), and to the State Implementation Plan (SIP) in order to control ground-level ozone in the Dallas/Fort Worth (DFW) ozone nonattainment area through the accelerated purchase of United States Environmental Protection Agency (EPA) certified Tier 2 and Tier 3 non-road equipment 50 horsepower (hp) and larger.

BACKGROUND AND SUMMARY OF THE FACTUAL BASIS FOR THE PROPOSED RULES

The commission proposes these revisions to Chapter 114 and to the SIP in order to control ground-level ozone in the DFW ozone nonattainment area. The DFW ozone nonattainment area includes Collin, Dallas, Denton, and Tarrant Counties. The rules are proposed to be effective in the four nonattainment counties, as well as the eight other perimeter counties in the DFW consolidated metropolitan statistical area (CMSA). The proposed revisions are one element of the control strategy for the proposed DFW Attainment Demonstration SIP. The purpose of these proposed rules is to establish the accelerated purchase and operation of non-road, compression-ignition fleet equipment within the 12-county DFW CMSA, to reduce emissions of oxides of nitrogen (NO_x) and volatile organic compounds (VOC) necessary for the counties included in the DFW nonattainment area to be able to demonstrate attainment with the national ambient air quality standard (NAAQS) for ozone. The commission looked at all

possible areas for reduction, and each control strategy chosen is integral and necessary to the attainment demonstration.

The EPA has been regulating highway (on-road) cars and trucks since the early 1970s and continues to set increasingly stringent emissions standards for such vehicles. After considerable progress has been made in controlling the emissions from on-road vehicles, EPA has turned its attention to non-road engines, which also contribute significantly to air pollution.

Non-road diesel engines, also referred to as compression-ignition engines, dominate the large non-road engine market. Examples of applications falling into this category include: agricultural equipment, such as tractors, balers, and combines; construction equipment, such as backhoes, graders, and bulldozers; material handling equipment, such as heavy forklifts; and utility equipment, such as generators, compressors, and pumps.

EPA adopted regulations in 40 Code of Federal Regulations Part 89 (40 CFR 89), concerning Control of Emissions from New and In-use Nonroad Engines, as effective June 17, 1994. Under 40 CFR 89, compression-ignition engines greater than 50 hp must comply with Tier 1 emissions standards that are being phased in between calendar years 1996 and 2000, depending on the size of the engine. Under the Tier 1 standards, EPA projects that NO_x emissions from new non-road, compression-ignition equipment will be reduced by over 30% from uncontrolled levels of unregulated engines. The Tier 1 standards do not apply to engines used in underground mining equipment, locomotives, and marine vessels. The

Mine Safety and Health Administration is responsible for setting requirements for underground mining equipment. Locomotives and marine vessels are covered by separate EPA programs.

On October 23, 1998 EPA adopted, in 40 CFR 89, more stringent emission standards for NO_x, hydrocarbons (which are also called VOC), and particulate matter (PM) for new non-road, compression-ignition engines, to be phased in over several years beginning in model year 1999. Engines used in underground mining equipment, locomotives, and marine vessels over 50 hp are not included. This comprehensive new program phases in more stringent Tier 2 standards for all engine sizes from the model years 2001 to 2006, and yet more stringent Tier 3 standards from the model years 2006 to 2008. The following figure, which was extracted from the Table 1-1 of the “Final Regulatory Impact Analysis: Control of Emissions from Non-road Diesel Engines,” (EPA 420-R-98-016, dated August 1998) shows the emission standards adopted by EPA in 40 CFR §89.112. Also, the new program includes a voluntary program called the “Blue Sky Series” engine program to encourage the production of advanced, very low-emitting engines. Under these new standards, EPA projects that emissions from new non-road, compression-ignition equipment will be further reduced by 60% for NO_x and 40% for PM compared to the emission levels of engines meeting the Tier 1 standards.

Figure 1: 30 TAC Chapter 114 - Preamble

Emission Standards					
In grams per kilowatt-hour (g/kW-hr) and grams per horsepower-hour (g/hp-hr)					
Engine Power	Tier	Model Year	Non-Methane Hydrocarbons plus NO _x	Carbon Monoxide	Particulate Matter
kW < 8 (hp < 11)	Tier 1	2000	10.5 (7.8)	8.0 (6.0)	1.0 (0.75)
	Tier 2	2005	7.5 (5.6)	8.0 (6.0)	0.80 (0.60)
8 ≤ kW < 19 (11 ≤ hp < 25)	Tier 1	2000	9.5 (7.1)	6.6 (4.9)	0.80 (0.60)
	Tier 2	2005	7.5 (5.6)	6.6 (4.9)	0.80 (0.60)
19 ≤ kW < 37 (25 ≤ hp < 50)	Tier 1	1999	9.5 (7.1)	5.5 (4.1)	0.80 (0.60)
	Tier 2	2004	7.5 (5.6)	5.5 (4.1)	0.60 (0.45)
37 ≤ kW < 75 (50 ≤ hp < 100)	Tier 2	2004	7.5 (5.6)	5.0 (3.7)	0.40 (0.30)
	Tier 3	2008	4.7 (3.5)	5.0 (3.7)	
75 ≤ kW < 130 (100 ≤ hp < 175)	Tier 2	2003	6.6 (4.9)	5.0 (3.7)	0.30 (0.22)
	Tier 3	2007	4.0 (3.0)	5.0 (3.7)	
130 ≤ kW < 225 (175 ≤ hp < 300)	Tier 2	2003	6.6 (4.9)	3.5 (2.6)	0.20 (0.15)
	Tier 3	2006	4.0 (3.0)	3.5 (2.6)	
225 ≤ kW < 450 (300 ≤ hp < 600)	Tier 2	2001	6.4 (4.8)	3.5 (2.6)	0.20 (0.15)
	Tier 3	2006	4.0 (3.0)	3.5 (2.6)	
450 ≤ kW ≤ 560 (600 ≤ hp ≤ 750)	Tier 2	2002	6.4 (4.8)	3.5 (2.6)	0.20 (0.15)
	Tier 3	2006	4.0 (3.0)	3.5 (2.6)	
kW > 560 (hp > 750)	Tier 2	2006	6.4 (4.8)	3.5 (2.6)	0.20 (0.15)

The North Texas Clean Air Steering Committee (steering committee) representing the DFW ozone nonattainment area counties requested that an ozone pollution control strategy regarding non-road, compression-ignition engines be established to reduce NO_x emissions necessary for the counties included in the DFW ozone nonattainment area to be able to demonstrate attainment with the ozone NAAQS. At the request of the steering committee and after a review of other alternatives, the commission developed an accelerated non-road, compression-ignition fleet program within the 12-county CMSA.

The proposed rules will require state and local governments, businesses, and private entities in the DFW CMSA which own or operate non-road equipment powered by compression-ignition engines 50 hp up to 750 hp to ensure that their fleet of such equipment will consist of a minimum of 50% Tier 3 non-road equipment and the remainder Tier 2 non-road equipment by the end of the calendar year 2007. In addition, the proposed rules will require owners or operators of fleets with equipment with engines greater than or equal to 750 hp, to have 100% Tier 2 engines by the end of calendar year 2007. The proposed rules will accelerate the turnover rate of compression-ignition engine powered non-road equipment that would naturally occur. The DFW area needs emissions reductions earlier than what natural turnover would allow; therefore, these proposed rules will require that Tier 2 and Tier 3 equipment be purchased at an accelerated rate over the EPA schedule outlined in 40 CFR 89. The proposed rule exempts non-road engines used in locomotives, underground mining equipment, marine application, aircraft, airport ground support equipment (GSE), and equipment used solely for agricultural purposes. The proposed rules will affect equipment 50 hp and larger used in the construction, general industrial, lawn and garden, utility, and material handling.

Examples of equipment used in the construction category include backhoes, bore/drill rigs, cement mixers, crawler tractors, excavators, graders, off-highway trucks, pavers, paving equipment, plate compactors, rollers, rubber-tire dozers, rubber-tire loaders, scrapers, signal boards, skid-steer loaders, trenchers, and feller/bunchers. Examples of equipment used in the general industrial category include concrete/industrial saws, crushing equipment, oil field equipment, refrigeration/air conditioning units, scrubber/sweepers, and rail maintenance equipment. Examples of equipment used in the lawn and garden category include garden tractors, rear engine mowers, and chipper/grinders. Examples of equipment used in the utility category include air compressors, hydro-power units, pressure washers, pumps, generator sets, irrigation sets, and welders. Examples of equipment used in the material handling category include aerial lifts, cranes, forklifts, and rough-terrain forklifts.

Precursor chemicals (which contribute to the production of ozone) include NO_x and VOC. The proposed rules will require that the cleaner Tier 2 and Tier 3 non-road equipment be purchased which will reduce VOC and NO_x emissions and, therefore help control ground-level ozone. The emissions inventory for non-road equipment being regulated by these proposed rules in the DFW CMSA is projected to be about 89 tons per day of NO_x in the year 2007. Modeling has shown that the proposed rules will reduce NO_x emissions in the year 2007 for the DFW CMSA by 16.5 tons per day.

The costs of meeting the new emission standards are expected to add about 1.0% to the purchase price of typical new non-road, compression-ignition equipment, although for some equipment the standards may cause price increases on the order of 2.0% to 3.0%. The cost of this proposed program is the cost of having to replace the non-road, compression-ignition fleet on an accelerated schedule, not the cost of

Tier 2 and Tier 3 engines. The cost of Tier 2 and Tier 3 engines is already accounted for in the EPA regulations, not as a result of these proposed rules. The program is expected to cost between \$8,400 and \$11,700 per ton of NO_x reduced, which compares favorably with other emission control strategies.

The commission is soliciting comments regarding the issue of small fleets and compliance with the proposed rules. The commission is also soliciting comments regarding the size cutoff for small fleets below which they should be exempt. The commission will use the public comment regarding small fleets to determine if the rules should be adopted with an exemption regarding small fleets.

SECTION-BY-SECTION DISCUSSION

Subchapter I is a new subchapter which is being proposed as part of a concurrent rulemaking.

The proposed new §114.410 adds definitions for Blue Sky Series engine, compression-ignition engine, fleet, non-road engine, Tier 2 engine, and Tier 3 engine.

The proposed new §114.412 will require state and local governments, businesses, and private entities in the affected counties listed in §114.419, which own or operate non-road equipment powered by compression-ignition engines to use non-road equipment powered by Tier 2 and Tier 3 compression engines. The phase-in schedule specified in these proposed rules accelerates the phase-in schedule specified in the federal rules at 40 CFR 89 as amended on October 23, 1998. For compression-ignition engines greater than or equal to 50 hp, but less than or equal to 750 hp, the proposed rule gradually increases the percentage of Tier 2 and Tier 3 engines required in the affected fleet, so that by the end of

calendar year 2007, at least 50% of the affected portion of the fleet shall meet Tier 3 certification standards and the remainder of the affected fleet shall meet Tier 2 certification. For engines greater than 750 hp, the proposed rule requires that 100% of the affected fleet be Tier 2 engines by the end of calendar year 2007. The proposed rule also allows the non-road engines designated as “Blue Sky Series” engines be counted toward the percentage requirements. The “Blue Sky Series” engine program is a voluntary EPA program that allows for earlier introduction of cleaner engines. The emission standards for the Blue Sky Series program are the same as Tier 3 emission standards. Finally, the proposed rule will allow that an EPA-certified retrofit of newly purchased engines, in order to meet the Tier 2 or Tier 3 emission standards, be allowed to meet the percentage requirements. This retrofit allowance is proposed because some newly purchased engines may be able to meet the Tier 2 and Tier 3 emission standards by being retrofitted. Therefore, for an affected entity to meet the percentage requirements, they may purchase new equipment or retrofit existing engines if there is an EPA-certified retrofit available.

The proposed new §114.416 requires state and local governments, businesses, and private entities subject to §114.412 to submit annual fleet reports. The proposed rule also requires them to maintain copies of the submitted reports for a minimum of three years.

The proposed new §114.417 exempts locomotives, underground mining equipment, aircraft engines, airport GSE, and agricultural equipment. Locomotives, underground mining equipment, marine engines, and aircraft engines are exempt from this proposed rule because they are not regulated by the EPA non-road rule. Airport GSE is exempt from this rule because it is being regulated by another rule

being proposed concurrently. Agricultural equipment is exempt from the proposed rule because of its small contribution (less than 1.0%) to non-road emissions, and it is operated primarily in rural areas.

The proposed new §114.419 specifies the counties that are subject to the new requirements. The counties included are all 12 counties in the DFW CMSA.

FISCAL NOTE

Bob Orozco, Technical Specialist with Strategic Planning and Appropriations, has determined that for the first five-year period the proposed amendments to Chapter 114 are in effect there will be significant fiscal implications for units of state and local government located within the DFW CMSA that own or operate non-road, compression-ignition vehicles and engines of 50 hp and larger. The proposed rules will require owners and operators of non-road, compression-ignition equipment 50 hp up to 750 hp to ensure that their fleet of such equipment will consist of a minimum of 50% Tier 3 non-road equipment and the remainder Tier 2 non-road equipment by the end of the calendar year 2007. In addition, the proposed rules will require owners and operators of fleets with equipment with engines equal to or greater than 750 hp, to have 100% Tier 2 engines by the end of calendar year 2007.

Tier 2 and 3 standards are EPA standards whose goals are to reduce emissions of NO_x, hydrocarbons called VOC, and PM for new non-road, compression-ignition engines. The primary differences between the current Tier 1 and Tier 2 standards is that Tier 2 has a combined standard for NO_x and non-methane hydrocarbon (NMHC) emissions that has replaced separate standards for NO_x and NMHC in Tier 1; a standard for carbon monoxide (CO) and PM was added in Tier 2 for engines of 50 to 175

hp; and in all other engine sizes, the CO and PM standards are more stringent for Tier 2 than Tier 1.

The primary difference between Tier 3 standards and Tier 2 standards is that NMHC and NO_x emission standards are approximately 39% more stringent in Tier 3 than in Tier 2. EPA also has a voluntary program called the “Blue Sky Series” engine program to encourage the production of advanced, very-low emitting engines. “Blue Sky Series” engines will be allowed to meet either percentage requirement because the Blue Sky standards are the same as Tier 3 standards. The proposed amendments will also allow that an EPA-certified retrofit of newly purchased engines, in order to meet the Tier 2 or Tier 3 emission standards, be allowed to meet the percentage requirements.

The proposed amendments to Chapter 114 would require units of state and local government, businesses, and individuals in the 12-county DFW CMSA which own or operate non-road, compression-ignition equipment 50 hp up to 750 hp to ensure that their fleet of such equipment will consist of a minimum of 50% Tier 3 non-road equipment and the remainder Tier 2 non-road equipment by the end of the calendar year 2007. In addition, the proposed rules will require owners and operators of fleets with equipment with engines equal to or greater than 750 hp, to have 100% Tier 2 engines by the end of calendar year 2007.

The steering committee representing the DFW ozone nonattainment area counties requested an air pollution control program, including the use of Tier 2 and Tier 3 non-road, compression ignition engine standards, be established to reduce NO_x emissions necessary for the counties included in the DFW nonattainment area to be able to demonstrate attainment with the NAAQS for ozone. The proposed amendments are part of the commission response to the request from the steering committee and one

element of the proposed DFW Attainment Demonstration SIP. A SIP is a plan developed for any region where existing (measured and/or modeled) ambient levels of pollutant exceeds the levels specified in a national standard. The plan sets forth a control strategy that provides emission reductions necessary for attainment and maintenance of the national ozone standard.

The proposed amendments will affect the owners and operators of compression-ignition equipment of 50 hp and larger used in the construction, general industrial, lawn and garden, utility, and material handling categories. Examples of equipment in the construction category include backhoes, bore/drill rigs, cement mixers, crawler tractors, excavators, graders, off-highway trucks, pavers, paving equipment, plate compactors, rollers, rubber-tire dozers, rubber-tire loaders, scrapers, signal boards, skid-steer loaders, trenchers, and feller/bunchers. Examples of equipment in the general industrial category include concrete/industrial saws, crushing equipment, oil field equipment, refrigeration/air conditioning units, scrubber/sweepers, and rail maintenance equipment. Examples of equipment used in the lawn and garden category include garden tractors, rear engine mowers, and chipper/grinders. Examples of equipment in the utility category include air compressors, hydro-power units, pressure washers, pumps, generator units, irrigation units, and welders. Examples of equipment in the material handling category include aerial lifts, cranes, forklifts, and rough-terrain forklifts.

The proposed amendments will also require affected individuals, state and local units of government, and businesses to submit to the commission, annual reports that demonstrate compliance with the proposed amendments. The proposed amendments exempt non-road engines used in locomotives,

underground mining equipment, marine applications, aircraft, airport ground support equipment, and equipment used solely for agricultural purposes.

PUBLIC BENEFIT

Mr. Orozco also has determined that for each year of the first five years the proposed amendments to Chapter 114 are in effect, the public benefit anticipated from enforcement of and compliance with the proposed amendments will be the potential reduction of NO_x, VOC, CO, and PM emissions, potentially improved air quality, and contribution toward demonstration of attainment with the ozone NAAQS.

There are significant fiscal implications anticipated to affected individuals, state and local government agencies, and businesses as a result of implementing the proposed amendments. The proposed amendments to Chapter 114 would require units of state and local government, businesses, and individuals in the 12-county DFW CMSA which own or operate non-road, compression-ignition equipment 50 hp up to 750 hp to ensure that their fleet of such equipment will consist of a minimum of 50% Tier 3 non-road equipment and the remainder Tier 2 non-road equipment by the end of the calendar year 2007. In addition, the proposed rules will require owners and operators of fleets with equipment with engines equal to or greater than 750 hp, to have 100% Tier 2 engines by the end of calendar year 2007.

EPA's NONROAD (April 1, 1999) computer model estimated a population, in calendar year 2007, of approximately 95,000 pieces of non-road, compression-ignition equipment in the 12-county DFW CMSA affected by the proposed amendments. Based on the 1996 population of 46,084 pieces of non-

road, compression-ignition equipment in the 12-county DFW CMSA, this is a growth factor of approximately 6.8% per year. It is estimated that by the end of calendar year 1997, the population of non-road, compression-ignition equipment in the 12-county DFW CMSA is approximately 49,217 units. Using the 10-year life-cycle for medium to large engines in the EPA's "Final Regulatory Impact Analysis: Control of Emissions from Nonroad Diesel Engines," August 1998, approximately 25,499 units with these types of engines will be purchased as a result of aging or growth from the beginning of year 1998 through 2000. This equipment will have to be either retrofitted or re-engined with compliant engines or replaced during years 2001 through 2007 in order to comply with the proposed amendments. It is estimated that approximately 14,571 engines will be either retrofitted, re-engined, or replaced from year 2000 through year 2004, the period covered by this fiscal note. It is assumed that retrofit, re-engine, or replacement will begin in the year 2001. In the years following calendar year 2000, the population of non-road, compression-ignition units is expected to grow by 35,049 units through the end of calendar year 2007 to a total of 95,000 units. In addition, it is estimated that another 34,452 aging units will be replaced due to the normal life-cycle of this equipment. The total of new units purchased due to growth and normal replacement is 69,501 units through year 2007. It is estimated that approximately 37,726 of these units will be purchased during years 2001 through 2004 due to growth and normal replacement.

EPA's final regulatory impact analysis contains estimated purchase prices for new non-road, compression-ignition equipment. Two of these price estimates include new portable and motive equipment in the 250 hp to 450 hp range and are applicable to the proposed rule. EPA estimated costs of \$24,000 to \$40,000 is for new portable equipment in the 250 hp to 450 hp range. The EPA report

does not specify the types of the portable equipment, but the types could include equipment like pumps, oil field equipment, refrigeration, and air conditioning units. These types of equipment may be classified for the most part as industrial equipment. In the EPA NONROAD model, the closest equivalent hp range is 175 hp to 300 hp. In that range, approximately 101 units must be retrofitted, re-engined, or replaced through calendar year 2004 to comply with the proposed standards. The estimated total replacement cost for these 101 units is an average of approximately \$482,435 to \$804,058 per year from 2000 through the end of calendar year 2004. The second EPA estimated cost is \$130,000 for new motive equipment in the 250 hp to 450 hp range. EPA does not specify the types of the motive equipment, however, the motive equipment types in the EPA NONROAD model are most likely classified as tractors and other related construction equipment. In the NONROAD model, there are 9,518 pieces of construction (motive) equipment in the 175 hp to 300 hp range by the end of calendar year 2007. In that size engine, approximately 1,461 units will be retrofitted, re-engined, or replaced from calendar year 2001 through 2004. The estimated replacement cost for these 1,461 units is an average of approximately \$38 million per year from 2000 through the end of calendar year 2004.

Since the EPA study addressed the larger engines, the commission has assumed that approximately 12,282 of the remaining 13,010 units existing at the end of calendar year 2000 in the 12-county area that must be retrofitted, or replaced are smaller units of equipment with replacement costs in the range of \$15,000 to \$30,000. If the 12,282 smaller units of non-road, compression-ignition equipment in the CMSA have replacement costs in the range of \$15,000 to \$30,000, the estimated replacement cost for these units is an average of approximately \$36.8 million to \$73.7 million per year from 2000 through the end of calendar year 2004. The commission has also assumed that 728 of the remaining population

of equipment with compression-ignition engines in the 12-county DFW CMSA that must be retrofitted or replaced are larger units of equipment in the \$130,000 to \$150,000 range. If the remaining 728 units of very large compression-ignition, non-road equipment in the CMSA have replacement costs in the range of \$130,000 to \$150,000, the estimated replacement cost for these units is an average of approximately \$18.9 million to \$21.9 million per year from 2000 through the end of calendar year 2004.

The cost impact to replace the 14,571 units of non-road, compression-ignition equipment due to growth and replacement to meet standards in the 12-county area at the end of calendar year 2004 is estimated to be an average of approximately \$94.2 million to \$134.3 million per year through the end of calendar year 2004. This cost impact is based on the assumption that all 14,571 units which will require modification or replacement through the end of calendar year 2004 will be replaced with new equipment. It is more likely that some of this equipment will be retrofitted to meet either Tier 2 or Tier 3 standards or re-engined with Tier 2 or Tier 3 compliant engines at costs much lower than the replacement cost indicated here. In addition, the total cost impact is anticipated to be mitigated by the trade-in or the sale of existing equipment if new equipment is purchased. However, over 96% of this cost is based on the assumption that all of the 14,571 units that must be retrofitted, re-engined, or replaced by the end of the calendar year 2004 will be replaced with all new equipment. It is more likely that some of this equipment will be retrofitted to meet either Tier 2 or Tier 3 standards or re-engined with Tier 2 or Tier 3 compliant engines at much lower cost than replacement cost. In addition, the total cost impact is anticipated to be mitigated by the trade-in or the sale of existing equipment if new equipment is purchased. It has been estimated that used equipment in good condition is sold for

from 40% to 60% of its original cost. If a 50% factor is applied to replacement costs to offset the reduced cost for retrofit, re-engine, and trade-in, the final cost impact to replace or retrofit the 14,571 units is approximately \$235.6 million to \$336 million. It is anticipated that the decision to either purchase new equipment, retrofit, or re-engine will be based on the economics for each unit of equipment.

Between the years 2000 and 2007, the EPA NONROAD computer model estimates the population of non-road, compression-ignition equipment in the CMSA to grow by 35,049 units. In addition another 34,452 units will be purchased to replace aging units for a total of 69,501 units. Approximately 37,726 of the total 69,501 units purchased for growth and aging replacement will be purchased during the years 2001 through 2004. The EPA analysis contains estimates of domestic sales of various sizes of equipment. If the sales within the CMSA are similar it is estimated that the additional cost of the engines for this equipment would be an average of approximately \$3.6 million per year through the end of calendar year 2004. The EPA document states that the costs of meeting the new emission standards are expected to add about 1.0% to the purchase price of typical new non-road, compression-ignition equipment, although for some equipment the standards may cause price increases on the order of 2.0% to 3.0%.

The total fiscal impact to replace the estimated 52,297 units of equipment which will be either purchased new, retrofitted, re-engined, or replaced through 2004 is estimated to be an average of approximately \$97.8 million to \$137.9 million per year through calendar year 2004. Over 96% of this cost is based on the assumption that all of the 14,571 units that must be retrofitted, re-engined, or

replaced by the end of calendar year 2004 will be replaced with all new equipment. It is more likely that some of this equipment will be retrofitted to meet either Tier 2 or Tier 3 standards or re-engined with Tier 2 or Tier 3 compliant engines at much lower cost than replacement cost. In addition, the total cost impact is anticipated to be mitigated by the trade-in or the sale of existing equipment if new equipment is purchased. It is anticipated that the decision to either purchase new equipment, retrofit, or re-engine will be based on the economics for each unit of equipment. The following table summarizes the costs calendar years 2000 - 2004. Figure 2: 30 TAC Chapter 114 - Preamble

Equipment Type	Cost Low	Cost High	Units	Avg. Annual Cost Low	Avg. Annual Cost High
Portable	\$24,000	\$40,000	101	\$482,435	\$804,058
Motive	\$130,000	\$130,000	1,461	\$37,973,011	\$37,973,011
Other Smaller	\$15,000	\$30,000	12,282	\$36,844,568	\$73,689,135
Other Larger	\$130,000	\$150,000	728	\$18,938,630	\$21,852,266
Replacement			14,571	\$94,238,643	\$134,318,469
Less Trade-in				< \$47,119,322 >	< \$67,159,235 >
Additional			37,726	\$3,566,715	\$3,566,715
Final Average Annual Cost				\$50, 686,037	\$70,725,950

SMALL BUSINESS AND MICRO-BUSINESS IMPACT ANALYSES

There are anticipated to be significant fiscal implications to small businesses and micro-businesses located in the DFW CMSA as a result of implementing the proposed amendments. It is anticipated that there are many small and micro-businesses in the affected area that own and operate non-road, compression-ignition equipment affected by the proposed rule. Depending on the relative age of current equipment and the economics to retrofit or re-engine the equipment versus new purchase for such equipment, affected small and micro-businesses in the DFW CMSA may have to retrofit, re-engine, or replace some or most of their current compression-ignition equipment in the calendar years 2001 through the end of calendar year 2007 in order to comply with the proposed amendments. It is anticipated that costs will be similar to those for business at large as indicated in the PUBLIC BENEFIT section of this preamble. EPA has estimated the costs of new portable equipment in the 250 hp to 450 hp category at \$24,000 to \$40,000 and motive equipment in the 250 hp to 450 hp range at approximately \$130,000. It is anticipated that most small businesses or micro-businesses will own and operate engines in the lower hp ranges, portable equipment, and other types of equipment in the lower cost ranges of approximately \$15,000 to \$30,000 per unit. EPA has estimated that the additional cost for compression-ignition engines which comply with the proposed standards are in the range of \$240 to \$1,900 each. The total cost impact will be less dependent on the relative size of the company than on the size and number of non-road, compression-ignition equipment they own and operate. It is also anticipated that the total fiscal impact may be mitigated by the trade-in or sale of existing equipment. Although there are expected to be impacts on small and micro-businesses, there is no feasible way to write the rule to mitigate those costs.

DRAFT REGULATORY IMPACT ANALYSIS

The commission has reviewed the proposed rulemaking in light of the regulatory analysis requirements of Texas Government Code, §2001.0225, and has determined that the rulemaking meets the definition of a “major environmental rule” as defined in that statute. “Major environmental rule” means a rule the specific intent of which is to protect the environment or reduce risks to human health from environmental exposure and that may adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. The proposed amendments to Chapter 114 are intended to protect the environment or reduce risks to human health from environmental exposure to ozone and could affect in a material way, the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. The proposed amendments would require units of state and local government, businesses, and individuals in the 12-county DFW CMSA which own or operate non-road, compression-ignition equipment 50 hp up to 750 hp to ensure that their fleet of such equipment will consist of a minimum of 50% Tier 3 non-road equipment and the remainder Tier 2 non-road equipment by the end of the calendar year 2007. In addition, the proposed rules will require owners and operators of fleets with equipment with engines equal to or greater than 750 hp, to have 100% Tier 2 engines by the end of calendar year 2007. This air pollution control program is part of the strategy to reduce NO_x emissions necessary for the counties included in the DFW nonattainment area to be able to demonstrate attainment with the NAAQS for ozone. The steering committee representing the DFW ozone nonattainment area counties requested an air pollution control program, including the use of Tier 2 and Tier 3 non-road, compression-ignition engine standards, be established to reduce NO_x emissions necessary for the counties included in the

DFW nonattainment area to be able to demonstrate attainment with the ozone NAAQS. The proposed amendments are part of the commission response to the request and one element of the proposed DFW Attainment Demonstration SIP. Although the proposed amendments meet the definition of a “major environmental rule” as defined in the Texas Government Code, §2001.0225 only applies to a major environmental rule, the result of which is to: 1. exceed a standard set by federal law, unless the rule is specifically required by state law; 2. exceed an express requirement of state law, unless the rule is specifically required by federal law; 3. exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program; or 4. adopt a rule solely under the general powers of the agency instead of under a specific state law. This rulemaking does not meet any of these four applicability requirements. Specifically, the use of Tier 2 and Tier 3 non-road, compression-ignition engine standards within this proposal were developed in order to meet the NAAQS for ozone set by the EPA under the Federal Clean Air Act (FCAA), §7409, and therefore meet a federal requirement. States are primarily responsible for ensuring attainment and maintenance of NAAQS once EPA has established those standards. Under the FCAA, §7410 and related provisions, states must submit, for EPA approval, SIPs that provide for the attainment and maintenance of NAAQS through control programs directed to sources of the pollutants involved. This proposal is not an express requirement of state law, but was developed specifically in order to meet the air quality standards established under federal law as NAAQS. This proposal is intended to help bring ozone nonattainment areas into compliance, and help keep attainment and near nonattainment areas from going into nonattainment. The proposed amendments do not exceed a standard set by federal law, exceed an express requirement of state law unless specifically required by federal law, nor exceed a requirement of a delegation agreement. The

proposed amendments were not developed solely under the general powers of the agency but were specifically developed to meet the air quality standards established under federal law as NAAQS, as authorized under the Texas Clean Air Act (TCAA), §§382.012, 382.017, 382.019, and 382.039. The commission invites public comment on the draft regulatory impact analysis.

TAKINGS IMPACT ASSESSMENT

The commission has prepared a takings impact assessment for these rules in accordance with Texas Government Code, §2007.043. The following is a summary of that assessment. The specific purpose of the rulemaking is to require state and local governments, businesses, and private entities in the 12-county DFW CMSA, which own or operate non-road equipment powered by compression-ignition engines of 50 hp up to 750 hp, to ensure their fleet of such equipment will consist of a minimum of 50% Tier 3 and the remainder Tier 2 non-road equipment by the end of calendar year 2007. In addition, the proposed rules will require owners or operators of fleets with equipment with engines greater than or equal to 750 hp, to have 100% Tier 2 engines by the end of calendar year 2007. This proposed rulemaking will act as an air pollution control strategy to reduce NO_x emissions necessary for the four counties included in the DFW ozone nonattainment area to be able to demonstrate attainment with the ozone NAAQS. The proposed affected area consists of the twelve counties contained in the DFW CMSA. Promulgation and enforcement of the proposed rules will not burden private, real property. Although the proposed rules do not directly prevent a nuisance, or prevent an immediate threat to life or property, they do prevent a real and substantial threat to public health and safety, and partially fulfill a federal mandate under the FCAA, §7410. Specifically, the emissions limitations and delays within this proposal were developed in order to meet the ozone NAAQS set by the EPA under

the FCAA, §7409. States are primarily responsible for ensuring attainment and maintenance of the NAAQS, once the EPA has established them. Under the FCAA, §7410 and related provisions, states must submit, for EPA approval, SIPs that provide for the attainment and maintenance of NAAQS through control programs directed to sources of the pollutants involved. Therefore, the purpose of the rule proposal is to implement a cleaner-burning, non-road, compression-ignition fleet program necessary for the DFW nonattainment area to meet the air quality standards established under federal law as NAAQS. Consequently, the exemption which applies to these proposed rules is that of an action reasonably taken to fulfill an obligation mandated by federal law. Therefore, these proposed revisions will not constitute a takings under the Texas Government Code, Chapter 2007.

COASTAL MANAGEMENT PROGRAM CONSISTENCY REVIEW

The commission has determined that this rulemaking relates to an action or actions subject to the Texas Coastal Management Program (CMP) in accordance with the Coastal Coordination Act of 1991, as amended (Texas Natural Resource Code, §§33.201 et seq.), and the commission's rules in 30 TAC Chapter 281, Subchapter B, concerning Consistency with the Texas Coastal Management Program. As required by 31 TAC §505.11(b)(2) and 30 TAC §281.45(a)(3), relating to actions and rules subject to the CMP, commission rules governing air pollutant emissions must be consistent with the applicable goals and policies of the CMP. The commission has reviewed this action for consistency with the CMP goals and policies in accordance with the rules of the Coastal Coordination Council, and has determined that the action is consistent with the applicable CMP goals and policies. The CMP policy applicable to this rulemaking action is the policy that commission rules comply with regulations in 40 CFR, to protect and enhance air quality in the coastal area (31 TAC §501.14(q)). No new sources of air

contaminants will be authorized by the rule amendments. Therefore, in compliance with 31 TAC §505.22(e), the commission affirms that this rulemaking is consistent with CMP goals and policies. Interested persons may submit comments on the consistency of the proposed rules with the CMP during the public comment period.

PUBLIC HEARING

The commission will hold public hearings on this proposal at the following times and locations:

January 24, 2000, 2:00 p.m., City of El Paso Council Chambers, 2 Civic Center Plaza, 2nd floor, El Paso; January 25, 2000, 10:00 a.m., Building E, Room 201S, Texas Natural Resource Conservation Commission Complex, 12100 Park 35 Circle, Austin; January 26, 2000, 10:00 a.m., Longview City Hall Council Chambers, 300 West Cotton Street, Longview; January 26, 2000, 7:00 p.m., City of Irving Central Library Auditorium, 801 West Irving Boulevard, Irving; January 27, 2000, 10:00 a.m., Dallas Public Library Auditorium, 1515 Young Street, Dallas; January 27, 2000, 7:00 p.m.; Lewisville City Council Chambers, Municipal Center, Lewisville; January 28, 2000, 10:00 a.m., Council Chambers, 2nd floor, Fort Worth City Hall, 1000 Throckmorton Street, Fort Worth; January 31, 2000, 1:30 p.m., John Gray Institute, 855 Florida Avenue, Beaumont; and January 31, 2000, 7:00 p.m., Houston-Galveston Area Council, 3555 Timmons Lane, Houston. The hearings are structured for the receipt of oral or written comments by interested persons. Individuals may present oral statements when called upon in order of registration. Open discussion will not occur during the hearing; however, agency staff members will be available to discuss the proposal 30 minutes before the hearing and will answer questions before and after the hearing.

Persons with disabilities who have special communication or other accommodation needs, who are planning to attend the hearing, should contact the Office of Environmental Policy, Analysis, and Assessment at (512) 239-4900. Requests should be made as far in advance as possible.

SUBMITTAL OF COMMENTS

Written comments may be submitted to Ms. Lola Brown, Office of Environmental Policy, Analysis, and Assessment, MC 205, P.O. Box 13087, Austin, Texas 78711-3087 or faxed to (512) 239-4808.

All comments should reference Rule Log Number 99055H-114-AI. Comments must be received by 5:00 p.m., February 1, 2000. For further information, please contact Alan Henderson at (512) 239-1510 or Ken Gathright at (512) 239-0599.

STATUTORY AUTHORITY

The new sections are proposed under the Texas Health and Safety Code, TCAA, §382.011, which provides the commission the authority to control the quality of the state's air; §382.012, which provides the commission the authority to prepare and develop a general, comprehensive plan for the control of the state's air; §382.017, which provides the commission the authority to adopt rules consistent with the policy and purposes of the TCAA; §382.019, which provides the commission the authority to adopt rules to control and reduce emissions from engines used to propel land vehicles; and §382.039, which provides the commission the authority to develop and implement transportation programs and other measures necessary to demonstrate attainment and protect the public from exposure to hazardous air contaminants from motor vehicles.

The new sections implement TCAA, §382.002, relating to Policy and Purpose; §382.011, relating to General Powers and Duties; §382.012, relating to State Air Control Plan; §382.019, relating to Methods Used to Control and Reduce Emissions from Land Vehicles; and §382.039 relating to Attainment Program.

CHAPTER 114: CONTROL OF AIR POLLUTION FROM MOTOR VEHICLES

SUBCHAPTER I: NON-ROAD ENGINES

DIVISION 2: HEAVY EQUIPMENT FLEETS - COMPRESSION-IGNITION ENGINES

§114.410. Definitions.

Unless specifically defined in the TCAA or in the rules of the commission, the terms used by the commission have the meanings commonly ascribed to them in the field of air pollution control. In addition to the terms which are defined by the TCAA, the following words and terms, when used in this division, shall have the following meanings, unless the context clearly indicates otherwise.

(1) **Blue Sky Series engine** - A non-road engine meeting the requirements of Title 40 Code of Federal Regulations §89.112(f), as amended on October 23, 1998.

(2) **Compression-ignition engine** - A type of engine with operating characteristics significantly similar to the theoretical Diesel combustion cycle. The non-use of a throttle to regulate intake air flow for controlling power during normal operation is indicative of a compression-ignition engine.

(3) **Fleet** - The aggregate of non-road equipment powered by compression-ignition engines that operate within the counties specified in §114.419 of this title (relating to Affected Counties).

(4) Non-road engine - Non-road engines are generally distinguished from highway engines in one of four ways:

(A) the engine is used in a piece of motive equipment that propels itself in addition to performing an auxiliary function (such as a bulldozer grading a construction site);

(B) the engine is used in a piece of equipment that is intended to be propelled as it performs its function (such as a lawnmower);

(C) the engine is used in a piece of equipment that is stationary, but portable (such as a generator or compressor); or

(D) the engine is used in a piece of motive equipment that propels itself, but is primarily used for off-road functions.

(5) Tier 2 engine - An engine subject to the Tier 2 emission standards listed in Title 40 Code of Federal Regulations, §89.112(a), Table 1, as amended on October 23, 1998.

(6) Tier 3 engine - An engine subject to the Tier 3 emission standards listed in Title 40 Code of Federal Regulations §89.112(a), Table 1, as amended on October 23, 1998.

§114.412. Control Requirements.

(a) State and local governments, businesses, and private entities which own or operate non-road equipment powered by compression-ignition engines 50 horsepower (hp) and larger, in the counties listed in §114.419 of this title (relating to Affected Counties), are subject to the compliance requirements specified in subsection (b) of this section.

(b) Owners or operators shall ensure that their fleet is certified to meet or exceed the Tier 2 and Tier 3 standards in accordance with the following schedule.

(1) For the part of the fleet greater than or equal to 50 and less than or equal to 750 hp:

(A) at least 10% of the affected portion of the fleet shall meet Tier 2 certification standards by December 31, 2004;

(B) at least 20% of the affected portion of the fleet shall meet Tier 2 certification standards by December 31, 2005;

(C) at least 30% of the affected portion of the fleet shall meet Tier 2 certification standards by December 31, 2006; and

(D) at least 50% of the affected portion of the fleet shall meet Tier 3 certification standards and the remainder of the affected fleet shall meet Tier 2 certification standards by December 31, 2007.

(2) For that part of the fleet with an hp rating greater than 750 hp:

(A) at least 50% of the affected portion of the fleet must meet Tier 2 certification standards by December 31, 2006; and

(B) 100% of the affected portion of the fleet must meet Tier 2 certification standards by December 31, 2007.

(c) Non-road equipment that uses a “Blue Sky Series” engine, as defined in §114.410 of this title (relating to Definitions) may be considered a Tier 2 or Tier 3 engine for compliance with the percentage requirements of subsection (b) of this section.

(d) The percentage requirements of subsection (b) of this section may also be met by a retrofit of currently owned or newly purchased non-road, compression-ignition engines certified by EPA to meet or exceed the Tier 2 or Tier 3 emission standards.

§114.416. Reporting and Recordkeeping Requirements.

(a) Governments, businesses, and private entities affected by §114.412 of this title (relating to Control Requirements) must submit annual reports for the previous year beginning February 1, 2002, and every February 1 thereafter. The report shall be submitted to the executive director and shall contain, at a minimum:

(1) the fleet identification number (when assigned);

(2) the affected entity's name, mailing address, telephone and fax numbers;

(3) the name, title, mailing address, and telephone number of the specified person responsible for the fleet;

(4) a list of all non-road equipment with compression-ignition engines 50 horsepower and larger; and

(5) a demonstration of compliance with the applicable implementation schedule under §114.412 of this title.

(b) The affected entity shall maintain copies of submitted reports required by subsection (a) of this section on-site at the reported fleet address for a minimum of three years, and upon request shall

make such reports available to the executive director or local air pollution control agencies having jurisdiction in the area.

§114.417. Exemptions.

The following equipment that use non-road, compression-ignition engines are exempt from this division:

(1) locomotives;

(2) underground mining equipment;

(3) marine engines;

(4) aircraft engines;

(5) airport ground support equipment; and

(6) equipment used solely for agricultural purposes which includes, but is not limited to, tractors, balers, combines, sprayers, swathers, and skidders.

§114.419. Affected Counties.

State and local governments, businesses, and private entities in the following counties shall be in compliance with §114.412 and §114.416 of this title (relating to Control Requirements; and Reporting and Recordkeeping Requirements) no later than the dates specified in §114.412(b) of this title: Collin, Dallas, Denton, Ellis, Henderson, Hood, Hunt, Johnson, Kaufman, Parker, Rockwall and Tarrant Counties.