

Another important aspect of this proposed program is that it would be limited to engines sold prior to the 2011 model year for engines at or above 175 hp, prior to the 2012 model year for engines between 75 and 175 hp, or prior to the 2013 model year for engines between 25 and 75 hp. In other words, as in the highway program, nonroad diesel engines sold during the transitional “phase-in” model years would not be considered “early” introduction engines and would therefore receive no early introduction

credit. However, such engines and vehicles would still be able to generate ABT credits. As with the phase-in itself, and for the same reasons, we are proposing that an early introduction credit could only be used to offset requirements for engines in the same power category as the credit-generating engine (*see* Section III.B).

As a further incentive to introduce clean engines and vehicles early, we are also proposing a provision that would give manufacturers an early introduction credit equal to two engines during or after the phase-in years. This

“Blue Sky” incentive would apply for diesel engines achieving standards levels at one-half of the proposed long-term NO<sub>x</sub> standard while also meeting the NMHC and PM standards. Due to the extremely low emission levels to which these Blue Sky series engines and vehicles would need to certify, we believe that the double engine count credit is appropriate. Table VII.E–1 shows the emission levels that would be required for diesel engines to earn any early introduction credits (other than ABT credits).

TABLE VII.E–1.—PROPOSED PROGRAM FOR EARLY INTRODUCTION OF CLEAN ENGINES AT OR ABOVE 25 HP

Category	Must meet <sup>a</sup>	Per engine credit
Early PM-only <sup>b</sup>	0.01 g/bhp-hr ( $\geq 75$ hp) or PM 0.02 g/bhp-hr PM ( $< 75$ hp) or 0.02 g/bhp-hr PM ( $< 75$ hp).	1.5-to-1 PM-only
Early Engine <sup>b</sup>	above-indicated PM standard + 0.30/0.14 g/bhp-hr NO <sub>x</sub> / NMHC ( $\geq 75$ hp) or 3.5 g/bhp-hr NMHC + NO <sub>x</sub> ( $< 75$ hp).	1.5-to-1
Blue Sky Series Engine	as above for Early Enginr, except must meet 0.15 g/bhp-hr NO <sub>x</sub> standard.	2-to-1

**Notes:**

<sup>a</sup>Engines in all 3 categories must also meet the Tier 4 crankcase emissions requirements.

<sup>b</sup>Engine count credits must be earned prior to the start of phase-in requirements in applicable power categories (prior to 2103 for 25–75 hp engines).

We welcome comment on these proposed provisions, as well as other ideas for encouraging the introduction of Tier 4 engines early, or of engines cleaner than Tier 4 levels. One area we especially seek comment on is whether or not engines below 25 hp that achieve the proposed long-term Tier 4 PM standard for 25–75 hp engines of 0.02 g/bhp-hr, or engines below 75 hp that achieve the proposed long-term Tier 4 NO<sub>x</sub> standard for  $> 75$  hp engines of 0.30 g/bhp-hr, should gain credits under this program that could be used to offset requirements for larger engines, as a means of encouraging the migration of clean technologies to smaller engines.

## 2. Continuance of the Existing Blue Sky Program

In the 1998 final rule, the Agency established its original Blue Sky Series Engine program for nonroad diesel engines (63 FR 56968; *see* preamble Section III.I). This program encourages the early introduction of engines with emission levels (as measured on a transient test) about 40% lower than the Tier 2 standards levels. Manufacturers could designate these engines as Blue Sky Series engines and sell them for use in state, municipal, or commercial programs calling for these cleaner engines (but not in the ABT program, to avoid double-counting of emission reductions). Because the Agency’s direction for the nonroad engine

program was not completely settled at the time, the 1998 final rule limited the Blue Sky program to engines built in the 2004 and earlier model years, but discussed our intent to consider extending it later. This Tier 4 proposal does provide more clarity for the future direction of the nonroad engine program, and so at this time we are asking for comment on extending or revising the existing Blue Sky Series engine program. We believe that the levels set for the existing Blue Sky program are not stringent enough to warrant their continuance into the Tier 4 years, but we also note that the lack of a transient certification test in Tier 3 may make continuance of this program beyond 2004, perhaps through Tier 3 (and Tier 2 for engines under 50 hp), useful. We welcome comment on this, as well as on any experience with the program thus far, plans to use it in the future, whether the standards and test cycle should be changed and, if so, beginning in what model year.

## F. Provisions for Other Test and Measurement Changes

This section contains further detail and explanation regarding several related nonroad diesel engine emissions test and measurement provisions. There are five topics which will be discussed: (1) EPA’s proposed supplemental nonroad transient test; (2) an additional cold start transient test requirement for

nonroad diesel engines; (3) a provision for control of smoke testing; (4) steady-state testing; (5) maximum test speed; and (6) general improvements to test procedure precision.

### 1. Supplemental Transient Test

Nonroad diesel engines and equipment for the most part run on a more transient basis than their highway diesel counterparts through operations such as shifting loads, powering auxiliary equipment and performing repetitive tasks. A smaller, but significant, transient segment of nonroad equipment operates in a constant-speed manner for most or all of its useful life as with electrical generating sets, arc welders and the like. However, nonroad test regulations to date have tended to not capture a broad area of real world operating characteristics and the emissions which result from these modes of equipment operation. The Agency believes that it is important to ensure that nonroad engines meet emission standards in-use under typical operating conditions so that the expected benefits of the program will be achieved over the life of the program. The supplemental nonroad diesel engine transient test provisions EPA is proposing are intended to help achieve this goal. Steady-state emission testing of nonroad diesel engines will be retained because it covers types of in-use diesel engine