appropriate, may select one of the alternatives in the final rule.

The Agency is also considering the alternative of establishing a single standard for NMHC+NO_X, instead of separate standards, and invites comments on the cost and emission impacts of this alternative.

One issue was identified too late for EPA to properly evaluate it. Concern was raised that the proposed level of CO control may significantly interfere with the ability for vehicles to comply with the proposed level of NO_X control. Should further data and analyses substantiate that tradeoffs between CO and NO_X control would preclude meeting the proposed level of NO_X control, EPA would consider reducing the stringency of the CO standards for the new control areas in the final rule.

On October 20, 1994, EPA representatives received a joint vehicle manufacturer proposal from the Ad Hoc Panel that addressed emissions arising from aggressive driving and A/C operation and proposed emission standards for each of these two areas. The Agency has not had sufficient time to fully analyze the concepts offered by the panel or to incorporate the manufacturer proposal as an explicit, complete alternative to the primary Agency proposal presented today. Nevertheless, the manufacturers' specific proposals fall within the scope of the options and alternatives discussed by EPA in today's notice. The Agency has submitted materials supplied by the panel on October 20, 1994, to the rulemaking docket.[11] Analysis of these elements by the Agency, as well as any related material supplied in the future, will also be docketed. In order that the Agency may make the most informed and appropriate judgments in any final rulemaking, EPA encourages interested persons and organizations to evaluate and comment upon these materials.

In the area of A/C emission control, EPA is considering an alternative to the proposed test simulation of A/C operation, as well as the alternative of requiring A/C testing across the cold start (that is, Bag 1 of the FTP). The alternative A/C simulation would leave the A/C off in the test cell, but would increase the dynamometer load curve across the range of vehicle speeds to reflect the additional load imposed by an A/C compressor during ozone exceedance conditions.[12]

In the intermediate soak area, the effect on in-use emissions of the alternatives depends on future changes to the stringency of the FTP standards, the control strategies manufacturers would employ to meet such future standards, and the impacts those strategies might have on post-soak emissions. Because these are not known, alternatives might include exemption from aspects of the soak requirement or total deletion of the soak requirement.

IV. Statutory Authority and Legal Analysis

The promulgation of these regulations is authorized by sections 202, 206, 208, and 301 of the Clean Air Act (CAA or the Act) as amended by the Clean Air Act Amendments of 1990 (42 U.S.C. 7521, 7525, 7542, and 7601). Section 206(h) of the Act requires EPA to ''review and revise as necessary—the testing of motor vehicles and motor vehicle engines to insure that vehicles are tested under circumstances which reflect the actual current driving conditions under which motor vehicles are used, including conditions relating to fuel, temperature, acceleration, and altitude.'' Congress mandated that EPA exercise its authority under section 206(a) of the Act, giving broad authority to determine appropriate test procedures, consistent with the broad direction of section 206(h), to determine appropriate changes to reflect real world conditions.

Although the text of the statute and the legislative history do not provide explicit criteria or intent for this review, EPA believes the primary concern of Congress is having test procedures for LDVs and LDTs reflect in-use conditions in order to obtain better in-use emission control. This flows from the basic purpose of test procedures—to measure compliance with the emission standards—and from standards designed to obtain in-use emission reductions. Therefore, EPA made this the primary concern and objective.

A more detailed analysis of the statute, the scope of EPA's authority, and interpretation of how best to exercise EPA's discretion under section 206(h) are found in the Support Document to the Proposed Regulations for Revisions to the Federal Test Procedure: Detailed Discussion and Analysis.

V. The FTP Review Project and Areas of EPA Concern

In response to the review requirement of the CAAA, EPA initiated the FTP Review Project (the FTP Review) in November 1990. The first action of the project team was to perform an initial review of existing information to identify elements of the current FTP that might be of concern (justifying additional focus) and others that might not justify concern at this time.

Of immediate concern to EPA was representativeness of the driving cycle used in the current FTP, the ''LA4'' or ''Urban Dynamometer Driving Schedule,'' especially in the area of aggressive driving behavior.[13] It was clear that the LA4 maximum speed of 57 mph excluded a significant fraction of higher-speed, in-use operation.[14] Similarly, EPA suspected that an important fraction of in-use accelerations were more severe than those found in the LA4. A 1990 CARB study found much higher emissions, particularly for CO, during operation at high acceleration rates relative to those seen during FTP-level accelerations.

One possible explanation for these emission increases is that the engines were not calibrated for emission control during the higher engine loads associated with aggressive driving, as these loads are not encountered during current FTP testing. However, insufficient data existed at the time to quantify the in-use frequency of aggressive driving events or the actual emission impacts. There were also concerns, based on engineering judgment, about other aspects of driving behavior that were not represented in the current test procedures for which no data existed. Thus, the Agency concluded that further information was necessary to properly represent actual driving conditions. In collaboration with key stakeholders, EPA began extensive research into driving behavior and conditions and their emission implications.

During the course of the research a number of other concerns with the current FTP were identified, including two additional concerns with the LA4 representation of in-use driving behavior. The first concern was start driving behavior; that is, behavior immediately following vehicle startup

[11] Ad Hoc Panel, ''Industry Proposal on FTP Revisions,'' October 20, 1994.

[12] The Ad Hoc Panel has submitted a proposed methodology for such a dynamometer simulation of A/C load, dubbed ''Nissan II.'' Manufacturers are pursuing additional refinements to address potential concerns with the approach, such as the ability to simulate air compressor cycling and A/C loads at idle, which cannot be simulated on a dynamometer.

[13] In this report, ''driving behavior'' refers to the measurable consequences of the operator's action on the accelerator pedal, including vehicle speed, throttle variation, acceleration, and power.

[14] Details about the development of the LA4 driving cycle can be found in an SAE paper, ''Development of the Federal Urban Driving Schedule,'' Ronald E. Kruse and Thomas A. Huls, EPA, 1973, #730553.