standards would be particularly complex and restrictive of the manufacturers' options.

The Agency developed a new Start Control Cycle (SC01) to be used for controlling emissions following intermediate soaks. Initial idles and start driving are addressed in SC01 by incorporating the EPA Start Cycle (ST01) in its entirety. The balance of SC01 is composed of two microtrips of moderate driving, selected from the in-use survey database in order to bring the total distance of the new control cycle up to match the 3.6-mile distance of the 505 Cycle; the resulting cycle is 568 seconds long.[25, 26]

A full analysis of the approaches and issues considered, how each was evaluated, how the level of emission control was determined, and the feasibility of the proposed approach is in the Support Document to the Proposed Regulations for Revisions to the Federal Test Procedure: Detailed Discussion and Analysis and Technical Reports and comment on the analysis is welcome. Comment is specifically solicited on the following items:

- The Agency believes that manufacturers should be able to control emissions on the SC01 cycle following a soak of from 10- to 60-minutes to the same gram-per-mile emission levels currently achieved on the third bag of the FTP. Comment on the appropriateness of this level of standard and method for determining compliance is requested.
- The Agency believes that internal catalyst insulation does not pose a temperature-based feasibility problem for underbody catalysts.[27] However, EPA had insufficient data to reach a firm view on this issue for the small number of Tier 1 vehicles which might need to insulate close-coupled catalysts. Thus, EPA solicits comments or data on the temperature-based feasibility of insulation for close-coupled catalysts.
- The Agency believes that application of catalyst insulation as a strategy for control of emissions following intermediate soaks is feasible. Data and comments are solicited on the feasibility of catalyst insulation and its impact on catalyst operation and durability.
- Comments are solicited on strategies to mitigate temperature increases in the catalyst brought about by insulation (such as moving the catalyst further downstream and subsequently conserving exhaust heat ahead of the catalyst to not impair cold start performance, or switching to more temperature-resistant noble metals like palladium), as well as spinoff effects of such strategies.
- The Agency believes it is necessary to move forward with an intermediate soak standard either if a significant proportion of vehicles are certified to Tier 1 standards for a significant time period following implementation or if it is cost effective and feasible to pursue control over intermediate soaks on vehicles certified to the lower standards. The Agency requests comment on the issues of cost-effectiveness and feasibility of an intermediate soak requirement on vehicles certified to lower emission standards.
- Criteria are being considered to permit manufacturers to forego the data submittal requirement for SC01 testing following a 60-minute soak on an engine family basis, allowing manufacturers to reduce the SFTP soak duration to 10 minutes. Under this option, manufacturers would be allowed to submit a technical justification demonstrating that an engine family would clearly pass the intermediate soak requirement. The Agency solicits comment on this option and potential criteria for granting such a waiver.

C. Affecting Air Conditioner Operation

The Agency analyzed several possible approaches to compliance testing designed to control emissions due to A/C operation. These options hinged on determination of two important elements—the choice of a control cycle and the choice of a methodology for simulating A/C operation over that cycle. The Agency pursued a control program for A/C-on emissions that utilized an emission performance standard rather than other control options.

A full analysis of each option considered, how it was evaluated, how the level of emission control was determined, and the feasibility of the approach is in the Support Document to the Proposed Regulations for Revisions to the Federal Test Procedure: Detailed Discussion and Analysis and Technical Reports and comment on the analysis is welcome. Comment is specifically solicited on the following items:

- The control cycle for A/C-related emissions being proposed is the 866 plus SC01. While the Agency believes these are the best cycles for A/C control, comments are solicited on the possibility of substituting the 505 component of the LA4 for SC01. Comments are also solicited on whether full A/C simulation should be added to the US06 cycle.
- A cold start test is not included in today's proposal, but the Agency does believe that it may be appropriate to return to this issue with respect to future technologies and future test procedures and emission standards. The Agency specifically solicits comments on this issue.
- Independent from determining the appropriate control cycles for testing, the Agency evaluated three principle options for simulating A/C operation on a given test cycle.[28] The Agency requests comment on the potential applicability of each option and the various methods of implementing each option, whether any specific method should be retained as an option in the final rule to allow for its future development and use by petitioning for Agency approval. The ''Nissan-II'' approach is currently being evaluated by a consortium of auto manufacturers and the Agency expects to review and evaluate the data as soon as it becomes available. The Agency specifically requests comments and data that would allow a better evaluation of this approach and its viability, as well as suggested improvements that would alleviate the Agency's concerns, as detailed in the Support Document to the Proposed Regulations for Revisions to the Federal Test Procedure: Detailed Discussion and Analysis.
- The Agency has estimated that vehicles can maintain existing NMHC and CO emission levels with the A/C turned on. For NO_X, the Agency believes that 25 percent of the NO_X increase with the A/C engaed is likely to be unavoidable without increasing the stringency of the current NO_X standard, but is proposing to control the other 75 percent. The Agency requests comments on the feasibility of this proposed level of control and the technology implications of controlling to this level.

[25] The severity of one SC01 acceleration was artificially modified to be less severe than in the original microtrip. This preserved the design objectives of matching the 505 trip distance and reflecting moderate, rather than aggressive driving. The representative level of microtransient behavior in the cycle was unaffected by this change.

[26] Analysis of the two microtrips used to complete SC01 shows higher power levels than the comparable portion of the 505. The Agency plans to replace these microtrips with those which match power levels of the 505 more closely. The completed cycle, known as SC02, will replace SC01 and serve the same purpose.

[27] Per vehicles with both under-body and close-coupled catalysts, EPA anticipates that only the underfloor catalyst would need to be insulated.

[28] The three options—bench testing, dynamometer simulation, and running test with A/C on—are discussed in more detail in the Support Document to the Proposed Regulations for Revisions to the Federal Test Procedure: Detailed Discussion and Analysis and the Final Technical Report on Air Conditioning for the Federal Test Procedure Revisions Notice of Proposed Rulemaking U. S. Environmental Protection Agency.