UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C.

California Waiver Hearing

May 18, 1978

Conference Room A-B

215 Fremont Street

San Francisco, California

Reported by:

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(C.S.R. No. 2393)

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THURSDAY, MAY 18, 1978 10:00 O'CLOCK

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CHAIRMAN JACKSON: Good morning.

This is the United States Environmental Protection Agency public hearing to consider a request by the State of California for a waiver of Federal Preemption under Section 209(b) of the Clean Air Act for three actions taken by the California Air Resources Board.

I am Ben Jackson, Director of the Mobile Source Enforcement Division of the Environmental Protection Agency. I have been designated as Presiding Officer for the hearing. My colleague who will assist me at various times in conducting the hearing is Mr. Charles Gray of the Office of Mobile Source Air Pollution Control.

The Panel will also be assisted by Mr. Matthew Low, who is head of the Special Projects Task Force in the Mobile Source Enforcement Division; Mr. Allen Silverstein and Mr. James McNabb III, who are attorney-advisors with the Task Force; and Ms. Joan Urbine, who is responsible for maintaining the record and scheduling witnesses.

The CARB has submitted the request under consideration to the Administrator of the Environmental Protection Agency in order to permit the State of

1 California to enforce the following provisions of
2 its motor vehicle emission control program:
3 (1) Highway Cycle NOx Emission Standard
4 for 1980 and subsequent model year passenger
5 cars and 1981 and subsequent model year
6 light duty trucks, and medium duty vehicles.
7 (2) Assembly-line Test Procedures
8 for 1979 model year passenger cars,light
9 duty trucks and medium duty vehicles.
10 (3) Tune-up Label Specifications for
11 1979 and subsequent model year passenger
12 cars light duty trucks, medium duty
13 vehicles, heavy duty gasoline-fueled
14 engines and heavy duty diesel-fueled
15 engines and 1982 and subsequent model
16 year motorcycles.
17 For the record, the hearing is convened in the
18 conference room on the sixth floor of the regional
19 office of the U.S. Environmental Protection Agency,
20 215 Fremont Street, San Francisco, California. That's
21 Region IX.
22 To complete the opening of the record and
23 at the same time to expedite the proceedings, I
24 would like to insert into the record, as if read,
25 the following documents:

1 (1) Letters dated March 8, 1978 and
2 April 18, 1978 from Mr. Thomas Austin,
3 Deputy Executive Officer of the CARB,
4 to Mr. Douglas Costle, Administrator of
5 the EPA, notifying the EPA that California
6 had made the revisions, specified above,
7 to its motor vehicle emissions control
8 program and requesting a hearing of
9 Federal Preemption for those actions,
10 (2) A letter of April 17, 1978 from
11 EPA to CARB, stating that a hearing would
12 be convened to address California's waiver
13 request, and
14 (3) the April 21, 1978 and May 5,
15 1978 Federal Register notices regarding
16 this hearing.
17 In addition, the following will be made part
18 of the record:
19 (1) Sections 1960(a) and 1960(b),
20 Title 13, California Administrative Code
21 and "California Exhaust Emissions Stan-
22 dards and Test Procedures for 1980 and
23 Subsequent Model Passenger Cars, Light
24 Duty Trucks and Medium Duty Vehicles,"
25 as amended April 10, 1978.

1 (2) Section 2057 of Title 13, California
2 Administrative Code and "California Assembly
3 Line Test Procedures for 1979 and Subse-
4 quent Model Year Passenger Cars, Light
5 Duty Trucks and Medium Duty Vehicles,"
6 dated December 19, 1977 and adopted
7 February 16, 1978.
8 (3) Section 1965, Title 13, Cali-
9 fornia Administrative Code and "Cali-
10 fornia Motor Vehicle Tune-Up Label
11 Specifications," adopted March 1, 1978,
12 Sections 1956.5(b), 1959.5(b), 1960(b),
13 1965.5, 1966 and 1967, Title 13, Cali-
14 fornia Administrative Code and all
15 standards and test procedures incorporated
16 by reference therein, as amended March 1,
17 1978.
18 This hearing is intended to provide an oppor-
19 tunity for interested persons to state their views
20 or arguments and present pertinent information relating
21 to the determination to be made by the Administrator
22 with respect to these aforementioned waiver requests.
23 However, the determination of the Administrator
24 regarding the action to be taken with respect to
25 the subjects under consideration is not required to be

1 made solely on the record of the public hearing.

2 Since the notice was inserted into the record

3 and not read, I will now summarize the procedures

4 and ground rules for the hearing.

5 The hearing is being held pursuant to Section

6 209(b) of the Clean Air Act. It will be conducted

7 in accordance with the rules which have been in effect

8 at prior hearings on California waiver applications.

9 The agenda for the hearing has been previously out-

10 lined in the Federal Register notice announcing this

11 hearing.

12 Generally, the procedures will be informal.

13 Formal rules of evidence will not be in effect.

14 The Presiding Officer is authorized, however, to strike

15 from the record statements which he deems irrelevant

16 or needlessly repetitious and to impose reasonable

17 limits on the duration of the statement of any witness.

18 No cross-examination will be permitted. However,

19 to the extent that time allows, the Presiding Officer

20 may permit brief questions of clarification from any

21 participant to any other participant. Questions

22 of a more exploratory nature may be submitted in

23 writing to the Presiding Officer through Ms. Urbine,

24 and such questions at the discretion of the Presiding

25 Officer may be posed to any witness by a member of

1 the Panel.

2 A verbatim record of the hearing is being made
3 and the transcript will constitute the sole official
4 record of this hearing.

5 A copy of the record will be on file for public
6 inspection by any interested persons at the EPA Public
7 Information Reference Unit, Room 2922, in Washington,
8 D.C., and at the regional office in San Francisco.

9 Persons desiring copies of the transcript should
10 make arrangements with the reporter.

11 We have an order of appearance for those who
12 have indicated that they wish to appear. Copies of
13 the witness list are available from Ms. Urbine.
14 There may have been additions to or deletions from
15 the list since it was printed. In fact, I think it
16 was just made up.

17 If it appears that the order is going to cause
18 one or more of you a hardship, please contact Ms.
19 Urbine, and she will relay this information to me.
20 We will attempt to accommodate any time problems anyone
21 has. We would also appreciate it if all witnesses
22 would confirm their positions on the schedule with
23 Ms. Urbine.

24 The record will remain open until Friday, June
25 2, 1978 for the submission of any further information

1 by any interested persons.

2 The first witnesses of the day will be the

3 representatives of the California Air Resources Board.

4 MR. AUSTIN: Good morning. Welcome back

5 to California.

6 My name is Tom Austin, and I am Deputy Executive

7 Officer for the California Air Resources Board.

8 With me today, on my right, Kingsley Macomber, the

9 Board's General Counsel; on my left, Gary Rubenstein,

10 a staff engineer with the Vehicle Emissions Control

11 Division; on his left, Kathleen Kahn, ARB Staff

12 Counsel.

13 We are here this morning to request a waiver

14 of Clean Air Act Section 209(a) in order that California

15 may implement more stringent vehicle emission stand-

16 ards and test and enforcement procedures. In consider-

17 ing this request, the Administrator is presented

18 with three basic issues:

19 1. There must be compelling and extraordin-

20 ary conditions in California.

21 2. California must make a determination

22 that its standards and tests and enforcement procedures

23 are, in the aggregate, at least as protective of

24 public health and welfare as applicable federal

25 regulations. This determination must not be arbitrary

1 and capricious.

2 3. California's standards and tests and
3 enforcement procedures must be consistent with Section
4 202(a) of the Clean Air Act. This means that they
5 must be technologically feasible within the available
6 lead time, with appropriate consideration for the
7 cost of compliance. California and federal regulations
8 must not be inconsistent.

9 The Administrator is compelled to grant Cali-
10 fornia a waiver of federal preemption if each of
11 these conditions is met.

12 As in the past, we do not wish to burden the
13 record by repeating arguments relating to the existence
14 of compelling and extraordinary conditions, since
15 California's extreme need for stringent and timely
16 emission control measures has been recognized by
17 the Administrator in each of his previous decisions
18 pertaining to waiver requests by California.

19 In his January 5, 1978 decision, the Administra-
20 tor stated that: "The CARB has continually demonstrated
21 the existence of compelling and extraordinary conditions
22 in California."

23 No significant testimony denying the existence
24 of such conditions has ever been presented at any
25 hearing by any party.

1 If the Administrator believes that further
2 documentation is required by CARB on this issue,
3 it will be provided before the close of the hearing
4 record.
5 Three recently adopted California regulations
6 are before us for consideration at this hearing:
7 1. The highway cycle NOx emissions standard
8 for 1980 and subsequent model passenger cars, light-
9 duty trucks, and medium-duty vehicles.
10 2. Assembly-line test procedures for 1979
11 model passenger cars, light-duty trucks, and medium-
12 duty vehicles.
13 3. Tune-up label regulations for 1979 and
14 subsequent model motorcycles, passenger cars, light-
15 duty trucks, medium-duty vehicles, and heavy-duty
16 vehicles and engines.
17 We believe that these regulations will provide
18 additional control necessary to combat California's
19 severe pollution problems, and, for reasons which
20 I will detail in the remainder of my statement,
21 we believe that each of these items should be
22 granted a waiver of federal preemption under Section
23 209(b) of the Clean Air Act.
24 Following my statement, Ms. Kahn will make a
25 formal evidentiary offer in support of our request.

1 The first item I'll discuss in detail is the
2 request for a waiver for the highway cycle NOx standard.
3 The ARB staff began considering the proposal
4 of a highway cycle NOx standard when it noticed that
5 certain cars with electronic control systems appeared
6 to show significantly less control of NOx on the high-
7 way fuel economy test than on the LA-4 Federal Test
8 Procedure.
9 The LA-4 driving cycle, which was developed in
10 conjunction with EPA,represents a typical morning
11 commute by a light-duty vehicle in the Los Angeles
12 Metropolitan Area. Although some freeway driving is
13 represented by LA-4, the cycle does not represent
14 freeway driving conditions with light to moderate
15 traffic congestion which are known to occur frequently
16 throughout the greater metropolitan Los Angeles
17 Area.
18 ARB staff report 78-1-3, a copy of which has
19 been provided for the record, reveals the average
20 speed data which indicate that the EPA Highway Driving
21 Cycle better represents such freeway driving. Although
22 carbon monoxide emissions which occur during freeway
23 driving are considered less of a problem because of
24 the lower vehicle densities associated with such
25 operations, the control of hydrocarbon and oxides of

1 nitrogen emissions is just as important as during
2 more congested conditions because photochemical
3 oxidant precursors have their greatest impact after
4 several hours of atmospheric transformation. Over
5 this period of time, the emissions from congested
6 roadways are uniformly mixed with emissions from
7 less congested freeways.
8 In the past, some manufacturers have attempted
9 to use systems which optimized emissions performance
10 on the Federal Test Procedure but which switched
11 off EGR systems or advanced spark timing under con-
12 ditions such as those found on the highway cycle in
13 order to improve driveability, fuel economy or per-
14 formance at minimum cost.
15 Certain of these devices are easily classified
16 as defeat devices because they are not activated
17 during the Federal Test Procedure. With the use of
18 electronic control systems, however, it is relatively
19 easy to program emission control systems to be
20 effective for almost all of the FTP, but ineffective
21 for almost all of the highway driving cycle.
22 System programming which reduces the effective-
23 ness of emission control systems has been considered
24 accepted to EPA as long as they are programmed
25 to decrease effectiveness on FTP as well as on the

1 highway cycle.

2 The obvious problem with this approach to system
3 evaluation is that a system can be programmed to
4 operate at reduced effectiveness for an insignificant
5 portion of the FTP while it substantially degrades
6 emission control during the highway driving cycle.

7 Control systems are now sufficiently complex
8 so as to render the simplistic EPA evaluation technique
9 virtually worthless. After receiving a totally inade-
10 quate explanation from EPA as to why they cannot
11 quickly solve this problem for the nation, we are
12 compelled to pursue an independent approach to detect-
13 ing defeat devices for which we are today seeking
14 a waiver.

15 The ARB has adopted a limit on highway NOx
16 emissions which requires approximately the same per-
17 centage of NOx control as has been achieved on the
18 Federal Test Procedure. We compared city and highway
19 NOx emissions from both controlled and uncontrolled
20 vehicles and found that, in general, controlled
21 vehicles demonstrate the same degree of NOx control
22 on the highway cycle as on the LA-4 cycle.

23 The notable exceptions were vehicles with
24 electronic controls which altered engine calibration
25 on the highway cycle. A highway cycle NOx standard

1 of 1.33 times the applicable city NOx standard has
2 been adopted for passenger cars, and a standard of
3 2.0 times the applicable city NOx standard was adopted
4 for light-duty trucks and medium-duty vehicles.
5 Before adopting the highway cycle standard for
6 light-duty trucks and medium-duty vehicles, the
7 Executive Officer allowed a comment period. From
8 the comments received from manufacturers and from
9 some additional study performed by the CARB staff,
10 it was determined that 2.0 times the applicable NOx
11 standard represented an appropriate feeling for NOx
12 emissions on the highway.
13 This was derived using much the same principles
14 which were applied to the passenger car standard.
15 The 1981 date was chosen to reduce the testing burden
16 on manufacturers, since 1980 is a carry-over year
17 for these vehicles, having the same standards as
18 1979, and implementing a new testing reguation would
19 disrupt their plans to carry over vehicle test data
20 from 1979 to 1980.
21 No requirement has been established for hydro-
22 carbon emissions since we are unaware of any systems
23 in existence or under development which do not
24 provide acceptable control of hydrocarbons during
25 highway cycle operation.

In assessing the technological feasibility of the highway cycle NOx limitations adopted by ARB, it is important to note that most systems currently in use already comply. Only those few vehicles which incorporate systems which reduce NOx control during highway driving are affected, and even these vehicles can be quickly modified through relatively simple calibration changes. The record of the Board's January 25, 1978 public hearing on this subject indicates that neither the technological feasibility nor the lead time adequacy was a major issue.

The transcript of this hearing has been submitted for the record.

The most significant lead time related issue raised dealt with the increased testing requirements which several manufacturers claimed would be needed to provide assurance that compliance would be achieved during the "official" EPA fuel economy tests. To address manufacturers' concerns in this area, the Board adopted a provision that allows a manufacturer to submit evidence showing why a vehicle which fails to comply with our requirement during the EPA testing did not actually include an improper calibration or a defeat device.

1 One would expect that Chrysler would have
2 the greatest problem complying with the Board's
3 highway cycle standard, since it is the only manu-
4 facturer which presently markets vehicles with
5 extensive electronic controls. At the January 1978
6 Board meeting, however, the Chrysler representative
7 stated that "During the limited time we have had
8 to review this proposal and in recognition of the
9 timing implications of including these additional
10 cycle requirements in the certification program for
11 1980, Chrysler believes the ARB objectives can be
12 met with a highway fuel economy cycle and, at least
13 for passenger cars, Chrysler will be able to meet
14 the proposed highway emission standards with some
15 recalibration and additional development of our
16 advanced electronic control system."
17 Several other manufacturers will be introducing
18 such systems in the near future. ARB believes that,
19 if Chrysler finds the Board's requirement to be
20 technologically feasible in the remaining lead time,
21 then short-term recalibration and minor development
22 work will solve the problem for other manufacturers
23 also.
24 Since the regulations do not take effect
25 until the 1980 model year, ARB recently requested

1 that certain manufactuers attempt to comply with the
2 spirit of the regulation for the 1979 model year in
3 recognition of the air quality problem which non-
4 complying cars would aggravate. Ford has agreed
5 in writing to comply with this request.
6 Since no comparable federal standards exist,
7 the ARB's determination that its highway cycle stan-
8 dard is at least as protective of public health and
9 welfare as applicable federal standards may not,
10 as a matter of law, be found arbitrary and capricious.
11 As mentioned earlier in my statement, the
12 existence of compelling and extraordinary air quality
13 conditions has previously been determined by the
14 Administrator. We therefore expect that any opposition
15 to the highway cycle standards expressed here today
16 will focus primarily on claims that the application
17 of these requirements will conflict with federally-
18 mandated fuel economy requirements.
19 In evaluating such claims, I encourage the
20 Agency to acknowledge the fact that emission control
21 requirements place no fundamental limitation on the
22 level of fuel economy achievable with a motorcycle.
23 While optimization of any given parameter is generally
24 easier when constraints are minimized, even the
25 maximum claimed effect of the new highway NOx

1 standards is only about one-half mile per gallon in
2 composite fuel economy. For the systems planned
3 for use by most manufacturers, there is no adverse
4 effect at all.
5 In addition, it is our position, as previously
6 communicated to EPA, that the fuel economy issue
7 is not relevant to any of the factors, including
8 feasibility and cost, which EPA has jurisdiction
9 to consider in these proceedings.
10 Before completing this portion of our statement,
11 since we have had the benefit of reviewing a couple
12 of the manufacturers prepared statements on this
13 issue, it appears as though there is one other
14 issue that will be brought up today regarding the
15 highway cycle, and that issue deals with the
16 desirability of achieving further NOx control in Cali-
17 fornia. The argument being that excessive amounts
18 of NOx control will aggravate the oxidant problem.
19 I believe the way the Act is structured, it's
20 California's decision to make regarding whether the
21 NOx control will in fact enhance or aggravate air
22 quality in California, not the Administrator's, as
23 long as the Air Resources Board has laid out a
24 rationale on which his decision was made, has demonstrated
25 that the decision is made not in an arbitrary and

1 capricious manner.

2 For the benefit of the Panel, however, I think
3 it's important to point out that our staff report on
4 this issue and in previous work the Air Resources
5 Board has done on desirability of NOx control in
6 California, we have indicated that NOx control is
7 needed for several reasons, not just compliance with
8 the NO_2 standards. We believe that the NOx control
9 that is going to be obtained with the existence of
10 the highway cycle will in fact be needed to comply
11 with the NO_2 standard, but we also believe it will
12 improve the oxidant situation in a number of California
13 air basins not aggravated. And perhaps even more
14 importantly, the control will substantially improve
15 the level of secondary particulate which is causing
16 violations of both the federal and state ambient
17 air quality standards for particulates in California.

18 We have data which indicates that secondary
19 particulate alone will cause violations of the
20 federal standard in California, and nitrate is a
21 substantial fraction of that secondary particulate.
22 Of course, nitrate is the result of photochemical
23 transformation of NOx emissions from automobile
24 and stationary sources.

25 Mr. Macomber indicates that there was material

1 submitted on this subject during the waiver hearing
2 on the .4 NOx standard. Since the same issue
3 regarding the appropriateness of NOx control in
4 California is coming up again at this hearing, we
5 would request that the documentation which the
6 Board submitted specific to the desirability of
7 NOx control in California be also made a part of this
8 hearing record.
9 One other thing I might point out: I think
10 the proper perspective, the proper context for this
11 particular issue will only exist if we recognize
12 the fact that we are not adopting a standard which
13 will in fact increase the amount of NOx control that
14 we had previously intended to obtain. The standard is
15 to prevent an increase in NOx emissions from cars that
16 may result from the use of certain devices, a few
17 of which are in use in 1978 model year, more of
18 which would have been in use in California had we
19 not gone forward with this type of regulation.
20 So basically, the degree of NOx control that
21 would be achieved with this regulation is essentially
22 identical to the degree of NOx control that we
23 had originally intended to achieve with the previous
24 standards for which we have already been granted
25 a waiver.

1 This completes the portion of our statement
2 which relates to the highway cycle NOx standards.
3 CHAIRMAN JACKSON: May I interrupt --
4 MR. AUSTIN: Would you like me to break
5 here for any questions on this before we go on to
6 the next, or what's your preference?
7 CHAIRMAN JACKSON: I would, because I don't
8 think I can remember the questions I have that long.
9 Two points: Without preempting whatever it is
10 that your attorney is going to do, do you want to be
11 more specific about the records you were referring
12 to in your unwritten dialogue?
13 MR. AUSTIN: There was a report submitted
14 that was an ARB staff report not directly related to
15 the adoption of a vehicle standard which, I think,
16 was dated January of 1977, which we did submit during
17 the waiver hearing on the .4 NOx standard for motor
18 vehicles. We did not include that staff report in
19 the package that we submitted on these standards
20 because we felt that the issue had already been decided,
21 but since we know that the same issue -- that is, the
22 wisdom of controlling NOx in California -- is being
23 brought up again in this proceeding, we would want
24 the Administrator to be able to consider that previously
25 submitted staff report in his decision.

1 MR. MACOMBER: Mr. Jackson, in addition to
2 the staff report, there were some other materials
3 that were identified in a previously-supplied evidentiary
4 guide relating to the .4 NOx standard that was adopted
5 by California last year, and that is what we would
6 like to have you incorporate by reference into these
7 proceedings.
8 Since we did not anticipate that this would be
9 a major issue today, we are asking that you do us that
10 favor.
11 The material has been previously supplied
12 to EPA. It included a transcript of some Board
13 proceedings, I think some independent research done
14 for the Board, as well as a staff report and some other
15 materials that will be identified in the evidentiary
16 guide.
17 If you like, we can identify the material more
18 specifically before the record is closed stating
19 that in a letter.
20 CHAIRMAN JACKSON: I think you should.
21 MR. MACOMBER: We will do that.
22 MR. AUSTIN: We may also want to submit
23 some additional information on this same subject.
24 We have been preparing a new report dealing with this
25 question of the desirability of NOx control in

1 California, which we've discussed with Assistant
2 Administrator Hawkins. He has been briefed on what
3 is going to be in this report. We may have it available
4 by the close of the hearing record. If so, we will
5 submit that also.
6 CHAIRMAN JACKSON: One other point. In
7 your unwritten dialogue, you made a point which
8 raises a rather interesting question. You said that
9 this action that you are taking with regard to NOx
10 control was intended to prevent an increase; i.e.,
11 that you are merely enforcing what you had anticipated
12 you were going to get by setting the original standard;
13 is that correct?
14 MR. AUSTIN: That's correct.
15 CHAIRMAN JACKSON: If that's the case, then,
16 as opposed to being a new standard, it becomes an
17 enforcement technique which is intended to enforce
18 a previously-waived standard.
19 There is a different series of considerations
20 that would be applicable there. Which is your position?
21 MR. AUSTIN: During our public hearing on
22 this item, several of the Board members expressed
23 their feeling that this in fact was not a new standard.
24 I think Kingsley will have to comment. Legally speaking,
25 it is a new standard.

1 However, the approach could possibly have
2 been somewhat different in that we could have attempted
3 to cause the same degree of control through an advisory
4 circular-type of publication that would have merely
5 interpreted the intent of our previously-adopted
6 regulations so as to require that the systems on
7 vehicles continue to control NOx in an effective manner
8 during highway cycle operation as well as during
9 the Federal Test Procedure Operation.
10 We debated as to whether we should go ahead
11 and do that. We decided that if we did it there
12 would surely be a challenge to our authority to
13 implement such an enforcement mechanism without
14 being granted a waiver from EPA for this new enforce-
15 ment mechanism, since it does put a new requirement
16 on the manufacturers. It appeared to us as though
17 it was something that was going to be possible to
18 do if EPA and ARB did it jointly, but if EPA
19 was unwilling to go ahead with a new defeat device
20 definition which would have been consistent with
21 the defintion that we were developing, which would
22 have prevented certain systems from coming into
23 existence.
24 Then we thought probably the best approach would
25 be to go with a standard and to apply formally for

1 a waiver.

2 CHAIRMAN JACKSON: I am not suggesting that
3 you wouldn't apply for a waiver for an enforcement
4 technique of a pre-existing waived standard. I am
5 not suggesting that that would have been the approach
6 necessarily. I am just saying the considerations
7 would be different if you were approaching this
8 from the point of view which I thought you said you
9 were in your diaglogue, and that is: This is not
10 a new standard; it is a mechanism to enforce a pre-
11 existing standard. I am not on my part suggesting
12 that you didn't need a waiver for an enforcement
13 mechanism to determine its effect on the protective-
14 ness of a waived standard. But I hear you say now
15 that indeed this is a new standard, and it requires
16 a waiver.

17 MR. AUSTIN: Do you want to comment on it?

18 MR. MACOMBER: From a legal standpoint,
19 I agree with you, Mr. Jackson. I don't think it makes
20 too much difference, because this is being enforced
21 as a condition of registration of new vehicles in
22 California.

23 Beyond that, I don't see the real importance
24 of your question. Why would it make any difference
25 to consider this to this hearing?

1 CHAIRMAN JACKSON: You don't have to consider
2 the standard, other than the mechanism that's being
3 used to enforce the standard. That switches the
4 perspective. We are not talking about a standard
5 anymore. We are just talking a new enforcement mechan-
6 ism; vis-a-vis assembly-line test, for example, or
7 something like that, and does that add to the pro-
8 tectiveness or distract. And your findings are
9 different under those circumstances. That's why I
10 am trying to make clear exactly what your position is,
11 because it seemed to shift in your dialogue.
12 MR. MACOMBER: The only issue that I can
13 recall, which I think has been disposed of, at least
14 from the EPA standpoint, is whether or not we have
15 to show that enforcement procedures which, technically
16 speaking could be distinguished from standards, in
17 fact have to be more protective of the public health.
18 I think EPA has addressed this issue already
19 and concluded they should be treated the same as
20 standards on this issue.
21 CHAIRMAN JACKSON: I'm not going to agree
22 with you on that.
23 Why don't you proceed with your statement,
24 then, Mr. Austin.
25 MR. AUSTIN: Let me make one more point

1 on the highway cycle before we leave it.

2 CHAIRMAN JACKSON: We plan to come back to

3 it.

4 MR. AUSTIN: Pardon me?

5 CHAIRMAN JACKSON: We plan to come back

6 to it.

7 MR. AUSTIN: Oh, you plan to come back to

8 it. Okay. Fine.

9 On assembly-line test procedures, when deciding

10 on a waiver for California test or enforcement proce-

11 dures which enforce already-waived standards, the

12 Administrator may only deny California a waiver if:

13 1. California's test or enforcement pro-

14 cedures cause its standards, in the aggregate, to

15 be less protective of public health and welfare than

16 applicable federal regulations; or

17 2. Inadequate lead time exists for

18 compliance, or California's test or enforcement

19 procedures are inconsistent with Section 202(a)of

20 the Clean Air Act.

21 Waivers have already been granted for the 1979

22 light-duty truck and medium-duty vehicle standards,

23 and we expect the 1979 passenger car standards to

24 be granted a waiver shortly, since both federal

25 and California 1979 passenger car standards are

1 identical to the respective 1978 standards. The
2 assembly-line test procedures merely represent a
3 means of enforcing these standards. In our discussion,
4 we will assume that waivers will be granted for all
5 of the relevant standards.
6 The major changes to the 1979 assembly-line
7 test procedures were the deletion of the 90 percent
8 option and the retention of the averaging option.
9 Under the first option, a family or subgroup passes
10 if 90 percent of the vehicles quality audit tested
11 meet the applicable certification emission standards.
12 Under the second option, the average emissions of
13 each family or subgroup, with deterioration factors
14 applied, must meet the applicable emission standards.
15 Both options were retained for a two-year
16 experiment during which manufacturers could choose
17 to demonstrate compliance with either one. After
18 evaluating the results of this experiment, the ARB
19 decided that the average emissions option was the
20 most effective and should be retained as the only
21 option, with certain modifications.
22 This procedure now requires that no more than
23 one percent of the vehicles in an engine family
24 can have emissions which exceed the applicable
25 standards by 2.33 times the standard deviation of

1 the results and that the engine family's average
2 emissions must be below the standard.
3 In the staff's original proposal, the emissions
4 of one percent of the vehicles in an engine family
5 would not have been permitted to exceed the standards
6 by one standard deviation. However, at the CARB
7 staff's November 3, 1977 workshop, manufacturers
8 objected that this requirement would force them to
9 recalibrate their systems so that the average emissions
10 would be significantly below the standard, even
11 assuming that the only source of emissions variability
12 was expected random test variability.
13 Manufacturers argued that the required design
14 and recalibration changes would be so extensive that
15 insufficient lead time existed for compliance by
16 the 1979 model year.
17 After evaluating manufacturers' comments,the
18 ARB concluded that 2.33 times the standard deviation
19 was a more appropriate figure at this time. This
20 number was derived from the fact that if an engine
21 family had emissions which were normally distributed
22 with average emissions precisely at the standard,
23 only one percent of the vehicles in the engine
24 family would be expected to have emissions greater than
25 2.33 sigmas above the standard.

1 Under this requirement, a manufacturer would
2 only be forced to reduce its average emissions below
3 the standard if, for some reason, its emissions
4 distribution were not random due to some problem,
5 such as a non-complying subgroup or a significant
6 quality control problem.
7 The staff analyzed 1977 model quality audit
8 data from 65 engine families to see what percent
9 of the vehicles would comply with the new requirements
10 if they had been in effect in 1977. The results
11 of this analysis are shown in Table 1 attached to the
12 presentation.
13 We found that only 13 percent of the domestic
14 engine families would have complied throughout the
15 model year but that 81 percent of the foreign engine
16 families would have consistently met the requirement.
17 This supports the staff's contention that the new
18 requirements are feasible in the allotted lead time
19 but that some manufacturers, especially the domestics,
20 will have to improve their quality control measures
21 prior to the 1979 model year.
22 At the workshop, manufacturers argued that
23 the one percent, one sigma requirement, would result
24 in fuel economy penalties. However, the CARB staff
25 believes that the one percent, 2.33 sigma requirement,

1 as actually adopted by the Board, will not result
2 in a fuel penalty. Manufacturers already maintain
3 average emissions well below those required by the
4 1979 assembly-line test procedures; further reductions
5 in average emissions are not required.
6 Some manufacturers may need to implement improved
7 quality control techniques, which have no effect on
8 fuel economy.
9 Only if a manufacturer chooses to reduce the
10 average emissions from an engine family instead of
11 implementing additional quality control measures
12 should any adverse effects related to the new require-
13 ment be incurred.
14 Since the kinds of problems likely to cause
15 a manufacturer to fail the one percent, 2.33 sigma
16 criteria are different from those likely to cause
17 failure of the average emissions requirement, the CARB
18 has implemented a separate enforcement procedure for
19 each.
20 If a manufacturer fails the one percent, 2.33
21 sigma requirement, he would have to notify the
22 Executive Officer and submit a report on the failure,
23 including an analysis by subgroup of the average
24 emissions and stadard deviations within the family.
25 An engineering evaluation must also be submitted of

1 the cause of failure for each vehicle which exceeds
2 the standard by more than 2.33 sigma. The manufacturer
3 may also express its opinion as to the cause of the
4 failure and may propose corrective action.
5 After reviewing the manufacturer's report, the
6 Executive Officer must decide whether or not it is
7 adequate to solve the problem and may direct the
8 manufacturer to implement the proposed corrective
9 action. If the Executive Officer finds the proposed
10 corrective action to be inadequate, he or she may
11 invoke Section 2109 or 2110 of the California Admini-
12 strative Code, as appropriate, and take enforcement
13 action.
14 Another important change to the test procedures
15 was the lowering of the maximum levels to which
16 the statistically derived control limits used in
17 the steady-state emissions test could be artificially
18 raised. The steady-state emissions test is an idle
19 emissions test similar to that which will be used
20 in the California Vehicle Inspection Program. Each
21 vehicle manufactured for sale in California must
22 pass the steady-state test on the assembly-line.
23 Like other short idle emissions test, this
24 test serves mainly as an inexpensive method of
25 detecting gross emitters and of catching problems

1 such as maladjusted carburetors or chokes, loose
2 or defective wires or vacuum hoses, faulty air
3 injection systems, or gross catalyst defects.
4 The emission standards, for control limits,
5 used in the steady-state test represent the average
6 plus twice the standard deviation of the idle emissions
7 measured from the first 100 cars in an engine family
8 or subgroup produced during a quarter.
9 Temporary control limits are used until 100
10 cars have been tested.
11 Since hydrocarbon and carbon monoxide emissions
12 from new catalyst vehicles can be extremely low,
13 manufacturers are permitted to add a constant amount
14 to the statistically derived control limits, provided
15 that they remain below specified levels.
16 This insures that properly adjusted and operating
17 vehicles with relatively high emissions do not
18 fail the steady-state test; only those vehicles with
19 emission-related defects should fail.
20 The revised maximum control limits are repre-
21 sented in the following table, which we request
22 be entered into the record of this hearing. The
23 table appears in the written statement I have provided.
24 The new control limits do not impose a further
25 or more stringent requirement on manufacturers but

1 are intended to prevent manufacturers from raising
2 control limits to the point where they are ineffective
3 in detecting gross emitters.
4 A third change is the requirement that quality
5 audit vehicles be tested with their evaporative
6 emission control systems connected. Evaporative
7 control system disconnection was originally allowed
8 as a testing convenience at a time when the ARB con-
9 sidered the interaction between the exhaust and evapora-
10 tive emission control systems to be insignificant.
11 However, the new, more sophisiticated evaporative
12 vapor storage and purging systems used in California,
13 as well as the low California exhaust hydrocarbon
14 standards, has led the staff to conclude that this
15 interaction is no longer insignificant.
16 At the workshop, manufacturers suggested that
17 they should be allowed to install a fresh cannister
18 on test vehicles prior to the start of the precondition-
19 ing sequence. Manufacturers also requested that they
20 be permitted to conduct the preconditioning sequence
21 on a street or a test track. The ARB staff agreed
22 to these changes, provided that the manufacturer
23 supplied evidence that the alternate preconditioning
24 procedure would load the cannister to the same extent
25 that the dynamometer procedure would.

1 Other less significant changes to the test
2 procedure include a change in the reporting date
3 for quarterly assembly-line test reports, which
4 now must be submitted within 45 days after the end
5 of each production quarter, and of each production
6 year.
7 In addition, a standardized procedure for
8 rounding quality audit emissions data has been speci-
9 fied and additional information concerning quality
10 audit test vehicles must be submitted, including
11 inertia weight, test horsepower, carbon dioxide
12 data, and engine code or calibration number. Numerous
13 minor organizational changes were made to the procedures
14 to make them more clearly understandable.
15 These requirements are not expected to cause
16 manufacturers any significant difficulty or expense.
17 Since the 1979 assembly-line procedures may
18 cause some manufacturers to institute additional
19 quality control precautions, an emissions benefit
20 should be realized over the 1978 assembly-line
21 regulations for those manufacturers which do not
22 already comply.
23 The Administrator's decision to grant a waiver
24 of Federal preemption for our 1978 assembly-line
25 procedures indicates his concurrence that California's

1 determination that its basic assembly-line program
2 is at least as protective of public health as applicable
3 Federal regulations is not arbitrary and capricious.
4 California's assembly-line test procedures
5 have never been considered by the Administrator to
6 be inconsistent with Federal regulations, and as
7 discussed above, we do not believe that a lead time
8 problem exists. We therefore believe that the 1979
9 California assembly-line test procedures meet all
10 the criteria required for a waiver of federal pre-
11 emption and that the Administrator has no reason to
12 deny such a waiver.
13 Would you like me to pause here for any ques-
14 tions before moving on to the label?
15 CHAIRMAN JACKSON: No.
16 MR. AUSTIN: Okay. On to the tune-up label
17 regulations.
18 In December of 1977, the ARB heard testimony
19 regarding its proposed motor vehicle tune-up label
20 regulations. At the end of the meeting, the Board
21 delegated to the Executive Officer the authority
22 to make changes in and to adopt the proposed regula-
23 tions. The Executive Officer provided a comment
24 period for manufacturers and afterwards issued a set
25 of regulations which address most of the manufacturers

major concerns.

The Board's tune-up regulations now include the following requirements:

1. The label must be permanently affixed to a readily visible part of the engine compartment, and, for light and medium-duty vehicles including motorcycles, the label shall not be affixed to any equipment which is easily detached from the vehicle.

2. Specific tune-up information must be included on the label, including a hose routing diagram, which may be separate. Other required information includes engine family, engine displacement, emission control system type, ignition dwell and timing, idle air/fuel ratio setting procedure, high idle speed, et cetera. An unconditional statement of compliance with California Emission Control Regulations must also be included. At the manufacturers' suggestion, we also included a provision which allows the addition of a statement that the vehicle conforms with Federal emission control regulations. Any other information which the manufacturer deems necessary may also be included.

3. The label must either be readable to the average person from a distance of eighteen inches without any obstruction from vehicle or engine

1 parts except for flexible parts, or the label must
2 be printed in eight point type size or larger, pro-
3 vided no vehicle or engine parts except flexible
4 parts obstruct the label. This latter alternative
5 was added at the request of the manufacturers, who
6 claimed that the first requirement was too vague.
7 4. The label and any adhesives used to
8 attach it must be designed to withstand typical engine
9 compartment conditions for the vehicle or engine's
10 total expected life. These conditions include exposure
11 to coolant, oil, gasoline, solvents, steam cleaming,
12 and so forth.
13 Manufacturers must submit a statement
14 that their labels are in compliance with this require-
15 ment. The ARB staff's original proposal required
16 manufacturers to state that the label would comply
17 with these conditions for the vehicle's total
18 expected life. However, the ARB basically intended
19 this to be a design requirement, not a test requirement,
20 so the Executive Officer changed the original language
21 to reflect this intent.
22 5. The manufacturer must obtain approval
23 of the label format from the Executive Officer prior
24 to use. Specific tune-up settings need not be
25 approved during this process, but the format for all

1 settings and tolerances must be reviewed. If the
2 Executive Officer judges that the label is vague
3 and/or subject to misinterpretations, or that it
4 does not comply with the other specifications, he or
5 she may require modification of the label or its
6 location to correct the deficiency.
7 6. Samples of all labels must be submitted
8 to the Executive Officer within 30 days after the
9 start of production.
10 7. In response to manufacturers' comments,
11 the ARB added a provision which allows the Executive
12 Officer to waive or modify any of the tune-up
13 label requirements for the 1979 model year if a
14 vehicle or engine manufacturer has insufficient
15 lead time to comply. Alternate locations may be
16 approved by the Executive Officer, and he or she
17 may, upon request, modify or waive any of the content
18 requirements, provided that the intent of the speci-
19 fications are met.
20 8. If the Executive Officer finds any
21 motor vehicle or motor vehicle engine with labels
22 which differ from those which were approved, or which
23 do not substantially comply with the readability or
24 durability requirements, he or she may invoke Section
25 2109 of Title 13, California Administrative Code,

1 and take appropriate enforcement action.

2 Most of the manufacturers' major concerns were
3 addressed in the revised regulations. Those sections
4 with which manufacturers had the most problems
5 have been reworded to make them flexible and, in
6 many cases, to give the manufacturer the option of
7 appealing to the Executive Officer for an exemption.

8 The manufacturers' lead time concerns have been
9 adequately addressed by allowing the Executive Officer
10 to waive all or part of the requirements for any
11 manufacturer which cannot fully comply by the 1979
12 model year.

13 No technological feasibility problems exist,
14 since several manufacturers stated their belief that
15 their labels already complied with the design require-
16 ments. In addition, manufacturers may, in a case
17 of technological infeasibility, request an exemption
18 from the Executive Officer, provided the intent of
19 the specifications is preserved.

20 Federal tune-up label regulations currently
21 require manufacturers to submit their tune-up labels
22 to EPA, but the labels are not approved or disapproved
23 by EPA. Therefore, ARB's regulations, which include
24 review requirement, should make the labels, on the
25 whole, more accurate and more durable than Federal

1 labels. This will result in more mechanics having
2 the correct tune-up procedure before them, and
3 therefore, in more correctly performed tune-ups.
4 This could cause California tune-up label regulations
5 to have a slight emissions benefit over comparable
6 Federal regulations. Even if this is not the case,
7 however, no provision of these regulations makes the
8 standards which they enforce less stringent than
9 Federal regulations. For these reasons, the Board's
10 finding that its tune-up regulations are at least
11 as protective of public health and welfare as applicable
12 federal regulations cannot be deemed arbitrary and
13 capricious.
14 That completes our prepared statement. We
15 would be happy to respond to any questions.
16 Kathy Kahn, however, would like to give you
17 the evidentiary record for the hearing that we would
18 like to submit.
19 MS. KAHN: Okay. I believe Mr. Macomber
20 has already given you copies of an evidentiary guide
21 and assorted documents together with that.
22 The evidentiary guide is a list of all the
23 documents we have submitted to date in connection
24 with this hearing. Some of them, Mr. Jackson,
25 I think you read into the record in your statement,

1 our letters and the regulations. The documents today
2 include primarily transcripts of the Board hearings
3 and written testimony that was received from the manu-
4 facturers in connection with those hearings.
5 So I would like to request at this point that
6 that guide and the documents listed in it, most
7 of which are attached to it today, be entered into
8 the record of this hearing.
9 MR. WAGNER: Excuse me, but I think you
10 turned the mike off.
11 MS. KAHN: Do I have to repeat all that?
12 MR. WAGNER: No.
13 MS. KAHN: In addition, the staff may
14 wish to present oral testimony on some of the items
15 under consideration, since many of them were delegated
16 by the Board to the Executive Officer and decided
17 on the basis of the staff research information.
18 CHAIRMAN JACKSON: We will enter into the
19 record whatever you give us.
20 MR. GRAY: I have one rather general question
21 which relates to a pretty strong statement made
22 in the early part of your testimony with respect to
23 the highway NOx standard, a statement which relates
24 to the position that the Environmental Protection
25 Agency has taken with respect to what is generally

1 referred to as non-FTP emissions.

2 Is this statement a statement of impression

3 or a statement that you would contend is fact?

4 In particular, the statement on Page 5 of your

5 written testimony, "System programming which reduces

6 the effectiveness of emission control systems has

7 been considered acceptable to EPA as long as they

8 are programmed to decrease effectiveness on FTP as

9 well as on the highway cycle."

10 MR. AUSTIN: That's my impression based upon

11 discussions I have had with certain EPA employees

12 who are responsible for making these determinations

13 and also upon my reading of correspondence on this

14 issue which I received from the former Deputy Assist-

15 ant Administrator for Mobile Sources --

16 CHAIRMAN JACKSON: You can use names if

17 you want to.

18 MR. AUSTIN: -- which indicated to me that

19 the policy at the EPA essentially was to allow

20 systems which substantially reduced the effectiveness

21 of emission controls off the FTP as long as they

22 reduced the effectiveness of emission controls on

23 the FTP to some extent; although that extent might

24 be insignificant.

25 MR. GRAY: I think the key word here is

1 "substantially" used on the FTP, and it appears that
2 the potential flexibility in the definition of that
3 term has at least communicated to you an impression
4 as to how that word might be interpreted.
5 The question is pretty straightforward. Do
6 these statements reflect your impression of current
7 policy as opposed to your reading of constraints
8 that are upon the Environmental Protection Agency?
9 MR. AUSTIN: It's my impression.
10 MR. GRAY: In discussing the standards
11 for the highway fuel economy cycle for passenger cars
12 and for the light-duty trucks and medium-duty vehicles,
13 you speak of an appropriate ceiling that these standards
14 reflect. Do you mean an appropriate ceiling from
15 the context of easily achievable or an appropriate
16 ceiling with respect to controlling those emissions
17 to protect the public health in California?
18 MR. AUSTIN: Appropriate in that it doesn't
19 require more control on the highway driving cycle than
20 would be controlled on the Federal Test Procedure
21 in order to comply with the NOx standards.
22 MR. GRAY: So it does not represent a finding
23 by the CARB that that level is sufficient in terms
24 of the needed reduction in oxides of nitrogen?
25 MR. AUSTIN: The level that's sufficient

1 in terms of the needed reduction is zero. The factor
2 of two is the factor which we believe will insure
3 that no manufacturer has to control NOx more stringently
4 on the highway cycle than on the Federal Test Procedure.
5 It's the factor that gives us assurance that the
6 vehicles will have approximately the same degree of
7 NOx control on both the highway and the LA-4 cycles.
8 MR. GRAY: And that is the basic objective
9 of these standards?
10 MR. AUSTIN: Yes.
11 MR. LOW: I've got a question.
12 On Page 7 of your prepared statement, Mr.
13 Austin, where you are addressing manufacturers concerns
14 and you adopted a provision for manufacturers to
15 submit evidence as to why the NOx standard isn't being
16 met.
17 Could you explain that just a bit more? What
18 does that entail?
19 MR. AUSTIN: One of the major concerns
20 we heard at the Board meeting on this regulation
21 was that there would be a substantial increase in
22 the testing requirements associated with the adoption
23 of a standard for highway cycle NOx emissions,
24 even though the standard was set at a level that should
25 not present any particular problems for a manufacturer

1 who has designed a system to control NOx under
2 virtually all driving conditions.
3 The argument here was that there is some risk
4 associated with going through the EPA certification
5 process, even though your vehicle has been designed
6 to emit at a level significantly under the standard.
7 There's test variability, the vehicles themselves
8 are variable, and for that reason you can't be
9 100 percent confident that your vehicle is actually
10 going to pass when tested by EPA. The addition of
11 an additional standard, an additional procedure, would
12 increase the risk and, therefore, would put a burden
13 on the manufacturers, potentially requiring more
14 retests than are now the case.
15 In order to minimize the possibility that
16 there would be delays associated with this new
17 standard, we inserted this language, which would essen-
18 tially allow a manufacturer who might have just failed
19 to meet the 1.33 criteria on the highway cycle to
20 submit evidence to us showing that under other tests
21 run on this same vehicle at his lab or at a lab other
22 than EPA's lab, that the vehicle was in fact under
23 the 1.33 level.
24 If we were convinced that there were data
25 available on that particular vehicle that made us

1 confident that its NOx emissions would not be on the
2 average over the 1.33 cut point, then we could
3 accept that without requiring the manufacturer to
4 go back and make changes to the vehicle and run it
5 through the entire EPA process again.
6 MR. LOW: I think that's a different way
7 of measuring the compliance with the standards than
8 we are normally used to seeing.
9 Again, it seems to be more of a way for you
10 to determine whether there is a defeat device in
11 a vehicle than to measure compliance with a highway
12 fuel economy standard, NOx standard. I think Ben's
13 question before is still relevant. Do you consider
14 this to be a standard or an enforcement procedure?
15 It appears to me that you could, I suppose,
16 determine whether or not a vehicle had a defeat
17 device by using the currently employed EPA advisory
18 circular process without establishing this particular
19 test cycle or test standard. I am wondering why
20 you haven't chosen to adopt that particular type of
21 procedure.
22 MR. AUSTIN: I wish I knew what the real
23 significant of the distinction was. Frankly, I
24 don't care whether you grant us a waiver for this
25 as an enforcement procedure or as a new standard. We

1 will accept it however you want to word it.
2 Conceptually, it's an enforcement procedure.
3 Our concern is that from a strictly legal standpoint
4 it's a new standard. I don't really think there
5 is any practical significance to the distinction.
6 MR. LOW: If a manufacturer doesn't meet
7 the standard, though, he still can show you through
8 other means that he has met the standard or he has
9 not had -- really what he is showing he doesn't have
10 defeat devices on his vehicle because the mechanism
11 you have inserted --
12 MR. AUSTIN: Okay. The other mechanism is
13 only to deal with the possibility that a vehicle
14 which in fact would comply when tested -- in fact
15 would comply most of the time when tested by EPA,
16 may not comply during the single test that the
17 vehicle is given during the official fuel economy
18 testing that EPA does. This provides an alternative
19 means of convincing the Air Resources Board that
20 the vehicle does not emit more than 1.33 times the
21 Federal Test Procedure Standard without having to
22 go back through the entire EPA process again.
23 I think we could use this same approach, on
24 the standards that apply in the Federal Test Procedure
25 if we chose to, as long as the vehicle met the

1 federal standards when tested by EPA. We could
2 accept the vehicle for sale in California if it
3 was shown to comply with California standards through
4 tests run by the manufacturers, through tests run
5 by the Air Resources Board, or thorugh tests run
6 by some third party.
7 CHAIRMAN JACKSON: To follow up on that,
8 Mr. Austin, do you have any plans to do any other
9 testing of the production units or in-use units using
10 the highway cycle for NOx?
11 MR. AUSTIN: We intend to test some of
12 the vehicles which are submitted for our Title 13
13 testing program that's conducted at the Air Resources
14 Board using the highway cycle, and we'll look to see
15 how well the manufacturers are complying. However,
16 we have not adopted changes to our Title 13 testing
17 procedures which we feel would be necessary prior
18 to doing the testing on an official basis.
19 We do not intend to take enforcement action
20 against manufacturers who fail to meet the 1.33
21 criteria during Title 13 testing. If we determine
22 that there is a need for an official enforcement
23 program, we'll make the necessary changes to Title
24 13 and will submit those to EPA for a waiver.
25 At this time, we'll give the manufacturers the

1 benefit of the doubt. We'll assume that the vehicles
2 are designed properly. We'll do some spot-checking.
3 Unless we find a problem, we may very well stick
4 with just the Federal Test Procedure as our only real
5 test used outside the certification process.
6 CHAIRMAN JACKSON: So for purposes of
7 evaluating the impact here, the manufacturers need
8 not worry about conducting this type of testing on
9 an assembly line or in response to any kind of testing
10 that you may have to do, defensive testing of any
11 other nature.
12 MR. AUSTIN: That's correct. There is no
13 assembly-line testing requirement. We do not intend
14 to adopt an assembly-line testing requirement, and
15 until we find that there are problems in customer
16 service in production with a substantial number of
17 vehicles we will probably refrain from doing any
18 official compliance testing on the highway cycle
19 at all.
20 CHAIRMAN JACKSON: I had one other question
21 on a different subject.
22 Did you do a computation of what the difference
23 in the NOx ambient emissions would be given the
24 existing type of controls versus what it will be
25 with the standard on the highway cycle?

1 MR. AUSTIN: We did some computations along
2 that line, but the difference is going to be a
3 function of how many manufacturers would have used
4 systems which increase NOx emissions during highway
5 driving substantially above the levels you would
6 expect based upon the Federal Test Procedure results.
7 There was a system being developed by Ford
8 Motor Company which would have done that which we
9 understand Ford would have used on most of their
10 product line. It wasn't clear to us how many other
11 manufacturers might use such a system. If all
12 manufacturers eventually used such a system, then
13 the difference in the NOx emissions from the passenger
14 cars would have been almost 50 percent greater than
15 with the cars complying with the highway cycle
16 requirements. That assumed roughly a 50-50 split of
17 highway-to-city cycle driving within the South Coast
18 Air Basin and assumed that the increase in NOx
19 emissions on the highway cycle due to the use of
20 defeat devices of the type Ford was considering would
21 be in the range of three-to-one highway cycle emissions
22 to city cycle emissions.
23 MR. RUBENSTEIN: Mr. Jackson, there was
24 also an analysis of some alternate scenarios that
25 were also done, and that's shown on Page 24 of our

1 staff report on the subject.

2 CHAIRMAN JACKSON: The staff report?

3 MR. RUBENSTEIN: Right, that's previously

4 been submitted.

5 MR. GRAY: The current California regulations

6 in this area do include a definition of a defeat

7 device and do prohibit the use of a defeat device;

8 is that correct?

9 MR. AUSTIN: I think we have adopted the

10 Federal definition.

11 MR. GRAY: The Federal definition and you

12 do prohibit?

13 MR. AUSTIN: Yes.

14 MR. GRAY: As I understand the comments

15 that you made earlier, you feel that you could have

16 achieved this same objective under those requirements

17 but that achieving that objective might have been

18 more administratively difficult and might have been

19 more subject to confusion and to objection, possibly

20 challenge, by the manufacturers; so as a convenience,

21 a more efficient manner of enforcing that requirement,

22 you adopted that standard; is that correct?

23 MR. AUSTIN: Well, if we attempt to do it

24 administratively, the manufacturers, I believe, would

25 clearly have demanded that we apply for a waiver

1 from EPA for this change in our administrative pro-
2 cedures. Since we've never really had an administra-
3 tive procedure, something that's not been formally
4 adopted into the code go before EPA for waiver
5 decision, we preferred to go forward with a procedure
6 which was more consistent with the type that we've
7 brought before the agency in the past.
8 MR. GRAY: But you do have functioning
9 regulations that would prevent the use of defeat
10 devices as defined in the California Regulations;
11 is that not correct?
12 MR. AUSTIN: That's correct.
13 MR. GRAY: So do you feel that you could
14 still take action against defeat devices provided
15 they meet the definition in the regulations over
16 different types of driving schedules, say?
17 MR. AUSTIN: You can make that argument.
18 However, there is another argument to be made,
19 and that I believe the manufacturers surely would
20 have made, and we didn't see any point in putting
21 ourselves in a precarious legal posture; and so,
22 we decided to go ahead with notification of EPA
23 of this change and to get a waiver for it to preclude
24 any opposition that the manufacturers may have,
25 that they may try to follow up on with a court chal-
lenge.

1 MR. GRAY: Okay. So it is primarily to
2 preclude the possible challenge of such action
3 under existing regulations that you adopted the
4 NOx standard for the highway cycle?
5 MR. AUSTIN: Yes, I think that's essentially
6 correct.
7 CHAIRMAN JACKSON: I had one question on
8 your statement relating to the assembly-line test
9 procedure.
10 You showed some data -- actually, it's not
11 data; it's just summary analysis of performance on
12 assembly line of manufacturers, foreigners versus
13 U.S.
14 MR. AUSTIN: Yes.
15 CHAIRMAN JACKSON: There's a remarkable
16 dicotomy of performance there.
17 MR. AUSTIN: Isn't there?
18 CHAIRMAN JACKSON: Can you offer any reason
19 for that difference?
20 MR. AUSTIN: I think Gary should correct
21 me if he disagrees.
22 I think one of the significant factors here
23 is that the foreign manufacturers don't have as
24 many subgroups as the domestics. We had evidence
25 in the past that there are certain subgroups within

1 domestic engine families that have average emissions
2 substantially different from other subgroups within
3 the family, and those subgroups are not treated
4 as distinct entities in the assembly line evaluation
5 procedures, and they can result in a distribution of
6 emissions which is not at all normal but has some
7 outlyers causing a number of vehicles to be sub-
8 stantially above the standards.
9 MR. RUBENSTEIN: If I can add to that just
10 a bit.
11 That may be a factor in some cases. We did,
12 however, look at several engine families from import
13 manufacturers and domestic manufacturers where we
14 were looking at the same size of vehicle, same
15 general weight class, same general number of sub-
16 groups; i.e., different inertia weights, transmissions,
17 et cetera; and the imports tended to more often than
18 not comply whereas the domestics didn't.
19 Generally, it appears to be a combination of
20 the fact that the imports have both lower means
21 and significantly lower standard deviations on their
22 production vehicles, even with this subgroup issue
23 isolated and taken out.
24 One of the reasons might be, you know, the kind
25 of thing that Toyota does, where they have apparently

1 developed and reported in an SAE paper a short cycle
2 emissions test that they believe is fairly correlatable
3 to the CVS cycle, and this short test is performed
4 on 100 percent of their production prior to its
5 quality audit testing for California. And that gives
6 them, obviously, on a quality audit testing a much
7 lower standard deviation and a much smaller chance
8 of an outlyer coming through. I think it's additional
9 techniques like that that may be responsible for
10 the difference in performance.
11 MR. AUSTIN: If you are not familiar with
12 that test that Toyota uses: For each individual
13 vehicle -- and they will break it down and have
14 several different standares within an engine family
15 if they have to -- they have an estimate of what the
16 NOx emissions, for example, should be during a
17 certain accel (sic) that's typical of an accel (sic)
18 on the LA-4, and they'll take every vehicle and run
19 it over this very short transient test and measure
20 its NOx emissions as it's going through this accel (sic).
21 If, for example, the EGR valve was installed improperly
22 or something is disconnected, that shows up very
23 clearly because they expect a certain level of
24 NOx concentration. If the EGR valve, for example,
25 is not working, that level will go up by a factor of

1 two or three easily, and they can detect things
2 like that with a relatively rapid test.
3 CHAIRMAN JACKSON: But I would also
4 submit regarding your analysis here that with subgroups
5 you can also attribute different design characteristics
6 to a subgroup as opposed to just quality control.
7 In other words,they can all get the same level
8 of quality control, but because of the subgroups you
9 can get different designs within them causing this
10 aberation that we see contributing to the difference
11 in performance here.
12 MR. AUSTIN: Yes.
13 MR. SILVERSTEIN: I'd like to turn for a
14 second to the tune-up label specification.
15 In particular, as part of the information you
16 submitted along with the statement -- I think it's
17 part of Exhibit 3C -- there is one document entitled
18 "California Motor Vehicle Tune Up Label Specifications,
19 another which is the "Exhaust Emission Standards
20 and Test Procedures."
21 I am particularly interested in what affect
22 not providing this label would have on granting a
23 certificate to a manufacturer, or what penalties
24 would accrue if the label were not provided?
25 In particular, on Page 6 of the Tune-Up Label

1 Specifications, you mention that "If the Executive
2 Officer finds some deficiency, you can invoke Section
3 2109."
4 Can you briefly tell me what Section 2109 is?
5 MR. AUSTIN: Well, that's a separate question
6 from your first one, I think. Kingsley can correct
7 me if I am wrong.
8 Basically, the penalty for failing to comply
9 with these requirements is that the vehicle is not
10 certified because the requirements are a condition of
11 certification, and if the manufacturer does not
12 submit an acceptable label then we don't consider he's
13 fulfilled all the requirements for receiving his
14 certificate.
15 MR. SILVERSTEIN: He wouldn't get a certificate,
16 then, if he didn't provide the proper information; is
17 that true?
18 MR. MACOMBER: Right. Essentially what we
19 get prior to certification is the label format.
20 You'll see that described on Page 19 of the written
21 statement.
22 On the basis of that, I think we conclude
23 whether or not the vehicle is certifiable in terms
24 of this condition. Later on, I think within 30 or
25 45 days, we actually get a copy of the label and we

1 review those. If it turns out that the production
2 vehicles or the production labels do not meet our
3 requirements, then we can invoke these sections
4 you were inquiring about. These sections, 2109 and
5 2110, are the sections which authorize us to require
6 the manufacturers to take corrective action. They
7 also make reference to fines and penalties that might
8 apply under California law.
9 MR. SILVERSTEIN: There could be a monetary
10 penalty if you learned after the fact in production
11 that a certain manufacturer was not providing
12 a label as he said he would, for example?
13 MR. MACOMBER: It could be. I would
14 imagine, based on our current policy, that would
15 be invoked only in extreme cases. Ordinarily, we would
16 just want some corrective action.
17 MR. SILVERSTEIN: Is it true that the
18 primary method you'd use to enforce this kind of
19 a provision would be through the certification provisions
20 themselves?
21 MR. RUBENSTEIN: The label content format
22 requirements?
23 MR. SILVERSTEIN: That's right.
24 MR. RUBENSTEIN: Yes.
25 MR. MACOMBER: Right.

1 CHAIRMAN JACKSON: I have a question here
2 submitted by Mr. Rosenberg.
3 It says: "If the non-conformities that we
4 were talking about on Table 1 in your statment con-
5 nected with the assembly-line test requirement are
6 a function of subgroups and possibly a function of
7 design -- for example, different configurations --
8 what happens to the argument that there is no fuel
9 economy impact because the procedure just requires
10 better quality control?"
11 The "procedure" being the new assembly-line
12 test procedure.
13 MR. AUSTIN: If they are a function of --
14 obviously, there's more than one thing involved.
15 If we are talking about the case where the
16 non-compliance is solely caused by the existence
17 of a subgroup which has average emissions higher
18 than the other subgroups in the engine family and
19 it's causing a number of the vehicles to exceed the
20 standards by design, then there are still several
21 possible approaches for the manufacturer to come
22 in to compliance.
23 One approach might be to recalibrate the
24 vehicle in a manner which could reduce its fuel
25 economy, but that's only one of the possible approaches

1 There are other approaches that also could be used.
2 Since we are talking about a procedure which
3 will affect vehicles for 1979, there is time available
4 to do more than just simply change the initial spark
5 advance, for example. It may be possible to modify
6 the carburetor calibration in a manner which will
7 bring the vehicle into compliance without reducing
8 its fuel economy at all. It may be possible to change
9 some other component on the vehicle in a manner that
10 will enhance the emission control without adversely
11 affecting the fuel econony.
12 There's a variety of options available to
13 a manufacturer. Clearly, one option may be in some
14 cases to recalibrate a vehicle in a manner which
15 would reduce emissions and fuel economy. That's only
16 one possibility.
17 CHAIRMAN JACKSON: Or drop those configura-
18 tions?
19 MR. AUSTIN: Or drop them.
20 MR. RUBENSTEIN: One thing I'd like to
21 point out, though, is the way the assembly-line
22 requirement is written. A subgroup would have to
23 have its average emissions exceeding the standard
24 in order for it to cause, on a statistical basis,
25 that engine family to fail. So if we have an engine

1 family which has several subgroups, all of whose
2 average emissions are below the standard, then you
3 would not expect to find any vehicles, any more than
4 the one percent, exceeding the 2.33 sigma requirement.
5 So the only case that we are really talking
6 about where there is even a potential for fuel
7 economy penalty would be if there is a subgroup
8 whose average emissions are already exceeding the
9 standard. Under the compliance test procedures that
10 have already been waived by EPA, we already have
11 the authority to take enforcement action against such
12 subgroups.
13 So we are not talking about any real change
14 in that philosophy here.
15 CHAIRMAN JACKSON: Thank you, Mr. Austin.
16 I presume that you will have someone or yourself
17 here for the balance of the hearing?
18 MR. AUSTIN: Yes, and we appreciate the
19 opportunity to be able to rebut any testimony which
20 you will receive from the manufacturers on this today.
21 CHAIRMAN JACKSON: Thank you.
22 Next will be Chrysler.
23 MR. WAGNER: Good morning. My name is
24 Robert Wagner. I work for the Chrysler Corporation,
25 and on my right is Michael Grice from our Legal

1 Department.

2 Chrysler Corporation again welcomes the opportunity
3 to speak on the important subject of vehicle emission
4 control for California. We would like to emphasize,
5 as we have at previous Air Resources Board meetings
6 and EPA hearings, that Chrysler and the State of
7 California have the same basic objective, which is
8 to attain clean air goals as rapidly as possible
9 by eliminating automotive emissions as a contributing
10 source. We believe our efforts to this end have been
11 substantial, and we maintain a strong interest in
12 this continuous and sometimes frustrating struggle.

13 Regarding the necessity for more control, Chrysler
14 agrees that Southern California in particular contin-
15 ues to have an extraordinary air pollution problem
16 despite the billions of dollars and man hours expended
17 during the last two decades. This fact alone should
18 cause us to seriously question each new step that
19 is taken to be sure that a recognizable benefit
20 will result.

21 In this regard, we refer again to the conference
22 held in Los Angeles a year ago in January 1977 of the
23 most prominent experts in the field of air quality.
24 By invitation of the California Air Resources Board,
25 they gathered together to pool their knowledge and

1 hopefully establish direction for future improvements.
2 Disappointingly, the reports presented were not
3 conclusive, and no positive direction could be
4 established except to observe that additional study
5 was required. In fact, there was substantial dis-
6 agreement, and it is not at all clear, for instance,
7 what the effect of an NOx change would be downstream
8 of the emission source.
9 Certainly some of the experts felt that the
10 overall effect on oxidants depended on the amount of
11 hydrocarbons in the air, and it was more important
12 to control hydrocarbons than NOx. The experts did
13 agree on one thing, however: They agreed there is
14 a need for a comprehensive coordinated program to
15 better define ambient air conditions and the changes
16 that occur. They also recognized a need for better
17 control and coordination of the data gathering
18 activity.
19 Chrysler concluded, after listening to the
20 recommendations of the experts, that it would be
21 premature and irresponsible to insist that further
22 reductions of NOx emissions would result in measurable
23 improvements in air quality. We have strongly recom-
24 mended to the Air Resources Board that no additional
25 changes be made in the regulations until new information

1 is available which clearly indicates the direction
2 to move and the gains to be realized.
3 The new highway cycle NOx standard regulations
4 were proposed and adopted with very little prepara-
5 tion, or even conversation, with the industry. At
6 the ARB hearing, universal concern was expressed about
7 this method to achieve air quality improvement.
8 Questions were raised about the effect of the regula-
9 tions on other pollutants and the possible adverse
10 effect on air quality.
11 Chrysler stated at the ARB hearing, when the
12 highway cycle NOx standard was proposed, that the
13 ARB objective of reducing NOx emissions during highway
14 driving could be accomplished with the Highway Fuel
15 Economy Test Cycle and that Chrysler would be able
16 to meet those standards with recalibration and
17 additional development of our advanced electronic
18 control systems.
19 Nonetheless, we believe the outcome of this
20 hearing should be decided on whether there will be
21 a measurable effect on air quality of an additional
22 control put on highway NOx emissions. Despite the
23 obviously contrived extrapolations of 1978 vehicle
24 certification data, Chrysler does not believe that
25 the ARB has presented data which convincingly

1 demonstrate that improvements will be attained as
2 a result of the regulations. In fact, if we
3 extrapolate data using the new three-way catalyst
4 systems, it appears we will get a substantial reduction
5 in highway NOx emissions whether we need it or not
6 or whether we have a new regulation or not.
7 The point is that Chrysler does not believe the
8 ARB has presented adequate information to conclude
9 that California needs a new highway NOx control in
10 order "to meet compelling and extraordinary conditions.
11 We believe existing vehicle regulations
12 are more than adequate to accomplish that objective.
13 Another questionable area which needs con-
14 sideration in this hearing is the area of technical
15 feasibility. We remind you of our previous statements
16 regarding achieving the more stringent California
17 standards for 1980 and beyond. Even though a
18 confusing number of options may be available, the
19 fact remains that .41 hydrocarbons, 7.0 carbon
20 monoxide, and .4 NOx will have to be achieved in
21 the near future to maintain our presence in the
22 California market. We still have not been successful
23 in attaining those levels with sufficient confidence
24 to be able to meet quality audit and fuel economy
25 requirements also by 1982. The addition of highway

1 NOx control regulations does nothing to improve our
2 chances of meeting all the other requirements; there-
3 fore the technological feasibility requirement
4 within existing lead time is not met.
5 In conclusion, Chrysler believes that ARB has
6 arbitrarily decided that highway NOx controls will
7 improve California air quality. Until there is
8 scientific evidence to support ARB's position,
9 their request for waiver should be denied.
10 MR. GRICE: I have a couple of points I
11 would like to make here.
12 Mr. Wagner has provided you with our general
13 comments on California's request for a waiver in
14 this matter. I would like to address one aspect of
15 this request which I find troublesome.
16 As we all recognize, technological feasibility
17 and lead time must be established before a waiver
18 is proper. In this case, EPA is considering a waiver
19 request on a standard proposed and promulgated by
20 California about six months before the start of
21 certification of vehicles subject to the standard.
22 While Mr. Wagner has testified that we are con-
23 fident we will be able to comply in 1980 model vehicles,
24 it is readily apparent that this proposal will
25 increase both the complexity of the 1980 model

1 certification we are now starting and the risks of
2 unanticipated failure. This means further dealy in
3 an already cumbersome process, making certification
4 that much more difficult to obtain.
5 The addition of a second standard to the cer-
6 tification process, compounded by that delay, will
7 undoubtedly increase the number of last-minute changes
8 to correct unanticipated failures every manufacturer
9 experiences. This, in turn, will increase the likeli-
10 hood of deteriorating fuel economy, driveability or
11 even in-use emission control caused by the last-
12 minute changes.
13 The simple fact is that adequate lead time
14 would minimize these risks. The lead time permitted
15 by California in promulgating this standard is vir-
16 tually non-existent. As such, the California standard
17 would maximize the likelihood that we will experience
18 problems of the type I have mentioned.
19 I submit to you that California has not pro-
20 vided adequate lead time in this case as a matter of
21 law, even though compliance is likely. Accordingly,
22 California's request for a waiver should be denied.
23 I also would like to take one exception to
24 one point in Mr. Austin's statement this morning,
25 although it isn't totally relevant to the issues we

1 have raised.

2 He made a statement that fuel economy and

3 consideration of fuel economy is not relevant to

4 the question of feasibility. This is something I

5 could not disagree with more.

6 It is our position, and I think we have stated

7 it in the past, that fuel economy is a very relevant

8 consideration in determining the feasibility of

9 any standard, whether it is EPA promulgating a standard

10 or whether it is EPA acting on a waiver request of

11 California.

12 Quite simply, we believe that if a standard

13 results in or aggravates civil penalties under the

14 Energy Policy and Conservation Act, then as a matter

15 of the law it is not a feasible standard.

16 Either Mr. Wagner or I will be happy to answer

17 any questions you may have.

18 MR. GRAY: Does Chrysler plan to use

19 three-way catalyst systems in 1980 in California?

20 MR. WAGNER: Yes, sir.

21 MR. GRAY: With any exceptions?

22 MR. WAGNER: No.

23 MR. GRAY: You made the statement in your

24 testimony that with the use of such systems you expect

25 a substantial reduction of highway NOx emissions,

1 even apparently below what the California standard
2 would constrain the emissions to be.
3 In looking at the data submitted by the
4 ARB in their waiver request, the staff report that
5 supported the request, it appears that the data
6 seemed to indicate a very substantial control of
7 NOx over the highway cycle with three-way catalyst
8 systems. So is it fair to assume that the Chrysler
9 system will be substantially below that highway
10 fuel economy test NOx standard in 1980?
11 MR. WAGNER: Our present information is NOx
12 emissions under highway conditions are substantially
13 below Federal Test Procedure.
14 Now it is possible -- and we haven't worked
15 out all of the requirements yet, and we obviously
16 aren't there yet. But in the interest of maximizing
17 fuel economy, we may be able to increase the NOx
18 levels under highway conditions above those that
19 we are presently experiencing. We should, even under
20 those conditions, be considerably below the standards
21 proposed today or adopted by California for a waiver.
22 MR. GRAY: Right. With that --
23 MR. WAGNER: But we are still -- all I
24 am trying to say there is we are still in the process
25 of calibrating the system. Obviously, we have

1 driveability and fuel economy and emissions to consider,
2 and the whole thing is a trade-off.
3 MR. GRAY: Realizing that, then, I am
4 confused with your statement that the condition of
5 NOx control regulations over the highway cycle does
6 nothing to improve your chances of meeting the other
7 requirements; therefore, the technological feasibility
8 requirement within existing lead time is not met.
9 Even if you do increase emissions somewhat
10 because of other trade-offs, you are still substantially
11 below the standard.
12 MR. WAGNER: No. No. You are only talking
13 about highway standards there.
14 MR. GRAY: Right.
15 MR. WAGNER: In that statement that I made,
16 I am primarily concerned about point 4 NOx on FTP.
17 This new regulation doesn't help me a bit, and I
18 still don't know how I am going to meet .4 NOx on
19 FTP and still meet quality audit requirements for
20 California. We still don't know how to do that.
21 MR. GRAY: Okay.
22 MR. WAGNER: Because that's not feasible,
23 then this thing which adds to it is not feasible.
24 MR. GRAY: But this addition does not make
25 more difficult the difficult problem of achieving

1 .4 on the Federal Test Procedure; right?

2 MR. WAGNER: Theoretically, this does. We

3 are still so far away from actually meeting .4 with

4 all the other requirements that it's hard to evaluate

5 this additional one in terms of how much more difficult

6 is it. It is more difficult per se.

7 MR. GRAY: It's another requirement, but

8 one with the systems you expect to use in 1980 --

9 MR. WAGNER: 1980 is a 1.0 NOx requirement.

10 MR. GRAY: I am talking about the highway

11 fuel economy test NOx standard.

12 MR. WAGNER: Okay.

13 MR. GRAY: The levels of those systems

14 for that requirement are so much below it that I guess

15 I am confused as to how that requirement which you

16 don't see any problem in meeting will make it more

17 difficult in meeting the FTP .4 gram per mile NOx

18 standard. I don't understand the interaction there.

19 MR. WAGNER: Okay. Let's see if I can

20 explain it a little better.

21 In 1980, we are talking about 1.0 FTP NOx

22 requirement. Okay?

23 MR. GRAY: Yes.

24 MR. WAGNER: So the highway NOx requirement

25 is 1.33 grams per mile. We have stated, I guess

1 quite awhile ago, that we are pretty confident about
2 meeting all the requirements at the 1.0 NOx level
3 with three-way catalyst systems. Level of confidence,
4 pretty high.
5 Therefore, our level of confidence about meet-
6 ing a 1.33 under highway conditions is likewise
7 pretty high.
8 When we are talking about .4 NOx FTP, we
9 are talking about a different ballgame. Even with
10 three-way catalyst systems, we are in extreme diffi-
11 culty getting down to those additional levels.
12 An additional requirement sure doesn't help us
13 get there.
14 MR. GRAY: Right. I guess we can fully
15 appreciate that it may not help you get there, but
16 the problem is, since it's not really a technological
17 constraint because it's easy to meet the highway fuel
18 economy NOx standard with this kind of technology,
19 how does it --
20 MR. WAGNER: How is it an additional require-
21 ment?
22 MR. GRAY: Yes.
23 MR. WAGNER: It may not be an additional
24 requirement. Okay?
25 I cannot tell you in any absolute terms whether

1 it's a plus or a minus. It's just from an intellectual
2 standpoint it sure doesn't subtract from any of the
3 job. What is not feasible to start with is still not
4 feasible.
5 MR. GRICE: It's a further complicating factor,
6 and when you start about meeting .4 it is a substantial
7 complicating factor.
8 CHAIRMAN JACKSON: You changed it just
9 a little bit. I understood it to be an uncertainty
10 as to which direction it would go regarding the
11 complication. That was the uncertainty.
12 In other words, you don't know that it would
13 be more difficult nor less difficult because you
14 are not there and you just don't know. And that's
15 different from saying it is indeed going to be more
16 difficult.
17 MR. GRICE: It is, indeed. I think on
18 the basis of what Mr. Wagner has indicated it is
19 indeed going to be more difficult.
20 CHAIRMAN JACKSON: No, no.
21 MR. GRICE: Your question, Ben, directs
22 itself to you don't know whether it's going to
23 make it easier. Well, I can tell you as a lawyer
24 it isn't going to make it any easier. It can't
25 make it any easier in making .4.

1 CHAIRMAN JACKSON: Let's put it on a
2 technological basis, though.
3 Mr. Wagner has stated that he can meet the
4 1.0 NOx and 1.33. He knows that. He can do that,
5 the argument being that it doesn't make it any more
6 difficult to meet the 1.33 if he can meet the 1.0.
7 Now with regard to meeting .4 in the highway
8 cycle standard, you just don't know whether or not
9 you can meet .4 and you don't know if you meet .4
10 whether you can concurrently meet or far exceed the
11 highway cycle NOx standard. And that's the message
12 that I was getting, as opposed to saying you knew
13 that when you got down to meeting .4 on the FTP
14 it was going to be damn difficult to meet the highway
15 cycle standard with the same technology.
16 MR. GRICE: And that, I submit to you, is
17 a substantially complicating factor.
18 CHAIRMAN JACKSON: Complicated and uncertain?
19 MR. GRICE: And uncertain.
20 CHAIRMAN JACKSON: Right.
21 MR. LOW: Mr. Grice, with regard to the
22 lead time problems that you seem to be referring
23 to, is it because your testing programs aren't
24 up to speed enough to handle this additional requirement
25 and you are afraid that in certain instances you

1 might exceed the standard by some minimal amount,
2 or are you talking about your ability to design
3 vehicles to meet the requirements of this new
4 regulation?
5 MR. GRICE: This is going primarily to
6 the question of uncertainty. You have a standard
7 that is promulgated immediately prior to the begin-
8 ning of the certification process. You think that
9 in fact you have the technology that will enable you
10 to comply. However, that additional requirement is
11 going to further aggravate the certification process.
12 It is likely to cause further problems, further
13 changes of a last-minute variety which are not going
14 to be easy to solve --
15 MR. LOW: Excuse me. Are these design
16 changes that you are talking about as opposed to just
17 quality control problems?
18 MR. GRICE: Anytime you fail a certification
19 test in an unanticipated manner, you are going to
20 have to change your design.
21 MR. LOW: California does have a provision
22 whereby if you do exceed the highway cycle test
23 you can submit other data to demonstrate that it's
24 not a design problem but perhaps a test variability
25 problem. Does that help you out on your lead time

1 problem?

2 MR. GRICE: I don't think it does. I

3 just am submitting to you that the promulgation of

4 a standard, an additional test requirement and a

5 standard a few months before the beginning of a

6 certification process just fails to provide adequate

7 lead time.

8 MR. LOW: But you have stated previously

9 that you can meet the requirements or the standard?

10 MR. GRICE: We have confidence that we

11 will be able to meet them. I don't think anyone at

12 this point in time can flatly say, "Well, we will

13 meet that standard."

14 MR. LOW: Thank you.

15 MR. GRAY: While it's pretty well understood

16 that Chrysler may disagree with the California Air

17 Resources Board with respect to the need for additional

18 NOx control in Southern California, it appears that

19 you did not address whether or not the operation

20 over the highway cycle is representative of the

21 operation in Southern California or not.

22 In particular, the California Air Resources

23 Board in their request for the waiver and in the

24 statements they made today have really made the

25 point, as stated in their formal request, that

1 compliance with this standard will be based on emis-
2 sions measured during the highway fuel economy test
3 which the Board has found to represent typical driving
4 patterns in many urban areas of California.
5 Would you disagree with that conclusion by
6 the California Air Resources Board as well?
7 MR. WAGNER: I have no basis to disagree
8 with it. At the same time, I don't really have
9 much of a basis to agree with it. I just don't have
10 any supporting information for their statement.
11 MR. GRAY: Well, they did provide an analysis
12 in their staff report upon which they based that
13 judgment. Do you take issue with that analysis
14 and feel it's invalid?
15 MR. WAGNER: I don't know that it is invalid.
16 I think it's based on a pretty small sample of the
17 entire freeway driving conditions in the Los
18 Angeles Basin. I think that I could perhaps pick
19 some other segments of Los Angeles freeways and
20 develop a plausible argument that the opposite might
21 be true.
22 MR. GRAY: Well, certainly there would be
23 driving conditions which this cycle would not repre-
24 sent, but the only contention that the ARB has made
25 is that there is a substantial amount of urban

1 operation that is represented by this cycle. And
2 that's the question I am posing to you. Do you
3 disagree with --
4 MR. WAGNER: I have no -- I have no informa-
5 tion that we have developed that would support or
6 refute such a statement. We feel that it puts
7 together a plausible argument, and that's about
8 the most you can say for it.
9 MR. GRAY: So you are at least not today
10 taking issue with that part of California's determina-
11 tion; is that fair to say?
12 MR. WAGNER: Will you say that again, Chuck?
13 MR. GRAY: I said --
14 MR. WAGNER: Mr. Gray?
15 MR. GRAY: I'm trying to get a feel for
16 whether or not, since it wasn't specifically
17 mentioned in your statement, you would also take
18 issue with that part of California's determination
19 with respect to the need, separating the need with
20 respect to whether or not you need more NOx control
21 in Southern California as opposed to whether or
22 not this cycle even is representative of any operation
23 in Southern California.
24 Clearly if it's not representative of a sig-
25 nificant amount of operation in the urban area of

1 Southern California, then control of this cycle
2 wouldn't be very meaningful; and, therefore, there
3 would be some question about the need. So there
4 are two issues relative to need.
5 I am asking do you take issue with California's
6 determination simply that there is a substantial
7 amount of operation in California that is represented
8 by the highway test?
9 MR. WAGNER: There must be.
10 MR. GRAY: Okay.
11 MR. WAGNER: And I say that primarily because
12 there is so much freeway driving in Los Angeles
13 you ought to be able to pick out just about any kind
14 of cycle that would be representative of something.
15 Now whether or not the highway cycle as defined
16 represents a substantial or even a significant portion
17 of freeway driving in California, I guess I am not
18 in a position to judge.
19 MR. GRAY: I can't recall the exact location
20 of the statement, but as I recall the California
21 analysis at least implied it could be as high as
22 40 percent or more of the operation. If so, even if
23 they were optimistic by a factor of two it would be
24 substantial, I guess, then, and you wouldn't take issue
25 MR. WAGNER: But if they were optimistic

1 by a factor of 50, it would be a different story.
2 I don't know as to what degree they are being
3 optimistic, if they are.
4 MR. GRAY: Okay.
5 CHAIRMAN JACKSON: Mr. Wagner, on Page 2
6 of your statement, you said, "Despite the obviously
7 contrived extrapolations of 1978 vehicle certification
8 data, Chrysler does not believe that the ARB has
9 presented data which convincingly demonstrate that
10 improvements will be attained as a result of the
11 regulations."
12 I'm not sure what's behind your use of the
13 word "contrived."
14 Could you explain that a little bit?
15 MR. WAGNER: Well, perhaps that's a Robert
16 Wagner judgment -- Chrysler Corporation judgment
17 even -- but my feeling is that 1978 certification data
18 is not going to be representative of what California
19 will be experiencing in 1980. From what I have been
20 able to learn about not only Chrysler's projected
21 systems but our competitors' projected systems
22 for 1980, why the great majority of the new vehicles
23 will have three-way catalyst systems. So basing
24 your judgments on 1978 systems and extrapolating
25 from that base, to me, is a contrived way of justifying

1 that I don't believe is necessary.

2 CHAIRMAN JACKSON: One question we had

3 about your concern about meeting the fuel economy

4 standard by virtue of the implications of the

5 highway cycle NOx standard.

6 Is your inability to meet the fuel econony

7 standard based upon your intention to have cut loose

8 NOx control on the highway cycle as a means of

9 meeting your fuel economy standards in the future,

10 or is it just that you think that the standard on

11 the highway cycle will require you to put on more

12 control than you would have had to put on to meet

13 the .4 on the FTP?

14 MR. GRICE: I am a little confused by your

15 question. Let me explain a couple of things. I

16 think your question is directed about some of my

17 remarks. Am I correct, Ben?

18 CHAIRMAN JACKSON: Yes.

19 MR. GRICE: Okay. I think I made essentially

20 two points: Number one, the type of last-minute

21 change that this hastily promulgated standard is

22 likely to lead to can adversely impact fuel economy

23 on an individual vehicle.

24 The second portion of my comment, I was simply

25 disagreeing on the record with the statement by Mr.

1 Austin that fuel econony is irrelevant to the question
2 of feasibility. And I prefaced those remarks
3 with the indication that I didn't think it was
4 relevant to any of the issues that we were raising
5 here.
6 CHAIRMAN JACKSON: Well, I'm not really
7 trying to get on to the second point that you made.
8 The first point, which more or less deals with
9 technology, is the one that I am concerned about.
10 I am saying is the problem going to result from
11 the fact that you had planned on cutting loose NOx
12 control on the highway cycle as a means of improving
13 fuel economy at some point in the future, or is it
14 a problem with meeting a more stringent requirement
15 on the highway cycle than you would have to meet
16 meeting the .4 on the FTP?
17 MR. GRICE: It's really neither. It's
18 simply the fact that anytime you have to make a
19 change in the certification process immediately
20 prior to production it can and sometimes does result
21 in adverse impacts on the vehicle, whether it be
22 driveability, whether it be fuel economy.
23 CHAIRMAN JACKSON: So you are talking
24 about the 1980 --
25 MR. GRICE: I am talking about the practical

1 impact of what happens when you make a last-minute
2 change. Sometimes they are good; sometimes they are
3 bad. That's all I am saying.
4 CHAIRMAN JACKSON: I see. But you are
5 answering in the negative to my question, that your
6 plans had originally contemplated cutting loose NOx
7 control?
8 MR. WAGNER: What do you mean "cutting
9 loose"?
10 CHAIRMAN JACKSON: Not controlling to the
11 same extent as you would on the FTP.
12 MR. WAGNER No. Our intent was not to
13 play games with highway NOx.
14 CHAIRMAN JACKSON: In other words, the
15 penalty that you see is not because you had anticipated
16 reducing control of NOx on the highway cycle?
17 MR. GRICE: It's a penalty which is inherent
18 anytime California or the Environmental Protection
19 Agency at the very last minute changes the rules
20 of the game and this causes a complication in the
21 certification process, an unanticipated complication
22 in the certification process, and you run into,
23 as a result of those complications, problems in
24 the certification process.
25 CHAIRMAN JACKSON: So the answer to my

1 question, then, would be no?

2 MR. GRICE: I think it probably would be.

3 I'm not totally certain I comprehend your question.

4 CHAIRMAN JACKSON: Well, I am trying

5 to get at whether or not your concern about the

6 fuel economy impact was just totally because of the

7 fostering on of the new requirement and certification

8 and all the uncertainties attendent thereto, or whether

9 it was because you had anticipated in your plans

10 of meeting the fuel economy standard to reduce

11 control of the highway cycle and this new requirement

12 prevents you from doing that and that's going to

13 cost fuel economy?

14 MR. WAGNER: Let me answer that, Mike.

15 MR. GRICE: Okay.

16 MR. WAGNER: To answer your question

17 directly, Ben: No, we did not intend to juggle around

18 the highway NOx with the intent of improving fuel

19 economy. I think that it is only honest to tell

20 you that because we have fuel economy, driveability

21 and emissions to consider we will calibrate our

22 system to give us the best compromise involving all

23 three of those.

24 In fact, we expect to bring our highway NOx

25 levels to lower levels even in '79, particularly

as a result of this activity, our conversations with

1 EPA associated with electronic controls. We recognize
2 the concern that the regulatory bodies have in using
3 those controls. We expect that any system that we
4 come up with will be fully acceptable, not only
5 to EPA but also to California. It's obvious that
6 we will not be able to market our cars unless you
7 people approve of our systems.
8 Does that answer your question?
9 CHAIRMAN JACKSON: Thank you, sir.
10 Thank you, Mr. Wagner, Mr. Grice.
11 Why don't we take a lunch break and come back
12 about 1:10 and start with General Motors and then
13 Ford.
14 (Luncheon Recess)
15 CHAIRMAN JACKSON: We are ready, Mr.
16 Schwochert.
17 MR. CALHOUN: Mr. Jackson, other members
18 of the Panel, my name is Joe Calhoun. I am Assistant
19 Director of the Automotive Emission Control Office
20 for General Motors Corporation.
21 With me today is Mr. Harry Schwochert, who is
22 a staff engineer in the same department.
23 We have comments we'd like to make concerning
24 each of the three items being considered here today.
25 Mr. Schwochert will briefly summarize our statement

1 concerning the highway NOx standards. I will present
2 the statement concerning the assembly-line test pro-
3 cedures and the tune-up lable. At the end of our
4 statement, we will be happy to answer any questions
5 regarding any of these three items that you care
6 to ask.
7 Harry?
8 MR. SCHWOCHERT: General Motors concurs
9 with the intent of this proposed requirement that
10 exhaust emissions should be controlled under modes
11 of vehicle operation which measurably contribute
12 to air pollution. We want to help solve automotive
13 related air pollution problems, including the
14 particular air pollution problem in Southern California,
15 and believe that emission control program driving
16 schedules should reflect vehicle operation in the
17 area where emissions must be controlled.
18 Emission control requirements impose constraints
19 on the design and calibration of an automobile.
20 Control of NOx emissions require trade-off considera-
21 tions, among the more important of which are fuel economy
22 and vehicle driveability.
23 Furthermore, if NOx emissions are actually
24 reduced by this proposal, the characteristics
25 of the complex photochemical smog process are such

1 that this proposal may in fact result in an increase
2 of undesirable oxidants.
3 This proposed change in the emissions driving
4 schedule reflects a new constraint with yet unknown
5 effects on vehicle operating characteristics and
6 air quality benefits. General Motors recommended
7 to the California Air Resources Board that emission
8 performance under conditions other than those encoun-
9 tered in the Certification Test Procedure be given
10 more study prior to regulatory action.
11 The basis for this recommendation was fourfold.
12 First, the proposal addresses only one of the three
13 exhaust pollutants for which standards have been
14 established on the Certification Test Procedure.
15 Although, emission of some pollutants may be more
16 important under certain driving conditions, this
17 proposal does not recognize that the hydrocarbon and
18 carbon monoxide emissions on the Highway Fuel Economy
19 Test are very low for most catalytic converter equipped
20 vehicles.
21 Second, the proposal does not appear to be
22 directly relatable to projected air quality benefits.
23 For years, the need for improved air quality has
24 been measured in terms of the Certification Test
25 Procedure. The introduction of a second test procedure

1 appears to reflect a dissatisfaction with the repre-
2 sentivity of the Certification Test Procedure,
3 rather than to represent a well-considered solution
4 to any possible air-quality need. Under the ARB
5 proposal, compliance would be based upon two separate
6 test schedules, the Certification Test Procedure and
7 the Highway Fuel Economy Test, without any assignment
8 of relative importance to each schedule. In other
9 words, failure to meet the NOx standards for either
10 test schedule would constitute vehicle failure without
11 regard for NOx emissions on the other test schedule.
12 Third, on an overall basis, the information
13 contained in the ARB report prepared for the January
14 25, 1978 meeting did not clearly demonstrate a
15 need for an NOx standard based on the Highway Fuel
16 Economy Test.
17 The data presented on Page 19 of the ARB report
18 referenced above showed that the average ratio of
19 NOx emissions on the Highway Fuel Economy Test to
20 NOx emissions on the Certification Test Procedure
21 was about the same for 1978 California models compared
22 to vehicles manufactured prior to exhaust emission
23 control requirements. The actual data in the report
24 show a ratio of 1.15 for pre-control cars and
25 a ratio of 1.14 for 1978 California models. These

1 data would suggest that air quality has not been
2 depreciated and that on the average vehicles are
3 not being designed to operate differently under
4 highway driving conditions.
5 Fourth, the proposal places an additional
6 constraint on vehicle calibration and design with yet
7 undefined air quality benefits and fuel economy and
8 vehicle driveability effects. National energy concerns
9 suggest that the need be well defined for any regula-
10 tions which may adversely impact fuel economy.
11 The ARB proposal is, of course, intended to
12 discourage the use of emission control devices which
13 are designed to relax emission control during
14 vehicle conditions other than those encountered on
15 the Certification Test Procedure. These devices are
16 sometimes referred to as "defeat devices." We believe
17 that any attempt to eliminate the use of such
18 defeat devices should be a joint effort of the EPA,
19 ARB, General Motors and any other interested parties
20 to develop appropriate performance criteria. This is
21 particularly important in view of the possible
22 inconsistency between EPA and ARB certification
23 requirements which could arise regarding defeat
24 devices. To avoid the many difficulties caused by such
25 inconsistencies, EPA should withhold a waiver decision

1 until EPA and ARB are prepared, based upon further
2 study, to use uniform evaluation criteria for
3 eliminating the use of defeat devices.
4 MR. CALHOUN: The thrust of that statement
5 is, in essence, to say that we'd like to have some
6 uniform criteria, whatever it is.
7 CHAIRMAN JACKSON: Are you suggesting
8 that the criteria that CARB would use as proposed
9 here is different than what you perceived as being
10 used by EPA?
11 MR. CALHOUN: We don't know what the criteria
12 is that EPA is considering. The only concern that
13 we do have is that the method adopted by the California
14 Air Resources Board is composed of one restraint, and
15 it's conceivable that EPA could adopt something al-
16 together different.
17 CHAIRMAN JACKSON: Until they do, then you
18 don't have a problem?
19 MR. SCHWOCHERT: Well, I think there could
20 be a problem, because ARB, by their analysis and
21 their staff report, indicated there were some vehicles
22 that had defeat devices this year. None of them
23 were General Motors vehicles, but that would suggest
24 that the evaluation criteria are not consistent.
25 Some vehicles in California in 1978 would

1 fail the California requirement and should have
2 failed the defeat device evaluation. So I think
3 there could be an inconsistency. ARB listed, I
4 think, about five or six vehicles of 1978 vintage
5 that were certified that had defeat devices and
6 would have failed the performance criteria. So
7 there could be that inconsistency by their demonstra-
8 tion in their staff report.
9 CHAIRMAN JACKSON: Yes, but if they meet
10 the California requirement would they fail the
11 Federal requirement, whatever it might be that you
12 perceive that it might be?
13 MR. CALHOUN: We don't know that.
14 CHAIRMAN JACKSON: So you don't know that
15 there is an inconsistency?
16 MR. SCHWOCHERT: That's right.
17 CHAIRMAN JACKSON: So it's not like you
18 are saying there is something in place where there
19 is a known inconsistency, you just fear that there
20 is an inconsistency?
21 MR. SCHWOCHERT: There's a possibility.
22 CHAIRMAN JACKSON: I'd like to ask the
23 same question that I asked of Chrysler.
24 Does this proposal make any changes with regard
25 to your intent to decontrol NOx during the highway

1 cycle?

2 MR. CALHOUN: I think the point that Mr.
3 Wagner brought out in his testimony with Chrysler,
4 in that meeting the emission control requirement
5 along with fuel economy and driveability are certainly
6 a trade-off, and we try to optimize the system to
7 do that. So I don't envision us having to make many
8 changes, but certainly some of the systems that
9 we would probably consider in the future may have
10 been affected by this particular regulation.

11 CHAIRMAN JACKSON: In that you had planned
12 to achieve less control during the highway cycle?

13 MR. CALHOUN: No, I didn't mean to imply
14 that.

15 I am saying that we try to optimize our controls
16 primarily for the purpose of maximizing the emission
17 control simultaneously with maximizing fuel economy
18 and driveability. But certainly it wasn't the
19 intent to decrease the control of NOx on any other
20 particular driving schedule.

21 CHAIRMAN JACKSON: So you could argue
22 to say that the answer is no?

23 MR. CALHOUN: That's correct.

24 CHAIRMAN JACKSON: And that this wouldn't
25 change any of your plans as it related to the intensity

1 of control of NOx in the highway cycle?

2 MR. CALHOUN: I would have to say this:

3 That we look at a lot of different ways of complying

4 with these regulations, and I don't know what we

5 would have finally adopted in the future. But certainly

6 our intent was not to adopt any kind of defeat device.

7 MR. SCHWOCHERT: It would have been an

8 imposition as far as it's another constraint.

9 CHAIRMAN JACKSON: Let me ask the question

10 here: If indeed the regulation will not result in

11 a reduction as based upon demonstrated performance,

12 do you theorize that it could have prevented increases

13 in NOx that would have resulted if you did have

14 plans to decontrol NOx to some extent on the highway

15 cycle?

16 MR. CALHOUN: I don't know if we had any

17 particular plans to decontrol NOx on the highway

18 cycle. But certainly if a manufacturer had intended

19 to do that, this would be affected by this particular

20 regulation.

21 CHAIRMAN JACKSON: So you agree, then,

22 that it has the potential of preventing an increase

23 in NOx emissions that could have occurred if it

24 was not for this regulation?

25 MR. CALHOUN: Yes, I think we have to

1 agree with that.

2 CHAIRMAN JACKSON: If it's reasonable to

3 assume that it could have occurred?

4 MR. CALHOUN: Yes.

5 MR. SCHWOCHERT: If that device would have

6 been allowed to be produced under the Federal regula-

7 tion which prohibits the use of defeat devices.

8 If it had slipped through that crack, so to speak,

9 I suppose it could have occurred.

10 MR. CALHOUN: Let me point out one other

11 thing, something that Mr. Gray brought up this morning.

12 You do have at the current time, and the ARB

13 does also, a requirement that's aimed at defeat devices.

14 If that's the intent, then your regulation already

15 in existence may satisfy the requirement. I'm not

16 sure that it is, but it is something that could be

17 taken into consideration.

18 MR. GRAY: I guess I am not really sure

19 where General Motors comes out on this. By beginning

20 your statement with "General Motors concurs with

21 the intent of this proposed requirement that exhaust

22 emissions should be controlled under modes of vehicle

23 operation which measurably contribute to air pollution,"

24 then with the recommendations that follow, are those

25 meant to take away from the original concurrence

1 with the approach, or are they just to encourage
2 consistency between Federal and California State
3 action?
4 MR. CALHOUN: Our primary purpose is to focus
5 on consistency. We would not like to see EPA come
6 along next month or next year, for example, and
7 adopt something altogether different that may be
8 a different constraint which also could have some
9 adverse effect on our ability to optimize the system.
10 MR. GRAY: Would you go so far as to
11 encourage the EPA to adopt a very objective criteria
12 like this which would reflect --
13 MR. CALHOUN: We are certainly not suggesting
14 that you adopt the ARB method of a portion of whatever
15 this particular problem is. We are suggesting that
16 perhaps this is something that the vehicle manufacturers,
17 EPA, and the ARB should take a very critical look at.
18 MR. SCHWOCHERT: I think we do, in general,
19 support objective -- I think your reference was to
20 performance criteria in contrast to design criteria,
21 I guess. If you will, to some extent, you might
22 interpret the advisory circular to be aimed at
23 more of a design evaluation in reference to a
24 performance criteria.
25 We do in general, of course, support that
concept because it allows us, then, to know how you

1 expect the vehicles to perform, and then we can
2 design the vehicle to meet those performance
3 constraints.
4 MR. GRAY: I think that California's
5 discussion of why they felt this requirement was
6 needed really gets to the heart of the problem here.
7 The current requirement that the California Air
8 Resources Board and the Environmental Protection
9 Agency has to try to deal with this problem requires
10 a subjective determination.
11 Subjective determinations work, but they are
12 more open to disagreement, disputes. The ideal is
13 to have an objective criteria that can fairly
14 evaluate, across different manufacturers in this
15 case, whether or not a system meets the requirement.
16 This move by California is to try to define, if you
17 will, the defeat device problem from the objective
18 criteria standpoint, and in fact I would ask: Doesn't
19 that approach really fall pretty much in line with
20 your basic suggestion that exhaust emission should
21 be controlled under modes of operation which contribute
22 to air pollution?
23 Their whole intent, it seems, as I understand
24 their background material, was to establish a level
25 that reflected similar reductions as their FTP

1 standards reflect.

2 MR. CALHOUN: I think you brought up some-

3 thing this morning that bears on your particular

4 point, and that is: Is it an enforcement tool, or

5 is it a new standard? I see both things being con-

6 sidered here today.

7 CHAIRMAN JACKSON: What do you think it is?

8 MR. CALHOUN: Well, it's kind of difficult

9 to say. It seems to me that if you were in Mr.

10 Austin's shoes you would probably say it's a new

11 standard. If it's aimed primarily at defeat devices,

12 then it could be considered an enforcement tool.

13 You've looked at this and wrestled with this trying

14 to decide what is it.

15 I think in response to your comment, Mr. Gray,

16 we have already had a meeting with some members

17 of the EPA staff, and I believe that you were there,

18 primarily for the purpose of discussing defeat devices.

19 This is something that I think should be pursued.

20 MR. GRAY: Do you think that a reasonable

21 and fair way of handling this would be to try to

22 establish objective criteria that would in fact have

23 as the objective to insure that urban emissions

24 are reduced to the assumed proportion that the

25 FTP numbers reflect? In other words, not constrained

1 by the fact that you just happen to have picked this
2 particular type of driving. We have had previous
3 people say that there are a variety of types of
4 driving that occur in the urban area. Would you go
5 so far as to say that an objective of trying to
6 strive for a portion of reduction in urban emissions
7 is a correct objective?
8 MR. CALHOUN: I don't know if it's correct
9 or not. I can say this: That certainly something
10 that's done to resolve the air pollution problem
11 in Los Angeles or San Francisco would be desirable.
12 But the difficulty that we would have with this is
13 that we already have one set of standards that
14 we are required to meet, and they are the standards
15 as determined from the FTP.
16 So now we are imposing something else, and
17 which is the one that's important?
18 CHAIRMAN JACKSON: Let me follow up on that,
19 if you don't mind, just one moment.
20 I've heard you say that you don't think that
21 you would change your plans with regard to decontrol-
22 ling NOx in the highway cycle, saying that was not
23 a part of the corporate approach to this emission
24 control in the future as far as General Motors was
25 concerned. So that's not an issue.

1 Do you agree that if you can meet the FTP
2 NOx number that the systems will also meet the
3 highway NOx number, given that you have no intention
4 to decontrol NOx on the highway cycle?
5 MR. CALHOUN: I don't know what the future
6 will hold, but you would certainly think that would
7 be the case based on what we see today.
8 CHAIRMAN JACKSON: Now is that true for
9 both the 1980 system and systems in the future?
10 MR. CALHOUN: I don't know. I can't specu-
11 late as to whether that would be true or not.
12 MR. SCHWOCHERT: I think we really may
13 be trying to oversimply emission control a little
14 bit by talking about decontrolling on the highway
15 test, because the vehicle really is the total system
16 and there are lots of components on the vehicle
17 that contribute to emissions. It's not something
18 that you just turn on or off.
19 I have control or don't have control. So I
20 think maybe that's an oversimplification.
21 CHAIRMAN JACKSON: It may be, but everybody
22 understands it.
23 But I'd like to pursue this just a little bit
24 more, because I think it's very important.
25 The issue is the ratio of the levels of

1 control between the FTP and the highway cycle. Do
2 you have a basis for saying that you know that if
3 you meet the FTP NOx number you will not meet the
4 highway cycle NOx number, given the ratio that's
5 been established by the CARB?
6 MR. CALHOUN: We don't have any basis for
7 making that kind of statement at this time.
8 CHAIRMAN JACKSON: And you are also aware
9 of the fact that the CARB has adopted a procedure
10 whereby that if you failed the NOx number on the
11 highway cycle in certification you still have the
12 opportunity to come back and demonstrate that it
13 wasn't necessarily the fault of the design of the car
14 but may be attributable to variability in the test
15 procedure or variability in the car itself?
16 MR. CALHOUN: Yes, we are aware of that.
17 CHAIRMAN JACKSON: So those two things
18 together add up, at least in my mind, to saying that
19 you are not telling me that you have a real problem
20 with this in terms of your ability to meet the
21 NOx standard on the highway cycle.
22 MR. CALHOUN: That's correct. Based on
23 the data that we've looked at -- and I think the
24 ARB staff published this in their report. I think
25 that most of our vehicles were already in compliance --

1 most if not all, I believe, were in compliance with
2 the standard.
3 I'd like to reiterate one point that we made
4 earlier. That is, that if this is aimed at defeat
5 devices, and we know that this is a concern of EPA,
6 then we would like to see whatever the procedure
7 that is going to be used that the criteria be uniform.
8 That's, in essence, the thrust of our statement.
9 CHAIRMAN JACKSON: That, of course, is
10 something to the future, and rest assured that your
11 hypothetical of the EPA coming out with something
12 in a month isn't going to happen. Maybe two months
13 (laughter).
14 MR. GRAY: I was really probing, because
15 I was quite honestly impressed with that initial
16 statement. It's a problem that I think we all
17 recognize that needs to be approached, and we have
18 had objections to the old approach of handling the
19 problem; today we are hearing objections to the new
20 approach. General Motors, at least, hasbeen willing
21 to go far enough to say that they concur with the
22 intent.
23 Is there any way you can be a little more
24 specific in terms of what that means in terms of
25 an objective guideline or requirement that could

1 really be implemented in an equitable manner.

2 MR. CALHOUN: Let me say this: That all

3 of these regulations are aimed at controlling emissions

4 from the automobile, and if there is an air pollution

5 problem, and certainly there is in certain parts of

6 California, then any procedure that's aimed at

7 that, provided it isn't irrational or an extreme,

8 is one that General Motors would support.

9 We are interested in solving this air pollution

10 problem also.

11 MR. GRAY: Do you think that California's

12 proposal is reasonable and a fair way of attacking

13 that objective?

14 MR. CALHOUN: I don't know, frankly.

15 I am worried about what's going to happen a year

16 from now or two years from now about any constraint

17 that you, EPA, will come along with.

18 MR. GRAY: If the EPA requirement is

19 consistent with this requirement that California has

20 adopted, would it then be, in your opinion, a fair

21 approach to try to solve this problem?

22 MR. CALHOUN: I don't know if it's fair

23 or not, but we can live with it.

24 MR. GRAY: Okay. I'd like to go to the

25 second part of that statement. There's a lot said

1 in that one sentence.

2 Under modes of operation which measurably

3 contribute to air pollution, would you take issue

4 with the Board's finding that the highway cycle

5 does represent typical driving patterns in many

6 urban areas in California to a significant extent?

7 Would you concur with that finding or take issue

8 with it?

9 MR. CALHOUN: I think they based that

10 on data they got from Caltrans, and we don't have

11 any data to the contrary.

12 MR. GRAY: Does it seem reasonable based

13 upon their analysis? Would you take issue with

14 their determination?

15 MR. CALHOUN: We have not looked at any

16 data at all, so I can't say that it's unreasonable

17 or that it's reasonable. But I do know there is

18 a lot of high-speed driving in the urban areas.

19 MR. GRAY: So you wouldn't, in effect,

20 argue that the highway cycle is not representative

21 of urban freeway driving on the other side?

22 I mean either it's representative of urban

23 freeway driving to some extent, and California offered

24 its representative to a very significant extent,

25 or it's not.

1 Do you feel, based upon your expertise, and
2 certaily General Motors has been perhaps more in
3 the area of characterizing vehicle operation than
4 perhaps anyone, that that's a reasonable determination?
5 MR. CALHOUN: I think, as I said earlier,
6 looking at the Caltrans data, and I do know they
7 make all kinds of measurements all over the State of
8 California, and if they provided the ARB with data
9 to support the speed they specified in the staff
10 report we don't have any data to the contrary.
11 So we cannot say that it's wrong.
12 MR. GRAY: Okay. I guess in particular I
13 am thinking of the G.M. Chase Car Program that covered
14 at least the Los Angeles Area.
15 Have you had an opportunity to consider the
16 results of that study relative to California's
17 determination?
18 MR. SCHWOCHERT: We have not tried to
19 assess the weighting of various types of driving,
20 trying to characterize driving into a certain number
21 of different types and then try to weight that.
22 But neither has, really, the ARB report done that.
23 It just says that it represents significant amounts
24 of driving in California, and you can take almost
25 any schedule, I think, and show there was a fair

1 amount of driving in California, since California is
2 a pretty big area and a lot of freeways and a lot
3 of surface streets. We have not tried to determine
4 what fraction of the time is spent under highway
5 driving modes and compared to the California study.
6 MR. GRAY: Well, then, it seems like on
7 the surface you would think that it's a reasonable
8 determination if you haven't, based on the data base
9 you have, tried to show that it's not. It seems
10 like a pretty simple question. There's not intended
11 to be any hidden meaning.
12 MR. SCHWOCHERT: What do you mean by "sig-
13 nificant," if you think it's a simple question? If
14 you were to weight the two schedules we are talking
15 about, how would you weight them for driving purposes?
16 From a fuel economy standpoint, a determination
17 has been made that it's 55/45 type of weighting.
18 How would you weight them, I guess, from an emissions
19 standpoint in Southern California?
20 MR. GRAY: I think that's a question I
21 am really posing to you.
22 MR. CALHOUN : We can't give you --
23 MR. GRAY: I mean just in the broad
24 context --
25 CHAIRMAN JACKSON: It's a draw (laughter).

1 MR. GRAY: -- of whether or not you disagree
2 with the determination that that represents operation
3 which measurably contributes to air pollution. I
4 mean you use general words like that, too.
5 Would it classify in that category of operation
6 that you have referred to in your statement?
7 MR. SCHWOCHERT: I think so.
8 MR. GRAY: That's a fair statement. Thank
9 you.
10 MR. LOW: Let me ask a question.
11 You made a statement on Page 2, the second
12 paragraph, that if NOx emissions are actually reduced
13 that this proposal may result in an increase in
14 oxidants.
15 My question to you is do you foresee an
16 actual decrease in NOx emissions from General Motors'
17 systems as a result of this proposal?
18 MR. CALHOUN: As of now, I would say no.
19 MR. LOW: You have no intent to make any
20 changes that would reduce NOx emissions?
21 MR.CALHOUN: No.
22 MR. LOW: So you recognize a need for
23 this as perhaps a protection against a defeat device,
24 but you don't see it as decreasing NOx emissions
25 in California?

1 MR. CALHOUN: No.

2 MR. LOW: Okay. Thank you.

3 MR. SCHWOCHERT: Except if a different

4 relationship between highway NOx and FTP NOx occurs

5 as a result of the use of different control systems,

6 for example, and different technology.

7 CHAIRMAN JACKSON: Based on your knowledge

8 now, though, you could, by virtue of the manipulation

9 of the electronic controls, affect an increase of

10 NOx emissions on the highway cycle, but that's in-

11 consistent with your plans?

12 MR. CALHOUN: Yes.

13 MR. SCHWOCHERT: Yes.

14 CHAIRMAN JACKSON: I had one other question.

15 You make a point on your first page that "First,

16 the proposal addresses only one of the three exhaust

17 pollutants for which standards have been established

18 on the Certification Test Procedure."

19 I'm not sure what your point there is. Should

20 they have standards for HC and CO also on the highway

21 cycle?

22 MR. SCHWOCHERT: The staff in their report

23 addressed hydrocarbons and CO and said there is

24 no need for a standard on the highway test because

25 CO and hydrocarbons are very low under warmed-up

1 driving conditions with catalytic-converter equipped
2 cars. We agree with that statement, and we are
3 not saying that there ought to be a relaxation of
4 hydrocarbon standard as a result of this.
5 But perhaps one ought to think about the CO
6 standard. I guess you ought to think about all
7 pollutants. If now this new schedule represents a
8 significant amount of driving, we ought to look at
9 all pollutants and maybe consider the requirements
10 for other pollutants, for example.
11 If you are going to place a performance require-
12 ment on two tests, you could consider weighing the
13 importance of the two tests and then look at the
14 pollutants. That's the point we are making.
15 Maybe you ought to consider this. If EPA and
16 the industry and the ARB got together and talked,
17 that's one of the things you might talk about, per-
18 formance criteria on everything.
19 CHAIRMAN JACKSON: Why don't we talk about
20 your statement on the assembly-line test procedures.
21 MR. CALHOUN: On December 19, 1977, the
22 California Air Resources Board adopted new Assembly-
23 Line Test Procedures for 1979 model year Passenger
24 Cars, Light-Duty trucks and Medium-Duty Vehicles.
25 These new procedures are similar to those in effect

1 for the 1978 model year, except that one of the
2 options for compliance, Option I, has been deleted
3 and a revised Option II, which is averaging, is
4 now required. Option II was changed to require that
5 not more than one percent of the sample can exceed
6 the exhaust emission standard plus 2.33 standard
7 deviations.
8 General Motors submits the following comments
9 for consideration by the Environmental Protection
10 Agency.
11 Let's take a look at the tail of the distribution
12 curve. I'd like to very briefly comment on that.
13 General Motors supports the goal of the
14 Air Resources Board in continuing to reduce air
15 pollution. We also agree with the Air Resources
16 Board's Assembly-Line Test Procedure which bases compli-
17 ance upon the average emission levels of an engine
18 family. End of line test data from past model years
19 show that the average emissions from General Motors
20 vehicles are well below the California Emission
21 Standards.
22 Nevertheless, General Motors fundamentally
23 disagrees with this proposed regulation because it
24 places a performance requirement on the extreme
25 tail of the emissions distribution curve. We do not

1 believe that it is technically sound and fair to
2 consider any enforcement action based on the one
3 percent point of the distribution curve.
4 Present vehicle exhaust emission requirements
5 are generally based upon the important statistical
6 parameter, the sample mean. Certification procedures,
7 the procedures which have existed since the advent
8 of emission control requirements, have been based
9 upon the mean vehicle. One of the options of the
10 1978 California assembly line test procedure defines
11 the compliance requirements based upon the mean
12 emissions of a sample and a projection of this sample
13 statistic to the entire population. General Motors
14 agrees with this averaging principle.
15 Air quality is a function of the average emissions
16 of a population of vehicles and is not influenced to
17 any significant degree by one percent of the vehicle
18 population.
19 Therefore, the development of any statistical
20 plan, such as the proposed revision to quality
21 audit test, should recognize the statistical significance
22 or confidence which can be associated with estimating
23 the emissions performance of the population from a
24 random sample. There must be a reasonable confidence
25 level for invoking these requirements which include

1 possible sanctions. This confidence level should
2 take into account the fact that there are sampling
3 variations. The proposal is technically deficient
4 in this area.
5 A factor which adds to the concern expressed
6 above is the non-normality of emission distributions.
7 You heard some comment about that this morning from
8 Mr. Austin and, I think, Mr. Rubenstein, I think
9 Mr. Rubenstein in particular.
10 ARB determination of the cutoff point was based
11 on the assumption that if the emission from a population
12 of vehicles is normally distributed and the average
13 emissions are precisely at the standard, only one
14 percent of the vehicles would be expected to have
15 emissions greater than 2.33 standard deviations above
16 the standard.
17 However, the distribution of emissions of
18 General Motors engine families has never followed
19 the theoretical random variability pattern. As a
20 result of practical real-world conditions, the dis-
21 tribution of emissions of General Motors Vehicles
22 is skewed. The Air Resources Board proposal does
23 not take into consideration the skewness of exhaust
24 emission distributions and, thus, is improper.
25 The ARB Staff rejected the above arguments

1 on the basis that quality control improvements were
2 the only changes necessary to meet the proposal.
3 You heard that again this morning. General Motors
4 has and will continue to make quality control improve-
5 ments regarding our products, and this will be done
6 as a matter of good business. We also continue to
7 review our vehicle designs in light of the emission
8 control requirements, the ability of our products
9 to be manufactured and assembled while high-quality
10 standards are maintained and many other requirements.
11 Special emphasis has and is being placed upon these
12 considerations as a result of the proposed assembly-
13 line test requirements.
14 Nevertheless, at the present time, we have
15 not been able to identify what is required to meet
16 this proposal.
17 Let's look at the effect of this proposed regu-
18 lation on the air quality improvement.
19 General Motors has always strived to meet or
20 perform better than the emission control regulations
21 as adopted by the EPA and the ARB, including the
22 Assembly-Line Test procedures. This is supported
23 with California Quality Audit Data for the 1977 model
24 year averaging 0.28 hydrocarbon, 3.6 CO, 1.25 NOx,
25 well below the standard. General Motors supports

1 the goal of continuing to reduce pollution but does
2 not believe that our ability to produce and sell
3 automobiles should be placed in jeopardy and/or
4 dependent on passing this more stringent regulation
5 when we are now demonstrating that average emissions
6 are meeting or are lower than the standards, and this
7 is what really affects air quality.
8 The ARB Staff stated that they expect that
9 there will be no adverse impact on air quality as
10 a result of the regulation. They go further and
11 state that there will be an emissions benefit resulting
12 from the new regulation, ". . .although the (ARB) Staff
13 is unable to quantify definitely those benefits."
14 Although no data regarding possible air pollution
15 benefits have been presented, air quality is not
16 influenced to any significant degree by imposing
17 controls on the tail end of the distribution curve.
18 I'd like to also point out that this is another yard-
19 stick by which compliance is to be determined.
20 As the EPA is aware, the emission control
21 standards in California for the model year 1978 were
22 0.41 hydrocarbon, 9.0 CO, 1.5 NOx. These standards
23 are carryover from 1977 and for the 1979 model year.
24 However, the ARB Assembly-Line Test Procedures that
25 were also used to verify production compliance in

1978 have now been changed by the ARB for 1979, for which they are requesting a waiver. We believe that the implementation of this Assembly-Line Test Procedure change at this time is improper and should not apply to any vehicles certified on carryover data.

We believe it is unfair that a manufacturer who in good faith has complied with a set of certification and compliance rules in 1978 should then be evaluated by a different compliance measuring stick in the subsequent model when when the certification procedure and standards have not changed. In other words, a carryover vehicle passing 1978 and 1979 certification requirements would now fail 1979 Assembly-Line Test Requirements if the waiver is granted. It's possible that that would happen. Inadequate lead time, as it applies to these vehicles, suggests that the applicability and effective date should be a consideration in your decision.

In summary, we conclude that we must oppose the waiver request for the following reasons:

1. An emission performance requirement placed upon the extreme tail of the distribution curve is fundamentally inappropriate and lacks technical justification.

2. General Motors believes that the Air

1 Quality is not influenced to any significant degree
2 by imposing controls on the tail of the distribution
3 curve. We are now demonstrating that average emissions
4 are well below the standards. It is only this latter
5 statistic that really affects air quality.
6 3. The Assembly-Line Test Procedure should
7 not be changed in a year when the primary certifica-
8 tion procedure and standards are carryover. Inadequate
9 lead time, as it applies to these vehicles, suggests
10 that the applicability and effective date should be
11 a consideration in your decision.
12 Concerning the last item, I'd like to point
13 out that, in effect, this regulation would retroactively
14 apply to something that has already been certified
15 and approved in the last two model years.
16 We therefore recommend that this proposed
17 recommendation be returned to the Air Resources Board
18 for reconsideration.
19 CHAIRMAN JACKSON: We've never been able
20 to do that.
21 MR. CALHOUN: To return it to them?
22 CHAIRMAN JACKSON: That's right.
23 MR. CALHOUN: You have to make a decision
24 one way or the other is what you are suggesting.
25 CHAIRMAN JACKSON: On Page 4, it says,

1 "Special emphasis has and is being placed upon these
2 considerations as a result of the proposed Assembly-
3 Line Test requirements. Nevertheless, at the
4 present time, we have not been able to identify what
5 is required to meet this proposal."
6 Can you say, then, that you cannot meet the
7 proposal?
8 MR. CALHOUN: No, we can't say that at
9 this time. What we are suggesting is that it may
10 be necessary to lower the mean in order to bring
11 in this tail end of the distribution. That's one
12 possibility.
13 We have listened to the ARB Staff and suggested
14 that only quality control improvements were necessary
15 in order to satisfy that. We don't believe that.
16 Certainly, quality control has some bearing on it,
17 but we are not sure yet that just simply by using
18 the quality control techniques that we are going to
19 be able to comply with this particular regulation.
20 It may necessitate changing the calibration and moving
21 the mean.
22 CHAIRMAN JACKSON: Just for the purposes of
23 correcting the record, I believe in response to a
24 question that we asked the CARB did say that some
25 design changes, calibration changes for example,

1 may have to be made in addition to quality control.
2 My question, though, gets more to the point
3 of do you know that you will not be able to meet these
4 requirements with the carryover certification for
5 the applicable model year?
6 MR. CALHOUN: We suspect that one of our
7 engine families will have some difficulty complying
8 with this particular requirement.
9 CHAIRMAN JACKSON: One engine family?
10 MR. CALHOUN: Is it more than one area?
11 MR. SCHWOCHERT: I think that you can say
12 one possibly will have more trouble than others, but
13 I don't think we can say with certainty that we
14 will not be able to meet the requirement. We just
15 really at this time haven't identified all that is
16 required to keep from producing an occasional vehicle
17 -- and that's really all it takes by this one percent
18 requirement -- to have emissions in excess of the
19 standard.
20 So at this time it's kind of iffy. We've
21 got families that are close to meeting the requirement
22 now; some aren't. Most of them that don't are based
23 on the data or analysis that was presented by the
24 ARB in their staff report.
25 CHAIRMAN JACKSON: Is this a big engine

1 family, the one that you mentioned?

2 MR. SCHWOCHERT: Volume-wise, it's not

3 one of the larger ones.

4 CHAIRMAN JACKSON: Is it a specific configura-

5 tion within the engine family that causes the problem?

6 MR. SCHWOCHERT: No.

7 CHAIRMAN JACKSON: Just the entire family?

8 MR. SCHWOCHERT: Yes.

9 CHAIRMAN JACKSON: Volume-wise, it's not

10 a big volume family; is that correct?

11 MR. SCHWOCHERT: That's correct.

12 MR. CALHOUN: I think the ARB staff has

13 indicated that some of our engine families would not

14 comply, and this is what we are saying; and even with

15 the best quality control techniques, we aren't sure

16 that they will comply.

17 CHAIRMAN JACKSON: Are you saying that

18 you know that you cannot do anything between now

19 and the application of this rule to see that that

20 engine family will meet this rule?

21 MR. CALHOUN: Well, we are working awfully

22 hard to try to see to it that they all meet the

23 requirement. But as of today we can say that they

24 are not all complying with the ARB regulation.

25 CHAIRMAN JACKSON: But are you saying you

1 can't make them meet that requirement?

2 MR. CALHOUN: No. No, I am not saying that.

3 I am saying we are working hard in trying to get

4 there, but I cannot assure anyone here that we will

5 in fact be there when production time comes.

6 MR. GRAY: Why do you think that the dis-

7 tribution for some of your groups is skewed toward

8 the high side? Have you investigated that problem?

9 I understood your answer to one of Mr. Jackson's

10 questions to be that you don't think it's some sub-

11 group of the engine family that's causing this problem,

12 that it's more of a random effect; is that correct?

13 Across the engine family, a random effect?

14 MR. SCHWOCHERT: It certainly is affected

15 by both, but it's not just subgroups that are a

16 concern to us. But the fact that emission characteris-

17 tics might be different for a subgroup of vehicles

18 increases the problem, but it's just not the fact

19 that you have subgroups that have a problem complying

20 with the one percent requirement.

21 The emissions -- to get back to your first

22 question, why do you think the emission distributions

23 are skewed, historically if you look at emissions

24 data, it's skewed. It's practically skewed, because

25 practically it's bounded on one side. It's not

1 normal because it's bounded on one side. It's just
2 that simple, really. I mean it's a practical thing.
3 MR. GRAY: But the variability, in effect,
4 increases the emissions. When you have that varia-
5 bility that exists, it tends to skew it toward higher
6 emissions due to what? And I assume the answer is
7 variability in production.
8 MR. SCHWOCHERT: I think it's variability
9 in production and variability in testing, both.
10 MR. GRAY: Variability in testing shouldn't
11 skew the distribution; should it?
12 MR. SCHWOCHERT: Well, of a big enough popu-
13 lation, it should tend to wash out. But you never
14 get any way out here on the negative side, and you
15 might occasionally get one way out on the positive
16 side. I don't know how practical that is, but
17 certainly test variability might have some tendency
18 to occasionally generate a very high emission number.
19 It can never generate one that's offsetting on
20 the other side.
21 MR. GRAY: Sure. It could be normal
22 distribution, and that would be the purpose of the
23 one percent grouping of vehicles.
24 Another cause could be the subgroup issue.
25 If it was, say, the major cause of the problem, then

1 an across-the-board calibration change might pull
2 you under the requirement. So I am a little bit
3 confused as to why you haven't perhaps tried to
4 identify what's really causing that.
5 MR. CALHOUN: We are working on those things.
6 MR. SCHWOCHERT: If we look at historical
7 data, we find non-compliance with this one percent
8 requirement and probably for every engine family
9 for every quarter that we look at we don't find
10 non-compliance just because it's one subgroup that
11 has all of its vehicles in excess of this standard.
12 There are vehicles from all of the subgroups or from
13 many of the subgroups within that family that have
14 one vehicle, and when you add up one vehicle from
15 three or four subgroups, unless you have an extremely
16 large sample size, you have now exceeded one percent
17 requirement.
18 So it isn't specifically a subgroup.
19 MR. GRAY: If that's the case in production
20 variability, then maybe CARB's comment that you alluded
21 to earlier, which was the way you solved that
22 problem is to improve your quality control -- I mean
23 if it's production variability, perhaps quality control
24 improvement can help. If it's a subgroup issue,
25 quality control improvement probably can't help you

1 because you may need a chance in calibration. That's
2 why I was trying to probe into this area as to which
3 is your problem.
4 MR. CALHOUN: I think it's a combination of
5 those things.
6 MR. GRAY: So, then, part of California's
7 contention that you can improve your quality control
8 will probably take some burden off of it but not
9 enough; perhaps you have to go after the subgroup
10 issue as well.
11 MR. CALHOUN: I think we have to take
12 that into consideration, yes.
13 CHAIRMAN JACKSON: The CARB, according to
14 your statement on Page 4, said there will be an
15 emissions benefit resulting from the new regulation.
16 Then you point out that they were unable to quantify
17 definitively those benefits.
18 If we look at it in a different perspective --
19 that is, the protectiveness of air quality of the
20 standard -- do you think that this proposal will
21 make that protectiveness any less protective?
22 MR. CALHOUN: No.
23 MR. JACKSON: You make a statement in
24 your conclusion about the inadequacy of lead time
25 to deal with this problem of making changes to classes

1 of vehicles that have alredy been certified, and
2 you make a point about there's not enough lead time
3 to do that. I think that's the point you are making.
4 Is that indeed the case?
5 In other words, you are not going to be able
6 to sell this one configuration in California if
7 this rule is adopted?
8 MR. CALHOUN: No, I am not saying that.
9 What we are saying is that the standard that the ARB
10 is adopting is something that is retroactively being
11 applied to a family that is already approved for
12 sale in California. That to me just kind of funda-
13 mentally seems wrong, to retroactively adopt a
14 requirement that today is already in compliance
15 with the rules and regulations.
16 CHAIRMAN JACKSON: But other than, in your
17 words, it's fundamental inequity, it doesn't mean that
18 you can't do it?
19 MR. CALHOUN: That's right. We don't know
20 at this particular time whether we can do it.
21 CHAIRMAN JACKSON: The tune-up lable comments?
22 MR. CALHOUN: I won't bother to read our
23 comments concerning the tune-up label. The only
24 thing I would point out here is that we have spent
25 some time working with the staff. Most of the

1 problems we had with that requirement have been
2 worked out. So, we don't see any basis for denying
3 it.
4 I'd like to have that statement become a part
5 of the record.
6 CHAIRMAN JACKSON: Thank you, Mr. Calhoun,
7 Mr. Schwochert.
8 We are ready.
9 MR. JENSEN: Mr. Chairman, I am Donald A.
10 Jensen, Director of the Automotive Emissions and
11 Fuel Economy Office of Ford Motor Company.
12 First, I will discuss the recommendation of
13 the highway NOx standards.
14 Before going into the specific reasons for
15 our recommendation concerning California's request
16 for a waiver of preemption on its highway NOx standards,
17 let me briefly summarize our testimony before the
18 CARB and our concerns with the proposed standards.
19 In our testimony before the CARB, Ford recom-
20 mended against adopting what, in essence, would be
21 a highway NOx standard because of the absence of
22 an adequate data base which would show whether meeting
23 a .53 highway, as well as a .4 city, NOx standard
24 would be technologically feasible in 1982 and subse-
25 quent model years, and what the adverse effect of

1 these standards would be on the control of other
2 pollutants and on fuel economy.
3 To deal with the question of the use of so-called
4 defeat devices, we recommended that, rather than
5 imposing a new highway NOx standard, the manufacturer
6 be required to demonstrate, on the basis of a sound
7 engineering judgment, the effective operation of
8 emission control devices during prolonged steady-state
9 operation.
10 Adoption of a new highway NOx standard raises
11 several major concerns, particularly with respect to
12 the 1982 and subsequent model years.
13 First, there are grave doubts as to the techno-
14 logical feasibility of meeting a .53 grams per mile
15 and .8 grams per mile highway NOx standard for
16 1982 and subsequent model year cars and trucks.
17 Ford does not have development experience or data
18 sufficient to reach a conclusion that these standards
19 can be met within that time frame.
20 In the absence of such experience and data,
21 any decision as to a waiver of preemption for such
22 a standard must be deferred.
23 Second, these standards should not be imposed
24 in the absence of data that would answer very
25 important questions relating to the net effects of

1 the highway NOx standards on air quality from
2 potential increases in HC/CO emissions and potential
3 reductions in fuel economy due to restricted operation
4 on some modes of both city and highway cycles.
5 We will skip the third point because the
6 Air Resources Board took care of that this morning.
7 If you would, Mr, Chairman, go over to the middle
8 of Page 3 of the statement, or the upper part where
9 it starts out "Our final concern . . ."
10 Our final concern is that adoption of a highway
11 NOx standard would substantially increase the total
12 amount of California development workload and facilities
13 (estimated at 48 percent and 4 new dynamometers)
14 needed by us during the certification process.
15 Furthermore, we would be incapable of fully implementing
16 this development program until after 1981 4,000-mile
17 car development testing, which must be essentially
18 completed if we are to certify 1981 models on a
19 timely basis.
20 Before a waiver can be granted, we believe
21 the following changes to California's proposal must
22 be made: Then, Mr. Chairman, if we would, we can
23 go over to the top of Page 4 because, again, the
24 Air Resources Board this morning indicated that it
25 was not their intent to apply this to Title 13.

1 Second -- which really becomes first on Page
2 4 -- with respect to the 1982 and subsequent model
3 years, the waiver must be denied at this time,
4 since sufficient data do not now exist to enable
5 EPA to make a reasoned determination with regard
6 to the consistency of the California requirement with
7 Section 202(a) of the Clean Air act, as amended.
8 In this regard, EPA's .4 NOx program should
9 provide data which can be used for such a determination
10 in time for the 1982 model year. EPA must make
11 the determination of availability of technology
12 and lead time based on an objective analysis of
13 available data. If the data are not available, or
14 as in the case of the recent truck waiver decision,
15 not relevant, then EPA must find that the requirements
16 for a waiver have not been met.
17 In summary, Ford continues to recommend that
18 the implementation of a specific highway NOx
19 standard be deferred until need, feasibility, and
20 trade-offs can be defined. The Ford statements
21 before CARB at the January 25, 1978 and the February
22 23, 1978 hearings are attached, and we request they
23 be made a part of the record of this hearing.
24 Mr. Saybolt of our Office of the General Counsel
25 would like to comment further on the 1982 and subsequen

1 mdoel year NOx standard, after which we would be
2 happy to answer any further questions that the panel
3 may have.
4 Tom?
5 MR. SAYBOLT: Mr. Chairman, other members
6 of the hearing panel, my name is Tom Saybolt, and
7 I am an attorney with Ford Motor Company.
8 Today I'd like to spend just a few minutes
9 very briefly touching on four items.
10 The first one is a practical item. That is,
11 it is our understanding that a transcript of today's
12 proceeding won't be available for roughly a week,
13 and we would request that the hearing record remain
14 open until June 19 to allow interested parties
15 time to evaluate the transcript and file comments
16 with the EPA in connection with this proceeding.
17 CHAIRMAN JACKSON: Other than the fact
18 that the transcript won't be available for a week,
19 why do you need until the 19th for the record to
20 be open?
21 MR. SAYBOLT: It's going to take a certain
22 amount of time to review the transcript. Undoubtedly
23 it's going to be a lengthy one. We have a holiday
24 coming up next week. There's mail time to get the
25 transcript, and things like that. We feel that 30

1 days from this hearing would be a reasonable period
2 of time within which to file additional comments.
3 MR. LOW: Having the transcript, how do
4 you feel that will help you? You have been here
5 today. I guess we have some concerns about leaving
6 the hearing record open that long. It just delays
7 the decision process is really what it does, and
8 that seems to fly in the face of some of the lead-time
9 constraints you've discussed.
10 MR. SAYBOLT: But by the same token we
11 have to have an opportunity to be able to review
12 everything we said here with the words in front of
13 us. It's one thing to attend a hearing and take
14 notes and try to concentrate on what's being said
15 and what your reaction is, and it's a little different
16 when you have a transcript and you can sit down
17 and go through it point by point.
18 MS. PETRAUSKAS: We don't want to make
19 an unnecessarily big deal out of it, but I saw
20 this morning, for example, that the Air Resources
21 Board submitted, I believe they referred to it as,
22 an evidentiary record. We want to have an opportunity
23 to study that as well as anything else that may
24 have been filed on the record.
25 I can't sit here and tell you today what it is

1 that I am going to want to file because I have to
2 look at the whole record in order to be able to
3 determine that. Thirty days seemed like a reasonable
4 request.
5 CHAIRMAN JACKSON: It's been my experience
6 that two weeks has never made a difference in terms
7 of our ability to deal with these matters, and if
8 it will help Ford get its business together, well,
9 then, I guess we will concede to Ford's wishes
10 and we will leave the record open until June 19.
11 MR. SAYBOLT: Fine. Thank you very much,
12 Mr. Chairman.
13 The second point I'd like to make is, in line
14 with the California Air Resources Board request
15 this morning to make their prior submissions with
16 respect to .4 NOx part of the record, we request
17 that our prior submissions with respect to that
18 point also be incorporated as part of the record
19 of these proceedings.
20 Specifically, the prior submissions that we
21 would want to have incorporated are, number one,
22 our November 3rd, 1976 submission to the CARB;
23 two, our December 14, 1976 submission to CARB;
24 third, our January 6, 1977 submission to CARB; four,
25 our June 22nd, 1977 submission to CARB; five, our

1 September 9, 1977 submission to EPA in connection
2 with the August 3rd and 4th waiver hearing; and,
3 finally, our October 13, 1977 submission also to
4 EPA in connection with the waiver hearing that was
5 held last fall as well.
6 CHAIRMAN JACKSON: You are going to make
7 those documents available to us?
8 MR. SAYBOLT: We can make additional
9 copies of those documents available to you.
10 CHAIRMAN JACKSON: I'd hate to make a
11 mistake trying to procure all of those from the
12 different sources and render the record inadequate
13 because of our indiligence.
14 MR. JENSEN: Be sure you say the lawyers
15 have to find them, Mr. Chairman.
16 MR. SAYBOLT: The third point that I'd
17 like to make this afternoon --
18 MR. LOW: We would like to have five
19 copies of those submissions if it wouldn't be
20 too difficult.
21 MR. SAYBOLT: Fine. That's acceptable.
22 MR. LOW: Thank you.
23 MR. SAYBOLT: The third point that I'd
24 like to make this afternoon involves the fact
25 that the Administrator of the Environmental Protection

1 Agency recently reached a decision in a proceeding
2 under Section 209 of the Clean Air Act which we
3 believe has a direct bearing on California's request
4 for a waiver today.
5 Specifically in its April 7th, 1978 decision
6 granting California a waiver of preemption with
7 respect to emission standards for 1983 and subsequent
8 model year light-duty trucks and medium-duty vehicles,
9 the Administrator on the question of lead time and
10 technology stated that based on testimony of the
11 CARB and manufacturers he, and I quote, cannot conclude
12 that the requisite technology cannot be developed and
13 applied within the available lead time in order
14 to achieve compliance with the California standards,
15 close quote.
16 Under Section 209, the Administrator is
17 required to make a number of very specific determina-
18 tions. One of these determinations is whether the
19 state requirements are consistent with Section 202(a)
20 of the Clean Air Act. In purporting to make his
21 determination of consistency on the basis that there
22 is no evidence that the requisite technology could
23 not be developed, the Administrator failed to make
24 an affirmative finding as mandated by Section 209
25 of the Clean Air Act in the court in International

1 Harvester v. Ruckelshaus that the requisite tech-
2 nology can be developed within the available lead
3 time. In doing so, the EPA Administrator, contrary
4 to the court's holding in International Harvester,
5 placed on the manufacturers the insurmountable
6 task of proving a negative requirement beyond a
7 reasonable doubt.
8 I think it becomes obvious that what the
9 Administrator did in the recent truck waiver decision
10 was identical to what was being done in the suspension
11 proceeding at issue in International Harvester,
12 particularly when you compare the language of Section
13 209(b) with that of the old Section 202(b)(5)(d).
14 That section provides, of course, that the Administra-
15 tor could grant a one-year suspension of the 1975
16 HC and CO standards if he made an affirmative
17 determination that, among other things, a manufacturer
18 had established that effective control technology
19 was not available or had not been available for
20 a sufficient period of time to achieve compliance
21 prior to the effective date of those standards.
22 Rather than making that affirmative determina-
23 tion, the Administrator concluded, in denying the
24 application for suspension, that based on the informa-
25 tion supplied by the manufacturers, and it was on

1 the record, that he was unable to make the necessary
2 determination with respect to technological feasibility.
3 Judge Leventhal, you may recall, of course,
4 held that the Administrator was required not to make
5 that kind of negative finding but, rather, was to
6 make a very positive determination as to just what
7 was required. And that certainly is the rule that
8 should have been applied in the recent truck waiver
9 decision, and we trust that is the rule that will
10 be applied here.
11 Furthermore, as the Administrator correctly
12 recognized in his June 10, 1977 heavy-duty vehicle
13 waiver decision, the burden of establishing that
14 the requisite lead time exists rests on the CARB.
15 In reviewing the evidence offered by the manufacturers,
16 the Administrator must determine whether, based on
17 reliable, objective test data, a requisite technology
18 can be -- not can't be, can be developed within
19 the available lead time.
20 In the absence of such concrete data, the
21 Administrator must defer granting California's request
22 for a waiver.
23 I think the approach taken in the April 7 decision
24 makes meaningless the express provision for Federal
25 review of California requirements in the opportunity

1 for a full public hearing which must accompany this
2 review. Taken to its logical conclusion, it would
3 mean that a requirement with respect to which
4 there is absolutely no information is the one
5 most eligible for a waiver because it is the one
6 with respect to which it is the easiest to conclude
7 that no showing of infeasibility has been made.
8 This certainly Congress could not have intended,
9 and we don't believe that the law permits that.
10 The final point that I want to make is something
11 that was raised this morning by a California Air
12 Resources Board witness, and that involved a question
13 posed to the witness regarding the promulgation of
14 the highway cycle NOx standard.
15 We would fully agree with California's position
16 that this standard requires the promulgation of a
17 rule, and that to do otherwise simply would not
18 have, according to California law -- it's the
19 California EPA, like the Federal EPA, Section 307(d)
20 of the Clean Air Act requires that any kind of
21 new obligation that's going to be imposed on a
22 manufacturer can only be done after the regulated
23 parties have had an opportunity for a hearing, that
24 there has been notice, and that there in fact has
25 been a rule promulgated.

1 Those are all the comments that I have at this time.
2 CHAIRMAN JACKSON: As to your last comment,
3 you are not suggesting that we are not doing this
4 improperly, this matter that's before us here?
5 Are you suggesting that we are doing something im-
6 proper?
7 MR. SAYBOLT: You mean in terms of holding
8 a waiver hearing with respect --
9 CHAIRMAN JACKSON: That's correct.
10 MR. SAYBOLT: Absolutely not. I think
11 that a waiver is required.
12 CHAIRMAN JACKSON: Then do you also conclude
13 that it's a standard as opposed to an enforcement
14 procedure?
15 MR. SAYBOLT: Yes. Yes, and I think
16 California, at least based on our review of the
17 record, has also certainly treated that as a standard.
18 For instance --
19 CHAIRMAN JACKSON: I know that. I know
20 that. I am just asking what your legal opinion of
21 the status of that is.
22 MR. SAYBOLT: I would regard it as a
23 standard, absolutely.
24 CHAIRMAN JACKSON: Have you, by virtue
25 of your previous comment, given us notice that you

1 are going to petition fo· review the Administrator's
2 truck decision?
3 MR. SAYBOLT: Well, Mr. Chairman, as
4 you know, of course, we have several remedies available
5 to us under the Act in that regard. Conceivably
6 when the time comes, you yourself may find that you
7 have to withdraw the waiver that you granted to
8 California in this area.
9 For instance -- just bear with me a moment.
10 Representative Moss, for instance in 1967 when they
11 were considering the preemption provision noted,
12 and I quote, California is not, however, given a
13 blanket check by this amendment. Implicit in this
14 provision is the right of the Secretary to withdraw
15 a waiver at any time after notice and opportunity
16 for a public hearing if he finds that the State of
17 California no longer complies with the conditions of
18 the waiver.
19 What I am saying, in essence, is we have
20 several options available to us, as do you.
21 MR. GRAY: In the statement that you
22 presented, there was one reference that I recall
23 to the need, and that was in your closing remarks.
24 Do you take issue with California's contention
25 that there is a need to control NOx emissions during

1 urban operation and, further, that their contention
2 that the highway cycle represents, to at least
3 some degree, urban operation?
4 MR. JENSEN: My feeling is that there is,
5 particularly with electronic controls coming into
6 widespread use, a need for the regulating agency,
7 whether it's California or EPA,to know how that
8 electronic engine control operates to assure the
9 regulator that there is not a deliberate attempt
10 to have a defeat device or to put emissions in the
11 air that would adversely affect air quality.
12 There's several ways to do this. EPA, at
13 least in their current operation, the way they are
14 going currently as I understand it from your budget
15 document, has an electronic expert in your shop,
16 Mr. Gray, and one also in the Certification Branch.
17 We are busy educating them almost on a daily basis
18 as to what's inside the little black box at Ford.
19 There's a lot to be said for the California
20 Air Resources Board's simplicity in just saying 1.33.
21 I don't know which way is the best way to go, but
22 there certainly is a need to do something so that
23 you can be assured, whether it's EPA or whether it's
24 California, that there is no electronic device
25 controlling that engine that would negate the intent

1 of controlling the emissions from the car.

2 MR. GRAY: Can you see another way that

3 you could objectively make such a determination other

4 than what California has asked for?

5 MR. JENSEN: I think the defeat device

6 provision in the EPA advisory circular is one way

7 to proceed, which is the way we are currently working

8 with EPA. I think that would have to be revised

9 as we get more into the electronic -- inside the

10 black box. As you probably realize, at Ford we

11 are now on the electronic engine controlled second

12 generation. I think we will end up with, and all

13 the other car companies will, ten or twelve genera-

14 tions, and god knows what's going to be in that little

15 black box before we get through.

16 I feel we have a real responsibility to keep

17 the government informed, both California and EPA,

18 their technical people as to everything we know that

19 we are trying to do within that black box. Certainly

20 the simplicity of the California system has some

21 advantages. I don't know whether it's the best

22 way yet or not because I don't know what's going

23 to be in the little black box at DEC-3.

24 MR. GRAY: That's sort of part of the

25 problem. The approach they have taken is an end of

1 the line objective test of what's in the box, and
2 since what's in the box is continuously changing,
3 in effect across manufacturers and with time for
4 a given manufacturer, the question is simply put:
5 What other objective evaluation of performance of
6 what's in that box is there except for something
7 similar to what California has asked for? Certainly
8 the current procedure which is subjective is an
9 approach, but we often hear the plea for an objective
10 evaluation.
11 MR. JENSEN: I'm not arguing against
12 what California has done. I hope I didn't --
13 MR. GRAY: Well, I guess I'm calling
14 for what --
15 MR. JENSEN: You've got a defeat device
16 advisory circular where it says you've got to operate --
17 the system's got to operate so that it's not outside
18 the temperature ban and a whole series of criteria
19 in there. So that's another approach, and that's
20 the one we are currently following for the certifica-
21 tion with EPA in 1979. That's one approach.
22 CHAIRMAN JACKSON: But you agree that the
23 California approach will be in some ways more
24 restrictive than that EPA approach?
25 MR. JENSEN: For the particular system that

1 we happen to have in place originally in the 1979
2 models, it was more restrictive than the EPA approach.
3 We have what we call a lean combustion control system,
4 an LCC, and which is part of our electronic engine
5 control and operates about 29 percent of the mile-
6 age within the CVS cycle and, I think. about 13
7 percent of the time of the CVS cycle as I recall.
8 Our initial data on that would indicate that
9 it would exceed the 1.33 NOx in the highway cycle.
10 We were going to use it in the 351W engine in the
11 1979 models at the request of the Chairman of the Air
12 Resources Board, even though there was not a regula-
13 tion in effect. He asked if in the interest of --
14 I've forgotten what phrase he used, but whatever
15 the interest was we took it off in California until
16 we can recalibrate it. So it met the EPA requirements
17 and did not meet the California requirements.
18 So there are things like that that are going
19 to come up. We thought the defeat device was the
20 living end, and so did EPA. Then we got some
21 electronic devices, and we find out it probably
22 isn't.
23 CHAIRMAN JACKSON: Okay.
24 MR. GRAY: As far as a measure, though,
25 of the need for such a regulation, we have to refer

1 to whether or not that test reflects the way the
2 vehicle operates in the urban area. Do you take
3 issue with CARB's determination that that test is
4 a reasonable measure of the vehicle's contribution
5 to the NOx in the urban area?
6 MR. JENSEN: Well, I have to answer it
7 two ways. I've got scientists back at Ford that
8 disagree with everything about the automobile putting
9 out NOx, and they can sit here and argue all day.
10 If you are talking about if that's the right
11 percentage -- and I think that's what your question
12 is -- of time, whether you drive in the city or
13 highway driving, we don't disagree with that.
14 You've listened to them, too, I'm sure,
15 and I think most scientists from anyplace will argue
16 about at what point the main problem with the NOx
17 is from automobiles or from stationary sources and
18 whether it's in the high up or ground level and
19 all kinds of things that you have heard about before.
20 I don't want to get into that, if I may.
21 If your question is: Is that about the right
22 proportion of highway versus city driving, we don't
23 have any data that conflicts with that. We are
24 not arguing that point.
25 MR. GRAY: In 1980, will Ford have

1 in California anything other than three-way catalyst
2 systems?
3 MR. JENSEN: I'm not positive, and I'm
4 talking from memory. I can change it for the
5 record when I get back home and check. I think
6 on the smaller engines we may very well not have
7 three-way catalysts. They may not be required.
8 We may be able to meet the standard without the
9 three-way catalyst.
10 I'd appreciate it, Mr. Chairman, if I could
11 answer that question for the record, because I
12 haven't got the information with me.
13 CHAIRMAN JACKSON: Yes.
14 MR. JENSEN: It won't take 30 days. As
15 soon as I get back.
16 CHAIRMAN JACKSON: You mean 30 more days
17 (laughter)?
18 MR. GRAY: For the other vehicles that
19 do have three-way catalyst systems -- and I guess
20 it would be safe to say that at least most of
21 Ford's production would have three-way catalyst
22 systems; is that correct?
23 MR. JENSEN: Yes, sir.
24 MR. GRAY: I think the staff report and
25 other data and testimony we have heard today indicate
that the three-way system, because of its inherent

1 control characteristics, tends to porportionally
2 reduce NOx to a much greater extent than this pro-
3 portional reduction from the pre-controlled vehicles.
4 The 1.33 factor, highway-to-city on uncontrolled,
5 turns to, according to the CARB 1978 three-way
6 system data, I think .51 or something ratio. That
7 plus the other testimony would imply that those
8 systems just inherently give you a break with
9 respect to this 1.33 requirement.
10 First of all, do you disagree that the three-
11 way system has that kind of capability inherently;
12 and, secondly, if so, how could you argue a techno-
13 logical feasibility problem?
14 MR. JENSEN: On the one three-way system
15 that we had, I think that's accurate.
16 We have other three-way systems, and every
17 engine family has to be controlled because of
18 different combustion chamber design and all kinds
19 of things. We have to go through the trade-offs
20 in every single engine family. This LCC I mentioned,
21 the lean combustion control, was primarily a
22 fuel economy device. It's just like the carburetor
23 is rich when you start up and gets into the lean
24 operation for the cruise and all kinds of things.
25 It's a refinement of that kind of lean operation

1 at higher speeds or cruise speeds with the LCC.
2 Some of the data that we have shows it saves about
3 seven percent in fuel economy.
4 Well, as you go into different trade-offs, the
5 LCC -- as electronic controls are applied to three-way
6 catalysts, this may very well not occur. So I
7 can't tell you how each calibration will work out.
8 I'm trying to give you the general principle. We
9 do like the LCC, primarily for fuel econony purposes,
10 not to generate or cut down on NOx one way or the
11 other.
12 MR. GRAY: You would think that that system
13 with the three-way catalyst system could still offer
14 substantial fuel economy benefits? Is that what
15 I am hearing, or that there is a possibility of that?
16 MR. JENSEN: Yes.
17 MR. GRAY: Do you have an estimate of what
18 that would be?
19 MR. JENSEN: Again, I'd like to supply
20 that for the record. We think there is about a
21 seven percent benefit, and I don't really know.
22 Maybe you know, Helen.
23 Excuse me just a minute. Let me ask my
24 lawyers if they remember. They went to more meetings
25 than I did, and they were here all morning. Excuse

1 me just a second.

2 (Off-the-record discussion not reported.)

3 MS. PETRAUSKAS: I am not sure I understand

4 Mr. Gray's question. You are saying what is the

5 fuel economy benefit of using a system like the

6 LCC in conjunction with the three-way catalyst?

7 MR. GRAY: Isn't that what you were really

8 suggesting that you might want to do? If you just

9 had the three-way system which controlled the stoichi-

10 ometric, then the data available before us indicates

11 that the three-way system on the highway cycle controls

12 NOx to a very substantial degree, especially in rela-

13 tion to the California requirement. So in order for

14 that inherent control capability to be diminished,

15 you would have to override the functioning of the

16 three-way system like this system could do, for

17 example.

18 MR. JENSEN: Yes. Let me get some data on

19 what happens with the LCC with a three-way catalyst,

20 because apparently it hasn't come up in the discussion.

21 We must have some, because the LCC is a part of our

22 future control system.

23 Again, I'll supply that when we talk about

24 our 1980 models, and I'll send that in as soon as

25 I get back.

1 MR. GRAY: Okay.

2 MR. JENSEN: I assume we've got it. We

3 must have it.

4 MS. PETRAUSKAS: I believe that the seven

5 percent figure that you referred to earlier reflects

6 the fuel econony detriment associated with having

7 to recalibrate the LCC system in order to meet a

8 1.33 ratio.

9 MR. GRAY: That's probably an oxidation

10 catalyst system.

11 MR. JENSEN: That's the oxidation system

12 for the 351W. We haven't got the three-way catalyst

13 data, and that's what you are asking for.

14 MR. GRAY: That's the trade-off of EGR

15 and NOx control in that context. But the three-way

16 system adds an additional complexity to the fuel

17 economy benefit of this LCC system?

18 MR. JENSEN: Yes.

19 MR. GRAY: If there's no argument with

20 respect to the technical feasibility of the three-

21 way system that's controlling to near stoichiometric

22 during the highway cycle, then the issue is are

23 there override systems that are necessary for

24 fuel economy or some other reasons that might not

25 only negate the advantage of the three-way system

1 but extend the emission levels beyond the 1.33
2 level.
3 MR. JENSEN: I understand the question.
4 I'll try to get some data. I hate to talk just in
5 general principles unless I have some data. I
6 better get some data for you and for me, too.
7 MR. GRAY: I guess, to make the question
8 a little more specific, the issue would be: With
9 the three-way system and its inherent control
10 capability, an override like the LCC would increase
11 NOx. If it increased it up to 1.3 times the applicable
12 standard, you certainly get some fuel econony benefit.
13 So that's the first part of the question.
14 The second would be: What incremental fuel
15 economy benefit would you gain from further increasing
16 NOx which would then put you in a non-compliance
17 situation in this situation? That's the real ques-
18 tion. How much additional --
19 MS. PETRAUSKAS: But in the second instance
20 you are assuming that whatever the system we are
21 talking about would be one that would meet the
22 present EPA defeat device requirements. I mean you
23 don't want us to speculate about a defeat device.
24 You want something that will satisfy the EPA defeat
25 device requirement and not satisfy the 1.33 and

1 what's the increment between those two?

2 MR. GRAY: I guess the real question is

3 not whether or not it would satisfy the EPA plans

4 but whether or not the system that Ford currently

5 plans to use, how it would perform with respect to

6 a three-way system. The issue with respect to

7 EPA down-the-road acceptance of this system is some-

8 thing that I think that is more appropriately left

9 out of the answer.

10 MS. PETRAUSKAS: Yes. But implicit in the

11 answer would be that any system we plan on using

12 would be a system that we believe would be --

13 MR. GRAY: I understand that. That has

14 to be implicit, sure.

15 Maybe there is one part of this general area

16 that you can answer here. Do you have any indication

17 or evidence to indicate that a three-way system

18 without an override control logic would have any

19 problem complying with the California requirement?

20 MR. JENSEN: You mean --

21 MR. GRAY: A three-way system with enclosed

22 loop control, near stoichiometric on the highway

23 cycle. Do you have any indication that that system

24 could not comply on any of your vehicles with the

25 California requirement?

1 MR. JENSEN: I think from our data so
2 far we will have to recalibrate. The last I heard,
3 and I am talking again now from memory, we had
4 calibrations that were like at 1.5, and we have
5 to recalibrate the LCC to get down to the 1.33,
6 if that's your question.
7 MR. GRAY: As I understand it, you will
8 be answering that part of the question as a follow-up.
9 But perhaps a more direct question that we passed
10 over was: Do you have any evidence that would indi-
11 cate that a three-way system without an override such
12 as the LCC -- in other words, a three-way system
13 that's controlling to near stoichiometric on the
14 highway cycle, do you have any evidence that that
15 system would not be able to comply with the California
16 requirement?
17 MR. JENSEN: No. Based on the current
18 three-way system we are using, it could meet the
19 California requirement quite handily. That's the
20 data the California Air Resources Board quoted, and
21 we agree with that.
22 CHAIRMAN JACKSON: So you have to cut out
23 control?
24 MR. JENSEN: Yes.
25 CHAIRMAN JACKSON: You wouldn't have to cut

1 out control, but you would cut out control to bust
2 that standard?
3 MR. JENSEN: We'd either recalibrate the
4 LCC or take it off. I assume we -- I wouldn't even
5 assume. We'd recalibrate. I'm using the word
6 "recalibrate" with "reprogramming," really.
7 MR. GRAY: Right.
8 CHAIRMAN JACKSON: Can we take about a
9 five-minute break?
10 MR. JENSEN: Okay.
11 (Short recess.)
12 CHAIRMAN JACKSON: Mr. Jensen, do you want
13 to talk about assembly-line testing?
14 MR. JENSEN: Sure.
15 One of the new elements introduced by these
16 regulations is a requirement that a manufacturer
17 make reports to the California Air Resources Board
18 when it finds that more than one percent of the
19 vehicles tested under the quality audit requirements
20 for a particular engine family exceed an applicable
21 standard by more than 2.33 standard deviations.
22 As we understand it, the purpose of this
23 requirement, as described on Page 13 of Staff Report
24 77-26-1, which is to identify "quality-related
25 effects," within an otherwise conforming group of

1 vehicles.

2 Further, it is our understanding that no
3 enforcement action would be taken unless the manu-
4 facturer's report indicates the existence of "quality-
5 related defects," and the manufacturer fails to
6 set forth and implement an appropriate plan of
7 corrective action.

8 This element of the regulations is very
9 important in that it makes workable a requirement
10 that could otherwise be very complex, vague, and
11 potentially infeasible. For example, Ford is aware
12 of no data which would indicate that the one percent/
13 2.33 sigma criteria can accurately identify defective
14 subpopulations -- if no quality defect can be
15 identified, it is obviously difficult to propose
16 a fix.

17 We have only one concern with regard to
18 the feasibility of this requirement, and that is
19 the ten working day reporting requirement set forth
20 in Section 3 of the assembly-line test procedures
21 on Page 18. Ten working days is simply too short
22 a period in which to analyze and project the average
23 emissions for each engine code/transmission/inertia
24 weight combination and Ford presently has 114 such
25 combinations, excluding medium-duty trucks, tested

1 for information only, and 225 such configurations
2 if these trucks are included. That was one thing
3 you'd have to do during this ten days. The second
4 thing is to complete an engineering evaluation of
5 the cause of emission levels in excess of 2.33
6 sigma above the standard for each vehicle exhibiting
7 these levels; next determine "the nature of the
8 problem" -- presumably this means to determine
9 if there exists a commonality in the causes identified
10 and, if so, to explain why they occurred; and, finally
11 to propose corrective action.
12 Ford believes that, at the very least, a
13 waiver of preemption for this requirement should
14 only be granted on the condition that the regulations
15 are amended to permit the manufacturer to obtain
16 up to an additional 30 days to submit information
17 which is not available at the close of the ten-day
18 period. Set forth in the Attachment is suggested
19 language illustrating one way to implement this
20 recommendation.
21 In closing, I would simply add that in our
22 testimony before the Air Resources Board we supported
23 the averaging approach for quality audit evaluation
24 and again do so today. We did note that elimination
25 of the "90 percent" option will require manufacturers

1 to run additional 50,000 mile vehicles with attendant
2 increase in workload, facilities, and costs in those
3 cases where deterioration factors are obtained which
4 do not reflect the design capability accurately.
5 This was a particular concern for the 1979 model
6 year in the case of carryover vehicles. It was
7 because of this timing problem that we had recommended
8 that California retain the "90 percent" option for
9 at least the 1979 model year. This is the same point,
10 essentially, that General Motors was making.
11 In general, however, we support approval of
12 the waiver request, with the qualification noted
13 above -- that is, we think there ought to be some
14 permission for extending the ten-day period -- and
15 we will be happy to answer any questions that the
16 EPA panel might have.
17 CHAIRMAN JACKSON: A little more about
18 this problem with the ten days versus the 30 days.
19 What would happen in the extra 20 days?
20 MR. JENSEN: I think the biggest problem
21 you got is trying to identify what the quality
22 problem is. There's lots of components that could
23 cause a quality problem; carburetor could be shipped --
24 they come in different periods of build, and to try
25 to identify that and then go back and see what

1 corrective action you can take and whether it applies
2 to all that engine family or certain calibrations
3 within that engine family, just identifying it
4 and getting a report within ten days, we think is --
5 it could be done in some instances where it was a
6 glaring quality problem. You know, gross emitter
7 of some kind. You could nail down the quality
8 problem and correct it in ten days. That's no problem
9 there.
10 But if you get into a complex situation you
11 would probably require more than that in certain
12 instances, and we think that there should be some
13 provision for that. Ten days is awful short to do
14 an engineering evaluation and find out what the
15 quality problem may be at the end of the line.
16 MS. PETRAUSKAS: Mr. Jackson, we are
17 not objecting to giving the ARB notice within the
18 ten-day period. That's perfectly appropriate that
19 we should notify the ARB that we find ourselves
20 in a potential non-compliance situation.
21 All we are saying is having given that notice,
22 give us up to an additional 30 days in which to
23 provide information, the gathering and compilation
24 of which takes more than ten working days.
25 CHAIRMAN JACKSON: Does the CARB have

1 any reaction to the request by Ford for an extension
2 of the reporting time -- not the reporting time,
3 I guess, but the --
4 MR. JENSEN: Analysis.
5 CHAIRMAN JACKSON: -- time for analysis
6 of a problem?
7 MR. AUSTIN: We may want to comment on
8 that later. We are talking it over right now.
9 CHAIRMAN JACKSON: I hate to put you out.
10 MR. AUSTIN: It would be a disappointment,
11 Mr. Jackson, if there wasn't some significant change
12 in the regulations we make right here on the spot,
13 so we are looking for something.
14 CHAIRMAN JACKSON: Why don't you go on
15 and talk about your label, and we will come back
16 when you get through.
17 MR. JENSEN: Fine, Mr. Chairman.
18 Ford Motor Company believes that, in general,
19 the regulations relating to the California tune-up
20 label, which are the subject of this waiver request,
21 are feasible. There are a number of issues which
22 are not expressly dealt with by the regulations.
23 Accordingly, Ford suggests that the following
24 clarifications of the manufacturers' obligations
25 should be added to the sections of this regulation

1 noted below. We further request that California's
2 position on these issues be made a part of the record
3 of this hearing and serve as the basis for EPA's
4 final decision in this matter.
5 In Section 2, add the following text: "Man-
6 ufacturers of heavy-duty engines are deemed to comply
7 with these requirements upon delivery to the purchaser
8 of the engine of (a) an approved label and (b)
9 reasonable and necessary instructions for the mounting
10 of the label."
11 The reason is that it is not feasible for
12 heavy-duty engine manufacturers to supervise the
13 installation of labels by engine customers. There-
14 fore, responsibility for such installation should
15 not fall on the engine manufacturer.
16 Section 3a. Ford recommends that the require-
17 ment that the label not be affixed to any equipment
18 which is easily detached from the vehicle be deleted.
19 This requirement would preclude attachment of the
20 label to certain very visible surfaces, such as the
21 air cleaner housing or fresh air ducting; these
22 parts are not likely to be replaced during the
23 vehicle's useful life.
24 Furthermore, their absence is likely to be
25 noted during vehicle inspection.

1 The reason is that this modification would,
2 in certain cases, permit a more visible, better
3 protected, and better mounting surface for label
4 installation.
5 Section 3(b)(ix). Ford recommends that a
6 separate label containing maximum curb weight and
7 frontal area be permitted.
8 The reason is that the integration of weight
9 and frontal area information with the remaining
10 label information will cause extreme and unnecessary
11 complexity in vehicle manufacturer's assembly plants.
12 Section 6. This section should be clarified
13 to state expressly that "bench-testing" shall be
14 used to determine compliance with the requirements
15 of this section.
16 The reason is that this modification acknowledges
17 the fact that bench-testing cannot possibly duplicate
18 with accuracy the environmental exposure of an engine
19 compartment label.
20 Ford recognizes that the changes that we
21 mentioned above could possibly be handled by the
22 Executive Officer under Section 9(b); however, our
23 experience is that both issues will relate to our
24 procedures in the assembly plants for insuring that
25 labels are correctly applied. Furthermore, these are

1 the types of issues that should be encompassed in
2 the basic regulation, which is reviewed by EPA
3 during a waiver proceeding.
4 With the above clarifications, Ford supports
5 California's request for waiver of its tune-up
6 label specifications. Suggested language implementing
7 these suggestions is shown on the Attachment.
8 Again, we will be happy to answer any questions.
9 MR. SILVERSTEIN: I have one question on
10 the opening page of the tune-up label statement.
11 You say at the very bottom of one of your
12 recommendations, "It is not feasible for heavy duty
13 engine manufacturers to supervise the installation
14 of labels by engine customers."
15 I guess the two things I am concerned about is,
16 one, do you believe that that would have to be
17 done to comply with the California requirement;
18 and, two, when you say it is not feasible, are
19 you then saying that, therefore, this aspect of
20 the regulation is technologically infeasible or
21 in some other way infeasible for Ford to comply
22 with?
23 MR. JENSEN: They are really just clarifica-
24 tions. We sell an awful lot of incomplete vehicles.
25 When you get into the heavy-duty business, whoever

1 you sell it to goes off and puts a chassis on and
2 everything else and mounts the engine, and if you
3 give him all the labels and everything and tell him
4 to do it and give him instructions to do it -- we
5 do this in other areas -- presumably they do it.
6 We can't follow the engine around and see that it's
7 put on properly and have us responsible.
8 I think that's the main issue.
9 Helen, why don't you talk about responsibility.
10 We are not talking feasibility. That's probably the
11 wrong semantic term. We are talking about responsi-
12 bility.
13 MS. PETRAUSKAS: That's right. It's feasi-
14 bility in the sense that there are requirements that
15 relate to the visibility of the label and the life.
16 When we sell the engine, of course, we don't know
17 what other structural things, whether it's hoses
18 and what-have-you, that the purchaser of that engine
19 may put around it. I think it's unrealistic to
20 expect us to assume the responsibility for another
21 independent manufacturer, so we are saying that a
22 way to clarify the regulation so as to avoid that
23 dilemma is simply to require us to provide an appro-
24 priate label and to provide instructions for the
25 installation of that label, but leave the

1 responsibility for that installation with the
2 vehicle.
3 MR. SILVERSTEIN: Thank you.
4 MR. GRAY: Your Section 3a recommendation
5 which would be to, in effect, allow you to affix
6 a label to -- one of the examples you gave was
7 the air cleaner housing. If that recommendation
8 were adopted by the CARB, wouldn't that, in effect,
9 eliminate that Section 2 question, because then you
10 could affix the label to such components at that
11 time and there would no longer be a need to be
12 concerned about whether or not the final builder
13 of the vehicle really did install that label?
14 MR. JENSEN: In that case, it would.
15 These really, as we say in the conclusion
16 of this section, are clarifications that could be
17 handled by understanding, perhaps. We do support
18 the regulation, but we do think there are some of
19 these little clarifications we could get hung up on.
20 CHAIRMAN JACKSON: Mr. Austin, did you
21 have anything you wanted to say about the reporting
22 requirement or the analysis for the assembly-line
23 problems?
24 MR. AUSTIN: Let me comment on this discussion
25 we have just been having regarding the label.

1 I think there may be some misunderstanding of
2 what's allowable under our regulations. It is
3 allowable under the regulations to put the label
4 on the air cleaner or on some other removable part
5 if it's a heavy-duty engine, and I think Ford's
6 principle concern is with heavy-duty engines and
7 not being confident that the label can go on the
8 engine or will be put on the engine by the vehicle
9 manufacturer in a location which is readily accessible
10 and visible to the owner.
11 However, if I heard correctly, the air cleaner
12 location would be considered a good location from
13 Ford's perspective because that very seldom would
14 ever be covered by any structural, non-flexible
15 structural component of the vehicle. We don't have
16 any problem with the label going on the air cleaner
17 as long as it's heavy-duty.
18 MS. PETRAUSKAS: But you agree, Mr. Austin,
19 that the regulations don't expressly state that --
20 MR. RUBENSTEIN: Yes, they do.
21 MS. PETRAUSKAS: -- as they are written?
22 MR. RUBENSTEIN: Yes, they do.
23 MR. AUSTIN: Implicitly, I think they
24 sate it because I think, Gary, they talk about
25 what you cannot do with light-duty. They specifically

1 do not mention that one of the things you cannot do
2 with a heavy-duty is put the label on something like
3 the air cleaner or an easily-removable part.
4 MR. RUBENSTEIN: The language about the
5 easily removable parts is explicitly applicable to
6 motorcycles, passenger cars, and light-duty trucks.
7 That's listed out that way.
8 MS. PETRAUSKAS: And the regulations are
9 silent as to heavy-duty engines?
10 MR. RUBENSTEIN: Right. But the obvious
11 implication is that for heavy-duty vehicles you could
12 put it on removable parts. That was done intentionally.
13 MR. AUSTIN: Regarding the other point
14 that was raised on the time available for reporting
15 requirements, in discussing that we can foresee
16 that there would be some circumstances when the ten-
17 day requirement would be extremely difficult for a
18 manufacturer to comply with. We would be willing
19 to modify the language in this section to provide
20 additional time for certain of the requirements,
21 such as "d. Any corrective action proposed by the
22 manufacturer," in cases where, because of the nature
23 of the problem, it was not possible for the manufacturer
24 to develop the corrective action in a period of ten
25 days. In some cases, that may require some CVS testing

1 to determine what the exact corrective action should
2 be. That's a modification which we will be able
3 to incorporate without taking this back to the
4 Board. It's not something that we'd have trouble
5 getting a delegation for the Executive Officer to take
6 care of by himself. It's only going to be in some
7 cases where it's a problem.
8 MR. JENSEN: That's all we are really
9 saying. We can do it in ten days for lots of
10 things, but when you have to trace it down and
11 it's carburetor problems or something of that
12 nature it just takes longer.
13 MR. AUSTIN: What I'd be happy to do, Mr.
14 Jackson, before the close of the record is to submit
15 some language to the manufacturers and for the
16 record indicating changes that we think would be
17 appropriate in this area. By the close of the record,
18 we will have obtained a delegation from the Board
19 to make these changes at the Executive Officer
20 level rather than a Board hearing. So we will be
21 able to guarantee what the final language will be
22 prior to the close of the record.
23 CHAIRMAN JACKSON: Fine.
24 Thank you, Mr. Jensen.
25 MR. SCHWENTKER: Can I have one minute to

1 express one concern that I didn't hear expressed
2 today?
3 CHAIRMAN JACKSON: You may.
4 MR. SCHWENTKER: My name is Don Schwentker,
5 counsel to the Automobile Importers of America.
6 I think virtually all of the concerns that
7 we have have been expressed by others, and there
8 is no point in repeating them.
9 One concern that was not covered completely
10 concerned the attachment of the label. With respect
11 to motorcycles, I think it's impractical to expect
12 a label to be attached to something that's not readily
13 detachable because the whole motorcycle is readily
14 detachable from itself.
15 If it's okay on a heavy-duty vehicle to attach
16 a label to an air cleaner, I see no reason that
17 what's good for the goose shouldn't be good for
18 the gander. Why shouldn't that be suitable for
19 a light-duty vehicle as well, and particularly so
20 for a motorcycle?
21 Labels on motorcycles now are frequently
22 put in the most protective location they can find,
23 and that's usually underneath the seat so that when
24 you unhook the seat and hinge it up the label is
25 there for you to see. But it's usually on a piece

1 that's readily detachable.

2 I think the chassis is the only thing on a
3 motorcycle that would be considered non-detachable,
4 and even that's detachable from the rest of the
5 bike.

6 So I'd appreciate hearing some rationale for
7 why these labels can't be on something that's
8 readily detachable. It seems to me that having
9 a label that's easy to see is far more important.

10 CHAIRMAN JACKSON: I can't provide that
11 rationale, but the CARB may.

12 MR. AUSTIN: Mr. Jackson, if I could
13 respond to that.

14 Mr. Schwentker brings up a good point. However,
15 this exact question of where to put the label on a
16 motorcycle was discussed at the public hearing, after
17 which we adopted the procedures, and at the hearing
18 it was stated by the Board members on the record
19 that they had no problem with the Executive Officer
20 granting exemptions under the provisions of the
21 regulations for motorcycles if the label would be
22 put in a location where we wouldn't expect it to
23 be detached and where it would be protected, yet
24 still readily visible to the owner or to the mechanic
25 during maintenance on the vehicle. In particular,

1 we discussed the top of the fender under the seat
2 as being a good location, and during the public
3 hearing we agreed that we would accept that location
4 for labels on motorcycles.
5 MR. SCHWENTKER: Well, I was at the public
6 hearing, too, Tom, and it was not all too clear to
7 many of us how this was going to be handled. Because
8 we got about two-thirds of the way through the
9 public hearing and the Board decided to delegate
10 the entire thing to the Executive Officer, and most
11 of us went out of the room with the understanding
12 that the Executive Officer would hold a hearing.
13 And the next thing I got was a copy of the final
14 rule.
15 So, there was no further hearing. The Executive
16 Officer went ahead and adopted it. I think it would
17 be nice to have it in the regulation.
18 MR. AUSTIN: At the public hearing, the
19 Board heard all the testimony, made all the decisions
20 on what aspects of the regulations should or should
21 not be modified by the Executive Officer. They gave
22 specific direction for certain types of modifications
23 in a few limited areas. There was no need for a
24 public hearing to be held, because the public hearing
25 had been held. All the testimony had been heard.

1 We were only responding to directions to change
2 the regulations in a fairly specific manner from
3 the Board, and that's in fact what we have done.
4 One of the things that is possible under the regula-
5 tions which were finally adopted would be a provision
6 or an exemption for motorcycles, for example, to have
7 the labels located under the seat on top of the
8 fender.
9 CHAIRMAN JACKSON: Is there any need
10 for any more clarification on that point?
11 MR. SCHWENTKER: That just means that
12 each motorcycle manufacturer has to come in separately
13 and seek that alternative location; is that right?
14 MR. AUSTIN: As part of his certification
15 application, he can tell us where he proposes to
16 put it and we will approve that part of the applica-
17 tion, along with all of the others, there is no
18 special procedure required.
19 MR. SCHWENTKER: That's all I have.
20 CHAIRMAAN JACKSON: Does that satisfy
21 your concern?
22 MR. SCHWENTKER: Well, it doesn't satisfy
23 my concern with respect to light-duty vehicles.
24 That was not addressed at all.
25 And, no, it doesn't satisfy my concern

1 completely with respect to motorcycles. I think
2 it would be far easier to put it into the regulation.
3 MR. AUSTIN: I don't understand the
4 concern with light-duty vehicles.
5 MR. SCHWENTKER: Well, the concern is
6 we'd like to be able to put the label on the
7 air cleaner or parts that are not permanent parts.
8 MR. RUBENSTEIN: You can't do that under
9 federal regulations anyway.
10 CHAIRMAN JACKSON: Wait a minute. Either
11 you are on the record or you are not.
12 MR. SCHWENTKER: All right. I am finished.
13 CHAIRMAN JACKSON: I then must presume
14 that the parties are aware of the concerns, that
15 it's either acceptable or something's going to be
16 worked out.
17 Is there anyone else that has anything
18 to say before these proceedings?
19 Mr. Austin?
20 MR. AUSTIN: We have a couple final comments
21 we'd like to make.
22 Mr. Macomber has a few comments which he'd
23 like to make. Also, I'd like to indicate to you
24 that we are going to provide some supplemental
25 data regarding the capability of three-way catalyst

1 cars to comply with the .53 gram per mile NOx emission
2 limitation that will apply on the highway cycle
3 when the .4 NOx limitation applies on the Federal
4 Test Procedure. We had some of that infomration in
5 our staff report which is already part of this
6 record.
7 Since the public hearing on this matter,
8 though, there have been some additional tests run
9 by the Air Resources Board providing further evidence
10 that three-way catalysts are able to comply with
11 a .53 gram per mile requirement on the highway
12 cycle. In fact, the data available indicate that
13 in general three-way catalyst cars will emit lower
14 levels of NOx emissions on the highway cycle than
15 they do on the Federal Test Procedure, and we've
16 had numerous tests of vehicles with highway cycle
17 NOx emission numbers less than half the .4 gram
18 per mile level that will be required in the Federal
19 Test Procedure. We will give you all the data
20 which is available at this time for highway cycle
21 NOx emissions from three-way catalyst cars that we
22 have.
23 CHAIRMAN JACKSON: Mr. Austin, were these
24 cars that also met the .4 on the Federal Test
25 Procedure?

1 MR. AUSTIN: Some were and some were not.
2 Some of the data come from the certification of
3 California cars; some come from the Volvo three-way
4 catalyst vehicles owned by the State. We had
5 vehicles which certified at one gram per mile which
6 had emissions of roughly .8 to .9 on the Federal
7 Test Procedure that were under the .8 to .9 level
8 on the highway cycle. We have other vehicles that
9 certified much closer to the .4 level, and they
10 were under .4 on the highway cycle.
11 The range of results on the highway cycle
12 for three-way catalyst cars we've tested so far,
13 I think, is from roughly .05 grams per mile to a
14 high of about 1.13. All of those cars had a highway
15 cycle NOx level that was less than 1.33 times the
16 standard that applied in the Federal Test Procedure,
17 and most of the data that we have indicates that
18 the cars are capable of getting below .53 on the
19 highway cycle much more easily than getting below
20 .4 on the Federal Test Procedure.
21 CHAIRMAN JACKSON: I presume you are
22 going to submit that data for the record?
23 MR. AUSTIN: We will.
24 MR. MACOMBER: There are a couple of loose
25 ends from the legal side that I'd like to address.

1 First on the question of whether or not the
2 effect on fuel economy of vehicles is relevant
3 to these proceedings, I would just, without elaborat-
4 ing here, like to incorporate into the record my
5 letter addressed to Mr. Ben Jackson, the Hearing
6 Officer today, dated November 10, 1977, in the
7 context of our waiver request for the light-duty
8 truck standards in which we addressed this question
9 and provide some legal authority and some argument
10 in support of the position asserted by Mr. Austin
11 in his opening statement to the effect that the
12 Federal fuel economy standards are, in effect, not
13 relevant here because Congress has considered the
14 possible conflict between fuel economy and emissions
15 in the context of adopting the fuel economy standard
16 requirements for vehicles and has concluded, we
17 think very clearly, that those standards are to
18 be made subordinate through various procedures
19 specified in the fuel economy legislation and also
20 the regulations subordinate to the emission control
21 standards. And there is a direct reference, specific
22 reference in fact, to the California emission
23 standards in this context.
24 So I'd like to incorporate that into the
25 record.

1 Secondly, just a brief comment with respect to the
2 citation made by the Ford attorney to the International
3 Harvester case. We do intend to address this further
4 before the record closes, but we do disagree that
5 the analysis about technology forcing or feasibility
6 context of the suspension hearing is in any way
7 relevant to these proceedings. We think that these
8 are completely different proceedings, the legislative
9 history is different, and indeed the statutory require-
10 ments are different.
11 And, finally, we would like to take some addi-
12 tional time to analyze the question of whether or
13 not the highway cycle NOx standard is indeed an
14 emission standard or an enforcement procedure further.
15 We have addressed this already today in Mr. Austin's
16 comments, but we would like to examine this a little
17 further. It was not an issue that we had anticipated
18 before this hearing, and we will provide the final
19 comment on our position on that question before the
20 record closes.
21 CHAIRMAN JACKSON: Thank you, gentlemen.
22 Is there any other matters of concern?
23 The record will remain open until June 19,
24 1978. With regard to the June 19 date, that would
25 be the date on which the comments should be received

1 by my office.

2 This hearing is adjourned.

3 (Whereupon, the hearing adjourned at 3:40

4 o'clock p.m.)

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STATE OF CALIFORNIA)
o ss.
City and County of San Francisco)

I, JERRY R. SMYTHE, hereby certify that the proceedings in the conference held pursuant to Section 113(a)(4) of the Clean Air Act at the offices of the United States Environmental Protection Agency, Region IX, 215 Fremont Street, San Francisco California 94105, on May 18, 1978, were taken down in shorthand by me, a Certified Shorthand Reporter and a disinterested person, at the time and place therein stated, and that the proceedings were thereafter reduced to typewriting under my supervision and direction.

I further certify that I am not of counsel or attorney for either or any of the parties to the said proceedings, nor in any way interested in the event of this cause, and that I am not related to any of the parties thereto.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal of office this 21st day of May, 1978

NOTARY PUBLIC in and for the
County of Contra Costa,
State of Califronia