Enclosure II

INSTRUCTIONS FOR SUBMITTING NLEV INFORMATION TO EPA'S DATA BASE

This document provides instructions for submitting National Low Emission Vehicle (NLEV) test data and certification information to EPA's Certification and Fuel Economy Information System (CFEIS) data base. These instructions are intended to supplement the April 1, 1997 version of the CFEIS Manufacturers' User Guide, (CMUG).

1. General Overview

As manufacturers know, to expedite EPA's process of issuing certificates, manufacturers should include an error-free copy of EPA's summary sheet report from the EPA CFEIS data base with each certificate request. Currently, EPA's CFEIS data base supports the following types of certificates:

- Federal (Tier 1);
- California Only (Tier 1, TLEV, LEV, ULEV);
- NLEV-Northeast Trading Region (TLEV, LEV, ULEV);
- NLEV-All States Trading Region (TLEV, LEV, ULEV); and
- Combined NLEV-All States Trading Region/Clean Fuel Fleet (CFF) Certificate (LEV, ULEV).

CFEIS routinely supports the following fuels:

- EPA Gasoline (Federal Certification Test Fuel);
- California Phase II Gasoline;
- Methanol (M85);
- Ethanol (E85); and
- CNG-fueled vehicles (dedicated CNG vehicles only).

Manufacturers should contact a member of EPA's computer support staff prior to submitting CFEIS information in support of other (non-routine) types of certificates, including the following:

- Electric vehicles (ZEVs);
- CNG-conversions and bi-fueled vehicles;
- Inherently Low-Emission Vehicles (ILEVs); and
- LPG (Propane) fueled vehicles.

Additional CFEIS instructions for these non-routine types of certification programs will be provided in a future manufacturer guidance letter.

2. **<u>Overview - Changes to Accommodate NLEV Certification</u>**

Since the NLEV program is based on California's existing LEV program, very few changes were necessary to the CFEIS data base to accommodate NLEV certification. Several new sales location codes were added to indicate NLEV sales in 1) the Northeast Trading Region (NTR); 2) the All States Trading Region; 3) in All States Trading Region plus areas which have Clean Fueled Fleet Programs in effect; or 4) combinations of the above. Adding new sales area codes to CFEIS will allow manufacturers to create sub-systems in their ESI and EvSI programs so that they may enter the appropriate deterioration factors (DFs), emission standards, etc., for each subsystem. Normally only one subsystem would be required, however CFEIS will allow manufacturers to create two or more subsystems if needed.

For example, an NLEV engine family would require two subsystems, if California vehicles were certified to LEV emission standards and NLEV vehicles (introduced into commerce in the All States Trading Region) were certified to TLEV emission standards. The CFEIS requirements for this example are very similar to current requirements for a 50-state engine family which is certified to both Federal and California emission standards. Note that the appropriate sales codes should also be used for the Vehicle Information (VI), Manufacturers Test Data System (MTDS) and Summary Sheet (SS) programs.

Other changes are as follows:

• Highway NOx emission values should appear on the summary sheet, which will require appropriate data entries in the ESI and MTDS programs. Manufacturers should begin entering the unrounded highway NOx emission results into the MTDS data base as "NOX-HWY" instead of "NOX" for all NLEV, CFF, and California certification and fuel economy vehicles.

• Pass/fail results for all NLEV emission values except total HC, OMHCE, Spitback, and high altitude data (if supplied) must be reported differently, ref. 40 CFR 86.1728-99 (g). To implement this change, we request that manufacturers report the 1999 and later model year NLEV emission standards listed on the ESI and EvSI to one decimal place beyond the value of the actual emission standard. [The emission standards for total HC, OMHCE and Spitback should be reported to the same number of significant figures as the actual emission standard.] This method will have a minor effect on fuel economy mpg calculations, since the CO emissions value used in the equation to calculate the rounded mpg value will be carried out to one more significant figure than actually required. However, reporting a more accurate CO emission value will have no

effect on the mpg value, except in extremely rare cases. Manufacturers may contact EPA to correct any incorrectly rounded mpg values on a case-by-case basis.

- The 50°F test emission values should appear on the summary sheet, which will require appropriate data entries in the ESI and MTDS programs. In the interim until CFEIS can be updated, manufacturers may supply this data with the request for certificate, e.g. written on a "marked up" copy of the summary sheet.

- NMOG mass emission values reported to EPA should be "adjusted" NMOG values, which include the reactivity factor (RAF) and the methane RAF (natural gas vehicles only). For additive NMOG deterioration factors (DFs), the DF should also include the effect of the RAF. [Note: Manufacturers who have previously included the RAF in multiplicative NMOG DFs may continue to use this approach for the 1999 model year, if approved by EPA and noted in the ESI comment field.]

- The fuel type will continue to be reported on the certificate and in the Summary Sheet as in the past, however we have revised the CFEIS to distinguish between EPA unleaded gasoline and California Phase II gasoline. A test fuel type code of "G" for gasoline, should no longer be entered in the ESI, EvSI, and MDTS programs. Instead, codes "GA" for EPA unleaded gasoline, and "GB" for California Phase II gasoline should be used.

3.   Changes to the Engine System Information (ESI) Program

The following changes should be made to the ESI input codes:

Field Name	Record	Position	Valid Range/Entry Criteria
Sales Area Code	E2	28-29	CA – California **+ 177 States (includes Calif. Tier 1, TLEV, LEV, ULEV, ZEV vehicles)** FA – Federal All Altitude **(Tier 1)** **NE – NLEV Northeast Trading Region (TLEV, LEV, ULEV, ZEV)** **NL – NLEV All States Trading Region (TLEV, LEV, ULEV, ZEV)** CF – **Federal Clean Fueled Fleet Areas (LEV, ULEV, ILEV, ZEV)** ~~CT – Clean Fuel Vehicle Tier 1~~ (obsolete) **CE – CA + NE (if certified to same stds)** **CL – CA + NL (if certified to same stds)** **NF – CA + NL + CF (if certified to same stds)**

Field Name	Record	Position	Valid Range/Entry Criteria
Test Fuel Type	ES	5-7	~~G - Gasoline~~
			GA - EPA Unleaded Gasoline
			GB - California Phase II Gasoline
			EL - Electricity
			D - Diesel
			M - Methanol (M85)
			E - Ethanol (E85)
			~~C - Compressed Natural Gas (1994-1997)~~
			~~L - Liquefied Natural Gas (1994-1997)~~
			CNG - Compressed Natural Gas (1998 & later)
			LNG - Liquefied Natural Gas
			LPG - Liquid Petroleum Gas **(Propane)** (1998 & Later)
			N - Not Applicable
Emission Standard	EG	33-40	000.0000 - 999.9999

Emission Standard, EG, 33-40:

000.0000 – 999.9999

Notes: 1. The system shall support the entry of emission standards by the user and may additionally provide default values if EPA has applicable standards.

2. **To promote proper rounding of certification values in accordance with 40 CFR 1728-99(g), the emission standards for Federal TLEV, LEV, and ULEV vehicles and all California vehicles should be reported to one significant figure beyond the number of significant figures contained in the standard (not applicable to total HC, OMHCE, or Spitback emissions). For example, a 0.2 g/mi NOx standard should be reported as 0.20.**

3. Business rule error if the value after update is blank or null.

Multiplicative DF, EG, 46-50:

0.000 – 9.999

Notes: 1. This field shall be stored in the database as entered by the user, however IOV CFEIS processes that use this field shall use the value 1 when the value entered is less than 1.

2. Multiplicative DFs for 1999 and later NMOG values should not include the RAF (unless approved by EPA and noted in the comments).

Additive DF, EG, 52-60:

-9.999999 – 9.999999

Notes: 1. This field shall be stored in the database as entered by the user, however IOV CFEIS processes that use this field shall use the value 0 when the value entered is less than 0.

2. Additive DFs for 1999 and later NMOG values should include the effect of the RAF.

4.   **Changes to the Evaporative/Refueling System Information (EvSI) Program**

The following changes should be made to the EvSI input codes:

Field Name	Record	Position	Valid Range/Entry Criteria
Fuel Type **Stored in the Fuel Tank(s)**	PM	5-7	G - Gasoline D - Diesel M - Methanol (M85) E - Ethanol (E85) ~~C - Compressed Natural Gas (1994-1997)~~ ~~L - Liquefied Natural Gas (1994-1997)~~ CNG - Compressed Natural Gas (1998 & later) LNG - Liquefied Natural Gas LPG - Liquid Petroleum Gas **(Propane)** (1998 & Later) N - Not Applicable
Sales Area Code	P2	28-29	Same as outlined above for ESI Program
Test Fuel Type	PS	5-7	Same as outlined above for ESI Program
Emission Standard	PG	26-33	Same as outlined above for ESI Program (Note #2 added.)

5.   **Changes to the Vehicle Information (VI) Program**

The following changes should be made to the VI input codes:

Field Name	Record	Position	Valid Range/Entry Criteria
Sales Area Code	V4	42-43	Same as outlined above for ESI Program
Sales Area Code	V4	45-46	Same as outlined above for ESI Program
Sales Area Code	V4	48-49	Same as outlined above for ESI Program
Sales Area Code	V4	51-52	Same as outlined above for ESI Program
Emission Standards **Test** Fuel Type Code	VF	5-7	Same as outlined above for ESI Program (for the Test Fuel Type field).

Note: A minimum of one code is required for entry.

6.   **Changes to Manufacturers Test Data System (MTDS) Program**

Test Procedures 51, 52, unrounded emission results names 50-HC, 50-CO, 50-CO2, 50-NOX, 50-NMOG, 50-HCHO and 50-FE will be added approximately three weeks from the date of this letter. No actual changes were made to any other MTDS input codes, however the instructions were revised for clarity, as follows:

Field Name	Record	Position	Valid Range/Entry Criteria
Test Procedure **(All codes are shown)**	T1	49-50	02 - CVS 75 & Later **(EPA city test w/o canister loading)** 03 - HWFE **(Highway test)** ~~06 - Evap Only~~ (obsolete)

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10 - Idle CO
11 - Cold CO
~~12 - Short Test~~ (obsolete)
13 - Constant Temperature Evap **(2-hr evap)**
~~14 - Variable Temperature Evap~~ (obsolete)
15 - Spitback Test
~~16 - 1995 California Variable Temperature Evaporative~~ (obsolete)
~~17 - 1995 California Running Loss Evaporative~~ (obsolete)
21 - **Federal Fuel 2-day Exhaust (C_4H_{10} can load)**
~~22 - Federal Fuel 2-day Butane Preconditioned Exhaust plus Hot Soak~~ (obsolete)
23 - **Federal Fuel 2-day Evap Test (C_4H_{10} can load)**
24 - **Federal Fuel Refueling Test (ORVR) (C_4H_{10} canister loading)**
25 - **Calif Fuel 2-day Exhaust (C_4H_{10} can load)**
~~26 - California Fuel 2-day Butane Preconditioned Exhaust plus Hot Soak~~ (obsolete)
27 - **Calif Fuel 2-day Evap Test (C_4H_{10} can load)**
28 - **Calif Fuel Refueling Test (ORVR) (C_4H_{10} canister loading)**
31 - Federal **Fuel** 3-day Exhaust **(C_4H_{10} can load)**
~~32 - Federal Fuel 3-day Exhaust plus Running Loss~~ (obsolete)
~~33 - Federal 3-day Exhaust plus Running Loss plus Hot Soak~~ (obsolete)
34 - **Federal Fuel 3-day Evap Test (C_4H_{10} can load)**
35 - Calif **Fuel** 3-day Exhaust **(C_4H_{10} can load)**
~~36 - California 3-day Exhaust plus Running Loss~~ (obsolete)
~~37 - California 3-day Exhaust plus Running Loss plus Hot Soak~~ (obsolete)
38 - **Calif Fuel 3-day Evap Tes**t **(C_4H_{10} can load)**
41 - **Federal Fuel 2-day Exhaust (heat fuel tank to load canister)**
~~42 - Federal Fuel 2-day Heat-build Preconditioned Exhaust plus Hot Soak~~ (obsolete)
43 - **Federal Fuel 2-day Evaporative Test (heat fuel tank to load canister)**
44 - Federal Fuel Refueling Test (ORVR) (heat fuel tank to load canister)
45 - Calif Fuel 2-day Exhaust **(heat fuel tank to load canister)**
~~46 - California 2-day Heat-build Preconditioned Exhaust plus Hot Soak~~ (obsolete)
47 - **Calif Fuel 2-day Evaporative Test (heat fuel tank to load canister)**
51 - Calif Fuel 50°F Exhaust Test
52 - Federal Fuel 50°F Exhaust Test
71 - CST -Idle Test **(EPA Only)**
72 - CST -Two Speed Idle Test
73 - CST -Loaded Test **(EPA Only)**
74 - CST -Preconditioned Idle Test **(EPA Only)**
76 - CST -Preconditioned Two Speed Idle Test **(EPA Only)**

Field Name	Record	Position	Valid Range/Entry Criteria
Unrounded Emission Result Name	TR	4-19	**HC-TEV - Total 2-hour evaporative hydrocarbon emission loss**
			HC-TEV-2D - Enhanced evap 2-day total evaporative hydrocarbon emission loss
			HC-TEV-3D - Enhanced evap 3-day total evaporative hydrocarbon emission loss
(All emission names are shown)			OMHCE-TEV-2D - Enhanced evap 2-day total evaporative organic material hydrocarbon equivalent emission loss
			OMHCE-TEV-3D - Enhanced evap 3-day total evaporative organic material hydrocarbon equivalent emission loss
			HC-RL - Running loss HC
			HC-TOTAL - Total **exhaust** hydrocarbon
			CO - Carbon monoxide
			CO2 - Carbon dioxide
			NOX - Oxides of nitrogen
			PM - Particulate emissions
			HC-NM - Non-methane hydrocarbon emissions HC-TOTAL - Total **exhaust** hydrocarbons
			~~HC-IDLE - Idle HC~~ (obsolete)
			CO-IDLE - Idle CO
			CO-COLD - Cold CO
			HC-ST2500 - Short test 2500 RPM HC
			CO-ST2500 - Short test 2500 RPM CO
			HC-STLM -Short test loaded mode HC **(EPA only)**
			CO-STLM -Short test loaded mode CO **(EPA only)**
			HC-STI - Short test idle HC
			CO-STI - Short test idle CO
			~~HC-BAG - Bag measured HC~~ (obsolete)
			~~HC-HFID - Heated FID HC~~ (obsolete)
			OMHCE - **Exhaust** Organic material hydrocarbon equivalent
			OMNMHCE - **Exhaust** Organic material non-methane hydrocarbon equivalent
			HC-ORVR - Total ORVR hydrocarbon emissions
			OMHCE-ORVR - Total ORVR organic material hydrocarbon equivalent emissions
			NMOG - Non-methane organic gas (**NLEV, CFF,** California) **NMOG emission values for 1999 and later should be adjusted by the RAF & methane RAF if appropriate, but should not include the DF.**
			~~HC-FE - Fuel Economy Hydrocarbon~~ (obsolete)
			~~HC-TOTAL-EV - Total 2-hr evaporative hydrocarbon emissions loss~~ (obsolete; replaced by HC-TEV)
			~~HC-NM-TOTAL-EV - Total evaporative nonmethane hydrocarbon emissions loss~~ (obsolete)
			OMHCE-TOTAL-EV Total evaporative organic material hydrocarbon equivalent emissions loss **(2-hour evap test)**
			~~OMNMHCE-TOTAL- EV Total evaporative nonmethane organic material hydrocarbon equivalent emissions loss~~ (obsolete)
			~~HC-DIURN-EV Diurnal evaporative hydrocarbon emissions loss~~ (obsolete)

Field Name	Record	Position	Valid Range/Entry Criteria
Unrounded Emission Result Name (continued)	TR	4-19	~~HC-NM-DIURN-EV Dirunal evaporative nonmethane hydrocarbon emissions~~ (obsolete)
			~~OMHCE-DIURN-EV Diurnal evaporative material hydrocarbon equivalent emissions loss~~ (obsolete)
(All emission names are shown)			~~OMNMHCE-DIURN-EV Diurnal evaporative nonmethane organic material hydrocarbon equivalent emissions~~ (obsolete)

~~HC-HS-EV Hot soak evaporative hydro-carbon emissions loss~~ obsolete

~~HC-NM-HS-EV Hot soak evaporative non-methane hydrocarbon emissions loss~~(obsolete)

~~NMHC-HSEV~~ (obsolete)

~~OMHCE-HS-EV Hot soak evaporative organic material hydrocarbon equivalent emissions loss~~ (obsolete)

~~OMHCE-HSEV~~ (obsolete)

~~OMNMHCE-HS-EV~~ (obsolete)

OMHCE-RL - Organic material hydrocarbon equivalent running loss

SPITBACK - Spitback

NOX-HWY - Highway NOX (**NLEV, CFF,** California)

HCHO - Formaldehyde **(units are in g/mi)**

~~H3C2HO - Acetaldehyde~~ (obsolete)

HCHO-COLD - Cold test formaldehyde

HC-TOTAL-COLD - Cold test total hydrocarbon

NOX-COLD - Cold test oxides of nitrogen

CO2-COLD - Cold test carbon dioxide

~~METHANE - Methane~~ (obsolete)

~~ETHANE - Ethane~~ (obsolete)

~~PROPANE - Propane~~ (obsolete)

~~BUTANE - Butane~~ (obsolete)

~~METHANOL - Methanol~~ (obsolete)

~~ETHANOL - Ethanol~~ (obsolete)

~~METHANOL-COLD - Cold test methanol~~ (obsolete)

~~BENZENE - Benzene~~ (obsolete)

~~H2 - Hydrogen~~ (obsolete)

~~O2 - Oxygen~~ (obsolete)

~~O3 - Ozone O3~~ (obsolete)

MFR-FE - Manufacturer-derived fuel economy

~~EPA-FE - EPA-calculated fuel economy~~ (obsolete)

~~FE - Official fuel economy~~ (obsolete)

~~FE-URND-UADJ - Unrounded unadjusted fuel economy~~

~~FE-URND-ADJ - Unrounded adjusted fuel economy~~

~~FE-RND-UADJ - Rounded unadjusted fuel economy~~ (obsolete)

~~FE-RND-ADJ - Rounded adjusted fuel economy~~

50-HC - 50° test total hydrocarbons

50-CO - 50° test carbon monoxide

50-CO2 - 50° test carbon dioxide

50-NOX - 50° test oxides of nitrogen

50-NMOG - 50° test Non-methane organic gas (NLEV, CFF, California) NMOG emission values should be adjusted by the RAF, but should not include the DF.

50-HCHO - 50° test formaldehyde

50-FE - 50° test fuel economy (mpg)

7.   Changes to Summary Sheet (SS) Program

The following changes should be made to the VI input codes:

Field Name	Record	Position	Valid Range/Entry Criteria
Sales Area Code	X2	16-17	Same as outlined above for ESI Program

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