

NEV America TEST SEQUENCE

Revision 2
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NEV PERFORMANCE TEST PROCEDURE SEQUENCE

The following test sequence shall be used for conduct of NEVAmerica Baseline Performance Testing. This sequence of testing confirms vehicle conformance with all "shall" statements contained in the NEV America Neighborhood Electric Vehicle (NEV) Technical Specifications. Additionally, submittal of all information required by the NEV America Neighborhood Electric Vehicle (NEV) Technical Specifications is verified and selected "should" statements are verified.

1. ETA-NAC006 Receipt Inspection

Conduct of this test procedure accomplishes the following test objectives.

- Should data submittal verification
- Should data submittal accuracy verification by inspection
- Should data submittal accuracy verification by vehicle measurement
- Testing for selected should requirements not verified by specific Performance Test Procedures (ETA-NTPXXX)

2. ETA-NTP011 Vehicle Verification (Initial Phase)

Conduct of this test procedure is accomplished in two phases. The initial phase accomplishes the following test objectives.

- Shall data submittal verification
- Shall data submittal accuracy verification by inspection
- Testing for shall requirements not verified by specific Performance Test Procedures (ETA-NTPXXX)

3. ETA-NTP004 Electric Vehicle Constant Speed Range Tests

Conduct of this test procedure accomplishes the following test objectives.

- Vehicle range should requirement verification
- Maximum speed shall (FMVSS) requirement verification¹
- Maximum speed should requirement verification
- Speedometer accuracy should requirement verification
- Odometer accuracy shall requirement verification
- SOC meter accuracy should requirement verification
- Maximum battery discharge shall requirement data collection
- DOD calibrations for subsequent tests
- Charging efficiency data collection²

¹ This requirement normally satisfied during conduct of ETA-NTP002

² Conducted in conjunction with ETA-NTP010

NEV PERFORMANCE TEST PROCEDURE SEQUENCE**4. ETA-NTP005 Rough Road Course Test**

Conduct of this test procedure accomplishes the following test objectives.

- Rough road completion shall requirement verification
- Rough road impairment should requirement
- Chassis leakage current shall requirement data collection

5. ETA-NTP002 Acceleration, Gradeability and Deceleration

Conduct of this test procedure accomplishes the following test objectives.

- Acceleration should requirement verification
- Gradeability should requirement verification
- Maximum speed shall (FMVSS) requirement verification³

6. ETA-NTP006 Brake Test

Conduct of this test procedure accomplishes the following test objectives.

- Dry brake test
- Regenerative braking interaction shall requirement verification
- Braking distance data collection

7. ETA-NTP007 Road Course Handling Test

Conduct of this test procedure accomplishes the following test objectives.

- Vehicle handling course time data collection

8. ETA-NTP010 Battery Charger Performance⁴

Conduct of this test procedure accomplishes the following test objectives.

- Maximum battery discharge shall requirement data collection
(Note; This testing requires a separate battery discharge to verify repeatability of the discharge limiter data collected by ETA-NTP004 using ETA-NTP011)
- Charge time shall requirement verification
- Automatic termination shall requirement verification
- Charger input voltage shall requirement verification
- Charger operating data collection
- Charging efficiency calculation
- Radio frequency interference shall requirement verification
- Charger ground leakage current shall requirement verification
- Out-of-service shall requirement verification

³ This requirement may optionally be satisfied during conduct of ETA-NTP004

⁴ Conducted in conjunction with ETA-NTP004

NEV PERFORMANCE TEST PROCEDURE SEQUENCE

9. ETA-NTP011 Vehicle Verification (Final Phase)

Conduct of this test procedure accomplishes the following test objectives.

- Verification of maximum DOD limit repeatability (using ETA-NTP004 and ETA-NTP010)
- Repair time shall requirement verification (using Non-Conformance Reports)
- Charger leakage current verification

CONDUCT OF BATTERY CHARGING

During conduct of testing, the vehicle shall be charged using the following procedures.

10. ETA-NTP008 Battery Charging

- Battery charging activities using Level 1 or Level II charging.

USE OF LEVEL III BATTERY CHARGING

For vehicles designed for Level III Charging, the NEV America Test Program may be conducted using Level III Charging. Because of the differences in the chargers and their potential effect on the batteries, if the vehicle supplier's Level III charge methodology is to be used, a separate EV America Test Program utilizing only the Level III methodology shall be conducted. This testing may be in addition to a full NEV America Test Program conducted using the vehicle supplier's Level II charge methodology and equipment.

In preparation for testing using Level III charging, the vehicle shall be discharged and recharged, using the Level III charger, at least two times prior to conduct of any Level III testing.

A. ETA-NTP004 Electric Vehicle Constant Speed Range Tests

Conduct of this test procedure accomplishes the following test objectives.

- Vehicle range should requirement verification
- Charging efficiency data collection⁵

⁵ Conducted in conjunction with ETA-NTP010 (during Level III charging)

B. ETA-NTP010 Battery Charger Performance⁶

Conduct of this test procedure accomplishes the following test objectives.

- Maximum battery discharge shall requirement data collection
(Note; This testing requires a separate battery discharge to verify repeatability of the discharge limiter data collected by ETA-NTP004 using ETA-NTP011)
- Charge time shall requirement verification
- Automatic termination shall requirement verification
- Charger input voltage shall requirement verification
- Charger operating data collection
- Charging efficiency calculation
- Charger ground leakage current shall requirement verification

During conduct of testing, the vehicle shall be charged using the following procedures.

C. ETA-NTP013 Level III Charging

- Battery charging activities using Level III charging

⁶ Conducted in conjunction with ETA-NTP004