

**Interim Administrative Guide for the  
Traffic Enforcement Technologies Program**

**National Highway Traffic Safety Administration  
Enforcement and Justice Services Division**



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## 1. Program Scope

The scope of the Traffic Enforcement Technologies Program includes the following.

- a. Oversight of testing and approval processes for speed measuring devices used by law enforcement in the collection of evidence of traffic violations for inclusion on the Conforming Product List (CPL).
- b. Sanctioning and/or the revision or updating of current NHSTA *Speed-Measuring Device Performance Specifications*, other traffic law enforcement technology specifications, and documentary performance specifications published by international and/or national standardization bodies.
- c. Management of technical specifications and standards for emerging speed enforcement technologies, and supporting the development of appropriate test methods and test artifacts for new technologies.
- d. Development of the policies and procedures for the operation of the Traffic Enforcement Technologies Program.
- e. Ensuring the fair and consistent application of the processes described in this document in a manner that will not unreasonably delay the testing and approval process of new or updated products for inclusion on the CPL.

## 2. Purpose of this Document

The purposes of this document are:

- a. To specify the procedures that conform to the performance and accuracy requirements for traffic enforcement technologies used to measure speed(s) in the collection of evidence of traffic violations. Devices that meet all standards and requirements may be included on the Conforming Product List (CPL), which informs States and local jurisdictions which devices are eligible for purchase using Federal Highway Safety grant funds.
- b. To specify the requirements for testing facilities or laboratories to test speed measuring devices used for traffic law enforcement, and verification of facility credentialing to be submitted with requests for inclusion on the CPL.

### 3. Background

The use of enforcement technologies represents a major component of many traffic safety programs. Traffic RADAR (Radio Detection and Ranging) technology has been used in the United States to detect speeding motorists since the late 1940s. Since then, radar speed-measuring devices have evolved from large, unwieldy stationary models to compact and sophisticated units capable of monitoring the speeds of vehicles moving in all directions while operating in either the stationary or moving mode. These technological advances as well as the development of other traffic enforcement technologies have greatly enhanced the mobility, efficiency, and effectiveness of traffic enforcement operations.

In 1977, NHTSA entered into an Interagency Agreement with the National Institute of Standards and Technology (NIST) to develop minimum performance specifications for radio detection and ranging (RADAR) speed-measuring devices. A technical document was published in March 1982 by NHTSA, entitled, “Model Performance Specifications for Police Traffic Radar Devices” under NHTSA report number DOT HS 806-191. That document has been updated and revised a number of times as a result of improvements and advances in speed measuring device technology. In 1992, NHTSA entered into another Interagency Agreement with the National Institute of Standards and Technology (NIST), United States Department of Commerce, to develop performance specifications for light ranging and distance (LIDAR) speed-measuring devices. A technical document was published by NHTSA in Feb. 1995 entitled “Model Minimum Performance Specifications for Lidar Speed Measurement Devices” under NHTSA report number DOT HS 808-214.

Continuous review of the technical specifications for RADAR and LIDAR devices has taken place with input from industry representatives, scientific and technical experts, members of law enforcement, and members of law enforcement professional organizations. An evolution of the process has resulted in the current approach; management of all processes associated with the review of test results and oversight of the CPL by NHTSA. This is complimented by the establishment of a working group through the Instrument Measurement Society of the Institute of Electrical and Electronic Engineers (IEEE) to inform potential updates or revisions to NHTSA technical specification documents using established methods and practices that are scientifically valid and defensible.

#### **Disclaimer**

Any changes to devices listed on the CPL that are modified (including but not limited to hardware, firmware, and software changes), that have not been tested and reviewed in accordance with the procedures established in this document shall be considered non-conforming devices.

#### 4. Conforming Product List

- a. The Conforming Product List serves to inform States and local jurisdictions when purchasing speed measuring devices of which devices have been subjected to, and successfully met the technical standards and specifications for devices being purchased with Federal Highway Safety grant funds. The CPL also serves to provide law enforcement agencies purchasing devices through other funding mechanisms which devices have been demonstrated to be reliable and accurate.
- b. Manufacturers will subject one device from a production model for testing by facilities capable of performing them as described in this document. The results of such testing will be compiled into a submission packet as described in Appendix C. Submission packets will be delivered to the NHTSA Technical Advisor in the prescribed format. That packet will be reviewed by the NHTSA Technical Advisor who will provide a summary assessment of the testing results to the NHTSA Program Manager with a recommendation of eligibility for inclusion on the CPL.
- c. It shall be the responsibility of the manufacturer to provide assurances and certification to purchasers of devices from a model described on the CPL of compliance with established specifications for the device type.
- d. The Conforming Product List as well as the technical specifications for RADAR and LIDAR, along with this Administrative Guide Document shall be maintained on the Federal Register for public access and viewing.

**Table 1.** Applicable documents for Down the Road RADAR and LIDAR technology

Technology Type	Applicable Requirements Document
Down the Road (DTR) RADAR	DOT HS 812 266 – Speed-Measuring Device Specifications: Down-the-Road Radar Module; revised April 2016
LIDAR Devices	DOT HS 809 811 – LIDAR Speed-Measuring Device Performance Specifications; revised March 2013

In cases where a manufacturer discontinues the production of a previously approved device model and/or variant; the device model will remain on the CPL with a notation of “APPROVED BUT NO LONGER IN PRODUCTION.”

Unless circumstances require removal, device models that have been approved and placed on the CPL prior to October 1, 2016 shall remain on the CPL with no change in status. Changes in testing protocols, review processes, and compliances with technical specifications in place at the time a device model was certified shall not change the approved status of the device model.

## 5. Testing Requirements for New or Updated Devices

- a. All speed measuring device models submitted for review and consideration for placement on the Conforming Product List shall require the manufacturer of a RADAR or LIDAR to subject a device from the model under review to complete testing in accordance with the specifications outlined in the documents described in Table 1 for the device type (RADAR or LIDAR). This requirement shall apply to new devices anticipated for production and devices already approved and on the CPL that have been upgraded or modified. Examples of changes or modifications include, but are not limited to:
  - 1) One or more features are to be added or deleted to a model currently on the CPL
  - 2) Changes, updates, or modifications will be made to the software on a device model currently on the CPL that will change the performance of the device
  - 3) Changes, updates, or modification will be made to hardware on a device model currently on the CPL that will change the performance of the device
  - 4) Functional or operational changes will be made to a device model that will change the operation of the device
  - 5) Model designation or name, or physical changes will be made to a device model currently on the CPL that could reasonably be expected to cause confusion.

NOTE: The National Highway Traffic Safety Administration does not advise on, or make technical determinations regarding changes or modifications to speed measuring devices.

## 6. Testing Facilities Qualifications

The testing of speed measuring devices for inclusion on the CPL is conducted to verify compliance of these technologies with the NHTSA performance requirements, as described and illustrated in Table 1. Facilities selected by manufacturers to conduct testing of devices from a model under review for consideration of inclusion on the CPL must be capable of performing the tests described in the applicable document listed in Table 1.

- a. Testing may be conducted by multiple facilities based on capacity, expertise, or availability of technology.
- b. For testing results to be reviewed and evaluated, the manufacturer will be required to secure documentation from the facility to support their qualifications to conduct the tests. Copies of such documentation must be submitted with any request for review of test results of a device during the interim period for consideration of inclusion on the CPL.

- c. The testing laboratories may sub-contract tests if needed. The manufacturer is responsible for ensuring evidence of sub-contractor laboratories or facility provides evidence of their capacity to perform the specific test(s) conducted.
- d. Devices approved during the interim period will remain on the CPL after final transition to the new process is complete.

## 7.0 Testing and Review Processes

Participation in this program and compliance with the processes described within this document are voluntarily. Testing is conducted to verify that devices meet all applicable technical specifications; the needs of law enforcement; the expectations of legislative and judicial bodies; and most importantly- the public to assure the accuracy and reliability of the device.

- a. Manufacturers assume all responsibility for the costs associated with consultation with technology experts, testing, collection of documentation, and submission of a device model for review and recommendations for inclusion on the CPL.
- b. NHTSA shall be responsible for the identification and compensation of a qualified independent Technical Advisor to review the test results and documentation submitted by the manufacturer.

### 7.1 Providing Notice of Intent to Test

- a. The manufacturer will notify the NHTSA Program Manager in writing of the intention to perform testing on a device that will result in review of results for potential inclusion on the CPL. Notification shall be accomplished by transmitting a completed "Manufacturer Notification of Intent to Perform Testing" form (Appendix A) to the NHTSA Program Manager.
- b. The NHTSA Program Manager will acknowledge receipt of the manufacturer's notice and create a file for all documents, correspondence, or other information exchange regarding the device.

### 7.2 Manufacturer Submission of Device for Testing

- a. A manufacturer seeking to have their device model placed on the CPL shall submit one (1) device from the production model for testing. The device shall be subjected to testing to verify and provide documentation that the model complies with the requirements of the applicable document given in Table 1.
- b. Upon initiating testing, the manufacturer shall provide information to the NHTSA Program Manager that a device of a given model has been submitted to a testing laboratory for testing.

- 1) This information shall include the model name, model number, serial number of the submitted device, the date of manufacture, and place of manufacture. The manufacturer is solely responsible for all costs associated with the testing of the device.
- c. If more than one laboratory will be involved in the testing of the device, it is the manufacturer's responsibility to schedule the testing among the contributing test laboratories and shall provide a tracking record for the device under test. The tracking record shall include at a minimum:
  - 1) Device model designation and serial number
  - 2) Dates of shipping and delivery of the device under test
  - 3) Signatures of facility representatives verifying receipt and transfer/shipping of the device under test
- d. The manufacturer shall send one device from the model under review to the identified testing laboratory or laboratories for testing. Only one (1) device from the model under review may be used for type testing. The manufacturer will identify the device under test by model designation and serial number.
- e. More than one testing laboratory may be used to ensure testing for all the requirements of a given traffic enforcement technology. The testing laboratories are also permitted to subcontract tests if needed. All laboratories performing tests of the given traffic enforcement technology shall provide evidence of the calibration of their equipment to render accurate measurements of testing results.
- f. If more than one laboratory will be involved in the testing of the device under test, it is the manufacturer's responsibility to schedule the testing among the contributing test laboratories, and the manufacturer shall provide a tracking record for the device under test. The tracking record shall include, at a minimum, dates of shipping and delivery of the device under test and signatures by responsible individuals.

### 7.3 Testing and Collection of Results and Documentation

- a. It is the responsibility of the manufacturer to ensure all applicable tests are conducted, and proper documentation is secured for device models being submitted for review, whether the device under review is a new model or a variant of an existing model.
- b. The manufacturer should provide updated information to the NHTSA Program Manager in cases where the anticipated time necessary to complete testing and submit a packet for review changes.



#### 7.4 Submission of Review Packet to NHTSA

- a. The manufacturer shall provide a certified copy of the test record to NHTSA for review by the Technical Advisor. If more than one test laboratory was involved in the assessment of the device under test, the manufacturer shall provide all the certified test records plus a summary test report indicating pass/fail for each test. The test record shall include a copy of the testing laboratories' documentation as required in 7.2.e supporting the accuracy of their testing equipment.
- b. The Technical Advisor shall receive the review packet from the Program Manager for review of the submitted results of the device under test. A written report of the NHTSA Technical Advisor's review and recommendation for inclusion or rejection for the CPL will be made to the NHTSA Program Manager.

#### 7.5 Technical Advisor Role

The NHTSA Program Manager will identify a qualified Technical Advisor to review all test results and documentation submitted by the manufacturer to determine if the model under review will meet or exceed the technical specifications for the device type. The results of the review will include a statement as to whether or not the device under test has met or exceeded all relevant specifications to be tested, and that all documents required to validate the results are provided. The results will include a recommendation as to whether the model under review should be placed on the CPL. All results will be directly reported to the NHTSA Program Manager.

- a. The Technical Advisor will not respond to, or initiate any direct or indirect contact with the manufacturer, their consultants, or other representative from the time the NHTSA receives the Manufacturer Notification of Intent to Perform Testing is received by the NHTSA Program Manager until all testing and review is completed.
- b. Any contact or discussion between the Technical Advisor and the manufacturer regarding the Technical Advisor's report and/or finding shall be facilitated by NHTSA to ensure consistency and fairness in the administration of program.
- c. The NHTSA Program Manager will communicate the results of the review and recommendation to the manufacturer in writing.

The applicable technical documents containing the specifications and processes to be met by manufactures and testing facilities in the review and approval of speed measuring devices for inclusion on the CPL are noted in Table 1.

## 7.6 Providing Notice to Manufacturer of Results

- a. The NHTSA Program Manager will provide notice to the manufacturer in writing regarding the outcome of the Technical Advisor's review and recommendation regarding inclusion on the CPL. Device models that qualify for inclusion on the CPL will be identified and published as soon as is practicable.
- b. Notice will be provided to a manufacturer if a device model has failed to receive a recommendation for inclusion on the CPL. The reason for the failure will be identified, to include lack of compliance with technical specification(s) or other factors.

## 8. Recommendations for Maintenance of Speed Measuring Devices

- a. Law enforcement agencies have a compelling interest to ensure the accuracy and reliability of speed measuring devices in use. Maintaining public and judicial faith in the accuracy of speed measuring devices is critical in securing and holding support for the use of the devices.
- b. Law enforcement agencies are strongly encouraged (but not required) to use devices that appear on the CPL for the collection of evidence of traffic violations, regardless of the funding source used to purchase the device(s).
- c. The viability and legitimacy of traffic enforcement actions involving speed measuring technology demands that devices in service are properly maintained and subjected to testing to verify their accuracy on a recurring basis during the service life of the devices.
- d. Law enforcement agencies and State peace officer standards and training organizations are also strongly encouraged to train speed measuring device operators at a minimum, in accordance with the NHTSA Speed Measuring Device Operator Training curriculum.
- e. Peace officers should not be operating speed measuring devices to collect evidence of a traffic violation without having first successfully completed such training.
- f. NHTSA recommends that written policies and procedures describing maintenance requirements and scheduled calibration testing be established by law enforcement agencies using RADAR and LIDAR technologies. These procedures should define the conditions under which each device should be tested and calibrated by a qualified testing facility.
- g. Testing to ensure the accuracy of all speed measuring devices is recommended whenever the unit undergoes repair(s). Law enforcement agencies are strongly recommended to maintain all records related to the accuracy, maintenance, repairs, and documentation of calibration for every device in service.

- h. These records should be readily accessible to provide evidence to courts hearing cases involving the use of a specific device to verify the proper maintenance and of the unit.
- i. Unless required by State or local statute, participation in periodic testing and maintenance as described in this document to ensure the accuracy of speed measuring devices by law enforcement agencies is voluntary.

## 9. Proposal of New Performance Specifications

A manufacturer wishing to propose a change, update, or enhancement to a performance specification shall submit a request in writing to the NHTSA Program Manager. Such requests would be to meet an emerging need related to technology improvements or changes not addressed in current published traffic enforcement technology specifications. The NHTSA Program Manager will review the proposal and refer the matter to the IEEE DTR Radar Working Group as appropriate for consideration and recommendations.

## 10. Review and/or Updating of Current Performance Specifications

Existing technology specifications for speed measuring devices will be reviewed and revised as necessary and appropriate in a manner consistent with the practice of the standardization body that publishes the standards. NHTSA encourages manufacturers, law enforcement agencies, law enforcement professional organizations, and testing laboratories to participate in this standardization body process.

The National Highway Traffic Safety Administration; United States Department of Transportation, recommends that every speed measuring device used for the collection of evidence in the enforcement of traffic laws be subjected to periodic testing to ensure the accuracy of the device in measuring speed(s). Such testing is recommended to occur no more than 36 months (3 years) from the date the device entered service, and every subsequent 36 months (or sooner) for the duration of time the device remains in service.

## Glossary

**Approval** – Result of the review of testing that demonstrates compliance with all relevant technical specifications for a device based on published NHTSA specifications for the device type. Approval will result in the inclusion of a device model on the Conforming Product List.

**Certification Testing** – Testing of a production model of enforcement technology devices to be used by law enforcement agencies to assure that the devices perform in compliance with the applicable *Speed-Measuring Device Performance Specifications*.

**Conforming Product List (CPL)** - A list of device models that comply with the applicable *Speed-Measuring Device Performance Specifications* that informs States which devices are eligible for purchase using Federal Highway Safety Grant funds.

**Device Under Test** – applies to the device (from a model under review) that is submitted for certification testing

**Model Under Review** - applies to any device or system from the time the Manufacturer Notification of Intent to Perform Testing is received by the NHTSA Program Manager until all testing and review of test results is completed and the Program Manager is informed of the completion of testing

**Down-the-Road (DTR) Radar** - A radar device that does not make allowances for the cosine angle effect; for purposes of inclusion on the CPL, DTR RADAR devices are those which are staffed by qualified law enforcement officers to collect evidence of a traffic violation that will result in contemporaneous and direct contact with a violator.

**LIDAR Device** - Down-the-road speed-measuring equipment, which determines target range and speed based on the time-of-flight of laser light pulses reflected off a target; for purposes of inclusion on the CPL, LIDAR devices are those which are staffed by qualified law enforcement officers to collect evidence of a traffic violation that will result in contemporaneous and direct contact with a violator.

**National Highway Traffic Safety Administration** - NHTSA; a mode of the United States Department of Transportation. NHTSA provides oversight of the program.

**National Institute of Standards and Technology** - NIST; part of the United States Department of Commerce. NIST provides support to NHTSA for the oversight of technical specifications

**Program Manager** - Individual designated by NHTSA to oversee and manage all aspects of the program including but not limited to records management, approval of devices, oversight of contractors/subcontractors serving as Technical Advisors, and supporting publication of technical specifications. The Program Manager may delegate responsibilities and/or functions to contractors, consultants or subordinates, as dictated by the operational and scientific needs of the program.

**RADAR Device** - An instrument that transmits microwave energy, monitors the reflected signal from moving vehicles within the microwave beam, processes the Doppler shift of the reflected signal to display the speed of the vehicle that is being tracked, and if applicable, the speed of the patrol vehicle and the direction of the target vehicle. For purposes of inclusion on the CPL, RADAR devices are those which are staffed by qualified law enforcement officers to collect evidence of a traffic violation that will result in contemporaneous and direct contact with a violator.

**Specification** – A detailed description of a technical requirement that determine specific acceptance criteria, stated in terms suitable to measure a particular design or operational characteristic.

**Technical Advisor** – independent, objective third party contracted by NHTSA to review test results and the documentation presented to NHTSA for consideration of inclusion on the CPL. The Technical Advisor shall be an individual(s) with established professional credentials, supported by education and certifications.

# APPENDIX A: NOTICE OF INTENT TO PERFORM TESTING



## Manufacturer Notification of Intent to Perform Testing Conforming Product List

Date: \_\_\_\_\_

Manufacturer Name	
Address	
City	
State	
Zip Code	
Point of Contact (name/title)	
Phone number(s) Work:	Cell Ph.
E-mail address	

Device type to be tested:	
Down-the-Road RADAR <input type="checkbox"/>	LIDAR <input type="checkbox"/>

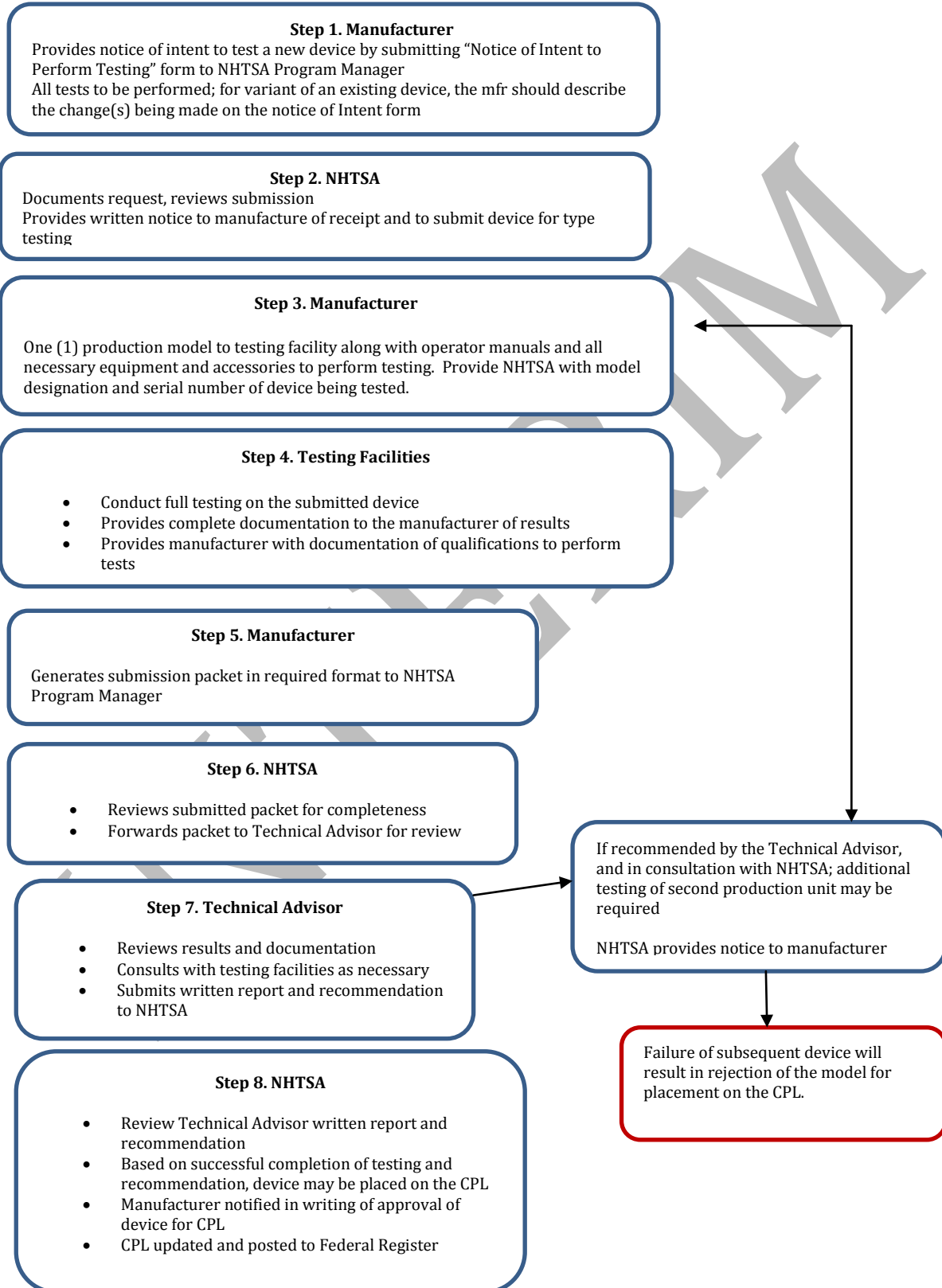
Check Test Being Conducted	
CPL Type Testing (New Model or Device) <input type="checkbox"/>	CPL Type Testing (Model variation or upgrade) <input type="checkbox"/>
Model Number/Name _____	

Describe the device to be tested to include any changes or modifications being made to a currently approved device
--

Anticipated date of submission of test results for review _____
---

Received by Program Office: _____ by: _____
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# APPENDIX B: CPL TESTING & APPROVAL PROCESS



## APPENDIX C: SUBMISSION OF TEST RESULTS & DOCUMENTATION

The following procedures will be employed in the submission of test results for approval of new devices or variants of existing devices for inclusion on the Conforming Product List.

The manufacturer is solely responsible for providing all elements of the submission packet for review by a qualified Technical Advisor as designated by the NHTSA

The function of the independent Technical Advisor is limited to the review of the documents included in submission packets, test results, making contact with testing facilities or laboratories that performed the tests to resolve potential questions, and providing the NHTSA Program Manager with a written report and recommendation with respect to adding a device to the CPL. The Technical Advisor reports only to the NHTSA Program Manager.

The independent Technical Advisor shall not interact with the manufacturer, nor provide consultation services to any manufacturer prior to, or subsequent to testing and approval or rejection of a device.

### **Submission Packet Contents**

Submission packets will incorporate three separate elements, and shall be organized in the sequence described below for consistency and efficiency of reviewing the contents in a timely manner to avoid unnecessary delays.

**Element One: Laboratory Test Report Form-** a completed Laboratory Test Report Form shall be the first element of the submission packet that includes all required content for the device type to be tested. All forms must include a written signature of an authorized representative of the manufacturer requesting the review. The form shall be created and maintained by NHTSA, and will be made available to manufactures or their agents in electronic format. The form will contain information describing the device, and the manufacturer shall supply a copy of the operator manual for the device along with the form as an component of element one.

A full printed copy of the operator manual for the device will be included in Element One.

**Element Two: Test Results-** documents containing test results for the submitted device shall be the second element of the submission packet. The manufacturer is responsible for the collection and submission of all documents from testing facilities or laboratories that reflect the results of testing to include numeric values, if appropriate. Test results shall be organized in a sequential manner to align with the sequence and contents of the Laboratory Test Form, and must be clearly marked with identifying information for the testing facility, and which standard or specification the test result(s) support.



All documents must be clear and legible and indicate the standard or specification being addressed. Packets that contain material that is incomplete or illegible will be returned to the manufacturer by the NHTSA Program Manager for correction prior to being forwarded to the independent Technical Advisor.

**Element Three: Documentation/Evidence of Testing Facility Certifications-** written documentation reflecting the qualifications of testing facilities shall be the third element of the submission packet. It is the responsibility of the manufacturer to obtain and submit evidence of the testing facility or laboratory performing the test of their current certifications to support the second element of the packet.

All documents must be legible and contain the name, address, and telephone number of the facility. If these documents do not contain the above listed information, the manufacturer shall provide such information for each facility engaged to perform testing.

**Method of Submission-** each submission packet will be in standard 8 ½ x 11 inch business format in portrait orientation. The packet shall clearly delineate separation of the three elements required, and be contained in a three ring binder of appropriate size to contain all three elements. The binder will be forwarded to the independent Technical Advisor for the review process, and returned to the NHTSA Program Manager to ensure compliance with Federal records retention law.

All submitted documents containing signatures of the manufacturer's representative and testing facilities must be originals. It is strongly recommended that all signatures be made in blue ink to ensure the originality of the document.

The manufacturer shall also submit a copy of the packet in electronic PDF format to the NHTSA Program Manager to be maintained in program files at NHTSA Headquarters.

### Written Report/Recommendation of the Independent Technical Advisor

The independent Technical Advisor shall review the contents of the submission packet and provide a written report and recommendation regarding the device without unreasonable delay. The written report shall include a summary of the review process, and include a brief description of any concerns or questions noted and how the issue was resolved. The report shall also contain a recommendation to approve or reject the device being reviewed for inclusion on the Conforming Product List.

A hard copy of the report containing the independent Technical Advisor's original signature shall be submitted to the NHTSA Program Manager, along with a PDF electronic copy. Original copies of the report and recommendation will be consolidated with the submission packet and retained by the government in accordance with Federal records retention schedules and requirements.

## SUBMISSION PACKET CONTENTS AT A GLANCE

### **Element One- Laboratory Test Form**

- Laboratory Test Form
- Original signature of representative of lab conducting test(s)
- Complete printed version of operator manual for the device

### **Element Two- Test Results**

- Test results to support findings on Laboratory Test Form
- Clear and legible
- Submitted in alignment with standards and specifications on the Device Testing Report
- 8 ½ x 11 inch, portrait format

### **Element Three- Documentation/Evidence of Testing Facility Certifications**

- Testing Facility Certification(s)
- Name of testing facility
- Address and phone number of testing facility

- Hard copy- one, with original signature(s) of manufacturer representative
- All elements contained in one (1) three-ring binder sufficient in size to contain all documents
- Electronic copy- submitted in PDF form