

## Section 5.5

### INDEPENDENT ASSURANCE PROGRAM

#### 5.5.1 PURPOSE

To describe the necessary activities for Florida Department of Transportation (Department) personnel as related to the Independent Assurance (IA) Evaluation Program. The IA Program consists of two parts: 1) evaluating the performance of the qualified sampling and testing personnel and equipment, and 2) evaluating the reliability of acceptance data.

#### 5.5.2 AUTHORITY

Code of Federal Regulations (CFR), Federal-Aid Policy Guide (FAPG), Subchapter G - Engineering and Traffic Operations, Part 637 - Construction Inspection and Approval, Subpart B - Quality Assurance Procedures for Construction  
Sections 334.044(2), 334.044(10)(a) and 334.048(3) Florida Statutes

#### 5.5.3 SCOPE

Primary offices affected by this procedure include the State Materials Office (SMO), State Construction Office (SCO), District Construction Offices (DCOs), District Materials Offices (DMOs), and Resident Construction Offices (RCOs).

#### 5.5.4 INDEPENDENT ASSURANCE PERSONNEL AND EQUIPMENT

IA personnel are employed by the Materials Office or consulting firm hired by the Department to perform IA inspection and testing. District personnel performing IA evaluations must participate in at least one evaluation per fiscal year.

##### 5.5.4.1 GENERAL INFORMATION

Technicians who perform acceptance program sampling and testing for the Department must be qualified. Qualifications must be verified by review of the **Construction Training Qualification Program (CTQP)** web site.

Other qualifications may apply as defined in the contract. Test methods not covered by CTQP for qualification are not included in the IA Program. Acceptance program sampling and testing includes Quality Control (QC), Verification (V), Independent Verification (IV), and Resolution (R) testing.

Periodic IA evaluations are intended to assure the integrity of the testing program, used in acceptance of the materials.

CTQP qualifications are subject to suspension in accordance with the ***Construction Training and Qualification Manual (CTQM)***.

The number of evaluations for each test method will be a percentage of the active qualified technicians in that test method for one fiscal year.

#### **5.5.4.2 FREQUENCY AND GOALS OF EVALUATION**

The frequency of IA evaluations will be determined by a statistically representative sampling of active technicians.

Technicians will be considered active if they have run tests that are used by the Department to accept material. They will be evaluated for each of the test methods for which they are active. The Department will document the percent of active technicians evaluated for each test method.

It is understood that the Department will not be able to evaluate every active technician in every test method.

The Department has set a practical goal of an average of 90% of the percentages of all test method.

Example:

FM1 – T027	89% of active technicians evaluated
ASTM C39	98% of active technicians evaluated
FM1-T238	92% of active technicians evaluated

Average = 93% Goal was achieved.

The schedule will be based on a systems approach.

The CTQP qualifications required for active technicians to perform specific tests are listed below:

- (A) Aggregate  
Qualified Sampler Technician  
Aggregate Base Testing Technician  
Limerock Bearing Ratio (LBR) Technician  
Aggregate Testing Technician
- (B) Asphalt  
Asphalt Paving - Level I  
Asphalt Plant - Level I
- (C) Concrete  
Concrete Field Technician Level I  
Concrete Laboratory Technician Level I
- (D) Earthwork  
Earthwork Construction Inspection Level I  
Earthwork Construction Inspection Level II

#### **5.5.4.3 EVALUATION SCHEDULING**

Technicians sampling and testing materials for acceptance will contact the District Materials Office to schedule an IA evaluation prior to performing or concurrent with first tests for acceptance by the Department. Project Administrators will notify the District Materials Office in accordance with ***Construction Project Administration Manual (CPAM) Section 10.3.6.1*** when there is concrete placement activity on a project. District personnel will perform IA evaluations randomly throughout a calendar year to meet the sampling goals as specified in ***Section 5.5.4.2*** of this ***Chapter***. These IA evaluations may be scheduled with the technician in advance or may be unannounced and without notice.

#### **5.5.4.4 EVALUATING EQUIPMENT**

Test equipment used by any technician performing testing for Department Projects must be evaluated using one or more of the following: verification of critical dimensions, calibration checks, observation, split samples, or proficiency samples. Equipment conformance will be reported on the Qualification Performance Report (QPR) or Laboratory Qualification Performance Report (LQPR) as applicable. The first unsatisfactory evaluation due to deficient equipment will result in a strike to the technician.

#### 5.5.4.5 EVALUATING PERSONNEL

Test personnel must also be evaluated for each of the test methods for which they are active by proficiency samples, observations, split samples, or a combination of observation and split samples.

The combination of an observation and split sample applies only to test methods with split sample comparison criteria. A split sample should be performed in addition to observation when evaluating a technician on test methods with comparison criteria. The split sample comparison criteria are defined in each test procedure.

IA evaluations at production facilities should be performed by IA personnel working in or for the corresponding technical section of the material office, and who are already visiting the production facility on a regular basis.

IA personnel will promptly compare and document test results to support the Qualification Performance Report (QPR) described in **Section 5.5.6.2**.

#### 5.5.4.6 RESOLUTION FOR DEFICIENT EVALUATION

The Department will perform re-evaluation(s) on sampling and testing technicians who fail an evaluation. The re-evaluation is required on the same test method that the technician failed from the previous evaluation. However, the Department has the option to perform the re-evaluation on additional test methods associated with the qualification.

Another strike will be issued to the technician if:

The re-evaluation was unsatisfactory due to the technician's failure to demonstrate the test procedure during observation.

Split samples did not compare.

The proficiency sample test result is outside two standard deviations.

See **Appendix B**.

If the re-evaluation was unsatisfactory due to the same deficient testing equipment and is beyond the technician's control, a second strike may not be issued to the technician. The laboratory's qualification status may be suspended on the affected test method for non-compliance with **Section**

**5.7.6 of the Materials Manual** and the Department may suspend the facility's QC plan, if applicable, per **Section 5.6.11 of the Materials Manual**. See **Appendix C**.

The Department will perform re-evaluation(s) within 365 days from the first strike. The re-evaluation must be performed by different IA personnel or someone other than the person who issued the previous strike. If the re-evaluation results in three strikes in the same qualification area, the technician will be prohibited from performing related testing. The case will also be escalated to the District Materials and Research Engineer (DMRE) and State Construction Engineer (SCE) for recommendation to the State Construction Training Administrator that may result in qualification suspension which is addressed in the **Construction Training and Qualification Manual (CTQM) Section 1.9.11**.

#### **5.5.4.7 COMPARISON TOLERANCE**

##### **5.5.4.7.1 Comparison Testing**

Acceptable comparison testing tolerances are shown on each Independent Assurance procedure checklist.

##### **5.5.4.7.2 Proficiency Samples**

Acceptable tolerance for the test results of proficiency samples is two standard deviations of the grand average value for all proficiency samples in that evaluation.

##### **5.5.4.7.3 Testing Equipment**

Acceptable tolerances for the test equipment are shown on each Independent Assurance equipment checklist.

#### **5.5.5 INDEPENDENT ASSURANCE-ACCEPTANCE DATA ANALYSIS**

The reliability of the acceptance data will be assessed annually based on an analysis of data. The analysis will focus on materials as determined by the Director, Office of Materials.

The analysis will consist of an assessment of Quality Control (QC), Verification (VT) and Independent Verification (IV) data as collected from the

Department's database and will be based on existing pass/fail criteria as well as a statistical analysis of contractor/producer QC data as compared to independent test data. The analysis will include a statewide assessment, district specific assessments, and producer specific assessments.

Upon completion of the fiscal year assessments, an action plan will be developed and included in the fiscal year report to the Federal Highway Administration (FHWA) as described in **Section 5.5.6.1**.

## **5.5.6 DOCUMENTATION**

### **5.5.6.1 SYSTEMS REPORT**

On a fiscal year basis, the Director, Office of Materials will submit a report to the FHWA documenting the effectiveness of the Independent Assurance Program. The report will be made up of two parts: 1) the effectiveness of the IA Program as related to the evaluation of personnel and equipment, and 2) an assessment of the reliability of acceptance data.

The report will include the current IA goals, results achieved, comparison analysis, and the goals for the upcoming year. The goals are set in the Department's database in order to develop and generate the report for the evaluation of personnel and equipment.

The report will also document the analysis conducted in **Section 5.5.5**. It will provide the Department's assessment of the reliability of the acceptance data by identifying inconsistencies and any potential problem areas, and will include an action plan to improve the Department's acceptance program.

### **5.5.6.2 QUALIFICATION PERFORMANCE REPORT (QPR)**

The Qualification Performance Report is generated by the Department's database. All IA evaluations are entered in the Department's database. **Form No. 675-000-01** is attached as **Appendix A** and may be used as a guide.

The QPR shall be completed and made available in the Department's database within five (5) working days. Evaluation by observation will be considered satisfactory if the procedure is performed correctly, and the equipment is found to meet the specified requirements. Evaluation by split sample will be considered satisfactory if the test results meet the

comparison criteria as defined in the checklist(s). The evaluation by proficiency sample shall be considered satisfactory if the test results are within two standard deviations of the grand average value for all proficiency samples in that evaluation. The technician and other personnel identified on the QPR should be notified of the results either by courier mail or electronic mail for satisfactory evaluations. The notification list is shown below in the table. For unsatisfactory evaluations, additional personnel will be notified as described below. Refusal to participate or a lack of cooperation in the IA evaluation will be a sufficient reason to consider an evaluation unsatisfactory. Technicians who submit late proficiency sample test results will receive an unsatisfactory evaluation. Late test results are defined as those test results not submitted by the result submission date. Technicians who receive three strikes in the same qualification area will be prohibited from performing any related testing until the strikes are resolved.

Notification of Satisfactory Qualification Performance Report	
IA Evaluation of Contractor's QC Technician	IA Evaluation of FDOT Verification Technician
Technician, Supervisor	Technician, Supervisor

Notification of Unsatisfactory Qualification Performance Report		
Strike	IA Evaluation of Contractor's QC Technician	IA Evaluation of FDOT Verification Technician
1 <sup>st</sup> Strike	QC Manager, Technician, Supervisor	Technician, Supervisor
2 <sup>nd</sup> Strike	QC Manager, Technician, Supervisor	Technician, Supervisor, Resident Engineer
3 <sup>rd</sup> Strike	Technician, Supervisor, District Materials and Research Engineer (DMRE), Resident Engineer, District Construction Engineer (DCE)	Technician, Supervisor, DMRE, DCE, Resident Engineer

### 5.5.6.3 IA CHECKLISTS

The IA Checklists are located at:

<http://www.fdot.gov/materials/quality/programs/independentassurance/checklist/index.shtm>

## 5.5.7 RESPONSIBILITIES

District Materials Offices are responsible for IA evaluation of the district personnel participating in the Quality Control, Verification, and Independent Verification testing of the acceptance program sampling and testing. The District IA goals are set at the beginning of each fiscal year. All District Materials Office IA personnel and SMO technicians will be evaluated by SMO personnel. The SMO will set its goals at the beginning of each fiscal year.

The SMO monitors and reviews the IA Program statewide to ensure consistency in implementation and to evaluate the IA Program effectiveness. The IA fiscal year reports are reviewed and used to refine the system.

The SMO will conduct the annual acceptance data analysis as described in **Section 5.5.5**, and will generate the annual report to the FHWA.

## 5.5.8 TRAINING

IA personnel must be qualified in the areas they are evaluating.

## 5.5.9 FORMS

Form No. 675-000-01, Qualification Performance Report, is available from the Department's forms library.

Checklists are not considered official forms of the Department since they are used to supplement information that is included in **Form No. 675-000-01**, See **Appendix A**.



# APPENDIX A

## Form No.: 675-000-01, Qualification Performance Report

FORM 675-000-01  
MATERIALS  
12/08/2016

### STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION QUALIFICATION PERFORMANCE REPORT

**Project Information:**  
FIN: \_\_\_\_\_  
Date: \_\_\_\_\_  
Time: \_\_\_\_\_  
Location: \_\_\_\_\_  
Resident Office: \_\_\_\_\_

**Qualified Technician Information:**  
Trainee Identification No. (TIN): \_\_\_\_\_  
Active in District: \_\_\_\_\_  
Type of Technician: \_\_\_\_\_  
Company Name: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_

**Qualification(s) Reviewed:**

<b>Aggregates:</b> <input type="checkbox"/> Qualified Sampler <input type="checkbox"/> LBR Technician <input type="checkbox"/> Aggregate Base <input type="checkbox"/> Aggregate Testing	<b>Asphalt:</b> <input type="checkbox"/> Asphalt Plant L-I <input type="checkbox"/> Asphalt Paving L-I	<b>Concrete:</b> <input type="checkbox"/> Field Technician L-I <input type="checkbox"/> Concrete Lab Technician L-I <input type="checkbox"/> Concrete Lab Technician L-II	<b>Earthwork:</b> <input type="checkbox"/> ECI L-I <input type="checkbox"/> ECI L-II
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**Type of Evaluation:**

Observation  
 Split Sample Results  
 Proficiency Sample

Technician result: \_\_\_\_\_ IA result: \_\_\_\_\_ Comparison Criteria: \_\_\_\_\_

Sample No. _____	Tech. Result _____	Average _____	Standard Dev. _____	Passing Range _____
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**Evaluation Summary:**

Was Sampling, Testing and/or Reporting demonstrated according to qualification standards? \_\_\_\_\_  
**YES** concludes evaluation(s) satisfactory, if **NO**, see attached (check lists, other).

Was Equipment used in conformance with appropriate test method(s)? \_\_\_\_\_  
**YES** concludes evaluation(s) satisfactory, if **NO**, see attached (check lists, other).

If results were unsatisfactory, indicate action taken (1st, 2nd, 3rd, NA if passing): \_\_\_\_\_  
If 1st and 2nd action, document results. If 3rd action, written summary of observations sent to District Materials Engineer for disposition.

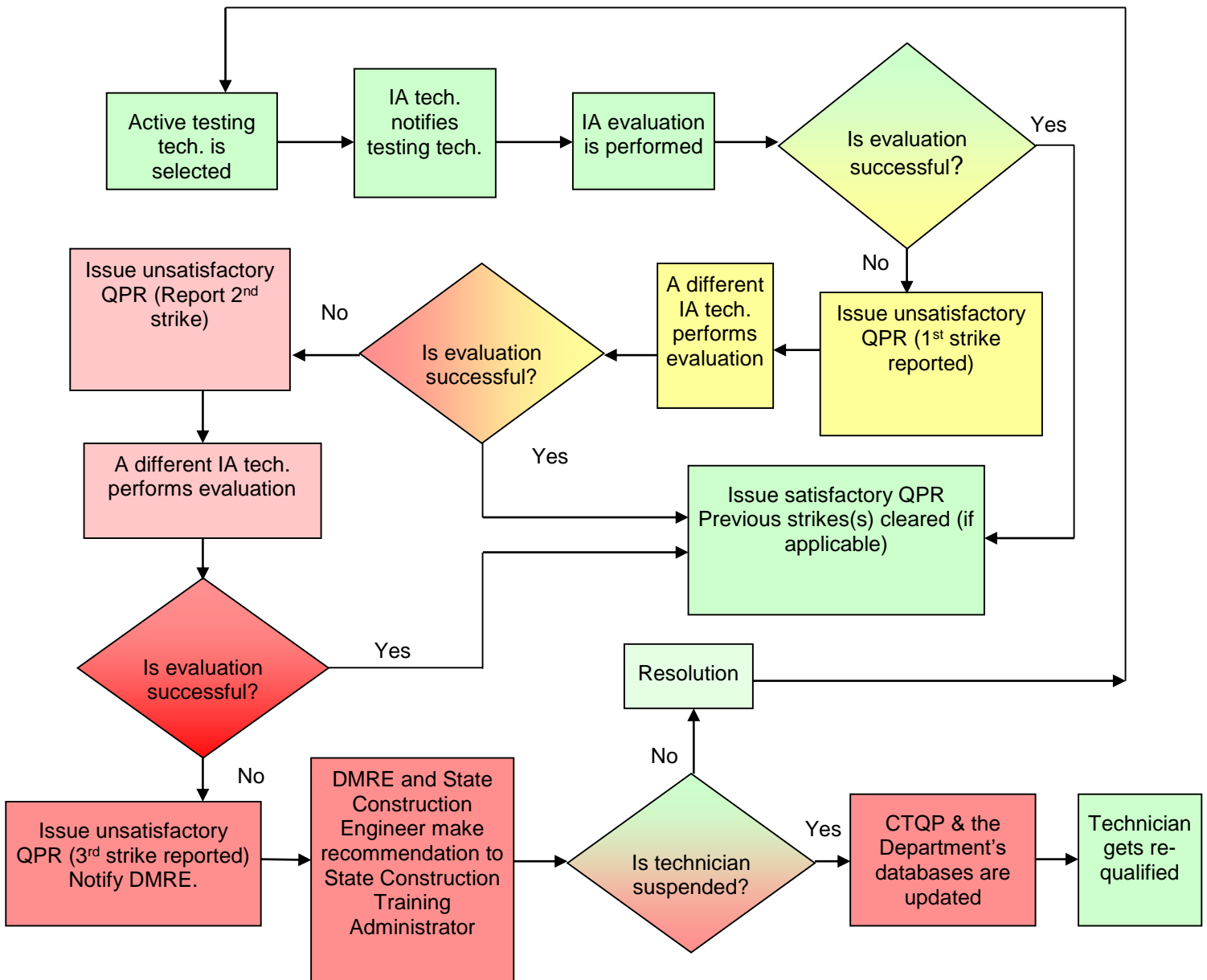
**Comments, Test Methods Evaluated, and others:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Signature of Independent Assurance Evaluator/Observer \_\_\_\_\_ Date Approved \_\_\_\_\_

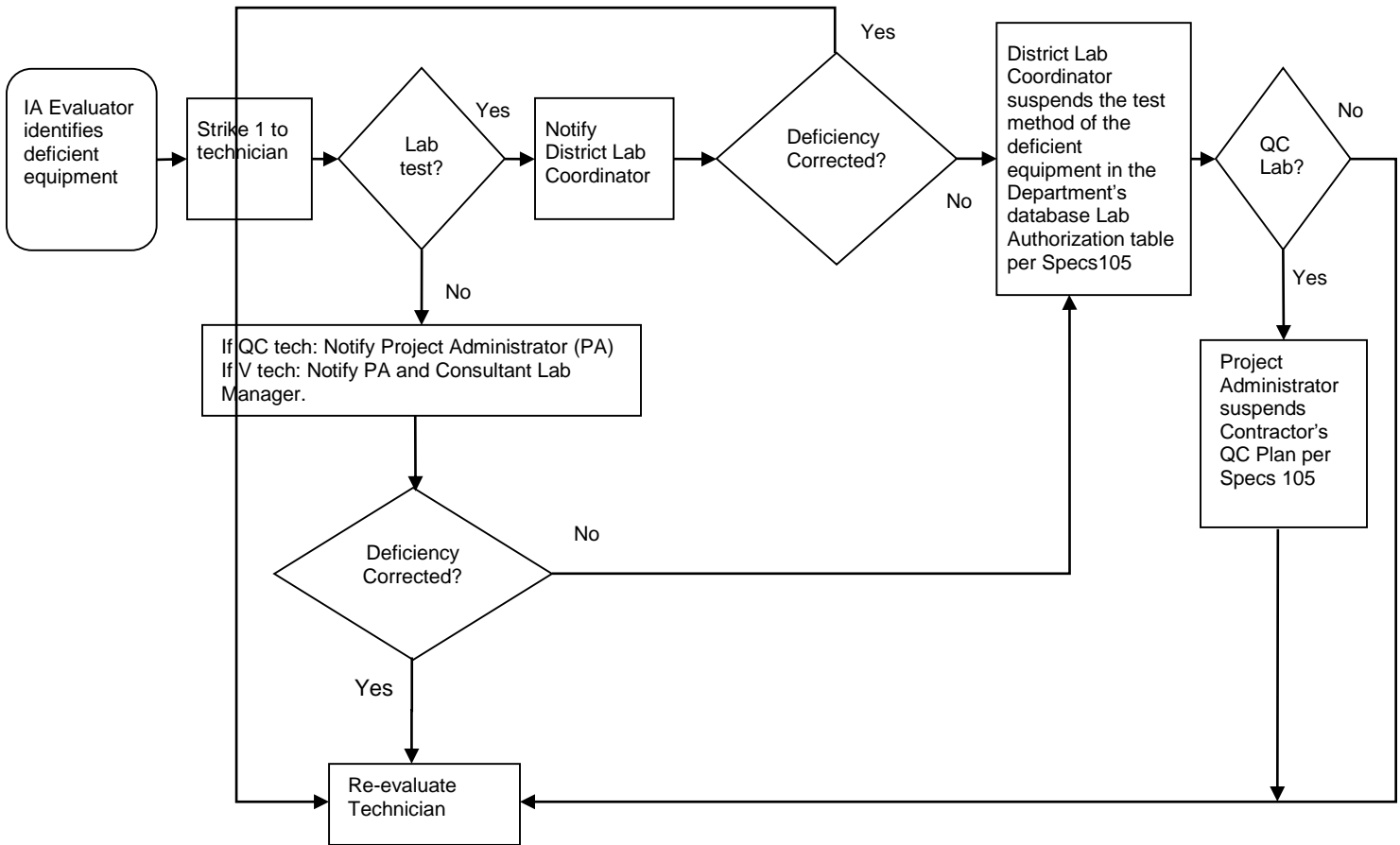
cc: Original ( IA Files/DME): \_\_\_\_\_  
Project Administrator/Supervisor: \_\_\_\_\_ Technician's E-mail: \_\_\_\_\_  
Other(s): \_\_\_\_\_ Supervisor's E-mail: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### APPENDIX B



## Independent Assurance Flowchart

## APPENDIX C IA EVALUATION OF EQUIPMENT



Note:

1. May not issue 2<sup>nd</sup> strike to the technician if the same deficient equipment.
2. Follow MM Section 5.7 for reinstating a suspended test method under the Lab ID.