Basics of Quality Assurance

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Basic Concepts

• Components of a Quality Assurance program
• Who is responsible for what?
• Quality Control Plans
What are we trying to achieve?
Definitions

• All federal aid projects must comply with CFR 637.203, Quality Assurance Procedures for Construction

• State and Local Agencies should also have such policies in place for non-federal aid projects
Quality Assurance

• All those planned and systematic actions necessary to provide confidence that a product or service will satisfy given requirements for quality

Owner?

Agency
Quality Control

• All contractor/vendor operational techniques and activities that are performed or conducted to fulfill the contract requirements.

Owner?

Contractor
Independent Assurance

• Activities that are an unbiased and independent evaluation of all the sampling and testing procedures used in the acceptance program.

Owner?
Agency
Who “Owns” Quality?

- Up to this point, owner?
  Contractor

⇒ Quality Control
Agency Role?
Oversee

⇒ Quality Assurance
Who “Owns” Quality?

• Once project accepted
  ➞ Agency Owns
What do we QA?

• Materials
  – Aggregates
  – Emulsions
What do we QA?

• Application rates
  – Mix designs!
    • ETF Specs
  – Equipment Calibration
What do we QA?

- Final product????
Quality Control Plans

- Each material supplier should have their own quality control plan
  - And follow it
- Contractor should have a quality control plan
  - Specific to each job
- Agencies may have guidelines
Quality Control Plans

• Define QC Personnel
  – QCP Manager
  – QCP Site Manager
  – QC Technician(s)

• Process Balance

• Equipment Utilized on Job
Quality Control Plans

• Equipment Calibration Procedure
• Construction Sequence
• Control of Application Rates
Quality Control Plans

• Procedure/schedule for sweeping

• Traffic Control
  – Methods
  – Special Considerations (i.e. intersections)
  – Determination of opening to traffic
Quality Control Plans

• Material Sampling/Testing
  – Response to results

• Documentation
  – How long to maintain records
QUIZ!!
The agency inspector takes a random aggregate sample to check gradation. This is an example of:

A. Quality Control
B. Quality Assurance
C. Independent Assurance
B. Quality Assurance
The contractor performs a yield calculation to ensure his application rate is correct. This is an example of:

A. Quality Control  
B. Quality Assurance  
C. Independent Assurance
A. Quality Control
The flagger behind the chip seal operation notes excessive aggregate pickup on passing vehicles.
The contractor’s response would be to...

A. Ask the agency to perform a QA test on the emulsion
B. Increase the aggregate application rate
C. Stop operations, stabilize and assess the situation, per the QC plan
C. Stop operations, stabilize and assess the situation, per the QC plan
Remember the goal
So how do we get there?

- Good specifications
- Good designs
- Qualified personnel
  - Contractor – actually running the equipment
  - Agency – overseeing and accepting
Questions???

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