

**NEW ENGLAND TRANSPORTATION CONSORTIUM  
QUARTERLY PROJECT PROGRESS REPORT**

**A. PROJECT NUMBER AND TITLE: NETC 13-3**

**B. PRINCIPAL INVESTIGATOR(s) & UNIVERSITY(s): Eshan V. Dave, University of New Hampshire**

**C. WEB SITE ADDRESS (If one exists):**

**D. START DATE (Per NETC Agreement): 3/27/2015**

**E. END DATE (Per NETC Agreement): 3/31/2016**

**F. ANTICIPATED COMPLETION DATE: 3/31/2016**

**G. PROJECT OBJECTIVES:**

- (1) Review of current QA process used by New England DOTs for precast and prestressed concrete elements (PCE/PSE).
- (2) Review of QA specifications for PCE/PSE.
- (3) On the basis of the review and through working with the technical review committee of the project, develop common acceptance standards for PCE/PSE to be used by NETC constituents.
- (4) Develop a cost-sharing mechanism to accompany the common acceptance standards.
- (5) Identify agencies and contractors to conduct pilot implementation of the common acceptance standards.
- (6) Develop a list of additional materials and services for which common acceptance standards might be beneficial and feasible.

**H. REPORT PERIOD: 7/1/2015 – 10/02/2015**

**I. ACCOMPLISHMENTS THIS PERIOD:**

In this quarter the researchers continued their work on the review of the QA processes of the New England State DOTs. The researchers reviewed additional specifications and QA process documents from the agencies (additional to what was done last quarter) and also continued review of literature on the topic. Visits for interview with the DOT personnel was conducted for two more agencies (Massachusetts and Vermont). The data from the visits as well as the data from review of the specifications and manuals is being reduced into set of tables for easy comparison of pertinent information.

Some of the early findings on the QA processes for PCE/PSE of the New England DOTs on the basis of review of the specifications and manuals of practices are as follows:

- The plant qualification procedures are comparable between agencies and PCI certification is most commonly used pre-qualification criteria for PSC producing facilities.
- The quality control requirements put-forth by the agencies for the producers utilized requirements described by PCI MNL-116.
- The unification of the inspection and acceptance testing procedures were identified as the critical step in moving towards potential for cross-utilization of resources between agencies.
- The six New England DOTs represent full spectrum practices when it comes to use of in-house versus consultant inspectors for PCE and PSE.

- Majority of baseline (pre-pour, during pour, post-pour, destressing, form stripping, early and design strength) inspection and acceptance testing activities are similar between the agencies. Some additional tests are being used by some agencies, such as permeability and testing associated with accelerated curing.
- A few currently utilized practices as well as some that are currently under implementation at various DOTs could really aid in implementation of the unified QA process between New England DOTs. For example, use of RFID (Radio Frequency Identity) tag with cloud based data-storage system that is being evaluated by MassDOT could serve as a vehicle for management of information and the use of “Shift Planning” system used by VTrans can make it streamlined to keep database of eligible inspection personnel in the region, their availability as well as tracking of their work hours.

**J. PROBLEMS ENCOUNTERED (If any): None**

**K. TECHNOLOGY TRANSFER ACTIVITIES: None**

**L. STATUS BY TASK:**

**Task 1: State of the Practice Review:** A literature review on common acceptance standard is completed. The visit of DOTs for QA process review is completed for five agencies. Visit to sixth agency as well as one fabricator is scheduled. The review of the current practice is being analyzed in form of Excel spreadsheet.

**Task 2: Development of Common Acceptance Standards for PCE/PSE:** Information from the literature review and the visits to three DOTs has allowed some preliminary formations of the framework for common acceptance standards. This process will continue with the additional visits to remaining DOTs as well as PCE/PSE fabricator.

**Task 3: Reporting and Technical Committee Meetings:** The summary report for Task-1 is currently being developed. Dr. Dave will give a brief report on the project activities and preliminary findings at the NESMEA meeting in October.

**M. PERCENT COMPLETION OF TOTAL PROJECT: 40 %**

**N. ACTIVITIES PLANNED FOR NEXT QUARTER:**

- Interview with DOT engineers and QA inspectors for CT (Scheduled on October 16<sup>th</sup>)
- Visit of PCE/PSE facility and interview of fabricator(s) as well as New England PCI (One visit tentatively scheduled to J P Carrera in VT on October 20<sup>th</sup>)
- Compilation and submission of the summary report on the review of New England State DOT QA Processes for Precast and Prestressed Concrete Elements in Highway Construction.
- Continued development of draft common acceptance standards

**O. FINANCIAL STATUS:**

**As of: 10/1/2015**

**Total Project Budget: \$ 100,000**

**Total Expenditures: \$ 22,000**

**Note: This report should not require more than 2-3 pages & should be e-mailed to the NETC Coordinator so as to arrive no later than three (3) working days after the end of each calendar quarter.**