

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program

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March 07, 2007

Contract No. 04-0120F4

04-SF-80-13.2 / 13.9

Self-Anchored Suspension Bridge

Letter No. 05.03.01-000158

Michael Flowers
Project Executive
American Bridge/Fluor Enterprises, a JV
375 Burma Road
Oakland, CA 94607

Dear Michael Flowers,

Submittal 54, DRAFT Welding Quality Control Plan (WQCP) for ZPMC

Submittal ABF-SUB-000054R00, "DRAFT Welding Quality Control Plan (WQCP) for ZPMC" dated February 21st, 2007 has been reviewed. This submittal is returned for correction. The following items, correlating to section 8-3.01, "WELDING QUALITY CONTROL," shall be addressed in the resubmittal.

Item E: Organization Chart/QCM/subs/QC & NDT firms and personnel.

1. The Organization chart does not reflect all of the QC personnel submitted;
2. CAWI's were not included;
3. Only QC positions are listed, not names of personnel;
4. The independent third party for witnessing welder qualifications should be revised to report to ABF.

Item M: Copies of Quality Control forms to be used.

1. A copy of the certificate of compliance was not included.
2. Forms submitted do not appear to sufficiently track rejected lengths and joint types.

Item N: Documentation of Filler metal etc.

The filler metal (electrodes) and filler metal-flux combination certifications for the SAW and SMAW processes were not included.

Item R: Methods, procedures and log to track rejected weld.

The methods, procedures, and log to track rejected lengths of weld by welder, position, process, joint configuration, and piece number do not appear to be sufficient. It is unclear how the Contractor will track rejected weld lengths or joint configurations.

Item S: Pre-qualified Welding Procedure Specifications (WPS) (if applicable).

The Welding Procedure Specifications (WPS) submitted for welding HPS 485W using the shielded metal arc welding (SMAW) processes are not prequalified per Section 5.4.1 of AWS D1.5.

Item T: Documentation of Procedure Qualification Record (PQR) tests. (First 9 reviewed)

1. Submitted certified material test reports (CMTR) do not match the base metals listed. Discrepancies with the material thicknesses used for the qualification tests and the backing material;
2. Illegible documentation;
3. Macroetch test results missing;
4. Charpy impact testing information missing;
5. Maximum Interpass temperature missing;
6. Transfer mode for GMAW not listed;
7. Heat numbers missing.

Item V: Non-prequalified WPSs supported by PQR testing. (First 9 reviewed)

1. Fillet weld sizes being qualified not identified on PQR;
2. Test results of Macroetches do not indicate pass or fail;
3. Supporting groove plate PQR notes that welding was done by machine while fillet PQR was welded semi-automatically;
4. Minimum preheat temperature is lower than supporting groove PQR.
5. For non-standard joints, two PQR test plates are required for qualification;
6. Test plate welded in accordance with AWS D1.5 Figure 5.1 should be identified.
7. Fillet weld PQRs outside groove PQR parameters.

Item W: Documentation from the Engineer approving any deviation from non-standard joint details, code requirements or other contract documents was not provided.

Item X: Written Practice of the NDT inspection personnel or firm.

1. The Written Practice does meet the minimum requirements of ASNT SNT-TC-1A- 2001. Examples include;
 - the minimum number of training hours;
 - number of test questions for Level III's;
 - test scores not calculated using simple average.
2. Written Practice Exhibit's 2 & 3 were not provided for all personnel certifications records.
3. Items were noted that might be related to technical language translation difficulties that must be discussed or clarified before approval is considered.

Item Z: Names, qualifications, and documentation of certifications of NDT personnel etc.

The certifications for the technicians do not reflect all of the minimum guidelines of ASNT SNT-TC-1A, 2001 paragraph 9.4, such as;

- visual acuity records;
- educational background;
- actual test scores for each examinations;
- certification expiration dates.

Item AA: List of NDT equipment, calibration procedures, etc.

Calibration procedures do not comply with ASW D1.5, 2002.

Item BB: Procedures, methods and frequencies for performing all required NDT as required by the specification to include minimum amounts required.

The NDT procedures do not comply with AWS D1.5, 2002 and the Special Provisions.

Item EE: Copies of NDT report forms to be used.

NDT report forms lack information and further clarification required to comply with AWS D1.5. Refer to Figure VII-6 in Annex VII for an example of UT report.

General Comments:

There are statements contained in the procedures that require clarification or correction before approval of the PQRs and WPSs can be considered. Refer to the request below for a meeting to discuss these items in specific detail.

The distortion control plan submitted as Section 10 in the WQCP does not contain sufficient information to be evaluated at this time. Review of the distortion control plan can not be completed without a better understanding of the Contractor's shop practices, fabrication procedures and other details required in the Special Provisions for working drawings. Please re-submit this plan as part of the other Working Drawings. Note that the Distortion Control Plan is not included in the requirements for the WQCP.

There are additional items in the submittal which can be "approved as noted". Due to the size of the submittal, the Department requests a meeting at your earliest convenience to better communicate our review comments. The Department is available to meet with the Contractor at the Working Drawing Campus or at ZPMC in Shanghai. Please coordinate with Stanley Ku to schedule a time and location for this meeting to occur.

Should you have any questions, please contact Patrick Lowry at (858) 344-2712. Thank you.

Sincerely,

<<< ORIGINAL SIGNED >>>

GARY PURSELL
Resident Engineer

cc: R. Morrow, S. Ku, B. Boal, M. Wahbeh, P. Lowry
file: 05.03.01, 55.0054