

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
 690 Walnut Ave. St. 150
 Vallejo, CA 94592-1133
 (707) 649-5453
 (707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.25B

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

Location: Changxing Island, Shanghai, PRC**Report No:** NCR-000418**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 16-Sep-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0392**Type of problem:**

Welding	Concrete	Other	
Welding	Curing	Procedural	Bridge No: 34-0006
Joint fit-up	Coating	Other	Component: Tower
Procedural	Procedural	Description: Tower UT acceptance criteria	

Reference Description: Tower welds tested to the incorrect UT acceptance criteria**Description of Non-Conformance:**

The Contractor has allowed welds to be evaluated to the incorrect Ultrasonic Testing (UT) criteria throughout various Tower component welds. This is leading to the repair of welds with non-rejectable indications causing unnecessary thermal cycles or not meeting contract NDT requirements by accepting indications that are rejectable. The following Critical Welds Repairs (CWR) have been submitted indicating that the welds were originally tested to the incorrect UT criteria, as specified in AWS D1.5-2002:

CWR - Weld Location - Criteria Used - Criteria Required

T-CWR 104 - Tower Skin to Skin Corner Seam - Table 6.3 - Table 6.4

T-CWR 105 - Longitudinal Stiffener to Skin - Table 6.3 - Table 6.4

T-CWR 107 - Longitudinal Stiffener to Skin - Table 6.3 - Table 6.4

T-CWR 122 - Tower Skin to Skin Corner Seam - Table 6.3 - Table 6.4

T-CWR 175 - Diaphragm Plate Weld - Table 6.4 - Table 6.3

T-CWR 215 - Diaphragm Plate Weld - Table 6.4 - Table 6.3

T-CWR 216 - Diaphragm Plate Weld - Table 6.4 - Table 6.3

T-CWR 217 - Diaphragm Plate Weld - Table 6.4 - Table 6.3

T-CWR 218 - Diaphragm Plate Weld - Table 6.4 - Table 6.3

T-CWR 230 - Interior Corner Splice Plate Welds - Table 6.3 - Table 6.4

T-CWR 231 - Interior Corner Splice Plate Welds - Table 6.3 - Table 6.4

T-CWR 232 - Interior Corner Splice Plate Welds - Table 6.3 - Table 6.4

T-CWR 233 - Interior Corner Splice Plate Welds - Table 6.3 - Table 6.4

T-CWR 234 - Interior Corner Splice Plate Welds - Table 6.3 - Table 6.4

T-CWR 237 - Interior Corner Splice Plate Welds - Table 6.3 - Table 6.4

T-CWR 247 - Interior Corner Splice Plate Welds - Table 6.3 - Table 6.4

Applicable reference:

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Special Provisions, Section 8-3.01 Welding, General - "Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents."

AWS D1.5-2002 Table 6.3 - UT Acceptance-Rejection Criteria - Tensile Stress

AWS D1.5-2002 Table 6.3 - UT Acceptance-Rejection Criteria - Compressive Stress

Contract Drawings, General Notes No. 4

Who discovered the problem: Serge Sinevod

Name of individual from Contractor notified: Steve Lawton

Time and method of notification: 9/14/2009, 14:00; Verbal

Name of Caltrans Engineer notified: Scott Kennedy

Time and method of notification: 9/14/2009, 14:00; Verbal

QC Inspector's Name:

Was QC Inspector aware of the problem: Yes No

Contractor's proposal to correct the problem:

Comments:

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

Inspected By:	Sinevod,Serge	ASMR
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Reviewed By:	Wahbeh,Mazen	SMR
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DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
 333 Burma Road
 Oakland CA 94607
 Tel: Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

To: AMERICAN BRIDGE/FLUOR, A JV
 375 BURMA ROAD
 OAKLAND CA 95607

Date: 22-Sep-2009

Contract No: 04-0120F4
 04-SF-80-13.2 / 13.9

Dear: Mr. Charles Kanapicki
Attention: Mr. Thomas Nilsson Project/Fabrication Manager
Subject: NCR No. ZPMC-0392

Job Name: SAS Superstructure
Document No: 05.03.06-000381

Reference Description: CWR Incorrect Acceptance Criteria / Tower

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract document as indicated below:

- Material or Workmanship not in conformance with contract documents.
- Quality Control (QC) not performed in conformance with contract documents.
- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

Material Location: Tower **Lift:**

Remarks:

The Contractor has allowed welds to be evaluated to the incorrect Ultrasonic Testing (UT) criteria throughout various Tower component welds. This is leading to the repair of welds with non-rejectable indications causing unnecessary thermal cycles or not meeting contract NDT requirements by accepting indications that are rejectable. The following Critical Welds Repairs (CWR) have been submitted indicating that the welds were originally tested to the incorrect UT criteria, as specified in AWS D1.5-2002:(see attached NCR for CWR Nos.)

Special Provisions, Section 8-3.01 Welding, General - "Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents."
 AWS D1.5-2002 Table 6.3 - UT Acceptance-Rejection Criteria - Tensile Stress
 AWS D1.5-2002 Table 6.3 - UT Acceptance-Rejection Criteria - Compressive Stress
 Contract Drawings, General Notes No. 4

Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance that addresses the failure of Quality Control to properly identify the acceptance standard for ultrasonic testing (UT) evaluation of the welds. Provide documentation of the steps/actions taken by the Quality Control Manager to prevent future occurrences.

Transmitted by: Scott Kennedy Sr. Bridge Engineer
Attachments: ZPMC-0392

cc: Rick Morrow, Gary Pursell, Mark Woods, Doug Coe
File: 05.03.06

NCR PROPOSED RESOLUTION

To: CALTRANS - SAS Superstructure
333 Burma Road
Oakland CA 94607

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000381

Subject: NCR No. ZPMC-0392

Dated: 22-Oct-2009

Contract No.: 04-0120F4
04-SF-80-13.2 / 13.9

Job Name: SAS Superstructure

Document No.: ABF-NPR-000405 **Rev:** 00

Contractor's Proposed Resolution:

Reference Resolution: As part of the ABFJV QCM's training program a class on proper application of UT criteria will be given to ZPMC CWIs to reinforce the importance of verifying the criteria prior to testing.

As part of the ABFJV QCM's training program a class on proper application of UT criteria will be given to ZPMC CWIs to reinforce the importance of verifying the criteria prior to testing. Documentation of the class can be provided once it is conducted. The critical weld repairs referenced in this NCR have been tested using the appropriate criteria and repaired if necessary. ZPMC requests that this proposal be approved, with action pending. Once documentation is provided ZPMC will then request closure.

Submitted by:

Attachment(s): ABF-NPR-000405R00

Caltrans' comments:

Status: AAP

Date: 27-Oct-2009

This NCR (ZPMC-392) will be closed once the training documents are submitted and reviewed. In addition, please notify this office when this class is scheduled so that this NCR can be brought to closure in a timely manner.

Submitted by: Lee, Ken

Date: 27-Oct-2009

Attachment(s): NPR CT Comments

NCR PROPOSED RESOLUTION

To: CALTRANS - SAS Superstructure
333 Burma Road
Oakland CA 94607

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000381

Subject: NCR No. ZPMC-0392

Dated: 28-Oct-2009

Contract No.: 04-0120F 4
04-SF-80-13.2 / 13.9

Job Name: SAS Superstructure

Document No.: ABF-NPR-000405 **Rev:** 01

Contractor's Proposed Resolution:

Reference Resolution: Attached is documentation of the UT class that the ABF JV QCM conducted on 10/23/09. Based on these documents, ZPMC requests closure of this NCR.

Attached is documentation of the UT class that the ABF JV QCM conducted on 10/23/09. Based on these documents, ZPMC requests closure of this NCR.

Submitted by:

Attachment(s): ABF-NPR-000405R01;

Caltrans' comments:

Status: CLO

Date: 02-Nov-2009

Based on the attached document which provides the proof of UT class conducted by ABF JV, the Department concurs that this NCR (ZPMC-0392) is closed.

Submitted by: Lee, Ken

Date: 02-Nov-2009

Attachment(s):

UT Refresher Training Agenda

Subject: UT Techniques

Reason for Training: Several CT NCR's for missed UT indications

1. **Safety**
 - a. Safety Glasses
 - b. Gloves (if required)
 - c. Knee Pads
 - d. Electrical Shock

2. **Tools**
 - a. Calibrated UT Machine
 - b. Coaxial cable
 - c. Transducer
 - d. IIW Block
 - e. Scraper
 - f. UT couplant

3. **Inspection Techniques**
 - a. Surface preparation
 - b. Location of weld. UT from beveled plate
 - c. Scanning patterns
 - d. Correct choice of Angles
 - e. Calibration.
 - f. Scanning speed
 - g. Know where your sound is at.... First leg, second leg etc...

4. **Inspection Criteria**
 - a. Table 6.3 or Table 6.4
 - b. Scanning Levels
 - c. Planar flaws

会议签到表

MEETING SIGN IN LIST

会议主题	超声检测培训		
时间	2009. 10. 23 17:00	地点 Place	钢桥办公室
姓名	会议内容:		
代建 Dai Gengshay	1. 首要的工作, 必须安全; 注意周边环境; a 护目镜防止飞溅, 打磨铁屑, b 护膝有助于降低检测速度, 2 检测工具 a 仪器必须每月校准, b 注意同轴电缆的接头, c 接头在标准允许范围内, d IW试块在检测时的使用, 3 检测技术 a 杂质去除, 检测距离要是够, b 扫查方法的要求, A、B、C、D、E扫查方式 c 角度的选择; d 扫查速度尽量慢一点, 4. 检验标准 a 表B.3与表B.4 b 扫查水平是与声程有关 c 横向扫查平面缺陷		
黄进 Huang Jing			
黄进 Huang Jin			
徐荣刚 Xu Ronggang			
吴文 Wuhao			
解洪 Xie Hong			
周解 Zhou Jianjun			
王飞 Wang Fei			
孙宇 Sun Yu			
解 Jie Peng			
徐浩 Xu Hao			
李琳 Li Lin			

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: xx.25A**QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION****Location:** Changxing Island, Shanghai, PRC**Report No:** NCS-000314**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 23-Oct-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0392**Type of problem:**

Welding	Concrete	Other	
Welding	Curing	Procedural	Bridge No: 34-0006
Joint fit-up	Coating	Other	Component:
Procedural	Procedural	Description:	

Date the Non-Conformance Report was written: 16-Sep-2009**Description of Non-Conformance:**

The Contractor has allowed welds to be evaluated to the incorrect Ultrasonic Testing (UT) criteria throughout various Tower component welds. This is leading to the repair of welds with non-rejectable indications causing unnecessary thermal cycles or not meeting contract NDT requirements by accepting indications that are rejectable. The following Critical Welds Repairs (CWR) have been submitted indicating that the welds were originally tested to the incorrect UT criteria, as specified in AWS D1.5-2002:

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Contractor's proposal to correct the problem:

