

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 #: 04-0120F4
 Cty: SF/ALA Rte: 80 PM: 13.2/13.9
 File #: 69.25B

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

Location: Changxing Island, Shanghai, PRC

Report No: NCR-000277

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 25-May-2009

Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

NCR #: ZPMC-0251

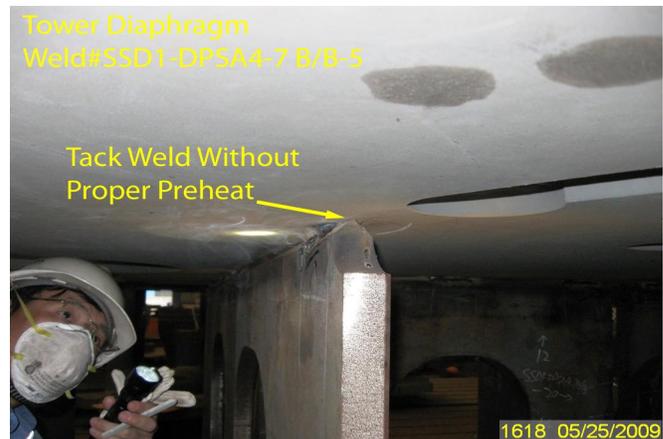
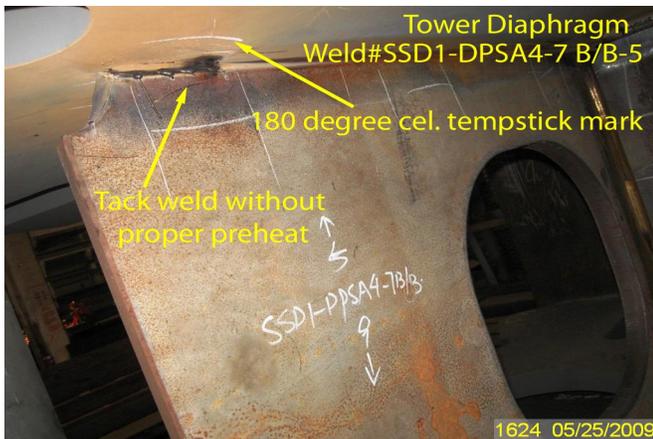
Type of problem:

Welding	Concrete	Other	
Welding	Curing	Procedural	Bridge No: 34-0006
Joint fit-up	Coating	Other	Component: South Tower, 135m Diaphragm
Procedural	Procedural	Description: South Tower, 135m Diaphragm	

Reference Description: South Tower, 135m Diaphragm inadequate pre-heat

Description of Non-Conformance:

QA observed tack welding without adequate pre-heat on tower diaphragm weld joint SSD1-DPSA4-7 B/B-5. The recorded temperature at the tack weld and adjacent base material was 100 degrees Celcius. The required pre-heat temperature according to approved WPS is 180 degrees Celcius.



Applicable reference:

WPS-B-T-33(1)14-SMAW-4G Tack Weld

AWS D1.5-2002 Section 3.3.7.1 "Tack welds shall be subject to the same quality requirements as final welds"

Who discovered the problem: Dilip Chakrabarti

Name of individual from Contractor notified: Mr. Zhang Huilong

Time and method of notification: 5/25/09; 16:15; Verbal

Name of Caltrans Engineer notified: Scott Kennedy

Time and method of notification: 5/26/09, 13:30; Verbal

QC Inspector's Name:

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

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: 27-May-2009

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

Dear: Mr. Charles Kanapicki

Job Name: SAS Superstructure

Attention: Mr. Thomas Nilsson Project/Fabrication Manager

Document No: 05.03.06-000242

Subject: NCR No. ZPMC-0251

Reference Description: Perheat / South Shaft 135m Diaphragm / Web to Diaphragm Plate Tack Weld

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:** 04

Remarks:

QA observed tack welding without adequate pre-heat on tower diaphragm weld joint SSD1-DPSA4-7 B/B-5. The recorded temperature at the tack weld and adjacent base material was 100 degrees Celcius. The required pre-heat temperature according to approved WPS is 180 degrees Celcius.

Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance including documentation that the tack welds placed are in compliance with the contract requirements. In addition to the material/workmanship non-conformance, propose a resolution that addresses the failure of Quality Control to identify the lack of preheat of the base material. Provide documentation of the steps taken by the Quality Control Manager to prevent future occurrences.

Recent failures by Quality Control to identify Production's failure to perform the required preheating of the material have resulted in the issuance of NCR ZPMC-0202, ZPMC-0233, ZPMC-0249 and an additional Incident Report concerning lack of preheating on 03/28/09 (Tower).

Transmitted by: Scott Kennedy Sr. Bridge Engineer

Attachments: ZPMC-0251

cc: Rick Morrow, Gary Pursell, Mark Woods, Jason Tom

File: 05.03.06

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000242

Subject: NCR No. ZPMC-0251

Dated: 22-Jun-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000246 **Rev:** 00

Contractor's Proposed Resolution:

Reference Resolution: ABF QCM has informed ZPMC QA and QC to first educate the person (s) performing the pre-heat of the WPS requirements to pre-heat based on material thickness

ABF QCM has informed ZPMC QA and QC to first educate the person (s) performing the pre-heat of the WPS requirements to pre-heat based on material thickness and that tack welding has the same requirements as the balance of the welding. ABF QCM has explained the consequences of hydrogen embrittlement and that these thicker materials should be heated from the opposite side to ensure through thickness heat distribution as materials at these thicknesses lend themselves to cooling faster than thinner materials. ZPMC will provide the inspection documentation for this weld at a later date for close out.

Submitted by:

Attachment(s): ABF-NPR-000246R00

Caltrans' comments:

Status: AAP

Date: 30-Jun-2009

The response is acceptable, but the Non-Conformance is not closed.

Please provide documentation of the weld repairs that were performed and that the repairs were acceptable. The Department will review the Contractor's proposal to close Non-Conformance ZPMC-0251 at that time.

The Non-Destructive Testing (NDT) for this weld should be at least 72 hours after welding to ensure that there are no delayed cracks from any possible hydrogen contamination.

Submitted by: Wright, Doug

Date: 30-Jun-2009

Attachment(s):

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000242

Subject: NCR No. ZPMC-0251

Dated: 14-Dec-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000246 Rev: 01

Contractor's Proposed Resolution:

Reference Resolution: Per Caltrans' response to ABFJV's NPR, ZPMC is providing documentation that welds were acceptable 72 hours after the weld was complete. Based on this ZPMC requests closure of the NCR.

Per Caltrans' response to ABFJV's NPR, ZPMC is providing documentation that welds were acceptable 72 hours after the weld was complete. Based on this ZPMC requests closure of the NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000246R01;

Caltrans' comments:

Status: CLO

Date: 16-Dec-2009

The proposed resolution is acceptable. The Department concurs that Non-conformance ZPMC-0251 is closed.

Submitted by: Lee, Ken

Attachment(s):

Date: 16-Dec-2009



No. T-052

LETTER OF RESPONSE

TO: American Bridge/Flour JV

DATE: 2009-9-8

REGARDING: NCR-000277 (ZPMC-0251)

ZPMC received NCR-000277(ZPMC-0251), it mentioned that ZPMC personnel performed tack welding on South Tower 135m diaphragm weld joint SSD1-DPSA4-7B/B-5 without adequate pre-heat.

ZPMC acknowledged this problem, and put forward ZPMC's NCR-T-037. ZPMC had already inculcated the work team to enhance the management and control of preheating, and it must be checked by QC before welding in compliance with proper WPS. Here attached the related VT and NDT reports, the result shows the preheating issue didn't influence the weld quality.

So ZPMC hope CT could take a review and close this NCR.

ATTACHMENT:

NCR-000277 (ZPMC-0251)

T-VT-7192

T787-MT-5401 .

Wu Shuangbin

2009.9.8



Nonconformance Report

不符合项报告

Project Name: S.F.O.B.B 项目名称: 美国加州海湾大桥		NCR Number: NCR 编号: NCR-T-037(NCR-102)
Item: inadequate preheating during tack welding 名称描述: 定位焊预热温度不够	Item Number: 件号: South tower 135m diaphragm	Drawing: 图号: SSD1-DPSA4-7B/B-5
Location: bay 6 位置: 6# 车间	Date: 日期: 2009-06-03	

Description of Nonconformance: 不符合项状态描述:

CT inspector observed ZPMC perform tack welding without adequate preheating on tower diaphragm weld joint SSD1-DPSA4-7B/B-5. The recorded temperature at the tack weld and adjacent base material was 100 degrees Celsius, yet the required preheating temperature according to the approved WPS should be 180 degrees Celsius. This was not compliance with AWS D1.5 Section 3.3.7.1.

加州检验员发现 ZPMC 施工人员在对南塔 135m 隔板与腹板进行点焊时, 预热温度不够。按照 WPS 应该为 180°C, 而实际测得为 100°C。这不符合 AWS 3.3.7.1 的要求。

涉及到的焊缝编号为: SSD1-DPSA4-7B/B-5

Work By: 施工方: 郑尧夏	Prepared by: 准备: Zhang Jiaodi 2009.6.4	Reviewed by QCE: 质量工程师批准: Lin Frankhua 6/10/09
<input type="checkbox"/> Drawing Error 图纸错误	<input type="checkbox"/> Material Defect 材料缺陷	<input checked="" type="checkbox"/> Fabrication Error 制作错误
<input type="checkbox"/> Other 其他原因		

Disposition: 处理措施:	<input type="checkbox"/> Use as is 回用	<input type="checkbox"/> Repair 返修	<input type="checkbox"/> Reject 拒收
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Recommendation:

建议: 提高检验员质量控制意识, 严格按照 WPS 进行检测, 不准施工队人员自行测温。
Improve the quality controlling consciousness, and perform according to wps requirement and prohibit thermometric by work team.

Prepared by: 准备: [Signature]	Approved by QCA: 质量经理批准: _____
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Reason for Nonconformance:

不符合原因: 预热温度不够, 施工人员进行点焊。
Tack welding without adequate preheating.

Prevention of Re-occurrence:

预防措施:

加强质量控制, 提高作业人员的质量意识。

不定时进行质量培训, 让作业人员将质量放在首位。

Train work team irregular to improve quality consciousness and enhance controlling of quality.

Approved by/批准: 刘恒力

Technical Justification for Use-As-Is/Repair:

回用或返修的技术依据:

Attachment
附件

Non-attachment
无附件

Reviewed /批准: _____

Verification:

确认:

Acceptable
可接受

Unacceptable
不可接受

Verified by QCI/质检确认: _____

Reviewed by QCA/质检主任审核: _____

#R787-QCP-1300



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: 27-May-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-0251

Job Name: SAS Superstructure
Document No: 05.03.06-000242

Reference Description: Preheat / South Shaft 135m Diaphragm / Web to Diaphragm Plate Tack Weld

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:** 04

Remarks:

QA observed tack welding without adequate pre-heat on tower diaphragm weld joint SSD1-DPSA4-7 B/B-5. The recorded temperature at the tack weld and adjacent base material was 100 degrees Celcius. The required pre-heat temperature according to approved WPS is 180 degrees Celcius.

Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance including documentation that the tack welds placed are in compliance with the contract requirements. In addition to the material/workmanship non-conformance, propose a resolution that addresses the failure of Quality Control to identify the lack of preheat of the base material. Provide documentation of the steps taken by the Quality Control Manager to prevent future occurrences.

Recent failures by Quality Control to identify Production's failure to perform the required preheating of the material have resulted in the issuance of NCR ZPMC-0202, ZPMC-0233, ZPMC-0249 and an additional Incident Report concerning lack of preheating on 03/28/09 (Tower).

Transmitted by: Scott Kennedy Sr. Bridge Engineer
Attachments: ZPMC-0251

cc: Rick Morrow, Gary Pursell, Mark Woods, Jason Tom
File: 05.03.06

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

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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-000277

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 25-May-2009

Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

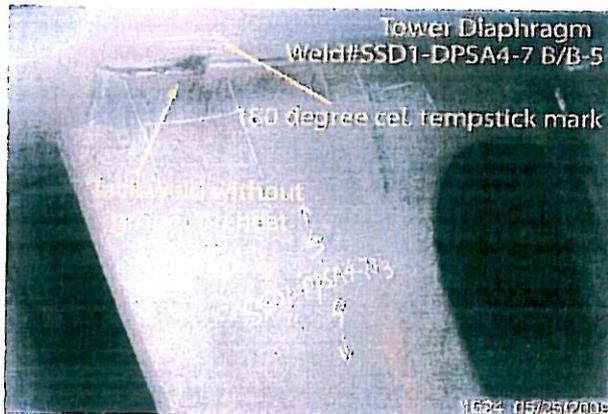
NCR #: ZPMC-0251

Type of problem:Welding Concrete Other Welding Curing Procedural Bridge No: 34-0006Joint fit-up Coating Other Component: South Tower, 135m DiaphragmProcedural Procedural Description: South Tower, 135m Diaphragm

Reference Description: South Tower, 135m Diaphragm inadequate pre-heat

Description of Non-Conformance:

QA observed tack welding without adequate pre-heat on tower diaphragm weld joint SSD1-DPSA4-7 B/B-5. The recorded temperature at the tack weld and adjacent base material was 100 degrees Celcius. The required pre-heat temperature according to approved WPS is 180 degrees Celcius.

**Applicable reference:**

WPS-B-T-33(1)14-SMAW-4G Tack Weld

AWS D1.5-2002 Section 3.3.7.1 "Tack welds shall be subject to the same quality requirements as final welds"

Who discovered the problem: Dilip Chakrabarti

Name of individual from Contractor notified: Mr. Zhang Huilong

Time and method of notification: 5/25/09; 16:15; Verbal

Name of Caltrans Engineer notified: Scott Kennedy

Time and method of notification: 5/26/09, 13:30; Verbal

QC Inspector's Name:

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

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
Reviewed By:	Wahbeh,Mazen	SMR

FVF-7192
77#
2009.6.30



Visual Weld Inspection Report
焊缝目视检查报告

Caltrans Contract No. 加州合同编号: 04-0120F4
 Project No.: 项目名称: San Francisco Oakland Bay Bridge 美国海湾大桥
 Project No.: 项目编号: ZP06-787

Girder/梁: The 4th lift
 Tower/塔: Diaphragm
 Quality Control Representative: 质检代表: Xu Jun
 C W I: 检验员: Zhao Chen Sun 07072091
 Quality Assurance Manager ~Approval: 质量控制经理: Lu Jianhua

Weld No. 焊缝编号	Welder I.D.# 焊工识别号	Location 位置	Welding consumables 焊接材料	Undercut 咬边	Porosity 气孔	Over lap 焊瘤	Crater 弧坑	Arc strike 电弧擦伤	Spatters 飞溅	Crack 裂纹	Accept or Reject 接受或拒收	Repair 返修	Accept or Reject after repair 返修后接受 或拒收
SSDI-DPSM4-7B/B-4	037932	2G	E9018N MR	✓	✓	✓	✓	✓	✓	✓	Acc	NA	NA
SSDI-DPSM4-7B/B-5	068091	2G	E9018N MR	✓	✓	✓	✓	✓	✓	✓	Acc	NA	NA
SSDI-DPSM4-7B/B-6	067588	2G	E9018N MR	✓	✓	✓	✓	✓	✓	✓	Acc	NA	NA
SSDI-DPSM4-7B/B-7	069493	2G	E9018N MR	✓	✓	✓	✓	✓	✓	✓	Acc	NA	NA
SSDI-DPSM4-7B/B-12	066268	2G	E9018N MR	✓	✓	✓	✓	✓	✓	✓	Acc	NA	NA
SSDI-DPSM4-7B/B-13	068924	2G	E9018N MR	✓	✓	✓	✓	✓	✓	✓	Acc	NA	NA
SSDI-DPSM4-7B/B-16	067588	2G	E9018N MR	✓	✓	✓	✓	✓	✓	✓	Acc	NA	NA
SSDI-DPSM4-7B/B-17	069493	2G	E9018N MR	✓	✓	✓	✓	✓	✓	✓	Acc	NA	NA
<input checked="" type="checkbox"/> After root weld <input checked="" type="checkbox"/> After CWR or WRR No.: HSR (IT)-9358 <input type="checkbox"/> Others													

#R787-QCI'-603

" ✓ " is no defects. " X " is defects. "NA" is not applicable.



REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 T787-MT-5401 DATE日期 2009.08.07 PAGE OF页码 1/1 Revision No: 0

PROJECT NO. 工程编号: ZP06-787		CONTRACTOR: 用户: CALTRANS	
DRAWING NO. 图号: DPSA4-7\WP4-10\WP4-18\WP4-33\WP4-6 Tower(S) 135m diaphragm		CALTRANS CONTRACT NO.: 加州工程编号 04-0120F4	
REFERENCING CODE 参考规范编码 AWS D1.5-2002	ACCEPTANCE STANDARD 接受标准 AWS D1.5-2002	PROCEDURE NO. 程序编号 ZPQC-MT-01	CALIBRATION DUE DATE 仪器校正有效期 Dec. 28 ST , 2009
EQUIPMENT 设备 MT YOKE	MANUFACTURER 制造商 PARKER	MODEL NO. 样式编号 B310S	SERIAL NO. 连续编号 5620 5395 5617
MAGNETIZING METHOD 磁化方法	Continuous magnetic yoke 磁轭式连续法	CURRENT 电流	AC
PARTICLE TYPE 磁粉类型	Dry magnet powder 干磁粉	YOKE SPACING 磁轭间距	70~150mm
MATERIAL TO BE EXAMINED 检测材料	<input checked="" type="checkbox"/> WELDING 焊接件 <input type="checkbox"/> CASTING 铸件 <input type="checkbox"/> FORGING 锻造	Material & thickness 母材,厚度	A709M-HPS-485WT2-Z 75/40/60mm
WELDING PROCESS 焊接方法	SMAW	TYPE OF JOINT 焊缝类型	T-JOINT

WELD I.D. 焊缝编号	DISCONTINUITY不连续性			ACCEPT 接受	REJECT 拒收	REMARKS 备注
	INDICATION 指示	TYPE 类型	LENGTH IN mm 长度			
SSD1-DPSA4-7B/B-4				ACC.		100%MT
SSD1-DPSA4-7B/B-5				ACC.		100%MT
SSD1-DPSA4-7B/B-6				ACC.		100%MT
SSD1-DPSA4-7B/B-7				ACC.		100%MT
SSD1-DPSA4-7B/B-12				ACC.		100%MT
SSD1-DPSA4-7B/B-13				ACC.		100%MT
SSD1-DPSA4-7B/B-16				ACC.		100%MT
SSD1-DPSA4-7B/B-17				ACC.		100%MT

AFTER HSR1(T)-9358

BLANK

EXAMINED BY主探 Xu Hai Xu Hai	REVIEWED BY 审核 Cai Xinxin
LEVEL-II SIGN 签名 / DATE日期	LEVEL-II SIGN / DATE日期 09-08-07
质量经理 / QCM Lujianhua 8/14/09	用户CUSTOMER
签字 SIGN / 日期 DATE	签字 SIGN / 日期 DATE

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 #: xx.25A**QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION****Location:** Changxing Island, Shanghai, PRC**Report No:** NCS-000302**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 23-Sep-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0251**Type of problem:**

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

Date the Non-Conformance Report was written: 25-May-2009**Description of Non-Conformance:**

QA observed tack welding without adequate pre-heat on tower diaphragm weld joint SSD1-DPSA4-7B/B-5. The recorded temperature at the tack weld and adjacent base material was 100 degrees Celcius. The required pre-heat temperature according to approved WPS is 180 degrees Celcius.

Contractor's proposal to correct the problem:

ZPMC stated that pre-heat will be monitored more closely.

Corrective action taken:

The affected weld has been verified with NDT and subsequently green tagged. ABF QCM has informed ZPMC QC to educate the persons performing the pre-heat of the WPS requirements to pre-heat based on material thickness and that tack welding has the same requirements as the balance of the welding. ABF QCM has explained the consequences of hydrogen embrittlement and that thicker materials should be heated from the opposite side to ensure through thickness heat distribution.

Did corrective action require Engineer's approval? Yes No**If so, name of Engineer providing approval:****Date:****Is Engineer's approval attached?** Yes No**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

Quality Assurance Inspector

Reviewed By: Wahbeh, Mazen

QA Reviewer