

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-000449

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 18-Oct-2009

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

NCR #: ZPMC-0422

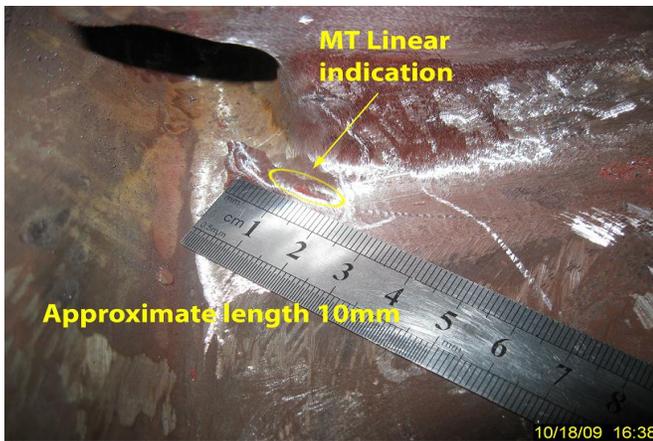
Type of problem:

| | | | |
|---------------------|-------------------|--|------------------------------|
| Welding | Concrete | Other | |
| Welding | Curing | Procedural | Bridge No: 34-0006 |
| Joint fit-up | Coating | Other | Component: West Tower |
| Procedural | Procedural | Description: West Tower, Lift 3 | |

Reference Description: Missed MT indication on West Tower, Lift 3, 85.25m Diaphragm to Skin A weld

Description of Non-Conformance:

During Magnetic Particle Testing (MT) of West Tower, Lift 3, 85.25m Diaphragm to Skin A weld WSTL3-4B/K-39, QA discovered a linear indication of approximately 10mm in length. This weld had been previously tested and accepted by ZPMC NDT personnel (NDT Inspection Notification Sheet #004423).



Applicable reference:

Special Provisions Section 8.3 – “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, Section 6.26.2 – “Welds that are subject to MT in addition to visual inspection shall have no cracks.”

Who discovered the problem: Umesh Gaikwad

Name of individual from Contractor notified: You Yuan Mao

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Time and method of notification: 10/18/2009, 17:00; Verbal

Name of Caltrans Engineer notified: Scott Kennedy

Time and method of notification: 10/20/2009, 11:00; Verbal

QC Inspector's Name: Zao Mao Mao

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 |
|---------------------|--------------|-----|



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
 333 Burma Road
 Oakland CA 94607
 Tel: 510-808-4618 Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

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

Date: 20-Oct-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: 05.03.06-000412

Subject: NCR No. ZPMC-0422

Reference Description: Missed MT indication on West Tower, Lift 3, 85.25m Diaphragm to Skin A 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:** 03

Remarks:

During Magnetic Particle Testing (MT) of West Tower, Lift 3, 85.25m Diaphragm to Skin A weld WSTL3-4B/K-39, QA discovered a linear indication of approximately 10mm in length. This weld had been previously tested and accepted by ZPMC NDT personnel (NDT Inspection Notification Sheet #004423).

Special Provisions Section 8.3 – “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, Section 6.26.2 – “Welds that are subject to MT in addition to visual inspection shall have no cracks.”

Action Required and/or Action Taken:

Propose a resolution for this systematic non-conformance that addresses the failure of Quality Control to identify the linear indication during magnetic particle testing of the weld. Provide documentation of the steps/actions taken by the Quality Control Manager to prevent future occurrences.

In addition to the Quality Control non-conformance, address the material/workmanship for the identified non-conformance including documentation that the deficiency has been brought into compliance with the contract requirements. Additionally address the probable causes for the indication and the actions that will be taken to limit future occurrences.

Recent failures by Quality Control to identify linear indications (MT) have resulted in the issuance of NCR ZPMC-0358, ZPMC-0359, ZPMC-0371, ZPMC-0372, ZPMC-0373, ZPMC-0375, ZPMC-0376, ZPMC-0377, ZPMC-383, ZPMC-0384, ZPMC 0386, ZPMC-0387, ZPMC-0388, ZPMC-0389, ZPMC-0390, ZPMC-0401, ZPMC-0408, ZPMC-0413 and ZPMC-419 related to Tower

Transmitted by: Ken Lee Transportation Engineer

Attachments: ZPMC-0422

NCT

(Continued Page 2 of 2)

cc: Rick Morrow, Gary Pursell, Mark Woods, Doug Coe, Scott Kennedy

File: 05.03.06

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000412

Subject: NCR No. ZPMC-0422

Dated: 23-Oct-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000409 **Rev:** 00

Contractor's Proposed Resolution:

Reference Resolution: ABFJV QCM has implemented training with ZPMC to improve inspections. Topics to be covered: inspection of equipment prior to use, proper conditions for inspection, proper technique for MT, and UT.

ABFJV QCM has implemented training with ZPMC to improve the quality of inspections. ABFJV will provide documentation showing attendance by ZPMC QC inspectors and the subject of training. Topics to be covered during the instruction are: inspection of equipment prior to use, proper conditions for inspection, proper technique for MT, and UT. In addition, ABFJV has committed to perform overchecks in both the Tower and OBG. This will serve two purposes, first to monitor if the training is effective at reducing the number of missed indications and second to ensure missed indications are prevented.

Documentation of repairs and subsequent NDT specific to this report will be transmitted through Daily Welding Reports and will be available in the documentation data base. Based on this course of action, ZPMC is requesting that this proposed resolution be approved with action pending. Once training records are available to be transmitted, ZPMC will request closure of this NCR.

Submitted by:

Attachment(s): ABF-NPR-000409R00

Caltrans' comments:

Status: REJ

Date: 27-Oct-2009

Even though the course of action is acceptable, the Department will not consider closure of this NCR (ZPMC-422) until all the repair documents and training documents are submitted and reviewed.

Submitted by: Lee, Ken
Attachment(s): NPR CT Comments

Date: 27-Oct-2009

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000412

Subject: NCR No. ZPMC-0422

Dated: 20-Nov-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000425 **Rev:** 00

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has completed repairs associated with the non conformance and is providing weld repair reports and NDT documentation to show the soundness of the weld. ZPMC requests closure of this NCR.

ZPMC has completed repairs associated with the non conformance and is providing weld repair reports and NDT documentation to show the soundness of the weld. ZPMC requests closure of this NCR.

Submitted by:

Attachment(s): ABF-NPR-000425R00;

Caltrans' comments:

Status: CLO

Date: 10-Dec-2009

It should be noted that the original NPR (ABF-NRP-000425R00) was submitted on October 23, 2009. As such, this submittal should be designated as ABF-NPR-000425R01.

Based on the course of action listed in the original NPR, and the evidence of the acceptability of the welds and the training documents submitted with this NPR, the Department concurs that Non-conformance ZPMC-0422 is closed.

Submitted by: Lee, Ken

Date: 10-Dec-2009

Attachment(s):



No. T-082

LETTER OF RESPONSE

TO: American Bridge/Flour JV
DATE: 2009-11-20
REGARDING: NCR-000449 (ZPMC-0422)

ZPMC received NCR-000449(ZPMC-0422), it mentioned that during MT of west tower lift 3 85.25m diaphragm to skin a weld WSTL3-4B/K-39,CT discovered a linear indication of approximately 10mm in length . This weld had been previously tested and accepted by ZPMC NDT personnel.

About this situation we ZPMC at the first time issued the CWR, and did the repair work then give the notification to the CT people to confirm no problem on the welds.

As far as I am concerned ,CT should close this NCR.

ATTACHMENT:
NCR-000449 (ZPMC-0422)
NOTIFICATION: 4606
REPORT OF MAGNETIC PARTICLE: T787-MT-6412R1
CWR:T-CWR397

L: Xinyong

09.11.20



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
 333 Burma Road
 Oakland CA 94607
 Tel: 510-808-4618 Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

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

Date: 20-Oct-2009
 Contract No: 04-0120F4
 04-SF-80-13.2 / 13.9
 Job Name: SAS Superstructure
 Document No: 05.03.06-000412

Dear: Mr. Charles Kanapicki
 Attention: Mr. Thomas Nilsson Project/Fabrication Manager
 Subject: NCR No. ZPMC-0422

Reference Description: Missed MT indication on West Tower, Lift 3, 85.25m Diaphragm to Skin A 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: 03

Remarks:

During Magnetic Particle Testing (MT) of West Tower, Lift 3, 85.25m Diaphragm to Skin A weld WSTL3-4B/K-39, QA discovered a linear indication of approximately 10mm in length. This weld had been previously tested and accepted by ZPMC NDT personnel (NDT Inspection Notification Sheet #004423).

Special Provisions Section 8.3 – "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, Section 6.26.2 – "Welds that are subject to MT in addition to visual inspection shall have no cracks."

Action Required and/or Action Taken:

Propose a resolution for this systematic non-conformance that addresses the failure of Quality Control to identify the linear indication during magnetic particle testing of the weld. Provide documentation of the steps/actions taken by the Quality Control Manager to prevent future occurrences.

In addition to the Quality Control non-conformance, address the material/workmanship for the identified non-conformance including documentation that the deficiency has been brought into compliance with the contract requirements. Additionally address the probable causes for the indication and the actions that will be taken to limit future occurrences.

Recent failures by Quality Control to identify linear indications (MT) have resulted in the issuance of NCR ZPMC-0358, ZPMC-0359, ZPMC-0371, ZPMC-0372, ZPMC-0373, ZPMC-0375, ZPMC-0376, ZPMC-0377, ZPMC-383, ZPMC-0384, ZPMC 0386, ZPMC-0387, ZPMC-0388, ZPMC-0389, ZPMC-0390, ZPMC-0401, ZPMC-0408, ZPMC-0413 and ZPMC-419 related to Tower

Transmitted by: Ken Lee Transportation Engineer

Attachments: ZPMC-0422

12.02.15.04

Received
 NCR-000412 20 Oct 09

05.03.06-000412,NCT

NCT

(Continued Page 2 of 2)

cc: Rick Morrow, Gary Pursell, Mark Woods, Doug Coe, Scott Kennedy

File: 05.03.06

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-000449

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 18-Oct-2009

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

NCR #: ZPMC-0422

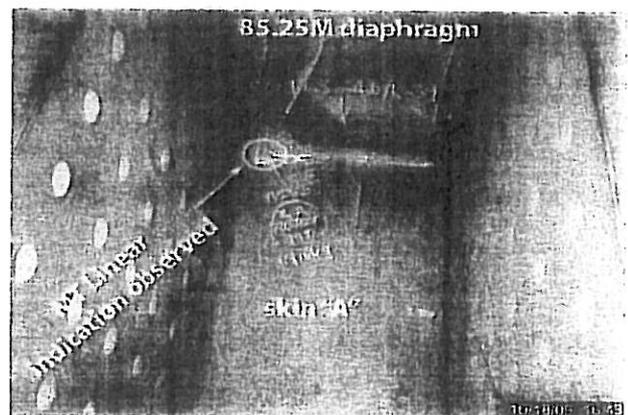
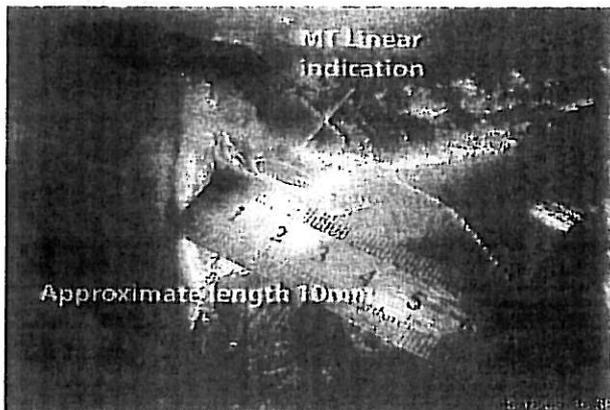
Type of problem:

Welding Concrete Other Welding Curing Procedural Bridge No: 34-0006Joint fit-up Coating Other Component: West TowerProcedural Procedural Description: West Tower, Lift 3

Reference Description: Missed MT indication on West Tower, Lift 3, 85.25m Diaphragm to Skin A weld

Description of Non-Conformance:

During Magnetic Particle Testing (MT) of West Tower, Lift 3, 85.25m Diaphragm to Skin A weld WSTL3-4B/K-39, QA discovered a linear indication of approximately 10mm in length. This weld had been previously tested and accepted by ZPMC NDT personnel (NDT Inspection Notification Sheet #004423).



Applicable reference:

Special Provisions Section 8.3 – "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, Section 6.26.2 – "Welds that are subject to MT in addition to visual inspection shall have no cracks."

Who discovered the problem: Umesh Gaikwad

Name of individual from Contractor notified: You Yuan Mao

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Time and method of notification: 10/18/2009, 17:00; Verbal

Name of Caltrans Engineer notified: Scott Kennedy

Time and method of notification: 10/20/2009, 11:00; Verbal

QC Inspector's Name: Zao Mao Mao

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



NDT客户检验通知单

NDT Inspection Notification Sheet

| 序号 No | 检验内容 Inspection | 待检验构件 Inspection part | 产品分类 Section | 检验场地 Inspection Place | 申请递交时间: Submit time: 2009-11-11 14:21 | 文件编号:004606 Document No. |
|----------|--------------------|--------------------------|---|--------------------------|---|--|
| | | | | | 计划检验时间 Inspection Time | CT 计划赴检时间 CT Estimated Inspection Time |
| 1 | MT/VT AFTER REPAIR | WSTL3-4B/K-39 | WEST TOWER LIFT 3 THE WELDS BETWEEN THE 85.25M DIAPHRAGM TO SKIN A | MILLING POSITION | 15:00 (CLOSE NCR- 000449;ZPMC-0422) | |
| 2 | MT/VT AFTER REPAIR | WSTL3-4K/K-51 | WEST TOWER LIFT 3 CD CORNER CAPPING PLATE | MILLING POSITION | 15:00 | |
| 3 | MT/VT AFTER REPAIR | WSTL3-4C/K-69 | WEST TOWER LIFT 3 THE FIT LUG ON THE 89M DIAPHRAGM SKIN B | MILLING POSITION | 15:00 | |
| 4 | MT/VT AFTER REPAIR | WSTL3-4H/K-85 | WEST TOWER LIFT 3 THE FIT LUG ON THE 105.5M DIAPHRAGM SKIN D | MILLING POSITION | 15:00 | |

1、见证通知发出后，现场等待时间通常不超过35分钟；如有变动，现场通知。

1、When ZPMC give this table to AB/F,Zpmc will do the inspection in 35 minutes.If we change the plan, we will inform AB/F in the shop.

2、ZPMC根据自己的检验控制点 (HOLD POINT) 进行日常检验。

2、ZPMC will do any inspection according to the HOLD POINT.

3、此单为临时试用单，仅适用于完工焊缝的NDT检验见证通知。

3、This table is a temporary one, just for final NDT inspection notification.

4、QC检验完成后，QA是否需要复验，由QA自行决定，QC不再另行通知。复验等待时间通常为24小时。

4、When ZPMC QC finish NDT inspection,Caltrans QA can decide if they want to

5、AB/F预约CT后会在同班时间内通知ZPMC具体CT现场报验时间

5、AB/F to notify ZPMC in the same shift that CT will attend and at what time.

6、加州现场检验完成后会告知AB/F检验结果，AB/F会在24小时内告知ZPMC加州复检结果。

6、CT to notify AB/F that the work has been completed and the result. AB/ to notify ZPMC that the work has been completed and the result within 24 hours.

ZPMC 联系人:
Requested By:

AB/F 签收人:
AB/F Receiver:

签收时间:
Time:

CT 签收人:
CT Receiver:

签收时间:
Time:



Daily Production Report
每日生产报告

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

- # *Description Code Legend*
- 1 Joint Prep./ Fit-Up
接头准备/装配
 - 2 Assembly Practice
装配
 - 3 Welding Techniques
焊接工艺
 - 4 Welding Parameters
焊接参数
 - 5 Magnetic Particle (MT) MT检查
 - 6 Ultrasonic (UT) UT检查
 - Final Visual (FVT) 最终目检
 - Radiography (RT) RT检查

周数
日期
2009.11.10

| | | |
|--------------------|----------------------|--|
| Assembly/ 装配: | NA | Quality Control Representative/ 质检代表 |
| Sub-Assembly/ 预装配: | NA | Xu bing Xu Bing |
| Girder/ 梁: | NA | Quality Assurance Manager ~ Approval 质量控制经理 |
| Tower/ 塔: | Tower(W) 3rd lifting | |

| | Weld No. 焊缝编号 | Welder I.D.# 焊工识别号 | Location 位置 | Part No. 构件编号 | % of Completion 焊缝完成率 | Inspection Description Code 检查类别 | Acc. & Rej. 合格/拒收 | CWR 关键焊缝返修 | WRR 焊缝返修报告 | HSR 火工校正报告 | NCR 不符合项报告 |
|-------------------|------------------|-----------------------|----------------|------------------|--------------------------|-------------------------------------|----------------------|---------------|---------------|---------------|---------------|
| | | | | | | | | | | | |
| Day Shift 白班 | WSTL3-4B/K-39 | 058026 | work shop 10 | WSTL3-4B/K | 100% | 3 | ACC. | T-CWR397 | NA | NA | NA |
| | | | | | % | | | | | | |
| | | | | | % | | | | | | |
| | | | | | % | | | | | | |
| | | | | | % | | | | | | |
| | | | | | % | | | | | | |
| | | | | | % | | | | | | |
| | | | | | % | | | | | | |
| | | | | | % | | | | | | |
| | | | | | % | | | | | | |
| | | | | | % | | | | | | |
| | | | | | % | | | | | | |
| | | | | | % | | | | | | |
| | | | | | % | | | | | | |
| Night Shift 夜班 | | | | | % | | | | | | |
| | | | | | % | | | | | | |
| | | | | | % | | | | | | |



关键焊缝返修报告
Critical Welding Repair Report (CWR)

版本
Rev. No.:

(1)

| | | | | | |
|-----------------------|-----------------|----------------------|--|-----------------------------|--------------|
| 项目名称 Project Name: | 美国海湾大桥 SFOBB | 部件图号 Drawing No.: | WSTL3-4B/K | 报告编号 Report No.: | T-CWR 397 |
| 合同号 Contract No.: | 04-0120F4 | 部件名称 Item Name: | Tower(W) 3 rd lifting CD angle diagonal stiffener and skin plate | NDT 报告编号 NDT Report No.: | T787-MT-6412 |
| 项目编号 Project No.: | ZP06-787 | | | | |

焊缝缺陷描述:

Description of Welding Discontinuity:

在对WSTL3-4B/K-39检测时, 发现1处纵向裂纹。L1=10mm

Welder ID No. (焊工编号): 049220 Position:(位置): 2G

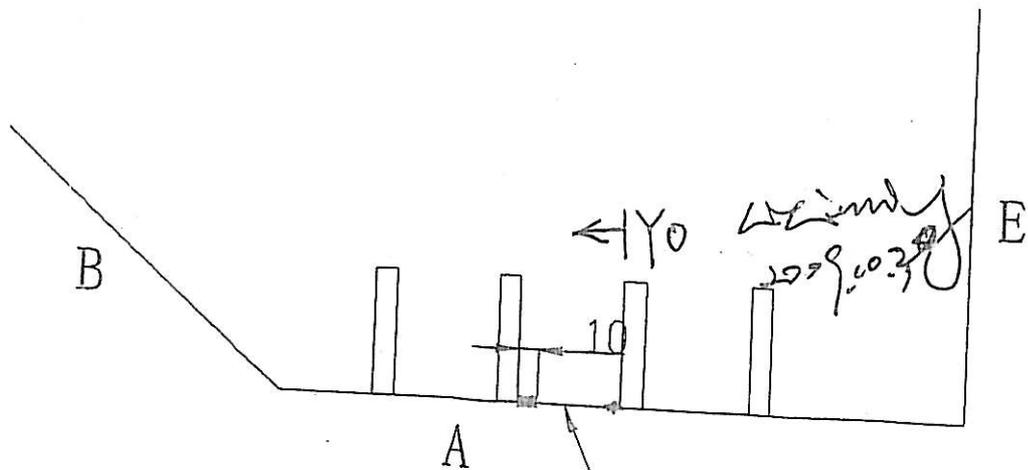
One longitudinal crack was found by use of MT on WSTL3-4B/K-39.

检验员 (Inspector): Xu Bing

日期 (Date): 2009.10.21

焊缝返修位置示意图:

Draft of Welding Discontinuity:



WELD NUMBER: WSTL3-4B/K-39

This document is APPROVED
State of California
DEPARTMENT OF TRANSPORTATION
Pursuant to Section 5-1.02 of the
Standard Specifications
Initial: [Signature] Date: 10/21/09

产生原因:

Cause:

1. 焊缝的位置比较狭窄, 碳刨时, 不能准确的将缺陷刨出.
2. 打磨工在打磨时, 不够仔细, 没有将所有的缺陷去除.

1. The access space was quite narrow resulting in making it difficult to arc-gouge the defects effectively.
2. The grinder was not observant during the grinding operation resulting in the indications not being completely removed.

车间负责人 (Foreman): *Lishiguan* 日期 (Date): *09.10.23*

处理意见

Disposition :

1. QC shall monitor and direct the welder and the grinder doing the repair operation.
2. Preheat before gouging; the temperature shall be at least 65°C.
3. Gouge the weld to remove identified defects.
4. Joint details shall refer to the approved WPS repair.
5. Grind the gouged areas to a smooth and shiny surface.
6. Verify with VT and MT to ensure no defects remain in the weld joint prior to welding.
7. QC shall monitor all welding passes being deposited.
8. QC shall ensure all slag has been removed prior the deposition of next pass.
9. Preheat and maintain interpass temperature control in accordance with the WPS.
10. Blend the weld repaired areas into the adjacent weld or base metal by grinding.
11. Perform VT, MT and UT NDT inspection to the repaired areas.

- 1、在返修过程中, QC 应该监控和指导焊工和打磨工;
- 2、碳刨之前必须先进行预热, 温度不低于 65° C;
- 3、碳刨去除缺陷;
- 4、缺陷被完全清除后, 必须准备一个正确的接头型式, 具体接头型式请参见对应的修补焊接工艺规程(WPS);
- 5、将碳刨面打磨光滑;
- 6、在准备好焊接接头焊接前, 用 VT 和 MT 检测缺陷被完全清除;
- 7、在返修过程中, QC 确认焊道清理干净;
- 8、在进入下道焊缝前, QC 应该保证所有的缺陷已经去除,
- 9、根据 WPS 控制预热和焊道的温度;
- 10、打磨返修区域与临近焊缝和母材齐平;
- 11、对返修区域进行 VT,MT 和 UT 等 NDT 检测。

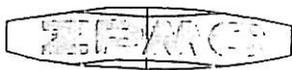
This document is APPROVED
State of California
DEPARTMENT OF TRANSPORTATION
Pursuant to Section 5-1.02 of the
Standard Specifications
Initial *SAC* Date: *10/26/09*

工艺: *Lichen Ping*
Technical Engineer: *09.10.23*

审核:
Approved By: *Liyuanhua*

日期:
Date: *10/23/09*

#R787-QCP-900



关键焊缝返修报告

版本
Rev. No.:

Critical Welding Repair Report (CWR)

0

| | | | | | |
|-----------------------|-----------------|----------------------|--|-----------------------------|--------------|
| 项目名称 Project Name: | 美国海湾大桥 SFOBB | 部件图号 Drawing No.: | WSTL3-4B/K | 报告编号 Report No.: | T-CWR397 |
| 合同号 Contract No.: | 04-0120F4 | 部件名称 Item Name: | Tower(W) 3 rd lifting CD angle diagonal stiffener and skin plate | NDT 报告编号 NDT Report No.: | T787-MT-6412 |
| 项目编号 Project No.: | ZP06-787 | | | | |

纠正措施:

Corrective Action to Prevent Re-occurrence:

1. 碳刨打磨后, 要圆滑过度, VT和MT确认所有的缺陷已经去除;
2. 教导在烧熔透焊缝和焊道清理时, 焊工必须负责任;
3. 关键焊缝返修时, 主要的QC负责人要在现场;

1. Grind smoothly transition after gouging. Perform VT and MT to ensure all the defects have been removed.
2. Instruct the welder that it is his responsibility to produce sound welds and perform interpass cleaning.
3. Greater QC presence during critical welding operations.

车间负责人 (Foreman):

Li Shiquan

日期 (Date):

09.10.23

| | | | |
|---|--|--|------------------------|
| 参照的WPS编号 Repair WPS No.: | WPS-345-FCAW-1 G (1F) -Repair WPS-345-FCAW-2 G (2F) -Repair WPS-345-SMAW-1 G(1F)-Repair WPS-345-SMAW-2 G(2F)-Repair | 工艺员 Technologist: | Lichenping 09.10.23 |
| 返修(碳刨)前预热温度 Preheat Temperature Before Gouging: | 65 ^{±2} | 返修的缺陷 Description of Discontinuity: | 裂纹 |
| 焊前处理检查 Inspection Before Welding: | Acc | 焊前预热温度 Preheat Temperature Before Welding: | 185 [±] |
| 最大碳刨深度 Max. Depth of Gouge: | 3mm | 碳刨总长 Total Length of Gouge: | 10mm |
| 焊工 Welder: | 058026 | 焊接类型 Welding Type: | SMAW WPS |
| 焊接电流 Current: | 165A | 焊接电压 Voltage: | 25.8V |
| | | 焊接位置 Position: | 2G |
| | | 焊接速度 Speed: | 124 mm/min |

返修后检查

Inspection After Repair:

| | | | | | |
|----------------------|-----|--------------------|-----|-------------|------------|
| 外观检查 VT Result: | Acc | 检验员 Inspector: | 姚文娟 | 日期 Date: | 2009.11.10 |
| NDT复检 NDT Result: | Acc | 探伤员 NDT Person: | 姚文娟 | 日期 Date: | 09.11.10 |

见证:

Witness/Review:

备注:

Remark:

Tool Box Training Agenda

Subject: MT Techniques

Reason for Refresher Training: Several CT NCR's for missed MT indications

1. Safety

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

2. Tools

- a. Lighting
- b. MT Powder. Red for ambient, Yellow for High Temperature.
- c. Powder Bulb
- d. Powder Blower
- e. MT Yoke condition

3. Inspection Techniques

- a. Lighting
- b. Position of body (distance of eyes to the weld surface)
- c. Application of Powder
- d. Continuous method
- e. Two directions
- f. Both sides of weld

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-000340**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 23-Nov-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0422**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: 18-Oct-2009**Description of Non-Conformance:**

During Magnetic Particle Testing (MT) of West Tower, Lift 3, 85.25m Diaphragm to Skin A weld WSTL3-4B/K-39, QA discovered a linear indication of approximately 10mm in length. This weld had been previously tested and accepted by ZPMC NDT personnel (NDT Inspection Notification Sheet #004423).

Contractor's proposal to correct the problem:

Repair affected weld.

Corrective action taken:

The affected weld has been repaired and NDT reports indicating a sound weld have been submitted. To resolve the recurring failure for QC to detect MT indications, ABFJV QCM has implemented training with ZPMC to improve quality of inspectors. Topics include: inspection of equipment prior to use, proper conditions for inspection, proper technique for MT & UT.

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