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, P.R. China **Report No:** NCR-000833
Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date:** 04-Sep-2010
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0795

Type of problem:

Welding	☑	**Concrete**	☐	**Other**	☐	
Welding	☐	**Curing**	☐	**Procedural**	☐	**Bridge No:** 34-0006
Joint fit-up	☐	**Coating**	☐	**Other**	☐	**Component:**
Procedural	☑	**Procedural**	☐	**Description:** Cross Bracing Gusset Plate		

Reference Description: Missed UT Indication located at 99m Cross Bracing Gusset Plate

Description of Non-Conformance:

During random 10% verification Ultrasonic Testing (UT) of Cross Bracing Gusset plate, this Quality Assurance Inspector (QA) discovered the following issues:

-Two (2) Class “A” non conforming longitudinal indication’s in one weld.

- First UT discontinuity rating was -2 db; Class “A” non-conforming indication.

-Depth of the discontinuity from face “B” is approximately 18mm.

-Length of the discontinuity is approximately 15mm. -Y location is 70 mm from Skin D/E corner of the weld.

-Second UT discontinuity rating was +0 db; Class “A” non-conforming indication.

-Depth of the discontinuity from face “B” is approximately 24mm.

-Length of the discontinuity is approximately is 10mm.

-Y location is 80 mm from Skin D/E corner of the weld.

-This weld is a T-joint complete joint penetration (CJP), between the West Tower Skin ‘E’ and the Cross Bracing Gusset plate.

This weld is identified as WD1-GUSA3-3-99M-W#4B.

-Scanning was performed from face “B” using 2.25 MHz, 3/8 inch transducer to cover the full volumetric scan of the weld.

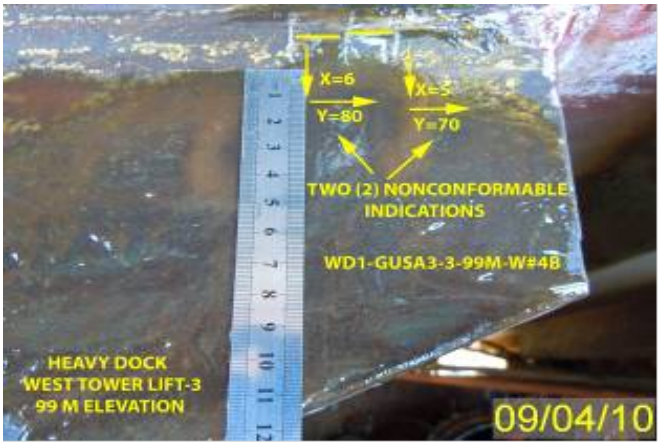
-The material thickness is 40 mm.

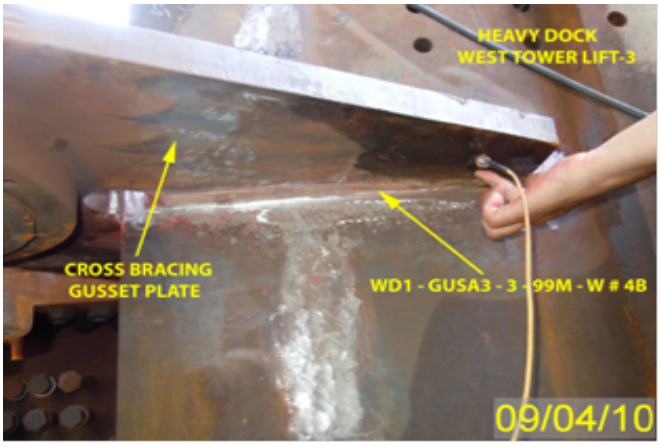
-This member is identified as Seismic Performance Critical Member (SPCM).

The Notice of Witness Inspection Number (NWIT) is 006575. These indications are located inside the area that has been previously tested and accepted by ZPMC Quality Control (QC) personnel. ZPMC’s QC personnel performed 100% UT inspection of this weld.

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)





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 Section 6.26.3.1; "Welds that are subject to UT in addition to visual inspection shall be acceptable if they meet the following requirements:…(1) Welds subject to tensile stress under any condition of loading shall conform to the requirements of Table 6.3.

Who discovered the problem: Naddi Sandeep Kumar

Name of individual from Contractor notified: Bi Dewei

Time and method of notification: 1100 hours,/ 09/04/10/ Verbal

Name of Caltrans Engineer notified: Jim Reid

Time and method of notification: 1320 hours /09/06/10/ Verbal

QC Inspector's Name: Bi Dewei

Was QC Inspector aware of the problem: ☐ **Yes** ☑ **No**

Contractor's proposal to correct the problem:

N/A

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 Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Ng,Michael	QA Inspector
Reviewed By:	Devey,Jim	SMR

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge
666 Feng Bin Road Room 708, Changxing Island
Shanghai 201913 PR China
Tel: 021-56856666 ext 207061 Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

To:	AMERICAN BRIDGE/FLUOR, A JV 375 BURMA ROAD OAKLAND CA 95607	**Date:**	08-Sep-2010
		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:**	05.03.06-000790
Subject:	NCR No. ZPMC-0795		

Reference Description: Missed UT Indication located at 99m Cross Bracing Gusset Plate

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:** N/A

Remarks:

During random 10% verification Ultrasonic Testing (UT) of Cross Bracing Gusset plate, this Quality Assurance Inspector (QA) discovered the following issues:

-Two (2) Class “A” non conforming longitudinal indication’s in one weld.

- First UT discontinuity rating was -2 db; Class “A” non-conforming indication.

-Depth of the discontinuity from face “B” is approximately 18mm.

-Length of the discontinuity is approximately 15mm. -Y location is 70 mm from Skin D/E corner of the weld.

-Second UT discontinuity rating was +0 db; Class “A” non-conforming indication.

-Depth of the discontinuity from face “B” is approximately 24mm.

-Length of the discontinuity is approximately is 10mm.

-Y location is 80 mm from Skin D/E corner of the weld.

-This weld is a T-joint complete joint penetration (CJP), between the West Tower Skin ‘E’ and the Cross Bracing Gusset plate. This weld is identified as WD1-GUSA3-3-99M-W#4B.

-Scanning was performed from face “B” using 2.25 MHz, 3/8 inch transducer to cover the full volumetric scan of the weld.

-The material thickness is 40 mm.

-This member is identified as Seismic Performance Critical Member (SPCM).

The Notice of Witness Inspection Number (NWIT) is 006575. These indications are located inside the area that has been previously tested and accepted by ZPMC Quality Control (QC) personnel. ZPMC’s QC personnel performed 100% UT inspection of this weld.

Action Required and/or Action Taken:

Propose a resolution for this non-conformance and provide documentation that the deficiency has been brought into compliance with the contract requirements. Propose a resolution that addresses the apparent failure of Quality Control to identify the indication. Additionally, provide documentation of the steps taken by the Quality Control Manager to prevent future occurrences.

The response for the resolution of this issue is requested within 7 days.

Transmitted by: Sean Eagen Transportation Engineer

Attachments: ZPMC-0795

cc: Rick Morrow, Peter Siegenthaler, Brian Boal, Mark Woods, Ching Chao, Bill Casey

File: 05.03.06

AMERICAN BRIDGE/FLUOR ENTERPRISES, a JV

P.O. BOX 23223 Oakland, CA 94623

Phone (510) 419-0120 / Fax (510) 839-0666

NCR PROPOSED RESOLUTION

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

Attention: Siegenthaler, Peter
Resident Engineer

Ref: 05.03.06-000790

Subject: NCR No. ZPMC-0795

Dated: **27-Sep-2010**

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

Job Name: SAS Superstructure

Document No.: **ABF-NPR-000801 Rev: 00**

Contractor's Proposed Resolution:

Reference Resolution: ZPMC has repaired the missed indication and is providing the WRR and NDT performed after the repair to show the weld is acceptable.

ZPMC has repaired the missed indication and is providing the WRR and NDT performed after the repair to show the weld is acceptable. To deal with the number of missed indications ABFJV tracks inspector performance to determine which inspector is responsible for missed indications, a pattern of continued missed indications will result in disciplinary action and potential removal. ZPMC has written an internal NCR to document this incident as well. Based on these actions and acceptable results after repair, ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000801R00;

Caltrans' comments:

Status: CLO

Date: 28-Sep-2010

This proposed resolution is acceptable. The documentation received is sufficient and the Department concurs that Non-Conformance ZPMC-0795 is closed.

Submitted by: Eagen, Sean

Date: 28-Sep-2010

Attachment(s):

ZPMC

No. T-172

LETTER OF RESPONSE

TO: American Bridge/Flour JV

DATE: 2010-09-27

REGARDING: NCR-000833 (ZPMC-795)

ZPMC received NCR-000833 (ZPMC-795), it mentioned that CT inspectors found indication on weld WD1-GUSA3-3-99M-W-4A/B.

Once CT inspector found indication on this weld, ZPMC took positive action and performed repair work under approval of CT site inspector. Finally this weld was checked by CT and green tagged.

As a conscientious attitude and to improve welding quality, we have already inculcated the welder to perform carefully, and welding must be covered by QC.

Here attached WRR and related NDT reports show the weld is sound finally.

Basing on above information, ZPMC hope CT could take a review and close the NCR.

ATTACHMENT:

NCR-000833 (ZPMC-795)

T-WR3525

T787-UT-3246

Zhaojiaheng

2010.9.27

STATE OF CALIFORNIA--BUSINESS,TRANSPORTACTION AND HOUSING AGENCY Arnold Schwarzenegger, Governor

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
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QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

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Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date:** 04-Sep-2010
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0795

Type of problem:

Welding	☑	Concrete	☐	Other	☐	
Welding	☐	Curing	☐	Procedural	☐	**Bridge No:** 34-0006
Joint fit-up	☐	Coating	☐	Other	☐	**Component:**
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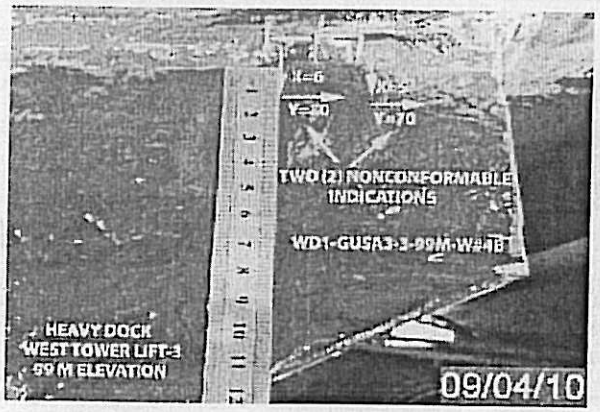
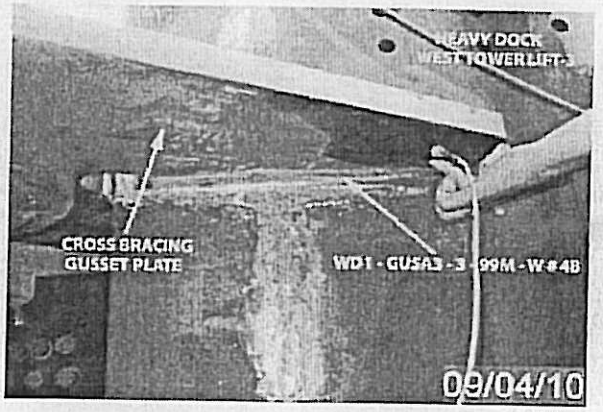
QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)





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Name of individual from Contractor notified: Bi Dewei

Time and method of notification: 1100 hours,/ 09/04/10/ Verbal

Name of Caltrans Engineer notified: Jim Reid

Time and method of notification: 1320 hours /09/06/10/ Verbal

QC Inspector's Name: Bi Dewei

Was QC Inspector aware of the problem: ☐ Yes ☑ No

Contractor's proposal to correct the problem:

N/A

Comments:

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Inspected By:	Ng,Michael	QA Inspector
Reviewed By:	Devey,Jim	SMR

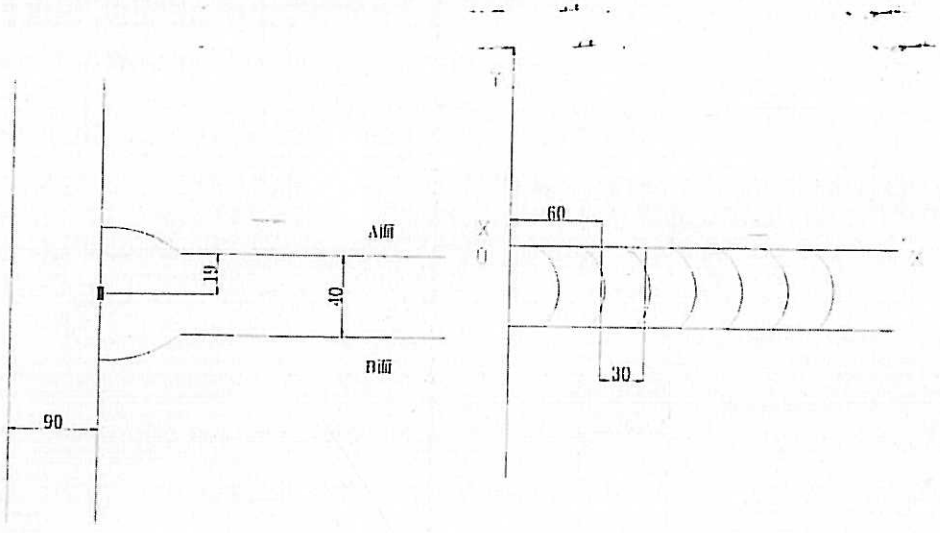
ZPMC	焊缝返修报告 Welding Repair Report				版本 Rev.-No. 0
项目名称 Project Name	美国海湾大桥 SFOBB	部件图号 Drawing No	WD1-GUSA3-3	报告编号 Report No.	T-WR3525
合同号 Contract No.:	04-0120F4	部件名称 Items Name	THIRD LIFTING TOWER(W)	NDT报告编号 Report No.of NDT	T787-UT-3147
项目编号 Project No.:	ZP06-787				

焊缝缺陷描述：(普通UT探伤发现的缺陷长度小于最大允许长度)
(Description of welding discontinuity)

焊缝编号为：WD1-GUSA3-3-99M-W-4A/B

检验员（Inspector）：Xu Ronggang　　日期(Date)：2010.08.28

焊缝返修位置示意图：
Draft of welding discontinuity:



WELD NUMBER: WD1-GUSA3-3-99M-W-3A/B

产生原因:

Caused:

1、焊道未及时处理干净。

1. Did not clear the weld pass completely in time.

车间负责人(Foreman): Luyefei 日期(Date): 10.08.28

处理意见

Disposition :

1. 从缺陷距离端面较近一侧（D≤0.65T, D为缺陷深度，T为板厚）采用碳刨或打磨的方法去除焊缝缺陷;

2. 参照返修焊接工艺规程（WPS）准备正确的接头型式，预热和焊接;

3. 将修补区域打磨到与母材或邻近焊缝平齐;

4. 根据批准的车间图纸检查焊缝.

1. Gouge or grind from nearer side from metal edge （D≤0.65T, "D" is depth of defects, "T" is thickness of metal） to remove all defects;

2. Follow repair WPS for joint preparation, preheat, and weld deposit;

3. Grind the repaired area flush with base metal or the adjacent weld;

4. Check the welds according to the working drawings.

工 艺:
Technical engineer He Shaofang

审核:
Approved by

日期
Date 10.8.28

ZPMC	焊縫返修报告 Welding Repair Report				版本 Rev. No. 0
项目名称 Project Name	美国海湾大桥 SFOBB	部件图号 Drawing No	WD1-GUSA3-3	报告编号 Report No.	T-WR3525
合同号 Contract No.:	04-0120F4	部件名称 Items Name	THIRD LIFTING TOWER(W)	NDT报告编号 Report No.of NDT	T787-UT-3147
项目编号 Project No.:	ZP06-787				

纠正措施:

Correction action to prevent re occurrence:

1.加强焊接监控和道间清理。

1. Improve monitoring of welding and interpass cleaning.

车间负责人(Foreman): Liu Yefei 日期(Date): 10.08.24

参照的WPS编号 Repair WPS No.	☐ WPS-345-SMAW-1G(1F)- Repair ☐ WPS-345-FCAW-1G(1F)- Repair-1 ☐ WPS-345-SMAW-2G(2F)-Repair ☐ WPS-345-FCAW-2G(2F)-Repair-1 ☐ WPS-345-SMAW-3G(3F)- Repair ☐ WPS-345-SMAW-4G(4F)- Repair ☐ WPS-345-SMAW-1G(1F)-FCM-Repair ☐ WPS-345-SMAW-2G(2F)-FCM-Repair ☐ WPS-345-SMAW-3G(3F)-FCM-Repair ☐ WPS-345-SMAW-4G(4F)-FCM-Repair ☐ 其他	工艺员 technologist	
返修（碳刨）前预热温度 Preheat temperature before gouging		返修的缺陷 Desctiption of discontinuity	
焊前处理检查 Inspection before welding		焊前预热温度 Preheat temperature before welding	
最大碳刨深度 Max. depth of gouging		碳刨总长 Total length of gouging	

焊工 welder	焊接类型 welding type	焊接位置 position
焊接电流 Current	焊接电压 Voltage	焊接速度 Speed

返修后检查

Inspection After repairing:

外观检查 VT result	检验员 Inspector	日 期 Date
NDT复检 NDT result	探伤员 NDT person	日 期 Date

见证：
Witness/Review:

备注：
Remark：

REPORT OF ULTRASONIC EXAMINATION
UT探伤报告

REPORT NO. 报告编号 T787-UT-3246	DATE 2010.09.23	PAGE 1 OF 1	Revision No: 0

PROJECT NO. :工程编号 ZP06-787		CONTRACTOR : CALTRANS
ITEMS NAME: 部件名称 THE THIRD LIFTING TOWER(W)	DRAWING NO.: 图号 WD1-GUSA3-3	CALTRANS CONTRACT NO.: 04-0120F4 加州工程编号

REFERENCING CODE 参考规范	ACCEPTANCE STANDARD 接受标准	PROCEDURE NO. 程序编号
AWS D1.5-2002	AWS D1.5-2002(Table 6.3)	ZPQC-UT-01
WELDING PROCESS 焊接方法	JOINT TYPE 焊缝类型	CALIBRATION DUE DATE 仪器校正有效期
SMAW	T-JOINT	Dec. 28ST ,2010

EQUIPMENT 设备	MANUFACTURER 制造商	MODEL NO. 样式编号	SERIAL NO. 序列编号
UT SCOPE	PANAMETRICS	EPOCH-4B	71565311

CALIBRATION BLOCK 试块	COUPLANT 耦合剂	MATERIAL/THICKNESS 材料厚度
AWS IIW BLOCK TYPE II	C.M.C	A709M-345T2/F2-Z 40/90mm

TRANSDUCER 探头

MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸	MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸
GAMMA	70°	2.25MHz	0.75'×0.625'				
				Reference Level 参考灵敏度		20dB	

Base metal inspected per AWS D1.5-2002 Section 6.19.5 0° UT OK.

WELD IDENTIFICATION 焊缝部件编号	INDICATION NO. 指示号	PROBE ANGLE 探测角度	FROM FACE 检测面	LEG (次数)	DECIBELS分贝				DISCONTINUITY 不连续性					Discontinuity Evaluation 缺陷估计	Remark 备注
					Indication Level	Reference Level	Attenuation Factor	Indication Rating	LOCATION OF DISCONTINUITY 不连续位置(mm)						
					a	b	c	d	Length 长度	Sound Path 声程	Depth from Surface 距表面深度	From'X 距X	From'Y 距Y		
WD1-GUSA3-3-99M-W-4A/B		70				40								ACC.	100%
AFTER T-WR3525															
BLANK															

EXAMINED BY主探

LEVEL - II SIGN / DATE 10.09.23

REVIEWED BY 审核

LEVEL - II SIGN / DATE 10.09.23

质量经理 / QCM

签字 SIGN / 日期 DATE

用户CUSTOMER

签字 SIGN / 日期 DATE

(FORM# ZPQC-UT01)

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: xx.25A

QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

Location: Changxing Island, Shanghai, P.R. China **Report No:** NCS-000789
Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date:** 27-Sep-2010
Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0795

Type of problem:

Welding	☑	**Concrete**	☐	**Other**	☐	
Welding	☐	**Curing**	☐	**Procedural**	☐	**Bridge No:** 34-0006
Joint fit-up	☐	**Coating**	☐	**Other**	☐	**Component:**
Procedural	☑	**Procedural**	☐	**Descripton:**		

Date the Non-Conformance Report was written: 04-Sep-2010

Description of Non-Conformance:

During random 10% verification Ultrasonic Testing (UT) of Cross Bracing Gusset plate, this Quality Assurance Inspector (QA) discovered the following issues:
-Two (2) Class “A” non conforming longitudinal indication’s in one weld.
- First UT discontinuity rating was -2 db; Class “A” non-conforming indication.

-Depth of the discontinuity from face “B” is approximately 18mm.

-Length of the discontinuity is approximately 15mm. -Y location is 70 mm from Skin D/E corner of the weld.
-Second UT discontinuity rating was +0 db; Class “A” non-conforming indication.
-Depth of the discontinuity from face “B” is approximately 24mm.

-Length of the discontinuity is approximately is 10mm.
-Y location is 80 mm from Skin D/E corner of the weld.
-This weld is a T-joint complete joint penetration (CJP), between the West Tower Skin ‘E’ and the Cross Bracing Gusset plate.
This weld is identified as WD1-GUSA3-3-99M-W#4B.
-Scanning was performed from face “B” using 2.25 MHz, 3/8 inch transducer to cover the full volumetric scan of the weld.
-The material thickness is 40 mm.
-This member is identified as Seismic Performance Critical Member (SPCM).
The Notice of Witness Inspection Number (NWIT) is 006575. These indications are located inside the area that has been previously tested and accepted by ZPMC Quality Control (QC) personnel. ZPMC’s QC personnel performed 100% UT inspection of this weld.

QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

(Continued Page 2 of 2)

Contractor's proposal to correct the problem:

Contractor proposes to repair the weld with an approved WRR and provide NDT documentation. An internal NCR will be issued to discipline and potentially remove those inspectors who frequently miss indications.

Corrective action taken:

Contractor repaired the weld successfully with a WRR and provided NDT documentation with acceptable results to the Department. An internal NCR was issued for the personnel involved with the incident.

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 , who represents the Office of Structural Materials for your project.

Inspected By:	Ng,Michael	Quality Assurance Inspector
Reviewed By:	Devey,Jim	QA Reviewer