

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



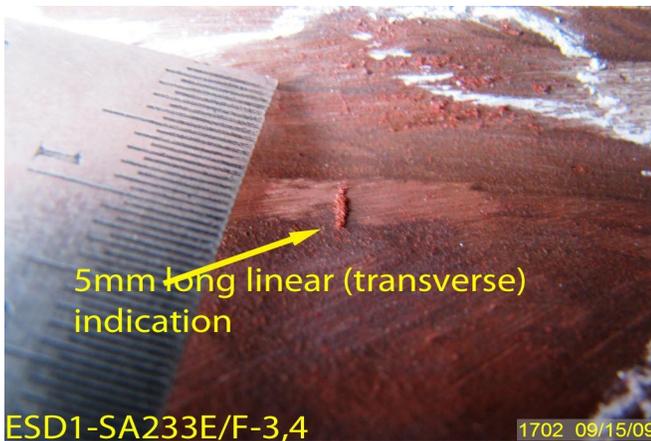
Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

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-000409**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 15-Sep-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0383**Type of problem:**

Welding	Concrete	Other	
Welding	Curing	Procedural	Bridge No: 34-0006
Joint fit-up	Coating	Other	Component: East Tower
Procedural	Procedural	Description: East Tower, Lift 1	

Reference Description: Missed MT indications on East Tower, Lift 1**Description of Non-Conformance:**

During Magnetic Particle Testing (MT) of East Shaft, Lift 1, welds ESD1-SA233E/F-3,4, QA observed one transverse and one longitudinal linear indications. These welds have been previously tested and accepted by ZPMC MT Technicians.

**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: Hiranch Patel**Name of individual from Contractor notified:** Khang Xiong

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Time and method of notification: 9/15/2009, 17:00; Verbal

Name of Caltrans Engineer notified: Scott Kennedy

Time and method of notification: 9/17/2009, 14:00; Verbal

QC Inspector's Name: Li Xiu Yang

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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NCT

(*Continued Page 2 of 2*)

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: 05.03.06-000371

Subject: NCR No. ZPMC-0383

Dated: 16-Oct-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000380 **Rev:** 00

Contractor's Proposed Resolution:

Reference Resolution: ABF JV QCM has implemented training with ZPMC to improve the quality of inspections. ABF JV will provide documentation showing attendance by ZPMC QC inspectors and the subject of training.

ABF JV QCM has implemented training with ZPMC to improve the quality of inspections. ABF JV 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, ABF JV 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-000380R00

Caltrans' comments:

Status: REJ

Date: 18-Oct-2009

Even though the course of action is acceptable, the department will not consider closure of this NCR (ZPMC-0383) until all the repair documents and training documents are submitted and reviewed.

Submitted by: Lee, Ken

Date: 18-Oct-2009

Attachment(s):

NCR PROPOSED RESOLUTION

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

Attention: Pursell, Gary
Resident Engineer

Ref: 05.03.06-000371

Subject: NCR No. ZPMC-0383

Dated: 24-Nov-2009

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000380 Rev: 01

Contractor's Proposed Resolution:

Reference Resolution: Attached is documentation of the repair of the missed indications and subsequent NDT. ZPMC requests closure of this NCR.

Attached is documentation of the repair of the missed indications and subsequent NDT. The NDT documentation shows that the weld is acceptable. ABFJV's QCM has conducted training with ZPMC's MT inspectors and has previously submitted the training agenda and sign in sheet to the Department for verification to show the steps ABFJV is taking to address the missed indications. In addition, ABFJV has implemented NDT verification of welds to ensure that welds are acceptable prior to being inspected by the Engineer. On September 24, 2009 an exploration by ABFJV, ZPMC and the Department found that these indications were slag or porosities which were the result of insufficient interpass cleaning. ABFJV has reminded ZPMC of the importance of interpass cleaning of the welds and ZPMC acknowledges that interpass cleaning must be a focus. Based on these actions and the attached documentation, ZPMC requests closure of this NCR.

Submitted by:

Attachment(s): ABF-NPR-000380R01;

Caltrans' comments:

Status: CLO

Date: 21-Dec-2009

The proposed resolution is acceptable. The Department concurs that Non-conformance ZPMC-0383 is closed.

Submitted by: Lee, Ken

Date: 21-Dec-2009

Attachment(s):



No. T-084

LETTER OF RESPONSE

TO: American Bridge/Flour JV
DATE: 2009-11-23
REGARDING: NCR-000409 (ZPMC-0383)

ZPMC received NCR-000409 (ZPMC-0383), it mentioned that during MT of east tower lift 1 welds ESD1-SA233E/F-3,4. CT observed one transverse and one longitudinal linear indications. These welds have been previously tested and accepted by ZPMC MT technicians.

About this situation we ZPMC at the first time issued the WR, and did the repair work and did the MT again to make sure no problem on the welds, 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-000409 (ZPMC-0383)
NOTIFICATION: 4243
REPORT OF MAGNETIC PARTICLE: T787-MT-6900
WR:T-WR2705

A handwritten signature in black ink, appearing to read "L. Xiang", is written in a cursive style.

09.11.24

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
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(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-000409

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 15-Sep-2009

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

NCR #: ZPMC-0383

Type of problem:

Welding Concrete Other

Welding Curing Procedural

Joint fit-up Coating Other

Procedural Procedural Description: East Tower, Lift 1

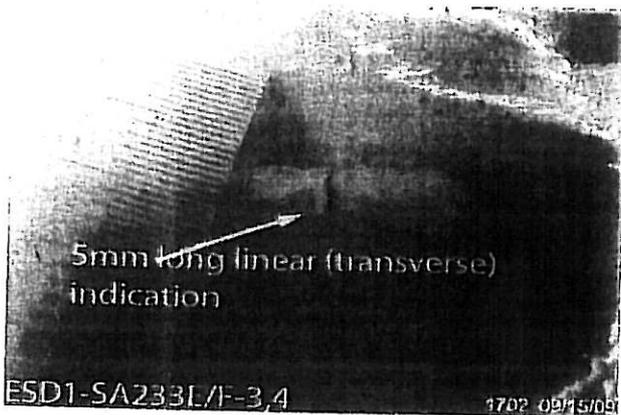
Bridge No: 34-0006

Component: East Tower

Reference Description: Missed MT indications on East Tower, Lift 1

Description of Non-Conformance:

During Magnetic Particle Testing (MT) of East Shaft, Lift 1, welds ESD1-SA233E/F-3,4, QA observed one transverse and one longitudinal linear indications. These welds have been previously tested and accepted by ZPMC MT Technicians.



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: Hiranch Patel

Name of individual from Contractor notified: Khang Xiong

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

Time and method of notification: 9/15/2009, 17:00; Verbal

Name of Caltrans Engineer notified: Scott Kennedy

Time and method of notification: 9/17/2009, 14:00; Verbal

QC Inspector's Name: Li Xiu Yang

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: Fax:

NON-CONFORMANCE REPORT TRANSMITTAL

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

Date: 18-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-0383

Job Name: SAS Superstructure
Document No: 05.03.06-000371

Reference Description: Missed Indications (MT) / East Shaft Lift 1 / Transverse & Longitudinal Indication

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:** 01

Remarks:

During Magnetic Particle Testing (MT) of East Shaft, Lift 1, welds ESD1-SA233E/F-3,4, QA observed one transverse and one longitudinal linear indications. These welds have been previously tested and accepted by ZPMC MT Technicians.

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 indications during magnetic particle testing of the welds. 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 deficiencies have been brought into compliance with the contract requirements. Additionally address the probable causes for the indications 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 and ZPMC-0377 related to Tower.

Transmitted by: Scott Kennedy Sr. Bridge Engineer

Attachments: ZPMC-0383

2:02:15.04

05.03.06-000371,NCT

Received
 NCR-000371 18 Sep 09

NCT

(Continued Page 2 of 2)

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

File: 05.03.06



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: 2009-9-19 13:25	文件编号:004243 Document No.
1	FINAL VT MT FOR WELDS	ESD1-SA233E/F-3, 4	EAST TOWER LIFT 1 STEP PLATES ON SKIN B	TOWER JETTY	计划检验时间 Inspection Time	CT 计划赴检时间 CT Estimated Inspection Time
2	FINAL VT MT FOR WELDS	ESD1-A167A/H-63~72, 73~82, 5~28, 53~62, 29~52	EAST TOWER LIFT 1 PADEYES ON SKIN A/B/C/D/E	TOWER JETTY	2009-9-19 14:10 FOR GREEN TAG(NO. 4213)	
3	FINAL VT MT FOR WELDS	ESD1-SA237A/F-35, 36, 37, 38, 39	EAST TOWER LIFT 1 SKIN A SMALL DOUBLER PLATES	TOWER JETTY	2009-9-19 14:10 FOR GREEN TAG(NO. 4213)	
4	FINAL VT MT FOR WELDS	ESD1-SA384A/D-43~52, ESD1-SA384B/D-53~56, ESD1-SA300A/F-5~18, ESD1-SA298A/G-18~31, ESD1-SA388A/D-38~51, ESD1-SA376A/E-7~20	EAST TOWER LIFT 2 PADEYES ON SKIN A/B/C/D/E	TOWER JETTY	2009-9-19 14:10 FOR GREEN TAG(NO. 4213)	

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 retest it. ZPMC QC will not inform Caltrans again. The waiting time is 24 hours ordinarily.

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:



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	ESD1-SA233E/F	报告编号 Report No.	T-WR2705
合同号 Contract No.:	04-0120F4	部件名称 Items Name	东塔第一吊 First lifting east tower	NDT报告编号 Report No. of NDT	NA
项目编号 Project No.:	ZP06-787				

缺陷描述

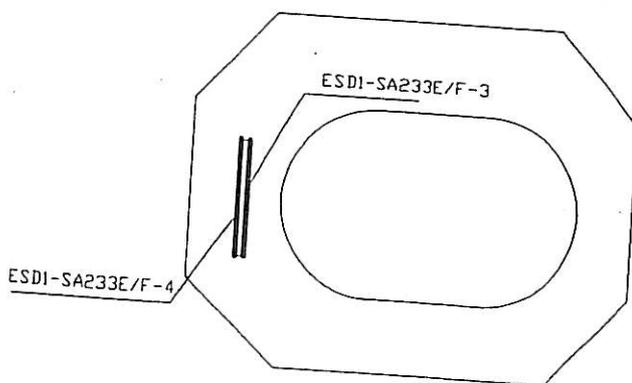
Description of welding discontinuity:

东塔第一吊装段报验时，发现B面板踏步板2条裂纹，长度分别为10MM，5MM.具体如图：
During inspection first lifting east tower, two cracks were found at Skin B, 10mm and 5mm in length, the details sees the following draft.

检验员 (Inspector) : He Gen.
HEGEN 日期(Date) : 09.09.17

焊缝返修位置示意图：

Draft of welding discontinuity:



阴影处为需要补焊区域 Repair area in shadow.

产生原因:

Caused:

1. 火焰加热时, 水汽没有完全的去掉或者这个区域预热不够;
1. Moisture wasn't completely removed during drying operation (preheating) or the area wa sn't preheated sufficiently.

车间负责人(Foreman):

Lisliquan

日期(Date):

09.11.22.

处理意见

Disposition :

1. QC 须监控碳刨、打磨和焊接过程
 2. 碳刨去除缺陷并打磨光滑
 3. VT 检测以确保缺陷被清除
 4. 焊接须符合 WPS 要求
 5. 在进入下道焊缝前, QC 须确保所有焊渣都已被去除干净
 6. 打磨返修区域使其与临近焊缝或母材齐平
 7. 对返修区域进行 VT, MT 和 UT 检测
-
1. QC shall monitor gouging/grinding/welding
 2. Gouge defects & grind smoothly
 3. Verify that defects have been removed with VT
 4. Welding shall be in accordance with WPS
 5. QC shall ensure all slag is removed prior to deposition of subsequent weld passes
 6. Blend repair area with adjacent base metal
 7. Perform VT, MT, & UT to repaired area

工艺: Lichunping
Technical engineer

09.11.22

审核:
Approved by

日期
Date



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.	ESD1-SA233E/F	报告编号 Report No.	T-WR2705
合同号 Contract No.:	04-0120F4	部件名称 Items Name	东塔第一吊 First lifting east tower	NDT报告编号 Report No. of NDT	NA
项目编号 Project No.:	ZP06-787				

纠正措施:

Correction action to prevent re occurrence:

1. 返修前, QC确认有效的预热, 以将水汽全部去除。

1. QC shall verify sufficient preheat has been applied, to remove moisture, prior to welding.

车间负责人(Foreman): *Lishiguan*日期(Date): *09.11.22*

参照的WPS编号 Repair WPS No.	WPS-345-FCAW-1G(1F)-Repair WPS-345-FCAW-2G(2F)- Repair WPS-345-SMAW-1G(1F)- Repair WPS-345-SMAW-2G(2F)- Repair	工艺员 technologist	<i>Lichunping</i> <i>09.11.22.</i>
返修(碳刨)前预热温度 Preheat temperature before gouging	<i>NA</i>	返修的缺陷 Description of discontinuity	<i>裂纹</i>
焊前处理检查 Inspection before welding	<i>ACU</i>	焊前预热温度 Preheat temperature before welding	<i>185</i>
最大碳刨深度 Max. depth of gouging		碳刨总长 Total length of gouging	
焊工 welder <i>066673</i>	焊接类型 welding type <i>FCAW</i>	焊接位置 position <i>2G</i>	
焊接电流 Current <i>309</i>	焊接电压 Voltage <i>29.9</i>	焊接速度 Speed <i>290</i>	
返修后检查 Inspection After repairing:			
外观检查 VT result <i>VT ACU</i>	检验员 Inspector <i>yeyangjun</i>	日期 Date <i>09.09.17</i>	
NDT复检 NDT result <i>MT ACU</i>	探伤员 NDT person <i>caixinxin</i>	日期 Date <i>09.09.17</i>	
见证: Witness/Review:			
备注: Remark:			

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
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(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-000343**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 30-Nov-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0383**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: 15-Sep-2009**Description of Non-Conformance:**

During Magnetic Particle Testing (MT) of East Shaft, Lift 1, welds ESD1-SA233E/F-3,4, QA observed one transverse and one longitudinal linear indications. These welds have been previously tested and accepted by ZPMC MT Technicians.

Contractor's proposal to correct the problem:

Repair affected welds.

Corrective action taken:

The affected welds have been repaired and NDT documentation indicating weld soundness has been submitted.

Furthermore, ZPMC has been reminded about the importance of interpass cleaning. 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:**

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Inspected By: Sinevod, Serge

Quality Assurance Inspector

Reviewed By: Wahbeh, Mazen

QA Reviewer