

**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-000104**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 28-Mar-2008**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0101**Type of problem:**

<b>Welding</b>	<b>Concrete</b>	<b>Other</b>	
<b>Welding</b>	<b>Curing</b>	<b>Procedural</b>	<b>Bridge No:</b> 34-0006
<b>Joint fit-up</b>	<b>Coating</b>	<b>Other</b>	<b>Component:</b> SEG-015A
<b>Procedural</b>	<b>Procedural</b>	<b>Descriptor:</b>	OBG Segment Assembly

**Reference Description:****Description of Non-Conformance:**

The Contractor did not build-up the entire groove face of the joint to acceptable dimensions. The Contractor performed welding to correct excessive root opening between two parts at the root portion of the joint only. This occurred on weld #002 of SEG-015A connecting side panel SP-026-01 to SP-018-01 and on weld #004 of SEG-015A connecting bottom panel BP-009-01 to BP-008-01.

**Applicable reference:**

AWS D1.5, Section 3.3.4.1: "Root openings wider than those allowed in 3.3.4, but not greater than twice the thickness of the thinner part or 20 mm [3/4 in.], whichever is less, may be corrected by welding to acceptable dimensions prior to joining the parts by welding."

**Who discovered the problem:** Sherri Brannon**Name of individual from Contractor notified:** ABF David Larue**Time and method of notification:** Verbal notification on 03-28-2008**Name of Caltrans Engineer notified:** Stanley Ku**Time and method of notification:** Verbal notification on 03-28-2008**QC Inspector's Name:** ZPMC QC Inspector Mr. Chen Chih Ming and ABF David Larue**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 Patrick Lowry, 916-227-5719, who represents the Office of Structural Materials for your project.

**Inspected By:** Lowry,Patrick

Quality Assurance Inspector

**Reviewed By:** Lowry,Patrick

QA Reviewer



**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 Enterprises, a JV  
375 BURMA ROAD  
OAKLAND CA 95607

**Date:** 09-Apr-2008

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

**Dear:** Mr. Charles Kanapicki

**Job Name:** SAS Superstructure

**Attention:** Mr. Dave Williams Consultant

**Document No:** 05.03.06-000081

**Subject:** NCR No. ZPMC-0101

**Reference Description:** The Contractor did not build-up the entire groove face of the joint to acceptable dimensions.

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 - No Response Required.

**Material Location:** OBG **Lift:**

### Remarks:

The Contractor performed welding to correct excessive root opening between two parts at the root portion of the joint only. This occurred on weld #002 of SEG-015A connecting side panel SP-026-01 to SP-018-01 and on weld #004 of SEG-015A connecting bottom panel BP-009-01 to BP-008-01.

### Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences.

**Transmitted by:** Stanley Ku Sr. Bridge Engineer

**Attachments:** ZPMC-0101

**cc:** Rick Morrow, Gary Pursell, Brian Boal, 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:** 05.03.06-000081

**Subject:** NCR No. ZPMC-0101

**Dated:** 25-Aug-2008

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000105 **Rev:** 00

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### Contractor's Proposed Resolution:

**Reference Resolution:** Inspectors have been notified that finger damping cannot be used to determine the acceptability of a weld. If indications exist that exceed the reference level they shall be repaired

Inspectors have been notified that finger damping cannot be used to determine the acceptability of a weld. If indications exist that exceed the reference level they shall be repaired

**Submitted by:** Mackey, Kim

**Attachment(s):** ABF-NPR-000105R00

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### Caltrans' comments:

**Status:** REJ

**Date:** 24-Sep-2008

This proposed resolution about finger dampening does not address the issue in the referenced Non-Conformance ZPMC-0101, which was issued for repair welding with an excessive root opening.

For NCR ZPMC-0101 dealing with repair welding to correct an excessive root opening, please provide documentation of the repair performed, and documentation that the required Non-Destructive Testing (NDT) of the area is acceptable.

The use of finger dampening during Ultrasonic Testing was addressed in NCRs ZPMC-0098, ZPMC-0103, and ZPMC-0104. This response is generally acceptable for these Non-Conformances. Please submit a response referencing these NCR numbers separately.

**Submitted by:** Wright, Doug

**Attachment(s):**

**Date:** 24-Sep-2008

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000081

**Subject:** NCR No. ZPMC-0101

**Dated:** 04-Dec-2008

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000105 **Rev:** 01

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**Contractor's Proposed Resolution:**

**Reference Resolution:** ZPMC has acknowledged this nonconformance and has generated an internal NCR.

ZPMC has acknowledged this nonconformance and has generated an internal NCR. Attached is the internal NCR and weld repair report. ZPMC requests closure of NCR ZPMC-0101.

**Submitted by:**

**Attachment(s):** ABF-NPR-000105R01; Doc to close this NCR

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**Caltrans' comments:**

**Status:** CLO

**Date:** 16-Dec-2008

The proposed resolution is acceptable. The welding repair report for the repair is included, and the welds in question have been accepted as shown in the attached documents. The Department concurs that Non-Conformance ZPMC-0101 is closed.

**Submitted by:** Wright, Doug

**Date:** 16-Dec-2008

**Attachment(s):**



TRANSMITTAL LETTER

PROJECT: SAN FRANCISCO OAKLAND BAY BRIDGE

DATE: 10/13/2008

TO: RUBY/ ABFJV QA DEPARTMENT

FROM: ZPMC QA DEPARTMENT

SUBJECT: NCR-000104 (ZPMC-0101) FOR CLOSURE

SUBMITTED FOR YOUR APPROVAL.

ENCLOSED WITH THIS TRANSMITTAL IS ONE

- (1) COPY OF LETTER OF RESPONSE WITH NO.B-310 FOR CLOSURE.
- (2) COPY OF NCR WITH NUMBER NCR-000104(ZPMC-0101)
- (3) COPY OF THE WELDING REPAIR REPORT.

PLEASE SIGN THIS TRANSMITTAL AND RETURN TO ME.

ACKNOWLEDGEMENT:

PLAN HOLDER

RECEIVED 13 OCT 2008  
1610

DATE



COMPANY

PHONE NO.

PLAN NUMBER: N/A

#R787-QCP-102



No. B-310

## LETTER OF RESPONSE

**TO: American Bridge/Flour JV**

**DATE: 2008-10-13**

**REGARDING: NCR-000104 (ZPMC-0101)**

With this letter of response, ZPMC requests closure for caltrans **NCR-000104 (ZPMC-0101)**. Because in the weld repair report the technology's disposition is not clear that only require welding with the ceramic backing, so the worker repair the groove gap with the build-up weld at the root position of the joint only. We have educated the workers for assembly job, that strengthen control the dimension between two panels and if it's necessary to adjust the joint gap with the method of grooving, he should perform the work in accordance with the procedure of welding on the all groove surface until the specification.

So ZPMC considers **NCR-000104 (ZPMC-0101)** can be closed.

Please reference attached documentation for acceptance and closure the **NCR-000104**.

**ATTACHMENT:**

**NCR-000104 (ZPMC-0101)**

**The welding repair report**

*Zhao Shuangbao*

*2008.10.13*



# 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-000104 (ZPMC-0101)  
 NCR 编号: NCR-B-035

Item: 板单元对接焊缝堆焊不合格  
 名称描述: build up welding on the groove root only  
 Item Number: 件号: SP026-01/SP-018-01; BP009-01/BP008-01  
 Drawing Number: 图号: SEG-015A

Location: 位置: 对接接头的坡口堆焊  
 Date: 日期: 2008-3-28

Description of Nonconformance:  
 不符合项状态描述:  
 The contractor did not build-up the entire groove face of the joint to acceptable dimensions. The contractor performed welding to correct excessive root opening between two parts at the root portion of the joint only. This occurred on weld #002 of SEG-015A connecting side panel SP-026-01 to SP-018-01 and on weld #004 of SEG-015A connecting bottom panel BP-009-01 to BP-008-01. ZPMC 对两拼三拼过程中的超标间隙进行堆焊的时候并没对全部的坡口面进行堆焊和打磨处理。而仅仅是对坡口的根部进行了堆焊处理。以上发生在 SEG-015A 的 SP-026-01 和 SP-018-01 以及 SEG-015A 的 BP-009-01 和 BP-008-01 当中。

Work By: HU Guo Xing  
 施工方: 准备: 2008.4.18  
 Prepared by: Wang Lu  
 Reviewed by QCE: Zhao Shuang Bao  
 质量工程师批准: 2008.4.18  
 Drawing Error  Material Defect  Fabrication Error  Other  
 图纸错误 材料缺陷 制作错误 其他原因

Disposition:  Use as is  Repair  Reject  
 处理措施: 回用 返修 拒收

Recommendation:  
 建议 加强现场监控, 严格按工艺流程施工. Enhance supervision on the spot and operate according to procedure.

Prepared by: Zhang Yun Zhi  
 准备: 质量经理批准: Hu Gang  
 2008.4.18

Reason for Nonconformance:  
 不符合原因: 施工队在修割余量时没有控制好尺寸.  
 Workers didn't control the size when correcting excessive root opening.

Prevention of Re-occurrence: Workers must control the dimensions well and operate according to the procedure.  
 预防措施 要求施工队在以后拼装过程中要严格按照工艺制作, 控制好尺寸.  
 Approved by/批准: Zhang Yun Zhi

Technical Justification for Use-As-Is/Repair:  Attachment  Non-attachment  
 回用或返修的技术依据: 附件 无附件  
 加强现场监督与管理, 保证产品的质量. 对相关人员进行教育, 委托. Strengthen the supervisor and management of shop fabricating relevant personnel to perform working in accordance with the procedure.  
 Reviewed/批准: Tang Yong Bo 5.19.08

Verification:  Acceptable  Unacceptable  
 确认: 可接受 不可接受

Verified by QCI/质检确认: Chen Chih-Ming  
 Reviewed by QCA/质检主任审核: Hu Gang



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 Enterprises, a JV  
375 BURMA ROAD  
OAKLAND CA 95607

Date: 09-Apr-2008

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

Dear: Mr. Charles Kanapicki  
Attention: Mr. Dave Williams Consultant  
Subject: NCR No. ZPMC-0101

Job Name: SAS Superstructure  
Document No: 05.03.06-000081

Reference Description: The Contractor did not build-up the entire groove face of the joint to acceptable dimensions.

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 - No Response Required.

Material Location: OBG

Lift:

### Remarks:

The Contractor performed welding to correct excessive root opening between two parts at the root portion of the joint only. This occurred on weld #002 of SEG-015A connecting side panel SP-026-01 to SP-018-01 and on weld #004 of SEG-015A connecting bottom panel BP-009-01 to BP-008-01.

### Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences.

Transmitted by: Stanley Ku Sr. Bridge Engineer

Attachments: ZPMC-0101

cc: Rick Morrow, Gary Pursell, Brian Boal, Jason Tom

File: 05.03.06

**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF ENGINEERING SERVICES**  
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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-000104

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 28-Mar-2008

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

NCR #: ZPMC-000104

## Type of problem:

Welding  Concrete  Other   
Welding  Curing  Procedural  Bridge No: 34-0006  
Joint fit-up  Coating  Other  Component: SEG-015A  
Procedural  Procedural  Descriptor: OBG Segment Assembly

## Reference Description:

## Description of Non-Conformance:

The Contractor did not build-up the entire groove face of the joint to acceptable dimensions. The Contractor performed welding to correct excessive root opening between two parts at the root portion of the joint only. This occurred on weld #002 of SEG-015A connecting side panel SP-026-01 to SP-018-01 and on weld #004 of SEG-015A connecting bottom panel BP-009-01 to BP-008-01.

## Applicable reference:

AWS D1.5, Section 3.3.4.1: "Root openings wider than those allowed in 3.3.4, but not greater than twice the thickness of the thinner part or 20 mm [3/4 in.], whichever is less, may be corrected by welding to acceptable dimensions prior to joining the parts by welding."

Who discovered the problem: Sherri Brannon

Name of individual from Contractor notified: ABF David Larue

Time and method of notification: Verbal notification on 03-28-2008

Name of Caltrans Engineer notified: Stanley Ku

Time and method of notification: Verbal notification on 03-28-2008

QC Inspector's Name: ZPMC QC Inspector Mr. Chen Chih Ming and ABF David Larue

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 Patrick Lowry, 916-227-5719, who represents the Office of Structural Materials for your project.

Inspected By: Lowry, Patrick

Quality Assurance Inspector

Reviewed By: Lowry, Patrick

QA Reviewer



# 焊缝返修报告

版本-Rev. No.

## Welding Repair Report

0

项目名称 Project Name	美国海湾大桥 SFOBB	部件图号 Drawing No	SEG15A	报告编号 Report No.	B-WR148
合同号 Contract No.:	04-0120F4	部件名称 Items Name	C5、D6 Bottom	NDT报告编号 Report No.of NDT	
项目编号 Project No.:	ZP06-787				

### 焊缝缺陷描述:

#### Description of welding discontinuity:

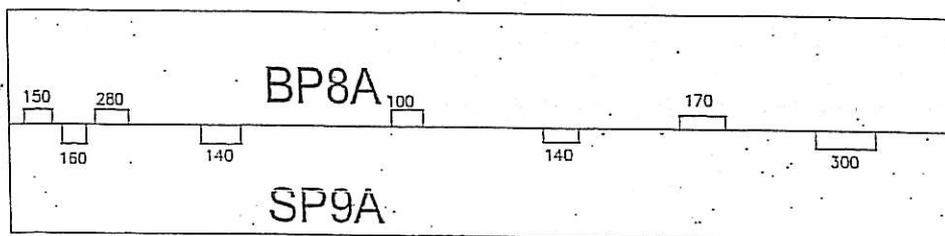
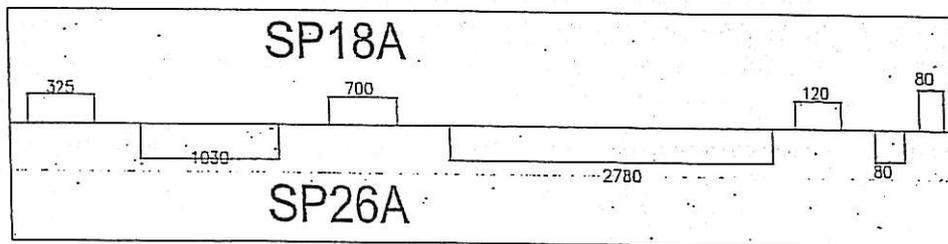
SP18A与SP26A、BP8A与BP9A两拼装配间隙超标, 最大间隙为10.6mm.

During assembling the SP18A and SP26A, BP8A and BP9A, the gap exceeds the maximum allowance; the maximum gap is about 10.6mm.

检验员 (Inspector): Shen Fuyou 日期(Date): 08.03.27  
Shen Fuyou

### 焊缝返修位置示意图:

#### Draft of welding discontinuity:



产生原因:

Caused:

因施工队在修割余量时没有严格控制好尺寸。

Worker failed in controlling the dimension when cutting the allowance.

车间负责人(Foreman): *Lu Guangbin* 2008.03.27  
日期(Date): 2008.03.27

处理意见:

Disposition:

1. 将尺寸超差部位清洁并打磨使与周边母材平滑过渡;
  2. 根据相应的修补WPS在陶瓷衬垫上对超差区域进行堆焊处理;
  3. 补焊区域打磨至要求的根部间隙;
  4. 对补焊区域进行100%MT及UT检查。
1. Clean the out-of-tolerance area and grind flush to the adjacent base metal.
  2. Welding will be performed of this area on the ceramic backing according to relevant repair WPS.
  3. Grind the repaired area to the requirements of root gap.
  4. Perform 100% MT and UT of this area.

工艺: *Lingshilua*  
Technical engineer

审核: *Hu Gang*  
Approved by

日期 *08.3.28*  
Date



# 焊缝返修报告

版本 Rev. No.

## Welding Repair Report

0

项目名称 Project Name	美国海湾大桥 SFOBB	部件图号 Drawing No.	SEG15A	报告编号 Report No.	B-WR148
合同号 Contract No.:	04-0120F4	部件名称 Items Name	C5、D6 Bottom	NDT报告编号 Report No. of NDT	
项目编号 Project No.:	ZP06-787				

纠正措施:

Correction action to prevent re occurrence:

要求施工队在以后拼装过程中,要严格按照工艺制作控制好尺寸保证类似事情不在发生。

Worker shall control the dimension per technical requirement to prevent similar occurrence during the assembly process.

车间负责人(Foreman): Lv Guangbin

日期(Date): 2008.03.27

参照的WPS编号 Repair WPS No.	WPS-345-FCAW-1 G-Repair ✓ WPS-345-SMAW-1 G-Repair	工艺员 technologist	Lingshutina
返修(碳刨)前预热温度 Preheat temperature before gouging	N/A	返修的缺陷 Description of discontinuity	间隙过大
焊前处理检查 Inspection before welding	Acc	焊前预热温度 Preheat temperature before welding	60°C
最大碳刨深度 Max. depth of gouging	N/A	碳刨总长 Total length of gouging	N/A
焊工 welder	Gao Dongliang 048714	焊接类型 welding type	FCAW
		焊接位置 position	F
焊接电流 Current	280A	焊接电压 Voltage	29V
		焊接速度 Speed	500mm/min
返修后检查 Inspection After repairing:			
外观检查 VT result	Acc	检验员 Inspector	C.M Chen 03110711
		日期 Date	2008.03.29
NDT复检 NDT result	MT Acc	探伤员 NDT person	Cai Xinxi
		日期 Date	2008.03.29
见证: Witness/Review:			
备注: Remark:			

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

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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-000126**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 12-Dec-2008**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0101**Type of problem:**

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

**Date the Non-Conformance Report was written:** 28-Mar-2008**Description of Non-Conformance:**

The Contractor did not build-up the entire groove face of the joint to acceptable dimensions. The Contractor performed welding to correct excessive root opening between two parts at the root portion of the joint only. This occurred on weld #002 of SEG-015A connecting side panel SP-026-01 to SP-018-01 and on weld #004 of SEG-015A connecting bottom panel BP-009-01 to BP-008-01.

**Contractor's proposal to correct the problem:**

ABF proposed resolution: Attached docs include: internal NCR and welding repair report, which has as apart of it an "inspection after repair" portion at the bottom noting VT & MT acceptable.

**Corrective action taken:**

Closed by Caltrans Construction. METS closed the NCR based on Construction's direction.

**Did corrective action require Engineer's approval?** Yes No**If so, name of Engineer providing approval:** Stanley Ku and Doug Wright **Date:** 12-Dec-2008**Is Engineer's approval attached?** Yes No Email on file showing concurrence to close NCR.**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 Sang Le, who represents the Office of Structural Materials for your project.

**Inspected By:** Dautermann, Peter

Quality Assurance Inspector

**Reviewed By:** Dautermann, Peter

QA Reviewer