

行政院及所屬各機關出國報告提要

出國報告名稱：A-46 工程之設備製程檢驗專案查證

頁數 23 含附件：是否

出國計畫主辦機關/聯絡人/電話：台灣電力公司/陳德隆（人力資源處）
/02-23667396

出國人員姓名/服務機關/單位/職稱/電話：方慶隆/台灣電力公司/第一核能發電廠/改善工程經理/02-26383501
邱雲長/台灣電力公司/核能安全處
/檢驗組長/02-23667195

出國類別：1 考察2 進修3 研究4 實習5 其他（洽公）

出國期間：104/12/10~104/12/17

出國地區：美國

報告日期：105/1/26

分類號/目：

關鍵詞：

內容摘要：本項出國計畫為執行 A-46 工程之設備製程檢驗專案查證。考量得標廠商(鉍原公司)之商譽與得標價格，及為確保本採購案核能級設備(支架)之取得過程與品質合乎相關規範，特指派專業人員至鉍原公司之設備組件製造商 ANVIL 公司，查證鉍原公司付予 ANVIL 公司之訂單內容與本公司採購合約內容一致，並查驗相關零組件規格之正確性與品質文件之完整性，以確保所採購設備符合本公司需求，避免衝擊電廠之營運。查證結果，除已確認鉍原公司付予 ANVIL 公司之訂單內容與本公司採購合約所列之一號機項目及數量一致外，對 ANVIL 公司之製品標識及品質紀錄，另提出改善要求及建議請 ANVIL 公司配合辦理，其餘均可符合 ASME 法規及核一廠採購合約之要求。

本文電子檔已傳至出國報告資訊網 (<http://report.nat.gov.tw/reportwork>)

出國報告（出國類別：其他）

A-46 工程之設備製程檢驗專案查證

服務機關：台灣電力公司第一核能發電廠、核能安全處
姓名職稱：方慶隆/改善工程經理、邱雲長/檢驗組長
派赴國家：美國
出國期間：104年12月10日至104年12月17日
報告日期：105年1月26日

A-46 工程之設備製程檢驗專案查證

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壹、出國目的

本項出國計畫為執行 A-46 工程之設備製程檢驗專案查證，所採購項目為核一廠提升機組重要系統設備之耐震能力所需之核能級支架零組件，也是行政院原子能委員會關注事項。考量得標廠商(鉍原公司)之商譽與得標價格，及為確保本採購案核能級設備(支架)之取得過程與品質合乎相關規範，特指派專業人員至鉍原公司之設備組件製造商 ANVIL 公司，查證鉍原公司付予 ANVIL 公司之訂單內容與本公司採購合約內容一致，並查驗相關零組件規格之正確性與品質文件之完整性，以確保所採購設備符合本公司需求，避免衝擊電廠之營運。

貳、出國過程

一、行程

104.12.10 ~ 104.12.10	台北—紐約	往	程
104.12.11 ~ 104.12.14	羅德島 ANVIL 公司	執行設備製程檢驗專案查證	
104.12.15 ~ 104.12.17	羅德島—紐約—台北	返	程

二、A-46 設備製程檢驗專案查證過程

(一)查證前會議

104.12.11 與 ANVIL 公司高層包含其副總裁 Mr. Rick Laviolette 與相關部門經理 Mr. Paul Dube、Mr. Bill Weis、Mr. Gary P. Szechy、Mr. Mark R. Ward、Mrs. Jennifer Fogarty Armitage、Mr. Carlos V. Costa 等及鉍源公司代表，召開查證前會議(Kick off meeting)，討論此次拜訪之目的及製程檢驗專案查證內容，並請該公司協助及配合。

(二)查證製造廠家資格及相關品保文件

與 ANVIL 公司之 Mr. Bill Weis(QA Manager)查證，確認該公司：

1. 已取得 ASME 產製核能級支架之授權(NS)證書，編號：N-3054，效

期至 9/29/2016(詳如附件 2)。

2. 已與 ASME 授權檢查機構(AIA, Authorized Inspection Agency)HSB 公司簽約，指派 ANIS/ANI 執行獨立檢查工作。HSB 公司之證書編號：AIA-037，有效期至 12/10/2016(詳如附件 3)。
3. 已建立符合 10CFR50 App.B 及 ASME Sec. III 要求之品保手冊(NQAM, Second Issue, Rev.6)及品保程序書，據以產製本採購案之核能級支架零組件。品保手冊業經 ANIS(Authorized Nuclear Inspector Supervisor)於 8/20/2014 審查同意(詳如附件 4)。

(三)查證鉍原公司付予 ANVIL 公司之訂單與本公司採購合約內容一致

依據本公司 104.12.8 變更契約後之一號機項目清單(共 276 項)，與 ANVIL 公司之 Mr. Aaron S. Hall-Stinson(Nuclear Estimator)逐一核對各項組件之名稱、規格與數量，確認均與採購合約相同，並由其出具一份書面聲明(詳如附件 5)，證實前述清單所列之一號機項目及數量，鉍原公司均有向 ANVIL 公司訂購。

(四)查驗核能級設備(支架)之製造、標識、儲存、清潔和交運準備狀況

1. 會同 ANVIL 公司人員赴現場執行製程查驗，確認核能級支架均依據相關圖面，全程使用傳票(Traveler)以管控制程品質，符合 ASME 法規要求。
2. 隨機抽檢編號 CSCW-H234、CSCW-H235、FDW-H202、CS-H46A、SW-H233、MS-H12C、SRV-H47 等 Snubber、Sway Struct、Spring Hanger，執行外觀檢查、尺寸與型式及標識核對等。除部份零組件使用紙卡掛卡方式標識，不符核能品保要求外，其他均可接受。本公司對核能級支架及零組件之標識要求，已於 104.12.8 查證後會議提出，並與 ANVIL 公司及鉍原公司代表共同討論訂出對標識之規範(詳如附件 6)，由 ANVIL 公司配合辦理。
3. 現場製造中或已完成之支架及零組件均放置於工作台或木棧板上，清潔情況良好。
4. 交運(Shipping)準備狀況由於一號機部分尚有約 10%在製造中，目前尚未進行裝運交運作業，現場僅見存放準備交運之支架及零組件，和準備裝運之木箱。故在裝箱上僅能現場說明本公司之要求。

5. 查驗相關照片詳如附件 1。

(五) 審查核能級設備(支架)之品質紀錄文件

抽查 PO No.P015AEI017PD01(SO No.41-10038834)核能級支架之成套品質紀錄，審查結果及處理情形（詳括弧內說明）如下：

1. 品質紀錄文件已彙集裝訂成冊(詳如附件 7)，內容大致完整。惟提出下列改善建議：

(1)成套品質紀錄應依組件，並按：NS-1 Reports、Certificate of Compliance、Weld Data/Travelers/NDE Reports/Test Reports、CMTR 等項目之順序整理成冊。

(2)品質紀錄每頁均應編訂頁碼，並於目錄中註明各項品質紀錄之總頁數，以利查對其完整性及易於日後查閱。

(3)BOM(Bill Of Material)應詳實列表，包含材料名稱、規範及數量等。

(4)相關圖面(Design Report Summary 或 As-built Dwg.)應附入成套品質紀錄。

【ANVIL 公司已承諾將配合上述建議重新整理出成套品質紀錄】

2. 對有銲接及無銲接之組件，ANVIL 公司已分別出具品質證明文件 NS-1 Certificate of Conformance 及 Certificate of Compliance，惟無法提供 ANI 簽署之數據報告(Data Report)。

【核一廠採購規範規定本案屬於 ASME Sec.III 2007 年版之 NF 核能級支架採購，另於交貨時須繳交之品質文件中，要求提供「ASME 法規數據報告」。ANVIL 公司依據 2007 年版 ASME Sec.III 之 NF-8100 規定，說明核能級支架已不需要 ANI 檢查及打鋼印(Stamping)，故已無 ANI 簽署之數據報告】

(六) 查證結果

1. 本次專案查證過程 ANVIL 公司全力配合及重視，由副總裁率領各部門之經理，包含 QC/QA、技術、安全、製造、人資及產品銷售等部門，並指示由產品銷售部門及製造部門等數位經理陪同，提供專案查證小組現場所有需求。從第一天飛機抵達後立即前往該公司，並召開查證前會議(Kick off meeting)，由本小組領隊說明本次來訪之目的及要求，也獲得 ANVIL 公司主管同意配合，使能在短短幾天順利完成查證工作。

2. ANVIL 公司為 ASME 產製核能級支架之授權廠商，並已與 ASME 授權檢查機構(AIA)簽約指派 ANIS/ANI 執行獨立檢查工作，其製品品質值得信賴。本次專案查證結果，除在製品之標識及品質紀錄上，有提出改善要求/建議，ANVIL 公司並已承諾配合辦理外，其餘均可符合 ASME 法規及核一廠採購合約之要求。
3. 本次專案查證亦確認鉍原公司付予 ANVIL 公司之訂單內容與本公司採購合約所列之一號機項目及數量一致。

參、出國期間所遭遇之困難與特殊事項

無。

肆、心得與建議事項

本項採購案由於合約中未訂定本公司有對得標廠商及其及其分包商或器材供應商執行品質檢驗/稽查的權利，以致本次專案查證必須由鉍原公司協商 ANVIL 公司同意才能執行。建議以後對核能級或重要設備之採購案，採購單位應將本公司執行品質檢驗/稽查的權利列入合約。

伍、附件

- 附件 1：專案查證工作相關照片（共 4 頁）
- 附件 2：ANVIL 公司(NS)證書（共 1 頁）
- 附件 3：HSB 公司授權檢查機構(AIA)證書（共 1 頁）
- 附件 4：ANVIL 公司品保手冊/ANIS 審查同意簽署（共 2 頁）
- 附件 5：ANVIL 公司確認採購項目及數量書面聲明（共 1 頁）
- 附件 6：標識之規範（共 1 頁）
- 附件 7：成套品質紀錄（共 6 頁）



查證前會議
(Kick off Meeting)



現場製程查驗



使用傳票(Traveler)
管控制程品質



查對材質
(SA-36)



尺寸檢查



尺寸檢查



檢查清潔情況



檢查組件之標識



審查品質
紀錄文件



準備裝箱
之組件



準備裝箱
之組件



準備裝運
之木箱

The American Society of Mechanical Engineers

NS

**CERTIFICATE OF
AUTHORIZATION**

This certifies the named company as having had the adequacy of their quality assurance program verified for the scope of the activity shown below in accordance with the applicable rules of the Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers (ASME). This certificate does not include authorization to use the ASME certification mark. The certification granted by this certificate is subject to the provisions of the agreement set forth in the application.

COMPANY:

**Anvil International, LLC dba Anvil EPS
Precision Park
160 Frenchtown Road
North Kingstown, Rhode Island 02852**

SCOPE:

Class 1, 2, 3, & MC fabrication without design responsibility and with design responsibility for supports and as a Material Organization supplying ferrous & nonferrous material at the above location only

AUTHORIZED: September 16, 2013

EXPIRES: September 29, 2016

CERTIFICATE NUMBER: N-3054



Vice President, Conformity Assessment



Director, Conformity Assessment

CERTIFICATE OF ACCREDITATION

This is to accredit the named organization as having had the adequacy of their program verified for the scope shown below in accordance with the applicable rules of The American Society of Mechanical Engineers Standard for Qualifications for Authorized Inspection. The accreditation granted by this certificate is subject to the provisions of the agreement set forth in the application.

ORGANIZATION:

**The Hartford Steam Boiler Inspection and Insurance Company of
Connecticut
One State Street
Hartford, Connecticut 06103**

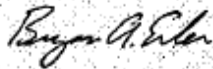
SCOPE:

Authorized Inspection Agency for performance of Authorized Inspection Agency activities controlled from the above location to cover Sections I, III Divisions 1, 2 & 3, IV, VIII Divisions 1, 2 & 3, X, XI and XII of the ASME Boiler and Pressure Vessel Code

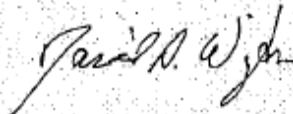
AUTHORIZED: November 7, 2013

EXPIRES: December 10, 2016

CERTIFICATE NUMBER: AIA-037



Vice President, Conformity Assessment



Director, Conformity Assessment





ANVIL EPS
ENGINEERED PIPE SUPPORTS

QUALITY ASSURANCE MANUAL

No. 1
Page 1 of 1
Rev. 7
Date 7-21-14

Copy No.:
Controlled



TITLE: **COVER PAGE**

NUCLEAR

Quality Assurance Manual (NQAM)
For Anvil International, LLC dba Anvil EPS

NS-CERTIFICATE
Supports

Class 1, 2, 3, & MC fabrication of Supports, with and without design responsibility, and as a material organization supplying ferrous and non-ferrous materials at the above location only.

NPT-CERTIFICATION DESIGNATION

Class 1, 2, 3, & MC fabrication with and without design responsibility for Appurtenances and Supports (supports limited to the 1998 Edition, 1998 Addenda, and earlier editions and addenda of the code) and as a material organization supplying ferrous and non-ferrous material at the above location only.

10CFR50 Appendix B

This Quality Assurance Program complies with the Quality Assurance criteria for Nuclear Power Plants and fuel reprocessing plants – Title 10 Code of Federal Regulations Part 50 Appendix B (10CFR50B).



Second Issue Rev. 7 7-21-14

DO NOT REPRODUCE

This document is the property of Anvil EPS. It shall not be copied or duplicated in any manner and shall not be submitted to outside parties for examination without our consent.



ANVIL EPS
ENGINEERED PIPE SUPPORTS

160 Frenchtown Rd.
Precision Park
North Kingstown, RI 02852

QA (401) 886-3030
QA (401) 886-3105
Fax (401) 886-3024

July 22, 2014

Mr. Anthony Cole -ANIS

Subject: Anvil EPS
Nuclear Quality Assurance Manual
Second Issue, Revision 7, dated 7-21-14

Dear Mr. Cole:

Attached, please find Second Issue, Revision 7, dated 7-21-14 of the Nuclear Quality Assurance Manual for your review and disposition.

Kindly indicate your disposition below and return to me as soon as possible.

Very truly yours,

Bill Weis
Quality Assurance Manager

BW/dm

MANUAL REVIEW DISPOSITION

ACCEPT REJECT ACCEPT w/ COMMENTS

COMMENTS: _____

SIGNATURE: *[Signature]*
DATE: 8/20/14

TITLE: Authorized Nuclear Equip. Sup.

(ANLACK)



160 Franconia Road
North Kingstown, RI 02852
Phone (401) 886-3000
Fax (401) 886-3010

December 14, 2015

To: Mr. Ching-Lung
Taiwan Power Company

From: Aaron Hall-Stinson
Anvil Engineered Pipe Supports

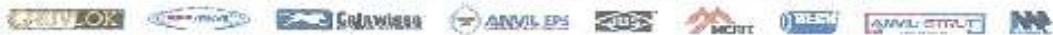
Dear Mr. Ching-Lung,

I have reviewed the attached list and agree that it is in accordance with the current material list provided to Anvil by Arcen Energy.

Sincerely,

Aaron Hall-Stinson
Nuclear Estimator
Anvil Engineered Pipe Supports

BUILDING CONNECTIONS THAT LAST





Engineered Pipe Supports
 160 Frenchtown Road
 North Kingstown, RI 02852
 Phone: 401 886 3000
 Fax: 401 886 3010
 www.anvileps.com

December 14, 2015

The following tagging and marking specifications have been developed by Area Energy, TPC and Anvil.

- Larger items will require permanent SS tag with Mark # for each support.
- Figure # will need to be etched on all items 1" and larger.
- Per ASME Section III – 2015 NCA-3856 section (f), items smaller than 1" do not need a tag.
- Smaller items that are larger than 1" but too small for metal tag will have a paper tag attached.
- If nuts & bolts over 1", the heat code should be marked.
- For items with more than 1 part that are shipping fully assembled there will be only 1 tag with the mark # required and the individual components will have the fig # etched on each component.
 For example: Sway strut assembly with clamp, there will be a tag on the sway strut and the clamp will have the fig # or SA #.
- If a clamp or other component is shipped unattached from the assembly the item will have a paper tag.
- For items that do not have an assembly that are ordered as stand alone, the mark number will be indicated on the tag.
- For rods less than 1" and hardware items Fig# will be etched or stamped and a paper tag with the mark # will be attached.
- Anvil is not required to paint over the etching.
- Anvil is not required to remove the paint prior to etching.
- For small clamps where there is not a big enough surface for the standard metal tag, Anvil will put a metal tag with the mark # attached by wire. Fig # or SA# will be etched on the clamp.
- For rod assemblies that are shipped assembled, Anvil will put a metal tag with the mark # and the individual components will have the Fig #.

We the signed below are in agreement with this specification:

Tina Chen
 Tina Chen
 Share Holder
 Area Energy

C. L. Feng
 Lang, Ching-Lung
 Eng. Improvement Sect. Mgr
 Taiwan Power Co.

Y. C. Chiu
 Yum-Chang Chiu
 Chief Inspector Sector
 Taiwan Power Co.

Jennifer Fogarty Armitage
 Jennifer Fogarty Armitage
 Mgr Commercial Operations

BUILDING CONNECTIONS THAT LAST



Area Energy

PO#:
PO15AEIO17PD01

ANVIL SO#:
41-10038834

1	NS-1 Reports
	Anvil Certificate of Compliance
3	Weld Data Sheets / NDE Reports/ Travelers
4	Hardware
5	10" SA-387 Gr22 Pipe Saddles
6	1" Riser Clamp
7	6" Riser Clamp
8	6" SA-36 Pipe Saddle
9	20" Riser Clamps
10	10" Medium Clamp
11	16" Medium Clamp
12	12" Double Bolt Clamp
13	16" Double Bolt Clamp
14	10" Double Bolt Clamp
15	8" Riser Clamp

Form NS-1

FORM NS-1 CERTIFICATE HOLDERS' CERTIFICATE OF CONFORMANCE FOR WELDED SUPPORTS*
As Required by the Provisions of the ASME Code, Section III, Division 1 Pg. 1 of 2

1. Manufactured by Anvil International, EPS - 160 Frenchtown Rd. No. Kingstown, RI 02852
(name and address of NPT Certificate Holder)

2. Manufactured for AREA Energy, Inc.
(name and address of Purchaser)

3. Location of installation Taiwan Power Company Chinsan Nuclear Power Station
(name and address)

4. Type: Standard Support DRS 82 REV. 12 2015
(describe) (Design Report or Load Capacity Data Sheet) (year built)

5. ASME Code, Section III, Division 1: 2007 No 1 N-249-14
(edition) (reference date) (class) (Code Case no.)

6. Identification

	(a) Component Support I.D. No.	(b) Material Specification No.	(c) Canadian Registration No.	(d) Applicable Drawings With Last Rev. & Date
(1)	2015- 72	Note 1	N/A	CH-1351/B 3/15/2012
(2)	2015- 73	Note 1	N/A	CH-1351/B 3/15/2012
(3)	2015- 74	Note 1	N/A	CH-1351/B 3/15/2012
(4)	2015- 75	Note 1	N/A	CH-1351/B 3/15/2012
(5)	2015- 76	Note 1	N/A	CH-1351/B 3/15/2012
(6)	2015- 77	Note 1	N/A	CH-1351/B 3/15/2012
(7)	2015- 78	Note 1	N/A	CH-1351/B 3/15/2012
(8)	2015- 79	Note 1	N/A	CH-1351/B 3/15/2012
(9)	2015- 80	Note 1	N/A	CH-1351/B 3/15/2012
(10)	2015- 81	Note 1	N/A	CH-1351/B 3/15/2012

7. Remarks:

Note 1: SA-36, SA-53 Gr.B, SA-105 Gr.B

NS-1 TAG# SUPPORT I.D.

2015-72 = CS-H34A, 2015-73 = CS-H46A, 2015-74 = CSCW-H01, 2015-75 = CSCW-H234, 2015-76 = CSCW-H235, 2015-77 = CSCW-H319

2015-78 = FDW-H202, 2015-79 = FDW-H214, 2015-80 = MS-H12C, 2015-81 = MSD-H55

PO#: PO15AEI017PDD1

SO#: 41-10038834

*Supplemental information in the form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 x 11, (2) information in items 1 through 4 on this Data Report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NS-1 CERTIFICATE HOLDERS' CERTIFICATE OF CONFORMANCE FOR WELDED SUPPORTS*
As Required by the Provisions of the ASME Code, Section III, Division 1 Pg. 1 of 2

1. Manufactured by Anwil International, EPS - 160 Frenchtown Rd. No. Kingstown, RI 02852
(name and address of NPT Certificate Holder)

2. Manufactured for AREA Energy, Inc.
(name and address of Purchaser)

3. Location of Installation Taiwan Power Company Chinsan Nuclear Power Station
(name and address)

4. Type: Standard Support DRS 82 REV. 12 2015
(describe) (Design Report or Load Capacity Data Sheet) (year built)

5. ASME Code, Section III, Division 1: 2007 No 1 N-249-14
(edition) (addenda date) (class) (Code Case no.)

6. Identification

	(a) Component Support I.D. No.	(b) Material Specification No.	(c) Canadian Registration No.	(d) Applicable Drawings With Last Rev. & Date
(1)	2015- 82	Note 1	N/A	CH-1351/B 3/15/2012
(2)	2015- 83	Note 1	N/A	CH-1351/B 3/15/2012
(3)	2015- 84	Note 1	N/A	CH-1351/B 3/15/2012
(4)	2015- 85	Note 1	N/A	CH-1351/B 3/15/2012
(5)	2015- 86	Note 1	N/A	CH-1351/B 3/15/2012
(6)	2015- 87	Note 1	N/A	CH-1351/B 3/15/2012
(7)	2015- 88	Note 1	N/A	CH-1351/B 3/15/2012
(8)	2015- 89	Note 1	N/A	CH-1351/B 3/15/2012
(9)	2015- 90	Note 1	N/A	CH-1351/B 3/15/2012
(10)				

7. Remarks:

Note 1: SA-36, SA-53 Gr.B, SA-106 Gr.B

NS-1 TAG# SUPPORT I.D.

2015-82 = MSD-HR5, 2015-83 = 6-RHR-H20E, 2015-84 = R-RHR-H37A, 2015-85 = R-RHR-H37A, 2015-86 = RHR-H318

2015-87 = RHR-H331, 2015-88 = SW-H212A, 2015-89 = SW-H233, 2015-90 = CSCW-H234

PO#: PO15AEI017PD01

SO#: 41-10038834

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160 Frenchtown Rd.
Precision Park
North Kingstown, RI 02852

QA (401) 886-3030
QA (401) 886-3105
Fax (401) 886-3024

CERTIFICATE OF COMPLIANCE / CONFORMANCE

December 11, 2015

Taiwan Power Company
Chinshan Nuclear Power Station

Reference: P.O.#: PO15AEI017PD01
Anvil C.O.#: 41-10038834

<u>Mark Nos.:</u>	<u>Description:</u>	<u>Qty:</u>
1 ½"-RHR-49-29-H1,	FigCL143N, 1 ½" Pipe Strap,	1
1 ½"-RHR-49-29-H2,	FigCL143N, 1 ½" Pipe Strap,	1
1 ½"-RHR-49-29-H2A,	FigCL144N, 1 ½" Pipe Strap,	1
1 ½"-RHR-49-29-H3,	FigCL142N, 1 ½" Pipe Strap,	1
CS-4A-H1,	Fig212N, 10" Medium Pipe Clamp,	1
CS-H34A,	B-268N, 13-F Variable Spring,	1
CS-H46A,	B-268N, 12-B Variable Spring w/ Hardware,	1
CSCW-H01,	82N, 15-F Variable Spring,	1
CSCW-H106,	Fig40N, 8" Riser Clamp,	1
CSCW-H234,	82N, 15-B Variable Spring w/ Hardware,	2
CSCW-H235,	82N, 15-B Variable Spring w/ Hardware,	1
CSCW-H319,	B-268N, 9-B Variable Spring,	1
CSCW-H436,	FigCL144N, 1" Pipe Strap,	1
CSCW-H582,	FigCL144N, 2" Pipe Strap,	1
FDW-19A-H1,	Fig212N, Medium Pipe Clamp,	1
FDW-H202,	B-268N, 16-B Variable Spring w/ Hardware,	1
FDW-H214,	B-268N, 15-B Variable Spring w/ Hardware,	1
FO-S-5-1,	FigCL144N, 4" Pipe Strap,	1
MS-H12C,	82N, 11-B Variable Spring w/ Hardware,	1
MS-SSB-3,	Special 1" Riser Clamp, SA-15-045,	1
MSD-H55,	98N, 2-A Variable Spring,	1
MSD-H63,	Special 1" Riser Clamp, SA-14-129,	1
MSD-H65,	82N, 3-A Variable Spring,	1
R-RHR-H20E,	B-268N, 16-C Variable Spring w/ Hardware,	1
R-RHR-H260,	Special Fig165AN, 10" Pipe Saddle, SA-15-150,	1
R-RHR-H262,	Special Fig165AN, 10" Pipe Saddle, SA-15-150,	1
R-RHR-H264,	Special Fig165AN, 10" Pipe Saddle, SA-15-150,	1
R-RHR-H268,	Special Fig165AN, 10" Pipe Saddle, SA-15-150,	1
R-RHR-H281,	Fig295HN, 16" Heavy Clamp w/ Hardware,	1
R-RHR-H349,	Special 20" Riser Clamp, SA-15-046,	1
R-RHR-H37A,	82N, 14-B Variable Spring w/ Hardware,	2
RCUW-H93,	Special 6" Riser Clamp, SA-14-127,	1
RCUW-H95,	Special 6" Pipe Saddle, SA-14-128,	4
RHR-H318,	B-268N, 14-B Variable Spring,	1
RHR-H331,	B-268N, 14-B Variable Spring,	1
RR-1C-H3,	Fig137N, 2" Standard U-Bolt,	2
SW-H201,	Fig55N, 1 ½" Structural Welding Lug,	1
SW-H212A,	82N, 17-B Variable Spring w/ Hardware,	1
SW-H233,	82N, 17-B Variable Spring w/ Hardware,	1



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December 11, 2015

We Anvil International, LLC dba Anvil EPS certify that the material supplied on the referenced order complies with the applicable requirements of ASME Section III, Subsection NF Class 1, 2007 Edition, no Addenda, ASME Section II, DRS 82 Rev.12 and the referenced purchase order.

We also certify to the best of our knowledge and belief that the contents of the report are correct and accurate and that all test results and operations performed by Anvil or our approved suppliers are in compliance with the applicable material specifications.

A marking code may be utilized to identify material specification, grade, class and heat treated condition. See reverse side for material identification codes.

No weld repair has been performed by Anvil or Anvil's suppliers. All materials were manufactured and/or supplied in accordance with the referenced purchase order, the ASME approved Anvil EPS Quality Assurance Program/Manual, Second Issue Rev.7 dated 7/21/14, and the Anvil ASME NS Certificate of Authorization Number N-3054 which expires 9/29/16.

Attachments: History Docket

Bill Weis, QA Manager
S.C. Miller, QA/QC
S.T. Mumford, QA/QC

Area Energy

PO#:
PO15AEIO17PD01

ANVIL SO#:
41-10038834

Variable Springs

CMTR's

1	82, N, 3-A
	82, N, 17-B
3	B-268, N, 16-C
4	B-268, N, 16-B
5	82, N, 11-A
6	98, N, 2-A
7	82, N, 15-F
8	82, N, 15-B
9	B-268, N, 12-B
10	B-268, N, 15-B
11	82, N, 17-B
12	82, N, 14-B
13	B-268, N, 13-F
14	B-268, N, 14-B
15	B-268, N, 9-B