



SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

1. CERTIFICATE/QUALITY ASSURANCE PROGRAM (QAP) HOLDER:

EnergySolutions
Suite 100 Center Point II
100 Center Point Circle
Columbia, SC 29210

2. NRC/REGIONAL OFFICE

Headquarters
U. S. Nuclear Regulatory Commission
Mail Stop 3WFN 14C-28
Washington, DC 20555-0001

REPORT NUMBER(S)

71-0935/2015-201

3. CERTIFICATE/QAP DOCKET NUMBER(S)

71-0935

4. INSPECTION LOCATION

Petersen, Inc., Ogden, UT

5. DATE(S) OF INSPECTION

March 24-26, 2015

CERTIFICATE/QUALITY ASSURANCE PROGRAM HOLDER:

The inspection was an examination of the activities conducted under your QAP as they relate to compliance with the Nuclear Regulatory Commission (NRC) rules and regulations and the conditions of your QAP Approval and/or Certificate(s) of Compliance. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector. The inspection findings are as follows:

- ☐ 1. Based on the inspection findings, no violations were identified.
- ☐ 2. Previous violation(s) closed.
- ☐ 3. The violation(s), specifically described to you by the inspector as non-cited violations, are not being cited because they were self-identified, non-repetitive, and corrective action was or is being taken, and the remaining criteria in the NRC Enforcement Policy, to exercise discretion, were satisfied.

_____ Non-cited violation(s) was/were discussed involving the following requirement(s) and Corrective Action(s):

- ☒ 4. During this inspection, certain of your activities, as described below and/or attached, were in violation of NRC requirements and are being cited in accordance with NRC Enforcement Policy. This form is a NOTICE OF VIOLATION, which may be subject to posting in accordance with 10 CFR 19.11.

(Violations and Corrective Actions)

During an inspection conducted March 24-26, 2015 at Petersen, Inc., a contract fabrication facility used by EnergySolutions (ES), an NRC certificate holder, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy dated February 4, 2015, the violation is listed below:

10 CFR 71.111, "Instructions, procedures, and drawings," states, in part, that the certificate holder shall prescribe activities affecting quality by documented instructions or procedures and shall require that these instructions or procedures be followed.

(Continued on Next Page)

Statement of Corrective Actions

I hereby state that, within 30 days, the actions described by me to the Inspector will be taken to correct the violations identified. This statement of corrective actions is made in accordance with the requirements of 10 CFR 2.201 (corrective steps already taken, corrective steps which will be taken, date when full compliance will be achieved). I understand that no further written response to NRC will be required, unless specifically requested.

TITLE	PRINTED NAME	SIGNATURE	DATE
CERTIFICATE/QAP REPRESENTATIVE	Richard Byars		4/30/15
NRC INSPECTOR	Jeremy Tapp		5/1/15
BRANCH CHIEF	Patricia Silva		5/6/15

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(Continued)

Contrary to the requirements of 10 CFR 71.111, the following instances were identified by the NRC where instructions or procedures for activities affecting quality were not followed:

1) Petersen did not perform an internal audit of the audit program on an annual basis as required by QCM-001, "Quality Control Manual," Revision 16, Step 18.3.1. Specifically, Petersen performed the last internal audit of the audit program in January 2014, but the annual internal audit of the audit program had not been performed as of March 2015 due to the wrong audit checklist being used for an audit in December 2014 when the audit program was planned to be assessed.

2) Petersen issued an internal audit report after 30 days from the date of completion of the audit, as required by procedure PI-SOP-18-1, "Internal Audit Procedure," Revision 8, Step 8.5. Specifically, an internal audit of the Production department was conducted on August 27, 2014 but the report was not issued until October 14, 2014.

3) Petersen failed to perform ultrasonic testing (UT) of the material to be used for two UT calibration blocks before fabrication of the calibration blocks began, as required by the approved UT nondestructive testing procedure, 100-UT-001, "General Ultrasonic Examination in Accordance with ASME Section V, Article 4 (Welds)," Revision 3, Step 6.6.5.

This is a Severity Level IV Violation (Enforcement Policy Section 6.8)

Pursuant to the provisions of 10 CFR 2.201, EnergySolutions is hereby required to submit a written statement or explanation within 30 days from receipt of this Notice to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to Patricia Silva, Chief, Inspections and Operations Branch, Division of Spent Fuel Management, Office of Nuclear Material Safety and Safeguards. This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation, or if contested, the basis for disputing the violation or severity level; (2) the corrective steps that have been taken and the results achieved; (3) the corrective steps that will be taken to avoid further violations; and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the certificate should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>, to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction.

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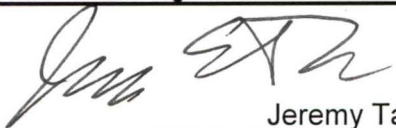
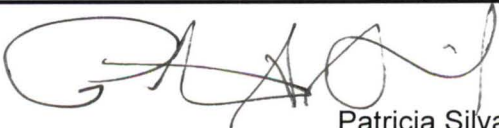
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If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, you may be required to post the Notice within two working days of receipt.

Dated this 6 day of May, 2015.

INSPECTOR NOTES COVER SHEET

Licensee/Certificate Holder (name and address)	EnergySolutions Suite 100 Center Point II 100 Center Point Circle Columbia, SC 29210
Licensee/Certificate Holder contact and phone number	Richard Byars, 803-758-1808
Docket No.	71-0935
Inspection Report No.	71-0935/2015-201
Inspection Dates(s)	March 24-26, 2015
Inspection Location(s)	Petersen Inc., Ogden, UT
Inspectors	Jeremy Tapp, Team Leader, Safety Inspector Earl Love, Safety Inspection Engineer
Summary of Findings and Actions	<p>Petersen, Inc. (Petersen) is under contract with EnergySolutions (ES) to fabricate the 3-60B transportation package at the Petersen fabrication facility located in Ogden, UT. The inspection was conducted to determine if fabrication activities were performed in accordance with the requirements of 10 CFR Part 71 and 21, the applicable Certificate of Compliance (CoC No. 71-9321), Safety Analysis Report, and ES' U.S. Nuclear Regulatory Commission (NRC)-approved Quality Assurance Program (QAP).</p> <p>The inspection consisted of an examination of selected fabrication and test activities, procedures and representative records, and interviews with personnel. Overall, the team assessed that the fabrication activities Petersen performed and the implementation of the QAP were adequate. Petersen's fabrication processes were assessed to be good with regard to the quality of workmanship and facility housekeeping practices. The team identified some issues with regard to performance of quality activities by Petersen personnel for failure to follow quality procedures; however, none of the issues were safety significant and did not affect the quality of fabricated components.</p> <p>Based on the results of this inspection, the NRC determined that a Severity Level IV violation of NRC requirements occurred. The violation is cited in NRC Form 591S and the circumstances surrounding it are described in detail in the subject inspector notes. The violation is being cited because it was identified by the NRC.</p>
Lead Inspector Signature/Date	 5/1/15 Jeremy Tapp
Inspector Notes Approval Branch Chief Signature/Date	 5/4/15 Patricia Silva

Inspection Background

Petersen, Inc. (Petersen) is under contract with EnergySolutions (ES) to fabricate one 3-60B transportation package, which is also the first 3-60B package to be fabricated. ES received design approval for this package from the NRC in 2010. Since that time, no 3-60B packages have been built and ES submitted an amendment request to the NRC for the package design, which was approved by the NRC in February 2015. Fabrication activities performed before the approval were performed at risk. The NRC last inspected ES at Petersen in December 2014, which was a limited scope inspection performed during initial fabrication activities. Inspection results were documented using a Form 591S with Inspector Notes and can be accessed through ADAMS accession number ML15012A397.

In addition, this is the first time ES has had equipment fabricated at Petersen. Oversight of and responsibility for the project by ES is out of both the quality assurance (QA) group in the Columbia, SC office, and the licensing and fabrication groups in the Campbell, CA office.

Inspection Purpose

The purpose of the inspection was to assess ES' and Petersen's 3-60B package fabrication and test activities to determine if they were being performed in accordance with the requirements of 10 CFR Parts 71 and 21, the applicable CoC (No. 71-9321), Safety Analysis Report, and ES' NRC-approved QA program. Specific areas that were focused on during the inspection were fabrication and test activities and controls, nonconformance controls, documentation controls, training, and the audit program.

1.0 Management Controls

Nonconformance Controls

The team reviewed the Petersen Inc. Quality Control Manual (QCM), Section 15, "Control of Nonconforming Items;" QCM Section 16, "Corrective and Preventative Action;" and a sampling of nonconformance reports (NCRs) associated with 3-60B shipping cask fabrication. No concerns were identified since the last NRC inspection (performed December 2014) with the timeliness and resolution of the reports.

Documentation Controls

The team reviewed Petersen's documentation control program to assess the effectiveness of controls established for the approval, review, and issuance of quality documents. The team reviewed the QCM, Section 6, "Document Control," and its corresponding implementing procedure PI-SOP-06-01, Revision 12, "Document Control Procedure." The team assessed that the procedures provided adequate guidance for the processing of quality document approvals, reviews, and issuance to the appropriate location. The team verified that quality procedures and fabrication documents were reviewed and approved per procedure by appropriate personnel who were qualified as required; and appropriate quality fabrication documents (including the correct revision) were marked as required and available at the job location where the prescribed activity was performed. The team interviewed personnel responsible for the program as well as reviewed several fabrication document packages on the shop floor that included travelers and drawings for the 3-60B project. The team assessed that for the quality

procedures and fabrication documents reviewed, they were reviewed and approved by appropriate personnel having the required qualification, and the correct revision was issued to the appropriate location(s). Overall, the team assessed that the documentation controls at Petersen were adequate and no concerns were identified.

Internal Audit Program

The team reviewed the internal audit program as defined in QCM, Section 18, Revision 16, "Audits," and its corresponding implementing procedure PI-SOP-18-01, Revision 8, "Internal Audit Procedure." This was to verify that the program was comprehensive and that audits were scheduled and conducted periodically in accordance with approved procedures by trained and qualified audit personnel who documented the audit results and followed up deficient areas via the corrective action program. The team reviewed a selection of internal audits performed in 2014 as well as the 2014 internal audit schedule to verify that they were conducted in accordance with the program as previously defined. The team also reviewed a selection of auditor and lead auditor training and qualification records to verify those performing and leading audits were trained and qualified as required by the approved procedures. For those audits performed that required corrective actions to be implemented, the team reviewed a selection of those corrective actions to determine if the resolution was timely and commensurate with the safety significance of the issue.

The team noted that audit personnel did not have direct responsibility in the areas being audited and that the audit records were reviewed and approved by appropriate levels of management. For the auditor and lead auditor training records that were reviewed, all were trained and qualified as required by the approved procedures. During the review of the 2014 internal audit schedule, the team noted that all eighteen quality criteria were planned to be evaluated within the required twelve month timeframe in the internal audit process. The audit quality criterion was planned to be evaluated once during 2014 in December. The team reviewed Internal Quality Audit Checklist for Quality Assurance dated February 5, 2015 to verify the audit quality criterion was evaluated in December 2014 as planned. However, the team identified that the audit quality criterion was not evaluated as planned due to the wrong audit checklist being used and therefore, the audit quality criterion had not been evaluated since January 2014. QCM, Revision 16, Step 18.3.1, states that "internal audits of the applicable elements of the quality system shall be performed at least annually." The failure of Petersen to follow Step 18.3.1 of the QCM is a violation of 10 CFR 71.111, "Instructions, procedures, and drawings," that states, in part, that the certificate holder (ES) shall prescribe activities affecting quality by documented instructions or procedures and shall require that these instructions or procedures be followed. The violation is cited as Item 1 in Form 591S Part 2 as a Notice of Violation (NOV). This issue was entered into Petersen's corrective action program as Preventive/Corrective Action (P/CAR) number P379, dated March 25, 2015.

In addition, the team reviewed the Internal Audit Report for the Production department, dated October 14, 2014 and the Internal Audit Report for Inspection, dated February 5, 2015. The audit of the Production department identified a number of issues and the team verified that P/CARs were issued for those that affected quality. The team reviewed four of the P/CARs issued as a result of that audit and determined that the corrective actions performed were adequate, timely, and commensurate with the safety significance of the issue. The team noted that the internal audit of Production was performed on August 27, 2014 and the report was issued on October 14, 2014 as stated above, which is greater than 30 days from the time of the audit. However, procedure SOP-18-01, Revision 8, Step 8.5 states that "the Audit Report shall be completed within 30 days of the audit." The failure of Petersen to follow Step 8.5 of SOP-18-

01 is a violation of 10 CFR 71.111, "Instructions, procedures, and drawings," that states, in part, that the certificate holder (ES) shall prescribe activities affecting quality by documented instructions or procedures and shall require that these instructions or procedures be followed. The violation is cited as Item 2 in Form 591S Part 2 as a NOV. This issue was entered into Petersen's corrective action program as P/CAR number P379, dated March 25, 2015.

Overall, the team assessed that the Internal Audit Program was adequately implemented by performing comprehensive audits with trained and qualified personnel of all aspects of the Quality Assurance Program on an annual basis with the exception of the audit criterion in 2014. All deficient areas identified during internal audits reviewed by the team were followed up using the corrective action program.

2.0 Fabrication Controls

Fabrication and Inspection

The team reviewed Petersen's fabrication processes and ES's oversight of fabrication activities. In addition, the team observed welding of the outer shell to the inner shell flange to ensure that it was controlled and verifiable from the onset of design through the approved welding process and procedure. The team reviewed a welder continuity log dated 2014 and compared it to the welder qualification record and noted that the welder was qualified and his qualification was maintained in accordance with applicable quality procedures. In addition, welding procedures were properly prepared and compliant with applicable Code and regulatory requirements.

The team identified a violation related to nondestructive examination. Specifically, Petersen failed to perform ultrasonic testing (UT) of the material to be used for two UT calibration blocks before fabrication of the calibration blocks began, as required by the approved UT nondestructive testing procedure, 100-UT-001, "General Ultrasonic Examination in Accordance with ASME Section V, Article 4 (Welds)," Revision 3. This violation of NRC requirements is cited as Item 3 in Form 591S Part 2 as a NOV. This issue was entered into Petersen's corrective action program as P/CAR number P380, dated March 26, 2015.

The team observed certain components and materials used on the shop floor for fabrication and traced them back to their associated purchase orders and applicable design drawings. In each case, Petersen was able to show that materials conformed to the requirements of the design drawings. No concerns were identified in the translation of design information into procurement documents and use of materials in the fabrication process.

As noted above, the team observed in-process welding of the outer shell to the inner shell flange weldment and a mock-up UT volumetric examination of the same weld. In addition, the team observed material storage controls to verify that certain phases of the fabrication, inspection and storage processes were properly controlled and implemented. Team observations included a review of a completed inner containment weldment traveler to verify that fabrication and test activities were accomplished and appropriately documented according to controlled fabrication drawings, procedures and controlling weld record/map specifications. In addition, the team reviewed records in support of completed visual, liquid penetrant, radiographic, and UT examinations, and a helium leak test. With the exception of the one violation identified, all examinations were properly performed in accordance with procedures and compliant with applicable Code and regulatory requirements.