August 28, 2013

Mr. Richard L. Byars
Director Quality Assurance
Processing and Disposal
Energy*Solutions*
Suite 100 Center Point II
100 Center Point Circle
Columbia, SC 29210

SUBJECT: CORRECTED U.S. NUCLEAR REGULATORY COMMISSION INSPECTION REPORT NO. 71-0935/2013-201 AND NOTICE OF VIOLATION

Dear Mr. Byars:

During the period of July 22 through 25, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed a team inspection of the implementation of Energy*Solutions*' (ES) NRC-approved Quality Assurance Program (QAP) for the fabrication of several new 8-120B casks at Diversified Metal Products (DMP), located in Idaho Falls, ID. The purpose of this first time inspection at DMP was to assess ES' and DMP's compliance to the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR), Parts 71 and 21. The inspection activities focused on management, design, and fabrication controls. The team examined activities conducted under your NRC-approved QAP as they relate to safety and compliance with the Commission's rules and regulations. The team reviewed selected procedures and records, observed activities in the shop, and interviewed personnel.

While no safety concerns were identified with the quality of the workmanship by DMP for cask fabrication, deficiencies were identified in associated ES and DMP procedural and programmatic controls for the fabrication activities. Of particular concern to the NRC was ES' failure to properly implement provisions in the license drawings for the use of progressive weld examination techniques and material testing requirements, and non-compliances by DMP with regard to procedure adherence and ensuring that quality activities were captured in appropriate quality procedures.

Based on the results of this inspection, the NRC has determined that four (4) Severity Level IV Violations of NRC requirements occurred. The violations are cited in the Notice of Violation (NOV) (Enclosure 2) and the circumstances surrounding them are described in detail in the subject inspection report. The Violations are being cited because they were identified by the NRC.

You are required to respond to this letter and should follow the instructions specified in the enclosed NOV when preparing your response. The NRC will use your response, in part, to

determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html.

To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Sincerely,

/RA/ D. T. Huang for

Eric Benner, Chief
Rules, Inspections, and Operations Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-0935

Enclosures: 1. NRC Inspection Report No. 71-0935/2013-201
2. Notice of Violation

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U.S. NUCLEAR REGULATORY COMMISSION
Office of Nuclear Material Safety and Safeguards
Division of Spent Fuel Storage and Transportation

Inspection Report

Docket: 71-0935

Report: 71-0935/2013-201

Certificate Applicant: Energy*Solutions*
Suite 100 Center Point II
100 Center Point Circle
Columbia, SC 29210

Inspection Location: Diversified Metal Products
3710 N. Yellowstone Hwy.
Idaho Falls, ID 83401

Date: July 22-25, 2013

Inspection Team: Rob Temps, Team Leader, Senior Safety Inspector
Earl Love, Safety Inspector
Clyde Morell, Safety Inspector
Bud Fabian, ANL, Observer

Approved by: Eric Benner, Branch Chief
Rules, Inspections, and Operations Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety and Safeguards

U.S. NUCLEAR REGULATORY COMMISSION
Office of Nuclear Material Safety and Safeguards
Division of Spent Fuel Storage and Transportation

Inspection Report
EXECUTIVE SUMMARY

Energy*Solutions*
NRC Inspection Report 71-0935/2013-201

During the period of July 22 through 25, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed a team inspection of the implementation of Energy*Solutions'* (ES) NRC-approved Quality Assurance Program (QAP) for the fabrication of several new 8-120B casks at Diversified Metal Products, Inc. (DMP), located in Idaho Falls, ID. The purpose of this first time inspection at DMP was to assess ES' and DMP's compliance to the requirements of 10 CFR Parts 71 and 21. The inspection activities focused on management, design, and fabrication controls. The team examined activities conducted under ES' NRC-approved QAP as they relate to safety and compliance with the Commission's rules and regulations. The team reviewed selected procedures and records, observed activities in the shop, and interviewed personnel.

Management Controls

From the review of roles, responsibilities, audit reports, and organizational charts, and interviews with DMP personnel, DMP's implementation of management controls was assessed to be adequate. However, the team identified several findings and observations regarding DMP's QAP manual, audit controls, and the corrective action program.

Design Controls

The team identified findings with regard to ES' failure to properly flow down design requirements to working level procedures governing procurement of materials and fabrication non-destructive examination controls.

Fabrication Controls

The team verified that personnel performing welding and non-destructive examination activities were qualified and were maintaining their qualifications in accordance with applicable quality procedures. Welding and non-destructive examination procedures were properly prepared and compliant with allocable Code and regulatory requirements. The team identified findings with regard to DMP's failure to record weld indications during non-destructive examinations and its use of temporary weld attachments without an approved procedure controlling this activity.

With regard to material receipt and inspection, the team identified a finding in that DMP was not storing Category A material in accordance with procedural requirements. A review of seal testing results raised a question as to one time testing for helium permeability versus other tests conducted on each lot of procured seal material. ES subsequently initiated action to clarify testing requirements in a submittal to the NRC.

REPORT DETAILS

1.0 Inspection Scope

Energy*Solutions* (ES) holds NRC QAP Approval 71-0935. The Approval is issued to the corporate headquarters in Salt Lake City, UT; however, the packaging design and Quality Assurance (QA) functions are performed out of Columbia, SC. ES was last inspected by NRC at the Columbia, SC, location in 2009 (IR 71-0935/2009-201).

ES holds several NRC Certificates of Compliance (CoCs) for packaging designs. This inspection involved the assessment of fabrication by ES of four new 8-120B packagings, CoC 71-9168, at Diversified Metal Products (DMP) located in Idaho Falls, ID. The 8-120B CoC is not a new design and ES has several 8-120B packagings that have been in use for several years. The four new packagings are being fabricated to a recent CoC amendment. The inspection was a first time inspection at DMP by NRC and was performed to verify and assess the adequacy of ES' implementation of their Part 71 NRC-approved QAP for the control of fabrication activities at DMP. Part 21 compliance, where applicable, was reviewed.

1.1 Inspection Procedures Used

IP 86001, "Design, Fabrication, Testing, and Maintenance of Transportation Packagings"
NUREG/CR 6314, "Quality Assurance Inspections for Shipping and Storage Containers"

1.2 List of Acronyms Used

ATS	Applied Technical Services
CAR	Corrective Action Report
CFR	Code of Federal Regulations
CMTR	Certified Material Test Report
CoC	Certificate of Compliance
CR	Condition Report
CVN	Charpy V-Notch (testing)
DMP	Diversified Metal Products, Inc.
ES	Energy*Solutions*
HAC	Hypothetical Accident Conditions
ITS	Important-to-Safety
NCR	Non-conformance Report
NCT	Normal Conditions of Transport
NDE	Non-destructive Examination
NOV	Notice of Violation
NRC	U.S. Nuclear Regulatory Commission
PEP	Pawling Engineering Products, Inc.
PO	Purchase Order
QA	Quality Assurance
QC	Quality Control
QAM	Quality Assurance Manual
QAP	Quality Assurance Program

QP Quality Procedure
TWA Temporary Weld Attachment
WPS Welding Procedure Specification

1.3 Persons Contacted

The team held an entrance meeting with ES and DMP personnel on July 22, 2013, to present the scope and objectives of the NRC inspection. On July 25, 2013, the team held an exit meeting with ES and DMP personnel to present the preliminary results of the inspection. The individuals present at the meetings are listed below in Table 1.

Table 1

Entrance and Exit Meetings Attendees

NAME	AFFILIATION	ENTRANCE	EXIT
Robert Temps	NRC	X	X
Earl Love	NRC	X	X
Clyde Morell	NRC	X	X
Bud Fabian	ANL	X	X
Nathan McMasters	DMP	X	
Brad Carver	DMP		X
Bill Borter	ES	X	X
Phillip Thomas	ES	X	X
Richard Byars	ES	X	X
Thaddeus Hymas	DMP	X	X
Sharon Strobel	DMP	X	X
George Riedle	DMP	X	X
Michael Vaught	ES	X	X

2.0 Management Controls

2.1 General

The inspection of management controls focused on the review of quality assurance policy and procedure implementation, including the control of DMP documents and the completion of quality assurance audits of DMP QAP implementation as well as material and service providers. Corrective action program controls were also reviewed.

2.2 Quality Assurance Program

2.2.1 Scope

The team reviewed DMP's Quality Assurance Manual (QAM), Fifth Edition, dated 11/23/09.

2.2.2 Observations and Findings

The team reviewed DMP's QAM and determined that it is based on ASME NQA-1 requirements, 2008 Edition. The QAM contained a management statement of policy

signed by DMP's President. The team noted an observation in that some names and titles of management personnel did not match with the organization chart in the back of the QAM. The observation was captured by ES in Condition Report (CR) PT-CR13-034 and by DMP in Corrective Action Report (CAR) 13-017.

2.2.3 Conclusions on Quality Assurance Program

Overall implementation of DMP's QAP was assessed to be adequate; however, an observation was identified with regard to discrepancies between management positions and the organization chart.

2.3 Nonconformance and Corrective Action Program Controls

2.3.1 Scope

The team reviewed DMP's non-conformance program to assess the effectiveness of measures established to control materials, parts, components, and services that have been identified by DMP as not conforming to specified requirements. The team also reviewed program controls for 10 CFR Part 21, "Reporting of Defects and Noncompliances."

2.3.2 Observations and Findings

The team reviewed the following DMP Quality Procedures (QPs):

QP 15-1 "Nonconformance Control"
QP 16-1 "Corrective Action"

The team assessed that the QPs provided adequate guidance for the processing of non-conforming items, corrective actions, and 10 CFR Part 21 requirements. The team reviewed eleven (11) Nonconformance reports (NCRs) issued since the initiation of fabrication earlier this year and processed in accordance with QP 15-1. No CARs processed in accordance with QP 16-1 had been issued for the 8-120B cask fabrication activities.

The team assessed that most NCRs had been appropriately dispositioned. Where NCRs were still open, red hold tags were verified in the shop to be located on the affected components. The team identified a finding with regard to NCR 13-175. The NCR documented that incorrect material had been used in the fabrication of a component. While the NCR addressed the acceptability of using the incorrect material, the team identified that the underlying performance issue of why shop personnel selected the incorrect material had not been documented in a CAR as the issue represented a condition adverse to quality. The failure to generate a CAR when required is a Violation of 10 CFR 71.133, "Corrective action," that states, in part, that conditions adverse to quality are promptly identified and corrected. DMP's failure to initiate a CAR when required is cited in the enclosed Notice of Violation (NOV). This issue was documented by ES in CR PT-CR13-034 and by DMP in CAR 130-16.

2.3.3 Conclusions on Non-conformance and Corrective Action Program Controls

The team assessed that the QPs provided adequate guidance for the processing of nonconforming items, corrective actions, and 10 CFR Part 21 requirements. A finding was identified, and cited in the enclosed NOV, for DMP's failure to initiate a CAR for a condition adverse to quality.

2.4. Audit Program

2.4.1 Scope

The team reviewed DMP's audit program to determine whether plans, procedures, and records were available and adequate. The team reviewed whether DMP scheduled and performed internal QA audits and vendor audits in accordance with approved procedures or checklists; whether qualified, independent personnel performed the audits; whether DMP management reviewed the audit results; and whether DMP took appropriate follow-up actions in those areas found deficient in the audits.

2.4.2. Observations and Findings

The team reviewed the following DMP procedures:

QP 2-2, "Qualification of Audit Personnel"
QP 18-1, "Audits"

The team reviewed two internal audits performed in February and March of 2013. The audits were assessed to be adequate with observations and findings noted. One audit report had a finding that resulted in generation of a CAR. The team observed that as of the NRC inspection (July 2013) neither audit report had been signed as reviewed by the QAM and management. The team verified that an internal audit schedule had been prepared for 2013. The team reviewed qualification records for DMP's three lead auditors and determined that they were qualified in accordance with QP 2-2.

The team identified a finding, with two examples, where DMP did not adhere to procedural requirements. Specifically: 1) QP 2-2 requires an annual evaluation of lead auditors and a signature on the form by the President or General Manager; contrary to this requirement, the QA Manager signed the certification in 2013 for two lead auditors, and 2) QP 18-1 requires that audit plans be reviewed and approved by the QA Manager or General Manager; contrary to this requirement, the audit plan for completed audit 13-003 had not been signed by either individual. These two examples constitute a Violation of 10 CFR 71.111, "Instructions, procedures, and drawing," that requires, in part, that procedures be followed. DMP's failure to follow procedures is cited in the enclosed NOV.

2.4.3 Conclusions on Audit Program

DMP's audit program was assessed to be adequate; however, two examples of failure to follow procedure were cited in the enclosed NOV, and an observation was made with the untimely review and approval of completed audit reports by the QA Manager and DMP management.

3.0 Design Controls

3.1 General

The team reviewed ES' process for design control flow down for the fabrication of the 8-120B cask.

3.2 Design Development and Modification

3.2.1 Scope

The team reviewed ES' QAP, ES-QA-PG-001, associated with design control.

3.2.2 Observations and Findings

The team reviewed Quality Level 1 items on the "license" drawings referenced in the 8-120B cask Certificate of Compliance (CoC) 71- 9168, specifically drawing C-110-E-0007, Revision 18, for flow down of license drawing requirements to the ES prepared cask fabrication drawing C-002-160000-015, Revision 6. Each Level 1 item in the fabrication drawing's Bill of Material was compared to the corresponding item on the licensed drawing. The team verified that the correct quality level, material, and requirements in each note were the same for both the license and fabrication drawings.

The team identified a finding in its review of the implementation of design/license requirements for the Quality Level 1 Heavy Hex Cap Screw, 2"– 8UN – 2A X 4-3/4" long. Review of the Certified Material Test Report (CMTR) indicated that the cap screws had been Charpy V-Notch (CVN) tested at + 20°F and a review of DMP Purchase Order 47601-02 revealed that the DMP purchase order for the cap screws had specified CVN testing at +20°F. However, license drawing C-110-E-0007, Revision 18, Sheet 2, Note 14, requires CVN testing to be conducted at -20°F. The failure to specify the correct testing temperature and the subsequent acceptance of the material for use without identifying the error in test values is a Violation of 10 CFR 71.107, that states, in part, that the certificate holder shall establish measures to assure that applicable regulatory requirements and the package design, as specified in the license or CoC for those materials and components to which this section applies, are correctly translated into specifications, drawings, procedures and instructions." The Violation is cited in the enclosed NOV.

The team identified a finding with regard to license drawing C-110-E-0007, Revision 18, Sheet 2, Note 30, that states, in part, that for certain weld configurations, progressive surface examination may be used in place of volumetric weld examination provided that the metal deposit shall be limited to the lesser of 3/8" or the critical flaw size as determined by the analysis using Section XI of the ASME Code. Contrary to this requirement, the team determined that components for the 8-120B cask had been examined using the progressive surface examination method allowed by Note 30 and that ES had not performed, nor had DMP requested, an analysis per Section XI of the ASME Code to determine the critical flaw size. ES documented this finding in CAR PT-CR13-033. A preliminary flaw size analysis by ES indicated that the critical flaw size for

the weld configuration was less than 3/8 inch. ES' preliminary review of the affected weld also indicated that none of the metal deposit layers exceeded the preliminary flaw size. The failure to perform the flaw size analysis when using the progressive surface examination method allowed by Note 30 is a Violation of 10 CFR 71.107 and is cited in the enclosed NOV.

3.2.3 Conclusions on Design Control

The team determined that design requirements for Level 1 items shown on the CoC/license drawings for the 8-120B cask flowed down properly to the associated fabrication drawings. However, the team identified a Violation of 10 CFR 71.107 in that Level 1 hex cap screws were not properly tested to the temperature requirement specified on the CoC drawing and the hex cap screws were receipt inspected and released for use.

4.0 Fabrication Controls

4.1 General

The team reviewed DMP's fabrication processes and ES' oversight of fabrication activities at DMP.

4.2 Welding and Non-destructive Examination (NDE) Activities

4.2.1 Scope

The team reviewed applicable DMP procedures for welding and NDE activities and observed shop activities for compliance to the procedures.

4.2.2 Observations and Findings

The team reviewed the following DMP procedures.

QP 2-1,"Written Practice for Qualification and Qualification & Certification of NDE Personnel"
QP 2-3, "Personnel Indoctrination and Training" `
QP 8-1, "Identification and Control of items"
WP P-2.0, "General Welding Procedure"
WP P-3.0, "Welder Procedure Qualification"
WP P-4.0, "Base Metal Repair Procedure"
WP P-5.0, "Weld Repair Procedure"
WP P- 18.0, "Welding Materials Control Procedure"
NDE MT-02.0, "Magnetic Particle Examination (Yoke Method)"
NDE PT-1.0, "Penetrant Test Procedure (Visible –Solvent Removable)"
NDE VT-1.0, "Visual Inspection Procedure"
Welding Procedure CS 2.0, "GTAW"

The team determined that the procedures were in compliance with ES technical specifications, QA requirements, and applicable (ASME) Code requirements.

The team reviewed certification records for DMP welders and verified that the welders were qualified for the DMP Welding Procedure Specification (WPS) they were using and that the WPS procedures met the ASME Section IX essential variable requirements.

The team reviewed QP 2-3, "Personnel Indoctrination and Training" to verify that the requirements for the training and certification of personnel performing fabrication activities were being maintained. The team obtained the shop personnel training records roster from the DMP QC Manager and selected several employees for the purpose of reviewing their training records for compliance to QP 2-3; no issues were identified.

The team reviewed QP 2-1, "Written Practice for Qualification and Qualification & Certification of NDE Personnel," against the training and certification records for several QA/QC personnel qualified in the following areas: Visual Inspector (VT) Level II, Dye Penetrant Examiner (PT) Level II, Magnetic Particle Examiner (MT) Level II, Radiographic Examiner (RT) Level ll, and Ultrasonic Examiner (UT) Level ll. No issues were identified in the review of the training and certification records for these individuals.

The team identified two findings with regard to welding controls and NDE activities. The first finding involved the team's determination, through discussions with DMP personnel, that it was DMP's NDE practice to not record indications identified during NDE of welds. Instead, QC inspectors allowed welders to remove weld indications and rework (weld) the affected area. This process was performed without documentation or approved rework instructions. The team determined that the associated ASME Code as well as the DMP NDE procedures require the recording of indications, whether relevant or non-relevant. While the team did not directly observe this practice during the inspection, the team did confirm with the ES QA Director that the practice had been used prior to the team inspection on components being fabricated for ES at DMP. This issue was documented in ES CAR PT-CR13-034.

10 CFR 71.119, "Special Processes," states, in part, that the certificate holder shall establish measures to assure that special processes, including welding and nondestructive testing, are controlled and accomplished using qualified procedures in accordance with applicable codes. DMP's failure to document indications as required by DMP's NDE procedures is a Violation of 10 CFR 71.119 and is cited in the enclosed NOV.

The second finding involved the team's inspection of components on the shop floor. The team noted that many of the components had temporary weld attachments (TWAs) affixed to them. The ASME Code contains specific requirements for the installation and removal of TWAs. The team determined that DMP did not have any quality procedure that addressed the requirements for installation and removal of TWAs per the Code requirements. This issue was documented in ES CAR PT-CR13-034. DMP's failure to have a qualified procedure for controlling the use of TWAs is a Violation of 10 CFR 71.119 and is cited in the enclosed NOV.

4.2.3 Conclusions on Welding and NDE Activities

The team verified that personnel performing welding and NDE activities were qualified and were maintaining their qualification in accordance with applicable quality

procedures. Welding and NDE procedures were properly prepared and compliant with applicable Code and regulatory requirements. The team identified a Violation of 10 CFR 71.119, with two examples. Specifically, DMP personnel failed to record weld indications during NDE inspections and TWAs were installed and removed without an approved procedure controlling this activity.

4.3 Material Procurement

4.3.1 Scope

The team assessed DMP's material control program to determine the effectiveness of controlling material for the 8-120B cask fabrication related items and components. The team also assessed DMP's purchase and receipt of materials, parts, components and services.

4.3.2 Observations and Findings

The team reviewed DMP procedures QP 18-1, "Identification and Control of Items," QP 8-2, "Material Identification Control (MIC)," and QP 10-1, "Receiving Inspection." The team interviewed DMP individuals that were assigned responsibilities for receiving inspection and maintaining material control from the time of purchase through release of material for fabrication.

The team identified a finding with regard to the requirements of QP10-1. Specifically, step 5.8 requires that Category A material be locked in a storage area and issued to production by QA when needed, and step 5.8.1 states that if material is too large for the locked storage area, other arrangements may be made as long as the material is controlled so that it is not used improperly. Contrary to these requirements, the team identified that Category A weld wire used for the 8-120B cask fabrication was not maintained in a locked storage area, and that other Category A materials associated with the 8-120B cask fabrication that were too large to fit in the locked area were located in various locations on the shop floor with no apparent controls to prevent their improper use. This finding is a Violation of 10 CFR 71.111 and is cited in the enclosed NOV. This issue was documented in ES CR PT-CR13-034.

The team reviewed a sampling of material purchase orders (POs) for important-to-safety (ITS) components to determine if the associated materials met the design requirements and specifications. Specifically, the team reviewed procurement controls of confinement boundary materials including the inner shell, primary lid, enclosure bolts, carbon and stainless steel weld wire, and o-ring seals. With the exception of DMP's failure to specify the correct CVN testing temperature and the subsequent acceptance of Heavy Hex Cap Screws (refer to Section 3.2.2 of this inspection report), DMP procurement controls were assessed to be adequate. The team also reviewed ES' and DMP's program for identifying and ensuring that commercial grade alternates meet the specifications for ITS components and assessed that the programs were satisfactorily developed, documented, and implemented.

The team reviewed ES inspection compliance report (ER-13-002) for the primary lid and secondary lid containment o-ring seals categorized as ITS Category A. The team noted that ES Specification (ES-C-038), "Seal Specification for the 8-120B Cask," adequately

defined the requirements and criteria for qualifying the seal material and accepting the manufactured seals, and that the 325 EPDM o-ring E603 seals were manufactured by Pawling Engineering Products, Inc. (PEP). Subsequently, a sample of the 325 EPDM compound was contracted to Applied Technical Services (ATS) for normal condition of transport (NCT) and hypothetical accident condition (HAC) testing utilizing a test fixture designed and fabricated by ATS.

The team reviewed ATS' NCT Materials Test Report (D186521-3(N), dated 12/4/2012) and HAC Materials Test Report (D186521-1(N) dated 10/26/2012). The team noted that both NCT and HAC tests demonstrated no loss of pressure during the test times and the results were satisfactory and compliant to the requirements of ES-C-038. The team noted both PEP and ATS were maintained as Quality Level 1 suppliers, approved for manufacture and certification of gaskets and o-rings and testing, respectively, and that ES had performed a source surveillance of ATS' o-ring mechanical functional testing for hardness, low temperature compatibility, and helium permeability.

With regard to helium permeability testing, the team reviewed PEP's Certificate of Conformance, dated 3/5/2013, and noted that the E603 material used for testing was from lot 33080748 and that the material used for the NCT and HAC testing (performed by ATS) was conducted on lot 33078669. The team questioned ES as to why the material subjected to the helium permeability testing of the seals was not from the same lot of material used to perform the other mechanical tests discussed above. ES stated that the helium permeability test on the one lot of material was performed to demonstrate that the particular formulation of that material was acceptable and only needed to be performed one time and not on all subsequent procurements provided the material was certified to be manufactured to the same formulation. The team noted ES' position but considered that specification ES-C-038 was not clear as to the activities to be performed for qualification versus acceptance testing. ES stated during the inspection that it would discuss clarification of the testing requirements with the NRC licensing project manager responsible for the 8-120B CoC. Subsequent to the inspection, ES submitted information to the NRC that further defined their commitments for seal testing consistent with their position discussed during the inspection. That information will be reviewed by NRC technical staff as part of a current amendment request to the 8-120B CoC.

4.3.3 Conclusions on Material Control

The team identified a Violation of 10 CFR 71.111 in that DMP was not storing Category A material in accordance with QP 10-1. A review of seal testing results raised a question as to one time testing for helium permeability versus other tests conducted on each lot of procured seal material. ES subsequently initiated action to clarify testing requirements in a submittal to the NRC.

4.4 Tools and Equipment

4.4.1 Scope

The team reviewed selected measuring and test equipment including records and procedures to assure that equipment used in activities affecting quality were properly controlled and calibrated.

4.4.2 Observations and Findings

The team reviewed QP 12-1, “Control of Measuring and Test Equipment,” that prescribes activities and requirements concerning roles and responsibilities; use of measuring and test equipment; that calibration occurs to national standards; and maintenance of records of various tools and equipment used at DMP’s facility. The team compared a sampling of measuring and test equipment in current use for fabrication activities to the requirements of QP 12-1 and determined overall compliance to the procedural requirements.

4.4.3 Conclusions on Tools and Equipment

The team concluded that DMP had adequately implemented measuring and test equipment calibration, tracking, and record retention requirements.

NOTICE OF VIOLATION

Energy*Solutions* Docket No. 71-0935
Columbia, SC

During an NRC inspection conducted on July 22-25, 2013, at Diversified Metal Products (DMP), a contract fabrication facility used by Energy*Solutions* (ES), an NRC certificate holder, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG-1600, the Violations are listed below:

A. 10 CFR 71.111, "Instructions, procedures, and drawings," states, in part, that the certificate holder shall prescribe activities affecting quality by documented procedures of a type appropriate to the circumstances and shall require that these procedures be followed.

Contrary to the above:

1. DMP Quality Procedure (QP) 2-2 requires an annual evaluation of lead auditors and a signature on the form by the President or General Manager. The NRC determined that the Quality Assurance (QA) Manager signed the certification in 2013 for two lead auditors. QP 18-1 requires that audit plans be reviewed and approved by the QA Manager or General Manager. The NRC determined that the audit plan for completed audit 13-003 had not been signed by either individual.

2. DMP procedure QP 10-1 step 5.8 requires that Category A material be locked in a storage area and issued to production by QA when needed, and step 5.8.1 states that if material is too large for the locked storage area, other arrangements may be made as long as the material is controlled so that it is not used improperly. Contrary to these requirements, the NRC identified that Category A weld wire used for the 8-120B cask fabrication was not maintained in a locked storage area, and that other Category A materials associated with the 8-120B cask fabrication that were too large to fit in the locked area were located in various locations on the shop floor with no apparent controls to prevent their improper use.

This is a Severity Level IV Violation (Enforcement Policy Section 6.2).

B. 10 CFR 71.107, "Packaging design," states, in part, that the certificate holder shall establish measures to assure that applicable regulatory requirements and the package design, as specified in the license or CoC for those materials and components to which this section applies, are correctly translated into specifications, drawings, procedures and instructions.

Contrary to the above:

1. Certificate of Compliance (CoC) 71-9168 drawing C-110-E-0007, Revision 18, Sheet 2, Note 14, requires Charpy V-Notch (CVN) testing of the Quality Level 1 Heavy Hex Cap Screw (2" – 8UN – 2A X 4-3/4" long) to be conducted at -20°F. The NRC identified that procured hex cap screws were improperly tested at + 20°F and released for use.

2. CoC 71-9168 drawing C-110-E-0007, Revision 18, Sheet 2, Note 30, states, in part, that for certain weld configurations, progressive surface examination may be used in place of volumetric weld examination provided that the metal deposit shall be limited to the lesser of 3/8" or the critical flaw size as determined by the analysis using Section XI of the ASME Code. Contrary to this requirement, the NRC identified that components for the 8-120B cask had been examined using the progressive surface examination method allowed by Note 30 and that ES had not performed, nor had DMP requested, an analysis per Section XI of the ASME Code to determine the critical flaw size to ensure that the correct weld metal thickness did not exceed 3/8" or the critical flaw size as determined by the required analysis, whichever is less.

This is a Severity Level IV violation (Enforcement Policy 6.2).

C. 10 CFR 71.119, "Special Processes," states, in part, that the certificate holder shall establish measures to assure that special processes, including welding and nondestructive testing, are controlled and accomplished using qualified procedures in accordance with applicable codes.

Contrary to the above, the NRC identified two instances in which welding and nondestructive testing were not controlled in accordance with applicable code requirements. Specifically: 1) DMP personnel did not record weld inspection indications as required by the ASME Code and DMP procedures governing non-destructive examinations, and 2) DMP did not have a quality procedure that addressed the requirements for installation and removal of temporary weld attachments in accordance with ASME Code requirements.

This is a Severity Level IV violation (Enforcement Policy 6.2).

D. 10 CFR 71.133, "Corrective action," states, in part, that conditions adverse to quality are promptly identified and corrected.

Contrary to the above, the NRC identified that while DMP Nonconformance Report (NCR) 13-175 documented that incorrect material had been used in the fabrication of a component, the underlying performance issue of why shop personnel selected the incorrect material had not been documented in a DMP Corrective Action Report as the performance issue represented a condition adverse to quality.

This is a Severity Level IV violation (Enforcement Policy 6.2).

Pursuant to the provisions of 10 CFR 2.201, ES 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, with a copy to Eric Benner, Chief, Rules, Inspections, and Operations Branch, Division of Spent Fuel Storage and Transportation, 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 license 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. 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.

Dated this 28th day of August, 2013.