NRC FORM 591S PART 1
(10-2013)
10 CFR 2.201

U.S. NUCLEAR REGULATORY COMMISSION

SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

1. CERTIFICATE/QUALITY ASSURANCE PROGRAM (QAP) HOLDER:	2. NRC/REGIONAL OFFICE
Orano Federal Services LLC (OFS) 7135 Minstrel Way, Suite 300 Columbia, Maryland 21045	Headquarters U. S. Nuclear Regulatory Commission Mail Stop TWFN 4B-34 Washington, DC 20555-0001
REPORT NUMBER(S) 071-0938/2018-201	

3. CERTIFICATE/QAP DOCKET NUMBER(S)	4. INSPECTION LOCATION	5. DATE(S) OF INSPECTION
CoC 71-9341 QAP 71-0938	Premier Technology, Inc. (PTI) Blackfoot, Idaho	November 5-8, 2018

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 violations(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.

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

Title 10 CFR 71.107, "Package design control," paragraph (a) 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.

(Continued on Next Page)

☐ 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)

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	Chris Lloyd, OFS Senior Manager, Environmental Safety, Health, and Quality	Christopher Lloyd	12/3/18
NRC INSPECTOR	Jon N. Woodfield	Jon N. Woodfield	12/10/18
BRANCH CHIEF	Patricia Silva		12/12/18

NRC FORM 591S PART 2
(10-2013)
10 CFR 2.201

U.S. NUCLEAR REGULATORY COMMISSION

SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

1. CERTIFICATE/QUALITY ASSURANCE PROGRAM (QAP) HOLDER:	2. NRC/REGIONAL OFFICE
Orano Federal Services LLC (OFS) 7135 Minstrel Way, Suite 300 Columbia, Maryland 21045	Headquarters U. S. Nuclear Regulatory Commission Mail Stop TWFN 4B-34 Washington, DC 20555-0001
REPORT NUMBER(S) 071-0938/2018-201	

3. CERTIFICATE/QAP DOCKET NUMBER(S)	4. INSPECTION LOCATION	5. DATE(S) OF INSPECTION
CoC 71-9341 QAP 71-0938	Premier Technology, Inc. (PTI) Blackfoot, Idaho	November 5-8, 2018

(Continued)

Contrary to the requirements of 10 CFR 71.107, during an inspection conducted November 5-8, 2018, the NRC identified the following example where Orano Federal Services failed to correctly translate packaging design information as specified in the Certificate of Compliance (CoC) onto fabrication/design drawings.

Licensing drawing 1910-01-01-SAR Sheet 1 (Sheets 1-5 Total) Revision 6 general note 13 states: Forged Material Shall Be Ultrasonically And Liquid Penetrant Inspected in Accordance With ASME Code Section III, Division 1, Subsection NB, Article NB-2540, and Section V, Articles 4 and 6. Contrary to general note 13 on the licensing drawing, the design/ fabrication drawing 1910-01-202 Sheet 1 of 2 Revision 1 (provided at PTI) general note 7 that applies to forged material states: Optional Forged Material: ASTM A182, Grade F304. Ultrasonically Inspected In Accordance With ASME B&PV Code, Section III, Division 1, Subsection NB, Article NB-2540, and Section V, Articles 4 and 6. The requirement to perform a liquid penetrant (PT) inspection was not correctly translated by Orano Federal Services from the licensing drawing to the design/fabrication drawing as required. This is a violation of 10 CFR 71.107 for failure to correctly translate design information as specified in the CoC onto (design/fabrication) drawings.

This violation was entered into OFS' corrective action program as Corrective Action Record (CAR) 2018-9897, dated November 8, 2018. The inspection team evaluated the violation in accordance with Section 2.3 of the NRC Enforcement Policy and dispositioned it as a non-cited Severity Level IV violation.

Note: At the time of this inspection, the official approved CoC 9341 was at Revision 6. The official licensing drawing listed in CoC 9341 Revision 6 was 1910-01-01-SAR, Sheets 1-4, Revision 4. At the time of the inspection OFS had an application with the NRC that was under review where in the submitted revised Safety Analysis Report licensing drawing 1910-01-01-SAR now had 5 Sheets and was at Revision 6. The inspection team elected to compare licensing drawing 1910-01-01-SAR, Sheet 1 (Sheets 1-5 Total) Revision 6 to the design/fabrication drawing 1910-01-202 Sheet 1 of 2 Revision 1 provided at PTI. Since note 13 is the same on licensing drawing 1910-01-01-SAR Sheet 1 Revisions 4 and 6, the violation of regulation 10 CFR 71.107 is still valid.

INSPECTOR NOTES COVER SHEET

Licensee/Certificate Holder (name and address)	Orano Federal Services LLC (OFS) 7135 Minstrel Way, Suite 300 Columbia, Maryland 21045
Licensee/Certificate Holder contacts and phone number	Chris Lloyd, OFS Senior Manager, Environmental Safety, Health, and Quality Phone: 410-910-6870 (Office)
Docket No.	71-0938
Inspection Report No.	71-0938/2018-201
Inspection Date(s)	November 5-8, 2018
Inspection Location(s)	Premier Technology, Inc. (PTI); Blackfoot, Idaho
Inspectors	Jon Woodfield, Team Leader, Safety Inspector Carla Roque-Cruz, Safety Inspector Engineer Jeremy Tapp, Safety Inspector
Summary of Findings and Actions	This inspection was a routine assessment of Orano Federal Services' Quality Assurance Program (QAP) implementation at their Battelle Energy Alliance Research Reactor (BRR) transportation packaging steel fabricator Premier Technology, Inc. (PTI). The team assessed PTI's management controls, design controls, and fabrication controls for compliance to 10 CFR Parts 21 & 71, and OFS' NRC approved QAP; as related to OFS' BRR Certificate of Compliance 71-9341. Overall, the team assessed that OFS through PTI was adequately and effectively implementing their NRC approved QAP subject to 10 CFR Part 71 with regard to Quality Assurance, Management Controls, Design Interface Controls, and Fabrication Controls. One non-cited Severity Level IV violation with one example of non-compliance was identified by the team and is described in these inspector notes. Contrary to the requirements of 10 CFR 71.107, "Package design control," OFS failed to correctly translate a note on a licensing drawing as an identical note on a design/fabrication drawing. OFS captured the non-compliance in their corrective action program. There were also two minor violations against regulation 10 CFR 71.133, "Corrective action," for OFS and PTI failing to take adequate corrective actions for an issue each had. OFS and PTI captured the violation against them in their corrective action programs.
Lead Inspector Signature/Date	Jon N. Woodfield Jon N. Woodfield 12/10/18
Inspector Notes Approval Branch Chief Signature/Date	Patricia Silva 12/12/18

Inspection History

From September 28, 2009 through October 2, 2009, the NRC conducted the last Part 71 team inspection at OFS' fabricator Premier Technology, Inc.'s (PTI) fabrication facility in Blackfoot, Idaho. At the time of the last Part 71 inspection, fabrication activities were ongoing for a single Battelle Energy Alliance Research Reactor (BRR) packaging being fabricated for Areva Federal Services (AFS) [OFS was AFS at the time] by PTI. Overall, PTI's fabrication activities, and AFS' oversight of the activities were assessed to be adequate. One violation of NRC requirements was identified. The violation, the result of three findings, concerned instances where procedures for activities affecting quality were not prescribed or were not followed. Details of the notice of violation (NOV) can be found in the inspection report and inspector notes (ADAMS ML092880096). A written response to the violation from AFS was requested by the inspection team leader. AFS' detailed response letter to the violation can be found at ADAMS ML093210177. From February 1, through February 3, 2011, a programmatic inspection was performed by the NRC at AFS' office in Tacoma, Washington (at the time). At that time the inspection team reviewed and verified the completion of AFS' corrective actions to the NOV. No concerns were identified in AFS' corrective actions and the NOV was closed. The inspection report and inspector notes can be found at ML110540584 and ML110540607, respectively.

Inspection Purpose

The purpose of the inspection was to assess OFS' compliance with 10 CFR Parts 21 & 71 using PTI as a fabricator, and to ensure that the BRR transportation packaging system for which OFS is the holder of CoC 9341 could be verified to comply with Part 71 in design, procurement, and fabrication requirements, as applicable. The focus of the inspection was to determine whether OFS activities through PTI associated with the transportation of radioactive materials were in accordance with OFS' NRC approved QA program requirements.

Primary Inspection Procedures/Guidance Documents

IP-86001, "Design, Fabrication, Testing, and Maintenance of Transportation Packagings"
NUREG/CR-6407, "Classification of Transportation Packaging and Dry Spent Fuel Storage System Components According to Importance to Safety"
NUREG/CR-6314, "Quality Assurance Inspections for Shipping and Storage Containers"
Regulatory Guide 7.10, "Establishing Quality Assurance Programs for Packaging Used in the Transport of Radioactive Material"

INSPECTOR NOTES: APPLICABLE SECTIONS FROM IP 86001 WERE PERFORMED DURING THE INSPECTION WITH RESULTS DOCUMENTED BELOW UNDER THE BASIC HEADINGS OUTLINED IN NUREG-6314.

4.1 Management Controls

4.1.1 Quality Assurance Policy

The team reviewed PTI's NQA-1 Quality Assurance Manual (QAM), 5th Edition, Revision 0, dated May 22, 2018 and associated quality procedures and, assessed the effectiveness of the Quality Assurance Program (QAP) implementation at PTI. The team verified that the overall QAP as written adequately addresses the applicable Quality Assurance criteria of 10 CFR Part 71 used for the activities PTI performs as the BRR fabricator. Additionally, the team discussed portions of the reviewed documents with selected personnel to determine whether activities subject to 10 CFR Part 71 were adequately controlled and implemented in accordance with the QAP. The team reviewed PTI's organization chart and noted that the Quality Assurance Director reports directly to the Chief Executive Officer. Quality Assurance has no other responsibilities within the project structure and functions independent of any group or individual directly responsible for the activities monitored, as described in Section 1, "Organization," of the PTI QAM.

Since OFS has the ultimate responsibility for quality of fabrication, the team verified that OFS approved PTI's QAM before it was implemented for PTI activities. In addition, the team noted through discussions with OFS and PTI personnel, that the Quality Assurance staff from both organizations have open communication and interactions as it relates to the fabrication activities. No concerns were identified by the team with PTI's QAP.

PTI procures material as commercial grade and performs commercial grade dedication (CGD) for material used to fabricate important to safety (ITS) Category A and B components. The team conducted interviews with PTI personnel and observed them performing CGD activities. The team also toured PTI's CGD laboratory. The team noted that PTI's CGD process is a combined effort between OFS and PTI. The team reviewed the OFS' documents FS-EN-PRC-015, "Classification of Components for Part 71 and 72 applications," Revision 3, dated August 2, 2018 and PKG-QL-SPL-002, "Quality List for BEA Research Reactor Package," Revision 5, dated December 15, 2015. These two documents contain the ITS category and description for all the BRR components to be fabricated and are the documents that PTI used to develop their CGD plans. The CGD plans were then reviewed by OFS for approval. The team reviewed technical procedure TP-2.14, "Commercial Grade Dedication," Revision 3, dated April 29, 2015 and CGD Plan 18-053, Revision 2 for job number 8873, related to the BEA Research Reactor fabrication. The team noted that the CGD plan was in compliance with the procedure by containing the dedication evaluation, the ITS category, the technical evaluation and Critical Characteristics for Acceptance, and the description of the methods used for the dedication. No concerns were identified by the team with PTI's CGD activities.

4.1.2 Nonconformance and Corrective Action Controls

The team reviewed PTI's nonconformance program to assess the effectiveness of controls established for the processing of nonconforming materials, parts, or components. The requirements for PTI's nonconformance program are contained in Section 15.0, "Control of Nonconforming Items," of PTI's QAM. This section describes the method for reporting and controlling nonconforming items that are under the control of PTI's QAP. This section also describes how the QA staff determines if a Part 21 evaluation is required. PTI staff use forms

QA-15.1-1, "Nonconformance Report (NCR)" and QA-15.1-2, "Supplier Deficiency Report" to document and track nonconformances. The team reviewed NCRs 18-08 Revisions 0, 1, and 2, 18-106, 18-128, 18-139, 18-141, and 18-171 related to the job 8873. The team noted that for those NCRs with a disposition of "use-as-is," PTI went back to OFS to obtain approval for this disposition.

The team noted on two of the NCRs reviewed that PTI failed to document all the corrective actions taken to address the nonconformances. Although it is unusual to document this type of information in NCRs, training was needed to preclude repetition of the NCR issues; however, it was not documented with the closeout of the NCRs.

The team determined that PTI had not properly documented all the corrective actions taken which included evidence that the training had occurred. This is a violation of 10 CFR 71.133, "Corrective action," for failure to document corrective actions taken. 10 CFR 71.133 requires, in part, the corrective actions taken must be documented by the certificate holder. This issue was determined to be a condition adverse to quality because there was no official record or documentation in the NCRs that the require quality training to prevent occurrence had been administered, yet the NCRs were closed out.

The team determined that the violation was of minor safety significance and not subject to formal enforcement action since it was ultimately determined and verified that the training had been performed but not properly documented. PTI identified this issue in corrective action report 18-12, dated November 8, 2018.

The team reviewed PTI's corrective action program to assess the effectiveness of the measures established to identify and correct issues, and if required, prevent recurrence. The team review Section 16.0, "Corrective Action," of the PTI QAM. The team noted that a corrective action report can be initiated by any staff member at PTI and that the corrective action form QA-16.1-1, Revision 6 has a section for identification of a potential Part 21 issue. The team reviewed corrective action reports (CARs) 18-05, 18-06 and 18-10 and noted that these CARs were adequately documented and provided evidence of corrective actions performed by PTI to address the conditions adverse to quality.

The team interviewed PTI's QA personnel on the NCR and Corrective Action process and found they were all knowledgeable and understood these processes as described in the QAM. No concerns other than noted above were identified by the team in the processing of NCRs and CARs by PTI.

The team reviewed PTI's procedure TP-15.1, "Reportability of Defects," Revision 4 and determined the procedure adequately implemented the requirements of 10 CFR Part 21. The team asked PTI if any Part 21 Reports had been written for the fabrication work performed for OFS on the BRR and PTI stated that no Part 21 Reports had been written. PTI has two postings in its fabrication facility and the team verified they were current copies, which is

compliant with Part 21.6, "Posting requirements." No issues were identified by the team regarding 10 CFR Part 21 program controls or implementation at PTI.

During the verification of the Part 21 postings, the team observed that the NRC Form 3, "Notice to Employees," that was posted at the same locations, was dated 5-2012 while the current revision to Form 3 is dated 8-2017. Observing the Form 3 posting was outside the Part 71 inspection scope since the posting is for Part 30. After the inspection, the team contacted Region IV which performs the Part 30 inspections of PTI and informed them of the observation for their information.

4.1.3 Documentation Controls

The team reviewed Section 6, "Document Control," and Section 17, "Quality Assurance Records," of the OFS Quality Assurance Program Description, FS-QA-PMD-001 Revision 15. In addition, the team specifically reviewed the following PTI procedures associated with document controls and records:

- NQA-1, Quality Assurance Manual, Premier Technology, Inc., 5th Edition, Revision 0 Section 6.0 Document Controls and Section 17.0 Records
- TP-17.0, Record Storage, Revision 6

PTI uses its shared computer system to ensure that its QAM and nuclear quality technical procedures are available to all its employees electronically at their computers. PTI demonstrated to the team at a computer screen how all these documents could be accessed electronically. Hard copies of these documents are prepared, reviewed, and approved by authorized personnel and scanned into the shared computer system and secured with a password to prevent editing. Once the documents are uploaded they are considered controlled documents. Once these types of documents are printed they become uncontrolled copies.

The team evaluated, for the BRR project, the distribution methods for the BRR fabrication drawings and fabrication procedure books to various individuals and facility locations in accordance with Section 6.0 of the Premier NQA-1 Manual. The Premier BRR Project Manager and Premier Technology document control person assigned to the BRR project are responsible for review of controlled documents for adequacy, completeness, and approval prior to hardcopy distribution. The team verified PTI had the documentation (Drawing/Document Distribution List) per NQA-1 Section 6.0 for the BRR project showing that drawing and procedure hard copy revisions had been distributed to the designated individuals and facility locations. The team specifically checked the current BRR fabrication drawing revisions were in controlled drawing binders and distributed to project management, Quality Control, and the fabrication area on the fabrication shop floor. The team determined the NQA-1 Manual Section 6.0 procedure gave adequate document distribution instructions and the distribution requirements were being followed.

NQA-1 Section 17.0 and TP-17.0 describe the requirements and process for storage,

maintenance, and classification (as lifetime or nonpermanent) of QA records. Each quality record is to be numbered and be traceable to the item(s) or operation(s) to which it applies and accurately reflect the work accomplished or information required. All records are to be initialed or signed with a date by authorized personnel. All records generated as part of the fabrication process are to be forwarded to PTI quality assurance and maintained in the Quality Assurance Records Room (QARR) in a project specific folder by the document control individual assigned to the project. The team verified that as quality records for fabrication of the BRR were being completed, they were maintained by PTI QA in a project folder in the QARR by a document control person. The Quality Assurance Manager restricts which PTI personnel have access to the permanent QA records in the QARR. The team found the quality record storage room adequate with its restricted access and fire protection features.

OFS specification PKG-GF-SPC-003, "General Fabrication Specification," Revision 5 requires PTI to submit to OFS for review and approval a list of Quality Records that PTI will provide in the final document package (FDP) for each BRR packaging it fabricates for OFS. Since only two BRRs are being fabricated by PTI and neither has been completed, no final document packages have been completed. The team discussed the FDPs with the PTI project quality engineer who, with help from the project manager and document control, will create the final document packages. At the time of the inspection some quality documentation for materials had been completed. However, no travelers had been completed and of course no final as-built drawings could be completed at the time of the inspection. At the end of the project, the project quality engineer will develop the as-built drawings for the FDPs. PTI will issue a Certificate of Conformance with the FDP.

The team determined the document control and QA record procedures were adequate and being followed by PTI personnel. No concerns were identified by the team in the documentation control and records management areas.

4.1.4 Audit Program

The team reviewed the internal audit program as described in Section 18.0, "Audits" of PTI's QAM, PTI procedure TP 18.2, "Internal Audits;" and PTI procedure TP 18.4, "NIAC Audit Acceptance." The review 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. Audit personnel are required to document the audit results and follow-up deficient areas via the corrective action program. The team reviewed one internal audit performed in May 2018 as well as an external audit performed in February 2017 to verify that they were conducted in accordance with the program as defined in PTI's procedures. In addition, the team reviewed the triennial NIAC audits of DuBose National Energy Services performed in May 2018 and Energy And Process Corporation performed in January 2016. The team noted the PTI acceptance of these audits was documented and in accordance with PTI's procedure TP 18.4. The team also reviewed a sampling of lead auditor training and qualification records to assess whether those leading audits were trained and qualified as required in Section 2.4, "Qualifications of Auditors and Lead Auditors," of the PTI QAM.

The team determined the PTI audits reviewed, including the NIAC audits that PTI accepted and took credit for vendor qualification, were comprehensive in nature, performed using the NIAC checklist, and conducted by qualified lead auditors. The team also noted that PTI initiated CARs to address and document the issues and findings identified during the audits and that corrective actions were taken in a timely manner. Additionally, the team noted that PTI's scheduling and frequency of audits is adequate and in accordance with PTI's approved QA program. No concerns were identified by the team with PTI's implementation of its audit program.

4.2 Design Control

4.2.1 Design Development

The team reviewed Section 3, "Design Control," of the OFS Quality Assurance Program Description, FS-QA-PMD-001 Revision 15. In addition, the team specifically reviewed the following OFS and PTI procedures associated with design control to verify that they were being properly implemented, as applicable:

- NQA-1, Quality Assurance Manual, Premier Technology, Inc., 5th Edition, Revision 0 Section 3.0 Design Control
- FS-EN-PRC-001, Design Control, Revision 11
- FS-EN-PRC-003, Engineering Drawings, Revision 8
- FS-EN-PRC-004, Specifications, Revision 4
- FS-EN-PRC-005, Design Changes, Revision 9
- FS-EN-PRC-012, Supplier Data Submittal, Revision 7
- FS-EN-PRC-022, Fabrication Readiness Review, Revision 3
- FS-PM-PRC-0001, Development of Project Management Plans, Revision 3
- PKG-GF-SPC-003, General Fabrication Specification, Revision 5

OFS is totally responsible for the BRR transportation packaging design development and therefore PTI does not have any design authority or design change authority. OFS developed the BRR design/fabrication drawings and therefore PTI is not even authorized to develop fabrication drawings. PTI is only authorized to process fabrication Nonconformance Reports. Therefore, the team addressed design control by reviewing the design control process between the BRR transportation packaging designer OFS and fabricator PTI. The team first reviewed OFS' purchase order (PO) 18C3020068 to PTI for the BEA Research Reactor Package, BRR Package Auxiliary Equipment, and Square Fuel Basket. The PO was very extensive by including references to packaging design/fabrication drawings, auxiliary equipment design/fabrication drawings, basket design/fabrication drawings, technical specifications, procurement quality clauses, a supplier data requirements list, a data transmittal form and instructions, and a supplier disposition request form and instructions. The PO also contained the minimum fabrication documentation requirements and submittal requirements of those documents for OFS review and approval prior to actual fabrication. The actual OFS BRR packaging design/fabrication drawings were part of the initial PO and if revision to them is

needed, it will be done by a PO change order to PTI.

The team verified that the design/fabrication drawings developed by OFS had received the proper OFS initiator and checker/approver signatures at each revision. The team verified that PTI had records of the transmittal of the design/fabrication drawings to PTI.

The team reviewed how all controlled copies of issued design/fabrication drawings were tracked and accounted for by PTI. When design/fabrication drawing revisions were received from OFS which affected fabrication, design/fabrication drawings would be pulled back from the shop floor until travelers could be reviewed for any affects and possibly revised before the traveler and design/fabrication drawing would be issued back to the shop floor.

The team reviewed the education and training records for the PTI project manager and found all the education and training records for the individual to be adequate and to meet the applicable requirements.

The team reviewed the OFS Fabrication and Construction Readiness Review Checklist for the BRR packaging fabrication for compliance to procedure FS-EN-PRC-022 and found it adequate.

Based on its review, the team determined that PTI was following its design procedures, as applicable, to ensure that design/fabrication drawings and any associated specifications and travelers were consistent with the OFS design/fabrication drawings, NRC approved licensing drawings, and design requirements/commitments as documented in the CoC for the BRR. No concerns were identified with the transmittal of OFS design/fabrication drawings to PTI. In addition, there were no concerns with the documentation of OFS' approval back to PTI for all submitted travelers, NDE procedures, weld procedures, approved vendor lists, coatings procedures, cleaning procedures, commercial grade dedication plans, NCRs, weld records, final document package contents, and other required documents for OFS' review.

There was one Non-cited Severity Level IV Violation against 10 CFR 71.107, "Package design control," where a note on a licensing drawing was not properly translated as a note on a design/fabrication drawing. Since the violation was discovered during a material procurement/receipt inspection review, it is documented in Section 4.3.1, Material Procurement.

4.2.2 Modifications

Modifications to the BRR transportation packaging design/fabrication drawings can only be made by a PO change order issued by OFS to PTI. All PTI would receive from OFS is a PO change order with any revised BRR design/fabrication drawings attached. PTI would then review the revised BRR design/fabrication drawings for any effects on the actual fabrication processes and travelers. PTI would also remove the previously issued design/fabrication drawing(s) as controlled copies from the outstanding controlled copy binders on the shop floor and with individuals and replace them with the next revision issued with the change order.

4.3 Fabrication Controls

4.3.1 Material Procurement

The team reviewed PTI's process that addresses procurement, including traceability and receipt inspection, to verify it was being properly implemented at PTI. The team specifically reviewed Section 10.3 of PTI's NQA-1 Quality Assurance Manual, 5th Edition, Revision 0, which addressed this process. The team also observed the performance of the receipt inspection of the BRR package cask outer body.

The team verified that OFS used a graded approach for identifying ITS components during design and PTI applied this graded quality level to component and material procurement documents. Specifically, the team reviewed procurement, traceability, and receipt inspection documentation of ITS Category A stainless steel round bar (ASME SA-276 Type 304/304L), cask outer body (ASME SA-182 Grade F304), and weld filler material (ER308/308L). The team reviewed selected drawings and records to verify that the procurement specifications for these materials met design requirements, traceability was maintained throughout the procurement process, and the material received met the design requirements. The team determined that the purchase orders were adequate and specified the applicable criteria and requirements, including Part 21. Also, the team determined the material ordered and received by PTI met the design requirements; and traceability was maintained throughout the procurement and receipt process. The team noted that all of the vendors from which the components were purchased were current on PTI's approved supplier list (ASL).

However, during the review of the design requirements for the cask outer body, the team identified a discrepancy in the inspection requirements between the licensing and design/fabrication drawings. The licensing drawing, 1910-01-01-SAR, Revision 6, Sheet 1, general note 13 that applies to the forged cask outer body states "forged material shall be ultrasonically and liquid penetrant inspected in accordance with ASME Code, Section III, Division 1, Subsection NB, Article NB-2540, and Section V, Articles 4 and 6." The design/fabrication drawing, 1910-01-202, Revision 1, Sheet 1 of 2, note 7 that applies to the forged cask outer body states "Optional forged material: ASTM A182, Grade F304. Ultrasonically inspected in accordance with ASME B&PV Code, Section III, Division 1, Subsection NB, Article NB-2540 and Section V, Articles 4 and 6." The requirement to perform a liquid dye penetrant test (PT) inspection was not correctly translated by OFS from the licensing drawing to the design/fabrication drawing, which was being used by PTI to perform the fabrication work. This is a violation of 10 CFR 71.107, "Package design control," for failure to correctly translate the package design as specified in the CoC into specifications and drawings. 10 CFR 71.107 requires, in part, the certificate holder shall establish measures to assure that the package design, as specified in the CoC, are correctly translated into specifications, drawings, procedures, and instructions. The team determined that the violation was more than minor because the failure to include the PT requirement in the fabrication drawing allowed the PT to be potentially missed and in turn, any potential surface defects to go undetected. The team evaluated the violation in accordance with Section 2.3 of the NRC Enforcement Policy and

characterized the finding as a Non-cited Severity Level IV Violation. OFS identified this issue in corrective action report 2018-9897, dated 11/8/2018.

In addition, the team noted that the two general note requirements stated in the previous paragraph require the use of the ASME Code, Section V, Article 4 for ultrasonic inspection of the cask outer body when Article 4 is actually for the inspection of welds, not materials. Article 5 is for ultrasonic inspection of materials and should have been specified. In reviewing the procurement documents from PTI for the cask outer body, the team identified that after a number of revisions, the purchase order correctly required the use of Article 5. Therefore, the team questioned OFS on whether the incorrect requirement on the two drawings was entered into their corrective action program since they were aware and involved in the purchase order revisions. The team determined that OFS had not entered this issue into their corrective action program nor initiated any action to resolve the issue. This is a violation of 10 CFR 71.133, "Corrective action," for failure to promptly correct conditions adverse to quality. 10 CFR 71.133 requires, in part, the certificate holder shall establish measures to assure that conditions adverse to quality are promptly identified and corrected. This issue was determined to be a condition adverse to quality because the approved design required the use of Article 4 when Article 5 was used for inspection. Therefore, the inspection performed did not meet the requirements of the design, even though it was ultimately performed correctly. The team determined that the violation was of minor safety significance and not subject to formal enforcement action. OFS identified this issue in corrective action report 2018-9897, dated November 8, 2018.

The team observed the receipt inspection of the BRR cask outer body and noted that it consisted of both a document review and dimensional inspection of the actual component. The team determined that both activities were performed adequately and in accordance with the PTI receipt inspection procedure. The team noted that all significant parameters and requirements were verified to the purchase order and industry standards, as applicable. The team also noted that at receipt inspection, the vendor/supplier certification documents that are supplied with each procured item, as required by the respective purchase orders, were reviewed to verify they all contained reference to the PTI purchase order and included the same heat or lot for that item on all documents.

The team reviewed PTI's process for identifying and providing the status of inspection and receipt activities in order to assure that items had been designated as acceptable for use. The team noted that material status is maintained through the use of marking fabricated components directly for traceability in combination with the PTI inspector indicating the acceptance of the associated material use/fabrication operation on associated travelers and inspection records by appropriately initialing or stamping.

The team determined that PTI's material traceability, procurement, and receipt Inspection controls were adequate. One Severity Level IV Non-cited Violation was identified against OFS for failure to correctly translate the requirement to perform a PT inspection from the licensing drawing to the design/fabrication drawing. In addition, one minor violation was identified against

OFS for failure to promptly correct a condition adverse to quality regarding a licensing drawing requirement with an incorrect industry standard for nondestructive examinations.

4.3.2 Fabrication and Assembly Controls

The team examined license and design/fabrication drawings, work control and welding procedures, and shop travelers to determine that fabrication of the BRR packaging met the requirements of CoC 9341. Specifically, the team reviewed drawings 1910-01-401 and 402 and PKG-FP-SPC-007 for the lower impact limiter; the shop traveler for the lower impact limiter for BRR package #1; welding procedure specification (WPS) PTA-CpH-8U, dated February 23, 2009 for Gas Metal Arc Welding (GMAW) groove and fillet welds; procedure qualification records (PQR) PTA-Cp-1-8P, dated March 9, 2007 and PTA-CpH-8P, dated March 23, 2008; and NQA-1 Manual Sections 9.1.5 and 9.1.8 on WPSs and use of weld filler metals, respectively. In addition, the team observed fabrication activities that included welding and reviewed applicable personnel qualification and certification records to determine that fabrication activities satisfied requirements and was accomplished by qualified personnel. The team noted that in all cases fabrication drawings, shop travelers, and WPSs were adequately identified at various work locations and the documents reflected the correct revisions, as applicable.

The team observed welding of the lower impact limiter components for BRR packaging #1 and verified it was being performed in accordance with the applicable traveler, WPS, and weld filler metal. The team determined that PTI was performing fabrication activities in accordance with required parameters of WPS PTA-CpH-8U including joint design, base metal thickness, welding position, amps, voltage range, and filler metal classification and size. The team also reviewed the qualifications and certifications of two welders working on the BRR project to determine if they were qualified to the requirements in PTI's NQA-1 Manual, Section 9.1.6. The review consisted of the Welder or Welding Operator Performance Qualification (WPQ) and associated continuity history log for each welding process the welders were qualified for. The team determined through a review of these records that the individuals were qualified and certified for the GMAW process observed by the team to the requirements in the NQA-1 Manual. No issues were identified with respect to qualifications and certifications of welding personnel.

Overall, the team determined that fabrication activities along with the associated controls and processes were adequate and no concerns were identified.

4.3.3. Test and Inspection

The team observed test and inspection activities including a visual inspection (VT) and PT on a completed weld of the upper impact limiter for BRR packaging #1. The team verified that the inspector and a trainee performed the PT in accordance with procedure TP-1.2.8780-1, "Liquid Penetrant Testing Procedure - ASME," Revision 0, as required, and were knowledgeable of the processes and requirements of PT. The team also verified that the inspector used a calibrated light source when performing both the VT and PT inspections.

The team noted that the PTI inspector and trainee identified some indications during the PT. The PTI inspector determined that they were not required to be evaluated any further per the acceptance standards in the PT procedure due to their small size. Once the examination report (Report Number 18-1972, dated November 7, 2018) was completed for the PT, the team reviewed it for procedural compliance and to verify it was complete. No issues of significance were identified.

The team also reviewed the qualifications and certifications for the PTI inspector that performed the VT and PT examinations as discussed above. The team determined that the individual was qualified and certified in accordance with the NQA-1 Manual, Section 2.1, and procedure TP-2.7, "Written Practice for Qualification and Certification of NDT Personnel," Revision 16 for both techniques and had passed a vision test within the past year as required. The team found that the inspector was qualified and certified in accordance with PTI requirements that met the guidelines of SNT-TC-1A, "Recommended Practice for Personnel Qualification and Certification in Nondestructive Testing."

Overall, the team determined that all the test and inspection activities observed were adequately performed by knowledgeable and qualified inspectors and no significant concerns were identified.

4.3.4 Tools and Equipment

The team reviewed selected measuring and test equipment (M&TE) including records and procedures to assure that equipment used in activities affecting quality were properly controlled and calibrated. The team reviewed PTI's NQA-1 Manual, Section 12, which prescribes activities and requirements concerning control and use of M&TE; that calibration occurs to national standards; and actions to take when any piece of equipment is found out of calibration. The team also interviewed personnel involved in the checking in and out of M&TE for use on the shop floor, control of out of calibration equipment, and equipment needing periodic recalibration.

The team compared a sampling of M&TE used for recent fabrication and testing activities to the applicable requirements of the NQA-1 Manual, Section 12, and determined overall compliance to the requirements. The M&TE selected consisted of a digital caliper, digital thermometer and associated probe, and flashlights, in which each were found to be in calibration and had current calibration certificates, as applicable. In addition, the team verified that if the M&TE had been sent offsite for calibration that the calibration service providers, including sub-suppliers of testing services, were current on PTI's ASL.

The team concluded that the M&TE Section 12 in the NQA-1 Manual being implemented at PTI provided adequate guidance for M&TE calibration and use, and PTI was adequately implementing M&TE calibration, tracking, and use requirements.