

SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

1. LICENSEE/CERTIFICATE HOLDER Energy Solutions - Spent Fuel Division 2105 S. Bascom Avenue, Suite 160 Campbell, CA 95008 REPORT NUMBER(S) 71-0804/2007201	2. NRC/REGIONAL OFFICE Division of Spent Fuel Storage and Transportation M/S O-13-D-13 Washington, DC 20555-0001
--	---

3. LICENSEE/CERTIFICATE NUMBER(S) 71-0804	4. INSPECTION LOCATION 804 S Illinois Ave., Oak Ridge, TN.,	5. DATE(S) OF INSPECTION February 5 - 9, 2007
--	--	--

The inspection was an examination of the activities conducted under your license as they relate to radiation safety and to compliance with the Nuclear Regulatory Commission (NRC) rules and regulations and the conditions of your license or Certificate of Compliance (CoC). 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 or nonconformances were identified.
- 2. Previous violation(s) or nonconformance(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, NUREG-1600, 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 or nonconformance of NRC requirements and are being cited. This form is a NOTICE OF VIOLATION OR NONCONFORMANCE, which may be subject to posting in accordance with 10 CFR 19.11.

(Violations, Nonconformances, and Corrective Actions)

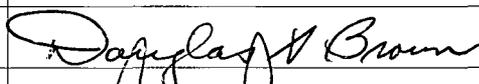
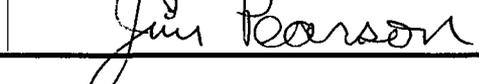
10 CFR 71.111 Instructions, procedures, and drawings, states in part... The licensee, certificate holder, and applicant for a CoC shall prescribe activities affecting quality by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall require that these instructions, procedures, and drawings be followed. The instructions, procedures, and drawings must include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

Contrary to the above, Manufacturing Sciences Corporation (MSC) procedures were not followed or were inadequate as described in the examples listed below:

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; **OR**

Written Response requested in 30 days YES NO

TITLE	PRINTED NAME	SIGNATURE	DATE
LICENSEE	Douglas Brown		2/9/07
NRC INSPECTOR	Jim Pearson		02/09/07

SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

1. LICENSEE/CERTIFICATE HOLDER Energy Solutions -Spent Fuel Division REPORT NUMBER(S) 71-0804/2007-201	2. NRC/REGIONAL OFFICE Division of Spent Fuel Storage and Transportation M/S O-13-D-13, Washington, DC 20555-0001	
3. LICENSE/CERTIFICATE NUMBER 71-0804	4. INSPECTION LOCATION 804 S Illinois Ave., Oak Ridge, TN., 37830	5. DATE(S) OF INSPECTION February 5 – 9, 2007

(Continued)

1. MSC procedure MG-01, "Manufacturing Process Control," Revision 7, effective 12/06/06, requires traceability but does not appropriately address the overall control of materials, parts, or components. Consequently the inspector identified that MSC personnel failed to control materials, parts or components according to the licensee's requirements (locating pins, marking pens, brazing paste, O-rings, and machined parts are examples of the uncontrolled materials).
2. MSC procedure QA-02, "Training Plan," Revision 7, effective 12/21/2006, step 5.3 requires MSC supervisors to ensure workers do not perform work where the skill or training required have lapsed or is missing. The inspection identified that a MSC supervisor assigned an employee to perform work in an area where the employees training had not yet been completed. The inspector was advised by MSC management that the recently hired employee was previously experienced in the area that training had not yet been completed.
3. MSC procedure QA-06, "Document Control," Revision 11, effective 12/15/2006, step 6.7 requires the MSC Document Control Specialist to maintain a log of approved documents. The log was determined to inaccurately represent the approved procedures for use. The NRC inspector did note that the MSC Document Control Specialist had correctly provided the proper controlled documents in the work areas sampled during the inspection.
4. MSC procedure QA-09, "Welding and Brazing," Revision 8, effective 1/10/2007, step 6.1.1 requires the MSC Manufacturing Manager or Designee to prepare WPS (welder procedure specification) in a format equivalent to the forms specified in ASME Section IX. A MSC WPS was noted to exclude the reference to the ASME Section IX code and also did not identify which gas flow rates included on the form applied to the shielding and the backing as required for GTAW application under ASME Section IX. In addition steps 6.6.2, and 6.6.3 requires that filler material be returned and only one heat number of material to be issued at one time. The form found on Attachment 2 of the current procedure does not provide for recording of either the amount of unused filler or the heat number of the material originally issued. Sample reviews of filler metal issue log forms identified the layout of the form did not allow for the consistent documenting of the identity of the material by heat number on issuance and return, nor did it allow for documenting of the quantity of filler metal returned.
5. MSC procedure QA-10.1, "Qualification and Certification of non Destructive Testing (NDT) Personnel," Revision 1, effective 12/01/2006, did not properly describe the requirements of SNT-TC-1A, Personnel Qualification and Certification in Nondestructive Testing, December 1988 Edition. The procedural inadequacy caused the improper eye testing of MSC personnel responsible for performing visual nondestructive examination techniques. The inspector noted that the examinations were acceptably completed the day following the NRC finding.

INSPECTOR NOTES COVER SHEET

Licensee/Certificate Holder (name and address)	Energy Solutions - Spent Fuel Division 2105 S. Bascom Avenue, Suite 160 Campbell, CA 95008
Licensee/Certificate Holder contact and phone number	Mr. Douglas Brown 815-342-6806
Docket No.	71-0804
Inspection Report No.	71-0804/2007-201
Inspection Date(s)	2/5-9/07
Inspection Location(s)	804 S. Illinois Avenue, Oak Ridge, TN
Inspectors	J. Pearson and C. Morell (NRC Contractor)
Summary of Findings and Actions	<p>The inspection considered activities occurring at the package fabricator, Energy Solutions - Manufacturing Sciences Corporation (MSC), Oak Ridge Tennessee in regard to the Part 71 MIDUS transportation package, which Energy Solutions - Spent Fuel Division has applied to be the designated primary design holder.</p> <p>Overall, the inspection identified that the MSC QA program, as overseen by Energy Solutions-Spent Fuel Division (SFD), and applied to the fabrication of the Part 71 packaging is being effectively implemented. However, numerous findings indicated procedural weaknesses or noncompliance.</p> <p>A Notice of Violation (NOV) was issued to Energy Solutions - Spent Fuel Division against the requirements of 10CFR Part 71, specifically, 10 CFR 71.111 Instructions, procedures, and drawings.</p> <p>The supporting details for the NOV are included in the accompanying inspector's notes.</p>
Lead Inspector Signature/Date	James J. Pearson <i>James J. Pearson</i> 2/28/07
Inspector Notes Approval Section Chief Signature/Date	<i>Pat JLS</i> 2/28/07

INSPECTOR NOTES: INSPECTION PROCEDURE (IP)86001 WAS USED IN CONJUNCTION WITH APPLICABLE PART OF NUREG/CR 6314. INSPECTION RESULTS USING THE IP-86001 FORMAT ARE DOCUMENTED BELOW:

02.02 Verify that the CoC holder's activities related to transportation packagings are being conducted in accordance with the CoC, as well as the NRC-approved QA Program (reference Regulatory Guide 7.10), and that implementing procedures are in place and effective.

The inspector reviewed portions of GM-01, Revision 5, of the MSC QA Manual (QAM), multiple organizational charts, and interviewed MSC staff to determine that the authorities and responsibilities described are acceptable. The inspector determined the acceptability of the organizational independence and independence from cost and schedule from interviews of MSC staff and from the organizational representation found in the MSC QAM.

Since the Certificate of Compliance for the MIDUS packaging was in the developmental stages during the inspection, the inspector used the standard quality criteria found in Part 71 and supporting inspection guidance as well as the reviews of a large variety of MSC procedures identified in the following sections as well as personnel interviews for the basis for determinations on the adequacy of program implementing procedures.

Overall the MSC procedures were adequate. However, the following sections of the inspector's notes will denote areas of issues of procedural inadequacy or noncompliance existed.

02.03 Verify that provisions are in place for reporting defects which could cause a substantial safety hazard, as required by 10 CFR Part 21.

The inspector examined the Part 21 posting at MSC. All required documents & information was found at the posted location, including the MSC procedure QA-15.1, Reporting of Defects and Noncompliances, Revision 2, effective 11/20/06 and the posting was in a conspicuous location.

The inspector also noted from a sample of MSC purchase requisitions reviewed, that Part 21 was indicated appropriately in the purchasing process as required by MSC procedure PC-01, Purchase Requisition And Ordering Process, Revision 11, effective 1/12/07.

02.04 Interview selected personnel and review selected design documentation to determine that adequate design controls are implemented.

The Inspector interviewed MSC management responsible for implementing and documenting requirement elements for manufacturing control and reviewed MSC documentation to determine the level of acceptance of design control.

The inspector noted that SFD utilizes a system of Procurement documents and Engineering Change Notices (ECN) to maintain design control. The inspector noted that MSC has the responsibility to convert the SFD design drawings into fabrication drawings. The inspector determined that the current system meets the minimum requirement for control of design documents, procurement documents, fabrication documents (e.g., travelers).

Additional evaluation of design documentation and control will occur during an upcoming NRC inspection of Energy Solutions - Spent Fuel Division in Campbell, California.

02.05 Review selected drawings, procedures and records, and observe selected activities being performed to determine that the fabrication, test, and maintenance activities meet the safety analysis report (SAR) design commitments and requirements documented in the CoC.

The inspector noted that MSC elected to out source the commercial dedication to a Commercial Dedication Services vendor (Columbiana Hi Tech LLC). The fabricator performed a vendor qualification audit prior to issuing a purchase order for Commercial dedication services. The fabricator purchased the following commercial items:

1. MSC Purchase Requisition No. 021052, dated 5/30/2006, for Parker "O" Rings
2. The Vendor (Columbiana HiTech, LCC) dedicated the "O" rings by verifying the key attributes of shore hardness of 80 +/- 5, temperature resistance, and radiation service.

The Inspector reviewed documentation provided by the Commercial Dedication Services vendor and affirmed that the "O" rings were dedicated in accordance with appropriate requirements.

The Inspector reviewed the following to verify compliance with the requirements:

1. Licensee/MSD Design Documents
 - a. MSC Drawing Control Procedure – QA-05.2 Rev. 1 Dated 01/19/2007
 - b. MSC Engineering Changes (ECN TYCO1-039, dated 2/2/2007)
 - c. Associated MSC Fabrication drawings
2. Special Process Procedures-MSD Welding Procedures
 - a. MSC-WPS-101, Rev.02, dated 9/15/06
 - b. MSC-WPS- P-135A, Rev. 1, dated 9/15/2006
 - c. MSC-BPS- TB103, Rev. 0, dated 6/24/2007
 - d. MSC –BPS-FB102, Rev. 0, dated 6/24/2007
3. MSC Fabrication Control Document samples
 - a. Manufacturing Process Control - MG-01 Rev. 7 Dated 12/06/2007
 - b. MSC Integrated Manufacturing, Inspection and Test Plan of the MIDUS Transportation units – Drawing No. IMPITP302006.03.02, rev. 0 dated 11/13/06
 - c. MSC Traveler/Router - MSC Router # 1260 - 02, Over Pack Lid Assembly, dated 1/10/2007

The Inspector interviewed MSC management responsible for implementing and documenting requirement elements for fabrication control and reviewed the cited MSC documentation and had the following findings/concerns:

1. Design Documents

From the inspector's review during the inspection, MSC had submitted MSC ECN NO. TYCO01- 039 which identified a total of 24 changes MSC wanted to make to the MSC fabrication drawings. Of the total changes, 20 had an impact on the changes in fabrication process. The Inspector interviewed the MSC management responsible for incorporating these changes to determine if the changes had been completed. The MSC management indicated that the ECN's had not been incorporated into revised fabrication drawings or fabrication routers. It is important to note that at the time of the inspection full fabrication was not occurring and some changes did not affect the actual fabrication drawings. This

area will be further evaluated during the upcoming inspection at the SFD, Campbell, California.

2. Special Process Procedures

- a. The inspector noted that the MSC Welding procedures/specifications does not specify the ASME Section IX welding code as the welding specification standard.
- b. The inspector also noted that the MSC Weld procedures do not utilize the recommended WPS format illustrated in ASME Sections IX Appendix B. Consequently the welding essential and non essentials variables are not clearly identified for the welder. Also the MSC WPS identifies two flow rates for the process, typically one flow rate is for the shielding gas and the other is for the backing gas. However the MSC WPS format does not distinguish which is back shielding gas and which is backing gas. This discrepancy has been identified on the Notice as a violation.
- c. The inspector determined the MSC Brazing procedures do not utilize the recommended WPS format illustrated in ASME Sections IX Appendix B. Consequently the welding essential and non essentials variables are not clearly identified for the welder. This discrepancy has been identified on the Notice as a violation.
- d. In addition the inspector noted that steps 6.6.2, and 6.6.3 of the MSC procedure QA-09, "Welding and Brazing" revision 8, requires that filler material be returned and only one heat number of material to be issued at one time. The inspector noted that the form found on Attachment 2 of the same procedure does not provide for recording of either the amount of unused filler or the heat number of the material originally issued. The inspector performed sample reviews of filler metal issue log forms and identified the layout of the form did not allow for the consistent documenting of the identity of the material by heat number on issuance and return, nor did it allow for documenting of the quantity of filler metal returned. This discrepancy has been identified on the Notice as a violation.

Note: MSC has documented Special Process control deficiencies on Condition Adverse to Quality Report No. 2006-52 issued on 10/30/2006.

3. MSC Fabrication Control Documents

The inspector noted that MSC utilizes a Traveler/Router system to identify fabrication drawings and the fabrication process. The inspector determined the MSC system provides adequate controls.

The Inspector interviewed MSC management responsible for implementing and documenting for material control procurement requirement elements. The Inspector reviewed the following MSC documents to verify compliance to the Material Procurement control requirements:

- a. SFD Purchase Order Number 06-SFD-004, Rev. 0 dated 12/21/2006 for MSC to fabricate the MIDUS Type B (U) package.
- b. SFD Purchase Order Number 06-SFD-004, Modification 1 dated 1/25/2007 for MSC to fabricate the MIDUS Type B (U) package.
- c. *MSC Purchase Requisition No. 021052, dated 5/30/2006, for Parker "O" Rings ,the vendor - Columbia HiTech, LCC

- d. **MSC Purchase Requisition No. 02115, dated 6/13/2006, for Helicoils the vendor Nova Machine Products.
- e. MSC Router # 1260 - 02, Over Pack Lid Assembly, dated 1/10/2007

As a result of the management interviews and documentation reviews the Inspector was able to affirm that MSC has adequate controls to satisfy the procurement control requirements.

*The inspector reviewed MSC procurement documentation for the Parker "O" Rings and found that the item had no shelf life restrictions. The Inspector also visited the storage area where the Dye Penetrant materials were stored and checked the Dye Penetrant, Solvent, and Developer to see if they had a shelf life date mark. The Inspector found that none of materials have shelf life identification requirement.

** The Inspector reviewed the MSC Purchase Requisition No. 02115, dated 6/13/2006, for Helicoils the vendor Nova Machine Products and the associated receiving inspection report dated 9/27/2006 and determined that MSC had adequate controls to assure that the receipt inspections are well documented and traceable to the procured item.

The Inspector reviewed the following MSC documents to verify compliance to the requirements for fabrication and assembly:

- a. Drawing Control - MSC Procedure QA-05.2 Rev.1, dated 01/19/2007
- b. Manufacturing Process Control – MSC Procedure MG-01, Rev. 7, dated 12/06/2007
- c. Inspection – MSC Procedure QA-10, Rev.13, dated 1/29/2007
- d. Quality Records – MSC Procedure QA-17, Rev 1, dated 05/26/2006

The Inspector interviewed MSC management responsible for fabrication and assembly to verify adequate controls were in place to satisfy the fabrication and assembly requirements.

The Inspector reviewed MSC documentation and interviewed MSC management responsible for implementing and documenting the controls for fabrication process control. As a result the Inspector was able to affirm that MSC has adequate controls to satisfy the fabrication and assembly quality requirements.

The Inspector interviewed MSC management responsible for Test and Inspection implementation and documentation and also reviewed the following MSC documents to affirm that MSC has adequate controls to satisfy the Test and Inspection requirements:

- 1. QA-10, Inspection, Rev. 13, dated 1/29/07
- 2. QA- 10.1, Qualification And Certification of Non Destructive Testing (NDT) Personnel, Rev. 1, dated 12/01/2006
- 3. QA-10.2, Visual Inspection. Rev.1, dated 1/11/2007
- 4. QA-10.3, Liquid Penetrant Inspection, Rev. 1 dated 1/11/2007
- 5. QA- 11 Test Control, Rev. 1
- 6. QA-12 Measuring and Test Equipment , Rev: 8, dated 01/26/2007
- 7. MG-01,Manufacturing Process Control - Rev. 7 dated 12/06/2007
- 8. Drawing No. IMPITP302006.03.02, MSC Integrated Manufacturing, Inspection and Test Plan of the MIDUS Transportation units – Rev. 0 dated 11/13/06

The Inspector reviewed MSC documentation and interviewed MSC management responsible for implementing and documenting Test and Inspection controls identified in the inspection requirements. As a result the Inspector was able affirm that MSC has adequate control to satisfy requirements for visual inspection activities.

Note: At the time of the NRC inspection MSC was not at a point in the fabrication process that allowed for the inspector to observe the implementing of either a Leak test, a Dye Penetrant test, or NDE (Ultrasonic Measurements) therefore a review was not completed of these inspection processes.

The inspector reviewed MSC procedure QA-10.1 paragraph 6.1 and noted that it requires that Inspection personnel pass a visual acuity color test and that Inspection personnel shall be qualified to ASNT-TC-1a. The inspector noted that ASNT-TC-1a requires that all Inspection personnel pass an annual visual acuity test that includes an Ishihara color blind test consisting of a 14 Plate Book, of which consists of 12 Plates with numbers and 2 plates of Line Tracing. The inspector's review of completed MSC Inspection personnel visual acuity test indicated the test did not specify the Ishihara color blind test. Consequently a MSC Condition Adverse to Quality Report No. 2007-14-R1, dated 2/7/2007 was written to identify this deficiency. This discrepancy has been identified on the Notice as a violation.

Regarding ASNT-TC-1a requirements of MSC to employ an ASNT Level III for the purpose of managing the ASNT requirements for certifying NDE personnel; defining NDE procedure requirements for NDE inspection methods; review and approving NDE procedures. The inspector interviewed the MSC QA manager to determine if MSC has an ASNT Level III. He informed me that MSC had entered into a service agreement with an outside consultant, as the ASNT Certified Level III for the purposes of managing the Manufacturing Sciences Corporation NDE program. The QA Manager provided the inspector with a letter dated 12/1/2006 signed by the MSC President designating the outside consultant as the MSC Level III. The MSC QA manager provided the inspector with the ASNT certification record for the outside consultant. The inspector reviewed the credentials and found the outside consultant to meet the ASNT requirements for an ASNT Level III.

The inspector asked the QA Manager if the outside consultant had performed any ASNT related services and he indicated that the consultant had performed the following services:

1. Certified the QA manager as a Level II Visual Inspector on 8/7/2006.
2. Reviewed and approved the MSC procedure - QA- 10.1, Qualification and Certification of Non Destructive Testing (NDT) Personnel, Rev. 1, dated 12/01/2006 on 12/01/2006.
3. Reviewed and approved the MSC procedure - QA-10.2, Visual Inspection. Rev.1, dated 1/11/2007 on 1/11/2007
4. Reviewed and approved the MSC procedure QA-10.3, Liquid Dye Penetrant Inspection. Rev.1, dated 1/11/2007 on 1/11/2007

The actions noted above which were performed by the MSC Level III prompted the inspector to query the MSC QA Manager and the Energy Solutions Corporate QA Director about the Energy Solution's PO identified as BFS P.O.05-BFS-008 Confirmatory Test Specification TYCO2.1040, Revision 1 where a requirement is cited for pre-use submittal to (BFS) of Written Shop Instructions (e.g. Travelers and Procedures, BPSs, WPS and PQR, Shop Drawings (MSC Drawings, NDE, and Thickness Check Procedures in accordance with "Table 5" -Required Test Table Fabrication Records." This requirement is being reviewed for corrective action under MSC Condition Adverse to Quality Report No 2006-24. The inspector noted that the MSC Corporate QA Director indicated that MSC Corporation would utilize their ASNT Level III to manage the MSC site NDE Program. The new action to have the MSC ASNT Level III does not relieve MSC to submit NDE procedures to SFD for review and approval. Corrective action verification is intended to ensure all review and approval has been completed, and corrective action should be complete prior to assembly of the MIDUS packaging. Additional review in this area will occur during an upcoming NRC inspection of Energy Solutions - Spent Fuel Division in Campbell, California.

In regard to establishing Test Conditions, Test and Inspection Hold Points, and Test and Inspection Operating Status, the inspector determined that MSC has developed an Integrated Manufacturing, Inspection and Test Plan and a Manufacturing Process Control procedure to manage these activities. The Inspector has reviewed the documents to determine their applicability for these requirements and found they meet the minimum requirements for quality control.

The Inspector reviewed the MSC procedure QA-12, Measuring and Test Equipment, Rev. 8, dated 01/26/2007 for compliance and found the procedure was acceptable. The Inspector visited the MSC shop inspection area and interviewed the personnel responsible for maintaining the MSC inspection tool programs and found them have a solid understanding their Testing/Calibration program for Tools and Equipment. The Inspector reviewed the Testing/Calibration program for Tools and Equipment data base and verified that the inspection tools and equipment calibration was being maintained in accord with the MSC applicable procedure. The inspector toured the fabrication area and stopped a various machining operations to sample inspection tools being used by the machinist and found all the tools being used were identified with calibration stickers and were all in calibration. The Inspector toured the machining area to determine if MSC tools and equipment had the ranges/sensitivities required to support fabrication activities. The inspector verified the inspection tools in use were capable of measuring the tolerances specified on the machine shop drawings in use. In summary the MSC calibration inspection tools and equipment is being well maintained and controlled.

The inspector reviewed MSC procedure QA-09, "Welding and Brazing," Revision 8, effective 1/10/2007, and determined that step 6.1.1 requires the MSC Manufacturing Manager or Designee to prepare WPS (welder procedure specification) in a format equivalent to the forms specified in ASME Section IX. A MSC WPS was noted to exclude the reference to the ASME Section IX code and also did not identify which gas flow rates included on the form applied to the shielding and the backing as required for GTAW application under ASME Section IX. This discrepancy has been identified on the Notice as a violation.

The inspector further reviewed MSC procedure QA-09, and determined that steps 6.6.2, and 6.6.3 requires that filler material be returned and only one heat number of material to be issued at one time. The inspector noted that the form found on Attachment 2 of the current procedure does not provide for recording of either the amount of unused filler or the heat number of the material originally issued. The inspector performed sample reviews of filler metal issue log forms and identified the layout of the form did not allow for the consistent documenting of the identity of the material by heat number on issuance and return, nor did the current form allow for documenting of the quantity of filler metal returned. This discrepancy has been identified on the Notice as a violation.

The inspector reviewed MSC procedure MG-01, "Manufacturing Process Control," Revision 7, effective 12/06/06, and noted that the procedure requires traceability but does not appropriately address the overall control of materials, parts, or components. The inspector toured the fabrication shop areas and identified that MSC personnel failed to control materials, parts or components according to the licensee's requirements (locating pins, marking pens, brazing paste, O-rings, and machined parts are examples of the uncontrolled materials). This discrepancy has been identified on the Notice as a violation.

02.06 Observe activities affecting safety aspects of the packaging (such as fabrication, assembly, and testing) to verify that they are performed in accordance with approved methods, procedures, and specifications.

The inspector reviewed samples of documents provided by MSC staff. The inspector also interviewed MSC QA Manager and the MSC Senior Document Control Specialist in regard to control of MSC documentation.

The inspector noted during a walk-down verification of controlled documents, at work station podiums, against the controlled log required by the MSC procedure QA-06, "Document Control," Revision 11, effective 12/15/2006, step 6.7, that the MSC Senior Document Control Specialist had excluded one of the controlled procedures in use in the MSC work areas. The controlled log was determined to inaccurately represent the approved procedures for use. The NRC inspector did note that the MSC Document Control Specialist had correctly provided the proper controlled documents at the podiums in the work areas sampled during the inspection. This noncompliance was noted as a violation of cited requirements in the Notice. The MSC Senior Document Control Specialist described to the inspector the process used for controlling changes to the MSC procedures and distribution of controlled copies. The inspector noted that the description matches the direction provided in the MSC procedure QA-06, noted above.

The inspector reviewed the MSC procedure QA-05.1, Procedures, Plans, and Manuals, Revision 2 and witnessed on multiple occasions the use of the electronic control process for providing access to MSC procedures. This process allows use of procedures from a variety of locations at the MSC facility and ensures that the system is supplying each user with the current procedure version.

Other than the noted discrepancies, indications from the inspection helped the inspector to determine that overall MSC activities are performed in accordance with approved methods, procedures, and specifications.

02.07 Review selected drawings and records, and interview selected personnel, to verify that the procurement specifications for materials, equipment, and services received by the QA Program holder meet the design requirements.

The inspector recognized for the MIDUS fabrication activities that a graded approach was provided through the design aspects of the packaging, as supplied by Energy Solutions - Spent Fuel Division. The inspector determined that the graded approach has been carried through to fabrication activities currently being performed at MSC as described in the TYCO01.1040 MIDUS "Transportation Package Confirmatory Test Specification, Revision 2.

The inspector reviewed two purchase orders to determine how the graded approach was applied consistent with the importance to safety and identity of the materials used for fabrication were controlled and implemented (SFD Purchase Order (PO) Number 06-SFD-004, Rev. 0 dated 12/21/2006, SFD PO Number 06-SFD-004, Modification 1, dated 01/25/2007).

The inspector noted that both POs clearly indicated that a graded approach to QA is applied consistent with importance to safety has been invoked on the fabricator and materials, structures, systems and components covered by the QA Program have been identified and documented.

02.08 Review selected records and interview selected personnel to verify that a nonconformance control program is effectively implemented, and that corrective actions for identified deficiencies are technically sound and completed in a timely manner. The inspector reviewed multiple MSC Conditions Adverse to Quality Reports (CAQRs) and noted that MSC has implemented their program requirements by the documenting of multiple material procurement control deficiencies. Associated documents: 2007-08 issued 2/1/2006, 2007-12 issued 2/4/2006, 2006-10 issued 6/29/2006, 2006-22 issued 7/14/2006, and 2006-48 issued 10/10/2006.

The inspector also discussed control of the corrective action process and reviewed a sample of the nonconformance log provided by MSC. The log clearly provides an acceptable method of tracking subject, issuance dates, closure dates, and responsible persons, as well as identifying the program criterion the action is against. The inspector determined that the corrective action process was being effectively implemented.

02.09 Review selected records and procedures, interview selected personnel, and observe selected activities affecting the safety aspects of the packaging to verify that individuals performing activities affecting quality are properly trained and qualified, and to verify that management and QA staff are cognizant and provide appropriate oversight.

The inspector determined the acceptable authority of QA personnel from interviews with MSC staff and from descriptions of authority provided in the MSC QAM, as well as individual responsibilities and authorities described in implementing procedures.

The inspector sampled training records of four (4) personnel from the welding, machining, engineering and quality areas of MSC. Of the records sampled, the inspector determined that discrepancy existed between a review of the MSC required training matrix and the completed training matrix. The discrepancy indicated from the inspectors review of MSC procedure QA-02, "Training Plan," Revision 7, effective 12/21/2006, that step 5.3 requires MSC supervisors to ensure workers do not perform work where the skill or training required have lapsed or is missing. The inspection identified that a MSC supervisor assigned an employee to perform work in an area where the employees training had not yet been completed. The inspector was advised by MSC management that the recently hired employee was previously experienced in the area that training had not yet been completed. The MSC QA Manager initiated CAQR 2007-16 to document the deficiency. However, the inspector was advised that the required training was completed by the MSC employee shortly after the discrepancy was identified. This discrepancy has been identified on the Notice as a violation.

The inspector interviewed the MSC RSO/Training Coordinator and the MSC Administrative Assistant responsible for control of the training program. Both MSC employees were very knowledgeable about the program and the actual control aspects in place at MSC. The inspector reviewed the process for tracking required reading as well as the MSC procedure, QA-17, Quality Records Management, Revision 1, effective 5/26/06, attachment 2, Records Inventory and Disposition Schedule (RIDS). The inspector noted that training records were identified under both the Training Plan/Lesson Plan Record Series Title and the Personnel Record Series Title with the appropriate retention requirements noted.

The inspector asked for any MSC Condition Adverse To Quality Reports (CAQRs), associated with the MIDUS fabrication work, for review by the inspection team. The team separated the 37 CAQRs primarily by subject area into four primary groups. The CAQRs were sorted by the inspectors for sampling as follows: Material Control, BFS Review/Interface, Program/Procedural Control, Out of Tolerance/Vendor Control issues. The team reviewed a sample of the 37 CAQRs and found them to be initiated and handled according to the MSC procedure QA-15,

Conditions Adverse to Quality/Corrective Action, Revision 5, effective 01/29/07.

The inspector noted that, on February 4, 2007, CAQR 2007-12 identified and documented the fact that material purchased for the fabrication of the MIDUS transportation packaging was purchased to a lower level than the material specification actually required. The CAQR documented that, upon review and request, the material vendor was able to provide suitable documentation to show that the material actually met the higher specified requirements. The inspector noted that each CAQR was logged and tracked in an electronic database and that once the CAQR is initiated it is evaluated for initial recommended action(s). The inspector noted that in most cases these recommended actions provided direction to curtail the condition in question.

The inspector reviewed the MSC procedure, QA-17, Quality Records Management, Revision 1, effective 5/26/06, attachment 2, Records Inventory and Disposition Schedule (RIDS) and noted that nonconformance reports were identified under the Record Series Title with the appropriate retention requirements noted.

02.10 Verify that audits of the QA Program and activities affecting the safety aspects of the packaging are scheduled, have been performed as scheduled, and that identified deficiencies have been satisfactorily resolved in a timely manner.

The inspector reviewed the BNG Fuel Solution audit report and evaluation of MSC for BFS - Fuel Solutions (BFS) (now Energy Solutions - Spent Fuel Division) approved vendor listing (AVL) which was identified as V05-01, dated 7/11/05. The inspector noted that 17 of the 18 quality criteria were assessed (MSC does not currently perform design work). In addition, the inspector noted that 29 implementing procedures were also reviewed during the audit. The audit resulted in 5 findings and 12 observations and was well documented and resulted in findings representative of the audit effort. This same audit was also identified as A-05-012 and was used as BNG America's annual audit of MSC. The annual audit was performed by outside personnel due to MSC's small corporate size. The inspector noted that the audit scope and scheduling was determined as appropriate by BFS.

The inspector also reviewed the Energy Solutions, BNG-America, LLC annual audit of June, 2006 identified as A-06-009. The audit results indicated four (4) findings and three (3) observations were identified. The inspector also reviewed audit A-06-010, performed from October 25-27, 2006 and again performed by Energy Solutions, BNG-America, LLC. This audit focused on the implementation of the MSC QA program as applied to the fabrication of the first three test articles for the medical isotope depleted uranium shielded (MIDUS) transportation cask and as a readiness review to begin the MIDUS transportation cask fabrication. This audit was also used to satisfy the requirement for an annual audit evaluation. The audit results indicated nine (9) findings which were dispositioned by MSC as of December 15, 2006. Essentially all actions to prevent recurrence had been completed at the time of the NRC inspection.

The inspector noted that personnel independence for auditors is required by Section 18 of the MSC QAM and was determined to be acceptable from the sample audits reviewed during the inspection.

Summary

Overall, from the results of the inspection, the MSC quality program is effectively implemented even though discrepancies exist in the areas of procedural noncompliance and adequacy. The discrepant areas are reflected in the Notice issues to Energy Solutions - Spent Fuel Division.