NRC FORM 591S PART 1
(8-2002)
10 CFR 2.201

U.S. NUCLEAR REGULATORY COMMISSION

SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

1. LICENSEE/CERTIFICATE HOLDER	2. NRC/REGIONAL OFFICE
Alpha-Omega Services, Inc. 9156 Rose Street Bellflower, CA 90706 REPORT NUMBER(S): 71-0086/2008-201	Division of Spent Fuel Storage and Transportation U. S. NRC M/S EBB-3D-02M Washington, DC 20555-0001

3. LICENSEE/CERETIFICATE NUMBER(S)	4. INSPECTION LOCATION	5. DATE(S) OF INSPECTION
71-5979 (CoC) / 71-0086 (QA)	Bellflower, CA	12/16-17/08 and 02/03-04/09

The inspection was an examination of the activities conducted under your NRC-approved Quality Assurance program as they relate 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 inspectors. The inspection findings are as follows:

☐ 1. Based on the inspection findings, no violation or nonconformances were identified.

☐ 2. Previous violations(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 Actions(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 CFR19.11.

(Violations, Nonconformances, and Corrective Actions)

During an NRC inspection conducted at the Alpha-Omega Services, Inc. (AOS) facility in Bellflower, CA, December 16 and 17, 2008 , and February 3 and 4, 2009, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG-1600, the violation is listed below.

10 CFR 71.133, "Corrective Action," states, in part, that the certificate holder (AOS) shall establish measures to assure that conditions adverse to quality, such as deviations and nonconformances, are promptly identified and corrected. Contrary to this requirement, following issues identified in late 2004 and early 2005 by AOS regarding a CoC 5979 packaging, sold to another company, that had significant deviations and nonconformances with regard to its CoC design configuration, AOS failed to promptly identify and correct significant deviations and nonconformances with the five CoC 5979 packagings in its possession. Deviations and nonconformances with CoC design requirements for all five CoC 5979 packagings in AOS' possession were not identified until late 2008.

This is a Severity Level IV violation (Supplement VI).

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 I made in accordance with the requirements of 10 CRF 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	Troy Hedger, CEO AOS		3/12/09
NRC INSPECTOR	Robert Temps	Robert J Temps	03/12/09

INSPECTOR NOTES COVER SHEET

Licensee/Certificate Holder (name and address)	Alpha-Omega Services, Inc. 9156 Rose Street Bellflower, CA 90706
Licensee/Certificate Holder contact and phone number	Mr. Troy Hedger, CEO 562-804-0604
Docket No.	71-0086
Inspection Report No.	71-0086/2008-201
Inspection Date(s)	December 16 and 17, 2008 and February 3 and 4, 2009
Inspection Location(s)	Bellflower, CA
Inspectors	Rob Temps, Senior Safety Inspector, Team Leader Earl Love, Safety Inspector
Summary of Findings and Actions	This Safety Inspection report refers to the special team inspection conducted by the U.S. Nuclear Regulatory Commission (NRC) during above dates. The team initially performed an independent inspection of four of the five CoC 5979 packagings in AOS' possession to ascertain their compliance with the CoC 5979 design drawings. Following the identification of numerous deviations and nonconformances with the approved design, the team performed additional inspection at a later date to observe and assess repair activities that AOS undertook to return two of the packagings to CoC design conformance. As documented on the Form 591 and in this inspection report, a Notice of Violation (NOV) was issued to AOS for their failure to promptly identify and correct deviations and nonconformances in their CoC 5979 packagings following AOS' identification in late 2004 of deviations and nonconformances of a CoC 5979 packaging sold to another company. Based on the NOV and from a limited review of other aspects of AOS' NRC-approved quality assurance (QA) program, the team assessed that while the basic structure of AOS' QA program was adequate, AOS' implementation was programmatically weak. This concern was communicated to AOS during a formal inspection exit meeting, held by telephone, on March 12, 2009, at which time AOS indicated they would implement actions to strengthen their QA program implementation.
Lead Inspector Signature/Date	Robert Temps 03/12/09
Inspector Notes Approval Section Chief Signature/Date	David W. Pstrak 3/12/09

Inspection Background

Alpha-Omega Services (AOS) is the holder of NRC Certificate of Compliance (CoC) 5979. The CoC was originally scheduled to permanently expire on October 1, 2008. By letter dated October 21, 2008, (reference ML082960023) the NRC granted authorization to AOS to continue making limited shipments, subject to a number of conditions, in the five CoC 5979 packagings in AOS' possession. Following the granting of the authorization, the NRC initiated a special inspection to perform a review of the five packagings to compare their present configuration to that described in the CoC reference design drawings. This review was prompted by the fact that 1) the packagings would be used for an additional two years, 2) the NRC had previously identified weaknesses in AOS implementation of their NRC-approved Quality Assurance (QA) program, and 3) as a result of an issue that led to the issuance of escalated enforcement action against AOS (reference EA-07-215, ML073530480) involving the improper certification of a CoC 5979 packaging (sold to another company) as complying with the CoC when in fact its configuration did not.

Packaging Inspection Observations and Findings

On December 16, 2008, the team performed an inspection entrance meeting with AOS personnel at their facility in Bellflower, California. The team described the methodology that would be used to inspect the packagings. AOS informed the team that they had four packagings at their facility and that a fifth was located at the General Electric facility in Vallecitos, California. AOS also informed the team that they had initiated their own review of each packaging's configuration to the CoC drawings and had identified and documented a number of discrepancies in three of the five packagings inspected to date.

Per previous request, the team was supplied with four sets of the CoC design drawings that had been enlarged to facilitate their use in performing the team's inspection. The team systematically performed physical inspections of packagings designated AOS II, IIA, IIB, and IIIA, with any discrepancies documented on the supplied CoC drawings. The team identified numerous discrepancies between each packaging's as-found configurations against the CoC design drawings. Examples of common discrepancies noted in the packagings that were inspected by the team included:

- missing 2" by 2" crush strips on some or all five internal faces of each overpack,
- addition of bolts with nuts through each overpack's four vertical faces that penetrated through the internal wood panels in contradiction to Note 2 of Drawing 0093 that stated "the laminated wood structures are not fixed to the steel skeleton,"
- variations in the number of overpack closure bolts against the 40 bolts shown on Drawing 0093,
- addition of drilled holes on various faces of the inner cask support structure,
- installation of threaded inserts used for securing the cask end caps,
- and, end caps with lead inserts filling the internal "void" space and two end caps that did not match any of the three allowed end cap configurations.

The team's inspection results were then compared to AOS' inspection results and found to be in

general agreement. Due to the number of issues identified, and the need to discuss the issues with senior NRC management, the team held an inspection debrief on the afternoon of December 17, 2008, rather than a formal exit meeting. The team requested that AOS review its shipping history in the non-compliant CoC 5979 packagings and to make any required 10 CFR 71.95 report to the NRC. The team also advised AOS to contact the appropriate 10 CFR Part 71 licensing project manager to inform them of the non-compliance issues and to discuss actions that AOS would take to bring the packagings into regulatory compliance. AOS stated they would undertake both actions.

The team returned to AOS' facility February 3rd and 4th, 2009. In the interim, AOS had completed all of their packaging inspections and had determined a path forward to return two of the five packagings to regulatory compliance to support planned shipments. AOS' plan involved significant repairs including to the base and side wood panels of the overpacks as well as welding and other extensive fabrication operations needed to return the packagings to CoC compliance. As these efforts were beyond AOS' capabilities, AOS contracted with Ranor, Inc., (a fabrication shop based in Massachusetts), to effect the necessary repairs. AOS had also contacted the NRC's Part 71 licensing project manager and planned to submit revised CoC design drawings for review and approval by the NRC, in the form of a CoC amendment, following completion of the repair activities.

The team observed the repair activities performed by Ranor personnel at AOS' facility. The team noted that Ranor had prepared, for AOS' approval, very detailed repair procedures. Measures were also put in place to allow rapid approval and implementation of repair procedure changes due to identification of new discrepant conditions, or changes in original conditions, as the repairs were implemented. The team noted high quality work by Ranor in the welding activities and in the associated non-destructive inspection activities (visual and magnetic particle testing) required by the procedures. Woodworking activities were also of high quality. During the repair process, it was determined that one of the packagings would need to be sent to Ranor's facility for additional metalworking that could not be performed with the tools and facilities at hand at AOS' facility.

The team held an inspection debrief with AOS and Ranor personnel on February 4th, 2009. The team noted as positives the detailed work procedures prepared by Ranor and their high quality implementation in effecting the repairs and returning the two packagings to full compliance with the CoC design drawings. The team informed AOS that a formal inspection exit meeting, to be conducted by telephone, would be arranged for a later date.

Other Inspection Issues

The team performed a limited review of AOS' corrective action program and identified that AOS had not entered any issues into its corrective action program system since the NRC's last inspection in 2004. The team noted that at a minimum, it would have expected that the issue and corrective actions for the escalated enforcement action (EA-07-215) would have been entered into the corrective action system for formal tracking and response.

10 CFR 71.133, "Corrective Action," states, in part, that the certificate holder (AOS) shall establish measures to assure that conditions adverse to quality, such as deviations and nonconformances, are promptly identified and corrected. Contrary to this requirement, following issues identified in late 2004 and early 2005 by AOS regarding a CoC 5979 packaging sold to another company that had significant deviations and nonconformances with regard to its CoC design configuration, AOS failed to promptly identify and correct significant deviations and

nonconformances with the five CoC 5979 packagings in its possession. Deviations and nonconformances with CoC design requirements for all five CoC 5979 packagings in AOS' possession were not identified until late 2008. This violation of NRC requirements is cited in the Form 591 associated with this inspection report.

The team considered the above examples to be examples of ineffective implementation of AOS' corrective action program.

The team also performed a limited review of AOS' internal audit program and noted that the audit of the QA function for 2008 had been scheduled to be performed by an individual lacking the proper independence from the QA function. Specifically, the individual was in training status for auditing purposes and would conduct the audit "under instruction" from the QA manager while performing the annual audit of the QA function. Given that the QA manager would need to sign off on the audit conducted by his trainee, and that the areas audited were under the purview of the QA manager, this was considered a lack of required independence. After discussing this concern with AOS management, a commitment was made to have an outside lead auditor perform the 2008 audit.

Inspection Conclusions

Based on the corrective action NOV, and from a limited review of other aspects of AOS' NRC-approved quality assurance (QA) program, the team assessed that while the basic structure of AOS' QA program was adequate, AOS' implementation was programmatically weak. These concerns were communicated to AOS during a formal inspection exit, held by telephone, on March 12, 2009, at which time AOS indicated they would implement actions to strengthen their QA program implementation. The NRC will maintain AOS on an escalated inspection frequency until consistent improved QA program implementation is demonstrated by AOS.