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
NAC International, Inc. 3930 East Jones Bridge Road Norcross, GA 30092 REPORT NUMBER(S) 72-01015/2004-202	Headquarters

3. LICENSEE/CERTIFICATE NUMBER(S)	4. INSPECTION LOCATION	5. DATE(S) OF INSPECTION
72-0105	Canonsburg, PA	8/23-27/2004

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)

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	Howard Smith	Howard Smith	8/27/2004
NRC INSPECTOR	Robert Temps	Robert R Temps	8/27/2004

INSPECTOR NOTES COVER SHEET

Licensee/Certificate Holder (name and address)	NAC International, Inc. 3930 East Jones Bridge Road Norcross, GA 30092
Licensee/Certificate Holder contact and phone number	Howard Smith 770-447-1144
Docket No.	07201015
Inspection Report No.	2004202
Inspection Date(s)	August 23-27, 2004
Inspection Location(s)	Ionics: Canonsburg and Bridgeville, PA
Inspectors	Robert Temps Jim Pearson Frank Gee Mike Karmis
Summary of Findings and Actions	This inspection involved a review of NAC's fabricator, Ionics. At the time of the inspection, TSCs and VSCs for use at the Palo Verde Nuclear Plant. Overall, Ionic's fabrication activities and NAC's oversight of the fabrication activities, were assessed to be good. No significant adverse findings were noted and no cited or non-cited violations were identified.
Lead Inspector Signature/Date	Robert R. Temps 09/03/04
Inspector Notes Approval Section Chief Signature/Date	Robert J. Lewis 9/7/04

INSPECTOR NOTES: SECTIONS 02.01 THROUGH 02.08 OF IP 60852 WERE PERFORMED DURING THE INSPECTION WITH RESULTS DOCUMENTED BELOW:

02.01: Determine whether the fabrication specifications are consistent with the design commitments and requirements documented in the SAR, and, as applicable, the CoC or the site-specific license and technical specifications.

The team's focus in addressing this inspection element was on the process Ionics uses to translate vendor supplied design documents and drawings into controlled Ionic's procedures and drawings for fabrication activities. Section 02.05 verified that procured materials were consistent with design drawing specifications.

Procedures Reviewed:

Ionics, Inc. Commercial Nuclear Quality Assurance Manual (QAM)
QAP-301, "Control of Design Changes"
QAP-610, "Canonsburg Document Control"

The team reviewed the implementation of design control requirements of the Ionics QAM as applied to the fabrication process. The team met with the Project Engineer responsible for implementing elements of the Ionics QAM Section 6 (Document Control) and QAP Section 3 (Design Control). The Project Engineer was knowledgeable of the processes and was assessed to be implementing the design control process in accordance with the QAM and supporting Qaulity Assurance Procedures (QAPs).

The team reviewed the process for translating the vendor supplied design drawings and documents into fabrication drawings as well as the controls on any changes to the drawings. The team determined that controlled documents are tracked through the use of the Document Control Database (DCD) and the Approved Documents List (ADL) as described in QAP-610. For NAC fabrication, all fabrication drawings and changes to them were directly controlled by NAC so the Ionics Engineering Change Notice (ECN) process was not used. The Approved Documents List for Part 72-related Shop Orders was reviewed and the team took a sample of controlled documents and verified use of the most recent revisions of the documents during inspection of activities at the two (Canonsburg and Bridgeville) fabrication facilities. No concerns were identified.

02.02: Determine whether corrective actions for identified fabrication deficiencies have been implemented in a time frame commensurate with their significance, and whether nonconformance reports documenting the deficiencies have been initiated and resolved.

Procedures reviewed:

QAP 1500, "Non-conforming Material Control"
QAP 1600, "Corrective Action Program"

The team reviewed the procedures controlling the problem identification and corrective action program used by Ionics. Discussions were held with the Quality Director, who controls the program, and the team also reviewed selected Non Conformance Reports (NCRs), Receipt

Rejection Reports (RRRs) and Request for Corrective Action Reports (RCAs). Ionic's resolution of the issues documented in the various reports was assessed to be appropriate and the reports were closed in an appropriate timeframe commensurate to their importance. All of the reports reviewed were closed at the time of the inspection. The team noted that the QA Director performs tracking and trending of all of the reports and this information is presented in the annual Management Assessment report issued by the QA Director.

02.03: Determine whether individuals performing quality-related activities are trained and certified where required.

Procedures reviewed:

QAP-210, "Inspection and Test Personnel Qualifications"
QAP-220, "Training and Indoctrination"
QAP-900, "Qualification and Certification of NDE Personnel"
QAP-940, "Special Process Personnel Qualifications"
QAP-1800, "Training and Qualification of Auditors and Lead Auditors"

The team reviewed selected portions of audits, travelers, procedures, and drawings to identify personnel performing activities affecting quality. From the review, the team verified the qualifications and/or certifications of fourteen Ionics personnel who perform various activities such as welding processes, NDE processes, or quality auditing activities. From the document reviews and discussions with personnel, and through direct observation of fabrication activities, the team assessed that Ionics personnel were qualified and appropriately trained and/or certified for the performance of the quality-affecting activities.

02.04: Determine whether the offsite fabricator's personnel are familiar with the specified design, designated fabrication techniques, testing requirements, and quality controls associated with the construction of the DCSS.

The team reviewed various documents as discussed throughout this report and also held discussions with personnel at all levels of the Ionics organization, including shop/floor personnel performing fabrication, QA/QC personnel, and engineering and management personnel. From these discussion and observations, the team concluded that Ionics personnel were familiar the designs under fabrication, and with the associated fabrication techniques, testing requirements and quality controls. No concerns were identified.

As part of this element, the team reviewed Ionics controls on the use of measuring and test equipment (M&TE) and also observed the performance of various non-destructive examination techniques.

With respect to M&TE, the team toured the Bridgeville and Canonsburg facilities and took a sample of the labeled M&TE to verify it was in the calibration program and being properly controlled in accordance with procedure QAP 1200, "Measuring, Test, and Inspection Equipment Calibration Procedure." Equipment in support of fabrication activities was reviewed and calibration stickers were inspected for current calibration dates. The calibration and recall program uses tracking software and recall reports are generated weekly. The output of the tracking database was reviewed and found to be current with no equipment was past required

calibration recall dates. The team verified traceability to NIST calibration standards. The team did identify one question regarding the calibration technique used for two portable measuring devices used by Ionics. Ionics contacted the device vendor and was subsequently informed that the method being used for calibration was acceptable.

The team observed the performance of QAP PT-1339, "Liquid Penetrant Examination Procedure," Revision 0, dated March 14, 2003. This procedure governed the performance of liquid penetrant examinations to detect cracks and other discontinuities on the surface of non-ferromagnetic materials and welds. The operator followed the procedure at the test station and also used properly labeled chemicals with the batch number. The test did not identify any defects on the welds. The team concluded that the test was performed properly and that the controlled procedure was well-written.

During the inspection the team witnessed a portion of radiographic activities for a canister shell. The team reviewed the weld control record for the radiographed areas, viewed the setup of the radiographs performed, and viewed the films and radiograph inspection report which noted acceptance of the radiographs by the Ionics radiographer. No concerns were identified.

02.05a: Determine whether materials, components, and other equipment received by the fabricator meet DCSS design procurement specifications.
02.05b: Determine whether the procurement specifications conform to the design commitments and requirements contained in the SAR and, as applicable, the CoC or the site-specific license and technical specifications.

The team reviewed procurement procedures, interviewed procurement QA personnel, reviewed various approved vendor audits/surveillances, and traced the procurement history of consumable items as well as components undergoing fabrication to verify that they were procured from qualified suppliers and met specifications.

The following procedures were reviewed:

QAP-400, "Procurement Document Control"
QAP-700, "Supplier Qualification and Oversight"
QAP-720, "Surveillances"
QAP-830, "Control of Detrimental Material"
QAP-1000, "Receiving Inspection Procedure"
Acceptable Products List
Ionics Approved Supplier List (ASL)

The following consumable items were reviewed for their procurement history:

Purchase Order (PO) 1142B-39 Rev. 0, 1142B-38 Rev. 0, and 1218-09 for weld wire. The team reviewed associated Inspection Receiving checklists and certified material test reports (CMTRs).

The team reviewed PO 1-724-4394 for Magnaflux Developer SKD-S@, Batch 03M07K, used for dye penetrant examinations. The team verified that all the requirements were met including those for chlorides, fluorides and sulphur. The team did identify some apparent inconsistencies

in different procurement specifications related to the acceptable halide (chloride and fluoride) levels and these were discussed with Ionics for appropriate resolution.

Several NAC material components being used at the time of the inspection in fabrication activities were reviewed for their procurement history. For all of the items reviewed, material inspection reports were on file, CMTRs and other laboratory analyses as needed were included, and the material specifications were traced back to the vendor design drawing specifications and determined to be in accordance with the design specifications. No concerns were identified.

The team also reviewed the Ionics Approved Supplier List (ASL) and the process for qualifying and maintaining suppliers on the ASL. All materials reviewed were verified to have been procured from suppliers listed on the ASL. No concerns were identified with the procurement process.

Overall, the team concluded that Ionic's procurement activities were being performed in accordance with their controlling procedures. Procurement personnel clearly understood the procurement process and the procedures used. Methods used to approve addition of suppliers to the ASL were appropriate and the audits and surveillances used to qualify and maintain suppliers on the ASL were adequate. Where issues identified in the audits required response by the supplier, documentation of supplier corrective action was included in the audit files. As required by Ionics QAPs, all audit findings were verified to have been documented in RCAs.

02.06: Determine whether DCSS components are being fabricated per approved QA and 10 CFR Part 21 implementing procedures and fabrication specifications.

All of the fabrication activities observed or reviewed by the team were determined to be conducted in accordance with approved Ionics QA procedures and fabrication specifications. The team noted that project specific procedures for vendor fabrication taking place at Ionics required adherence to 10 CFR Part 21. The team verified that Part 21 requirements were invoked where required on the various POs reviewed.

02.07a: With regard to fabrication activities, determine whether they are conducted under an NRC-approved QA program (10 CFR 72.140).

The Ionics QA Program is not directly an NRC-approved program; however, NAC's QA Program is an NRC-approved program and the vendor contractually imposed QA requirements on Ionics that meet NRC's requirements. All of the quality activities performed by Ionics and observed or reviewed by the team were determined to meet NRC's QA requirements.

02.07b: With regard to fabrication activities, determine whether the provisions of 10 CFR Part 21, "Reporting of Defects and Noncompliance," for reporting defects that could cause a substantial safety hazard have been implemented.

The team determined that Ionics has an approved procedure governing the reporting of defects in accordance with 10 CFR Part 21.

02.07c: With regard to fabrication activities, determine whether the fabricator's personnel are familiar with the reporting requirements of 10 CFR Part 21.
02.07d: With regard to fabrication activities, determine whether the fabricator has complied with 10 CFR 21.6, "Posting requirements."

The team verified that the Part 21 requirements were posted in multiple accessible locations at both the Canonsburg and Bridgeville fabrication facilities. A review of personnel training records indicated that Ionics personnel had received general training on Part 21 requirements.

02.08a: With regard to quality assurance activities, determine whether the fabricator has been audited by either the licensee or CoC holder.
02.08b: With regard to QA activities, determine whether for selected audits and inspection findings from QA audit or surveillance and/or inspection reports issued in the previous 2 years, the findings were appropriately handled with corrective actions implemented in a time frame commensurate with their safety significance.

The team determined that Ionics QA personnel perform planned annual audits of the Ionics QA Program, as well as audit and surveillance activities of suppliers on the ASL. The annual audit is led by a contract Lead Auditor who has the required independence from the QA organization. Ionics is also audited by the vendors who have contracted with them for cask fabrication activities. Vendor audit reports were reviewed, as well as numerous periodic surveillance reports. Audit findings were documented in Ionics RCAs and were addressed in a time frame commensurate with their importance. The team noted that the cask vendors maintain essentially near-continuous on-site coverage during fabrication activities.

02.08c: With regard to quality assurance activities, determine whether supervision and quality control/quality assurance personnel perform appropriate oversight during fabrication activities.

To help determine if appropriate oversight had been applied to fabrication activities the team observed various activities in the field and reviewed various documents and procedures. For fabrication procedures (travelers) the team noted the incorporation of hold and witness points in them at various points. The team witnessed the completion of hold point sign-offs during the inspection. Document reviews and discussion with Ionics quality inspectors/NDE examiners, as well as Ionics auditors and some of the on-site oversight personnel, indicated that sufficient levels of oversight have been, and are, being performed of the Ionics fabrication activities.