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**U.S. DEPARTMENT OF ENERGY  
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT  
OFFICE OF QUALITY ASSURANCE**

**SUPPLIER AUDIT REPORT**

**OF**

**ARI INDUSTRIES, INC.**

**ADDISON, ILLINOIS**

**REPORT NUMBER OQA-SA-97-022  
MAY 19-20, 1997**

Prepared by: *Richard L. Maudlin* Date: 06/03/97  
Richard L. Maudlin  
Audit Team Leader  
Office of Quality Assurance

Approved by: *James B. Horton for* Date: 6/10/97  
Donald G. Horton  
Director  
Office of Quality Assurance

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Enclosure

## **1.0 EXECUTIVE SUMMARY**

The supplier audit of ARI Industries, Inc. identified unsatisfactory conditions which will result in the issuance of one Deficiency Report (DR) to M&O/Sandia National Laboratory (SNL) for action which relates to the Quality Assurance (QA) program for the Office of Civilian Radioactive Waste Management (OCRWM) activities. The DR addresses deficiencies which relate to the lack of traceability of calibration documentation to the specific equipment calibrated and a lack of traceability of the standards to the calibration data sheets, and a lack of reference on the calibration data sheets to the procedure(s) used to perform the calibrations of the M&O/SNL thermocouples.

The unsatisfactory conditions identified during the audit were discussed with the Quality Assurance Manager, ARI Industries, Inc., who agreed to work with SNL in the resolution of the unsatisfactory condition.

The results of the audit warrant a recommendation that shipment of thermocouples calibrated by ARI Industries, Inc. be suspended until an evaluation of the impact of the deficiencies on completed calibrations has been performed and a determination of what actions are necessary to resolve the deficiencies and assure that remedial actions and actions to prevent recurrence have been fully implemented by ARI Industries, Inc. Responsibility for continued use of ARI Industries, Inc prior to resolution of the noted conditions rests with the M&O/SNL.

## **2.0 SCOPE**

The supplier audit was conducted to evaluate the adequacy, implementation, and effectiveness of ARI Industries, Inc.'s quality program. This was accomplished by determining if ARI Industries, Inc.'s program implements the applicable portions of the OCRWM Quality Assurance Requirements and Description (QARD); satisfies the applicable QA requirements specified in the SNL procurement requisition AU-5498; and satisfactorily implements the ARI Industries, Inc.'s Quality Assurance Manual, Revision 01/08/97, as accepted by the M&O/SNL, for the scope of work. The QA program elements determined to be applicable are: Organization; QA Program; Procurement Document Control; Implementing Documents; Document Control; Control of Purchased Items and Services; Measuring and Test Equipment; Corrective Action; QA Records; and Audits.

## **3.0 AUDIT TEAM AND OBSERVERS**

Richard L. Maudlin, Audit Team Leader, Office of Quality Assurance (OQA).

#### **4.0 PERSONNEL CONTACTED DURING FACILITY AUDIT**

J.T. Mulvey, Quality Assurance Manager, ARI Industries, Inc.  
K.E. Hoge, Quality Assurance Engineer, ARI Industries, Inc.  
Tom Restis, Document Control Coordinator, ARI Industries, Inc.  
Richard Guy, Vice President, Marketing, ARI Industries, Inc.

#### **5.0 SUMMARY OF AUDIT RESULTS**

ARI Industries, Inc.'s Quality Assurance Manual, Revision 01/08/97, and associated implementing procedures address the applicable elements of the OCRWM QARD and SNL purchase order for the intended scope of work. Effective implementation of the applicable elements of the QARD by ARI Industries, Inc. is considered satisfactory except for the control of traceability of calibration standards to documentation traceable to National Institute of Standards and Technology (NIST) as noted in the unsatisfactory conditions described in Section 6.0 of this report, "Deficiencies/Recommendations."

The details of the audit, along with the objective evidence reviewed, are contained within the audit checklist, which is available from the OQA's supplier evaluation files.

#### **6.0 DEFICIENCIES/RECOMMENDATIONS**

The unsatisfactory conditions have been documented on the respective corrective action document and submitted to the M&O/SNL for action and resolution. There were no recommendations.

##### **DEFICIENCIES**

DR No. YMQAD-97-D051

ARI Industries, Inc.'s QA Manual, Section QM-11, requires traceability of calibrations to nationally recognized standards in order to assure the reliability of measurement and test results and to demonstrate product conformance. ARI Industries, Inc.'s QSP-11 requires that traceability of measuring and test results to the equipment used will be maintained."

- A. Standards (working thermocouple standard and Precision Resistance Thermometer working standards) used to perform calibrations of SNL Thermocouples could not be traced from ARI Industries, Inc.'s calibration standards to documentation demonstrating traceability to the National Institute of Standards and Technology. Examples of SNL thermocouples evaluated include: LESF-HD-83-WH-1-TC, LESF-HD-84-WH-2-TC, LESF-HD-127-WH-47-TC.
- B. Calibration data sheets documenting the calibrations of SNL thermocouples did not provide traceability to the unique standard used to perform the calibration and did not reference the procedure(s) used to perform the calibrations.