Letter: NLI-QA-3152
Dated: 8/6/2012

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

CC: Chief
Electrical Vendor Branch
Division of Construction Inspection and Operational Programs
Office of New Reactors

From: Aron Seiken
NLI Vice President/General Manager

Subject: Reply to a Notice of Nonconformance
NRC Vendor Inspection Report 99901298/2012-201

As requested by the referenced Vendor Inspection Report, this document contains the response to the identified Notice of Nonconformance in the NRC Vendor Inspection report 99901298/2012-201.

NLI has evaluated the two findings identified and have performed the required actions to correct the issues. The attached response provides the following:

(1) The reason for the noncompliance
(2) The corrective steps that have been taken and the results achieved;
(3) The corrective steps that will be taken to avoid noncompliances; and
(4) The date when the corrective action will be completed.

Please contact me with any questions or comments.

Sincerely,

Aron Seiken
President
Nuclear Logistics, Inc.

Attachment:
NLI-QA-3152 - NRC Report 99901298/2012-201 Finding responses

IE09
NRO

NLI-QA-3152

NRC Report 99901298/2012-201 Finding responses

Finding 99901298/2012-201-01

Per the finding number indicated above:
"NLI failed to establish adequate measures for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the structures, systems, and components to dedicate the services that commercial lab Nemko was requested to do via a purchase order. Specifically, NLI did not identify or verify critical characteristics in their commercial grade dedication of Nemko that would ensure that Nemko would have the capabilities necessary to perform the requirements of the electromagnetic interference (EMI)/radio-frequency interference (RFI) standards requested through NLI's purchase order."

NLI Response:

(1) The reason for the noncompliance - The commercial grade survey for the testing services did not include documenting the critical characteristics that were related to the specific test methods being conducted. The critical characteristics identified in the CGS were general in regards to the testing services program.
(2) The corrective steps that have been taken and the results achieved - A Technical Evaluation was prepared to provide an evaluation to determine the critical characteristics and the dedication method for the required critical characteristics as they are applicable to the testing service provided. A dedication plan was prepared to identify the critical characteristics and acceptance criteria required to dedicate the services provided by NEMKO.
(3) The corrective steps that will be taken to avoid noncompliances – The data collected during the commercial grade survey and V&V activity provided the reasonable assurance that the facility could perform the testing services in accordance with the critical characteristics that were identified for the specific testing methods.
(4) The date when your corrective action will be completed. – Completed

The following documents were prepared:

- Technical evaluation TE-NEMKO-01 [1] was prepared to document the critical characteristics for the dedication of the EMI/RFI testing services.
- Dedication plan VP-NEMKO-01 [2] was prepared for the dedication of the EMI/RFI testing services.
- Dedication report VR-NEMKO-01 [3] was prepared to document the results of the dedication activities. When appropriate, credit was taken for the activities that were previously performed by NLI, including the commercial grade survey and software dedication/verification & validation.

Attachments:

1. Technical evaluation: TE-NEMKO-01
2. Dedication plan: VP-NEMKO-01
3. Dedication report: VR-NEMKO-01

Finding 99901298/2012-201-02

Per the finding number indicated above:
"NLI failed to establish adequate design control measures for verifying or checking the adequacy of design and failed to establish adequate design control measures commensurate with those applied to the original design for the evaluation of modifications done during the qualification process on the Trane Adaptiview Chiller Control system. Specifically, NLI failed to create a discrepancy report and perform an evaluation to determine whether modifications made during the EMI/RFI qualification testing of the Trane Adaptiview Chiller Control system impacted the original design requirements."

NLI Response:

(1) **The reason for the noncompliance** – Failure to follow written procedures
(2) **The corrective steps that have been taken and the results achieved** - NLI issued Corrective Action NLI-CAR-2012-08 to document the non-compliance in accordance with the NLI QA program. The required documentation was generated per the NLI procedure to document the required modification.
(3) **The corrective steps that will be taken to avoid noncompliances** – Training was conducted with the Engineering staff regarding the specific requirements within the NLI procedures
(4) **The date when your corrective action will be completed**. - Completed

Evaluations of the required modifications were not documented in accordance with the NLI written procedure. Although the required modifications were not documented and evaluated in a Discrepancy Report in accordance with the NLI procedure, the required modifications were documented in the qualification report and the supporting design drawings [5]. The modifications were verified to be acceptable by successfully passing the required qualification tests. Upon the identification of this non-conformance during the inspection, NLI issued the following documents:

- Discrepancy Report DR-3306, revision 1 [4] was issued to document the required modifications and to document that the modifications do not impact the original design requirements.
- NLI issued corrective action NLI-CAR-2012-08 [6] to address the failure to follow the procedure requirements regarding modifications to qualification test specimens and production units.

The issue was determined to not be a significant safety concern. The design and qualification of the equipment were not affected by the non-conformance. The equipment modifications were properly added to the design drawings and the production units were built to the revised design drawings, with the modifications.

The NLI procedure was reviewed and it was determined that the requirements were adequately stated. Training was administered to the Engineering staff regarding the requirements as they relate to documenting required modifications during qualification tests [7].

All required actions regarding this finding have been completed.

Attachments:

4. Discrepancy report DR-3306, revision 1.
5. Drawings
    a. 05215515-ENCL-1, Rev. 2 (addition of the Flat Washer)
    b. 05215515-GVA-1, Rev. 2 (Addition of the Ferrite Filter)
6. Corrective Action NLI-CAR-2012-08.
7. Training Records

Attachment 1

TE-NEMKO-01

NLI Technical Evaluation

TE-NEMKO-01, revision 0

1.0 **Component/Service**: Commercial EMI/RFI testing service provided by NEMKO.

1.1 This technical evaluation provides the requirements for NLI dedication of commercially procured EMI/RFI testing services in accordance with specific ESD testing standards.

1.2 The specific standards will be identified in the applicable qualification and dedication documentation.

2.0 **Functional Classification**: Test Service

3.0 **Safety Function**: Commercially produced test results used as input into nuclear safety related qualification, dedication and design activities.

4.0 **Dedication Methodology**: Commercial Grade Survey (CGS) at test facility. Source Inspection (SI) during the actual testing as applicable.

5.0 **Identification of Critical Characteristics**:

Potential failure mechanism	Critical characteristic	Methodology
Incorrect Measurement &Test Equipment (M&TE) used for required test method.	M&TE and required test parameters shall be per the required MIL-STD-461E and IEC-61000 series test methods.	Commercial Grade Survey or Source Inspection
Inadequate M&TE calibration status.	Calibration shall be current for the required M&TE and meet the requirements of the MIL-STD-461E and IEC-61000 series test methods.	Commercial Grade Survey or Source Inspection
Incorrect test setup.	Test setup shall be correct for the required MIL-STD-461E and IEC-61000 series test methods.	Commercial Grade Survey or Source Inspection
Incompetent or inexperienced test personnel.	Test personnel shall be experienced. They shall be trained on the test methods and equipment required.	Commercial Grade Survey or Source Inspection
Unapproved/ improper use of automation or lab software.	Lab software utilized shall be dedicated/validated based on the intended use during the required testing.	Commercial Grade Survey or Source Inspection
Incorrect execution of test method	Vendor test methodology and required M&TE shall meet the MIL-STD-461E and IEC-61000 series requirements for the NLI specified methods.	Commercial Grade Survey or Source Inspection

Potential failure mechanism	Critical characteristic	Methodology
Incorrect test procedures/ methods utilized.	MIL-STD-461E and IEC-61000 series test procedures/methods utilized by the vendor shall be as prescribed in the NLI test plan, purchase specification and/or PO requirements.	Commercial Grade Survey or Source Inspection
Incorrect test report documentation. Incorrect documentation of M&TE used.	Test reports shall accurately document the test MIL-STD-461E and IEC-61000 series methods executed, including M&TE used for testing.	1. Commercial Grade Survey or Source Inspection 2. NLI Engineering review of 100% of NEMKO test reports.

6.0 Evaluations:

6.1 This technical evaluation identifies the potential failure modes and the associated critical characteristics. The specific acceptance criteria are documented in the dedication plan, based on NLI's use of the commercial test results and NLI experience.

6.1.1 This technical evaluation provides guidelines for the methods that will be used to identify the acceptance criteria for critical characteristics. The acceptance criteria and the basis for the acceptance criteria are documented in the dedication plan.

6.1.2 This technical evaluation provides guidelines for the dedication methodology, based on NLI's experience.

6.1.3 NLI's EMI/RFI test requirements and related quality requirements used to identify the acceptance criteria for the test results produced will be referenced in the dedication plan for the targeted services.

6.2 Commercial Testing Service Approval:

6.2.1 The basis for vendor approval of testing services is documented and maintained in accordance with the NLI QA program.

6.2.2 Monitoring, control and use of NLI approved vendor services:

6.2.2.1 Continuation of vendor approval is at the discretion of the NLI QA department and is based on successful vendor performance during NLI CGS, SI, software evaluation activities and compliance with NLI purchase order requirements, including proper execution of NLI test plans.

6.2.2.2 NLI scope of approval of the vendor can be reduced or eliminated at anytime without notice to the vendor.

6.2.2.3 The scope of the vendor approval cannot be increased without the documented justification required by the NLI QA program.

6.2.2.4 Only the output of the testing services identified in the NLI dedication report related to this TE can be considered for use by NLI in nuclear safety related qualification, dedication or design activities.

6.2.2.5 The scope of NLI's approval of the vendor is defined. Control of services provided, with respect to the approved scope, are verified during CGS and SI activities.

6.2.2.5.1 Use of the vendor outside of the NLI AVL approved scope is not permitted where nuclear safety related equipment or applications are applicable.

6.2.3 Test results provided for NLI EMI/RFI qualification activities.

6.2.3.1 Traceability:

6.2.3.1.1 EMI/RFI qualification is by testing for each configuration. Additional special tests, outside the scope of this TE are performed to document traceability between the EMI/RFI qualified specimen and the supplied units. This traceability is NLI project specific.

Prepared by: Heather Morris	Reviewed by: Tony Bolt	Approved by:
Date: 8/3/12	Date: 8/3/12	Date: 8/7/12

Attachment 2

VP-NEMKO-01

Test Plan: VP-NEMKO-01 rev. 0
Description: Dedication of EMI/ RFI test services provided by NEMKO. NLI approved vendor number AVL-124
Vendor Address: NEMKO USA, 802 N. Kealy, Lewisville TX 75057
Safety Function: NEMKO results produced from the test methods identified in this plan may be used as input into nuclear safety related qualification, dedication and design activities.
NOTE: Where CGS is provided as the Sample Size, the frequency of evaluation shall be in accordance with NLI-PROC-05 latest revision.

Critical Characteristics	Sample Size	Acceptance		
		Criteria	Ref	Method
CC#1 M&TE and required test parameters are per the specified test method	100%	The M&TE and the required test parameters used in the test set up meets the M&TE requirements of the required MIL-STD-461E and IEC-61000 series test methods. Test method requirements are provided in CC#8.	3, 5-9	Commercial Grade Survey
CC#2 Calibration is current for the required M&TE	CGS CGS	1. Vendor has a documented and implemented program for M&TE calibration which meets NLI QA program requirements and the calibration requirements of MIL-STD-461E and IEC-61000 series test methods. 2. Calibration status of M&TE utilized during NLI testing is current.	3, 5-9	1. Commercial Grade Survey for acceptance of vendors M&TE calibration management system. 2. Commercial Grade Survey of acceptance of vendors test execution and documentation process.
CC#3 Test setup is correct for the required test method	100%	Verify the test setup is in accordance with the applicable MIL-STD-461E or IEC-61000 series test method requirements. Test method specific set up requirements are provided in CC#8.	3, 5-9	Commercial Grade Survey of acceptance of vendors test execution and documentation process. Source Inspection for test configuration and operation of equipment under test (EUT) by NLI technician.
CC#4 Test personnel shall be experienced. They shall be trained on the test methods and equipment required.	CGS	Training and experience level of vendor personnel are sufficient to correctly carry out the NLI test requirements. See CC#8 for the required test methods.	3	CGS to evaluate training and experience level of test personnel utilized
CC#5 Lab software utilized has been validated based on the vendor's intended use during the required testing.	100% of software utilized	NLI software V&V has been completed for lab software utilized. See CC#8 for the required test methods.	3	CGS or SI to identify the vendor's use of software to perform NLI required testing. NLI V&V of software utilized.
CC#6 The lab software utilized has been dedicated by NLI to perform its intended safety function.	100% of software utilized	Successful completion of the NLI VVR for the software identified. See CC#8 for the required test methods.	3	NLI Software dedication/V&V (Vendor software validation activities specific to the NLI required test methods may be utilized in NLI V&V activities but they will be subjected to NLI Quality and Engineering approvals. The basis for acceptance of vendor software validation activities shall be documented

Test Plan: VP-NEMKO-01 rev. 0
Description: Dedication of EMI/ RFI test services provided by NEMKO. NLI approved vendor number AVL-124
Vendor Address: NEMKO USA, 802 N. Kealy, Lewisville TX 75057
Safety Function: NEMKO results produced from the test methods identified in this plan may be used as input into nuclear safety related qualification, dedication and design activities.
NOTE: Where CGS is provided as the Sample Size, the frequency of evaluation shall be in accordance with NLI-PROC-05 latest revision.

Critical Characteristics	Sample Size	Acceptance		
		Criteria	Ref	Method
				if utilized).
CC#7 NLI dedicated lab/test software is controlled at the vendor's facility.	100% of software based testing	Verify the NLI controls established in the PO requirements are implemented prior to testing. See CC#8 for software dedication .	3	Source Inspection.
CC#8 Vendor test methodology and required M&TE meets the requirements of the test methods identified. Address CC's 1, 2, 3, 4, 5, 6&7 for each of the bulleted methods. Provide results in a matrix format.	CGS	Vendor test methodology and required M&TE meets the requirements of the test methods identified: • **MIL-STD-461E, CS101**: Low Frequency Conducted Susceptibility • **MIL-STD-461E, CS114**: High-Frequency Conducted Susceptibility • **MIL-STD-461E, RS101**: Low Frequency Radiated Magnetic Field Susceptibility • **MIL-STD-461E, RS103**: High-Frequency Radiated Electric Field Susceptibility • **MIL-STD-461E, CE101**: Low-Frequency Conducted Emissions • **MIL-STD-461E, CE102**: High-Frequency Conducted Emissions • **MIL-STD-461E, RE101:** Low-Frequency Radiated Magnetic Field Emissions • **MIL-STD-461E, RE102**: High-Frequency Radiated Electric Field Emissions • **IEC 61000-4-4**: Electrical Fast Transients/Burst • **IEC 61000-4-5**: Surge Withstand Capability (Combination Wave) • **IEC 61000-4-12:** Surge Withstand Capability • **IEC 61000-4-2**: Electrical Discharge Susceptibility	1, 2, 3, 5-9	Commercial Grade Survey with NLI EMI/RFI technical specialist.
CC#9 Test procedures/methods utilized by the vendor are as prescribed in the NLI test plan and purchase order.	CGS	1. Vendor has an effective process in place which provides reasonable assurance that NLI test plan requirements for MIL-STD-461E and IEC-61000 series test methods will be met. The NLI Qualification Plan is formally received and	3, 5-9	1. Commercial Grade Survey and applicable NLI Qualification Plan.

Test P[redacted] VP-NEMKO-01 rev. 0
Description: Dedication of EMI/ RFI test services provided by NEMKO. NLI approved vendor number AVL-124
Vendor Address: NEMKO USA, 802 N. Kealy, Lewisville TX 75057
Safety Function: NEMKO results produced from the test methods identified in this plan may be used as input into nuclear safety related qualification, dedication and design activities.
NOTE: Where CGS is provided as the Sample Size, the frequency of evaluation shall be in accordance with NLI-PROC-05 latest revision.

Critical Characteristics	Sample Size	Acceptance		
		Criteria	**Ref**	**Method**
	CGS	reviewed by NEMKO.		
	CGS	2. MIL-STD-461E and IEC-61000 series test methods identified in CC#8 are available at the vendors facility and are utilized when required by the NLI test plan		2. Commercial Grade Survey and applicable NLI Qualification Plan.
		3. Year edition of the NLI specified MIL-STD-461E and IEC-61000 series test method are utilized.		3. Commercial Grade Survey and applicable NLI Qualification Plan.
CC#10 Test reports accurately document the test methods executed including M&TE used for testing.	1. CGS 2. 100%	Vendor has an effective process in place which provides reasonable assurance that NLI test report requirements for MIL-STD-461E and IEC-61000 series tests will be met, including a list of M&TE used during testing.	3, 5-9	1. Commercial Grade Survey 2. NLI Engineering review of NEMKO test reports (perform for 100% of projects).

References:
1. NRC RG 1.180 Rev.1
2. EPRI TR-102323 Rev.3
3. NLI-PROC-05, Rev.22
4. NLI-TECH-05, Rev.11
5. MIL-STD-461E
6. IEC 61000-4-4
7. IEC 61000-4-12
8. IEC 61000-4-5
9. IEC 61000-4-2
10. TE-NEMKO-01, Rev.0

VP Approval

Prepared by: [signature] Date: 8/3/12

Reviewed by: [signature] Date: 8/3/12

Approved by: [signature] Date: 8/7/12

Attachment 3

VR-NEMKO-01

NLI

NUCLEAR LOGISTICS INC

VERIFICATION REPORT FOR VENDOR TEST SERVICES
VENDOR: NLI AVL-124
SERVICES: EMI/RFI TESTING

DOCUMENT NO: VR-NEMKO-01, REV. 0

NUCLEAR LOGISTICS INC

VERIFICATION REPORT FOR VENDOR TEST SERVICES
VENDOR: NLI AVL-124
SERVICES: EMI/RFI TESTING

DOCUMENT NO: VR-NEMKO-01, REV. 0

This dedication report has been prepared in accordance with the NLI Quality Assurance Program.

Prepared by: _____ date 8/3/12

Verified by: _____ date 8/3/12

Approved by: _____ date 8/7/12

REVISION HISTORY

Revision	Description	Date
0	Original Issue	8/7/12

TABLE OF CONTENTS

1.0 SUMMARY OF RESULTS

This report is to document the dedication of the EMI/RFI testing services provided by NEMKO Dallas Incorporated located at 802 N. Kealy, Lewisville, TX 75057. The NEMKO Lewisville facility provides NLI with services for electromagnetic interference testing, radio interference testing, high voltage surge testing, electrical fast transient testing and electrostatic discharge testing.

Testing services provided by NEMKO are controlled by NLI. The NEMKO facility is controlled by NLI as Approved Vendor List (AVL) No. 124[7]. The AVL summary and its contents are documented in accordance with the NLI QA program in accordance with NLI-PROC-05[27], section 4 - Control of Purchased Items and Services.

The NEMKO service profile was dedicated through the execution of verification plan VP-NEMKO-01, Rev.0. The Critical Characteristics in the VP utilized are in accordance with NLI Technical Evaluation TE-NEMKO-01 Rev.0. Ten Critical Characteristics were evaluated for acceptance using defined methods focusing on specific criteria. A set of Test Data Sheets was used to document compliance for each Critical Characteristic and is included as Appendix B of this report.

Compliance to Critical Characteristics #1 & #2 confirmed the capability of the NEMKO processes required for the control of measurement and test equipment (M&TE). A combination of commercial grade survey (CGS) results and implemented purchase order requirements (POR) are necessary and sufficient for compliance. The methods of control utilized by NLI include the use of source inspections, and detailed qualification plans to guide the testing activities for all purchase orders placed with NEMKO.

Compliance to Critical Characteristic #3 confirmed the NLI verification and approval of all test setups. Purchase order requirements (POR) for AVL-124 are necessary and sufficient for compliance. NLI process requires the use of source inspections defined in qualification plans for all purchase orders.

Compliance to Critical Characteristic #4 confirmed the adequacy of training and experience of all NEMKO test personnel. CGS findings provided necessary and sufficient information for compliance.

Compliance to Critical Characteristic #5 confirmed the completion of a review of software utilized in the execution of NEMKO test methods, where applicable. CGS findings provided necessary and sufficient information for compliance.

Compliance to Critical Characteristic #6 confirmed the adequacy of the VVR performed for NEMKO test software. Software Verification and Validation Report (VVR) findings provided necessary and sufficient information for compliance.

Compliance to Critical Characteristic #7 confirmed the process for purchase order review and Test Inspection Review (TIR) implementation prior to test execution. Purchase order requirements (POR) for AVL-124 are necessary and sufficient for compliance. Evidence of use

of an NLI test plan is a contractual requirement for acceptance of purchase order results.

Compliance to Critical Characteristic #8 confirmed test methodology per NLI requirements. A matrix analysis of critical characteristics for all applicable test methods was performed using CGS findings generated from input provided by an NLI EMI/RFI technical specialist. The matrix analysis provided necessary and sufficient information for compliance.

Compliance to Critical Characteristic #9 confirmed that NEMKO utilizes effective processes for implementing NLI test requirements. NLI commercial grade survey (CGS) results demonstrate that NEMKO has the required test method standards, including the proper year edition of the standard, on hand and that they are utilized as required per the NLI Qualification Plan. Additionally, a qualified NLI representative must confirm test configuration, test plan and test method prior to commencement of testing.

Compliance to Critical Characteristic #10 confirmed that NEMKO has an effective process in place which provides reasonable assurance that NLI test report requirements for MIL-STD-461 and applicable IEC test methods are met. NLI commercial grade survey results demonstrate NEMKO test reports are in accordance with the cited test method requirements as well as the applicable NLI Qualification Plan.

2.0 DISCREPANCY REPORTS

There were no discrepancy reports generated as a result of the execution of VP-NEMKO-01, Rev. 0.

Appendix A

Verification Test Data

(VP-NEMKO-01 Test Data Sheets)

Check off appropriate tests

TEST DATA SHEET ☐PRE-SEISMIC ☐ POST-SEISMIC ☒ VERIFICATION ☐ OTHER_____

Test Data for: VP-NEMKO-01 Rev. 0 Job Number: NA P.E. NA Catalog ID #: NA

Item Description: EMI/RFI Testing Services NLI Vendor: NEMKO Labs (AVL-124) Test Methods: Listed in CC#8

CC# 1 NLI identification of the required M&TE CC# 2 NLI verification of M&TE calibration status.

CC# 1	CC# 2
Criteria: The M&TE and the required test parameters used in the test set up meets the M&TE requirements of the required MIL-STD-461E and IEC-61000 series test methods.	**Criteria:** 1. Vendor has a documented and implemented program for M&TE calibration which meets NLI QA program requirements and the calibration requirements of MIL-STD-461E and IEC-61000 series test methods. 2. Calibration status of M&TE utilized during NLI testing is current.
Method: Commercial Grade Survey (CGS)	**Method:** 1. Commercial Grade Survey for acceptance of vendor's M&TE calibration management system. 2. Commercial Grade Survey of acceptance of vendors test execution and documentation process.
Compliance: Maintenance of an approved M&TE Test Equipment List per CGS. CGSR-AVL-124-05,[17] is a copy of the NEMKO file directory which includes an M&TE equipment file list by NEMKO asset number. NLI verified the M&TE identified for use on NLI tests meets NLI QA program requirements for calibration. Purchase order requirement 12 requires that an NLI project engineer, technician or QA Engineer verify M&TE prior to testing. Documented evidence of compliance is defined in AVL-124 purchase order requirement #11b which stipulates that each test report list all M&TE used. Verified M&TE used by NEMKO is documented in the following NEMKO test reports: • 1029726[14] • 10221567[17] • 1026634[20] C.H. PASS 8/2/12	**Compliance:** 1. CGSR-AVL-124-05[2], CC#6 provides evidence of compliance for a controlled M&TE program including: a. Control of sub-tier third party calibration providers b. Notification of out-of-calibration M&TE c. Traceability to NIST primary reference standards 2. CGSR-AVL-124-05[2], CC #10 provides evidence of compliance that NEMKO utilizes M&TE calibration management processes which ensure M&TE utilized on NLI EUT is in accordance with NLI QA and the specified test method requirements. C.H. PASS 8/2/12

NOTE: Initial and date after performance of each CC#. Indicate Pass or Reference DR#.

Check off appropriate tests

TEST DATA SHEET ☐ PRE-SEISMIC ☐ POST-SEISMIC ☒ VERIFICATION ☐ OTHER_____

Test Data for: VP-NEMKO-01 Rev. 0 Job Number: NA P.E. NA Catalog ID #: NA

Item Description: EMI/RFI Testing Services NLI Vendor: NEMKO Labs (AVL-124) Test Methods: Listed in CC#8

CC# 3 NLI verification and approval of the test setup.

CC# 4 Test personnel shall be experienced. They shall be trained on the test methods and equipment required.

CC# 3	CC# 4
Criteria: Verify the test setup is in accordance with the applicable MIL-STD-461E or IEC-61000 series test method requirements.	**Criteria:** Training and experience level of vendor personnel are sufficient to correctly carry out the NLI test requirements.
Method: NLI Source Inspection (SI) to verify test set up is in accordance with NLI test method requirements.	**Method:** CGS
Compliance: Verification of test setup to be performed as a part of the qualification plan per AVL-124[7] Purchase Order Requirement #12. Purchase Order Requirement #12 requires that a NLI project engineer, technician or QA Engineer verify M&TE prior to testing. Verified by review of various NLI Qualification Plans, including QP-21714062-2 R2 for Ametek Transmitters that test set up requirements are clearly prescribed and that a Test Specimen Traveler is utilized by the NLI inspector to document inspection activities. Incorrect test set-ups will not result in an approved status on the Test Specimen Traveler. C.D. PASS 8/2/12	**Compliance:** CGSR-AVL-124-05[2], CC#4 provides evidence of compliance for training and experience level of vendor personnel through the use of documented training records approved by qualified personnel. CGSR-AVL-124-06[1], CC#1 provides evidence of compliance for ability to perform NLI required tests through a review by an NLI technical specialist of NEMKO capability. C.D. PASS 8/2/12

NOTE: Initial and date after performance of each CC#. Indicate Pass or Reference DR#.

Check off appropriate tests

TEST DATA SHEET ☐PRE-SEISMIC ☐ POST-SEISMIC ☒ VERIFICATION ☐ OTHER_____

Test Data for: VP-NEMKO-01 Rev. 0 Job Number: NA P.E. NA Catalog ID #: NA

Item Description: EMI/RFI Testing Services NLI Vendor: NEMKO Labs (AVL-124) Test Methods: Listed in CC#8

CC# 5 Lab software utilized has been validated based on the vendor's intended use during NLI required testing.

CC# 6 The lab software utilized has been dedicated by NLI to perform its intended safety function.

CC# 5	CC# 6
Criteria: NLI Software V&V has been completed for lab software utilized.	**Criteria:** Successful completion of the NLI VVR for the software identified.
Method: CGS or SI to identify the vendor's use of software to perform NLI required testing. NLI V&V of software utilized.	**Method:** NLI Software dedication/V&V
Compliance: CGSR-AVL-124-05[2], CC#7 provides evidence of compliance through the review of software validation and verification testing performed by NLI of NEMKO data acquisition software. VVR-124-01[4] lists all NLI approved and controlled NEMKO data acquisition software utilized for NLI test methods. C.N. PASS 8/2/12	**Compliance:** VVR-AVL-124-01[4] documents vendor software that has been approved for use in support of NLI test methods. C.N. PASS 8/2/12

NOTE: Initial and date after performance of each CC#. Indicate Pass or Reference DR#.

Check off appropriate tests

TEST DATA SHEET ☐ PRE-SEISMIC ☐ POST-SEISMIC ☒ VERIFICATION ☐ OTHER_____

Test Data for: VP-NEMKO-01 Rev. 0 Job Number: NA P.E. NA Catalog ID #: NA

Item Description: EMI/RFI Testing Services NLI Vendor: NEMKO Labs (AVL-124) Test Methods: Listed in CC#8

CC# 7 NLI dedicated lab/test software is controlled at the vendor's facility.

CC# 8 Vendor test methodology meets the requirements of the NLI test method.

CC# 7	CC# 8
Criteria: Verify the NLI controls established in the PO requirements and applicable TIR are implemented prior to testing.	**Criteria:** Vendor test methodology meets NLI prescribed test method requirements for: • **MIL-STD-461E, CS101**: Low Frequency Conducted Susceptibility • **MIL-STD-461E, CS114**: High-Frequency Conducted Susceptibility • **MIL-STD-461E, RS101**: Low Frequency Radiated Magnetic Field Susceptibility • **MIL-STD-461E, RS103**: High-Frequency Radiated Electric Field Susceptibility • **MIL-STD-461E, CE101**: Low-Frequency Conducted Emissions • **MIL-STD-461E, CE102**: High-Frequency Conducted Emissions • **MIL-STD-461E, RE101**: Low-Frequency Radiated Magnetic Field Emissions • **MIL-STD-461E, RE102**: High-Frequency Radiated Electric Field Emissions • **MIL-STD-461E, IEC EN 61000-4-4**: Electrical Fast Transients/Burst • **MIL-STD-461E, IEC EN 61000-4-5**: Surge Withstand Capability (Combination Wave) • **MIL-STD-461E, IEC EN 61000-4-12**: Surge Withstand Capability • **MIL-STD-461E, IEC EN 61000-4-2**: Electrical Discharge Susceptibility
Method: Source Inspection.	**Method:** Commercial Grade Survey with EMI/RFI technical specialist. Address CC's 1, 2, 3, 4, 5, 6&7 for each of the bulleted methods. Provide results in a matrix format.
Compliance: Verification of NLI controls to be performed as a part of the qualification testing per AVL-124[7] POR #5. POR #5 requires that all testing be performed in accordance with the NLI supplied test plan. C. H. PASS 8/2/12	**Compliance:** Reference VR-NEMKO-01 TDS CC #8 Compliance Matrix C.H. PASS 8/2/12

NOTE: Initial and date after performance of each CC#. Indicate Pass or Reference DR#.

Check off appropriate tests

TEST DATA SHEET ☐PRE-SEISMIC ☐ POST-SEISMIC ☒ VERIFICATION ☐ OTHER_____

Test Data for: VP-NEMKO-01 Rev. 0 Job Number: NA P.E. NA Catalog ID #: NA

Item Description: EMI/RFI Testing Services NLI Vendor: NEMKO Labs (AVL-124) Test Methods: Listed in CC#8

CC# 9 Test procedures/methods utilized by the vendor are as prescribed in the NLI test plan, purchase specification and/or PO requirements.

CC# 10
1. End user technical requirements are documented in NLI qualification plan.
2. NLI qualification contractually transmitted to test lab.
3. Test lab tests per NLI qualification plan.

CC# 9	CC# 10
Criteria: 1. Vendor has an effective process in place which provides reasonable assurance that NLI test plan requirements for MIL-STD-461E and IEC-61000 series test methods will be met. 2. MIL-STD-461E and IEC-61000 series test methods identified in CC#8 are available at the vendors facility and are utilized when required by the NLI test plan 3. Year edition of the NLI specified MIL-STD-461E and IEC-61000 series test method are utilized.	**Criteria:** 1. Vendor has an effective process in place which provides reasonable assurance that NLI test report requirements for MIL-STD-461E and IEC-61000 series tests will be met, including a list of M&TE used during testing.
Method: CGS	**Method:** Commercial Grade Survey and applicable NLI Qualification Plan.
Compliance: 1. Verified in CGSR-AVL-124-05[2], CC#9 provides evidence of compliance through the review of the audited NEMKO quote/purchase order review procedures. The NLI qualification plan is formally received and reviewed by NEMKO. 2. Verified in CGSR-AVL-124-05[2], CC#3 provides evidence of compliance through the review of the NEMKO technical oversight process which validates training and test method procedure through maintenance of a test matrix. 3. Verified in CGSR-AVL-124-06[1], CC#2 provides evidence of compliance through the review of the NEMKO Test Standards Database. The implementation of the test standards is controlled through the use of written, controlled procedures. C.N. PASS 8/2/12	**Compliance:** 1. Compliance of NEMKO test reports to the corresponding test method requirements was evaluated by NLI via CGS and is clearly documented in the response to CC#8 of VVR-AVL-124-01 rev.2. 2. Section 4 of qualification reports QR-HIQEMIRFI-1 R0[13], QR-05215515-1 R0[16] and QR-15013927-1 R0[19] provide objective evidence of compliance through the review of NEMKO test reports performed by cognizant NLI Engineering personnel. C.N. PASS 8/2/12

NOTE: Initial and date after performance of each CC#. Indicate Pass or Reference DR#.

Check off appropriate tests

TEST DATA SHEET ☐PRE-SEISMIC ☐ POST-SEISMIC ☒ VERIFICATION ☐ OTHER_____

Test Data for: VP-NEMKO-01 Rev. 0 Job Number: NA P.E. NA Catalog ID #: NA

Item Description: EMI/RFI Testing Services NLI Vendor: NEMKO Labs (AVL-124) Test Methods: Listed in CC#8

Check appropriate boxes:

☐All Services Passed

Discrepancy Report(s): If yes, identify below: ☐Yes ☐No ☒N/A

Service	CC#	DR#			
	C/A		☐Acceptable	☐Not Acceptable	Initials/Date by PE:_____
			☐Acceptable	☐Not Acceptable	Initials/Date by PE:_____
			☐Acceptable	☐Not Acceptable	Initials/Date by PE:_____

List Services passed below:

MIL-STD-461E & IEC 61000 series Test Methods

CS101: Low Frequency Conducted Susceptibility
CS114: High-Frequency Conducted Susceptibility
RS101: Low Frequency Radiated Magnetic Field Susceptibility
RS103: High-Frequency Radiated Electric Field Susceptibility
CE101: Low-Frequency Conducted Emissions
CE102: High-Frequency Conducted Emissions
RE101: Low-Frequency Radiated Magnetic Field Emissions
RE102: High-Frequency Radiated Electric Field Emissions
IEC EN 61000-4-4: Electrical Fast Transients/Burst
IEC EN 61000-4-5: Surge Withstand Capability (Combination Wave)
IEC EN 61000-4-12: Surge Withstand Capability
IEC EN 61000-4-2: Electrical Discharge Susceptibility

Note: M&TE utilized to verify these vendor services is documented in the respective reports cited in VR-NEMKO-01 TDS CC #8 Compliance Matrix.

Performed by: _____ Date: 8/2/12

Reviewed by: _____ Date: 8/2/12

Approved by: _____ Date: 8/7/12

NOTE: Initial and date after performance of each CC#. Indicate Pass or Reference DR#.

VR-NEMKO-01 TDS CC #8 Compliance Matrix	**CC#1 - The M&TE and the required test parameters used in the test set up meets the M&TE requirements of the required MIL-STD-461E and IEC-61000 series test methods.**	**CC#2 -** **1) Vendor has a documented and implemented program for M&TE calibration which meets NLI QA program requirements and the calibration requirements of MIL-STD-461E and IEC-61000 series test methods.** **2) Calibration status of M&TE utilized during NLI testing is current.**	**CC#3 -** **Verify the test setup is in accordance with the applicable MIL-STD-461E or IEC-61000 series test method requirements.**	**CC#4 -** **Training and experience level of vendor personnel are sufficient to correctly carry out the NLI test requirements.**	**CC#5 -** **NLI software V&V has been completed for lab software utilized.**	**CC#6 -** **Successful completion of the NLI VVR for the software identified.**	**CC#7 -** **Verify the NLI controls established in the PO requirements are implemented prior to testing.**
MIL-STD-461E, CS101: Low Frequency Conducted Susceptibility	See Attachment 19 (M&TE Frequency Range Analysis[10]) cited in the response to CGSR-AVL-124-05[2], CC#10. Objective Evidence of compliance for test method CS101: M&TE Asset Tag 1204, 1205, 1464, 1888 (1943), 1901, 1902, 1903, 1904, 1932 Note: GPIB equipped M&TE also evaluated as a component of software V&V analysis and listed by Asset Tag in VVR-AVL-124-01[4], Table 1.	1) See response to CGSR-AVL-124-05[2], CC#6 2) See M&TE Frequency Range Analysis [10], Asset Tag 1204, 1205, 1464, 1888 (1943), 1901, 1902, 1903, 1904, 1932 Note: GPIB equipped M&TE also evaluated as a component of software V&V analysis and listed by Asset Tag in VVR-AVL-124-01[4], Table 1.	See response to CGSR-AVL-124-06[1], CC#2 & 3 Objective evidence of compliance: Based on supplier history, NEMKO Report No. 1029726EEPRI[14] is referenced as a typical example and is cited as objective evidence of compliance for CS101 test method setup. The physical test is shown in Section 5 (page 23). The test setup process and schematic is defined in Section 11 (page 51) which agrees with MIL-STD-461E[21], Figure CS101-4 (page 54) Note: The use of software-based data acquisition equipment has been confirmed for test method CS101 by verification and validation and is documented in VVR-AVL-124-01 Rev. 2[4].	See Attachment 5 (page 54) cited in the response to CGSR-AVL-124-05[2], CC#4 See response to CGSR-AVL-124-06[1], CC#1 and CC#3 paragraphs 3b, 3c and 3d	See response to CGSR-AVL-124-05[2], CC#7	See VVR-AVL-124-01[4] for the validation and verification of software used in support of this test method.	See the purchase order requrements list for AVL-124[7], Rev. 9. Objective evidence of compliance: In-process TIR-Nemko TILE Checklist-1[26]is evidence of implementation of AVL-124[7] purchase order requirement #5 for NLI Job No. 217-14062 per NLI Qualification Plan 21714062-2[11]. This TIR clearly establishes the completion of software checks for TILE profile, Nemko M&TE Asset Number, TILE software version for test methods CE101, CE102, RE101, RE102 and EFT. Once complete, the TIR will be signed by preparer, reviewer and approver. It will then become a part of the test record for NLI Job No. 217-14062.
MIL-STD-461E, CS114: High-Frequency Conducted Susceptibility	See Attachment 19 (M&TE Frequency Range Analysis[10]) cited in the response to CGSR-AVL-124-05[2], CC#10. Objective Evidence of compliance for test method CS114: M&TE Asset Tag 780, 781, 786, 1204, 1205, 1535, 1659, 1771, 1894, 1901, 1902, 1903, 1904 Note: GPIB equipped M&TE also evaluated as a component of software V&V analysis and listed by Asset Tag in VVR-AVL-124-01[4], Table 1.	1) See response to CGSR-AVL-124-05[2], CC#6 2) See M&TE Frequency Range Analysis [10], Asset Tag 780, 781, 786, 1204, 1205, 1535, 1659, 1771, 1894, 1901, 1902, 1903, 1904 Note: GPIB equipped M&TE also evaluated as a component of software V&V analysis and listed by Asset Tag in VVR-AVL-124-01[4], Table 1.	See response to CGSR-AVL-124-06[1], CC#2 & 3 Objective evidence of compliance: Based on supplier history, NEMKO Report No. 1029726EEPRI[14] is referenced as a typical example and is cited as objective evidence of compliance for CS114 test method setup. The physical test is shown in Section 6 (page 27). The test setup process and schematic is defined in Section 11 (page 52) which agrees with MIL-STD-461E[21], Figure CS114-4 (page 71) Note: The use of software-based data acquisition equipment has been confirmed for test method CS114 by verification and validation and is documented in VVR-AVL-124-01 Rev. 2[4].	See Attachment 5 (page 54) cited in the response to CGSR-AVL-124-05[2], CC#4 See response to CGSR-AVL-124-06[1], CC#1 and CC#3 paragraphs 3b, 3c and 3d	See response to CGSR-AVL-124-05[2], CC#7	See VVR-AVL-124-01[4] for the validation and verification of software used in support of this test method.	See the purchase order requrements list for AVL-124[7], Rev. 9. Objective evidence of compliance: In-process TIR-Nemko TILE Checklist-1[26]is evidence of implementation of AVL-124[7] purchase order requirement #5 for NLI Job No. 217-14062 per NLI Qualification Plan 21714062-2[11]. This TIR clearly establishes the completion of software checks for TILE profile, Nemko M&TE Asset Number, TILE software version for test methods CE101, CE102, RE101, RE102 and EFT. Once complete, the TIR will be signed by preparer, reviewer and approver. It will then become a part of the test record for NLI Job No. 217-14062.

VR-NEMKO-01 TDS CC #8 Compliance Matrix	**CC#1 - The M&TE and the required test parameters used in the test set up meets the M&TE requirements of the required MIL-STD-461E and IEC-61000 series test methods.**	**CC#2 -** **1) Vendor has a documented and implemented program for M&TE calibration which meets NLI QA program requirements and the calibration requirements of MIL-STD-461E and IEC-61000 series test methods.** **2) Calibration status of M&TE utilized during NLI testing is current.**	**CC#3 -** **Verify the test setup is in accordance with the applicable MIL-STD-461E or IEC-61000 series test method requirements.**	**CC#4 -** **Training and experience level of vendor personnel are sufficient to correctly carry out the NLI test requirements.**	**CC#5 -** **NLI software V&V has been completed for lab software utilized.**	**CC#6 -** **Successful completion of the NLI VVR for the software identified.**	**CC#7 -** **Verify the NLI controls established in the PO requirements are implemented prior to testing.**
MIL-STD-461E, RS101: Low Frequency Radiated Magnetic Field Susceptibility	See Attachment 19 (M&TE Frequency Range Analysis[10]) cited in the response to CGSR-AVL-124-05[2], CC#10. Objective Evidence of compliance for test method RS101: M&TE Asset Tag 1204, 1205, 1464, 1888 (1943), 1901, 1902, 1903, 1904, 1907, 1908 Note: GPIB equipped M&TE also evaluated as a component of software V&V analysis and listed by Asset Tag in VVR-AVL-124-01[4], Table 1.	1) See response to CGSR-AVL-124-05[2], CC#6 2) See M&TE Frequency Range Analysis [10], Asset Tag 1204, 1205, 1464, 1888 (1943), 1901, 1902, 1903, 1904, 1907, 1908 Note: GPIB equipped M&TE also evaluated as a component of software V&V analysis and listed by Asset Tag in VVR-AVL-124-01[4], Table 1.	See response to CGSR-AVL-124-06[1], CC#2 & 3 Objective evidence of compliance: Based on supplier history, NEMKO Report No. 1029726EEPRI[14] is referenced as a typical example and is cited as objective evidence of compliance for RS101 test method setup. The physical test is shown in Section 6 (page 31). The test setup process and schematic is defined in Section 11 (page 54) which agrees with MIL-STD-461E[21], Figure RS101-4 (page 116). Note: The use of software-based data acquisition equipment has been confirmed for test method RS101 by verification and validation and is documented in VVR-AVL-124-01 Rev. 2[4].	See Attachment 5 (page 54) cited in the response to CGSR-AVL-124-05[2], CC#4 See response to CGSR-AVL-124-06[1], CC#1 and CC#3 paragraphs 3b, 3c and 3d	See response to CGSR-AVL-124-05[2], CC#7	See VVR-AVL-124-01[4] for the validation and verification of software used in support of this test method.	See the purchase order requrements list for AVL-124[7], Rev. 9. Objective evidence of compliance: In-process TIR-Nemko TILE Checklist-1[26]is evidence of implementation of AVL-124[7] purchase order requirement #5 for NLI Job No. 217-14062 per NLI Qualification Plan 21714062-2[11]. This TIR clearly establishes the completion of software checks for TILE profile, Nemko M&TE Asset Number, TILE software version for test methods CE101, CE102, RE101, RE102 and EFT. Once complete, the TIR will be signed by preparer, reviewer and approver. It will then become a part of the test record for NLI Job No. 217-14062.
MIL-STD-461E, RS103: High-Frequency Radiated Electric Field Susceptibility	See Attachment 19 (M&TE Frequency Range Analysis[10]) cited in the response to CGSR-AVL-124-05[2], CC#10. Objective Evidence of compliance for test method RS103: M&TE Asset Tag 1033, 1204, 1205, 1206, 1464, 1621, 1771, 1793, 1901, 1902, 1903, 1904 Note: GPIB equipped M&TE also evaluated as a component of software V&V analysis and listed by Asset Tag in VVR-AVL-124-01[4], Table 1.	1) See response to CGSR-AVL-124-05[2], CC#6 2) See M&TE Frequency Range Analysis [10], Asset Tag 1033, 1204, 1205, 1206, 1464, 1621, 1771, 1793, 1901, 1902, 1903, 1904 Note: GPIB equipped M&TE also evaluated as a component of software V&V analysis and listed by Asset Tag in VVR-AVL-124-01[4], Table 1.	See response to CGSR-AVL-124-06[1], CC#2 & 3 Objective evidence of compliance: Based on supplier history, NEMKO Report No. 1029726EEPRI[14] is referenced as a typical example and is cited as objective evidence of compliance for RS103 test method setup. The physical test is shown in Section 8 (pages 36-37). The test setup process and schematic is defined in Section 11 (page 55) which agrees with MIL-STD-461E[21], Figure RS103-1 (page 129). Note: The use of software-based data acquisition equipment has been confirmed for test method RS103 by verification and validation and is documented in VVR-AVL-124-01 Rev. 2[4].	See Attachment 5 (page 54) cited in the response to CGSR-AVL-124-05[2], CC#4 See response to CGSR-AVL-124-06[1], CC#1 and CC#3 paragraphs 3b, 3c and 3d	See response to CGSR-AVL-124-05[2], CC#7	See VVR-AVL-124-01[4] for the validation and verification of software used in support of this test method.	See the purchase order requrements list for AVL-124[7], Rev. 9. Objective evidence of compliance: In-process TIR-Nemko TILE Checklist-1[26]is evidence of implementation of AVL-124[7] purchase order requirement #5 for NLI Job No. 217-14062 per NLI Qualification Plan 21714062-2[11]. This TIR clearly establishes the completion of software checks for TILE profile, Nemko M&TE Asset Number, TILE software version for test methods CE101, CE102, RE101, RE102 and EFT. Once complete, the TIR will be signed by preparer, reviewer and approver. It will then become a part of the test record for NLI Job No. 217-14062.

VR-NEMKO-01 TDS CC #8 Compliance Matrix	**CC#1 - The M&TE and the required test parameters used in the test set up meets the M&TE requirements of the required MIL-STD-461E and IEC-61000 series test methods.**	**CC#2 - 1) Vendor has a documented and implemented program for M&TE calibration which meets NLI QA program requirements and the calibration requirements of MIL-STD-461E and IEC-61000 series test methods. 2) Calibration status of M&TE utilized during NLI testing is current.**	**CC#3 - Verify the test setup is in accordance with the applicable MIL-STD-461E or IEC-61000 series test method requirements.**	**CC#4 - Training and experience level of vendor personnel are sufficient to correctly carry out the NLI test requirements.**	**CC#5 - NLI software V&V has been completed for lab software utilized.**	**CC#6 - Successful completion of the NLI VVR for the software identified.**	**CC#7 - Verify the NLI controls established in the PO requirements are implemented prior to testing.**
MIL-STD-461E, CE101: Low-Frequency Conducted Emissions	See Attachment 19 (M&TE Frequency Range Analysis[10]) cited in the response to CGSR-AVL-124-05[2], CC#10. Objective Evidence of compliance for test method CE101: M&TE Asset Tag 1163, 1204, 1205, 1283, 1464, 1811, 1812, 1901, 1902, 1903, 1904 Note: GPIB equipped M&TE also evaluated as a component of software V&V analysis and listed by Asset Tag in VVR-AVL-124-01[4], Table 1.	1) See response to CGSR-AVL-124-05[2], CC#6 2) See M&TE Frequency Range Analysis [10], Asset Tag 1163, 1204, 1205, 1283, 1464, 1811, 1812, 1901, 1902, 1903, 1904 Note: GPIB equipped M&TE also evaluated as a component of software V&V analysis and listed by Asset Tag in VVR-AVL-124-01[4], Table 1.	See response to CGSR-AVL-124-06[1], CC#2 & 3 Objective evidence of compliance: Based on supplier history, NEMKO Report No. 10221567EPRI[17] is referenced as a typical example and is cited as objective evidence of compliance for CE101 test method setup. The physical test is shown in Section 3 (page 11). The test setup process and schematic is defined in Section 12 (page 49) which agrees with MIL-STD-461E[21], Figure CE101-6 (page 35). Note: The use of software-based data acquisition equipment has been confirmed for test method CE101 by verification and validation and is documented in VVR-AVL-124-01 Rev. 2[4].	See Attachment 5 (page 54) cited in the response to CGSR-AVL-124-05[2], CC#4 See response to CGSR-AVL-124-06[1], CC#1 and CC#3 paragraphs 3b, 3c and 3d	See response to CGSR-AVL-124-05[2], CC#7	See VVR-AVL-124-01[4] for the validation and verification of software used in support of this test method.	See the purchase order requrements list for AVL-124[7], Rev. 9. Objective evidence of compliance: In-process TIR-Nemko TILE Checklist-1[26]is evidence of implementation of AVL-124[7] purchase order requirement #5 for NLI Job No. 217-14062 per NLI Qualification Plan 21714062-2[11]. This TIR clearly establishes the completion of software checks for TILE profile, Nemko M&TE Asset Number, TILE software version for test methods CE101, CE102, RE101, RE102 and EFT. Once complete, the TIR will be signed by preparer, reviewer and approver. It will then become a part of the test record for NLI Job No. 217-14062.
MIL-STD-461E, CE102: High-Frequency Conducted Emissions	See Attachment 19 (M&TE Frequency Range Analysis[10]) cited in the response to CGSR-AVL-124-05[2], CC#10. Objective Evidence of compliance for test method CE102: M&TE Asset Tag 1204, 1205, 1283, 1811, 1812, 1901, 1902, 1903, 1904, 1932 Note: GPIB equipped M&TE also evaluated as a component of software V&V analysis and listed by Asset Tag in VVR-AVL-124-01[4], Table 1.	1) See response to CGSR-AVL-124-05[2], CC#6 2) See M&TE Frequency Range Analysis [10], Asset Tag 1204, 1205, 1283, 1811, 1812, 1901, 1902, 1903, 1904, 1932 Note: GPIB equipped M&TE also evaluated as a component of software V&V analysis and listed by Asset Tag in VVR-AVL-124-01[4], Table 1.	See response to CGSR-AVL-124-06[1], CC#2 & 3 Objective evidence of compliance: Based on supplier history, NEMKO Report No. 10221567EPRI[17] is referenced as a typical example and is cited as objective evidence of compliance for CE102 test method setup. The physical test is shown in Section 4 (page 15). The test setup process and schematic is defined in Section 12 (page 50) which agrees with MIL-STD-461E[21], Figure CE102-3 (page 40). Note: The use of software-based data acquisition equipment has been confirmed for test method CE102 by verification and validation and is documented in VVR-AVL-124-01 Rev. 2[4].	See Attachment 5 (page 54) cited in the response to CGSR-AVL-124-05[2], CC#4 See response to CGSR-AVL-124-06[1], CC#1 and CC#3 paragraphs 3b, 3c and 3d	See response to CGSR-AVL-124-05[2], CC#7	See VVR-AVL-124-01[4] for the validation and verification of software used in support of this test method.	See the purchase order requrements list for AVL-124[7], Rev. 9. Objective evidence of compliance: In-process TIR-Nemko TILE Checklist-1[26]is evidence of implementation of AVL-124[7] purchase order requirement #5 for NLI Job No. 217-14062 per NLI Qualification Plan 21714062-2[11]. This TIR clearly establishes the completion of software checks for TILE profile, Nemko M&TE Asset Number, TILE software version for test methods CE101, CE102, RE101, RE102 and EFT. Once complete, the TIR will be signed by preparer, reviewer and approver. It will then become a part of the test record for NLI Job No. 217-14062.

VR-NEMKO-01 TDS CC #8 Compliance Matrix	**CC#1 - The M&TE and the required test parameters used in the test set up meets the M&TE requirements of the required MIL-STD-461E and IEC-61000 series test methods.**	**CC#2 -** **1) Vendor has a documented and implemented program for M&TE calibration which meets NLI QA program requirements and the calibration requirements of MIL-STD-461E and IEC-61000 series test methods.** **2) Calibration status of M&TE utilized during NLI testing is current.**	**CC#3 -** **Verify the test setup is in accordance with the applicable MIL-STD-461E or IEC-61000 series test method requirements.**	**CC#4 -** **Training and experience level of vendor personnel are sufficient to correctly carry out the NLI test requirements.**	**CC#5 -** **NLI software V&V has been completed for lab software utilized.**	**CC#6 -** **Successful completion of the NLI VVR for the software identified.**	**CC#7 -** **Verify the NLI controls established in the PO requirements are implemented prior to testing.**
MIL-STD-461E, RE101: Low-Frequency Radiated Magnetic Field Emissions	See Attachment 19 (M&TE Frequency Range Analysis[10]) cited in the response to CGSR-AVL-124-05[2], CC#10. Objective Evidence of compliance for test method RE101: M&TE Asset Tag 1149, 1204, 1205, 1464, 1811, 1812, 1901, 1902, 1903, 1904 Note: GPIB equipped M&TE also evaluated as a component of software V&V analysis and listed by Asset Tag in VVR-AVL-124-01[4], Table 1.	1) See response to CGSR-AVL-124-05[2], CC#6 2) See M&TE Frequency Range Analysis [10], Asset Tag 1149, 1204, 1205, 1464, 1811, 1812, 1901, 1902, 1903, 1904 Note: GPIB equipped M&TE also evaluated as a component of software V&V analysis and listed by Asset Tag in VVR-AVL-124-01[4], Table 1.	See response to CGSR-AVL-124-06[1], CC#2 & 3 Objective evidence of compliance: Based on supplier history, NEMKO Report No. 1029726EEPRI[14] is referenced as a typical example and is cited as objective evidence of compliance for RE101 test method setup. The physical test is shown in Section 3 (page 13). The test setup process and schematic is defined in Section 11 (page 48) which agrees with MIL-STD-461E[21], Figure RS103-1 (page 90). Note: The use of software-based data acquisition equipment has been confirmed for test method RE101 by verification and validation and is documented in VVR-AVL-124-01 Rev. 2[4].	See Attachment 5 (page 54) cited in the response to CGSR-AVL-124-05[2], CC#4 See response to CGSR-AVL-124-06[1], CC#1 and CC#3 paragraphs 3b, 3c and 3d	See response to CGSR-AVL-124-05[2], CC#7	See VVR-AVL-124-01[4] for the validation and verification of software used in support of this test method.	See the purchase order requrements list for AVL-124[7], Rev. 9. Objective evidence of compliance: In-process TIR-Nemko TILE Checklist-1[26]is evidence of implementation of AVL-124[7] purchase order requirement #5 for NLI Job No. 217-14062 per NLI Qualification Plan 21714062-2[11]. This TIR clearly establishes the completion of software checks for TILE profile, Nemko M&TE Asset Number, TILE software version for test methods CE101, CE102, RE101, RE102 and EFT. Once complete, the TIR will be signed by preparer, reviewer and approver. It will then become a part of the test record for NLI Job No. 217-14062.
MIL-STD-461E, RE102: High-Frequency Radiated Electric Field Emissions	See Attachment 19 (M&TE Frequency Range Analysis[10]) cited in the response to CGSR-AVL-124-05[2], CC#10. Objective Evidence of compliance for test method RE102: M&TE Asset Tag 707, 762, 1033, 1067, 1143, 1204, 1205, 1283, 1289, 1290, 1487, 1528, 1621, 1811, 1812, 1856, 1901, 1902, 1903, 1904, 1972 Note: GPIB equipped M&TE also evaluated as a component of software V&V analysis and listed by Asset Tag in VVR-AVL-124-01[4], Table 1.	1) See response to CGSR-AVL-124-05[2], CC#6 2) See M&TE Frequency Range Analysis [10], Asset Tag 707, 762, 1033, 1067, 1143, 1204, 1205, 1283, 1289, 1290, 1487, 1528, 1621, 1811, 1812, 1856, 1901, 1902, 1903, 1904, 1972 Note: GPIB equipped M&TE also evaluated as a component of software V&V analysis and listed by Asset Tag in VVR-AVL-124-01[4], Table 1.	See response to CGSR-AVL-124-06[1], CC#2 & 3 Objective evidence of compliance: Based on supplier history, NEMKO Report No. 1029726EEPRI[14] is referenced as a typical example and is cited as objective evidence of compliance for RE102 test method setup. The physical test is shown in Section 4 (pages 18-19). The test setup process and schematic is defined in Section 11 (page 50) which agrees with MIL-STD-461E[21], Figure RE102-X (page XX). Sections 4 & 11 of the NEMKO report conflict. Note: The use of software-based data acquisition equipment has been confirmed for test method RE102 by verification and validation and is documented in VVR-AVL-124-01 Rev. 2[4].	See Attachment 5 (page 54) cited in the response to CGSR-AVL-124-05[2], CC#4 See response to CGSR-AVL-124-06[1], CC#1 and CC#3 paragraphs 3b, 3c and 3d	See response to CGSR-AVL-124-05[2], CC#7	See VVR-AVL-124-01[4] for the validation and verification of software used in support of this test method.	See the purchase order requrements list for AVL-124[7], Rev. 9. Objective evidence of compliance: In-process TIR-Nemko TILE Checklist-1[26]is evidence of implementation of AVL-124[7] purchase order requirement #5 for NLI Job No. 217-14062 per NLI Qualification Plan 21714062-2[11]. This TIR clearly establishes the completion of software checks for TILE profile, Nemko M&TE Asset Number, TILE software version for test methods CE101, CE102, RE101, RE102 and EFT. Once complete, the TIR will be signed by preparer, reviewer and approver. It will then become a part of the test record for NLI Job No. 217-14062.

VR-NEMKO-01 TDS CC #8 Compliance Matrix	**CC#1 - The M&TE and the required test parameters used in the test set up meets the M&TE requirements of the required MIL-STD-461E and IEC-61000 series test methods.**	**CC#2 -** **1) Vendor has a documented and implemented program for M&TE calibration which meets NLI QA program requirements and the calibration requirements of MIL-STD-461E and IEC-61000 series test methods.** **2) Calibration status of M&TE utilized during NLI testing is current.**	**CC#3 -** **Verify the test setup is in accordance with the applicable MIL-STD-461E or IEC-61000 series test method requirements.**	**CC#4 -** **Training and experience level of vendor personnel are sufficient to correctly carry out the NLI test requirements.**	**CC#5 -** **NLI software V&V has been completed for lab software utilized.**	**CC#6 -** **Successful completion of the NLI VVR for the software identified.**	**CC#7 -** **Verify the NLI controls established in the PO requirements are implemented prior to testing.**
IEC EN 61000-4-4: Electrical Fast Transients/Burst	See Attachment 19 (M&TE Frequency Range Analysis[10]) cited in the response to CGSR-AVL-124-05[2], CC#10. Objective Evidence of compliance for test method IEC EN 61000-4-4: M&TE Asset Tag 590, 1746 Note: No GPIB based M&TE equipment are used for this test method.	1) See response to CGSR-AVL-124-05[2], CC#6 2) See M&TE Frequency Range Analysis [10], Asset Tag 590, 1746 Note: No GPIB based M&TE equipment are used for this test method.	See response to CGSR-AVL-124-06[1], CC#2 & 3 Objective evidence of compliance: Based on supplier history, NEMKO Report No. 1029726EEPRI[14] is referenced as a typical example and is cited as objective evidence of compliance for IEC EN 61000-4-4[22] test method setup. The physical test is shown in Section 9 (pages 40-41). The test setup process and schematic is defined in Section 11 (page 56) which agrees with IEC 61000-4-4[22], Section 7.2.2 - Capacitive Coupling (page 14). Note: The use of software-based data acquisition equipment is not applicable to test method IEC 61000-4-4[22].	See Attachment 5 (page 54) cited in the response to CGSR-AVL-124-05[2], CC#4 See response to CGSR-AVL-124-06[1], CC#1	N/A - software not utilized	N/A - software not utilized	See the purchase order requrements list for AVL-124[7], Rev. 9. Objective evidence of compliance: In-process TIR-Nemko TILE Checklist-1[26]is evidence of implementation of AVL-124[7] purchase order requirement #5 for NLI Job No. 217-14062 per NLI Qualification Plan 21714062-2[11]. This TIR clearly establishes the completion of software checks for TILE profile, Nemko M&TE Asset Number, TILE software version for test methods CE101, CE102, RE101, RE102 and EFT. Once complete, the TIR will be signed by preparer, reviewer and approver. It will then become a part of the test record for NLI Job No. 217-14062.
IEC EN 61000-4-5: Surge Withstand Capability (Combination Wave)	See Attachment 19 (M&TE Frequency Range Analysis[10]) cited in the response to CGSR-AVL-124-05[2], CC#10. Objective Evidence of compliance for test method IEC EN 61000-4-5: M&TE Asset Tag 585, 1746 Note: No GPIB based M&TE equipment are used for this test method.	1) See response to CGSR-AVL-124-05[2], CC#6 2) See M&TE Frequency Range Analysis [10], Asset Tag 585, 1746 Note: No GPIB based M&TE equipment are used for this test method.	See response to CGSR-AVL-124-06[1], CC#2 & 3 Objective evidence of compliance: Based on supplier history, NEMKO Report No. 1029726EEPRI[14] is referenced as a typical example and is cited as objective evidence of compliance for IEC EN 61000-4-5[24] test method setup. The physical test is shown in Section 10 (page 44). The test setup process and schematic is defined in Section 11 (page 56) which agrees with IEC 61000-4-5[24], Section 7.2 - Test setup for tests applied to EUT power ports. Note: The use of software-based data acquisition equipment is not applicable to test method IEC 61000-4-5[24].	See Attachment 5 (page 54) cited in the response to CGSR-AVL-124-05[2], CC#4 See response to CGSR-AVL-124-06[1], CC#1	N/A - software not utilized	N/A - software not utilized	See the purchase order requrements list for AVL-124[7], Rev. 9. Objective evidence of compliance: In-process TIR-Nemko TILE Checklist-1[26]is evidence of implementation of AVL-124[7] purchase order requirement #5 for NLI Job No. 217-14062 per NLI Qualification Plan 21714062-2[11]. This TIR clearly establishes the completion of software checks for TILE profile, Nemko M&TE Asset Number, TILE software version for test methods CE101, CE102, RE101, RE102 and EFT. Once complete, the TIR will be signed by preparer, reviewer and approver. It will then become a part of the test record for NLI Job No. 217-14062.

VR-NEMKO-01 TDS CC #8 Compliance Matrix	**CC#1 - The M&TE and the required test parameters used in the test set up meets the M&TE requirements of the required MIL-STD-461E and IEC-61000 series test methods.**	**CC#2 -** **1) Vendor has a documented and implemented program for M&TE calibration which meets NLI QA program requirements and the calibration requirements of MIL-STD-461E and IEC-61000 series test methods.** **2) Calibration status of M&TE utilized during NLI testing is current.**	**CC#3 -** **Verify the test setup is in accordance with the applicable MIL-STD-461E or IEC-61000 series test method requirements.**	**CC#4 -** **Training and experience level of vendor personnel are sufficient to correctly carry out the NLI test requirements.**	**CC#5 -** **NLI software V&V has been completed for lab software utilized.**	**CC#6 -** **Successful completion of the NLI VVR for the software identified.**	**CC#7 -** **Verify the NLI controls established in the PO requirements are implemented prior to testing.**
IEC EN 61000-4-12: Surge Withstand Capability	See Attachment 19 (M&TE Frequency Range Analysis[10]) cited in the response to CGSR-AVL-124-05[2], CC#10. Objective Evidence of compliance for test method IEC EN 61000-4-12: M&TE Asset Tag 1746 Note: No GPIB based M&TE equipment are used for this test method.	1) See response to CGSR-AVL-124-05[2], CC#6 2) See M&TE Frequency Range Analysis [10], Asset Tag 1746 Note: No GPIB based M&TE equipment are used for this test method.	See response to CGSR-AVL-124-06[1], CC#2 & 3 Objective evidence of compliance: Based on supplier history, NEMKO Report No. 1029726EEPRI[14] is referenced as a typical example and is cited as objective evidence of compliance for IEC EN 61000-4-12[23] test method setup. The physical test is shown in Section 10 (page 46). The test setup process and schematic is defined in Section 11 (page 56) which agrees with IEC 61000-4-12[23], Section 7.1 - Test of power supply ports. Note: The use of software-based data acquisition equipment is not applicable to test method IEC 61000-4-12[23].	See Attachment 5 (page 54) cited in the response to CGSR-AVL-124-05[2], CC#4 See response to CGSR-AVL-124-06[1], CC#1	N/A - software not utilized	N/A - software not utilized	See the purchase order requrements list for AVL-124[7], Rev. 9. Objective evidence of compliance: In-process TIR-Nemko TILE Checklist-1[26]is evidence of implementation of AVL-124[7] purchase order requirement #5 for NLI Job No. 217-14062 per NLI Qualification Plan 21714062-2[11]. This TIR clearly establishes the completion of software checks for TILE profile, Nemko M&TE Asset Number, TILE software version for test methods CE101, CE102, RE101, RE102 and EFT. Once complete, the TIR will be signed by preparer, reviewer and approver. It will then become a part of the test record for NLI Job No. 217-14062.
IEC EN 61000-4-2: Electrical Discharge Susceptibility	See Attachment 19 (M&TE Frequency Range Analysis[10]) cited in the response to CGSR-AVL-124-05[2], CC#10. Objective Evidence of compliance for test method IEC EN 61000-4-2: M&TE Asset Tag 1738, 1754 Note: No GPIB based M&TE equipment are used for this test method.	1) See response to CGSR-AVL-124-05[2], CC#6 2) See M&TE Frequency Range Analysis [10], Asset Tag 1738, 1754 Note: No GPIB based M&TE equipment are used for this test method.	See response to CGSR-AVL-124-06[1], CC#2 & 3 Objective evidence of compliance: NEMKO Report No. 1026634EEPRI[20], Sections 11 & 14 Objective evidence of compliance: Based on supplier history, NEMKO Report No. 1026634EEPRI[20] is referenced as a typical example and is cited as objective evidence of compliance for IEC EN 61000-4-2[25] test method setup. The physical test is shown in Section 11 (page 44). The test setup process and schematic is defined in Section 14 (page 65) which agrees with IEC 61000-4-2[23], Section 7.2.2-Table-top equipment, Figure 4 (page 17). Note: The use of software-based data acquisition equipment is not applicable to test method IEC 61000-4-2[25].	See Attachment 5 (page 54) cited in the response to CGSR-AVL-124-05[2], CC#4 See response to CGSR-AVL-124-06[1], CC#1	N/A - software not utilized	N/A - software not utilized	See the purchase order requrements list for AVL-124[7], Rev. 9. Objective evidence of compliance: In-process TIR-Nemko TILE Checklist-1[26]is evidence of implementation of AVL-124[7] purchase order requirement #5 for NLI Job No. 217-14062 per NLI Qualification Plan 21714062-2[11]. This TIR clearly establishes the completion of software checks for TILE profile, Nemko M&TE Asset Number, TILE software version for test methods CE101, CE102, RE101, RE102 and EFT. Once complete, the TIR will be signed by preparer, reviewer and approver. It will then become a part of the test record for NLI Job No. 217-14062.
Performed By:		Date:	8/2/12				

Appendix B

Reference Documents

1. CGSR-AVL-124-06 rev.0
2. CGSR-AVL-124-05 rev.0
3. CGSR-AVL-124-04 rev.0
4. VVR-AVL-124-01 rev.2
5. TIR-NEMKO TILE CHECKLIST-01 Rev.2
6. TE-NEMKO-01 rev.0
7. AVL-124 & Purchase Order Requirements
8. NRC RG 1.180
9. EPRI TR-102323
10. M&TE Frequency Range Analysis (CGSR-AVL-124-05, Attachment 19)
11. QP-21714062-2, Rev. 2
12. QP-HIQ120-1
13. QR-HIQEMIRFI-1
14. NEMKO REPORT NO. 1029726EEPRI
15. QP-05215515-1, Rev. 2
16. QR-05215515-1, Rev. 0
17. NEMKO REPORT NO. 10221567EPRI
18. QP-15013927-1, Rev. 0
19. QR-15013927-1, Rev. 0
20. NEMKO REPORT NO. 1026634EEPRI
21. MIL-STD-461E
22. IEC 61000-4-4
23. IEC 61000-4-12
24. IEC 61000-4-5
25. IEC 61000-4-2
26. TIR-NEMKO TILE CHECKLIST-01 – In Process
27. NLI-PROC-05, Rev. 22
28. NLI-TECH-05, Rev. 11

NOTE: Please contact NLI if copies of these reference documents are required.

Attachment 4

Discrepancy report DR-3306, revision 1

Discrepancy Report

DR#: DR-3306 Revision # 1

A. IDENTIFICATION **Project #:** 052-16060

Item Description: Chiller control upgrade

Manufacturer: NLI/Trane

Part Number: Adaptiview

Serial Number(s): 05216060-TS-1

Quantity: 1 Initial Evaluation/Tagging: Conditional Release

Issue:

The qualification testing identified the following modifications to the test specimens (reference QR-05215515-1, revision 0):

-Add flat washer to the control panel mounting studs (per section 7.2, anomaly 05215515-02, and the seismic data sheets in Appendix C.2 of the qualification report).

-Ferrite filter was added to the vane guide actuator wiring (per section 7.3 of the qualification report and Page 6 of the NEMKO test report).

Affected Hardware/Document/M&TE/Etc:

QR-05215515-1

Identification Electronic Signature

ID Prepared By:	Karim Sawaf	ID Preparer Signature:	☑ ksawaf 6/7/2012 5:37 PM
ID Approved By:	Carlos Castellanos	ID Approver Signature:	☑ ccastellanos 6/7/2012 5:44 PM

B. RESOLUTION

Evaluation:

These modifications are required as follows:

-The flat washer was required to pass the seismic qualification. The original bolted connection that was identified was not seismically secure. After addition of the washer, the seismic testing was successful.

-The ferrite filter was required to lower the radiated emissions (RE-102) of the test specimen. The initial testing identified emissions that were well above the allowables. Installation of the filter lowered the emissions.

The following actions were performed:
-Revise the design drawings to include these modifications. This will assure that the modifications will be made on the production units.

-Production unit 05216060-AS-1 included both modifications as noted in the as-built drawings.

These modifications were required to meet the design requirements in the client specification for seismic and EMI/RFI qualification of the equipment. The design requirements in the client specification are met as follows:
-The seismic and EMI/RFI requirements are met based on the successful qualification of the equipment with the modifications installed.
-The functional requirements were met by successful completion of the dedication of the production units with the modifications installed.

☐ Acceptable - Use As Is ☐ Acceptable - With Limitations

☐ Acceptable - With Repair ☑ Acceptable - With Rework

☐ Reject - Return to Vendor ☐ Reject - Scrap

Cause Code 1 0 - Other

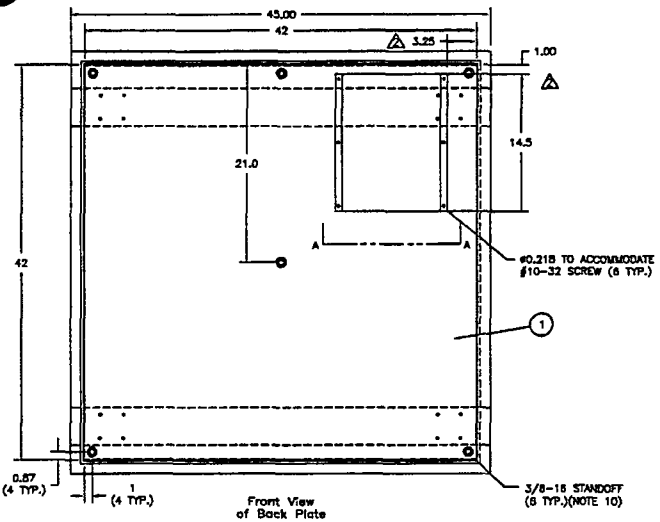
Resolution Electronic Signature

Resolution Prepared By:	Aron Seiken	Resolution Preparer Signature:	☑ aseiken 8/1/2012 4:48 PM
Resolution Reviewed By:	Alan Wong	Resolution Reviewer Signature:	☑ awong 8/1/2012 5:09 PM
Resolution Approved By:	Tracy Bolt	Resolution Approver Signature:	☑ tbolt 8/2/2012 8:11 AM

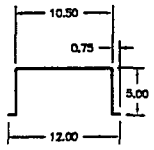
Attachment 5

05215515-ENCL-1, Rev. 2 (Addition of the Flat Washer)
05215515-GVA-1, Rev. 2 (Addition of the Ferrite Filter)

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0	ORIGINAL ISSUE	3/6/12	VL
1	REVISED BILL OF MATERIALS, DETAIL 7 & NOTE 7. REMOVED NOTES 9 & 10. ADDED WEIGHT & NOTE 9 (ECN#: ECNF-1103).	4/2/12	VL
2	AS-BUILT, REVISED DIMENSIONS, ITEMS 2-5, NOTES 5, 7 & SECTION B-B. ADDED WELDS & NOTE 10 (ECN#: ECNF-1223).	6/1/12	AS



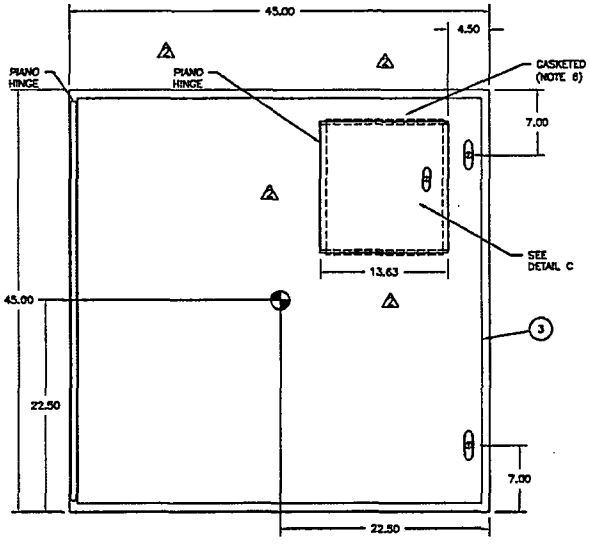
Front View of Back Plate



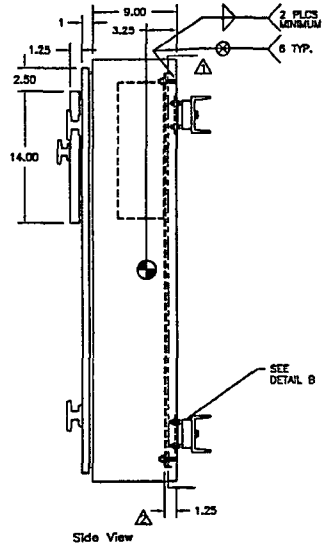
SECTION A-A
(STANDOFF BRACKET)

BILL OF MATERIALS					
ITEM	QTY.	DESCRIPTION	MANUFACTURER	MODEL	Supplied By
1	1	CONTROL PANEL BACK PLATE	NLI	05215515-CP-1	NLI
2	4	VIBRATION SHOCK MOUNT	BARRY	UC2040-T6	NLI
3	1	ENCLOSURE 45" x 45" x 9"	NLI	05215515-ENCL-1	NLI
4	2	4" x 44" x 1/8" MOUNTING PLATE	NLI	N/A	NLI
5	2	EMI/RFI GROUND MESH	ALPHA WIRE	1231	NLI

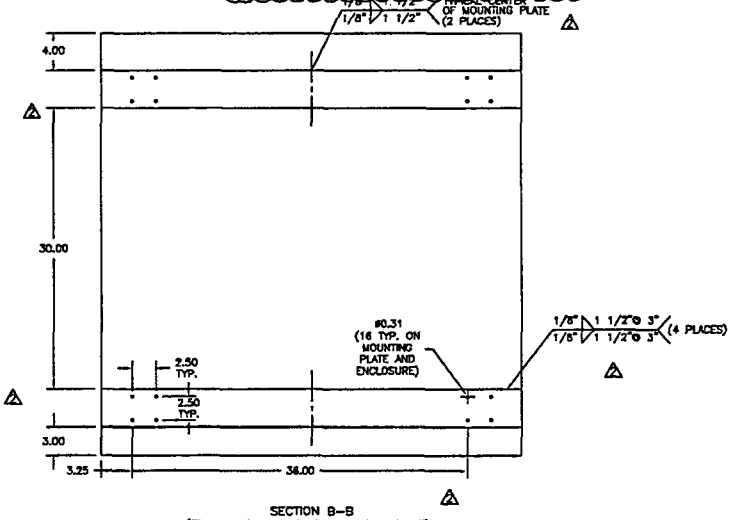
NOTES:
1. ALL DIMENSIONS ARE IN INCHES.
2. ALL TOLERANCES ARE NOMINAL, UNLESS OTHERWISE NOTED.
3. MATERIAL GAUGE:
   INTERNAL BACK PANEL – 10 GAUGE
   STANDOFF BRACKET – 12 GAUGE
   REMAINING PARTS – 12 GAUGE
4. ENCLOSURE IS CARBON STEEL, PROVIDING PROTECTION AGAINST INGRESS OF SOLID FOREIGN OBJECTS AND WATER (DRIPPING AND LIGHT SPLASHING). DOORS ARE GASKETED.
5. EPOXY POWDER COAT, GRAY, 1 MIL. MINIMUM THICKNESS.
6. DOOR GASKET MATERIAL IS NEOPRENE OR ENGINEERED EQUIVALENT.
7. ENCLOSURE MOUNTING (BARRY MOUNT) CONSISTS OF:
   (4) 3/8-16 x 1 1/4" LONG BOLT, SAEJ429 GRADE 5 OR EQUIVALENT, TORQUE TO 240IN-LBS (DRY) (-0, +10IN-LBS.)
   (4) 3/8" FLAT WASHERS, STEEL
   (16) 1/4-20 x 1/2" LONG BOLT, SAEJ429 GRADE 5 OR EQUIVALENT, TORQUE TO 60IN-LBS (DRY) (-0, +5IN-LBS.)
   (16) 1/4-20 NUT, A194 GRADE 1 OR BETTER
   (32) 1/4" FLAT WASHER STEEL
8. ALL CARBON STEEL WITH THE EXCEPTION OF FASTENERS SHALL BE COATED. FASTENERS ARE PLATED.
9. POWER CONSUMPTION
   20 AMP IN RUSH (2 CYCLES)
   1.4 AMP STEADY STATE (INCLUDES HGBP AND IGV OPERATION)
10. BACK PANEL MOUNTING CONSIST OF:
    (9) 3/8-16 NUT, SAEJ429 GRADE 5 OR EQUIVALENT
    (12) 3/8" FLAT WASHERS, TYPE A, WIDE, STEEL
    (REQUIRED PER DR-05215515-1, LATEST REVISION)



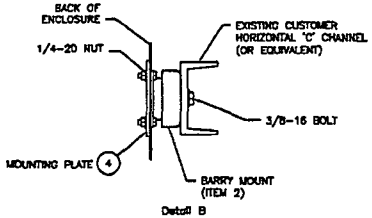
Front View



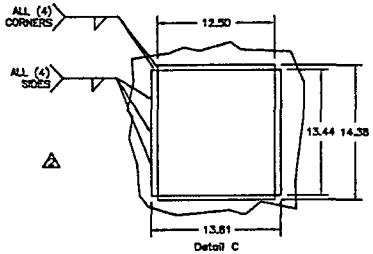
Side View



SECTION B-B
(Shown without plant mounting detail)



Detail B
SEE NOTE 7
PLANT TO SUPPLY AND INSTALL



Detail C
(VIEW FROM BACK OF DOOR)

THIS DRAWING APPLIES TO ALL TRAINS

PROJECT:	CHILLER CONTROL UPGRADE
CLIENT:	ENTERGY/RIVERBEND
CONTRACT:	10322999

DRAWN:	FVT	Date 6/1/12
CHECK:	KS/KRM	6/1/12
APPROVE:	AS	6/1/12
CUSTOMER:		

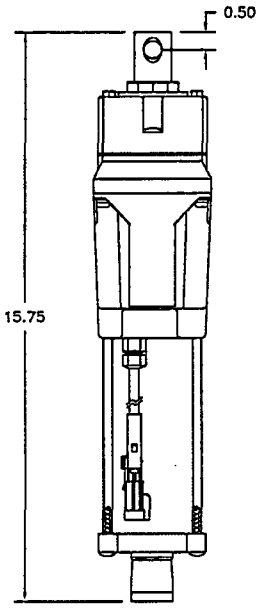
NLI NUCLEAR LOGISTICS INC.

TITLE: ENCLOSURE FOR CHILLER CONTROL UPGRADE

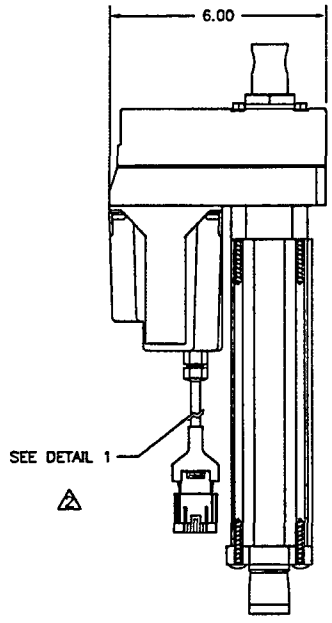
Size	DRAWING No.	REV
C	05215515-ENCL-1	2

Scale: N/A WEIGHT: 320LBS. SHT 1 OF 1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0	ORIGINAL ISSUE	2/23/12	VL
1	ADDED DIMENSION (ECN#: ECNF-1103).	4/2/12	VL
2	ADDED DETAIL 1, NOTES 5 & 6. REVISED NOTE 4 (ECN#: ECNF-1223).	6/1/12	AS



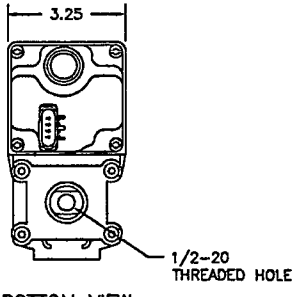
FRONT VIEW



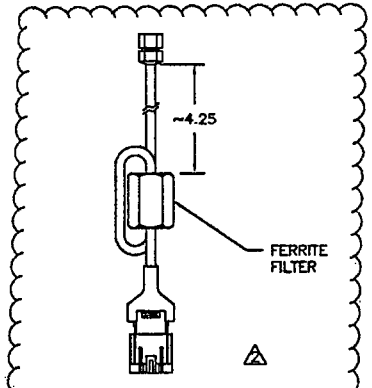
SIDE VIEW

Notes:
1. All dimensions are in inches and are nominal, unless otherwise noted.
2. All dimensions are based off of NLI S/N: 22374K2-01-0001.
3. Manufacturer: Trane
4. NLI P/N: X13611024-03-MOD1 (Trane P/N: X1361124-03 with Ferrite Filter).
5. Ferrite Filter, Fair-Rite P/N: 0446164181 (required per QR-05215515-1, Latest Revision).
6. Ferrite Filter installed per TIR-05216060-1.

2



BOTTOM VIEW



DETAIL 1
(NOTE 5)

THIS DRAWING APPLIES TO ALL TRAINS

DRAWN:	FVT	Date 6/1/12
CHECK:	KS	6/1/12
APPROVE:	AS	6/1/12
CUSTOMER:		

PROJECT: CHILLER CONTROL UPGRADE
CLIENT: ENTERGY / RIVERBEND
CONTRACT: 10322999

NLI NUCLEAR LOGISTICS INC.

TITLE: GUIDE VANE ACTUATOR

Size B | DRAWING No. 05215515-GVA-1 | REV 2

Scale: NTS | WEIGHT 12LBS. | SHT 1 OF 1

Attachment 6

Corrective Action NLI-CAR-2012-08

NLI
Nuclear Logistics Inc.
7410 Pebble Drive
Fort Worth, TX 76118
Phone: (817) 284-0077
Fax: (817) 590-0484

Corrective Action Request Report

Issue Date: 6/15/2012 **Report No.** NLI-CAR-2012-08

Issued By: Tracy Bolt **Due:** 7/15/2012

1. Responsible Organization: Engineering - Qualification

2. Contact / Title: Aron Seiken Phone: X303

3. Reference (Documents, Part Numbers, Etc.): NLI-TECH-05, Rev. 11

Attachments may be supplied if space is limited for the following sections:

4. Description of the Deficiency:
NLI-TECH-05 states that when there is an anomaly that results in a modification that is required to pass qualification tests, that there will also be a Discrepancy report that is initiated to capture the required modifications in the production units.

Contrary to this procedure requirement, a DR was not generated to capture the required modifications documented in QR-05215515-1.

Organization to Complete Sections 5 Through 9

5. Describe and Implement Remedial Action:
A discrepancy report was generated to document the justification for the modifications.

6. Identify Root Cause of the Problem:
The engineer did not follow the procedure.

7. Corrective Action Required to Prevent Recurrence:
The procedure will be reviewed to ensure that the requirements are clearly identified.

Training will be administered to the engineering group covering the specific procedure requirements regarding modifications to qualification specimens and production units.

8. Date When Full Implementation Will Be Achieved: 7/15/2012

9. Authorized By: [signature] Title: President Date: 6/15/12

10. NLI Review By: Tracy Bolt Title: Director of QA Date: 6/18/12

11. Acceptable: X, Unacceptable: ____, Re-submittal is Required By: ____

12. NLI Follow-up Verification By: Tracy Bolt Date: 7/23/12

13. Closed: X Open: ____ Review Again: ____

NLI
Nuclear Logistics Inc.
7410 Pebble Drive
Fort Worth, TX 76118
Phone: (817) 284-0077
Fax: (817) 590-0484

14. NCR required? (Y/N): NO If yes, NCR number: _____

Attachment 7

Training records

REF. NLI-CAR-2012-08

- Qualification testing anomalies will be documented using Figure 4-3 or equivalent. Anomalies will be documented for any anomalous conditions that are found during the testing, including the following:
  - The test specimen did not operate per design or did not meet the specified acceptance criteria.
  - The conditions specified in the test plan (seismic RRS, temperature, radiation, etc.) were not met.
  - The testing was not performed exactly as specified in the test plan. Examples could include taking measurements on a schedule different than in the plan, not recording measurements, etc.

When the anomaly results in the modification of production units that will be supplied to the client, a separate Discrepancy Report (DR) will be prepared to track the modifications to the production units. The DR will be prepared and dispositioned in accordance with procedure NLI-QUAL-06 (latest revision).

- Nonconformances and potentially reportable issues will be identified and resolved in accordance with procedures NLI-QUAL-06 (latest revision) and NLI-QUAL-08 (latest revision), respectively.

4.2.1 Qualification Plan (If required by client)

The qualification plan will be prepared prior to initiation of testing, when required by the client. Special emphasis will be placed in the following areas:

- Component identification - The item being qualified will be fully identified. Its plant safety function and functional requirements will be documented and will form the basis for the testing.

- Functional requirements - The functional testing requirements before, during, and after the test will be explicitly identified and based on the plant functional requirements.

- Acceptance criteria - The acceptance criteria will be stated and will be based on the plant functional requirements or industry standards.

TRAINING SIGNOFF SHEET FOR
NLI-CAR-2012-08
Ref. NLI-TECH-05, Rev. 11

The following personnel were present for this training session and have read and understood the topics discussed.

NAME	SIGNATURE	DATE
Rick Ehenberger		7/23/12
Tracy P. Helms		"
Steven Redmon		7/23/12
Cedric Hall-Hill		7/23/12
Callan McLaughlin		7/23/12
Vaughn Finkenzie		7/23/12
Leonardo Taylor		7/23/12
Nick Phan		7/23/12
Vincent Phan		7/23/12
Chris Cobano		7/23/12
Tue Le		7/23/12
David Gandee		7/23/12
Jason Isham		" "
Richard Maskill		7/23/12

Training conducted by: _____ Date: 7/23/12
Victor Lara, NLI Engineering Manager

TRAINING SIGNOFF SHEET FOR
NLI-CAR-2012-08
Ref. NLI-TECH-05, Rev. 11

The following personnel were present for this training session and have read and understood the topics discussed.

NAME	SIGNATURE	DATE
Danny Luong		7-23-12
Roger Fernandes		7/23/12
Donny Leach		7/23/12
Jonath McWan		7/23/12
Nick Jose		7/23/12
DEO G. MATUCAN FA		7/23/12
Joe Ehrke		7/23/12
JAMES NGUYEN		7/23/12
Hans Landsberger		7/23/12

Training conducted by: _____ Date: 7/23/12
Victor Lara, NLI Engineering Manager

TRAINING SIGNOFF SHEET FOR
NLI-CAR-2012-08
Ref. NLI-TECH-05, Rev. 11

The following personnel were present for this training session and have read and understood the topics discussed.

NAME	SIGNATURE	DATE
MARK MICHNEVITZ		7-23-12
CARLOS CASTELLANOS		7/23/12
Karim Sawaf		7-23-12
NAPOLEON RAMIREZ		7-23-12
Joshua Peyrot		7-28-12
Blake Anderson		7-23-12
Jim Hoorman		7/23/12

Training conducted by: _____ Date: 7/23/12
Victor Lara, NLI Engineering Manager