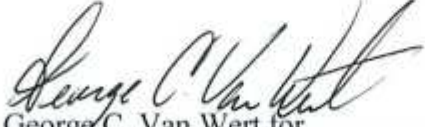
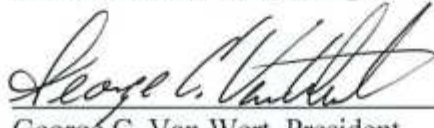


**NUCLEAR**  
**QUALITY ASSURANCE MANUAL**

**REVISION 4**  
February 13, 2013

Reviewed by:	 George C. Van Wert for Robert E. Shirk, QA Manager	<u>2/13/2013</u> Date
Approved by:	 George C. Van Wert, President	<u>2/13/2013</u> Date

*ILRT Inc.*

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## FOREWORD

ILRT Inc. provides engineering, training, and specialized technical services to industry and government. The Company offers a range of services needed by organizations involved in the design, construction, operation and maintenance of nuclear power plants.

ILRT Inc. is committed to achieving high quality in all the services and related products it provides. The Company realizes this goal through selective employment of experienced engineers and technical specialists coupled with effective project management. In addition, the Company recognizes the fundamental importance of quality assurance practices in achieving this goal and has established a Nuclear Quality Assurance Program to provide for these practices. The primary responsibility for the quality of the services and related products provided by the Company rests with the individuals doing the work. Accordingly, all employees are responsible for understanding and implementing the Nuclear Quality Assurance Program practices applicable to their work.

The President of ILRT Inc. has the overall responsibility for establishing the policies and requirements of the Nuclear Quality Assurance Program. Project Managers have the responsibility for implementing the Program. An appointed Quality Assurance Manager has the responsibility and organizational freedom to audit and verify the implementation of the Program, to identify quality problems, to initiate corrective actions, and to verify the implementation of corrective actions.

The Nuclear Quality Assurance Manual is the document that establishes the requirements of the Quality Assurance Program as it applies to nuclear safety-related work when the Company provides services and related products for clients involved in the design, construction, operation and maintenance of nuclear power plants. The Nuclear Quality Assurance Manual addresses each of the 18 Criteria of Title 10, Code of Federal Regulations, Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," and the referenced sections of ASME NQA-1-1994, "Quality Assurance Program Requirements for Nuclear Facilities", Subpart 2.7, applicable to software used for safety related plant functions. The requirements of the Nuclear Quality Assurance Manual are invoked on each project; consistent with client requirements, to the extent determined necessary by the Project Manager and the Quality Assurance Manager.

Compliance with the requirements of the Nuclear Quality Assurance Manual is accomplished through a series of Corporate (e.g. Quality Implementing Procedures – "QIPs") and project level (e.g. Project Procedures Manuals – PPMs) documents, as appropriate, which include necessary details and controls. The review process assures that the contents of implementing procedures conform to NQAM requirements. The requirements of the Nuclear Quality Assurance Manual are invoked on each project; consistent with client requirements, to the extent determined necessary by the Project Manager and the Quality Assurance Manager.

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## RECORD OF REVISIONS

### *Revision Number 0*

This is the initial issue of the ILRT Inc. Nuclear Quality Assurance Manual

### *Revision Number 1*

A general editorial revision of the manual to clarify position titles and responsibilities, delete outdated or inappropriate organizational references

### *Revision Number 2*

#### Page 2-1, Section 2.2.3 References

Incorporated a reference to incorporate an edition and section specific reference to NQA-1-1994, Subpart 2.7. Previously the only reference to which edition was referenced was in paragraph 5.5.2. The reference in 5.5.2 was deleted.

#### Page 18-1, Section 18.3.2, Audit Performance

A limited revision to Section 18, Audits, to incorporate guidance and controls for the review and acceptance of third party audits. Revision addresses root cause to Audit Finding #2 of FP&L Audit JQA-06-267.

### *Revision Number 2.1*

#### Exhibit 6, Nonconformance Report

Added a section documenting the assessment of report-ability under 10CFR Part 21.

### *Revision Number 2.2*

#### Page 1-1, Section 1.2, Organization General Description

- Updated corporate location. (CAR100418A)

#### Pages 16-1 & 2, Section 16, Corrective Actions

- Edited section to reflect merging of NCR & CAR Forms.

#### Page 19-4, Section 19.5, Notifications

- Added a paragraph to address Part 21.21(B) which discusses evaluations beyond ILRT Inc. capabilities. (NUPIC 2010 Audit Finding V-10-003 & NCR100422A)

#### Exhibits

- Updated address and phone numbers on Exhibit 1 (Contract / Purchase Order Review Form). (CAR100418A)
- Deleted Exhibit 9 (CAR Form) and incorporated CAR tracking fields with Exhibit 6 (NCR Form). (Forces Part 21 review on CAR)

*Revision Number 2.3*Forward

- Revised narrative to clarify link between NQAM and corporate/project implementing procedures in conforming to NQAM requirements.

Page 18-2, Section 18.7 ISO-17025 Audit Exemption

- Added section reflecting practice of adding Calibration Labs accredited to ISO-17025 to the Qualified Supplier's List without an Audit providing they meet specific requirements in line with practices accepted by the USNRC (e.g. current Accreditation, accreditation obtained from an accrediting agency or company that is an ILAC MOU signatory).

Page 17-1, Section 17-2 General

- Added fact that records may be paper or electronic to tie in details included in QIP 17.01.

*Revision Number 3*

Section	Description of Change
All	General revision to address change in organizational structure and responsibilities. Predominantly to reflect move from Company Principal Responsible for Quality to a dedicated Quality Assurance Manager.
Cover & Footers	Added note regarding how to identify if printed copy is a "Controlled Copy".
Forward	Revised narrative to replace Corporate Principal with Quality Assurance Manager.
1	Reassigned Vice President responsibilities to Quality Assurance Manager.
5	Revised assignments of preparer, reviewer, approver for quality procedures.
Exhibits 1 & 2	Reorganized Sample Exhibits for Order Entry Contract Review, QA Review & NQAM Applicability, and Quality Plan to put commercial review on one page and quality review on a separate page. In past the two were mixed. Merged QA review with NQAM Applicability.
Exhibit 8	Deleted Audit Finding Report Form from NQAM. Form exists in QIP 18.01 and should only be maintained in one place.

*Revision Number 4*

<b>Section</b>	<b>Description of Change</b>
1	Changed corporate office from Palm Harbor to New Port Richey to coincide with office relocation.
1.2	Deleted “A senior project team member not serving as the Project Manager will provide a peer review for quality related activities.” Per R120724A 2012 Mgmt Meeting.
1.4.1	Approval of Project Quality Plan deleted from PM responsibility. Moved to QAM.
2	Corrected typos identified in 2012 Mgmt Meeting – Step 2.1.5.2 should be step 2.15.2 and 2.1.5.1 (twice) in the step text should be step 2.15.1
6.10	Corrected NQAM section reference for NCRs. (Changed 16 to 15)
15	Corrected Typo – the last page of Section 15 was labeled as 15-1. It is 15-3.
18.7	Added allowance for Commercial Grade Survey in lieu of an Audit for calibration suppliers.
20.0	Expanded name and description of Exhibit 6 (CAR / NCR / AR form).
Exhibit 6	<p>Replaced CAR / NCR Form with updated to accomplish:</p> <ol style="list-style-type: none"> <li>1. Provide a checkbox to ensure entered in Issue Tracking</li> <li>2. Add a category for Action Tracking only for issues that should be tracked but do not involve a condition adverse to quality or nonconformance.</li> <li>3. Moved Part 21 review to immediately after Description of Nonconformance, Condition, or Action to be tracked on form.</li> <li>4. Added a footnote to identify nonconformances on a project / product may require client notification &amp; PM is to review PO requirements.</li> <li>5. Added checkoffs under recommended disposition for Repair / Us-As-Is / Rework / Scrap / Other.</li> <li>6. Added footnote “Nonconformances to design requirements dispositioned "repair" or "use as-is" shall be subject to design control measures commensurate with those of the original design”</li> <li>7. Added QAM review when a NCR / CAR / AR is initially generated. Added QAM Approval of Cause, Recommended Disposition, and Recommended Corrective Action.</li> </ol>

## SECTION 1.0 ORGANIZATION

### 1.1 Scope

This section of the Nuclear Quality Assurance Manual describes the organizational structure, functional responsibilities, and levels of authority for the direction and execution of the ILRT Inc. Quality Assurance Program on nuclear safety-related work.

### 1.2 General Description

ILRT Inc. is organized to provide engineering, staff support, training, and other specialized technical services to the nuclear industry. The Company management is comprised of a President, a Treasurer, and a Quality Assurance Manager. The corporate office is located in New Port Richey Florida but some personnel are located regionally.

A specific Project Organization is established for each safety-related Company project. The Project Organization is headed by a Project Manager and supported by management and other personnel as required. The Project Manager has the responsibility for managing the project and dealing directly with the client. All project tasks are performed by the Project Organization. Except for the specific responsibilities and authorities of the Corporate Organization as described herein, this manual is directed toward the Project Organization.

### 1.3 Corporate Organization

The Corporate Organization is described above. Position responsibilities and authorities that affect the control of quality in Company activities are described as follows:

#### 1.3.1 President

The President has the authority to issue directives, to make decisions, and to override the decisions of all other Company personnel. The President has the following specific responsibilities with respect to the Nuclear Quality Assurance Manual and its implementation:

- Approve the Nuclear Quality Assurance Manual.
- Review periodically the adequacy and effectiveness of the Nuclear Quality Assurance Manual.
- Resolve disagreements or disputes on quality matters between Company personnel.

### 1.3.2. Quality Assurance Manager

The Quality Assurance Manager reports directly to the President and has the overall responsibility for the implementation of the Nuclear Quality Assurance Manual. They have the authority and responsibility to:

- Implement the Nuclear Quality Assurance Manual, when applicable.
- Direct quality-affecting activities.
- Review periodically the adequacy and effectiveness of the Nuclear Quality Assurance Manual.
- Report to the President, as necessary, conditions adverse to quality and other quality-related matters.
- Verifying that quality-affecting activities are performed in accordance with applicable procedures.
- Establish direct lines of communication with external organizations such as contractors and clients, as may be necessary, to assure proper implementation of the Nuclear Quality Assurance Manual and to verify prompt resolution of quality-related problems.
- Develop, review, and issue the Nuclear Quality Assurance Manual, quality implementing procedures, and revisions to these documents.
- Certify personnel performing quality functions as appropriate.
- Assist in QA training and indoctrination of Company employees and subcontractor personnel who are required to work to this manual as requested by the Project Managers. (The degree to which the training or indoctrination is provided shall be commensurate with the assigned duties and responsibilities of the individuals.)
- Initiate or recommend corrective actions.
- Concur with decisions relative to the applicability of the Nuclear Quality Assurance Manual to ILRT Inc. projects.
- Provide interface with client QA representatives by coordinating client audits and providing follow-up documentation, when required.
- Assist in the establishment and implementation of program(s) for qualification of suppliers and subcontractors providing safety-related items or services to a Project.
- Establish and implement a system for collection, storage, and maintenance of records required to furnish evidence of activities affecting quality and the procedures for turnover of the records to clients in accordance with regulatory and contractual requirements.



- Approve project quality requirements as identified in NQAM Applicability forms and as stated in Project Quality Plans.
- Periodically assess the compliance with and effectiveness of the QA Program through a comprehensive system of planned and periodic surveillances and audits as required by Section 2 and 18 of this manual.
- Stop work on nonconforming items or where nonconforming practices are identified, when such action is warranted.
- Verify that corrective actions have been taken to resolve conditions identified by Nonconformance and Corrective Action Reports, Audit Finding Reports, and client reports.
- Review purchase orders associated with contracts requiring the application of the Nuclear Quality Assurance Manual, from the standpoint of satisfying QA requirements.

### 1.3.3 Business Operations

Business Operations provides administrative support functions to the company President and projects. Bookkeeping, human resource functions, accounts payable, and accounts receivables make up the majority of Business Operations functions.

### 1.3.4 Subsidiary Companies

Any ILRT Inc. subsidiary company conducting nuclear safety-related activities or services shall operate under the authority of this Manual.

## 1.4 Project Organization

A typical Project Organization is described below. The respective position responsibilities and authorities that affect the control of quality-affecting project activities are described as follows:

### 1.4.1. Project Manager

The Project Manager is responsible to the client for all project work. The Project Manager has the responsibility and authority to:

- Implement all applicable provisions of the Nuclear Quality Assurance Manual and related procedures.
- Prepare the Project Quality Plan Project Procedures.
- Maintain communications with the client on quality-affecting project activities.
- Issue quality-related documents and records to the client upon project completion.

The principal working contact with the client is through the Project Manager. However, the client also has direct access to the President and the Quality Assurance Manager.

#### 1.4.2. Project Staff

Project Staff members report to the Project Manager. They are required to be familiar with the provisions of the Nuclear Quality Assurance Manual and the Project Quality Plan and are responsible for complying with implementing procedures. All personnel assigned to a Project doing safety-related work, regardless of location, fall under the authority of this Manual and the applicable Project Quality Plan. The Project Quality Plan may define the location of the personnel assigned to a project.

#### 1.4.3 Corporate Quality Function

The Corporate quality functions associated with a project are performed as described in paragraph 1.3.2 by the Quality Assurance Manager.

### 1.5 Repetitive-Task Projects

Some projects performed by ILRT Inc. are repetitive in nature. An example of such a project is Integrated Leak Rate Testing (ILRT) projects.

For this repetitive type project, a generic Project Quality Plan may be written, with Appendices or supplemental Project Procedures as appropriate for details of a specific project.

## SECTION 2.0 QUALITY ASSURANCE PROGRAM

### 2.1 Scope

This section describes how the ILRT Inc. Nuclear Quality Assurance Manual is implemented to control quality-related activities on Company projects falling under the applicable requirements of the listed references.

### 2.2 References

2.2.1 10CFR50 Appendix B - Quality Assurance Criteria for Nuclear Power Plants

2.2.2 ANSI/ASME N45.2 - Quality Assurance Program Requirements for Nuclear Facilities

2.2.3 ASME NQA-1-1994 - Quality Assurance Program Requirements for Nuclear Facilities Subpart 2.7, Quality Assurance Requirements for Computer Software for Nuclear Facility Applications,

### 2.3 Definitions

The definitions contained in the references are applicable throughout this manual unless a specific exception is made.

### 2.4 General

This Nuclear Quality Assurance Manual defines the requirements of the ILRT Inc. Quality Assurance Program as it relates to nuclear safety related work. It is presented in 19 sections as follows: 18 sections corresponding to and addressing each of the 18 Criteria of 10 CFR 50, Appendix B, ANSI/ASME N45.2, applicable sections of ASME NQA-1-1994 and one section addressing the requirements of 10CFR21.

ILRT Inc. provides services and, on occasion, related products to the nuclear industry. (Normally the company does not produce, install, replace, repair, or otherwise handle hardware products other than for temporary use during integrated leakage rate tests.) Some of the sections of this manual are not applicable to Company services or projects but are provided in the event that a project falls into any of these areas. The sections not normally required for a typical project are:

Section 8 Identification and Control of Materials, Parts and Components

Section 9 Control of Special Processes

Section 10 Inspection

Section 14 Inspection, Test and Operating Status

Specific instructions and requirements for complying with applicable QA criteria for each project for which applicability is determined as described in Section 2.5 are contained in the Project Quality Plan and implementing procedures, as described in Section 5. Procedures may include Quality Implementing Procedures (QIPs), Quality Instructions (QIs), Operating

Procedures (OP), and specific Project Procedures (PPs or PPMs).

- QIPs define how the administrative requirements of the Nuclear QA Manual are to be implemented, and address the subjects common to all project activities of the Company.
- OPs implement the QA Manual requirements from a technical standpoint.
- QIs contain detailed instructions that support various QIP or OPs.
- PPs / PPMs describe how the quality-related activities of specific work tasks are performed.

## 2.5 Nuclear Quality Assurance Manual Applicability

The applicability of the Nuclear Quality Assurance Manual to each Company project shall be determined and affected as follows:

### NOTE:

1. The requirements of Section 1 through 18 are applicable to company projects as determined by a specific applicability review.
2. The requirements of Section 19 are applicable to all Company nuclear activities as described herein.

When a contract document is received, it is delivered to the President who assigns a Project Manager for review and contract setup. That individual assumes Project Manager responsibilities for the contract and reviews the document to identify and evaluate the specific project tasks, complete the order entry and commercial review, and to identify any provisions for quality assurance. The documented review is then provided to the Quality Assurance Manager for concurrence and approval to start quality related tasks.

The Project Manager documents the results of the quality assurance applicability review by checking the appropriate block on the QA Review and NQAM Applicability form, Exhibit 2, prepared for that project. If application of the Company's Nuclear Quality Assurance Manual is specified by the contract document, the "ILRT INC." block on the form is marked as YES. If application of the client's quality assurance program is required the "Client" block is marked as YES. If application of quality assurance is not required, the "ILRT INC. and "Client" blocks are marked NO, and the only mandatory quality assurance requirements applicable to the project are those defined in Section 19.

Following the Project Manager's review, the contract and review documents are forwarded to the Quality Assurance Manager for formal review and verification of appropriate assignment of QA status. A documented review of contract documents for commercial items is conducted by Business Operations or the President. If the "ILRT INC." block is checked, the Quality Assurance Manager also reviews and approves the Project Quality Plan (Exhibit 3). Contract review results and comments are recorded on the associated exhibits.

If the Nuclear Quality Assurance Manual is applicable, a Project Quality Plan is required, and the following actions are taken:

### 2.5.1 The Project Manager or designee completes a Nuclear Quality Assurance Manual

Applicability form as shown in Exhibit 2, indicating whether each section is (1) "Applicable, in accordance with 10 CFR 50, Appendix B," or "ASME NQA-1," (2) "Applicable, limited to specific project requirements", or (3) "Not Applicable," consistent with the quality assurance requirements specified in the contract.

- a. "Applicable, in accordance with 10 CFR 50, Appendix B" or "ASME NQA-1":

The client has invoked 10 CFR 50, Appendix B or ASME NQA-1 quality assurance requirements in the contract. Project quality-related activities associated with the specific work tasks shall be performed, reviewed, and documented in full compliance with the designated sections of the Nuclear QA Manual, the Project Quality Plan, and implementing quality assurance procedures.

- b. "Applicable, limited to specific project requirements":

10 CFR 50, Appendix B or ASME NQA-1 has not been invoked in full by the client, but some quality assurance requirements have been either specified in the contract or designated by the cognizant Project Manager. In this situation, the designated sections of the QA Manual shall be used on a limited basis for controlling quality-affecting project activities, as identified in the Project Quality Plan. The Project Manager shall indicate any exceptions to specific provisions in the QA Manual sections invoked in the Project Quality Plan.

- c. "Not Applicable"

10 CFR 50, Appendix B or ASME NQA-1 has not been invoked and does not apply.

The Project Manager shall sign and date the form when each section has been checked, and forward it to the Quality Assurance Manager for review and approval.

2.5.2 The Quality Assurance Manager reviews the Nuclear Quality Assurance Manual Applicability form along with the contract and all reference documents, and takes the following action:

- a. Documents the review by checking the appropriate blocks on the bottom section of the form, and indicating any recommendations in writing.
- b. Signs and dates the form, and returns the original and attachments to the Project Manager for retention with the project records.
- c. Obtains concurrence, or resolution of, recommendations from the Project Manager, and signs the form, indicating "Final Approval." The completed form with all backup documentation attached is filed with the project records, normally as a section of the Project Quality Plan.

## 2.6 Project Quality Plan

Following the determination of applicability of the Nuclear QA Manual, as described in Section 2.5, the Project Manager prepares a Project Quality Plan by reviewing the project task requirements and identifying the description of each on a Project Quality Plan form, Exhibit 3. The applicable sections of the Nuclear QA Manual, as listed on the Quality Assurance Manual Applicability form, are listed. The applicable implementing procedures, instructions corresponding to each listed task description or required QA Manual section, are identified in the "Applicable Procedure" column. Any exceptions to the applicable sections of the Nuclear QA Manual are listed in the appropriate space provided. The form is signed and dated by the Project Manager, then reviewed, approved, signed and dated by the Quality Assurance Manager. This completed document summarizes the applicability of the Nuclear QA Manual, project task requirements, and implementing procedures for controlling the quality-related project activities, and shall be included in the Project Quality Plan and filed with the project records, in accordance with Section 17.

## 2.7 Exceptions or Changes to Contract Documents

Any exception taken by ILRT Inc. to a client contract/purchase order requirement, or any change to the contract document, will be documented. Exceptions or changes may be documented on the Contract Setup Worksheet, in a letter/memorandum to the client, on form(s) provided by the client, or on Exhibit 7, Notice of Exception/Change to Client Procurement Document. Documentation of exceptions or changes will be filed with the project records.

## 2.8 Assessment of Nuclear QA Manual Implementation

It is the responsibility of the President to assess the implementation of the Nuclear Quality Assurance Manual by commissioning an audit of the program and a report of the results. This assessment is performed on a regular basis, approximately every two years. Revision to the Nuclear Quality Assurance Manual and its review by the President and Quality Assurance Manager will satisfy the requirements for reporting the status and effectiveness of the manual.

Implementation effectiveness of the Nuclear QA Manual, including compliance to the applicable criteria of 10 CFR 50, Appendix B or referenced sections of ASME NQA-1-1994, and other applicable Codes and specifications, is further assured through periodic programmatic or project audits performed by the Quality Assurance Manager or a qualified designee.

## 2.9 Revisions to the Nuclear QA Manual

Revisions to the Nuclear Quality Assurance Manual shall be reviewed by the Quality Assurance Manager and approved by the President.

## 2.10 Nuclear QA Manual Distribution

The Quality Assurance Manager is responsible for the issue, recall, revision, and reissue of the Nuclear QA Manual. The Nuclear QA Manual is a controlled document. When controlled copies of the Nuclear QA Manual are distributed, a receipt acknowledgment form is requested from each holder of controlled copies. Controlled copies may be issued as hard copies identified as such in red ink on the cover page, or as read-only electronic copies (e.g., such as a downloaded pdf file, or a labeled CDROM issued by the Quality Assurance Manager or designee. Editable (Microsoft Word) copies on CDRW disks or similar media will NOT be considered Controlled Electronic Copies). Copies of receipt acknowledgments are maintained for the most current revision of the QA Manual. An emailed receipt acknowledgment is considered adequate for both electronic and hard copies of QA Manuals and current revisions.

The Quality Assurance Manager may issue uncontrolled copies of the manual for information only. Copies shall be clearly indicated as "Uncontrolled" or "For Information Only." Any copy issued in any form not supported by a documented receipt shall be considered as "For Information Only".

## 2.11 Personnel Assignments

The assigned Project Manager makes all project personnel and project work assignments.

## 2.12 Project Personnel Qualifications/Certifications

The qualification requirements for project personnel are the responsibility of the Project Manager. The contract or the Project Manager may establish the requirements. Any required certifications shall be the responsibility of the appropriate certifying body. Verification of Qualification/Certification is the responsibility of Business Operations. Business Operations shall maintain documentation of the employee Qualification/Certification and the accompanying verification.

## 2.13 Project Personnel Indoctrination and Training

### 2.13.1 Indoctrination/Training

The Project Manager is responsible to ensure that the project personnel have been provided appropriate indoctrination and training to the applicable portions of the ILRT Inc. Nuclear Quality Assurance Manual and implementing procedures.

Prior to any project personnel performing quality-related activities under the auspices of this manual, it is the responsibility of the Project Manager to ensure they are indoctrinated and trained. The objective of this indoctrination and training is to familiarize project personnel with the various aspects of quality assurance relative to the individual's job functions. Assistance as required may be obtained from the Quality Assurance Manager. The indoctrination/training shall, as a minimum, include the following:

- ILRT Inc. Nuclear Quality Assurance Manual (applicable sections)



- Project Quality Plan and applicable procedures
- Other applicable codes and standards

Those personnel not directly related to the quality aspects of projects will be provided with indoctrination and training on quality subjects that can indirectly affect the quality or contractual requirements of the projects. These personnel may include Business Operations personnel. Training shall be initial, biennial, or major quality program change, whichever is first.

Completion of quality assurance indoctrination/training shall be documented in writing for each individual by the Project Manager and maintained in the project records.

### 2.13.2 Technical Training

The need for technical training for project personnel is evaluated by the Project Manager and provided on an as needed basis. The Project Manager is responsible for conducting project technical training (e.g., unique work instructions, unusual technical/interface requirements, etc.). This is not intended to be general engineering or skills training, but unique to the project being performed.

## 2.14 Project Organizational Responsibilities

The Project Manager is responsible for the quality of all work performed by the Project Organization under his jurisdiction. The Project Manager shall make individuals who are assigned tasks cognizant of quality and technical requirements. The project shall be organized to meet the quality requirements, as applicable.

## 2.15 Project Manager Addition or Replacement

In the event of a change of Project Manager, the incumbent Project Manager shall take the following actions:

2.15.1 Arrange for a formal turnover/indoctrination session for the newly assigned Project Manager. The turnover or indoctrination session shall be documented and cover the following topics as a minimum:

- (a) Project performance status:
  - Contract requirements
  - Project commitments
  - Task completion status
  - Project schedule
  - Personnel assignments, responsibilities, and qualifications
- (b) Project Quality Plan summary and status:
  - Explanation of Project Quality Plan
  - Review of Project Procedures and Quality Implementing Procedures
  - Project QA audit/surveillance status and results
  - Nonconformance/corrective actions (closed and outstanding)



- Interface with client QA program/personnel

2.15.2 In the event that the incumbent Project Manager is not available to fulfill the requirements of 2.15.1 above, the President or Quality Assurance Manager shall perform the steps required by 2.15.1

## 2.16 Quality Assurance Auditor Qualification and Training

It is the responsibility of the Quality Assurance Manager to assure those ILRT Inc. Quality Assurance Auditors, or auditors supplied by outside agencies, are properly qualified and certified in accordance with applicable procedures. ILRT Inc., in accordance with Section 17 of this manual and applicable procedures shall maintain records of auditor qualification and training.

## 2.17 QA/QC Qualification and Certification of ILRT Inc. Personnel

At times, ILRT Inc. performs nuclear related services for clients who require that ILRT Inc. certify employees for a particular service to be provided (e.g., NDE services, test surveillance, inspectors).

There is a body of codes, standards and rules that govern the qualifications of the personnel who conduct the testing, review test results and certify people as qualified to perform particular functions. These certifications are normally required to be in accordance with one or more industry standards such as ANSI N45.2.6.

A Level III Examiner is responsible for developing procedures, and instructions for performance of certifications. These procedures and instructions constitute the "Quality Assurance and Quality Control Qualification and Certification Program."

A Level III Examiner is also responsible for performing the certifications in a timely fashion. The Quality Assurance Manager is responsible for maintaining the certification records in duplicate files.

The cognizant ILRT Inc. Project Managers shall identify the personnel to be certified to a Level III Examiner and shall provide the Examiner the requisite supporting documentation attesting to the individual's qualification for certification and for performing the work assignment.

## 2.18 Staff Certifications

It is the responsibility of the Project Manager to assure that staff certificates of qualification are provided to the client, when required.

## 2.19 Resolution of Disagreement

The next higher level of authority shall normally resolve differences of opinion on quality requirements between the Quality Assurance Manager and Project Managers/Project Engineers, or Project Staff.

## 2.20 Subcontractors' Quality Assurance Programs

To assure that contractors providing items or services under the scope of this manual have acceptable Quality Assurance Programs, specific requirements for these programs shall be contained in subcontract procurement documents. Subcontractor QA Programs are subject to review prior to contract award and during contract life. Sections 4 and 7 of this manual further define this activity.

#### 2.21 Inspection and Test Requirements

Appropriate requirements shall be imposed on contractors in procurement documents to assure that inspections and tests are performed with appropriate equipment and under suitable environmental conditions. The project staff, prior to use, reviews inspection and test procedures for these activities, and the work activities shall be monitored for conformance to the procedures. Refer to Sections 10, 11, and 12 for further guidance.

#### 2.22 Management Review of QA Program

An effectiveness review of the ILRT Inc. Nuclear QA Program is conducted under the direction of the President once every two years as a minimum. To assure its continued effectiveness, the review results are reported in writing to the President and the Quality Assurance Manager.

#### 2.23 Annual QA Program Assessment

The Quality Assurance Manager shall provide to the President a documented assessment of the program on an annual basis. This assessment shall include an evaluation of the adequacy of the program and the effectiveness of its implementation. The assessment shall be detailed enough to cover all of the relevant activity during the period and include recommendations for changes or improvements.

#### 2.24 Applicability of Nuclear QA Manual Revisions

The Nuclear QA Manual revision in effect at the beginning of a project, as identified in the Project Quality Plan, remains in effect throughout the life of the project. Subsequent revisions to the Nuclear QA Manual do not apply to a project unless the revision is made to correct a deficiency in the Program that might adversely affect the project, as determined by the Quality Assurance Manager. (Project Managers may implement a revision to the manual on an existing project by revising the Project Quality Plan, obtaining concurrence of the Quality Assurance Manager, and notifying the client.)

## SECTION 3.0 DESIGN CONTROL

### 3.1 Scope

This section of the manual describes the measures established to assure that design bases, regulatory requirements, codes, and standards are correctly translated into engineering and design activities, and for the preparation, verification, review, approval, issue, and revision of design documents, including application or project-specific software, when design control is specified in the Project Quality Plan.

### 3.2 General

Design encompasses the processes by which the details of structures, systems and components are generated. The design control program of ILRT Inc. has been established to assure that all engineering and design activities are carried out in a planned, controlled and orderly manner. Engineering and design activities are governed by the Project Quality Plan and implementing procedures, which define the requirements for translating applicable regulatory requirements and design bases into technical specifications, drawings, written procedures and instructions. Design activities are the responsibility of, and are performed by, the Project Organization, unless otherwise identified in the Project Quality Plan.

### 3.3 Design Input

The basic document that identifies the applicable design inputs such as, regulatory requirements, design bases, codes and standards, and other criteria is the Project Quality Plan. The initial issue of the Project Quality Plan is not intended to provide all the detailed requirements to be incorporated into design documents, but to provide sufficient basic requirements to permit the design process to proceed. As additional criteria are developed, they are incorporated into the Project Quality Plan or incorporated into project specific procedures. Changes from approved design inputs, including the reason for the change, shall be documented and controlled in accordance with the approved Project Quality Plan and applicable implementing procedures.

### 3.4 Design Process

The design process consists of activities performed to translate the design inputs into the product of the design effort. These activities include the performance of design calculations and analyses and the preparation of drawings, specifications, test procedures and installation instructions, in accordance with the approved Project Quality Plan and applicable procedures.

All design activities shall be documented in sufficient detail to relate the design back to the design input, and thereby provide the basis for:

- Technical Checking
- Document Review
- Design Verification
- Auditing

Controls shall be imposed on the following design related activities as a minimum:

3.4.1 Inclusion of Quality Standards and Acceptance Criteria

Applicable PPs and/or the Project Quality Plan shall impose the requirements for the inclusion of appropriate quality standards and acceptance criteria on the project. Controls for documenting and approving changes to specified quality standards, including documentation of reasons for such changes, shall be included in the Project Quality Plan or PPs.

3.4.2 Interfaces Between Participating Organizations

A system of design interface control shall be established in the Project Quality Plan or implementing procedures to assure the appropriate reviews, approvals, release, distribution, and revision of design documentation are performed during the transfer of these documents between interfacing internal and external organizations. Controls shall be established to prevent the inadvertent use of superseded or outdated design documents.

3.4.3 Selection of Materials, Parts, Equipment, Software and Processes

The suitability and compatibility of materials, parts, equipment, software and processes essential to the function of the structure, system or component shall be assured through the use of applicable industry standards, approved specifications, and internal design reviews, as defined in the appropriate procedure or Project Quality Plan.

3.4.4 Internal Design Reviews

Internal design reviews shall be performed during the design process, as defined in the Project Quality Plan or applicable PPs, to assure acceptability of the design. These reviews shall normally consist of checking and approval of calculations, system descriptions, design specifications, stress reports, drawings, procurement specifications, and other documents at various stages of completion. Errors and deficiencies identified shall be documented and appropriate corrective action instituted to preclude repetition. Any corrections shall be re-reviewed. Computer programs may be utilized for design analysis without individual verification of the program for each application provided:

- a. The computer program has been verified to show that it produces correct solutions for the encoded mathematical model within defined limits for each parameter employed; and
- b. The enclosed mathematical model has been shown to produce a valid solution to the physical problem associated with the particular application.

### 3.5 Design Verification

When required by the nature of the work, and upon completion of design, a verification of overall design adequacy shall be performed by individuals or groups other than those who performed the original design work (although they may be from the same organization), in accordance with the Project Quality Plan and applicable implementing procedures, to assure compliance with applicable design bases, regulatory requirements, codes, and standards. The responsibilities of personnel performing these reviews shall be identified.

The extent of the design verification required is a function of the importance to safety, the complexity of the design, the degree of standardization, the state of the art, and the similarity with previously proven designs. The design verification may be accomplished through one or more of the following methods:

- Independent review of design documents.
- Alternate calculations selected to verify correctness of the original calculations or analysis.
- Qualification testing of a prototype under the most adverse design conditions. All qualification testing shall be performed in accordance with a written program having provisions for test procedures, review and approval by the design organization, qualitative and quantitative acceptance criteria, review of test results by the design organization, and evaluation of the need for retest when design criteria changes. (Refer to Section 11.0 of this manual.)

The results of all design verification activities shall be documented, with the identification of the verifier clearly indicated, and reviewed by cognizant project management personnel in accordance with applicable procedures and the Project Quality Plan.

### 3.6 Design Changes

All changes to design, including field originated changes or changes required due to design verification action, shall be justified and receive the same level of review, approval and design verification performed for the original design, based on the importance of safety of the change under consideration. Design changes should be reviewed and approved by the person or organization that performed the review and approval of the initial issue of the design document or by other equally qualified personnel or organizations. The personnel or organization(s) designated to perform the review and approval of changes shall be competent in the specific area of interest and have access to the background information and data related to the document being changed. Design changes shall be reflected in drawings, specifications and other design documents.

Where a significant design change is necessary because of an incorrect design, the Project Manager and the Quality Assurance Manager shall review the design process and verification methods and initiate corrective action as necessary.

### 3.7 Technical Reports

Technical reports may be used to document ILRT Inc.'s design efforts and shall meet the following requirements:

#### 3.7.1 Identification

Technical reports shall be identified as a minimum by (a) document title, issue date, and revision status; (b) client and project number; and (c) unique report number.

#### 3.7.2 Content

Technical reports shall include the following information as appropriate:

- Identification of design inputs incorporated in the final design.
- Identification of design assumptions incorporated in the final design.
- Identification of computer codes (and revision status) utilized.
- References to calculations, analyses, examination and test results, and other information that represents the basis for the report.
- Identification of applicable drawings resulting from the design addressed in the report, or drawings used in performing the evaluation.
- Demonstration of compliance with applicable specification and/or regulatory requirements.

#### 3.7.3 Review

Technical reports shall be reviewed and checked for accuracy by individuals other than those who prepared the document and by those who are technically competent in the subject area. The review shall include steps to confirm that (a) applicable technical specification requirements have been met, (b) the report fulfills the objective criteria, and (c) the results are consistent with input data and are reasonable. All review comments shall be resolved, and all review actions documented. (A memo to file is considered adequate documentation.)

### 3.8 Controlled Documents

Approved design documents that are required to accomplish a task or are the results of a task, and revisions thereto, are to be handled as controlled documents. The distribution to responsible project personnel and/or the client, shall be in accordance with the Project Quality Plan and applicable procedures, to prevent inadvertent use of superseded material. (Refer to Section 6 of this manual.)

### 3.9 Technical Computer Programs

The actions of selecting or developing, modifying, verifying, and maintaining technical computer programs used for nuclear safety related work shall be performed in accordance with the Project Quality Plan and applicable procedures.

Technical Computer Programs are classified into two categories; (1) Production Computer Programs, (2) Project Computer Programs, based on the following criteria:

#### 3.9.1 Production Computer Programs

- a. An ILRT Inc. owned and maintained proprietary program fully verified and available for use on ILRT Inc. projects. They are developed, verified, modified and maintained by ILRT Inc.
- b. A commercially available vendor developed and maintained program that has been verified, approved and authorized for use on ILRT Inc. projects.

#### 3.9.2 Project-Specific Computer Programs

Those programs developed, verified, and maintained for a specific project by project personnel. When project-specific modifications are made to a standard program, the modified version becomes a project-specific version of the program. Public-domain programs can be verified as project-specific programs when their use is restricted to one project. Project-specific programs/versions developed for one project shall not be used on another project, unless the program/version is re-verified and subsequently maintained by the second project.

If required as part of the contract, the client will be included in the review and approval process of project-specific programs.

### 3.10 Records

Design documents and reviews, records, and changes thereto shall be collected, stored and maintained as part of the Official Project Records in accordance with the Project Quality Plan and applicable procedures. These records shall be turned over to the client at project completion. (Refer to Section 17.0 of this manual.)

## SECTION 4.0 PROCUREMENT DOCUMENT CONTROL

### 4.1 Scope

This section of the manual describes the measures employed in the preparation, review, approval, and control of the documents required for purchasing nuclear safety-related items, equipment, software, or services, when procurement document control is specified.

### 4.2 General

Procurement documents subject to the requirements herein may consist of procurement specifications, purchase requisitions, contract letters, service contracts, purchase orders, and other binding instruments.

### 4.3 Procurement Document Content

Procurement documents, which consist of written descriptions of items or services to be purchased shall include or reference the following information and requirements as applicable:

- Scope of work to be performed by the supplier
- Approved design drawings and/or technical specifications
- List of applicable codes, standards and regulatory requirements
- Specific supplier and subcontractor quality assurance requirements
- Special process instructions for activities such as welding, heat treating and nondestructive examination
- Provisions for access to suppliers' facilities for source inspection and quality assurance audits
- Hold points and notifications for source inspections
- Computer software application and requirements for control and reporting of errors per ASME NQA-1-1994 Subpart 2.7, Subsection 10 PROCUREMENT.
- Documentation to be submitted by the supplier, such as:
  - Technical reports, drawings, calculations.
  - Inspection and test records
  - Material test reports
  - Appropriate quality assurance program requirements for sub-tier suppliers.

All procurement documents shall be uniquely identified by numbers assigned by the Project Manager, consistent with the requirements of the Project Quality Plan and applicable implementing procedures.



#### 4.4 Procurement Document Review and Approval

The Project Manager is responsible for the initiation of the procurement document, inclusion of appropriate technical requirements and conditions, and for review and approval. The Quality Assurance Manager shall review the procurement document to verify that procurement document control is specified and adequate, that all quality requirements are clearly delineated, and that the supplier has been approved for use in accordance with Section 7 of the manual.

#### 4.5 Bid Evaluation

- 4.5.1 If the item or service is to be purchased through bid action, an invitation for bid is prepared and issued to prospective suppliers by the Project Organization.
- 4.5.2 Bids submitted by prospective suppliers are evaluated by the Project Manager and staff, consistent with client requirements, and considering the following criteria:
- Technical ability to provide items or services
  - Ability to conform to delivery schedule
  - Proposed exceptions or deviations
  - Proposed price
  - Proposed warranty
- 4.5.3 The supplier shall have a documented quality assurance program that implements the applicable portions or all the requirements of this manual. The Quality Assurance Manager or other approved outside agency shall determine the acceptability of the supplier's Quality Assurance.
- 4.5.4 When the successful supplier is selected, the Project Manager notifies the client.
- 4.5.5 Upon the receipt of required approvals, a purchase order is prepared and issued by the Project Manager.
- 4.5.6 Qualification of suppliers is required prior to issue of the purchase order. (Refer to Section 7 of the manual.)

#### 4.6 Control of Changes

All changes to quality-related project generated procurement documents are controlled in respect to reviews and approvals, and are released in accordance with an approved procedure and the following:

- 4.6.1 Changes are documented on a Change Notice Form, as illustrated in Exhibit 4.
- 4.6.2 The change notice preparer evaluates the change with respect to its effect on the product item or services, and summarizes the findings on the form in the space provided for Review of Change Effect on Product.
- 4.6.3 Changes are reviewed, approved, and released in the same manner as the original document.
- 4.6.4 The Project Manager is responsible for notifying the selected supplier or prospective suppliers of all approved changes and for transmitting the applicable change notices.
- 4.6.5 The Project Manager reviews all changes and assigns appropriate follow-up actions to project personnel where necessary.

#### 4.7 Reference to 10 CFR 21

Any purchase order for Basic Components (as defined in 10 CFR 21) shall include a requirement that 10 CFR 21 applies to the vendor for all activities performed under the purchase order. The purchase order shall also require written notification of any defects to ILRT Inc. within five working days of the completion of the defect evaluation.

## SECTION 5.0 INSTRUCTIONS, PROCEDURES AND DRAWINGS

### 5.1 Scope

This section of the manual describes the requirements for the preparation, review, approval, and control of plans, instructions, procedures and drawings for quality-affecting activities, when the control of instructions, procedures, and drawings is specified in the Project Quality Plan.

### 5.2 General

#### 5.2.1 Plans

The Project Quality Plan (PQP) is the administrative control document for a project that falls under the purview of the ILRT Inc. Nuclear Quality Assurance Program.

#### 5.2.2 Procedures

Typical types of procedures used in implementing the Quality Assurance Manual include the following:

- Project Procedures (PPs) are procedures selected or prepared by the Project Organization for describing and controlling project task activities.
- Quality Implementing Procedures (QIPs) are procedures approved by the President or the Quality Assurance Manager for assuring the consistent implementation of the Nuclear Quality Assurance Manual from project to project.

#### 5.2.3 Drawings

Drawings are graphical representations prepared by the Project Organization in support of required project work tasks and are controlled documents. (Sketches and illustrations are not identified as drawings, and are not controlled documents.)

### 5.3 Project Quality Plans (PQPs)

#### 5.3.1 Requirement for Project Quality Plans

A Project Quality Plan shall be developed for all projects implementing the ILRT Inc. Nuclear Quality Assurance Program in accordance with the requirements of Section 2.0 of this manual.

#### 5.3.2 Preparation

The Project Quality Plan is normally developed by the Project Manager and will as a minimum address all the requirements of the criteria checked as applicable on the Quality Assurance Applicability Form

#### 5.3.3 Issuance

The Project Quality Plan is a controlled document and shall be issued and controlled in accordance with Section 6 of this manual.

#### 5.3.4 Review and Approval

PQPs are reviewed and approved to assure that the following conditions are satisfied:

- All technical requirements stated in the contract and Purchase Order have been addressed.
- The PQPs shall as a minimum address each of the criteria identified as "applicable" or "limited applicable" on the NQAM applicability form.
- The PQPs shall describe the project activities to be conducted.
- The PQPs comply with the requirements of the Nuclear QA Manual.

The review and approval of PQPs are performed in accordance with Section 2.0, paragraph 2.6.

#### 5.3.5 Changes

Changes to PQPs are reviewed and approved in the same manner as the original review and approval.

### 5.4 Project Procedures (PPs / PPMs)

#### 5.4.1 Requirement for Project Procedures

All project tasks affecting quality shall be performed in accordance with written and approved Project Quality Plans or Project Procedures. Projects of a large, long term, complex nature requiring implementation of the quality program shall be performed in accordance with written and approved Project Quality Plans and Project Procedures (PP / PPM). When agreed upon by the Project Manager and the Quality Assurance Manager, for short term fast paced simple projects, the Project Quality Plan alone can provide the necessary controls for the administrative and quality aspects of a project.

#### 5.4.2 Review and Approval

PPs are reviewed and approved to assure that the following conditions are satisfied:

- All technical requirements stated in the Project Quality Plan have been addressed.
- The PPs clearly delineate the activities to be performed.
- The PPs comply with the requirements of the Nuclear QA Manual and the Project Quality Plan.

The review and approval of PPs and other actions on PPs are performed in accordance with Table 5-1. If the Company President, serving as the Project Manager develops the PP, the review and approval must be by a different Project Manager or the Quality Assurance Manager. The review and approval may be by the same individual however where practicable the review and approval should be by two different, but qualified, individuals.

5.4.3 Changes

Changes to PPs are reviewed and approved in the same manner as the original review and approval, as described in Table 5-1.

5.4.4 Standard Project Procedure Manuals (PPMs) may be used in lieu of specific PPs for standardized, repetitive, well-defined scopes (e.g. such as ILRTs) provided they are referenced in the Project Quality Plan and unique client requirements are clearly described in the Project Quality Plan.

<b><u>TASK</u></b>	<b><u>RESPONSIBILITIES</u></b>
Preparation	Project Staff
Review	Project Staff or Project Manager
Approval	Project Manager
Implementation	Project Organization
Audit	President, QA Manager, or designee

Table 5-1 **Project Procedure Process Responsibilities**

5.5 Quality Implementing Procedures (QIPs)

5.5.1 Requirement for QIPs

Repetitive quality assurance activities that control and document the implementation of the QA Manual are performed in accordance with written QIPs.

5.5.2 Selection and Preparation

QIPs may be prepared by any employee, and shall comply with the applicable criteria of 10 CFR 50, Appendix B and this manual.

5.5.3 Review and Approval

QIPs are reviewed and approved to assure that the following conditions are satisfied:

- The QIPs clearly delineate the activities to be performed.
- The QIPs provide for adequate documentation of the subject activity.
- The QIPs are consistent with the attendant Company activities.

The preparation, approval and implementation of QIPs are performed in accordance with Table 5-2. The Quality Assurance Manager must serve as either the preparer, reviewer, or approver and may serve as both reviewer and approver when the QIP is prepared by the President.

#### 5.5.4 Changes

Changes to QIPs are reviewed and approved in the same manner as the original review and approval, as described in Table 5-2.

<b><u>TASK</u></b>	<b><u>RESPONSIBILITIES</u></b>
Preparation	Any employee
Review	QA Manager or President
Approval	President or QA Manager
Implementation	Project Organization
Audit	QA Manager, President, or designee

Table 5-2 **Quality Implementing Procedure Process Responsibilities**

#### 5.6 Drawings

##### 5.6.1 Preparation, Review and Approval

Drawings are prepared, reviewed, approved, and documented, in accordance with approved PPs or QIPs. Drawings are reviewed to the extent necessary, as defined in the PPs or QIPs, to assure that:

- Drawings are technically correct.
- Revision status is evident.
- Project requirements are satisfied.

##### 5.6.2 Graphics

Graphics developed solely to illustrate or support project work, that are not specifically called out as a deliverable in the client's purchase order shall not be considered drawings and are not subject to the controls described in 5.6.1 and 5.6.3

##### 5.6.3 Changes

Changes to drawings are reviewed and approved in the same manner as the original review and approval, as described in the PP or QIP.

## SECTION 6.0 DOCUMENT CONTROL

### 6.1 Scope

This section describes the necessary controls for documents that specify quality requirements or prescribe activities affecting quality such as instructions, procedures and drawings.

These controls include document identification, and responsibilities for preparation, approval, issue, recall, storage, and retention.

### 6.2 Types of Documents

For the purpose of control, the following types of documents are considered:

- 6.2.1 Controlled documents supplied by the client for use by the project staff.
- 6.2.2 Technical documents prepared by the project for delivery to the client, including drawings, design documents, and procurement documents.
- 6.2.3 Documents for the control of project activities, including PPs, QIPs, and QIs.
- 6.2.4 Controlled documents submitted by suppliers
- 6.2.5 Subcontractor procurement documents for quality-related activities
- 6.2.6 Nonconformance reports

### 6.3 Controlled Documents Supplied by the Client

Each quality-related, controlled document received from the client shall be logged in and distributed to appropriate project personnel in accordance with the Project Quality Plan and applicable implementing procedures. The log shall include the document identifier, revision level, date received, and individuals to whom the document is distributed. When revisions to the document are received from the client, the superseded revision is recalled concurrently with issuance of the later revision. (See typical Document Receipt/Distribution Log form, Exhibit 5.)

### 6.4 Technical Documents Generated by Project and Supplied to Client

Technical documents generated by the project, designated by the client or project procedures as controlled documents including drawings, design documents, (e.g., calculations, specifications, computer software and design changes) and procurement documents for delivery to the client, are subject to the requirements of Sections 3, 4, and 5 of this manual during their preparatory phases.

When the document is finalized and approved for issue to the client, it is submitted to the client in accordance with the Project Quality Plan and applicable implementing procedures.

When revisions are required to documents that have been delivered to the client, the Project Manager notifies the client in writing and the affected documents are recalled or superseded.

The revised documents are:

- Reviewed and approved in the same manner as the original documents were reviewed and approved, as described in Sections 3, 4 and 5, as appropriate
- Identified with the next successive revision number, and
- Reissued to the client.

#### 6.5 Documents for the Control of Project Activities

Documents developed on the project for control of project activities are prepared in accordance with Section 5 of this manual. When these documents are approved and authorized for issue, they are issued to persons as directed by the Project Manager. A log is maintained identifying the documents and their revision level, date of issue and distribution. When revisions to documents occur, obsolete revisions are recalled concurrent with issuance of the new revision to prevent inadvertent use.

Revised documents are reviewed and approved in the same manner as the original documents, as described in Sections 3, 4, and 5, as appropriate.

Controlled project documents shall be available at the location where the activity will be performed before the work is begun.

#### 6.6 Documents Submitted by Suppliers

Documents submitted by suppliers as required by quality-related ILRT Inc. procurement documents are:

- Reviewed and approved, and
- Filed in the Project Official Records file in accordance with approved PPs.

In the event that deficiencies or nonconformances are identified in the submitted documents, the Project Manager is responsible for contacting the supplier and obtaining acceptable documents or resolving the deficiencies.

#### 6.7 Procurement Documents

Procurement documents are handled and controlled as described in Section 4.

#### 6.8 Storage and Retention

All quality-related documents are controlled in accordance with Section 17 of this manual.

#### 6.9 Verification of Implementation

Surveillances and audits performed by the President, QA Manager, or designee provides verification that the document control program is being effectively implemented. (Refer to Section 18.)

#### 6.10 Nonconformances

Nonconformances are handled and controlled as described in Section 15 of this manual.



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## SECTION 7.0 CONTROL OF PURCHASED MATERIAL, EQUIPMENT AND SERVICES

### 7.1 Scope

This section of the manual describes the methods employed to assure supplier-furnished safety-related material, equipment, computer software and services conform to the requirements of the procurement documents, when the control of purchased material, equipment and services is specified in the Project Quality Plan or procedures.

### 7.2 Qualification and Selection of Suppliers

Suppliers to ILRT Inc. are evaluated and selected on the basis of demonstrated or assessed capability to comply with the requirements of the project procurement specifications and imposed quality requirements. The Project Manager or designee performs technical evaluation, and the President, Quality Assurance Manager, or a qualified Lead Auditor performs a quality assurance evaluation. If an onsite Audit is required, a qualified Lead Auditor must perform the Audit. The results of the evaluations are used to qualify the suppliers according to degree of acceptability or conformance to qualification criteria as delineated in the applicable project procedure for each type of procurement source.

With consideration of the following, the Project Manager selects suppliers:

- Supplier's capabilities
- Client approval, when required
- Quality Engineer's QA recommendations

Records of supplier qualification evaluation and selection actions are maintained and filed in accordance with the Project Quality Plan and applicable implementing procedures.

### 7.3 Review of Supplier Performance Requirements

The Project Manager establishes the necessary contractual arrangements for the review of supplier performance. The Project Manager meets with and/or corresponds with the supplier as necessary to resolve supplier exceptions and recommendations. The final purchase order shall include all necessary administrative arrangements to accomplish the following as appropriate to the scope of the work by the supplier:

- Establishment of mutual understanding with the supplier on the technical, quality, and administrative requirements of the order.
- Applicability of the requirements of 10CFR21.
- Identification and processing of change information.
- Method of exchange of information between ILRT Inc. and the supplier.
- ILRT Inc.'s review of documents generated by the supplier, including applicable quality assurance procedures and programs.
- ILRT Inc.'s degree of quality assurance surveillance, and inspection activities, consistent

with supplier's classification.

- ILRT Inc.'s access to the supplier's facilities for the purposes of reviews, inspections, quality assurance surveillance, and audits of supplier's processing, procedures, materials, records, and product within the scope of the contract.

#### 7.4 Verification of Supplier Performance

Verification activities are planned, established and documented in accordance with the applicable implementing procedures identified in the Project Quality Plan, consistent with the supplier's scope of work and previous quality history. Verification activity plans include the following, as applicable.

- Procedures to be reviewed
- Quality Assurance Program elements to be audited
- Special processes to be audited
- Source inspection and surveillance
- Acceptance criteria
- Records required for acceptance
- Receiving inspection
- Audits

##### 7.4.1 Receiving Inspection

Receiving inspection, when required, is performed on supplier-furnished material, equipment and services in accordance with the applicable implementing procedures that have provisions for the following:

- Identification of material, component or equipment
- Acceptance criteria
- Inspection and acceptance
- Inspection records and certifications
- Identification of inspection, acceptance, or rejection status
- Segregation, identification, and disposition of nonconforming items

##### 7.4.2 Quality Assurance Audits

Quality assurance audits of suppliers' facilities are performed as necessary to verify compliance with approved Quality Assurance Programs/plans in accordance with specified requirements. Such audits are performed in accordance with Section 18 of this manual.

### 7.5 Nonconformance

When a verification activity identifies a nonconformance, the supplier shall be requested to correct the nonconformance and identify any required corrective action to prevent recurrence. The ILRT Inc. Project Manager prior to implementation approves proposed disposition of nonconformances.

The Project Manager notifies the client of all nonconformances, dispositions, and corrective actions in accordance with Section 15 and 16 of this manual.

### 7.6 Records

Supplier records (e.g. Certificates of Compliance) provide documentary evidence of compliance to procurement requirements, and are reviewed and approved in accordance with applicable sections of the Project Quality Plan. These records become part of the Project Records or turned over to the client in accordance with the terms of the contract.

## SECTION 8.0 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS AND COMPONENTS

### 8.1 Scope

This section of the manual describes the requirements and methods employed for the identification and control of materials, parts and components, including partially fabricated subassemblies, when the identification and control of materials, parts and components are specified in the Project Quality Plan or implementing procedures. Computer software used in the design of safety related parts and components are to be treated as safety related components for purposes of this section.

### 8.2 General

An identification and control program, when applicable, is specified and implemented in accordance with the Project Quality Plan and applicable implementing procedures and includes the following:

- Methods of identification (such as type of markings, tagging, imprinted tape, color coding, or other means) that provide positive, lasting identification that does not affect item fit, function, or quality. Computer software program identified by name and version.
- Methods of traceability of items to appropriate documentation such as drawings, specifications, computer software program name and version, purchase orders, manufacturing and inspection documents, deviation reports, and physical and chemical mill test reports.
- Methods of handling and storage compatible with maintaining item identification and prevention of identification deterioration due to environmental exposure.
- Verification and documentation of identification of items in accordance with requirements prior to release for fabrication, assembly, shipment or installation.
- Control and identification of limited life items.

The specific requirements for the identification and control of materials, parts, components, and partially fabricated subassemblies, are delineated in the design and procurement documents, and applicable implementing procedures. These requirements are applicable during design, procurement, fabrication and installation to prevent the use of incorrect or defective items.

### 8.3 Subcontractor Programs

When specified in the procurement documents, contractors are required to prepare and implement an identification and control program that includes the applicable provisions described in Section 8.2 above.

## SECTION 9.0 CONTROL OF SPECIAL PROCESSES

### 9.1 Scope

This section of the manual describes the requirements for the control of special processes when those processes are identified in the Project Quality Plan and implementing procedures. Special processes include welding, heat treating, nondestructive testing, and cleaning.

### 9.2 General

The specific requirements for special processes are identified in applicable codes, standards and specifications. It is required that qualified personnel perform all special processes, accomplished with approved procedures, and documented to provide evidence of satisfactory work completion and verification. For each special process application, implementing procedures are prepared to include the following elements:

- Operations to be performed
- Sequence of operations
- Controlled parameters of the process
- Measuring and test equipment required (calibration requirements)
- Personnel, process, and equipment qualification requirements
- Documentation requirements
- Quantitative and qualitative acceptance criteria
- Appropriate records maintained

Special process procedures shall be reviewed and approved in accordance with Section 5 of this manual.

### 9.3 Contractors

For special process work performed by contractors, specific requirements shall be delineated in the procurement documents in accordance with Section 4 of this manual. Contractors' control programs shall include the elements described in Section 9.2 above.

### 9.4. Qualifications

#### 9.4.1 Personnel

All personnel who perform or evaluate special process work shall be qualified and certified in accordance with applicable codes and standards. Records attesting to the qualification and certification shall be controlled, filed, and maintained in the Project official records.

#### 9.4.2 Procedures

All special process work shall be performed in accordance with approved and qualified procedures. Records providing objective evidence of satisfactory procedure control shall be filed and maintained in the Project official records.

### 9.4.3 Equipment

All special process work shall be performed with qualified equipment. Records providing objective evidence of equipment qualification, and certification when required, shall be controlled, filed, and maintained in the Project official records.

## 9.5 Special Requirements

For special processes not covered by existing codes and standards or where quality requirements specified for an item exceed those of existing codes or standards, the necessary requirements for qualifications of personnel, procedures, or equipment shall be specified or referenced in the implementing procedures or instructions.

## SECTION 10.0 INSPECTION

### 10.1 Scope

This section of the manual describes the requirements for the control of inspection of items to assure conformance to contract documents, when inspection is specified in the Project Quality Plan.

### 10.2 General

It is required that inspections be performed in accordance with a written inspection program and procedures that comply with applicable regulatory requirements, codes, standards and specifications. When work is performed and inspected by contractors, applicable requirements and hold points for witness by ILRT Inc. personnel or an authorized inspector shall be imposed in the procurement documents.

### 10.3 Inspection Program

An inspection program performed by ILRT Inc. is documented in implementing procedures prepared in accordance with Section 5 of this manual. When inspections are included in the scope of a procurement, the Project Manager shall ensure that the procurement documents require the contractor to develop an inspection program consistent with this section.

Inspection programs shall include the following:

- Planning for inspection activities shall be accomplished and documented
- Identification of characteristics and/or activities to be inspected
- Employ recognized standard practices when sampling
- Identification of the individuals or groups responsible for performing the inspection operations
- Acceptance and rejection criteria
- Scope of inspection activities to assure quality verification
- Description of inspection method(s)
- Identification of mandatory hold points if required
- Provisions for indirect inspection/control when required
- Method of reporting inspection results
- Method of verification and certification of inspection completion
- Method of reporting nonconformances
- Method of identification, segregation, and disposition of nonconformances

## 10.4 Inspection Program Implementation

### 10.4.1 Inspection Personnel

Inspection personnel shall be:

- Independent of the individual or group performing the task being inspected.
- Qualified through experience, education and training in accordance with applicable codes and standards, and certified when required in accordance with implementing procedures.

Inspection personnel qualifications and certifications shall be maintained in the Project official records in accordance with applicable requirements and the applicable implementing procedures.

### 10.4.2 Inspection Procedures

Appropriate inspection procedures shall be provided with reference to the necessary drawings and specifications for use at the inspection location prior to performing inspection operations.

### 10.4.3 Inspection of Modifications and Repairs

The inspection of modifications and repairs made to items after the initial inspection shall be performed in accordance with the original design and inspection requirements or acceptable alternatives.

## 10.5 Inservice Inspection

### 10.5.1 Planning and Performance

Required inservice inspection or surveillance of structures, systems or components shall be planned and executed by or for the organization responsible for operation.

### 10.5.2 Methods

Inspection methods shall be established and executed to verify that the characteristics of an item continue to remain within specified limits.

## 10.6 Inspection Records

Inspection records required by PPs and procurement documents shall contain, as applicable:

- Description of the observation(s) and item inspected
- Evidence of completing and verifying a manufacturing, inspection, or test operation
- Date and results (acceptability) of the inspection
- Reference to information on action taken in connection with any nonconformances
- Inspector or data recorder information
- Evidence as to the acceptability of results



## SECTION 11.0 TEST CONTROL

### 11.1 Scope

This section of the manual describes the requirements for controlling the testing of structures, systems, and components, when test control is specified in the Project Quality Plan.

### 11.2 General

It is required that testing be performed in accordance with a written test program and procedures that comply with applicable regulatory requirements, codes, standards, and specifications. When contractors conduct tests, hold points for witness by ILRT Inc.'s personnel or an authorized inspector shall be imposed in implementing procedures and procurement documents when appropriate.

### 11.3 Test Program

A test program managed by ILRT Inc. shall consist of written procedures prepared in accordance with Section 5 in this manual. When tests are included in the scope of procurements, the Project Manager shall ensure that the procurement documents require the contractor to develop a test program consistent with this section.

- Test programs shall include the following, as applicable:
- Identification of test requirements and acceptance limits as contained in applicable design and procurement documents
- Instructions for performing the test(s)
- Descriptions of operating instructions for required test equipment and instrumentation
- Establishment of provisions for assuring the accomplishment of test prerequisites, including:
  - Use of calibrated equipment and/or instrumentation
  - Use of adequate and appropriate equipment
  - Training or qualification requirements of test personnel and, where required by code, personnel examination and certification requirements
  - Preparation, condition, and completeness of item to be tested
  - Suitable and controlled environmental conditions
  - Mandatory inspection hold points (when appropriate)
  - Method of documenting or recording test data and results
  - Acceptance and rejection criteria

## 11.4 Test Control Implementation

### 11.4.1 Test Procedures

- Approved test procedures shall be made available to the test personnel at the test location prior to performing tests.
- In lieu of specially prepared test procedures, appropriate sections of related documents, such as ASTM methods, supplier manuals, equipment maintenance instructions, or approved drawings with acceptance criteria can be used.

### 11.4.2 Test Records

Test records required by implementing procedures and procurement contract documents shall contain, as applicable:

- Description of the required test
- Any test witnessing
- Date and results of the test
- Equipment calibration data
- Test personnel data
- Test deviations and action taken
- Evidence as to the acceptability of results

### 11.4.3 Test Results

Test results shall be documented and evaluated. Qualified project personnel as required by the Project Quality Plan and applicable implementing procedures shall document their acceptability.

## SECTION 12.0 CONTROL OF MEASURING AND TEST EQUIPMENT

### 12.1 Scope

This section of the manual describes the requirements for the control, calibration, and maintenance of measuring and testing devices used for activities which affect quality, when control of measuring and test equipment is specified in the Project Quality Plan.

### 12.2 General

It is required that measuring and test equipment be controlled, calibrated, and maintained in accordance with a written program that complies with applicable codes and standards. The requirements for measuring and test equipment used by contractors shall be imposed in the procurement documents.

### 12.3 Measuring and Test Equipment Program

A measuring and test equipment program in which ILRT Inc. performs the testing shall consist of implementing procedures prepared in accordance with Section 5 of this manual. When applicable, the Project Manager ensures that the procurement documents require contractors to employ satisfactory controls of measuring and test equipment. The controls specified in the implementing procedures or procurement documents shall include the following, as applicable:

- Selection of measuring and test equipment shall be controlled to assure that such items are of proper type, range, accuracy, and tolerance for the application.
- Written procedures describing the calibration technique and frequency, maintenance, and control of the measuring and test equipment used in the measurement, inspection, or test of safety related or other identified items.
- Measuring and test equipment identification, traceable to the calibration test data.
- Measuring and test equipment calibration at specified intervals based on the required accuracy, degree of usage, purpose, stability characteristics, and other conditions affecting the measurement.
- Measuring and test equipment identification and marking by suitable means to indicate the next required calibration date.
- Evaluation of the results of previous inspections or tests when measuring and test equipment is found to be out of calibration, to determine the acceptability of the product that was previously accepted, notification to users may be required based on results of evaluation.
- Out-of-calibration devices shall be tagged or segregated and not used until they have been recalibrated.
- Specification of calibration standards that have an uncertainty (error) requirement of no more than 1/4 of the tolerance of the equipment being calibrated, unless limited by the "state of the art".

- Calibration and control measures may not be required for commercial devices such as rulers, tape measures, levels, and other such devices.

## 12.4 Implementation of the Measuring and Test Equipment Program

### 12.4.1 Traceability of Calibration Standards

Reference and transfer standards shall be traceable to nationally recognized standards. Where national standards do not exist, provisions shall be established to document the basis for calibration.

### 12.4.2 Records

Records shall be maintained listing the complete status of all measuring and test equipment and standards under the calibration system, and identification and removal from service of items that have not been properly maintained or calibrated in accordance with specified schedules or procedures.

### 12.4.3 Measuring and Test Equipment Program Review

Measuring and Test Equipment Programs are subject to review and approval in accordance with Section 5 or Section 7 of this manual, as applicable.

### 12.4.4 Handling and Storage

Measuring and Test Equipment shall be properly handled and stored to maintain accuracy.

## SECTION 13.0 HANDLING, STORAGE AND SHIPPING

### 13.1 Scope

This section of the manual describes the requirements for the handling, preservation, storage, cleaning, packaging, and shipping of items, when handling, storage and shipping control is specified in the Project Quality Plan.

### 13.2 General

It is required that handling, preservation, storage, cleaning, packaging, and shipping of items be performed in accordance with a written program which complies with the applicable regulatory requirements, codes, and industry standards. The requirements for these activities shall be imposed in the procurement documents when a contractor performs these activities.

### 13.3 Handling, Storage and Shipping Program

The program for the control of handling, preservation, storage, cleaning, packaging, and shipping of items shall include the following, as applicable:

- Instructions for marking and labeling of items, including special environment requirements.
- Applicable protective measures, classification of equipment, parts and components
- Housekeeping requirements for facilities where packaging, shipping, receiving, storage, and handling of items is performed
- Packaging design methods
- Shipping requirements and methods
- Receiving requirements and methods
- Cleaning requirements and methods
- Storage requirements, recommendations and methods
- Handling requirements, recommendations and methods
- Preservative requirements and methods
- Preventive maintenance requirements, recommendations and methods
- Provisions for surveillance, maintenance, segregation, preservation, release, and audit of stored items
- Records requirements

## 13.4 Implementation

### 13.4.1 Receiving and Handling Actions

Materials and equipment shall be received, inspected, stored, and maintained in accordance with implementing procedures. These actions shall include the following, as applicable:

- Physical inspection of items by qualified personnel
- Inspection results documented
- Storage in predetermined areas, depending on environmental exposure/protection requirements
- Storage in specific areas to minimize handling
- Provisions for special environmental protection, such as inert atmosphere, and moisture and temperature levels

### 13.4.2 Review of Programs for Handling, Storage and Shipping

Programs and procedures for the control of handling, preservation, storage, cleaning, packaging, and shipping of items are subject to review and approval in accordance with Section 5 or 7 of this manual, as applicable.

### 13.4.3 Verification of Program Implementation

Verification that the programs described herein are being effectively implemented is accomplished through quality assurance surveillances and/or audits performed by a the President, the Quality Assurance Manager, or a designee.

### 13.4.5 Special Handling or Lifting Equipment

When special handling or lifting equipment is required, operators shall be trained or experienced in the use of the equipment.

## SECTION 14.0 INSPECTION, TEST, AND OPERATING STATUS

### 14.1 Scope

This section of the manual describes the requirements for identifying and documenting the status of inspections or tests, and the status of the readiness of these items for operation, when inspection, test, and operating status control is specified in the Project Quality Plan.

### 14.2 General

It is required that the status of inspections, tests, and operational readiness be controlled in accordance with a written status control program that complies with applicable regulatory requirements, codes and standards. The requirements for these activities shall be imposed in the procurement documents when a contractor performs these activities.

### 14.3 Status Control Program

The status control program, shall be defined in written procedures, and shall include the following, where applicable:

- Identification of the inspection, test, and operating status of structures, systems and components throughout manufacturing, storage, and installation
- Method and control of the application and removal of inspection and welding stamps and status indicators such as tags, markings, labels and stamps
- Procedural controls to preclude inadvertent bypassing of inspections tests, and other critical operations
- Identification of the status of nonconforming, inoperative or malfunctioning structures, systems and components to prevent inadvertent use
- Inclusion of appropriate controls as described herein in test procedures prepared for the client

### 14.4 Implementation

#### 14.4.1 Status Control Program Review

Status control programs are subject to review and approval in accordance with Section 5 or 7 of this manual, as applicable.

#### 14.4.2 Verification of Program Implementation

Verification that programs as described herein are being effectively implemented is accomplished through quality assurance surveillances and/or audits performed by the President, Quality Assurance Manager, or a designee.

## SECTION 15.0 NONCONFORMING MATERIALS, PARTS OR COMPONENTS

### 15.1 Scope

This section of the manual describes the requirements for the identification, documentation, segregation, review, disposition, and notification to affected organizations of nonconforming materials, parts, components or services.

### 15.2 General

It is required that nonconforming material, parts, components, computer software, and services be controlled in accordance with written procedures that include provisions for the following, as applicable:

- Identification, documentation, segregation, review, and disposition of nonconforming materials, parts, components or computer software.
- Identification, documentation, review and disposition of nonconforming services.
- "Stop-work" actions.
- Notification to affected organizations of nonconformances.
- Nonconformance reports that identify the nonconforming item, describe the nonconformance, provide a disposition, describe any unique inspection requirements needed to support the item disposition, and include signature approval of the disposition.
- Identification of the responsibility and authority of personnel who approve the disposition of nonconforming items and have competence in the area being evaluated.
- Verification of the acceptability of rework or repair by reinspecting and/or retesting the item as originally inspected or tested, and documentation of all rework, repairs, inspection, or testing. When an alternate method is used, it shall be at least equal to the original inspection and testing method.
- Review and approval of "repair", "use-as-is", "rework", or "scrap" dispositions by Project Manager consistent with client requirements including technical justification for the acceptability of a nonconforming item.
- Periodic review and analysis of nonconformance reports for quality trends; reporting of results to management for review and assessment.
- Nonconformances to design requirements dispositioned "repair" or "use as-is" shall be subject to design control measures commensurate with those of the original design.

For work that is performed by ILRT Inc., written procedures shall be developed and implemented for the project to incorporate these provisions.

For work that is performed by contractors, specific requirements shall be imposed in the procurement documents. Contractors' procedures are subject to review and approval in accordance with Section 7 of this manual.



For work that is primarily the responsibility of ILRT Inc., specific types of nonconformances are identified and specific actions are taken as follows:

#### 15.2.1 "Nonconforming" Materials Supplied by the Client

The client is responsible for the accuracy and adequacy of materials (such as drawings and specifications) provided to ILRT Inc. Should any nonconformance be noted in such materials, however, ILRT Inc. is responsible to identify such nonconformance to the client for correction. The Project Manager is responsible for (1) documenting such nonconformances, (2) reporting the nonconformances to the client in writing, (3) requesting corrected replacement materials, and (4) following up as necessary to obtain the corrected material.

#### 15.2.2 "Nonconforming" Materials Developed as Contract Items

In cases where nonconformances are identified in completed materials (such as technical reports, engineering analyses, or computer software), the Project Manager is responsible for (1) documenting the nonconforming conditions and the required corrective actions on Nonconformance Action Report (NCR) form (Exhibit 6), (2) notifying the client in writing, (3) recalling the deficient materials for correction, and (4) initiating corrective action.

#### 15.2.3 "Nonconforming" Practices

Any individual identifying nonconforming practices or noncompliance, such as the failure to follow required sequences, steps, reviews, or documentation requirements specified in the QA Manual or the applicable implementing procedures, is responsible for notifying the Project Manager, the President, or the Quality Assurance Manager. The Project Manager, President, or Quality Assurance Manager (as applicable): (1) Evaluates and stops the "Nonconforming" practice if necessary, (2) Documents the deficiency on a Nonconformance Action Report form (NCR) if necessary (Exhibit 6), and (3) Initiates appropriate corrective action.

#### 15.2.4 "Nonconforming" Materials, In-Process

Errors or omissions detected during reviews, checks or surveillance of materials in process such as drawings, calculations, analyses, and reports shall be identified to the cognizant staff member and the Project Manager.

If possible, the error or omission is corrected on the spot and a written report is not required. If the error or omission cannot be corrected on the spot, it is documented on a Nonconformance Action Report (NCR) form (Exhibit 6).

### 15.3 Implementation

#### 15.3.1 Contractors' Programs

ILRT Inc. is responsible for assuring the implementation of contractors' nonconformance control programs. Verification that such programs are being effectively implemented is accomplished in accordance with Section 7.

#### 15.3.2 Documentation of Nonconformances

Any ILRT Inc. employee may initiate a Nonconformance Action Report (NCR) to document a known or suspected nonconformance or deficiency. The form is submitted to the Project Manager with a copy to the Quality Assurance Manager. Each NCR is evaluated and appropriate corrective action initiated.

#### 15.3.3 Corrective Action

Corrective action is identified and implemented by the Project Manager in accordance with Section 16 of this manual.

#### 15.3.4 Review of Nonconformance Action Reports (NCR)

Completed Nonconformance Action Reports shall be reviewed by the Quality Assurance Manager to detect trends of adverse conditions significant to quality. All significant adverse conditions, their causes, and the corrective actions taken or recommended shall be reported to the President.

### 15.4 Reporting of Defects and Noncompliance

The Code of Federal Regulations contains requirements for the reporting of defects and noncompliance that represent substantial safety hazards or could adversely affect the safety of operations of a nuclear power plant. These requirements are contained in:

1. 10 CFR 21, Reporting of Defects and Noncompliance, and
2. 10 CFR 50.55(e), Reporting of Deficiencies for Construction permit holders.

Any ILRT Inc. employee who detects a potential defect or noncompliance shall have the right to report the potential defect or noncompliance to ILRT Inc. Management. Section 19 of this manual provides guidance for processing reports of potential defects or noncompliance.

## SECTION 16.0 CORRECTIVE ACTION

### 16.1 Scope

This section of the manual describes the requirements for evaluating conditions adverse to quality to determine its significance and implementing appropriate corrective action.

### 16.2 General

Nonconformances and deficiencies such as material discrepancies, construction or installation errors or faults, improper actions, documentation errors and omissions, computer software errors, and procedural noncompliance are all considered conditions adverse to quality and shall be identified promptly and corrected as soon as practical. When such conditions are identified and documented, they are evaluated to determine if the adverse condition is significant and, as such, requires the attention of higher levels of management in order to assure the appropriate resources are allocated to determine the cause and prevent recurrence.

For work that is performed by contractors, specific requirements for corrective action programs shall be imposed in the procurement documents. Contractors' procedures shall be subject to review and approval in accordance with Section 7 of this manual.

### 16.3 Implementation

#### 16.3.1 Documentation of Conditions Adverse to Quality

Identified conditions adverse to quality (nonconformances, deficiencies and etc.) are normally documented on the following:

- Nonconformance (NCR/CAR) (Exhibit 6)
- Audit Finding Report (AFR)
- External audit, review, assessment reports, computer software error reports, or other requests for corrective action.

These documents are initiated as described in Sections 15 and 18 of this manual, or are received from external organizations. The Project Manager shall assure that such documents are acted on promptly and that a review is conducted by the President or Quality Assurance Manager to evaluate whether or not a significant condition adverse to quality exists.

#### 16.3.2 Significant Condition Adverse to Quality (SCAQ)

Significant conditions adverse to quality are those where established operating limits, specifications, standards, or administrative control systems have not been adhered to and the results could have unacceptable consequences. Examples of such conditions include but are not limited to the following:

- Repetitive process errors, omissions or improper sequencing.
- Repetitive conditions adverse to quality that are the result of a common cause.
- A specific condition adverse to quality in an operation or activity that is repeated because the corrective action has not corrected the root cause.

- Unauthorized removal of tags indicating nonconformance or continuing use, installation or processing of items identified as nonconforming.

#### 16.3.3 SCAQ Documentation and Notifications

The employee identifying a SCAQ shall document the SCAQ by initiating a Corrective Action Request (CAR), (Exhibit 6). The CAR shall be provided to the Project Manager, President, or Quality Assurance Manager. Upon receipt, the PM shall notify the ILRT Inc. chain of management up to the President and the client management associated with the item/activity involved if applicable.

#### 16.3.4 Corrective Action Determination and Approval

The Project Management organization shall determine, and document in the CAR, the cause of the SCAQ, the appropriate corrective action necessary to prevent recurrence and the estimated completion date. The cause, corrective action and completion schedule shall be approved by the PM and the Quality Assurance Manager prior to implementing the corrective action.

#### 16.3.5 Action Completion, Verification and Closeout

The PM shall notify the Quality Assurance Manager upon completion of the corrective action. The Quality Assurance Manager shall verify and document in the CAR that the specified action has been completed and shall schedule a follow up review to assure the effectiveness of the action taken where appropriate. The CAR may be closed by the Quality Assurance Manager upon verification or upon satisfactory results of the follow up review where necessary.

#### 16.3.6 CAR Recordkeeping

Copies of CARs and a log indicating the current status of issued CARs shall be maintained and accessible to the President and the Quality Assurance Manager. The closed CAR shall become part of the project records in accordance with Section 17 of this manual.

#### 16.3.7 Management Review of Reports of Corrective Action

CARs are reviewed periodically to determine any adverse quality trends, and the results are reported to the President, and the Quality Assurance Manager, for review and assessment. (Quality Assurance Program Audits and Management Reviews are forms of this review.)

#### 16.3.8 Contractor's Programs

ILRT Inc. is responsible for assuring the implementation of its contractors' corrective action programs. Verification that such programs are being effectively implemented as accomplished through audits in accordance with Section 18 of this manual.

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## SECTION 17.0 QUALITY ASSURANCE RECORDS

### 17.1 Scope

This section describes the requirements for the collection, storage, maintenance, and transfer of quality assurance records to the client.

### 17.2 General

Quality assurance records (QA records) are records that furnish documentary evidence of the quality of project activities. These records may be paper or electronic and include:

- Results of reviews, inspections, tests, audits and material analyses;
- Training of personnel, qualification of personnel, procedures, and equipment;
- Design documentation such as drawings, specifications, procurement documents, calibration procedures and reports; and
- Nonconformances, corrective action reports, and
- Audit finding documentation

The QA records described herein that are prepared or handled directly by ILRT Inc. are known as Project Official Records, and are collected and controlled in accordance with the Project Quality Plan and applicable implementing procedures.

Project documents are not quality assurance records until the scope of work defined by the project is completed.

Instructions shall be imposed in the procurement documents, in accordance with Section 7 of this manual, for records that provide documentary evidence of the quality of items or services supplied by contractors, including specific requirements and provisions for written procedures. When applicable, contractors shall be required to collect, store, maintain, and transfer such records consistent with specified codes, standards, the Project Quality Plan, and contract requirements.

### 17.3 Categories of Quality Assurance Records

Two categories of quality assurance records are established by this manual, "Lifetime" and "Nonpermanent."

Lifetime quality assurance records are those that would be of significant value in demonstrating the application and implementation of the ILRT Inc. Nuclear QA Manual to nuclear safety related applications.

Nonpermanent quality assurance records are those that are required to show evidence that a project activity was performed in accordance with applicable requirements. Nonpermanent quality assurance records need not be retained after they are transmitted to the client at the conclusion of a project.

The quality assurance records for specific projects are defined and classified as "Lifetime" or "Nonpermanent" in the Project Quality Plan and applicable implementing procedures.

#### 17.4 Validity of Quality Assurance Records

Quality assurance records shall be considered valid if they are:

- Legible and complete
- Identifiable to the item(s) or activity to which it applies in order to permit accurate traceability
- Stamped or signed and dated by authorized personnel
- Indexed and/or logged to make them retrievable

#### 17.5 Retention of Lifetime Quality Assurance Records

Lifetime quality assurance records are required to be maintained for the life of the ILRT Inc. program or ten years, whichever is less. Client contracts may specify retention time other than that stated and will take precedence.

#### 17.6 Retention of Nonpermanent Quality Assurance Records

Nonpermanent quality assurance records are normally transmitted to the client by cover letter or other documented medium. If not transmitted to the client at the end of the project, they shall be maintained at least three years from the date of the documents. They also may be maintained uncontrolled by the Project Organization for reference or historical purposes, as defined in the applicable implementing procedures.

#### 17.7 Storage and Security of Lifetime Quality Assurance Records

Lifetime quality assurance records maintained by ILRT Inc. are stored in steel, fire proof (350° F, 2-hour rating) safe or in a duplicate and separate storage location as described by the Project Quality Plan and implementing procedures.

#### 17.8 Storage and Security of Nonpermanent Quality Assurance Records

Nonpermanent quality assurance records, while in the possession of ILRT Inc., are stored in facilities that minimize the potential for their destruction by fire, flooding, theft, and deterioration from environmental conditions.

#### 17.9 Transfer of Nonpermanent Quality Assurance Records

The Nonpermanent quality assurance records are transferred to the client at the completion of the project in accordance with the terms of the contract. Receipt acknowledgment of the documents transferred is obtained from the client if possible.

#### 17.10 Corrected Information in Quality Assurance Records

Record information may be corrected in accordance with procedures that provide for review and approval from the originating Project Manager or President or Quality Assurance Manager as appropriate. The correction shall contain sufficient information to substantiate

validity.

#### 17.11 Verification of Implementation of Quality Assurance Records Program

The effective implementation of the quality assurance records program as described in this section is assured through quality assurance surveillances and/or audits performed by the President, Quality Assurance Manager, or a designee.

## SECTION 18.0 AUDITS

### 18.1 Scope

This section of the manual describes the requirements for planned and documented internal and external audits to verify compliance with, and assessing the effectiveness of all aspects of the Nuclear Quality Assurance Program.

### 18.2 General

Audits are performed on selected projects or activities that are performed by ILRT Inc. under the Nuclear Quality Assurance Manual. Audits are performed in accordance with Quality Implementing Procedures (QIPs), which are consistent with the provisions of this manual.

### 18.3 Implementation

#### 18.3.1 Audit Planning

Audits shall be planned and scheduled based on the status and importance of the activities being performed. Audit planning shall include the preparation of checklists that define the specific criteria to be examined. An annual audit schedule shall be prepared and updated annually by the Quality Assurance Manager, and submitted to the President and appropriate project personnel for review.

#### 18.3.2 Audit Performance

Project audits will be performed on a schedule to assure the quality of project activities. Audits shall be performed using checklists as guides for objectively evaluating quality-related activities and associated documentation. Departure from the checklist is permitted, at the discretion of the auditor. The audit checklist is intended for use as a guide and should not restrict the audit investigation when findings raise further questions that are not specifically included in the checklist.

Acceptance of third-party audits is acceptable provided:

- A review of available documentation can verify that the audit met all of the requirements for an audit performed under this manual.
- The auditor performing the audit was a certified Lead Auditor.
- The review by accepting party documents both the quality and technical adequacy of the audit, the audit report and any follow-up action.
- That the review package includes a copy of all documentation associated with the audit deemed essential to supporting the acceptance of the quality and technical aspects of the audited activity. The documentation shall be adequate to allow an independent assessment by another party if required.
- The audit documentation and reviewer's findings are accepted by the President.



### 18.3.3 Audit Reporting

Audit results shall be documented and reviewed with management having responsibility in the area audited. Audit findings of defects or noncompliances that may be reportable to the Nuclear Regulatory Commission, in accordance with the requirements of 10 CFR 21 or 10 CFR 50.55(e), shall be documented and controlled in accordance with Section 19 of this manual.

Audit reports shall be prepared which include the following:

- Description of audit scope.
- Identification of Lead Auditor.
- Identification of Audit Team Members.
- Persons contacted during the audit.
- Summary of audit results, including an evaluation statement regarding the effectiveness of the Quality Assurance Program, applicable to the areas audited.
- Description of identified deficiencies in sufficient detail to assure that corrective action can be effectively carried out.
- Recommendations for dispositions and corrective action, when applicable.

### 18.3.4 Audit Response

The organization or project being audited shall investigate deficiencies, audit findings and nonconformances. The responsible Project Manager shall respond to the Quality Assurance Manager with the proposed scheduled corrective action including measures to prevent recurrence. The Quality Assurance Manager or designee shall evaluate the adequacy of the response.

### 18.3.5 Re-audits

When warranted by audit results, deficient areas shall be re-audited on a timely basis to verify the effective implementation of corrective and preventive action.

### 18.3.6 Audit Personnel

Audit personnel shall have the necessary qualifications and be certified to the requirements of the applicable standards and implementing procedures prior to the performance of audit activities. Auditors shall be independent of any direct responsibility for the performance of the activity audited.

### 18.3.7 Audit Action Responsibilities

The Quality Assurance Manager is responsible for planning and performing audits and for verifying the implementation of appropriate dispositions and corrective action. The Quality Assurance Manager may delegate the conduct of the audit to qualified audit personnel.

#### 18.4 Audit Records

Records of audits including plans, checklists, reports, responses and implemented corrective action shall be filed, stored and maintained in accordance with Section 17 of this manual.

#### 18.5 Audit Program Review

Audit data shall be analyzed by a the Quality Assurance Manager on a periodic basis and reported to the President for review and assessment. These reports shall identify quality trends and assess the effectiveness of the overall Quality Assurance Program. (This is normally accomplished by reviewing past audits during annual board meetings.)

#### 18.6 Client Audits

From time to time, clients (existing and future) may wish to audit ILRT Inc.'s Nuclear Quality Assurance Manual and its implementation. All requests from clients for this activity are to be directed to the Quality Assurance Manager. The Quality Assurance Manager shall make all necessary arrangements for audits including the following:

- Scheduling audits with client personnel and applicable ILRT Inc. staff members
- Arranging for audit facilities
- Coordinating pre-audit meetings, if required
- Assisting client auditors during audits
- Coordinating post-audit meetings
- Collecting and/or receiving audit results
- Responding to audit results if required
- Maintaining a client audit file
- Following up and verifying implementation of commitments made as a result of audits
- Reporting status of client audits to the President on a quarterly basis if there has been any activity in the previous quarter

18.7 Commercial Grade Survey. A commercial grade survey in conjunction with a commercial grade dedication may be used to place a Calibration Lab on the ILRT Inc. Qualified Suppliers List.

#### 18.8 ISO-17025 Audit Exemption

Calibration Labs accredited to ISO-17025 do not require an Audit to be placed on the Qualified Supplier's List providing the following requirements are met:

- Commercial Grade Dedication of the calibrations is undertaken
- Accreditation is current
- Accrediting agency or company is an ILAC MOU signatory

## SECTION 19.0 REPORTING REQUIREMENTS

### 19.1 Scope

This section of the manual describes the reporting requirements of the Nuclear Quality Assurance Program applicable to all Company projects related to commercial nuclear power plants, and provisions for internal management of external audits.

### 19.2 Reporting of Defects and Noncompliance

ILRT Inc. performs work for electric utility companies and furnishes various services for commercial nuclear generating stations. Therefore, under the requirements of 10 CFR 21, any individual director or responsible officer of a firm constructing, owning, operating, or supplying material or services to any such facility, who obtains information indicating that substantial safety hazards exist or that the facility contains defects that would create a substantial safety hazard, must immediately notify the Nuclear Regulatory Commission (NRC) of the condition.

This regulation applies specifically to nuclear power plant "Basic Components" including design, inspection, testing, and consulting services important to safety that are associated with the component hardware, whether the services are performed by the component supplier or others.

### 19.3 Definitions

The following terms are defined in 10 CFR 21:

#### 19.3.1 Defect - (any of the following):

- A deviation in a Basic Component (including consulting services) that could create a substantial safety hazard, or the installation of such a component (Note: the dissemination of faulty information is also considered a "defect.")
- A deviation in a system or portion of a facility that could create a substantial safety hazard.
- A condition or circumstance involving a Basic Component that could contribute to the exceeding of a safety limit, as defined in the facility's Technical Specifications.
- A deficiency in design and construction that, were it to remain uncorrected, could adversely affect the safety of plant operations at any time throughout the expected lifetime of the facility.

19.3.2 Noncompliance - a failure to comply with the Atomic Energy Act of 1954, as amended, or any applicable rule, regulation, order or license of the Nuclear Regulatory Commission.

19.3.3 Basic Component - nuclear plant structure, system, component or part thereof necessary to assure the:

- Integrity of the reactor coolant pressure boundary, or
- Capability to shut down the reactor and maintain it in a safe shutdown condition, or
- Capability to prevent or mitigate the consequences of accidents which would result in potential unacceptable off-site radiation exposures

"Basic Component" includes safety-related design, analysis, inspection, testing, fabrication, replacement parts, or consulting services that are associated with the component hardware whether the component supplier or others perform these services.

19.3.4 Substantial Safety Hazard - a loss of safety function to the extent that there is a major reduction in the degree of protection provided to public health and safety for the facility or associated activities. Examples of what constitute a Substantial Safety Hazard include:

- Moderate exposure to, or release of, licensed material, or
- Major degradation of essential safety-related equipment, or
- Major deficiencies involving design, construction, inspection, test, or use.

19.3.5 Discovery - the completion of the documentation first identifying the existence of a deviation or failure to comply potentially associated with substantial safety hazard.

19.3.6 Evaluation - the process of determining whether a particular deviation could create a substantial hazard or determining whether a failure to comply is associated with a substantial safety hazard.

19.3.7 Notification - the telephonic communication to the NRC Operations Center or written transmittal of information to the NRC Document Control Desk.

#### 19.4 Communications

Any ILRT Inc. employee who discovers a defect or condition of noncompliance as defined above that may represent a substantial safety hazard has the right to notify the ILRT Inc. President or Quality Assurance Manager of the potential problem. It is requested that this notification be made verbally as soon as possible. Following the verbal communication, the individual is requested to document the information, in writing, in a memorandum. The ILRT Inc. President or Quality Assurance Manager receiving the notification shall take immediate action to review the design bases or other requirements that constitute the basis for the alleged defect or noncompliance, examine the information presented, and confirm that a reportable condition exists. This evaluation should be completed as soon as practicable and in most cases within 60 days of the date of discovery. However, if the deviations and failures to comply require complex evaluations such that the evaluation might not be completed within the required 60 days, an interim report must be prepared within 60 days of the date of discovery.

### 19.5 Notification

If the condition is deemed reportable, and if the condition is the responsibility of the licensee (such as a defect or noncompliance detected in an operating facility or in existing materials from an operating facility), reporting shall be handled as follows:

- (1) When the reportable condition is confirmed, the ILRT Inc. Quality Assurance Manager shall immediately notify the President or designee. The President or designee shall notify the licensee verbally of the existing conditions and relate all known, pertinent information.
- (2) Following the initial communication, the ILRT Inc. President or designee shall submit a written report describing the existing conditions and transmit the report to the licensee in a timely manner, along with a request that a copy of the resulting submittal to the Commission be forwarded to ILRT Inc.. Copies of the written report to the licensee are routed to the Project Manager, the ILRT Inc. Quality Assurance Manager, and the President prior to issuance.

NOTE: In this case, it is the responsibility of the licensee of the facility to notify the Commission of any reportable defects and noncompliance. If, however, it is determined that the licensee failed to notify the Commission following the detection and reporting of such conditions by ILRT Inc., then it is the responsibility of the President or designee to notify the Commission and present all facts and information pertinent to the condition.

- (3) All reports to the Commission are handled in accordance with the requirements of 10 CFR 21.21, "Notification."

If the condition is deemed reportable and is the responsibility of ILRT Inc. (such as a defect of noncompliance detected in training materials, computer software, or other consulting services that represents a substantial safety hazard), the following actions are taken:

- (1) When the reportable condition is confirmed, the ILRT Inc. Quality Assurance Manager or designee shall immediately notify the President, or responsible officer, verbally of the condition and relate all known pertinent information. The President or designee, shall then notify the licensee verbally of the reportable condition.
- (2) Following the verbal communication, a designated ILRT Inc. employee shall prepare a written report describing the existing conditions for the President. The written report shall be prepared within two days after the information is obtained.
- (3) Upon receipt of information by the President or the Quality Assurance Manager of the identification of a defect or failure to comply, initial notification shall be made to the NRC Operations Center within two days. The preferred method of this initial notification is by facsimile. Verification that the facsimile is received should be made by calling the NRC Operations Center. This initial notification can also be made by telephone.

- (4) A written report shall be submitted to the NRC within 30 days following receipt of information by the Chief Operating Officer or responsible officer that a defect or failure to comply has been identified. This report shall be addressed to:

Document Control Desk  
US Nuclear Regulatory Commission  
Washington, DC 20555

- (5) All reports to the NRC shall be handled in accordance with the requirements of 10CFR21.21, "Notification". Copies of all relevant memoranda, evaluations of deviations and failures to comply, reports or other relevant documents shall be retained by the ILRT Inc. Quality Assurance Manager for inclusion in the permanent quality assurance records file.

If a deviation or failure to comply is found that is beyond the capabilities of ILRT Inc. to perform an evaluation to determine if a defect exists, the President shall notify potentially affected customers of the deviation or failure to comply within 5 working days. Customers will be provided with all available details about the defect or failure to comply and ILRT Inc. shall assist customer organizations with technical input to assist in their evaluations.

The President or designee is responsible for preparing and disseminating procedures, and posting 10CFR21 reporting information in all applicable ILRT Inc. locations.

## 20.0 EXHIBITS

### Summary of Forms Applicable to QA Manual

<u>Exhibit</u>	<u>Form</u>	<u>Purpose</u>
1	Contract Setup Worksheet	To document the contract review by the Project Manager to capture commercial and technical aspects of the contract.
2	Quality Review and Quality Assurance Manual Applicability	To document the contract review by the Project Manger and the Quality Assurance Manager to capture quality requirements and identify the specific applicability of each section of the Nuclear QA Manual.
3	Project Quality Plan	To describe specific contract tasks and identify applicable Nuclear QA Manual sections, PPs, and QAPs, and summarize project quality requirements.
4	Change Notice	To document and control changes to approved procurement specifications, and review of change effect on product.
5	Document Receipt / Distribution Log	To record actions of receiving and controlling project documents received from the client.
6	Nonconformance, Corrective Action, & Action Tracking Report	To document the identification and evaluation of nonconformances, conditions adverse to quality, and other actions that should be formally tracked.
7	Notice of Exception / Change to Client Procurement Document	To document the review and subsequent actions resulting from exceptions taken or changes in a client contract document relative to work scope, quality assurance requirements, applicable procedures, and/or the Project Quality Plan.

**Order Entry & Contract Commercial Review**

Client: _____	Project ID Assigned: _____
Plant Name: _____	Contract No.: _____
Project Name: _____	Purchase Order No.: _____
Project Start Date: _____	Amount: _____
Completion Date: _____	Terms: _____
	Sales Tax DP ID: _____
Invoice Address: _____	Deliver To Address: _____
AP Contact: _____	Technical Contact: _____
Phone: _____	Phone: _____
Email: _____	Email: _____
Contracts Contact: _____	Insurance Contact: _____
Phone: _____	Phone: _____
Email: _____	Email: _____
Address: _____	Address: _____

Work Scope Description:

Special Technical Related Requirements/Provisions:

Special Billing Related Requirements/Provisions:

Billing Milestones	<u>Estimated Date</u>	<u>Estimated Amount</u>

Special Insurance COI Related Requirements/Provisions:

Prepared By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Project Manager

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Business Operations/President

**Exhibit 1 - Typical Contract Setup Worksheet Form (Commercial)**



**Quality Assurance Review & NQAM Applicability**

Client: \_\_\_\_\_  
 Plant Name: \_\_\_\_\_  
 Project: \_\_\_\_\_

Project ID: \_\_\_\_\_  
 Contract: \_\_\_\_\_  
 Purchase Order: \_\_\_\_\_

ILRT Inc QA   
 Program?

Client QA Program?

Purchase Order Description:

Quality Assurance Manual Section	Applicable, in accordance with 10CFR50, Appendix B	Applicable, limited to specific project requirements	Not Applicable
1 Organization	_____	_____	_____
2 Quality Assurance Program	_____	_____	_____
3 Design Control	_____	_____	_____
4 Procurement Document Control	_____	_____	_____
5 Instructions, Procedures, & Drawings	_____	_____	_____
6 Document Control	_____	_____	_____
7 Control of Purchased materials, Equipment and Services	_____	_____	_____
8 Identification & Control of materials, Parts, & Components	_____	_____	_____
9 Control of Special Processes	_____	_____	_____
10 Inspection	_____	_____	_____
11 Test Control	_____	_____	_____
12 Control of Measuring & Test Equipment	_____	_____	_____
13 Handling, Storage & Shipping	_____	_____	_____
14 Inspection, Test & Operating Status	_____	_____	_____
15 Nonconforming Materials, Parts or Components	_____	_____	_____
16 Corrective Action	_____	_____	_____
17 Quality Assurance Records	_____	_____	_____
18 Audits	_____	_____	_____
19 General Requirements	_____	_____	_____

Prepared By: \_\_\_\_\_  
 Project Manager

Date: \_\_\_\_\_

Reviewed By (Check appropriate blocks)  
 Concur with indicated applicability   
 Additional requirements are indicated   
 Recommendations are attached

QA Manager Comments/Remarks

\_\_\_\_\_  
 Quality Assurance Manager

Date: \_\_\_\_\_

**Exhibit 2 - Typical Quality Review and NQAM Applicability Form**

Sheet \_\_\_ of \_\_\_

Client: \_\_\_\_\_ Project ID: \_\_\_\_\_  
Plant Name: \_\_\_\_\_ Contract: \_\_\_\_\_  
Project: \_\_\_\_\_ Purchase Order: \_\_\_\_\_

Project Task Description	Applicable Section, QA Manual	Applicable Procedures

QA MANUAL EXCEPTIONS

Prepared by: \_\_\_\_\_ Date \_\_\_\_\_  
Project Manager

Approved by: \_\_\_\_\_ Date \_\_\_\_\_  
Quality Assurance Manager

Exhibit 3 - Typical Project Quality Plan Form

Change Notice No.: \_\_\_\_\_ Project: \_\_\_\_\_

Change Requested by: \_\_\_\_\_ Ref.: \_\_\_\_\_

Documents Affected: (as applicable)

Procurement Specification \_\_\_\_\_ Purchase Order \_\_\_\_\_

Procurement Requisition \_\_\_\_\_ Invit. for Bid \_\_\_\_\_

Description of Change:

REVIEW OF CHANGE EFFECT ON PRODUCT

<u>Applicability, Effect on Product</u>			<u>Follow-Up Assignment (by Project Manager)</u>
	<u>YES</u>	<u>NO</u>	
Current Orders	_____	_____	_____
Stock Items	_____	_____	_____
Installed Items	_____	_____	_____
Other (describe)	_____	_____	_____

Prepared by: \_\_\_\_\_ Date: \_\_\_\_\_

Technical Review \_\_\_\_\_ Date: \_\_\_\_\_

QA Review: \_\_\_\_\_ Date: \_\_\_\_\_  
 Quality Assurance Manager

Approved for Release: \_\_\_\_\_ Date: \_\_\_\_\_  
 Project Manager

Exhibit 4 - Typical Change Notice Form

DOCUMENT CATEGORY:

Date Received	Document Identification	Rev.	Description/ Remarks	Distribution		Recall	
				To:	Date	Date of Notice	Date Rec'd

Exhibit 5 - Typical Document Receipt/Distribution Log Form

**NOTE: The form below should be used to identify a nonconformance or any condition that may potentially be a condition adverse to quality.**

Project (or process):		Date:		Entered in Issue Tracking: <input type="checkbox"/>
				Tracking Number Assigned
Is this a report of a nonconformance? (NCR) <sup>1</sup>	Yes: <input type="checkbox"/>	No: <input type="checkbox"/>	NCR	
Is this a condition adverse to quality? (CAR)	Yes: <input type="checkbox"/>	No: <input type="checkbox"/>	CAR	
Action Tracking Only (AR)	Yes: <input type="checkbox"/>	No: <input type="checkbox"/>	AR	
Subject/References:				
Description of Nonconformance, Condition, or Action to be tracked:				
Does this nonconformance or condition represent a potentially reportable Defect or Non-compliance under 10CFR Part 21? (If Yes is checked, disposition and corrective actions below must include summary of notifications made or determination that notifications are not required.)				Yes: <input type="checkbox"/> No: <input type="checkbox"/>
Prepared By:		Date:		
Assigned To:		Date:		
QAM Review:		Date:		
Cause:				
Recommended Disposition (Required for NCRs):		Due Date:		
<input type="checkbox"/> Repair <sup>2</sup>	<input type="checkbox"/> Use-As-Is <sup>2</sup>	<input type="checkbox"/> Rework	<input type="checkbox"/> Scrap	<input type="checkbox"/> Other
Disposition Technical Justification:				
Recommended Corrective Action:		Due Date:		
Prepared By:		Date:		
QAM Approval:		Date:		
Disposition As Implemented:				
Prepared By:		Date:		
Corrective Action As Implemented:				
Prepared By:		Date:		
Disposition and Corrective Action Verification:				
Verified By:		Date:		
QAM Approval:		Date:		
Accepted By:		Date:		

Exhibit 6 - Typical Nonconformance, Corrective Action, & Action Tracking Report Form

<sup>1</sup> A nonconformance associated with a client project may require client notification. Review Purchase Order requirements.

<sup>2</sup> Nonconformances to design requirements dispositioned "repair" or "use as-is" shall be subject to design control measures commensurate with those of the original design.

TO: COMPANY PRESIDENT & QUALITY ASSURANCE MANAGER      DATE OF NOTICE: \_\_\_\_\_

FROM: \_\_\_\_\_, Project Manager      PROJECT ID.: \_\_\_\_\_

PROJECT/CLIENT:

CONTRACT NO./P.O. NO.: \_\_\_\_\_      CHANGE/AMENDMENT NO.: \_\_\_\_\_

---

REVIEW BY PROJECT MANAGER:

The exception to the procurement document, or procurement document change:

\_\_\_\_\_ Affects work scope and/or project task descriptions.  
 \_\_\_\_\_ Affects quality assurance requirements.  
 \_\_\_\_\_ Affects provisions of applicable project procedures.  
 \_\_\_\_\_ Does not affect project quality plan.

Summarize proposed action: ( \_\_\_ ) check if not required)

\_\_\_\_\_  
Signature, Project Manager      \_\_\_\_\_  
Date

---

RECEIPT ACKNOWLEDGEMENT AND REVIEW BY QA MANAGER:

\_\_\_\_\_ Concur, or \_\_\_\_\_ Do NOT concur with Project Manager

\_\_\_\_\_ Revision or addition required to:

\_\_\_\_\_ Project Procedures  
 \_\_\_\_\_ Quality Assurance Procedures  
 \_\_\_\_\_ Quality Assurance Manual Applicability  
 \_\_\_\_\_ Project Quality Plan

\_\_\_\_\_ Change does not require revision of project quality plan and/or applicable procedures, and project work may proceed without restriction.

\_\_\_\_\_ Project work may proceed, subject to the conditions described in the attached memorandum.

\_\_\_\_\_ Project work on certain tasks must be suspended until certain conditions are met, as described in the attached memorandum.

\_\_\_\_\_  
Quality Assurance Manager      \_\_\_\_\_  
Date

Exhibit 7 - Typical Notice of Exception/Change to Client Procurement Document Form

**Attachment 1: Approval Emails**

**George Van Wert**

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**From:** Bob Shirk [bshirk@ilrt.com]  
**Sent:** Wednesday, February 13, 2013 16:49  
**To:** 'George Van Wert'  
**Subject:** RE: NQAM Rev 4 DRAFT B

I have reviewed NQAM Rev 4 Draft B and find it acceptable. You may sign for me via this e-mail.