BWXT
BWX Technologies, Inc.

August 2, 2021
21-038

ATTN: Document Control Desk
Director, Division of Spent Fuel Management,
Office of Nuclear Material Safety and Safeguards
U.S Nuclear Regulatory Commission
Washington D.C. 20555-0001

References: (1) Docket 71-0088

(2) Letter dated August 14, 2019, BWXT (Burch) to NRC (Doc. Control Desk) – Submittal of Revision 24 to the Quality Assurance Plan for Shipping Program (QAP-0088)

Subject: Submittal of Revisions to the Quality Assurance Plan for Shipping Program (QAP-0088)

Dear Sir or Madam:

BWXT Nuclear Operations Group, Inc., Lynchburg (NOG-L), forwards the enclosed Revision 26 to the Quality Assurance Plan for Shipping Program (QAP-0088). This revision is submitted in accordance with the requirements of 10 CFR 71.106 (b). The changes QAP-0088 has undergone are described in Enclosure 1. The changes implemented in Revisions 25 and 26 have not reduced the effectiveness of the Plan or commitments in QAP-0088.

Enclosure 1 to this letter provides a summary of changes to QAP-0088 since submittal of Revision 24 in Reference 2. Enclosure 2 provides the final copy of the revised QAP-0088.

If you have questions or require additional information, please contact Chris Terry, Manager of Licensing and Safety Analysis, at ctterry@bwxt.com or 434-522-5202.

Sincerely,

Richard J. Freudenberger
Manager, Environment, Safety, Health & Safeguards
BWXT Nuclear Operations Group, Inc. – Lynchburg

Enclosures

cc: NRC, James Downs, Senior Project Manager
NRC, Resident Inspector
NRC, Region II

QDD4
NMSS20
NMSS

BWXT Nuclear Operations Group, Inc.
2016 Mt. Athos Road Lynchburg, VA 24504 USA
t: +1.434.522.6000 www.bwxt.com

# ENCLOSURE 1

BWXT Nuclear Operations Group, Inc.
2016 Mt. Athos Road Lynchburg, VA 24504 USA
t: +1.434.522.6000 www.bwxt.com

## Description of Changes – Quality Assurance Plan for Shipping Program (QAP-0088), Revision 26

| Section | Description of Change |
|---|---|
| Table 1.2.1.1, List of Implementing Procedures | Clerical updates to the Expanded List of Applicable Shipping Procedures |
| 1.4 | Clerical Updates |
| 1.18.2 | Added exigent conditions. |

## Description of Changes – Quality Assurance Plan for Shipping Program (QAP-0088), Revision 25

| Section | Description of Change |
|---|---|
| Figure 1.1.2 | Updated VP and GM |

# ENCLOSURE 2

BWXT Nuclear Operations Group, Inc.
2016 Mt. Athos Road Lynchburg, VA 24504 USA
t: +1.434.522.6000 www.bwxt.com

## Introduction

This Quality Assurance Plan (QAP) describes the Nuclear Operations Group - Lynchburg (NOG-L) program to comply with the requirements established by 10 CFR 71, Subpart H. This plan does not apply to shipments of materials, which are specifically exempted from the plan by 10 CFR 71.15. NOG-L and the Lynchburg Technology Center (LTC) are the primary holders of several Certificates of Compliance (C of C), and engage in shipping activities as a user, designer and fabricator of packages. This plan is written in accordance with the guidance provided in Reg. Guide 7.10.

**NOG-L Management** policy applies high standards of quality to product, employee safety, and public safety. Quality is fundamental to NOG-L's business, and its quality system emphasizes the highest standards of workmanship, integrity, and teamwork throughout the organization.

## Scope

This QAP is established to assure that radioactive shipping containers are designed, fabricated, used and maintained in accordance with the appropriate regulations, criteria, and procedures.

NOG-L has two facilities at this site. Both facilities are under the same NRC license (SNM-42) and share this QAP.

**Shipments from NOG-L** covered by this plan can consist of:

1. All enrichments of Uranium fuel in fabricated and un-fabricated forms.
2. Scrap and waste materials or contaminated materials for burial.
3. Recovered scrap in the form of UNH or oxides.
4. Sealed Beta and Gamma sources used for activation analysis, calibration, and other analytical purposes.
5. All fissile and Type B shipments from both sites (excluding those exempted in 10 CFR 71.15).

**Shipments from the Lynchburg Technology Center (LTC)** covered by this plan can consist of:

1. Sources, source material, and by-product material (Fissile Excepted Quantities and Type A Quantities Only)
2. Irradiated fuel and hardware for contract work (Fissile Excepted and Type A quantities only)

   **NOTE:** **NOG-L** is responsible for those shipments at LTC containing;
   1. Fissile material
   2. Non-fissile material containing Type B quantities.

## Distribution and Approvals

The following controls apply to the use, distribution, and modification of this plan:

1. The plan and its revisions will be approved by the Department, Section, or Unit Managers having responsibility for the following functions:

   a. Environment, Safety, Health & Safeguards **(ESH&S)**
   b. Radiation Protection **(RP)**
   c. Nuclear Criticality Safety **(NCS)**
   d. Quality Assurance **(QA)**
   e. Quality Control **(QC)**
   f. Technical Engineer **(ENG)**
   g. Procurement **(PROC)**
   h. Nuclear Materials Control Transportation **(NMCT)**

2. **NMCT** is the author of this QAP. Distribution of this document will be controlled by the EtQ system. All NOG-L & LTC procedures referenced in this plan are all stored and controlled by the EtQ system. Each cognizant organization at NOG-L maintains control of documents other than procedures controlled by EtQ.

## QAP Specifications and Commitments

### 1.1 Organization

#### 1.1.1 Structure and Authority

Both NOG-L and LTC are managed by the Division General Manager. Department Level Managers report to the General Manager. Section Level Managers report to Department Level Managers and Unit Level Managers report to Section Level Managers. In some cases, Front Line Managers report to the Unit or Section Level Manager.

Corporate Procurement provides services to NOG-L; however, they are not in the NOG-L organization. For the purpose of this plan, all functions come under the guidance of the General Manager of NOG-L.

NOG-L management defines and documents the responsibility, authority, and interrelationships of personnel who manage, perform, and verify work affecting quality and safety through job descriptions, procedures, organizational charts and activity specific directives.

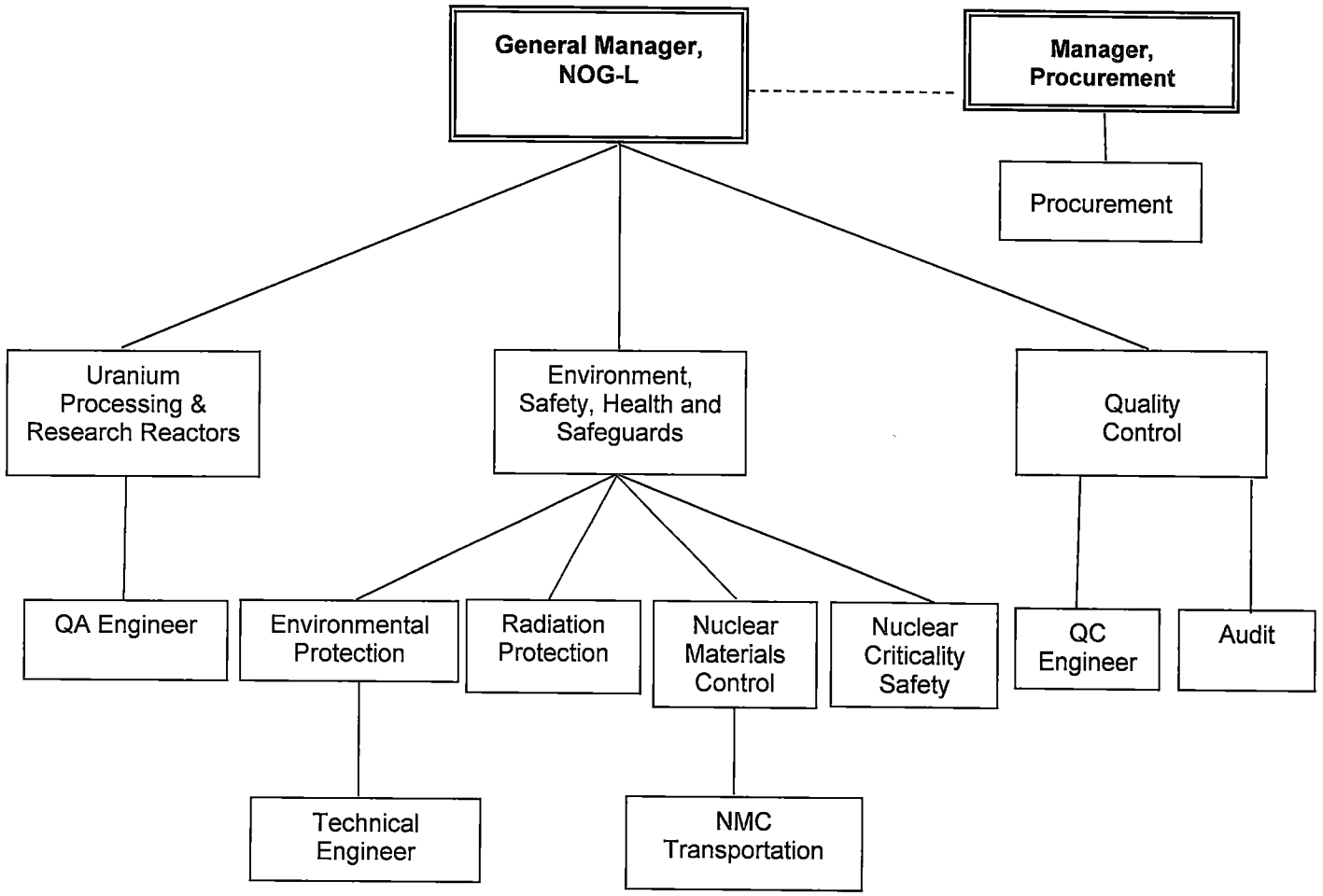
All functions requiring independence of function and cost report through the department chain of command to the General Manager under independent reporting protocol.

**Nuclear Materials Control Transportation (NMCT)** is at the unit level and reports to the General Manager level through the Manager of Nuclear Materials Control (NMC) (section level) and the Manager of Environment, Safety, Health, & Safeguards (ESH&S) (department level).

All functions (i.e. preparation or verification of design, analysis…) may be provided through **NOG-L organizations which are independent of NMCT**, or by **suppliers** on the Composite Supplier List. Persons providing verifications shall not be those who performed the work being verified, and to the maximum extent possible, shall be in a different organizational group. **NMCT** will maintain design drawings as part of the C of C/ SAR documentation.

Figure 1.1.1

**Organizational Structure**
(partial, designated as function)



**1.1.1.1 Nuclear Materials Control Transportation (NMCT) is responsible for:**

a. All Radioactive material (RM) shipping activities at NOG-L and only Fissile and Type B RM shipments at LTC.
b. Use and maintenance of radioactive shipping packages at NOG-L.
c. Preparation and maintenance of NMCT documents.
d. Document SAR authorized repairs.
e. Review fabrication specifications, purchase order and/or technical packages and Quality Control records, audits and other shipping related information.
f. Assist with approving suppliers as SME (Subject Matter Expert) during external audits.
g. Direct, oversee and manage any design, fabrication and repair activities concerning shipping containers. These functions may be performed by other NOG-L groups or independent designers, fabricators or consultants.
h. By authorization of the Division General Manager, stop any unsatisfactory work or otherwise controlling unsatisfactory processing, delivery or installation of nonconforming materials and unsatisfactory shipments.
i. Author and maintain this QAP.
j. Application of the Graded Approach (Method of assigning value to parts or processes on appropriate shipping containers, regarding their significance to safety).

NOTE: These **NMCT** responsibilities are performed under the guidance of the **Transportation Administrator** who reports **to the Unit Manager, NMCT**.

**1.1.1.2 Quality Assurance (QA) is responsible for:**

a. By authorization of the Division General Manager, stopping unsatisfactory work or otherwise controlling unsatisfactory processing, delivery, or installation of nonconforming materials and unsatisfactory shipments
b. Review and approve technical specifications for fabrication, as needed.
c. Review and approve procurement of packages, parts, fabrication services, repair, and procedures covering those functions, as needed.
d. Assist with approving suppliers in accordance with applicable procedures during external audits.
e. Review and approve supplier Quality Assurance (QA) systems, when required.
f. Trending of non-conformance, when applicable.
g. Review and approve disposition of nonconforming items / issues as necessary.
h. Review and approve receipt inspection / source inspection data packages.
i. Establishing and maintaining, in accordance with the applicable procedure, the Composite Supplier List (approved list of suppliers who may provide services under this plan).

**1.1.1.3 Quality Control (QC) is responsible for:**

a. Verifications requiring mechanical measurements and inspections.
b. By authorization of the Division General Manager, stopping unsatisfactory work or otherwise controlling unsatisfactory processing, delivery, or installation of nonconforming materials and unsatisfactory shipments
c. Performing "in-use" (pre-trip) container inspections, when required.
d. Performing source and /or receipt inspections as required.
e. Train personnel so they are qualified to perform quality control inspections.

**1.1.1.4 The Technical Engineer (ENG) is responsible for:**

a. Developing specifications, drawings, and specific evaluations as needed. These documents shall incorporate all requirements of (1) the C of C including drawings (2) this QAP, and (3) applicable sections of 10 CFR 71 and 49 CFR.
b. When needed, assist in approving suppliers in accordance with applicable procedures.
c. Generate and obtain approval for technical specifications.
d. Review and disposition nonconforming items / issues as necessary.

**1.1.1.5 Procurement (PROC) is responsible for:**

a. Assuring procurement documents contain the necessary specifications and requirements, and are forwarded to suppliers on the Composite Supplier List, when required.
b. Prepare the purchase order and issue the purchase order with technical package to an approved supplier.
c. Coordinate supplier delivery schedules and purchase order activities.
d. Route purchase order to NMCT and QA for review and approval. Note: For the purpose of this plan, "approval of PO" applies only to assuring the conditions set forth in this plan are covered.

**1.1.1.6 Nuclear Criticality Safety (NCS) is responsible for:**

a. Performing nuclear criticality safety evaluations and independently reviewing these evaluations.
b. Approved/qualified contractors may provide this function. Analyses performed by an approved/qualified contractor shall also be independently reviewed.

**1.1.1.7 Radiation Protection (RP) is responsible for:**

a. **RP** shall evaluate appropriate radiological considerations.

**1.1.1.8 Audit:**

a. Perform internal audits.
b. Evaluating the quality systems of the new and approved suppliers on a periodic basis.

1.1.2 Top Management Endorsement of the Quality Assurance Program:

Figure 1.1.2

General Manager's Policy Statement

## POLICY STATEMENT

It is the policy of NOG-L to perform work important to safety on Radioactive Material shipping containers in accordance with the requirements of 10 CFR Part 71, Subpart H, (Quality Assurance, 71.101 – 71.137) as described in the Shipping Container Quality Assurance Program No. 0088 and implemented by the NOG-L Quality Assurance System.

7/30/2021

Jim Bittner
Vice President and General Manager
BWXT Nuclear Operations Group, Inc. - Lynchburg

## 1.2 Quality Assurance Program

This plan applies to the design, fabrication, procurement, analysis, and repair of packages, as described in the applicable SARs for which NOG-L is the principal C of C holder. It also applies to the use and maintenance of all fissile (except those exempted by 10CFR 71.10 and references therein) and type B packages which NOG-L is authorized to use, under the General License in 10CFR 71, Subpart C.

### 1.2.1 Documentation

Table 1.2.1.1 lists current procedures used to implement the various criteria of this plan. (Criteria as indicated in Reg. Guide 7.10)

**Table 1.2.1.1: List of Implementing Procedures**

| Criteria | Procedure# | Title |
|---|---|---|
| 1 | | Section 1 of Quality Assurance Plan For Shipping Program |
| | QSP 6.1 | Purchasing |
| 2 | QWI 15.1.5* | Shipment of Radioactive Materials |
| 3 | QWI 6.1.13* | Procurement of Materials, Components, and Services for Radioactive Material Shipping Containers |
| | QWI 5.1.12 | Change Management |
| 4 | QWI 6.1.13 * | Procurement of Materials, Components, and Services for Radioactive Material Shipping Containers |
| | QWI 6.1.1 | Technical Requirements for Purchased Items |
| 5 | | *See expanded list of applicable RMS Shipping Procedures below* |
| | QWI 6.1.13* | Procurement of Materials, Components, and Services for Radioactive Material Shipping Containers |
| | OP-1001324* | Inspection of Fissile and Type B Shipping Containers and Spare Parts |
| 6 | QWI 5.1.12 | Change Management |
| | QWI 5.1.1 | Control of Plan Lists for Documents |
| | E41-157 | Administration of Nuclear Materials Control Internal/External Procedures and Forms |
| 7 | QWI 6.1.13* | Procurement of Materials, Components, and Services for Radioactive Material Shipping Containers |
| | OP-1001324* | Inspection of Fissile and Type B Shipping Containers and Spare Parts |
| | QWI 6.1.2 | Evaluation of New Supplier |
| 8 | QWI 6.1.13* | Procurement of Materials, Components, and Services for Radioactive Material Shipping Containers |
| 9 | QWI 6.1.13* | Procurement of Materials, Components, and Services for Radioactive Material Shipping Containers |
| | OP-1001324* | Inspection of Fissile and Type B Shipping Containers and Spare Parts |
| 10 | QWI 6.1.13* | Procurement of Materials, Components, and Services for Radioactive Material Shipping Containers |
| | OP-1001324* | Inspection of Fissile and Type B Shipping Containers and Spare Parts |
| | OP-1003947 | SGHX NDT Personnel Qualification and Training |
| 11 | QWI 6.1.13* | Procurement of Materials, Components, and Services for |

| Table 1.2.1.1: List of Implementing Procedures | | |
|---|---|---|
| Criteria | Procedure# | Title |
| | | Radioactive Material Shipping Containers |
| | OP-1001324* | Inspection of Fissile and Type B Shipping Containers and Spare Parts |
| 12 | OP-1000180 | Calibration Services |
| 13 | QWI 15.1.5* | Shipment of Radioactive Materials |
| | | *See expanded list of applicable RMS Shipping Procedures below* |
| 14 | QWI 15.1.5* | Shipment of Radioactive Materials |
| | QWI 6.1.13* | Procurement of Materials, Components, and Services for Radioactive Material Shipping Containers |
| | OP-1001324* | Inspection of Fissile and Type B Shipping Containers and Spare Parts |
| | RMS-02* | Package Selection and Use for Shipment of Radioactive Material |
| | RMS-16* | Package Maintenance |
| 15 | QWI 6.1.13* | Procurement of Materials, Components, and Services for Radioactive Material Shipping Containers |
| | OP-1001324* | Inspection of Fissile and Type B Shipping Containers and Spare Parts |
| | OP-1037861* | Non-Conformance Processing for the Shipping Program |
| 16 | QWI 6.1.13* | Procurement of Materials, Components, and Services for Radioactive Material Shipping Containers |
| | OP-1001324* | Inspection of Fissile and Type B Shipping Containers and Spare Parts |
| | QWI 14.1.1 | Preventive/Corrective Action System |
| 17 | | *See expanded list of applicable RMS Shipping Procedures below* |
| 18 | QWI 17.1.2 | Internal Quality Audits |
| | QWI 15.1.5* | Shipment of Radioactive Materials |
| | QWI 6.1.7 | Supplier Quality System Evaluation Program |

**Expanded List of Applicable Shipping Procedures**

| | |
|---|---|
| RMS-01 | Identification And Communication Requirements for Shipment of Radioactive Material |
| RMS-02* | Package Selection and Use for Shipment of Radioactive Material |
| RMS-16* | Package Maintenance |
| RMS-17 | Training |
| E41-85 | Requirements For Transport of SNM of Moderate Strategic Significance, and Export of SNM of Low Strategic Significance |
| OP-1000312 | Tamper-safing of SNM Stored on Site |
| RP-09 | Transportation of Radioactive Materials |
| RP-09-007 | Shipping Radioactive Waste From the LTC |
| RP-09-018 | Inspection, Use, and Storage of Various Shipping Packagings at the LTC |

** A NOG-L QA and/or QC Organization will review manufacturing and repair drawings, instructions, and procedures as noted with an asterisk in above table except changes not requiring review per QWI 5.1.12.*

### 1.2.2 Personnel

**NOG-L** and **supplier personnel** performing special processes, inspection, testing, and supplier reviews will be qualified. Acceptable qualification includes satisfaction of code requirements, education, and/or experience, as applicable.

The suggested qualification requirements for the **managers** or personnel providing design, inspection, and analysis verification are:

1. Bachelor's Degree in a technical field (or equivalent experience).
2. For fabrication verification, at least 5 years experience in engineering or manufacturing, with at least one year experience in quality assurance, or equivalent experience.
3. For design and analysis verification, at least five years experience in the discipline being verified.
4. Knowledge of applicable quality related codes, standards, regulatory, and statutory requirements.
5. Demonstrated ability to prescribe, apply, and assess compliance with applicable requirements.

The discipline with required expertise will have the responsibility to qualify and maintain any generated documentation.

NOG-L training includes review of parts of this plan applicable to functions performed and special training for the skills required for the designated activities. This training is maintained by retraining and re-certification, as appropriate.

## 1.3 Design Control

Design and development activities are planned and controlled on a project-specific basis. The planning addresses the required design activities, assignment of qualified personnel, organizational and technical interfaces, and the provision of adequate resources.

### 1.3.1 Control of Design Process

**NMCT** is the user of the containers, and will identify the need for new container designs or modification(s) to existing containers. This group will provide the mission definition.

**NOG-L and/or supplier groups** may contribute to the preparation of design documents.

### 1.3.2 Control of Design Input

For each design project, NOG-L identifies applicable statutory and regulatory requirements as well as other necessary design input information. Design specifications include technical and quality requirements. This input is reviewed by the appropriate NOG-L organization possessing the required expertise or qualified suppliers on the Composite Supplier List. Design input information is documented and distributed for review to verify its adequacy and to resolve incomplete, ambiguous, or conflicting requirements.

### 1.3.3 Control of Design Verification

Design output is documented in drawings, product specifications, and reports in terms that can be verified against design input requirements, and validated against acceptance criteria. Design output documentation identifies those components and processes that are critical to safety and proper functioning of the container using the Graded Approach (see section 1.4).

**Cognizant NOG-L** groups or **suppliers** on the Composite Supplier List may provide the necessary design verifications.

## 1.4 Procurement Document Control

NOG-L applies the Graded Approach using for guidance, NUREG/CR–6407. Where guidance is not provided by this document, personnel with required expertise (i.e. Engineering, Nuclear Criticality Safety, etc.) will be used to grade the process, component, or system. In addition to NUREG/CR-6407, the following shall be considered when procuring items:

a. The need for special controls and surveillance over processes and equipment;
b. The degree to which functional compliance can be demonstrated by inspection or test;
c. The quality history and degree of standardization of the item;
d. The impact of malfunction or failure of the item to safety; and
e. The design and fabrication complexity or uniqueness of the item.

NOTE: This grading dictates the amount of documentation, traceability records and applicability of the Composite Supplier List.

### 1.4.1 Preparation and Issuance of Procurement Documents

**NMCT** will request and **ENG** shall prepare technical documents. Procurement shall prepare the purchase order and both **NMCT** and **QA** will review and approve procurement documents in accordance with this plan.

### 1.4.2 Contents of Procurement Documents

**For category A and B Items:** (As defined in NUREG/CR-6407)

Procurement documents (PO/technical specifications) will be written in accordance with procedures which require:

1.4.2.1 A statement of the scope of work to be covered by the purchase order.

1.4.2.2 Reference to the design technical basis or 10CFR71, and a complete set of instructions to assure that the part or service is certified to the applicable codes, standards, and requirements.

1.4.2.3 Identification of the supplier's QA program or plan where this is applicable.

1.4.2.4 Access to the supplier's facilities and records for inspections and audits relating to the order.

1.4.2.5 Listing of all records, certifications, procedures, analyses, and tests to be maintained and submitted to NOG-L.

1.4.2.6 Requirement for reporting and dispositioning non-conformances if applicable.

**For category C Items:** (As defined in NUREG/CR-6407)

Category C items are typically off the shelf items with minor impact on safety. These items, with the exception of procurement documents, require no documentation, traceability or use of the Composite Supplier List.

### 1.4.3 Review of changes to Procurement Documents

Implementing procedures shall specify that revisions to procurement documents are subject to the same level of review and approval as the original document, with the exception of changes not requiring review per QWI 5.1.12.

## 1.5 Instructions, Procedures, and Drawings

### 1.5.1 Quality Assurance Program Procedures

**NMCT** provides documented instructions, procedures, or drawings for activities affecting safety considerations of shipping. These incorporate appropriate quantitative and qualitative means for verifying quality of the packaging, its use, and compliance with Subpart H. Appropriate **NMCT, LTC, QA** or **QC** procedures formalize responsibilities and actions required for the preparation, review, approval, and control of these documents.

### 1.5.2 Quality Assurance Review and Concurrence

**QA** and/or **QC** will review and approve manufacturing and repair drawings, instructions, and procedures as noted with an asterisk in Table 1.2.1.1 of this plan, as required by The Change Management Procedure (QWI 5.1.12). **QA** and/or **QC** will perform, or concur with inspections for fabrication and repair, which are performed under this plan. **QA** and/or **QC** will review and concur with procurement of manufacturing services provided by any supplier.

## 1.6 Document Control

### 1.6.1 Controlled Documents

Each cognizant organization issues procedures to assure review, approval, and issuance of design and procurement documents, purchase orders, manuals, procedures, regulations, inspections, changes, and corrective actions to assure proper implementation of activities conducted under this plan. These procedures specify responsibilities for these actions and for required independent reviews by qualified individuals. All internal procedures referenced in this plan are controlled under the division wide EtQ system.

### 1.6.2 Control of Document Generation and Issuance

A system has been established to ensure proper document revisions are used, superseded documents are controlled to prevent their use and packaging is performed in accordance with the appropriate document revision. According to procedure, all documents and changes thereto are to be reviewed and approved prior to issuance.

### 1.6.3 Control of Document Changes

The same procedures also specify that, to the extent possible, changes to documents are also reviewed and approved by the same organizations that performed the original reviews. Where same organization review is not possible, an equivalent alternate shall be used.

## 1.7 Control of Purchased Material, Equipment, and Services

### 1.7.1 Procurement Document Planning

Procedures are established that describe procurement actions leading to contract award for goods and services, and the organization responsible. This process is designed to ensure that materials, equipment, and services conform to the requirements specified in the procurement documents and purchase orders. Procedures specify that purchased packages, components, or services conform to appropriate requirements.

### 1.7.2 Selection of Procurement Sources

Suppliers are evaluated and selected based upon their ability to meet administrative, technical, quality, cost, and schedule requirements. The type and extent of control of each supplier is dependent upon the category assigned using the Graded Approach, the complexity of the technical specifications and upon any historical performance data available. Records of approved suppliers (Composite Supplier List) and supporting data are maintained by **QA**. Supporting data for suppliers may be a resume detailing appropriate education and applied experience.

### 1.7.3 Contract Award Criteria

NOG-L procedures specify that contract award criteria include technical considerations, conformance to **QA** requirements, production capabilities, and past performance. All outstanding issues must be resolved prior to a contract being awarded. **QA** shall perform a preselection review for fabricators of their quality program, as appropriate, to determine capability, personnel qualifications, certifications, instrument calibration, material identification, traceability control and special processes (i.e. welding, heat treating, radiography, etc.) control.

### 1.7.4 Supplier Performance Control

Purchase orders and/or technical packages shall specify, if warranted, hold points in the manufacturing processes to allow verification of required inspection approvals.

### 1.7.5 Suppliers' QA Plans

Purchase Orders and/or technical packages to suppliers shall specify that the applicable requested supplier's procedures be submitted to **QA** for review. For Category A and B items, this review shall assure:

1. The supplier has identified characteristics and activities to be inspected.
2. The supplier has identified acceptance and rejection criteria.
3. The supplier has assigned responsibility to control activities for receiving, in-process, and final inspections.
4. Operator, inspector, and equipment qualifications are delineated.
5. Appropriate standards are used in support of sampling.
6. Individuals performing inspection functions for acceptance are independent from those performing activities being inspected.

NOTE: When no QA Plan or an inadequate plan exists, a job specific one shall be developed or supplemented. It need only cover the applicable elements of this plan.

### 1.7.6 Control of Measuring and Test Equipment

Purchase orders and/or technical packages to suppliers providing measurement data or performing tests under this plan shall require the same level of control over measuring and test equipment. **QA/QC** shall review applicable procedures.

### 1.7.7 Verification Activities

**QC** shall source and/or receipt-inspect items shipped by the fabricator using the applicable procedures.

### 1.7.8 Controlling Non-conformances

Purchase order and/or technical specifications shall specify that nonconforming items shall be dispositioned by NOG-L, if necessary.

**Personnel with the required expertise** shall evaluate non-conformances and recommend disposition based on appropriate technical justification.

Purchase orders and/or technical packages to suppliers providing fabrication and repair services under this plan shall require control over nonconforming materials, parts, or components.

### 1.7.9 Records

Records retention will be based on the category assigned using the Graded Approach. Records will be retained in accordance with 10 CFR 71 and NUREG/CR-6407 taking into consideration the additional items listed in 1.4 (a. through e.)

## 1.8 Identification and Control of Materials, Parts, and Components

### 1.8.1 Identification and Control

**For category A and B items:** (As defined in NUREG/CR-6407)

Identification requirements are specified on a project-specific basis. Procedures provided by NOG-L or vendor procedures approved by NOG-L shall direct the application of identifications and shall assure that identification is maintained through their processing, and is verified prior to release (if required). These requirements take into consideration the location and method of identification to preclude adverse function or fit. In cases where it is not practical to identify a component (such as an "O-ring") traceability will be maintained by segregation according to Purchase Order Number or other means that provide traceability.

**For category C items:** (As defined in NUREG/CR-6407)

This category of items does not require identification or traceability.

### 1.8.2 Conditional Releases

**NMCT, ENG or QA** shall approve all conditional releases. The area approving the conditional release shall be determined based on the expertise required to disposition the release.

## 1.9 Control of Special Processes

Procedures are established to assure that all processes, equipment and procedures used for special processes are qualified in accordance with the applicable codes, standards and specifications. These special processes (including, but not limited to, welding, heat treating, radiography) will be performed by persons qualified in accordance with the requirements of the applicable codes or standards. A cognizant section will maintain documentary evidence of the qualifications, and will monitor that they are current for all work being performed. The type and/or extent of documentation will be determined by category assignment using the Graded Approach.

## 1.10 Inspection Control

### 1.10.1 Internal inspections

Inspectors who perform functions under the jurisdiction of this QAP are to be independent from the individuals performing the activity being inspected. The inspectors are qualified in accordance with company procedures.

#### 1.10.1.1 Receipt Inspection

Inspection of procured items upon receipt is controlled by documented procedure. The degree of receipt inspection is dependent upon the category assigned using the Graded Approach. NOG-L procedures allow source inspection instead of receipt inspection under some conditions. Where source inspection replaces receipt inspection, upon receipt, items will be inspected at NOG-L for identification (if applicable) and shipping damage as a minimum.

#### 1.10.1.2 In process (pre-trip) Inspections

In process inspections are performed by **QC**.

### 1.10.2 Non-Conformances

Inspection and test records shall clearly indicate whether or not the item conforms to requirements. Where non-conformances are present they are documented and processed in accordance with section 1.15 and documented procedures for control of non-conforming parts.

## 1.11 Test Control

Procedures will specify identification of required testing, means for assessing adequacy of the tests, and designation of responsibilities.

These procedures and sub-tier instructions include:

1. Method and instruction for performing the test.
2. Requirements for calibration, equipment, training, qualifications, and environmental conditions.
3. Acceptance/rejection criteria.
4. Requirements for documenting data and results.

Test results shall be documented and evaluated by qualified individuals. Modifications, repairs, and replacements are tested as described above.

## 1.12 Control of Measuring and Test Equipment

**Calibration Services** maintains procedures for assuring that all measurement and associated equipment be appropriately calibrated and maintained in accordance with manufacturer's instructions, or with license, contract, or procedure requirements. These procedures specify:

1. Labeling of equipment to show next required calibration.
2. Calibration records be identified.
3. Calibration records be traceable.
4. Calibration standards be traceable to nationally recognized standards.
5. Inspections found to have been made with equipment which is out of calibration will be reevaluated to validate the reported results.
6. Equipment out of calibration will be repaired or replaced.

## 1.13 Handling, Storage, and Shipping

**NMCT** maintains procedures to control package handling, use, and protective storage, as applicable. These procedures may also be in the form of Route Cards, process specifications, process plan outline (PPO), and/or drawings.

## 1.14 Inspection, Test, and Operating Status

NOG-L procedures require that our **QC organization** perform and document receipt and periodic inspections which are established in the shipping container SARs or applicable technical specifications.

## 1.15 Control of Nonconforming Materials, Parts, or Components

NOG-L ensures that any non-conforming item is identified and documented in quality records, as are subsequent evaluations and dispositions. The primary consideration is that nonconforming items are prevented from being inadvertently used.

**QA** maintains procedures to assure that all nonconforming parts and items are identified, segregated, and evaluated before dispositioning. These procedures identify individuals responsible for the evaluations and those with the authority to make the dispositions. Nonconforming parts that are identified as safety critical shall be deemed unusable and replaced. For the purpose of this plan, safety critical is defined as items with a safety margin in the Safety Analysis Report for Packaging and/or the Certificate of Compliance or the safety of the container could possibly be compromised.

NOG-L typically makes small purchases that do not lend themselves to trending. These purchases will not be trended; however, any non-conformances will be noted on the Subcontractor Rating Form which is stored in the Composite Supplier List qualification folder and will be considered when subsequent purchases are considered from that supplier. For long-term contracts, trending of non-conformances will be performed for management review. When repaired, such parts are inspected and tested, if appropriate, in accordance with original inspection and testing requirements.

### 1.16 Corrective Action

**NOG-L** maintains procedures to provide corrective actions for components fabricated under this plan. These procedures specify actions to preclude recurrence of quality degradation. They also identify individuals and organizations responsible to verify and close out in a timely manner corrective actions resulting from non-conformance reports, audits, and inspections.

### 1.17 Quality Assurance Records

**NMCT, LTC, QA,** and **QC,** when applicable, maintain procedures which specify the generation, maintenance, retention, and use of appropriate quality assurance records. These procedures control those design, fabrication, and inspection records necessary to demonstrate product quality. They also specify responsibility for all aspects of records management, and records storage to assure retrieval of all pertinent information.

### 1.18 Audits

1.18.1 All Quality Plan elements are audited, by personnel independent of the activity being audited, at least every two years. These audits are conducted to verify that activities are performed as planned and to determine the effectiveness of the quality system. Audit results are reported to management and personnel responsible for the activity. The audit group initiates corrective actions if necessary. Follow-ups are conducted to verify that corrective actions for significant events have been effectively implemented. Audit results are maintained as quality records.

1.18.2 The vendor or subvendor of category A or B items are audited every three years (1095 days $\pm$ 90 days) in order to remain on the Composite Supplier List and/or to assess the effectiveness of the control of quality by the vendor or subvendor based upon the importance, complexity, and quantity of the product or service. A vendor may be removed from the list if no materials are being purchased or if quality issues warrant such action. The vendor may not be added back until a vendor evaluation/approval has been performed and quality issues are shown to have improved as necessary. **See below for exigent condition allowances if necessary.**

**External Audits and Surveys Exigent Conditions:**

An overall 25% extension for audits or surveys may be exercised during periods where performance of such activities is not feasible. Examples of exigent conditions would include, but not limited to; 1) declaration of a national emergency, 2) severe localized or national weather conditions, or 3) localized outbreak of a severe health concern to the public and licensee.

Continued use of suppliers that have exceeded the maximum allowed audit or survey time due to exigent condition is allowed if the following conditions are met:

a. Priority shall be given to completing audits and surveys of affected suppliers in order of the expiration of the triennial audit frequency. The first expired audit or survey should be the first to be audited or surveyed.
b. There is verification that the supplier is still implementing a quality assurance program that meets BWXT's requirements for 10 CFR 71 Subpart H.
    i. For suppliers with delinquent surveys, the entity shall ensure that the suppliers have maintained adequate documented programmatic controls in place for the activity affecting quality.
c. The alternative method of the 25% extension discussed above is applicable to domestic and international suppliers.
d. Receipt inspection and industry operating experience are reviewed on an ongoing basis as the information becomes available and documented. The results of the review are promptly considered for the effects on a supplier's continued qualification and adjustments made as necessary, including corrective actions.
e. If there is no ongoing receipt inspection or operating experience with which to analyze the supplier for a period of 12 months since the last audit or survey, an annual documented evaluation shall be performed and include the following:
    i. Review of supplier-furnished documents and records such as certificates of conformance, nonconformance notices, and corrective actions.
    ii. Results of previous source verifications, audits, survey and receiving inspection activities.
    iii. Operating experience of identical or similar products furnished by the same supplier.
    iv. Results of audits from other sources (e.g., customer, American Society of Mechanical Engineers (ASME) audits, or NRC inspections).
f. If the contract or a contract modification significantly enlarges the scope or changes the methods or controls for activities performed by the same supplier, the supplier will provide documented justification the change(s) are adequately addressed by its quality assurance program controls.

For audits performed during exigent conditions, the audit "clock" does not have to reset backwards to the original date the audit or survey should have been performed. The date that the audit or survey is actually performed would be the start of the new triennial audit or survey frequency.