



Department of Mechanical Engineering

THE UNIVERSITY OF TEXAS AT AUSTIN

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February 5, 2018

Attn: Document Control Desk
M. Layton
Director, Division of Spent Fuel Management
Office of Nuclear Material Safety and Safeguards
Nuclear Regulatory Commission
Washington D.C., 20555

Subject: Request for Approval, Quality Assurance Program for the University of Texas at Austin

Reference: Facility License R-129, Docket 50-602

Sir:

In accordance with 10CFR71, a Quality Assurance Program (QAP) for the Nuclear Engineering Teaching Laboratory (NETL) of the University of Texas at Austin is attached for review and approval to support shipments of TRIGA type fuel and other radioactive material. We anticipate shipment activities mid-March 2018.

The Program is patterned from previously approved quality assurance programs where shipment was accomplished utilizing the BEA Research Reactor Package [USA/9341/B(U)F-96], which will be utilized in the planned shipment. Based on comments from the Reactor Safety Committee (Reactor Oversight Committee) of the University Texas at Austin, the most significant deviations from the template include:

1. Explicit correlation to 10CFR71 subpart H by step number, with identification of non-existent subpart H material and explanations for non-applicable subparts, and
2. Integration of essential functions of subpart H where the function remains with the owner of the cask (and is therefore not applicable to NETL).

Your attention in this matter is greatly appreciated. Please contact me if you have any questions at 512-232-5373 or whaley@mail.utexas.edu.

Sincerely,

A handwritten signature in cursive script, appearing to read "P. M. Whaley".

P. M. Whaley
NETL Associate Director

cc: Reactor Oversight Committee
S. Traiforos, Project Manager



UT Austin Nuclear Engineering Teaching Laboratory Quality Assurance Program (Type B Packages)

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UT Austin Nuclear Engineering Teaching Laboratory QUALITY ASSURANCE PROGRAM (TYPE B PACKAGES)

1 Quality Assurance Requirements

This Quality Assurance Program (QAP) applies to shipments of TRIGA® type reactor fuel and other radioactive material requiring a Type B package. This QA Program is submitted pursuant to 10 CFR Part 71 Subpart H and is appended to NETL procedure ADMN-2, Procedures for Design Features and Quality Assurance.

Transport will be performed by a licensed carrier. The shipping package will be a Type B package with an approved Certificate of Compliance (CoC). The package will usually be on loan from entities such as the Department of Energy or a prime contractor. When consignor of a shipment of licensed material, NETL is ultimately responsible for ensuring that the package conforms to the CoC.

The sections of this QAP and implementing procedures are numbered and named based on corresponding sections of 10 CFR 71 Subpart H. Non-continuous procedure numbers are intentional and are consistent with the numbering in Subpart H:

- Where numbering of Subpart H sections is not sequential, the unused number is noted in this QAP as “No current 10CFR71 Subpart H Section”
- Procedures are developed for Subpart H sections applicable to the QAP at NETL; sections of Subpart H not applicable to the NETL QAP are noted as “Not Applicable to NETL,” with an explanation in the QAP.

2 No current 10CFR71 Subpart H Section

3 ORGANIZATION

Figure 1 represents the organization chart for the operation of the reactor facility. The QAP will be the responsibility of the Associate Director at The University of Texas at Austin Nuclear Engineering Teaching Laboratory (NETL). The QAP will be performed within the Operating Organization. The Reactor Oversight Committee will review and approve all written procedures. NETL Reactor Operations and Health Physics personnel will have primary responsibility for monitoring all packaging, shipping and receiving activities.



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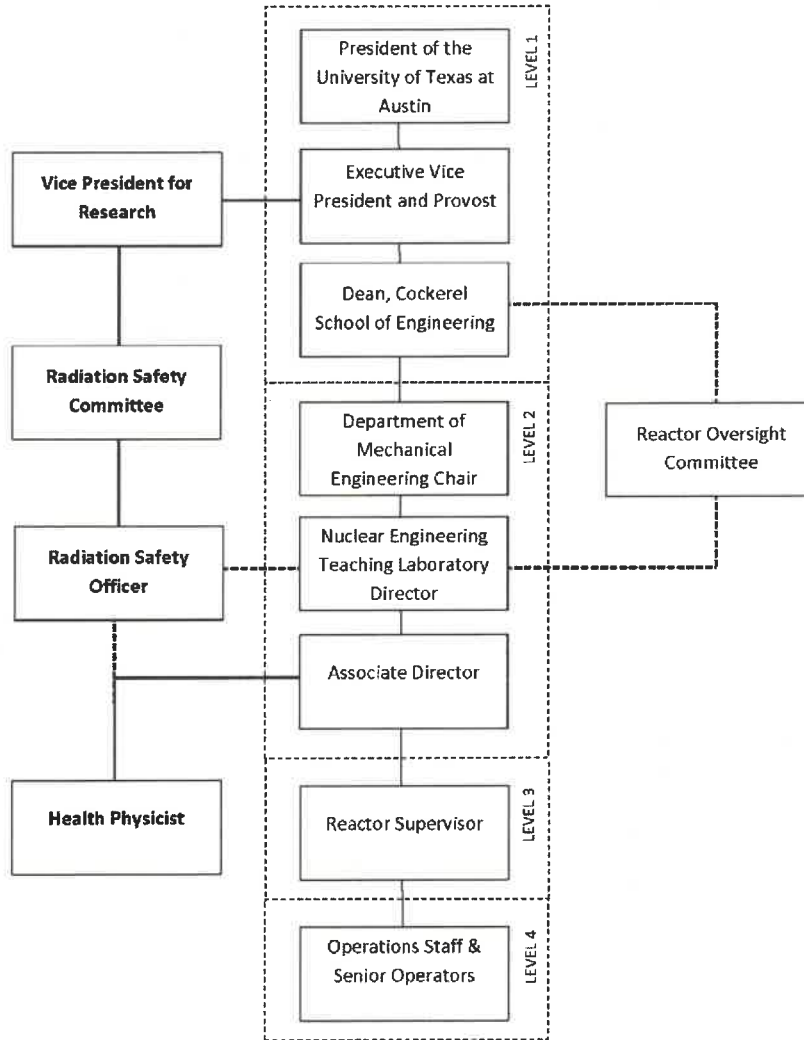


Figure 1

4 No current 10CFR71 Subpart H Section

5 QUALITY ASSURANCE PROGRAM

The scope of this program includes activities that are important to safety for receiving, handling, loading, and delivering to a carrier an approved and certified Type B package for the transport of TRIGA fuel or other radioactive material. Specifically, this QAP addresses unloading a package from a truck, receiving a loaded package at the NETL, and shipping an unloaded package from the NETL on a truck.



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NETL does not design, fabricate, assemble, or test packages, and does not intend to procure any package for ownership or lease to others. NETL does not intend to rework, repair, maintain or modify the package; repair and maintenance of the package will remain the responsibility of the package owner.

Quality assurance will be accomplished through the use of written procedures incorporating regulatory requirements, applicable portions of the NETL Health Physics Procedures, specific procedures developed by the manufacturer of the package (e.g. package operating procedures specified in the package Safety Analysis Report), and other procedures developed during review of packaging and transportation planning. Procedure-based checklists (or equivalent) will be used by individuals (or their designees) who are responsible for quality assurance.

6 Changes to QAP

Changes to this QAP will be performed in accordance with 10CFR70.106.

7 Package Design Control (Not Applicable to NETL)

Package design control is the responsibility of the package owner; design activities related to packages will not to be performed by the Facility.

8 No current 10CFR71 Subpart H Section

9 Procurement Document Control (Not Applicable to NETL)

Procurement document control is the responsibility of the package owner. No procurement documents are expected to be generated during this use of the package other than the procurement documents for the package itself. Procurement of the package is usually conducted via contract between the package user and the package owner.

Specific terms of use of the package will be stipulated in the contract or by memorandum between NETL and the package owner for use of the package. These contract terms will, at a minimum:

- Specify the scope of work intended for the package
- Require the package owner to demonstrate that the package conforms to the specifications contained within the CoC (i.e. by providing a valid and signed CoC, and a copy of the most recent package certification inspection).
- Require the package owner to provide a copy of their QAP approval letter to ensure that the quality control of the package owner is acceptable.
- Require the package owner to provide Copies of the quality control documents associated with spare or replacement parts of parts replaced during the contracted package use.



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The contract or memorandum containing the terms of package use must be reviewed and signed by an authorized representative of NETL. This contract will be retained by NETL as a quality assurance document.

Any replacement parts will be procured by the package owner under their QAP. The package owner is responsible for furnishing NETL with copies of the reviewed and approved procurement documents for the replacement parts. These procurement documents will be retained by NETL as well as the package owner.

10 No current 10CFR71 Subpart H Section

11 INSTRUCTIONS, PROCEDURES, AND DRAWINGS

Activities important to safety will be ensured by following manufacturer's instructions, procedures, and limitations as they relate to the safe use of the packages.

12 No current 10CFR71 Subpart H Section

13 DOCUMENT CONTROL

Control shall be exercised over the documents that are used in this shipping activity. The documents include a master document check-list, inspection procedures, loading and unloading procedures, package certification documents, radiation survey records, and shipping papers. All procedures and check-lists and changes will be approved by the Reactor Oversight Committee, NETL Director, Reactor Manager, and/or Senior Reactor Operator as appropriate.

14 No current 10CFR71 Subpart H Section

15 CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES (Not Applicable to NETL)

Control of purchased material, equipment, and services is the responsibility of the package owner. No equipment or services will be purchased that are applicable to this use of the package, other than procurement and use of the package itself.

In order to ensure that the package itself conforms to the procurement requirements specified in Section 9 of this plan, the package will be inspected upon receipt according to Section 21 of this plan with respect to the procurement requirements established in Section 9.

Control over services applicable to the use of the packages (eg. loading, unloading, opening, and closing the package) will be exercised via the contract scope of work, and will, in all respects, be performed in accordance with the operating procedures specified in the package Safety Analysis Report. Additionally, loading and shipping services must conform to the limits and specifications of the package CoC.



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Proper loading of the cask will be demonstrated via inspections in accordance with Section 21 of this plan, and adherence to the operating procedures specified in the package SAR.

16 No current 10CFR71 Subpart H Section

17 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS, AND COMPONENTS (Not Applicable to NETL)

Identification and control of materials, parts, and components is the responsibility of the package owner. No materials, part or components are intended to be identified or controlled for this activity under the NETL QAP. Should conditions adverse to quality occur, they will be identified and communicated to the package owner through the QAP Section 33.

The package should arrive at NETL in a “ready to use” configuration, fully assembled. In the event that a package component is damaged during transit to NETL it will be identified by receipt inspection in Section 21. Should a package component be damaged during unloading or loading operations, it will be identified during exercise of activities conducted under Section 27. In the event a package component is damaged the package owner will be notified and will provide replacement or repair (as necessary) in accordance with Section 9.

Copies of the quality control documents required by the package owner’s QAP for any spare or replacement parts should be furnished to NETL by the package owner in accordance with Section 9, and will be retained by NETL along with a complete summary of all parts that were replaced during the contracted package use. The documents will be reviewed by the NETL Associate Director prior to those parts being used in a shipment from NETL in accordance with Section 21.

18 No current 10CFR71 Subpart H Section

19 CONTROL OF SPECIAL PROCESSES

No special processes are to be undertaken for this activity.

20 No current 10CFR71 Subpart H Section

21 INTERNAL INSPECTION

The following inspection activities will be implemented for each package procured for shipping purposes:

21.1 Receiving Inspections

Checklists will be established to ensure receipt inspections are performed to verify:

1. Any unique identification of the package as received agrees with the package as shipped



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2. The Proper package assembly
3. External dose rates are congruent with those listed on the radioactive shipping paperwork
4. Shipping papers are properly completed
5. Packages are conspicuously and durably marked in compliance with USDOT regulations
6. Measures are established to ensure that the consignee is present to accept receipt of the package

21.2 Shipping Inspections

Checklists will be established to ensure inspections are performed to verify:

1. The package is uniquely identified
2. Quality control documents for spare or replacement parts acquired after package receipt have been reviewed by the NETL Associate Director
3. Proper package assembly
4. Moderators and neutron absorbers are present (if applicable)
5. Valves are set to specification and to prevent tampering
6. Shipping papers are properly completed and signed by a university certified shipper
7. Packages are conspicuously and durably marked in compliance with USDOT regulations

21.3 Maintenance Inspections

These inspections will not be performed under this activity unless specifically designated by the package standard operating procedures.

21.4 Inspection Documentation

Inspection records will be maintained to document performance of inspection activities

22 No current 10CFR71 Subpart H Section

23 TEST CONTROL

23.1 Procedures

Procedures will be prepared to ensure that applicable tests, surveys, or other measurements are performed according to manufacturer's instructions. Properly calibrated equipment will be used and methods for documenting tests will be established.

23.2 Acceptance Tests

Measures will be established to ensure that acceptance tests (as applicable) are performed prior to offering a package for transport. Tests may include structural integrity, leak tightness, component performance, and shielding and thermal integrity.



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23.3 Results

Test results will be documented, evaluated, and maintained as QA records. The NETL Associate Director (or designee) will determine acceptability of the records.

24 No current 10CFR71 Subpart H Section

25 CONTROL OF MEASURING AND TEST EQUIPMENT

25.1 Calibration Control

Gauges, reference standards, etc. are not expected to be used for this activity. Radiation measuring equipment will be used for this operation. This equipment will be the property of NETL. Calibration records for this equipment will be maintained by NETL in accordance with existing standard operating procedures.

A calibrated torque wrench will be used for cask closure. This torque wrench will be calibrated with traceable standards, and the calibration records covering the duration of use of at NETL will be maintained by the NETL.

25.2 Out of Calibration Equipment

Equipment that is out of calibration will not be used.

26 No current 10CFR71 Subpart H Section

27 HANDLING, STORAGE, AND SHIPPING CONTROL

27.1 Preservation

Measures will be established to ensure that cleaning, handling, storage, and shipping are accomplished in accordance with the package design requirements to prevent damage or deterioration by environmental conditions. Provisions for use of special equipment such as cranes or lifting devices will adequately identify and protect package components. Conditions identified in the CoC will be adhered to when loading or unloading packaging.

27.2 Preparation, Release and Delivery to Purchaser

Measures will be established to ensure that the following requirements are completed prior to shipping:

1. Cavities have been adequately dried
2. All conditions have been completed prior to offering for transport
3. All USNRC and USDOT requirements have been satisfied prior to offering for transport
4. All shipping papers have been completed and reviewed for accuracy and completeness



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28 No current 10CFR71 Subpart H Section

29 INSPECTION, TEST, AND OPERATING STATUS

A master check-list will be established to track the status of inspections, test, and operating conditions.

30 No current 10CFR71 Subpart H Section

31 NONCONFORMING MATERIALS, PARTS, OR COMPONENTS

Shipping and receiving inspections will be conducted according to Section 21 of this plan.

These inspections will include identification of parts that are unable to meet the specifications listed in the package CoC, and package Safety Analysis Report. Any part that is damaged or unable to perform its intended function as specified in the package CoC or SAR shall be identified in the inspection report and removed from service.

Nonconforming parts must be clearly labeled and removed from the work area to prevent their inadvertent use. Replacement parts must be obtained from the package owner. Control over the replacement parts must be exercised by the package owner in accordance with Section 17 of this plan.

Additionally, an assessment must be made on whether or not the replacement part has impacted the validity of the CoC, or if the package must be recertified by the package owner. A copy of this assessment and the new package certification (if necessary) must be retained by NETL.

32 No current 10CFR71 Subpart H Section

33 CORRECTIVE ACTION

33.1 Reporting

Causes of conditions that are detrimental to quality will be promptly identified and reported to the NETL Associate Director (or designee). Measures will be established to identify any corrective action from suppliers are obtained and that corrective actions were implemented and effective.

34 No current 10CFR71 Subpart H Section



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35 QUALITY ASSURANCE RECORDS

35.1 General

QA records will be generated for each activity that is performed during the receipt, unloading, opening and closing, loading, preparation of shipping papers, and adherence to conditions specified by the manufacturer. The records will demonstrate delivery to a carrier and have evidence to show that USNRC and USDOT requirements have been satisfied.

Inspection and test records will identify: the test or observation performed, show that the tests or inspections were complete, record test or survey data, identify any conditions that are detrimental to quality, names of individuals performing the tests or inspections, and whether the results were acceptable.

35.2 Generating Records

Measures will be established to generate and store records. Paper copies of records generated will be stored in secure files. Additionally, documents may be formatted for electronic storage.

35.3 Indexing and Classification Records

Records generated for these activities will be designated as non-permanent and will be retained for a period of at least 3 years or as prescribed in the University of Texas Handbook of Operating Procedures 3-1410, Records Management, whichever is longer.

35.4 Receipt, Retrieval, and Disposition of Records

The records generated by these activities will be maintained by NETL. Procedures are in place for storage of records that relate to transportation and health physics activities that relate to the use of licensed material at the Facility.

35.5 Storage, Preservation, and Safekeeping

Measures will be established to maintain records for the required period. Measures to be established include:

1. Prevention of damage from fire, flood, or other environmental damage
2. Electronic records will be stored on a system which is backed up periodically or on media stored in a manner that prevents damage as indicated in item 1 above
3. Unauthorized personnel will not have access to records
4. Damaged records will be promptly replaced

36 No current 10CFR71 Subpart H Section



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37 AUDITS

37.1 *Elements of an Audit Program*

Due to the small number of uses of any package an audit will be conducted after each use of a package. An auditor will be appointed by the Reactor Oversight Committee. The conditions of Technical Specifications Section 6.2.4 will be met in establishing an audit program.

37.2 *Scheduling of Audits*

An audit will be performed after each shipment to ensure that elements of the program are in place and that appropriate documentation was generated and maintained.

37.3 *Team Selection*

Due to the small scope of this activity an independent individual will be chosen that has an understanding of the program and the requirements for compliance.

37.4 *Various Audit Actions*

The auditor will meet prior to the audit to discuss scope and objectives and after the audit to discuss findings, clarify facts, and to ensure all appropriate information has been gathered. A report will be generated to identify deficiencies and a response is required to address deficiencies. The auditor will ensure that a schedule for resolving the items identified is presented and that corrective action is implemented. The report and response(s) will be retained in accordance with Section 35.