PURDUE
UNIVERSITY

RADIOLOGICAL & ENVIRONMENTAL MANAGEMENT

January 25, 2007

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Director, Spent Fuel Project Office
Office of Nuclear Material Safety and Safeguards
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852-2738

Re: Docket 71-0577

Dear Sir/Madam:

Please find enclosed the renewal for the Purdue University Quality Assurance Program No. 0577 for the transportation of radioactive material. For clarity, the program has been resubmitted in its' entirety. As is stated in the program, the scope of our activities will be the use of approved containers with valid CoCs. Purdue University will not design, fabricate, test, or perform maintenance on any approved packages.

If you should have any questions regarding this information please contact me at 765-494-2350. Thanks for your prompt attention to this matter.

Sincerely,

James F. Schweitzer
Radiation Safety Officer

NMSS01

550 Stadium Mall Drive ■ West Lafayette, IN 47907-2051 ■ (765) 494-6371 ■ Fax: (765) 494-7403

PURDUE UNIVERSITY
QUALITY ASSURANCE PROGRAM

INTRODUCTION

The Quality Assurance Program submitted here is to assist in the handling of shipments of MTR plate-type reactor fuel, and other radioactive material. Specifically the program will cover activities related to the shipping of approved packages containing radioactive material.

The Quality Assurance Program will be the responsibility of Radiological and Environmental Management at Purdue University. The transport of all radioactive material will be done by a licensed carrier and all shipping containers will be Type B containers with an approved Certificate of Compliance (CoC). The containers will usually be on lease or loan from entities such as the Department of Energy or a prime contractor of the DOE. The principal activity expected for this approval will be the transportation of natural and/or enriched uranium related to the School of Nuclear Engineering Reactor and other projects.

Purdue University does not design, fabricate, assemble, or test containers, and does not intend to procure any container for ownership or lease to others. Purdue University does not intend to rework, repair, maintain or modify the container.

The QA Program is submitted pursuant to 10 CFR Part 71.

1. ORGANIZATION

Figure 1 shows the organization chart for the operation of the reactor facility and the relation to the Radiation Safety Program of the University. The Quality Assurance Program will be performed within that organization for all shipments. The Committee on Reactor Operations will review and approve all written procedures. The Reactor Operation personnel and the Health Physics personnel will have primary responsibility for monitoring all packaging, shipping and receiving activities. For shipments external to the School of Nuclear Engineering, the Purdue University Radiation Safety Committee will provide oversight and procedure approval.

2. QUALITY ASSURANCE PROGRAM

The scope of the program includes handling, loading, delivering to a carrier for transport an approved package for the transport of MTR fuel, fuel rods, or other radioactive material. The shipments will be periodic in nature and will occur at a maximum frequency of up to several shipments per year. Quality assurance will be exercised primarily through the use of written procedures constructed from regulatory requirements, applicable portions of Purdue University Radiation Safety Procedures, specific procedures develop by the manufacturer of the package, and other procedures or safeguards developed during review of packaging and transportation planning. Quality Assurance will be effected by formatting these procedures as check-lists (or equivalent) to be used by the individuals or their designees who are responsible for quality assurance.

3. PACKAGE DESIGN CONTROL

Design activities related to packages will not to be performed by Purdue University.

4. PROCUREMENT DOCUMENT CONTROL

Procurement activities related to packages will not be performed by Purdue University. The proper procurement document control shall be the responsibility of the supplier of the designated package.

5. INSTRUCTIONS, PROCEDURES, AND DRAWINGS

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

6. DOCUMENT CONTROL

Control will 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 Radiation Laboratory Director, Reactor Supervisor, or the Radiation Safety Officer.

7. CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES

No materials or equipment are to be purchased for this activity. Any required services such as container off-loading and carrier transport will be procured via normal University procedures.

8. IDENTIFICATION AND CONTROL OF MATERIALS, PARTS, AND COMPONENTS

No materials, part or components are to be identified or controlled for this activity. Replacement parts will be obtained from the manufacturer or certificate holder.

9. CONTROL OF SPECIAL PROCESSES

No special processes are to be undertaken for this activity.

10. INTERNAL INSPECTION

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

10.2.1 Receiving Inspections

Inspections will be performed to ensure the integrity of containers that are used for transportation purposes. Visual inspection will include surface conditions, structural integrity, gaskets and flanges, tie-downs, labeling and marking, and other features as specified by the certificate holder.

10.2.3 Final Inspections

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

Proper package assembly
Moderators and neutron absorbers are present (if applicable)
Valves are set to specification and to prevent tampering
Shipping papers are properly completed
Packages are conspicuously and durably marked in compliance with USDOT regulations
Measures are established to ensure that appropriate personnel designated by the package user sign shipping tags or indicators prior to the authorization for shipping

10.2.4 Maintenance Inspections

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

10.2.5 Inspection Documentation

Inspection records will be maintained to document performance of inspection activities

11. TEST CONTROL

11.2 Procedures

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

11.3 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.

11.4 Results

Measures will be established to ensure that test results are documented, evaluated, and maintained as QA records. The Radiation Safety Officer will determine acceptability of the records.

12. CONTROL OF MEASURING AND TEST EQUIPMENT

12.1 Calibration Control

Gauges, reference standards, etc. are not expected to be used for this activity. The exception to this is the use of radiation measuring equipment. This equipment will be properly calibrated with traceable standards according to existing standard operating procedures.

12.2 Out of Calibration Equipment

Radiation measuring equipment that is out of calibration will not be used.

13. HANDLING, STORAGE, AND SHIPPING CONTROL

13.1 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 the use of special equipment such as cranes or lifting devices will be adequate to ensure the identity and protect package components. Conditions identified in the CoC will be adhered to when unloading packaging.

13.2 Preparation, Release and Delivery to Purchaser

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

Cavities have been adequately dried
All conditions have been completed prior to offering for transport
All USNRC and USDOT requirements have been satisfied prior to offering for transport
All shipping papers have been completed and reviewed by qualified personnel for accuracy and completeness

14. INSPECTION, TEST, AND OPERATING STATUS

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

15. NONCONFORMING MATERIALS, PARTS, OR COMPONENTS

This section does not apply to this activity.

16. CORRECTIVE ACTION

16.1 Reporting

Causes of conditions that are detrimental to quality will be promptly identified and reported to the Radiation Safety Officer. Measures will be established to identify any corrective action from suppliers are obtained and that corrective actions were implemented and effective.

17. QUALITY ASSURANCE RECORDS

17.1 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, show that the tests or inspections were complete, record test or survey data, identify any conditions that are non-conforming or are detrimental to quality, names of individuals performing the tests or inspections, and whether the results were acceptable.

17.2 Generating Records

Measures will be established to generate and store records. Paper copies of records generated will be stored in secure files. Additionally documents will be scanned in a pdf format for electronic storage.

17.3 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.

17.4 Receipt, Retrieval, and Disposition of Records

The records generated by these activities will be maintained by the Radiation Safety Officer. 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 University.

17.5 Storage, Preservation, and Safekeeping

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

Prevention of damage from fire, flood, or other environmental damage
Record will be filed in folders in steel storage cabinets
Electronic records will be stored on a server which is backed up daily in a remote location

Unauthorized personnel will not have access to records
Electronic information is accessible to authorized users with password only access
Data will be electronically stored as read only pdf files
Damaged records will be promptly replaced

18. AUDITS

18.1 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 Committee on Reactor Operations or the Radiation Safety Officer. The conditions of Regulatory Guide 7.10 Section 18.1 will be met in establishing an audit program.

18.2 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.

18.3 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.

18.4 through 18.7 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 will be required to address deficiencies. The auditor will ensure that a schedule for resolving the items identified is presented and that corrective action is implemented.

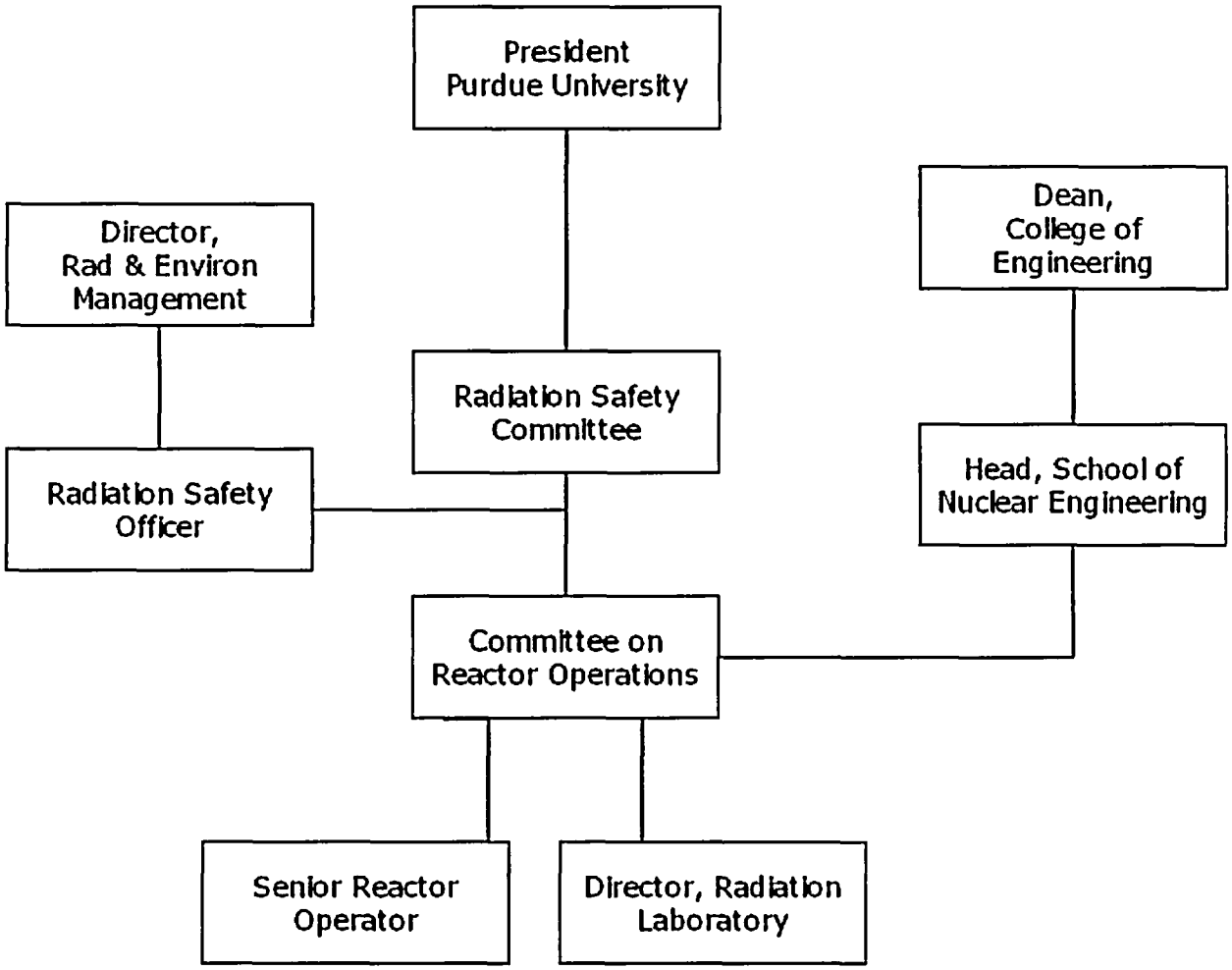

Figure 1. Organizational Chart for Quality Assurance at Purdue University

Appendix 1

List of Implementing Procedures for Purdue University QA Program

Implementing Document	Title	Regulatory Position	Description	Completion Date
Quality Assurance Manual (QAM), Quality Procedure (QP) 1	Organization	1	Identification of the QA organization, relationship to organizations in the institution and program responsibility.	Prior to initiation of activities
QAM, QP 2	QA Program	2	Methods for establishing the QA program under 10CFR71 Subpart H	Prior to initiation of activities
QAM, QP 5	Instructions, Procedures and Drawings	5	Procedures to implement manufacturer guidance relating to safe package use.	Prior to initiation of activities
QAM, QP 6	Document Control	6	Description of documents necessary and the generation and storage of those documents.	Prior to initiation of activities
QAM, QP 10	Internal Inspection	10	Procedures for receiving and shipping packages.	Prior to initiation of activities
QAM, QP 11	Test Control	11	Procedures for required performance tests for the packages and acceptability determination.	Prior to initiation of activities
QAM, QP 12	Control of Measuring and Test Equipment	12	Procedures for calibration of Radiation Safety instrumentation.	Completed
QAM, QP 13	Handling, Storage, and Shipping Control	13	Procedures for receiving and storing the packages to prevent deterioration and ensuring proper transport conditions.	Prior to initiation of activities
QAM, QP 14	Inspection, Test, and Operating Status	14	Master checklist to ensure the status of inspections, test, and operating conditions are met.	Prior to initiation of activities
QAM, QP 16	Corrective Action	16	Procedures on identification and reporting conditions detrimental to quality.	Prior to initiation of activities
QAM, QP 17	Quality Assurance Records	17	Procedures for generation, maintenance and storage of quality assurance records.	Prior to initiation of activities
QAM, QP 18	Audits	18	Procedures for audit scheduling, performance, and response to audits.	Prior to initiation of activities