University of Utah

Center for Excellence in Nuclear Technology

Engineering and Research

Audit and Review Plan

for
NRC License R-126: TRIGA Nuclear Reactor (Docket No. 50-407)

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AUDIT AND REVIEW PLAN FOR THE UNIVERSITY OF UTAH TRIGA NUCLEAR REACTOR

Purpose

This document states the requirements for the Audit and Review Program of the University of Utah's TRIGA Research Nuclear Reactor (R-126). The establishment of this program provides a method for independent audit and review of the safety aspects of reactor facility operations to advise facility management. This will ensure that all facility documentation is completely and properly maintained to satisfy R-126 licensing conditions.

Regulatory Requirements

Reviews and audits are functions explicitly assigned to the Reactor Safety Committee or subcommittee(s) thereof in the R-126 Technical Specifications (TS). Review topics outlined in TS 6.5.4 including the following:

(l) all new experiments utilizing the reactor facility
(2) all proposed changes to the facility license by amendment, and to the TS
(3) the operation and operational facility records
(4) facility equipment which displays any deviation from normal performance that affects nuclear safety
(5) approval of determinations of all proposed changes, tests and experiments which constitute a change in the TS or any unreviewed safety question as defined in 10 CFR 50.59
(6) reportable occurrences and subsequent reports filed with the NRC
(7) all standard operating procedures and changes thereto
(8) all standard procedures, the facility emergency plan, and the facility security plan

Since the TS does not specify a review frequency for items 1-7, the reviews are performed on an as needed basis. Item 8, however, is required to be reviewed on a biennial schedule not exceeding 30 months. Audits include an examination of the following pursuant to TS 6.6.5:

(1) reactor operating records (defined in TS 6.9)
(2) reactor operating areas
(3) unusual or abnormal events (defined in TS 1.1)
(4) radiation exposures at the facility or adjacent environs

Audits are performed semiannually, not exceeding 8 months.

Guidelines

The review process is further described in the ANSI/ANS standards as program-wide examinations which assess overall compliance with the Code of Federal Regulations, NRC Regulatory Guides ANSI/ANS Standards, Technical Specification, NU REG's, and other documents. These plans, programs, and procedures include:

(1) Emergency Plan
(2) Physical Security Plan
(3) Radiation Safety Program
(4) Procedure Document

In addition to the previously described regulatory requirements, ANSI/ANS 15.1[6.2.3(8)] and 15.18 [3.5.3(h)] recommend that audit reports be included in the review process. Audit functions described in the ANSI/ANS standards are the selective examination of operating records, logs, And other documents which also include those documents listed above. ANSI/ANS 15.1(6.2.4) and 15.18 (3.5.4) recommend that no individual immediately responsible for an area audit that same area.

Review and audit reports are to be submitted directly to the facility director as the Level 1 representative of facility management, and the review group members within three months after review completion.

Responsibility

Since responsibility for the audit and review program lies solely with the Reactor Safety Committee (TS 6.5), a subcommittee(s) is to be established to conduct and report activities associated with this plan. Audit and review subcommittee(s) is to be composed of at least three persons [ANSI/ANS 15.1(6.2.1)] from the Reactor Safety Committee (RSC) appointed by and report to the Committee Chair. These members collectively represent a broad spectrum of expertise of reactor technology. Qualified and approved alternates serve in the absence of regular members.

Audit and review activities are initiated by the Chairman of the RSC during regularly scheduled RSC meetings which take place prior to a scheduled activity. A suggested schedule for performance of these activities is contained in the appendices.

Criteria for assessment

The auditor or reviewer must have some criteria with which to judge an item's compliance. For audits, an item is not in compliance if the procedure is incomplete either through failure to initiate or complete the procedure. For reviews, an item is not in compliance if the plan, procedures, or other reports do not document the regulatory requirements or guidelines.

Audit and Review Materials

The following outline is provided to assist the auditor in selecting the proper audit materials. The bases are used to compare records for compliance.

Emergency Plan
- Bases
  - Emergency Plan
  - Emergency Procedures (Procedure Document, and Police Dispatcher's Procedures)
- Records
  - Emergency Drill Planning and Evaluation Memos
  - Emergency Procedures Training
  - Emergency Procedures Training for Support Agencies (attendance list)
  - Laboratory Call List

Radiation Safety Program
- Bases
  - University of Utah Radiological Health Procedures
- Records
  - Personnel Exposure Records
  - Irradiation Request (radioactive material transfer/release, CENTER-027)
  - Radiation Safety Training
  - Laboratory Surveys

Requalification Plan
- Bases
  - Operator Requalification Plan
- Records
  - Operator License Files
  - License
  - Medical Exam, Form 396 and Physicians Form

Operator Training, CENTER-025
Annual RSC Chairman's Review Memo

Security Plan
Bases
Security Plan
Procedure Document
Records
Safeguards Events Log
Security Alarm Door Record
Security Training

Standard Operating Procedures
Bases
Procedure Document
Records
Operations Log
Preliminary and Termination Checks
Maintenance Log
Procedures Log
Fuel Log
Core Log
Experiment Log

Again, the bases are to be used to compare plans, programs, and procedures for compliance.

Emergency Plan
Bases
10 CFR 50.54 and Part 50, Appendix E
NU REG - 0849
Regulatory guide 2.6
ANSI/ANS 15.16
Records
Emergency Plan
Emergency Procedures (Procedure Document)

Radiation Safety Program
Bases
10 CFR 20
TS 3.7, 4.3.3, and 5.4
ANSI/ANS 15.11
Records
University of Utah Radiological Health Procedures
Procedure Document

Requalification Plan
Bases
10 CFR 19.12
10 CFR 55.41,43,53,and 59
TS 6.3, 6.4, and 6.5.2
Regulatory Guides 8.13, 8.27, and 8.29
ANSI/ANS 15.4
Records

Operator Requalification Plan
Procedure Document

Security Plan
Bases
10 CFR 50.54 (p), and Parts 70 and 73
NU REG - 1304
Regulatory Guides (5.12 and 5.65)
ANSI/ANS 15.4
Records
Security Plan
Procedure Document

Procedure Document
Bases
10 CFR 20,50,and 55
R - 126 TS
R - 126 License
University Broad Form License (UT1800001)
Records
Procedure Document

Correction of Items Not In Compliance

Management of the reactor facility, assesses items listed as not in compliance initiate the appropriate action for correction. For example, if an entry is missing on a procedure, information concerning the item is to be acquired and corrected with an initialed entry on the procedure documentation. If an item constitutes a reportable occurrence, then the item is to be reported pursuant to TS 6.10. If a procedure or plan requires modification, facility staff drafts the modified document for review at the next RSC meeting. Other situations are to be similarly corrected.

Failure to Begin Audit or Review

Audits and reviews are required to be performed on a regular schedule as established in the TS. Failure to satisfy the frequency requirements of the TS is based on the length of the interval between the last day of the last audit or review and the first day of the next audit or review. If the time required for the function exceeds the TS requirement, it is a reportable occurrence (TS 1.1) and must be reported to the NRC pursuant to TS 6.10.

Records

Program tracking is maintained in the Audit and Review Log. An audit or Review report is logged in the Biennial Audit and Review Program Checklist (CENTER-035). These records are maintained in the facility for at least three years before being filed in the archives.