CATEGORY 1

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50-370 William B. McGuire Nuclear Station, Unit 2, Duke Powe 05000370
50-413 Catawba Nuclear Station, Unit 1, Duke Power Co. 05000413
50-414 Catawba Nuclear Station, Unit 2, Duke Power Co. 05000414
AUTH.NAME AUTHOR AFFILIATION
TUCKMAN,M.S. Duke Power Co.
RECIP.NAME RECIPIENT AFFILIATION
Records Management Branch (Document Control Desk)

See Reports

SUBJECT: Forwards Amend 25 to Duke Energy Corp Topical Rept Duke-1-A, "QA Program." Marked version of affected topical rept pages, showing proposed changes,provided as Attachment 2.

DISTRIBUTION CODE: Q004D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 26+68
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June 3, 1999

U. S. Nuclear Regulatory Commission
Washington, D. C. 20555-0001

ATTENTION: Document Control Desk

SUBJECT: Duke Energy Corporation

Oconee Nuclear Station Units 1, 2, & 3
Docket Nos. 50-269, 50-270, 50-287

McGuire Nuclear Station Units 1 & 2
Docket Nos. 50-369, 50-370

Catawba Nuclear Station Units 1 & 2
Docket Nos. 50-413, 50-414

Nuclear Quality Assurance Program
Amendment 25

Pursuant to 10CFR50.54(a)(3) and 10CFR50.71(e), attached is Amendment 25 to the Duke Energy Corporation Topical Report, Duke-1-A, *Quality Assurance Program* (hereafter referred to as Topical Report or Amendment 25). Amendment 25 contains these changes: 1) Implementation of the results of a recently completed internal Quality Improvement Team study of the Duke Nuclear Quality Assurance Program, 2) clarification of the minimum number of qualified personnel that compose the sites' Safety Review Groups, 3) clarification of the administrative requirements for functional verifications conducted after maintenance or modification activities, and 4) revisions to the list of records retained in accordance with the Topical Report.

In accordance with 10CFR50.54(a)(3), Duke has performed a detailed evaluation of each of the changes listed above and has determined that Amendment 25 contains NO REDUCTIONS IN COMMITMENTS currently within the Duke Quality Assurance Program. The results of the Duke evaluation are summarized in Attachment 1. This attachment provides a description, reason, and basis for each of the proposed changes.

Amendment 25 was implemented on May 31, 1999.

Q0041

A marked version of the affected Topical Report pages, showing the proposed changes, is provided as Attachment 2. The reprinted Amendment 25 is provided as Attachment 3 with the changes shown by the use of indicator bars on the left margin of Pages xiii, 17-20, 17-27, 17-29, 17-31, 17-34, 17-35, 17-37, 17-40, 17-44, 17-45, 17-46, 17-51, and 17-52.

Please direct questions on this matter to J. S. Warren at (704) 382-4986.

Very truly yours,

M. S. Tuckman

M. S. Tuckman

MST/JSW

Attachments

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ATTACHMENT 1
Duke Energy Corporation Topical Report, Duke-1-A
Quality Assurance Program, Amendment 25
Listing and Discussion of Amendment 25 Contents

PURPOSE

The purpose of this attachment is to document the evaluation of several changes being made in Amendment 25 to Duke Energy Corporation Topical Report Duke-1-A, *Quality Assurance Program.* This evaluation is based upon the provisions contained in NRC regulations 10CFR50.54(a) and 10CFR50.71(e).

BACKGROUND

Several changes are contained in Amendment 25. These changes were identified as a result of: 1) a recently completed internal Duke QA Program Quality Improvement Team, 2) the recent implementation of the Improved Technical Specifications at McGuire, Catawba, and Oconee Nuclear Stations, and 3) continuing Nuclear Generation Department review of the nuclear stations' activities.

The changes contained in Amendment 25 are itemized below.

1. Section 17.3.1.3, Responsibility: Added the phrase, "and used at the location where the prescribed activity is performed, where appropriate."

2. Section 17.3.2.3, Design Verification: Added the word, "quality" as an adjective for standards.

3. Section 17.3.2.4, Procurement Control: Added the phrase/sentence, "through appropriate processes and specific procurement documents. Pertinent provisions of 10CFR50, Appendix B are applied to these organizations."

4. Section 17.3.2.4, Procurement Control: Added the phrase, "and services."

5. Section 17.3.2.8, Test Control: Added the word, "vendor" as an adjective for documents.

6. Section 17.3.2.8, Test Control: Added the phrases, " demonstrate that they will perform satisfactorily in service. Testing activities are …. Testing schedules are …"

7. Section 17.3.2.12, Inspection: Added the sentences: "If inspection of processed material or products is impossible or disadvantageous, indirect control by monitoring processing methods, equipment, and personnel is provided. Both inspection and process monitoring are provided when control is inadequate without both."

8. Section 17.3.2.14, Document Control: Added the sentence, "These activities include measures to control the issuance of documents such as instructions, procedures, and drawings, and changes thereto, which prescribe all activities affecting quality."

9. Section 17.3.2.15, Records: Added the sentence, "Some records noted below may be generated by the Nuclear General Office and are retained at that location in a manner similar to that of the stations."

10. Section 17.3.2.15, Records: In Item s, added these additional records: design specifications, calculations, design analyses,

11. Section 17.3.3.2.3, Internal Audits: Changed Manager, Regulatory Audits/Operational Assessment to Manager, Nuclear Performance Assessment

12. Section 17.3.3.2.4, Safety Assurance: Added the word, "dedicated" as an adjective for individuals.

13. Section 17.3.2.8, Test Control: Replaced the first sentence of the last paragraph of this section as indicated below.

Amendment 24 reads as follows:

"In addition to the above, after maintenance to, or modification of, QA Condition 1 structures, systems, and components, certain functional verifications (to appropriate acceptance criteria), proof tests, electrical tests, operational tests or other special tests are performed and documented as required to verify the satisfactory performance of the affected items."

Amendment 25 will read as follows:

"In addition to the above periodic testing, after maintenance to or modification of QA Condition 1 structures, systems and components, other post maintenance testing, post modification testing or functional verifications are performed and documented as required to verify satisfactory performance of the affected items. Post maintenance/modification functional verifications are not subject to the requirements of periodic testing described above because they are acceptable good industrial practices that are simple and straightforward."

The last sentence of this paragraph remains unchanged.

14. Section 17.3.2.15, Records: Deleted item (r), "Copies of reports concerning station activities, events, and license amendment requests sent to the Nuclear Regulatory Commission." Renumbered the remainder of this section to be consistent with this deletion.

EVALUATION

Items 1 through 11

Description of Change: The changes described above as Items 1 through 11 resulted from a recently completed internal Duke Quality Assurance Program Quality Improvement Team.

Reason for Change: The primary reason for implementing these items is to ensure that the wording of the Topical Report is more consistent with that of 10CFR50, Appendix B.

Basis for Change: These items are all considered to be additions to, or editorial clarifications of, existing requirements within the Duke Quality Assurance Program. Neither of these items constitutes a reduction in any commitment currently contained within the Duke Quality Assurance Program. Additionally, neither of these items results in a change to Duke's current quality practices.

Item 12

Description of Change: In Section 17.3.3.2.4, Amendment 25 stipulates that a minimum of five individuals within the SRG staff shall be dedicated to fulfilling the SRG function as required by the Topical Report.

Reason for Change: This change clarifies the required minimum number of personnel that compose the sites' Safety Review Groups'.

Basis for Change: This change is based upon a recently completed Duke internal regulatory audit. This audit identified a concern that the members of the SRG staff performing the independent review function (a minimum of five as required by the Topical Report and former Technical Specifications) were not clearly identified. This change requires the nuclear sites to clearly designate the individuals that perform the independent review function. This change does not reduce the qualifications of the SRG personnel performing the independent review function at either Duke nuclear station. This change is consistent with the applicable provisions of the stations' Updated Final Safety Analysis Reports and NUREG-0737. This change does not constitute a reduction in any commitment currently contained within the Duke Quality Assurance Program. In actuality, the existing Duke commitment will be strengthen by implementation of this change.

Item 13

Description of Change: Amendment 25 clarifies that functional verifications conducted after maintenance or modification do not meet the administrative requirements of periodic testing (such as the use of procedures) as described elsewhere in Section 17.3.2.8 of the Topical Report.

Reason for Change: This change is needed to clarify that functional verifications are not subject to the full administrative requirements Duke applies to periodic testing.

Basis for Change: The use of functional verifications to ascertain acceptable post-maintenance/post-modification performance of QA Condition 1 structures, systems, and components is consistent with long-established Duke practice. In Topical Report Amendment 23 (submitted to the NRC by Duke

letter dated April 8, 1998) functional verifications were added to Section 17.3.2.8. This addition to Duke's Quality Assurance Program was made to address a NRC violation (Violation A, NRC Inspection Report Nos. 50-269/96-13, 50-270/96-13, and 50-287/96-13). However, when the functional verification provisions were added to Section 17.3.2.8, the programmatic text implied that the full requirements for periodic testing contained in this section also applied to functional verifications. Within Amendment 25, this change clarifies the requirements applicable to functional verifications. This change represents no reduction in commitment. The Duke testing program following maintenance/modification remains consistent with past practice.

Item 14

Description of Change: This change deletes a records keeping requirement (Item r) from Section 17.3.2.15 of the Topical Report. Item r currently reads: "Copies of reports concerning station activities, events, and license amendment requests sent to the Nuclear Regulatory Commission."

Reason for Change: Section 17.3.2.15, Item r was revised as a result of the implementation of the Improved Technical Specifications at each of the Duke nuclear sites. This revision has caused confusion within Duke concerning this records keeping requirement, since it is repetitive to other items listed in Section 17.3.2.15 and seems to expand records keeping requirements to non-quality related documents.

Basis for Change: Item r is repetitive, since the records keeping requirement of Item r are also addressed by other items listed in Section 17.2.3.15. Copies of reports concerning station activities and events as currently required by Item r are also covered by existing Item t in Section 17.3.2.15, which reads, "Copies of reports of all reportable and other significant events." The redundancy of these records keeping requirements has caused confusion in the document control area. Thus the redundant requirement currently in Item r for maintaining this category of records is being deleted from the Topical Report.

Copies of reports concerning license amendment requests sent to the Nuclear Regulatory Commission, as currently required by Item r, are also covered by existing Item a in Section 17.2.3.15 (under the records of activities within the purview of the Nuclear Safety Review Board on Page 17-46). Within Duke,

activities related to license amendment requests are documented within the purview of the Nuclear Safety Review Board (discussed in Section 17.3.3.2.1, Pages 17-49 and 17-50 of the Topical Report). Maintaining copies of reports concerning license amendment requests sent to the NRC were determined to be redundant to the Topical Report requirement to maintain Nuclear Safety Review Board Meeting Minutes. These meeting minutes document activities concerning license amendment requests sent to the NRC. Thus the redundant requirement currently in Item r for maintaining this category of records is being deleted from the Topical Report.

Duke has conducted a detailed review (including an industry survey) to ascertain that the deletion of Item r does not impact compliance with the applicable regulatory guide, the applicable standard, or 10CFR50, Appendix B. Therefore, this deletion has been determined to involve no reduction in commitment. The current Duke records keeping practices will not be impacted by the implementation of this change. All quality related records will continue to be maintained consistent with current practice.

CONCLUSION

Duke has determined that implementation of the fourteen changes described above will not represent a reduction in commitment. The changes have been determined to involve additions to, clarification of, or the redundancy to requirements currently existing in the Duke Quality Assurance Program. Additionally, the records keeping deletion described in Item 14 does not lessen Duke's level of commitment to the applicable regulatory guide, industry standard, or 10CFR50, Appendix B.

Attachment 2

Quality Assurance Program Topical Report, Amendment 25
Marked Copy

services (the Nuclear Generation Department assesses the quality assurance program for the Shared Services document management function). These activities in the Shared Services Department are directed by managers that report to the Senior Vice President, Shared Services.

17.3.1.2.7 Information Management Department

Information Management is responsible for the development and maintenance of selected information technology services and support for the Nuclear Generation Department, some of which support QA Condition activities. These activities in Information Management are directed by managers and directors reporting to the Senior Vice President, Information Management

17.3.1.2.8 Electric Transmission Department

The Electric Transmission Department provides maintenance and testing services to the nuclear stations for selected electrical equipment. These services are directed by the Senior Vice President, Electric Transmission who reports to the President, Energy Transmission.

17.3.1.2.9 Department Interfaces

Quality related activities are performed by Nuclear Generation, Electric System Support, Duke Power Group Human Resources, Duke Power Group Environmental, Health and Safety, Shared Services and Information Management Departments. Departmental interfaces are identified in the quality assurance program manuals associated with these areas. Quality related activities performed by the Electric Transmission Department are identified by and conducted in accordance with approved departmental interface agreements.

Organization charts for these departments are maintained in appropriate manuals for the respective departments.

and used at the location where the prescribed activity is performed, where appropriate.

17.3.1.3 Responsibility

The individuals who constitute the Duke Energy Corporate Organization have full personal and corporate responsibility to assure nuclear power plants are designed, constructed, maintained, tested and operated in a manner to protect the public health and safety; and to assure the effectiveness of the Quality Assurance Program.

Corporate audits are initiated and directed by the Executive Vice President, Nuclear Generation. This audit is performed annually to assess the adequacy of the Quality Program. This audit is discussed in greater detail in Section 17.3.3.2.5.

Applicable procedures are developed, approved by the responsible implementing manager, issued for use, ~~with~~ sufficient personnel available and trained with necessary resources prior to performing ~~quality affecting~~ activities, that affect quality.

are

17.3.1.4 Authority

Anyone involved in quality activities in the Duke organization has the authority and responsibility to stop work if they discover deficiencies in quality. Personnel performing quality assurance and quality control functions have the authority and responsibility to stop

In order to assure proper interface control, the responsibilities of the various individuals/organizations involved in modifications are formally identified. The assignment of responsibility for the evaluation and design of a particular modification to a specific individual/organization is documented. Also, the written instructions addressing the control of modifications address the communication of information between involved individuals/organizations and, where appropriate, require documentation of such communications.

For each proposed modification, the individual/organization assigned responsibility for evaluation and design of the modification considers the following in the design of the modification:

a) Necessary design analyses, e.g., physics, stress, thermal, hydraulic, accident, etc.

b) Compatibility of materials.

c) Accessibility for operation, testing, maintenance, inservice inspection, etc.

d) Necessary installation and periodic inspections and tests, and acceptance criteria therefor.

e) The suitability of application of materials, parts, components, and processes that are essential to the function of the structure(s), system(s) and/or component(s) to be modified.

Final approval prior to implementation of each station modification shall be by the Station Manager or the Manager of Engineering; or for the Station Manager by the Operations Superintendent, the Maintenance Superintendent, the Work Control Superintendent, or the On-Duty Emergency Coordinator as previously designated by the Station Manager. Modifications are then executed in accordance with approved checklists, instructions, procedures, drawings, etc., appropriate to the nature of the work to be performed. These checklists, instructions, procedures, drawings, etc. include criteria for determining the acceptability of the modification.

Errors and deficiencies noted in the design of a modification are corrected by means of a variation notice or a revision to the modification. The control measures applied to each such modification revision or variation notice are equivalent to the control measures applied to the modification originally. Each modification revision or variation notice and the review and approval thereof, is documented.

Prior to a modification being declared operable and returned to service, all procedures governing the operation of the modification are reviewed and revised as necessary. If the modification significantly alters the function, operating procedure, or operating equipment, then additional training is administered as necessary.

Adequate identification and retrievable documentation of station modifications is retained for the life of the station.

Computer programs are controlled in accordance with appropriate department procedures, whereby programs are certified to demonstrate their applicability and validity.

17.3.2.3 Design Verification

quality

During the check and review, of design documents, particular emphasis is placed on assuring conformance with applicable codes, standards, SAR design commitments, and

e) Materials, parts and components required in order to implement the modification.

f) Drawings revised and/or requiring revision.

g) FSAR revision(s) and/or Technical Specifications amendment(s) necessary.

h) Whether or not the modification involves an unreviewed safety question.

The reviews of the proposed modification, including applicable implementing procedures associated therewith, certifies that quality assurance requirements have been met and determines inspection requirements prior to implementation of the modification. Modifications which are determined to involve an unreviewed safety question are reviewed by the Nuclear Safety Review Board and must be authorized by the Nuclear Regulatory Commission prior to implementation.

17.3.2.4 Procurement Control

through appropriate processes and specific procurement documents, pertinent provisions of 10CFR 50, Appendix B are applied to these organizations.

Duke's Quality Assurance Program requires the control of QA Condition 1 items or services purchased from a supplier, subsupplier or consultant.

The Quality Assurance Program supplements appropriately the ASME QA requirements with the regulatory guides listed in Table 17-1, with the clarifications or alternatives stated therein.

Procurement of QA items is to the quality program requirements in effect at the time of purchase.

Nuclear Generation or Electric System Support is responsible for the technical qualification of suppliers and control of the initial procurement of all QA Condition 1 items and services. Procurement requirements/specifications are prepared, checked, and approved by appropriate personnel and forwarded to the Shared Services Department, who prepares an inquiry and forwards it to approved suppliers. The Nuclear General Office, Supplier Verification Section is responsible for qualification of supplier's quality assurance programs.

QA Condition 1 material, equipment and services procured as basic components may only be procured from qualified suppliers. Supplier qualification is accomplished by a Supplier Verification Section evaluation of the supplier's quality assurance program. An audit or pre-award survey is performed by the Supplier Verification Section when required. The audit or pre-award survey is carried out in accordance with a comprehensive audit checklist to determine the ability of the supplier's quality assurance program and manual(s) to meet applicable criteria of 10CFR50, Appendix B, the ASME Code when required, and any other codes and standards determined to be appropriate for the prospective scope of supply. The audit or survey includes a review of the supplier's QA program manuals. The audit team prepares a formal audit report which states whether or not the supplier is qualified to supply the specific items or services. The audit report is reviewed and approved or disapproved by the Supplier Verification Manager. Approved suppliers of basic components will then be included on the Approved Supplier's List. Technical qualifications are determined by engineering personnel. Commercial qualification is determined by the Shared Services Department following evaluation of bids from qualified suppliers. Bid evaluation includes evaluation of the technical, quality and commercial qualifications of the prospective suppliers.

Procurement of materials, parts, components and services associated with a station's QA Condition 1 structures, systems, and components is controlled during the operational life of the station so as to assure the suitability for their intended service and that the safety and reliability of the station are not compromised.

and services

Each procurement information for materials, parts, ~~and~~ components associated with QA Condition 1 structures, systems and components is identifiably designated as such. The procurement requirements applicable to each item are determined by a cognizant individual. This determination is reviewed by another cognizant individual who may be from the same organization as the individual/group making the determination. Procurement information must include or reference other documents such that to assure sufficient information is fully identified to specify the items being procured. Subsequent to preparation, procurement information is approved by the Procurement Engineering Manager or designee who is qualified by experience and training for the function.

Procurement information for QA Condition 1 materials, parts and components is reviewed to assure that quality assurance, technical and regulatory requirements including supplier documentation requirements are adequately incorporated into the purchase document(s). Significant changes to the content of such purchasing information are reviewed and approved in a manner consistent with the original.

Where necessary, procurement documents require that QA Condition 1 materials, parts, and components be acquired from suppliers determined to be acceptable by the Nuclear General Office, Supplier Verification Section - see Section 17.3.3.2.6. Determination of acceptability requires that a supplier provide Duke the right of access to the supplier's facilities and records for inspection and audit.

Except for some commercial grade items each shipment of items procured from a supplier must be accompanied by a certificate of conformance (or equivalent) which identifies the applicable procurement documents and item(s). The certificate and supplier documention specifies that the item meets the procurement requirements and includes repair records and a description of any deviations. This documentary evidence must be on site (any location under the QA Program) and all procurement, inspection, and testing requirements satisfied before the item is placed in service or used.

Nuclear Generation Department or Electric System Support Department personnel will review and approve this documentary evidence of item conformance with procurement requirements.

17.3.2.5 Procurement Verification

The approved procurement documents along with all quality and technical requirements are provided to the supplier by the Nuclear Generation and/or Shared Services Departments. Procurement information is provided to the Supplier Verification Section and the receiving location.

As required by procurement criteria, in order to assure that material and equipment are fabricated in accordance with applicable requirements, supplier review, audit and surveillance are performed by the Nuclear General Office, Supplier Verification Section. The review, audit and surveillance may include witnessing of tests, observation of fabrication checkpoints, and documentation review. Evaluation of overall supplier

demonstrate that they will perform satisfactorily in service.

17.3.2.8 Test Control

The operational quality assurance program addresses both preoperational and periodic (surveillance) testing. The program requires that such testing associated with QA Condition 1 structures, systems and components ~~be~~ are accomplished in accordance with approved, written procedures ~~and that~~ schedules ~~be~~ provided and maintained in order to assure that all necessary testing is performed and properly evaluated on a timely basis.

Testing

Testing activities are

Test controls include requirements on the review and approval of test procedures, and on the review and approval of changes to such procedures, as discussed in Section 17.3.2.14, "Document Control." Also, specific criteria are established with regard to procedure content. Examples of items which must be considered in the preparation and review of procedures include:

a) References to material necessary in the preparation and performance of the procedure, including applicable design documents.

b) Tests which are required to be completed prior to, or concurrently with, the specified testing.

c) Special test equipment required to perform the specified testing.

d) Limits and precautions associated with the testing.

e) Station, unit and/or system status or conditions necessary to perform the specified testing.

f) Criteria for evaluating the acceptability of the results of the specified testing, compatible with any applicable design specifications.

Test procedures contain the following information or require this information be documented:

vendor

a) Requirements and acceptance limits contained in applicable Design and ~~procurement~~ documents.

b) Instructions for performing the test.

c) Test prerequisites such as calibrated instrumentation, adequate test equipment and instrumentation including their accuracy requirements, completeness of the item to be tested, suitable and controlled environmental conditions, and provisions for data collection and storage.

d) Mandatory inspection hold points.

e) Acceptance and rejection criteria.

f) Methods of documenting or recording test data and results.

g) Provisions to assure test prerequisites have been met.

Requirements are also established for verification of test completion and for determining acceptability of tests results. Test results are reviewed and accepted by the testing organization and the organization responsible for the item being tested. In the event that test results do not meet test acceptance criteria, a review of the test, test procedure and/or test results is conducted to determine the cause, required corrective action, and retest as necessary.

In addition to the above, after maintenance to, or modification of, QA Condition 1 structures, systems and components, certain functional verifications (to appropriate acceptance criteria), proof tests, electrical tests, operational tests or other special tests are performed and documented as required to verify the satisfactory performance of the affected items. Included in these tests are such items as diesel generators, reactor control rod systems, and leak testing of appropriate pressure isolation valves.

17.3.2.9 Measuring and Test Equipment Control

Place attached INSERT here.

The organizations performing QA Condition 1 work activities have the responsibility to assure the required accuracy of tools, gauges, instruments, radiation measuring equipment, non-destructive testing equipment and other measuring and test devices affecting the proper functioning of QA Condition 1 structures, systems and components and that a program of control and calibration for such devices is provided. This program includes the following:

a) Devices are assigned permanent, identifying designations.

b) Devices are calibrated at prescribed intervals, and/or prior to use, against certified equipment having known, valid relationships to nationally recognized standards. The calibration interval for a device is based on the applicable manufacturer's recommendations. If experience dictates that the manufacturer's recommendations are not appropriate, the calibration interval is changed as necessary.

c) Devices that have been acceptably calibrated are affixed, where practical, with a tag, or tags, showing the date of calibration, the date the next calibration is due, an indication that the device is within calibration specifications and the identification of the individual who was responsible for performing the calibration. When attaching tags is not practical, the device is traceable by unique identification to the applicable calibration records.

d) Devices which fail to meet calibration specifications are affixed with a tag, or tags, showing the date of rejection, the reason for rejection and the identification of the individual rejecting the device. "Accepted" and "Rejected" calibration tags are sufficiently different to preclude confusion between them.

e) Items and processes determined to be acceptable based on measurements made with devices subsequently found to be out of calibration are re-evaluated.

f) Devices stored under conditions which are in accordance with, or more conservative than, the applicable manufacturer's recommendations.

g) Devices are issued under the control of responsible personnel so as to preclude unauthorized use.

h) Devices are shipped in a manner that is in accordance with, or more conservative than, the applicable manufacturer's recommendations.

i) Records are maintained on each device which identify such items as the device designation and the calibration frequency and specifications. Records are maintained to reflect current calibration status.

j) As a rule, the calibration program achieves a minimum ratio of 4-to-1 calibration standard accuracy to measuring and test equipment accuracy unless limited by the state of the art; however, when an accuracy ratio of less than 4-to-1 is utilized, an evaluation of the specific case is made and documented.

INSERT

In addition to the above periodic testing, after maintenance to or modification of QA Condition 1 structures, systems and components, other post maintenance testing, post modification testing or functional verifications are performed and documented as required to verify satisfactory performance of the affected items. Post maintenance/modification functional verifications are not subject to the requirements of periodic testing described above because they are acceptable good industrial practices that are simple and straightforward.

Electric System Support and Nuclear Generation are responsible for furnishing qualified personnel, performance of and documentation of Non Destructive Examination (NDE).

The operational quality assurance program contains or references procedures for the control of special processes such as welding, heat treating, non-destructive examination, coatings, crimping, and cleaning. The program requires that approved, written procedures, qualified in accordance with applicable codes and standards, be utilized when the performance of such processes affects the proper functioning of a station's QA Condition 1 structures, systems, and components. These procedures shall provide for documented evidence of acceptable accomplishment of special processes using qualified procedures, equipment, and personnel.

Personnel performing such activities must be qualified in accordance with applicable codes and standards. Adequate documentation of personnel qualifications is required prior to performance of the applicable special process. Non-destructive examination personnel are certified to required codes and standards.

17.3.2.12 Inspection

In order to assure safe and reliable operation, a program of inspections for QA Condition 1 structures, systems and components is established at each nuclear station. The program addresses:

a) Inservice inspections required by Section XI of the American Soc[illegible]f Mechanical Engineers Boiler and Pressure Vessel Code.

b) Inspections to verify compliance with cleanliness criteria.

c) Inspections to verify compliance with certain instrument [illegible] procedures.

d) Inspections to verify conformance of materials, parts, an[illegible]ed at a nuclear station with applicable specifications and require[illegible]

e) Inspections to verify the integrity of QA Condition 1 structur[illegible] components during and/or after maintenance and modificatio[illegible]

If inspection of processed material or products is impossible or disadvantageous, indirect control by monitoring processing methods, equipment, and personnel is provided. Both inspection and process monitoring are provided when control is inadequate without both.

The personnel performing these inspections are examined and certifie[illegible] category. Current qualification and certification files are maintained for [illegible] Nondestructive examination inspectors are certified in accordance with A[illegible] Society for Non-destructive Testing (SNT-TC-1A, ANSI/SNT-CP-189) recomm[illegible] Written procedures require the test and certification of inspectors in other c[illegible] as Mechanical, Electrical, and Structural as described in the appropriate qual[illegible] manual. For cases where inspectors will perform limited functions within a ca[illegible] are tested and certified to those limitations. These inspectors are only allowed [illegible] inspections specifically defined in this limited certification.

For inspections of concrete containments, personnel fulfilling the role of Responsible Engineer shall be a Registered Professional Engineer experienced in evaluating the in-service condition of structural concrete and knowledgeable of the design and construction codes and other criteria used in the design and construction of the concrete containment structure. The Responsible Engineer may also perform inspections as discussed in this section.

QA Condition 1 materials, parts and components which are determined to be nonconforming are identified, segregated or otherwise controlled in such a manner as to prevent installation and/or use. The determination of an item's nonconformance is documented and is retained on file by the Nuclear Generation Department and, as appropriate, by tags attached to the item. Nuclear Generation Department personnel are notified of any nonconformances identified in accordance with approved procedures.

The Nuclear Generation Department maintains a listing of the status of all nonconformance documents. These reports, when complete, identify the nonconforming material, part or component; applicable inspection requirements; and the resolution, and approval thereof, of the nonconformance. Provisions are established for identifying those personnel with the responsibility and authority for approving the resolution of nonconformances. Until a determination of conformance is made, a QA Condition 1 material, part or component cannot be issued or installed. Tags which are placed on items to identify nonconformance are removed upon resolution.

Information relating to nonconforming materials, parts and components is analyzed by Safety Assurance to determine if any discernible trends which might affect quality exist. When recurring nonconformances indicate possible supplier deficiencies, such information is considered in evaluation of supplier acceptability by the Nuclear General Office, Supplier Verification Section.

Significant trends will be/are reported to appropriate levels of management.

17.3.2.14 Document Control

The Topical Report describes Duke's Quality Assurance Program for the operational phase of Duke's Nuclear Stations. This document is certified to meet NRC Quality Assurance Regulations by the President, Duke Power Group. The Nuclear Policy Manual establishes the policies and instructions governing activities associated with Duke's nuclear stations and identifies the various departments performing these activities. This manual is approved by the Executive Vice President, Nuclear Generation, or the Site Vice Presidents, or designee. These manuals are considered controlled documents and copies are distributed by distribution indices from the Manager, Nuclear Assessment and Issues Division or designee.

These activities including measures to control the issuance of documents, such as, instructions, procedures, and drawings, and changes thereto, which prescribe all activities affecting quality.

The station Facility Operating License and Technical Specifications are considered Nuclear Regulatory Commission controlled documents and are distributed within Duke Energy Corporation by cover letter from the Site Officer or designee. Proposed changes to the station Facility Operating License or Technical Specifications shall be prepared in accordance with appropriate administrative controls by a knowledgeable individual/organization. Each proposed change shall be reviewed by a knowledgeable individual/organization other than the individual/organization that prepared the proposed change. Proposed changes to the station Facility Operating License and Technical Specifications shall be approved by the Station Manager, or for the Station Manager by a designated manager or corporate officer. Submittal cover letters for proposed changes to the station Facility Operating License and Technical Specifications shall be signed by an officer of Duke Energy Corporation.

The Safety Analysis Reports are considered controlled documents and are distributed by cover letter from the Site Officer or his designee.

A master copy of all controlled documents is maintained in the document control area of each station. Copies of controlled documents are distributed by station document control personnel utilizing a distribution index to assure proper distribution and use. Reviews are performed regularly and documented to assure proper functioning of the control system.

17.3.2.15 Records

Each nuclear station is required to maintain adequate identifiable and retrievable quality assurance records. Such records are managed in a controlled and systematic manner by means of a station Master File Index. Access to, and use of, this file is controlled. Records required to be retained include:

a) QA Condition 1 preoperational testing records.

b) Records of modifications to station QA Condition 1 structures, systems a components described in the Updated Final Safety Analysis Report.

c) Radiation monitoring records, including records of radiation and contamin surveys.

d) Personnel radiation exposure records.

e) Records of radioactive releases, shipments, and waste disposal.

f) Isotopic and physical inventory records of special nuclear materials.

g) Records of the qualifications, experience and training of appropriate station personnel.

h) Current calibrations for measuring and test devices.

i) Copies of approved purchasing documents for items requiring quality assuranc certification.

j) Maintenance histories on QA Condition 1 instrumentation and electrical, mechan and civil structures, systems, and components.

k) Records of special processes affecting QA Condition 1 structures, systems and components.

l) Copies of purchase specifications.

m) Operating records and logbooks covering time interval at each power level, including: switchboard record, reactor operator's logbook, and shift supervisor logbook.

n) Periodic testing records.

o) Records of inspections.

p) Copies of approved and of completed station procedures, and changes thereto; including review and approval documentation.

q) Copies of audit reports received from the Nuclear General Office, Regulatory Audits Section, and responses thereto.

r) Copies of reports concerning station activities, events, and license amendment requests sent to the Nuclear Regulatory Commission.

s) Copies of drawings and vendor documents.

t) Copies of reports of all reportable and other significant events.

Some records noted below may be generated by the Nuclear General Office and are retained at that location in a manner similar to that of the stations.

design specifications, calculations, design analyses,

t u) Records of inservice inspections.

u v) Records of quality control inspections.

v w) Records such as vendor documentation packages and inspection reports, piping isometric drawings, welding records, etc. compiled during the design and construction of a nuclear station.

w x) Records of the qualifications of quality control and other appropriate personnel.

x y) Records of off-site environmental surveys.

y z) Records of special reactor tests or experiments.

z aa) Records of environmental qualification.

aa ab) Records of the service life of all snubbers, including the date at which seal service life commences and associated installation and maintenance records.

ab ac) Records of the reviews performed for changes made to the Process Control Program, Offsite Dose Calculation Manual, Process Control Program, and Radwaste Treatment Systems.

ac ad) By-product material inventory records.

ad ae) Radioactive liquid effluent, gaseous effluent, and gaseous process monitoring instrumentation alarm/trip setpoints.

ae af) Records of sealed source and fission detector leak tests and results.

af ag) Records of annual physical inventory of all sealed source material of record.

ag ah) Records of new and irradiated fuel inventory, fuel transfers, and assembly burnup histories.

ah ai) Records of review performed for changes made to procedures; or modifications to station structures, systems, and components; or reviews of tests and experiments pursuant to 10CFR50.59.

ai aj) Records of secondary water sampling and water quality.

aj ak) Records of analyses required by the Radiological Environmental Monitoring Program that would permit evaluation of the accuracy of the analysis at a later date. This should include procedures effective at specified times and QA records showing that these procedures were followed.

ak al) Records of component cyclic or transient limits established for the reactor coolant system, reactor vessel, and secondary coolant system.

al am) Records of reviews performed for changes made to Radiological Effluent Controls.

am an) Records of reviews performed on the Fire Protection Program and implementing procedures.

an ao) Calibration standard records and Measuring and Test Equipment (M & T E) calibration records.

Test, inspection, and NDE records for QA Condition 1 structures, systems, and components maintained by the station that contain the following:

a) A description of the activity performed.

b) The date and results of the activity.

c) Information relating to discrepancies identified with regard to the activity.

d) An identification of the data recorder(s) or inspector(s) involved in the activity.

e) Evidence of the completion, and verification thereof, of the activity.

f) An identification of the acceptability of the results of the activity.

Records of activities within the purview of the Nuclear Safety Review Board are maintained. These records include:

a) Nuclear Safety Review Board meeting minutes.

b) Audit reports for audits conducted under the cognizance of the Nuclear Safety Review Board.

Records of activities within the purview of the Safety Review Groups are maintained. These records include:

a) Records of in-plant reviews performed on station activities.

b) Records of special reviews and investigations.

c) Copies of special reports.

Records of activities within the purview of the Plant Operations Committees are maintained. These records document the meetings of the Plant Operations Review Committees. These records include:

a) Identification of the chairperson for each meeting.

b) A listing of the Plant Operations Review Committee members present at each meeting.

c) A listing of others present at each meeting.

d) A summary of the items/issue(s) discussed during each meeting.

e) The decisions/approvals reached by the Plant Operations Review Committee during each meeting.

Records of activities within the purview of the Nuclear General Office are maintained. These records include:

a) Supplier audit reports and surveillances.

b) Audit reports of Duke Energy Corporation activities.

c) Audit and Supplier personnel qualification records.

d) NDE inspection personnel certification records.

Records of activities within the purview of the Information Management Department are maintained by the Information Management Department in a manner similar to that described above for station quality assurance records. These records include:

a) Software requirements.

17.3.3.2.3 Internal Audits

Duke's Quality Assurance Program requires a comprehensive system of planned and periodic internal audits for all phases of station operations and supporting activities.

All organizational units conducting quality assurance activities associated with a system of audits. These audits are performed to determine the effectiveness and implementation of all applicable criteria of 10CFR 50, Appendix B. Periodic audits of activities or records of processes (e.g., welding, maintenance, development, design, record management, or system testing), to verify compliance and effectiveness of the implementation of the Quality Assurance Program are performed. Internal audits are initiated under the direction of the Manager, ~~Regulatory Audits/Operational~~ Nuclear Assessment. The Manager, Nuclear Assessment and Issues Division may initiate special audits or expand upon the scope of an existing audit. The scope of each audit is determined by the responsible Lead Auditor, under the direction of the Manager, ~~Regulatory Audits Group~~. Additionally, the scope of audits performed under the cognizance of the Nuclear Safety Review Board (NSRB) is reviewed by the NSRB staff. The lead auditor directs the audit team in developing checklists, instructions, plans and in the performance of the audit. The audit shall be conducted in accordance with checklists; the scope may be expanded upon by the audit team during the audit, if needed. One or more persons comprise an audit team, one of whom shall be qualified lead auditor.

Audits of site activities shall be performed under the cognizance of the NSRB. These audits shall encompass:

a) The conformance of each nuclear unit's operation to provisions contained within the Technical Specifications and applicable Facility Operating License conditions;

b) The performance, training, and qualifications of the entire station staff;

c) The results of actions taken to correct deficiencies occurring in unit equipment, structures, systems, or method of operation that affect nuclear safety;

d) The performance of activities required by the Operational Quality Assurance Program to meet the criteria of 10CFR50, Appendix B;

e) The Emergency Plan and implementing procedures;

f) The Security Plan and implementing procedures;

g) The Facility Fire Protection programmatic controls inlcuding the implementing procedures;

h) The fire protection equipment and program implementation utilizing either a qualified offsite license fire protectoin engineer or an outside independent fire protection consultant. An outside independent fire protection consultant shall be used at least every third year;

i) The Radiological Environmental Monitoring Program and the results thereof;

j) The Offsite Dose Calculation Manual and implementing procedures;

k) The Process Control Program and implementing procedures for Solidification of radioactive wastes;

l) The performance of effluent and environmental monitoring activities;

m) Any other area of site operation considered appropriate by the NSRB or the Executive Vice President, Nuclear Generation;

n) The acceptability of a representative sample of station procedures, including the effectiveness of the procedure review and revision program.

Audits of selected aspects of operational phase activities are performed with a frequency commensurate with safety significance and in such a manner as to assure that an audit of all QA Condition 1 functions is completed within a period of two (2) years. The audit system is reviewed periodically and revised as necessary to assure coverage commensurate with current and planned activities.

The audit team concludes with a post-audit conference [illegible] the audit team and responsible management. The conference includes [illegible] discussion of audit results, including any deficiencies and recommendations. [illegible]dit results are documented in a report.

Within thirty (30) days of the post-audit co[illegible]e, a report is issued to the responsible management with copies sent to the Vi[illegible]ident of the audited Site or department, the Executive Vice President and other m[illegible]ment as appropriate.

Within thirty days after receipt of the [illegible]udit report, responsible management replies in writing to the Manager, ~~Regulatory Audits Group~~, describing corrective action and an implementation schedule. The established electronic corrective action process may be used to convey this information. When necessary, after receipt of the management reply, a re-evaluation is made to verify implementation of corrective action. This re-evaluation is documented. The audit is closed with a letter to the responsible management. All pertinent correspondence, checklists, and reports related to the audit are fliled.

Audit data are analyzed and the resulting reports on the effectiveness of the QA program, including any quality problems, are reported to management for review and assessment through periodic performance trend summaries. This data is also used to modify the audit schedule as necessary to assess potential weaknesses.

17.3.3.2.4 Safety Assurance

Safety Assurance, through the Safety Review Group, Regulatory Compliance, Environmental Compliance, Health and Safety, and Emergency Planning, monitors the day to day and overall performance of each nuclear station.

The Safety Review Group (SRG) functions to provide the review and assessment of plant design and operating experience for potential opportunities to impprove plant safety; evaluation of plant operations and maintenance activities; and, to advise management on the overall quality and safety of plant operations. The SRG makes recommendations for procedure revisions, equipment modifications, or other means of improving plant safety to appropriate station/corporate management. The SRG shall report to and advise the Manager of Safety Assurance. Investigations and reviews performed by the SRG are documented in reports that are submitted to management, the NRC, and other agencies as appropriate.

The SRG shall be composed of at least five individuals. Each individual shall have either:

a) A bachelor's degree in engineering or related science and at least 2 years professional level experience in his/her field, at least 1 year of which experience shall be in the nuclear field; or

n) The acceptability of a representative sample of station procedures, including the effectiveness of the procedure review and revision program.

Audits of selected aspects of operational phase activities are performed with a frequency commensurate with safety significance and in such a manner as to assure that an audit of all QA Condition 1 functions is completed within a period of two (2) years. The audit system is reviewed periodically and revised as necessary to assure coverage commensurate with current and planned activities.

The audit team concludes with a post-audit conference between the audit team and responsible management. The conference includes a brief discussion of audit results, including any deficiencies and recommendations. The audit results are documented in a report.

Within thirty (30) days of the post-audit conference, a report is issued to the responsible management with copies sent to the Vice President of the audited Site or department, the Executive Vice President and other management as appropriate.

Within thirty days after receipt of the audit report, responsible management replies in writing to the Manager, Regulatory Audits Group, describing corrective action and an implementation schedule. The established electronic corrective action process may be used to convey this information. When necessary, after receipt of the management reply, a re-evaluation is made to verify implementation of corrective action. This re-evaluation is documented. The audit is closed with a letter to the responsible management. All pertinent correspondence, checklists, and reports related to the audit are fliled.

Audit data are analyzed and the resulting reports on the effectiveness of the QA program, including any quality problems, are reported to management for review and assessment through periodic performance trend summaries. This data is also used to modify the audit schedule as necessary to assess potential weaknesses.

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The SRG shall be composed of at least five dedicated individuals. Each individual shall have either:

a) A bachelor's degree in engineering or related science and at least 2 years professional level experience in his/her field, at least 1 year of which experience shall be in the nuclear field; or

b) At least 15 years of professional level experience in his/her field, at least 10 years of which experience shall be in the nuclear field, at least 3 years of which nuclear experience shall be supervisory/managerial experience in Engineering, and shall hold or have held a Senior Reactor Operator License; or

c) At least 5 years of nuclear experience and hold or have held a Senior Reactor Operator License; or

d) At least 8 years of professional level experience in his/her field, at least 5 years of which experience shall be in the nuclear field.

A minimum of two of these individuals shall have the qualifications specified in Item a provided that at least one individual has the qualifications of Item b. Otherwise, a minimum of three of these individuals shall have the qualifications specified in Item a.

The SRG shall be responsible for:

a) Review of selected plant operating characteristics and other appropriate sources of plant design and operating experience information for awareness and incorporation into the performance of other duties.

b) Review of the effectiveness of corrective actions taken as a result of the evaluation of selected plant operating characteristics and other appropriate sources of plant design and operating experience information.

c) Review of selected programs, procedures, and plant activities, including maintenance, modification, operational problems, and operational analysis.

d) Surveillance of selected plant operations and maintenance activities to provide independent verification (not a sign-off function) that they are performed correctly and that human errors are reduced to as low as practicable.

e) Investigation of selected unusual events and other occurrences as assigned by Station Management or the Manager of Safety Assurance.

f) Preparation of summary reports of activities performed by the SRG. These reports are provided to the Manager of Safety Assurance each calendar month.

The Regulatory Compliance Group is responsible for the preparation, issue, and maintenance of all site licensing documents; providing site personnel with interpretations on the licensing documents, the preparation and submittal of violation responses, and coordination of NRC inspection activities on site.

The Environmental Compliance Group is responsible for the overall coordination of the site Environmental Management Programs to assure compliance with applicable Federal, State, and Local requirements.

The Emergency Planning Group is responsible for the overall coordination of the Site Emergency Plan to assure compliance with applicable FEMA and NRC requirements.

17.3.3.2.5 Corporate Audit

Corporate audits are initiated and directed by the Executive Vice President, Nuclear Generation. This audit is performed annually on the Duke Quality Assurance Program.

Attachment 3

Quality Assurance Report Topical Report, Amendment 25
Reprinted Version