

December 3, 1979

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JTCollins

MEMORANDUM FOR: R. Bangart, Acting Chief, ETSB
FROM: J. T. Collins, Deputy Director, TMI Support
SUBJECT: QUALIFICATIONS OF FIELD TESTING PERSONNEL FOR
NUCLEAR AIR AND GAS CLEANING COMPONENTS AND SYSTEMS

Reference is made to the subject document dated November 1979. If the Main Committee of CONAGT ballots affirmatively on the subject standard and ASME elects to publish this as an approved standard, then we need to be thinking how we intend to handle this in the licensing and enforcement programs for nuclear power plants. By copy of this memo, I am asking Ron Bellamy, also a member of CONAGT, to meet with us and discuss an acceptable method of implementation.

J. T. Collins
Deputy Director
TMI Support

Enclosure: Letter Ballot #5

cc:

R. Bellamy

R. Vollmer

8212030225 791203
PDR ADOCK 05000320
P PDR

TMI Support
JTCollins:si

12/ /79

Date Mailed: November 26, 1979

For the attention of: John T. Collins

TO THE MEMBERS OF THE MAIN COMMITTEE OF THE COMMITTEE ON NUCLEAR AIR AND GAS TREATMENT

BALLOT CLOSING DATE December 26, 1979

1) QUESTION:
Qualifications of Field Testing Personnel for Nuclear Air and Gas Cleaning Components and Systems

- 2) TYPE OF QUESTION: a) Procedure, b) Policy, c) New Document, d) Addendum, e) Revision, f) Reconsideration, g) Personnel, h) Other

1) INFORMATION submitted is sufficient to evaluate question? Yes.. No..

2) VOTE: Approved - No Objection, Approved with Comments, Disapproved - Objection

3) COMMENTS:

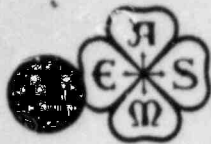
4) SIGNATURE: John T. Collins

5) DATE SIGNED: 12/3/79

6) Please fill out and return one copy to ASME Nuclear Department in the envelope provided.

ASME

COMMITTEE



The American Society of Mechanical Engineers

United Engineering Center / 345 E. 47th St., New York, N.Y. 10017 / 212 644-7722

WILLIAM J. WOOLLACOTT
Director
Nuclear Codes and Standards
212-644-7800

November 26, 1979

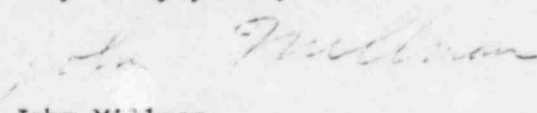
To: CONAGT - Main Committee Members

Subject: Letter Bailot #5
Qualifications of Field Testing Personnel for
Nuclear Air and Gas Cleaning Components and Systems

Gentlemen:

The proposed standard is attached for your consideration.
Please return the yellow copy of the ballot to ASME on or before
December 26, 1979.

Very truly yours,


John Millman
Senior Nuclear Engineering Administrator

JM:lc
Enc.

Draft: 1 Nov. 1979

QUALIFICATIONS OF FIELD TESTING PERSONNEL
FOR NUCLEAR AIR AND GAS
CLEANING COMPONENTS AND SYSTEMS

FOREWORD

This standard describes the qualifications required of personnel who field test installed nuclear air and gas cleaning systems and associated components to assure the integrity of these structures, the adequacy of their function, and their ability to operate effectively and reliably.

1. INTRODUCTION

1.1 Scope

This Standard describes requirements for the qualification of personnel who perform in-place testing of nuclear air and gas cleaning systems and associated components in accordance with Sections 5 and 8 through 12 of American National Standard ANSI/ASME N510 and for personnel who supervise and evaluate tests designed to assure the quality and performance of any installed high efficiency air and gas cleaning component and system in nuclear facilities that are required for the facility to operate effectively and reliably. It is intended to apply to the qualification of personnel who perform non-destructive tests and examinations of the designated components and systems, including associated control systems.

This Standard is to be used in conjunction with ANSI/ASME N509 (1) and ANSI/ASME N510 (2).

1.2 Applicability

The requirements of this Standard apply to personnel who perform in-place tests of nuclear air and gas cleaning components and systems, to those who provide measurement data needed to evaluate these facilities as representatives of, or consultants to a plant owner, and to those employed by regulatory bodies who verify such evaluations. The requirements of this standard do not apply to aides or craftsmen who perform all of their duties under direct supervision of a qualified test person who is in responsible charge.

The requirements are to be applied in both the selection and utilization of those personnel who perform inspection, examination, and testing

activities that are intended to achieve, assure, or verify conformance to established nuclear standards for nuclear air and gas cleaning systems.

1.3 Responsibility

It is the responsibility of each organization required to test and operate nuclear air and gas cleaning systems (e.g., holders of an operating license) to assure that only personnel who meet the requirements of this Standard are placed in responsible charge of in-place testing of nuclear air and gas cleaning components and systems.

The organization or organizations responsible for appointing individuals to perform the activities covered by this Standard (e.g., holders of an operating license) shall identify those in charge and the scope of their responsibility shall be documented. The provision of resources in the form of personnel, equipment, and services necessary to implement the requirements of this Standard may be delegated by the responsible organization to others (e.g., consultants). Such delegations shall be documented.

It is the responsibility of each organization using personnel covered by this Standard to conform to the applicable requirements of this Standard.

It is the responsibility of the organization performing in-place testing to document and maintain evidence that those employed for this purpose meet the requirements of this Standard.

The work of establishing selection and training practices and qualification procedures may be delegated by the responsible organization (e.g., holders of an operating license) to a recognized certification board.

1.4 Definitions

The definitions of ANSI/ASME N509(1), ANSI/ASME(2), and ANSI/ASME N45.2.6(3) are part of this Standard. The following definitions are provided to assure uniform understanding of this Standard.

1.4.1. Calibrate. To verify the operation of a precision device by comparing its performance factors and readings against known standards and to ascertain proper correction factors when deviations from standard occur.

1.4.2. Certification (Personnel). The action of determining, verifying or attesting in writing to the qualifications of personnel. (Note: This Standard is concerned with personnel qualifications, only; it does not deal with personnel certification.)

1.4.3. Certification (Systems). Issuance of a document signed by holders of an operating license that attests to the capability of items and systems to meet specified requirements.

1.4.4. Certification (Test Reports). A report signed by a person in responsible charge that identifies the test procedures used and certifies to the accuracy and completeness of the reported data.

1.4.5. Criteria. Education, experience, and other applicable standards used to evaluate the qualifications of personnel to perform the prescribed nuclear air and gas cleaning system tests.

1.4.6. Examination. Investigation of items by nondestructive methods.

1.4.7. Inspection. Determination of the conformance of nuclear air and gas cleaning components and systems to predetermined quality requirements by means of examination, observation or measurement.

1.4.8. Qualifications. The characteristics or abilities gained through training and experience that enable an individual to perform a required function.

1.4.9. Testing. The determination or verification of the capability of an item to meet specified requirements by subjecting it to standardized

physical, chemical, environmental, or operating conditions.

1.4.10. Verifiable Evidence. Information capable of being confirmed by (a) accredited institutions (e.g., state registration or license boards, educational institutions, professional societies) or (b) notarized statements.

1.5 Referenced Documents

Documents included as a part of this Standard are identified at the point of reference or described in Paragraph 4 of this Standard. The issue or edition of the referenced document that is required will be specified in Paragraph 4 of this Standard.

2. QUALIFICATIONS OF TESTING PERSONNEL

2.1 General

The requirements of this section define the minimum criteria that qualify personnel to test and certify the effectiveness of nuclear air and gas cleaning components and systems that are within the scope of ANSI/ASME Standard N509.

2.2 Levels of Qualification

The requirements are defined in terms of the two levels of qualification delineated below.

2.2.1 Level II. Level II personnel shall be (a) capable of performing the inspections, examinations, and tests that are required in accordance with ANSI/ASME Standard N510, and applicable technical specifications, guidelines, and standards; and (b) shall be experienced by having tested in the field

the different types of components and systems that are in service. They shall be familiar with the tools and equipment to be employed and shall have demonstrated proficiency in their use. They shall also be capable of determining that the calibration status of inspection and measuring equipment is current, that the measuring and test equipment is in proper condition for use, and that the inspection, examination, and test procedures are approved.

2.2.2 Level I. Level I personnel shall have (a) all of the capabilities of a Level II person for designated inspections, examinations, and tests and (b) demonstrated capabilities in (1) planning inspections, examinations, and tests (2) setting up tests, including preparation and set-up of related equipment, as appropriate (3) supervising or maintaining surveillance over the inspections, examinations, and tests (4) supervising and certifying lower level personnel (5) reporting inspection, examination, and testing results (6) evaluating the validity and acceptability of inspection, examination, and test results, and (7) when compliance cannot be demonstrated, explaining why a component or system did not comply and making appropriate recommendations for placing the component or system into compliance.

2.3 Education and Experience

Records of training and experience, when used as the basis for qualification to Level I and Level II, shall be maintained for a minimum period of 18 months. The education and experience requirements specified for the two levels should not be treated as absolute when other factors provide reasonable assurance that a person can perform a particular task completely. Alternative qualifying factors may include demonstrated capability in a given job through previous performance or satisfactory completion of proficiency testing.

2.3.1. The following requirements or an equivalent combination of education and experience shall be satisfied by personnel seeking Level II qualification:

(1) High school graduation and 100 weeks of comprehensive in-place testing experience of nuclear air and gas treatment systems under the direct supervision of a qualified Level I or Level II person within a five year period. The 100 weeks of experience meeting this requirement shall include not less than 10 and not more than 20 weeks of maintenance and pre-field test laboratory adjustments and calibrations of instruments. Field testing experience shall include testing five or more different air and gas cleaning systems, or:

(2) Completion of college level work leading to an associate degree or a baccalaureate degree in an appropriate science, technology, or engineering plus 50 weeks of comprehensive in-place testing of nuclear air and gas treatment systems within a five year period under the direct supervision of a qualified Level I or Level II person, or:

(3) Education in some branch of technology beyond the associate degree and, in addition, supplemental education in nuclear air and gas treatment technology to include, as a minimum, formal courses in the theory and practice of in-place testing, air and gas cleaning technology, radiation safety, and ventilation measurements; plus 25 weeks of comprehensive in-place testing of nuclear air and gas treatment systems under the direct supervision of a qualified Level I or Level II person within a five year period.

2.3.2 The following requirements or an equivalent combination of education and experience shall be satisfied by personnel seeking Level I qualification:

(1) Fifty weeks of satisfactory performance as a qualified Level II tester plus special education in nuclear and gas treatment technology to include as a minimum, formal courses in the theory and practice of in-place testing, air and gas cleaning technology, radiation safety, ventilation design and measurements, accident safety, quality assurance, and other relevant topics.*

(2) One hundred weeks of satisfactory performance as a Level II tester plus verifiable evidence of equivalent knowledge contained in the courses cited in (1) above but acquired through self-study and long experience of a relevant nature.

2.4 Trainees

These persons work only under the direct supervision of Level I or Level II testing personnel. This is an entry position into the field of nuclear air and gas cleaning system testing and requires no prior experience or educational qualification. Nevertheless, it is recommended that the general educational qualifications of Trainees be of such nature that they can through special education and experience, qualify for Level II. Trainees may be used in data-taking assignments or in equipment operation provided they are supervised by a qualified individual participating in the inspection, examination, or test.

2.5 Additional Qualification Requirements

2.5.1 Verifiable evidence of personal integrity as evidenced by Federal

*A syllabus for a typical nuclear in-place testing course is shown in Appendix 1. Appendix 2 lists examples of special short courses that offer satisfactory education in one or more of the aspects cited above.

security clearance, professional licensure, or documentation that the person has passed successfully a company security investigation, or other evidence complying with sections 10.10 and 10.11 of 10CFR73.55.

2.5.2 Physical capability to perform the required inspections, examinations and tests shall be reviewed annually. Characteristics that should be considered include:

(1) Visual Ability. Able to accomplish the required test procedures either with or without ocular correction.

(2) Ability to meet the physical demands of performing the required activities (such as ability to climb ladders and perform functions with respiratory protection and protective clothing).

2.5.3 Communication Skills. Test personnel in responsible charge shall be capable of effective oral and written communication.

2.6 Determination of Qualification for Level I and Level II

The capabilities of a candidate for qualification shall be determined by an evaluation of relevant education, training, experience, and demonstrated capability in a variety of typical work situations.

3. MAINTENANCE OF QUALIFICATION

3.1 General

Each person who verifies conformance of nuclear air and gas cleaning equipment to applicable test criteria shall be designated in writing by his or her employer as being qualified to perform this assigned work at Level I or Level II. The record of qualification shall be supported by appropriate education, training, testing, evaluation, and periodic review to verify the

initial and continued proficiency of each person. The effective period of designated qualification shall be two years and at the end of this period each individual shall be reevaluated in accordance with the requirements of Section 3.3.

3.2 Proficiency Testing

Tests shall be devised for determining the capability and proficiency of Level I and Level II personnel who perform nuclear air and gas cleaning equipment evaluations and each person who performs these evaluations shall have demonstrated proficiency by practical field tests that utilize the instruments and other equipment required for testing nuclear air and gas cleaning systems. The results of these tests shall be documented and placed in a personnel file maintained by the individual's employer and shall be considered in the evaluation described in paragraph 3.1.

3.3 Evaluation of Performance

The job performance of Level I and Level II testing personnel shall be evaluated initially and at periodic intervals not to exceed two years, and the results of each evaluation shall be reviewed to establish the capability of the individual. Reevaluation shall be by evidence of continued satisfactory performance or by redetermination of capability in accordance with Section 2 less those paragraphs relating to experience. If, during this evaluation or at any other time, it is determined by the responsible organization that the capabilities of an individual are not in accordance with the qualifications specified for the job, that person shall be removed from that activity until such time as the required capability has been demonstrated.

Any person who has not performed in-place testing of nuclear air and gas cleaning systems for a period of two years shall be reevaluated by a redetermination of required capability in accordance with Section 2 less

those paragraphs relating to experience.

3.4 Delegation of Certification Responsibility to Designate Personnel

Although designation of qualified Level I and Level II testing personnel is the responsibility of that person's employer (paragraph 1.3), the employer may delegate this activity to an independent certifying agency.

4. REFERENCES

- (1)ANSI/ASME Standard N-509. - 1979
- (2)ANSI/ASME Standard N-510. - 1979
- (3)ANSI/ASME Standard N45.2.6. - 1978