Little
Traveler attached

Commonwealth Edison
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Address Reply to: Post Office Box 767
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May 6, 1985

Mr. James G. Keppler
Regional Administrator
Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Il 60137

SUBJECT: Braidwood Station Units 1 and 2
Response to Inspection Reports Nos.
50-456/85-006 and 50-457/85-006
NRC Docket Nos. 50-456 and 50-457

REFERENCE (a): R. F. Warnick letter to C. Reed
dated March 8, 1985

Dear Mr. Keppler:

This letter is in response to the inspection conducted by Mr. R. N. Gardner on February 4 through March 1, 1985, of activities at Braidwood Station. Reference (a) indicated that certain activities appeared to be in noncompliance with NRC requirements. The Commonwealth Edison Company disagrees with the items listed in the Notice of Violation. Our detailed discussion of the bases for our disagreement is provided in the enclosure.

Commonwealth Edison Company has initiated increased interface of the Project Licensing and Compliance group with the NRC BCAP resident inspector. It is our desire to assure that routine onsite communications with the NRC are clear and provide an appropriate level of attention to NRC concerns.

The delay in submitting this response was discussed with Mr. R. F. Warnick on April 8, 1985 and Mr. W. S. Little on April 22, 1985.

If you have any further questions on this matter, please direct them to this office.

Very truly yours,

D. L. Farrar
Director of Nuclear Licensing

/klj
Enclosure
cc: NRC Resident Inspector - Braidwood

MAY 8 1985

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ENCLOSURE ONE

COMMONWEALTH EDISON COMPANY ONE
RESPONSE TO INSPECTION REPORT
50-456/85-006 AND 50-457/85-006
ITEM 50-456/85-006-02 AND 50-457/85-006-02

Item of Noncompliance

1. 10 CFR, Appendix B, Criterion II, states, in part, that "The quality assurance program shall provide control over activities affecting the quality of the identified structures, systems, and components.... The program shall provide for indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained."

   Commonwealth Edison Company Quality Assurance Manual, Quality Requirement No. 2.0, Section 2.3, states, in part, that "Qualifications and certifications will be...established to meet the applicable requirements of...ANSI Standard N45.2.6...Contractor personnel engaged in inspection...will be required to be trained, qualified, and certified to perform their specific activity in accordance with the above requirements.

   ANSI N45.2.6-1978, Paragraph 4, states, in part, that "Personnel who are assigned the responsibility and the authority to perform functions covered by this standard shall have, as a minimum, the level of capability shown in Table 1. Table 1 requires a Level II capability for personnel evaluating the acceptability of inspection and examination results. According to Table 1, Level I inspectors are authorized to act as data takers but they are not authorized to determine the acceptability of construction activities.

   Contrary to the above, the licensee's electrical contractor utilized Level I Quality Control (QC) inspectors for inspection and acceptance of electrical welds. This practice involved 14 different Level I inspectors over a four year time period.

RESPONSE

Commonwealth Edison Company does not agree that this is an example of non-compliance. We do believe, however, that resolution of this issue does lead to an enhanced inspection program.

The subject of inspector activities has been previously reviewed by NRC personnel and CECo QA personnel at Braidwood Station. We believe that a review of pertinent historical information is useful and provides insight into the practices previously utilized. This information, including a review of ANSI N.45.2.6 requirements, is enclosed as an attachment to this response.

Commonwealth Edison Company believes that no corrective action is necessary. Commonwealth Edison Company has confidence in the quality of the Braidwood Station. Further confirmation of the quality of the installed hardware, including welds by the electrical contractor, is provided by BCAP and other reinspection/overinspection programs already in progress at Braidwood.

In order to reach resolution of this issue, the following response acknowledges the previous practices while providing for enhanced inspection activities in the future.

Commonwealth Edison Company will issue a memo by May 15, 1985, to site contractors that will provide the following directions for the use of inspectors in ANSI N.45.2.6 programs:

1. Level II or Level III inspectors are to be used for inspection and acceptance of welds.

2. For all other types of inspections, Level II inspectors are to be used whenever practical. If Level I inspectors are used, specific data is to be recorded for each item inspected. This data will be reviewed by a Level II inspector, certified in the appropriate discipline, to determine the acceptance of the installation.

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ITEM 50-456/85-006-02 AND 50-457/85-006-02

In order to provide the proper perspective to this issue, we believe that it is necessary to document pertinent information regarding ANSI N45.2.6 and historical information specifically related to the use of electrical contractor Level I QC inspectors at Braidwood. This review will address:

1. Review of ANSI N45.2.6-1978 Requirements.

2. Review of NRC Item 50-456/80-06-01; 50-457/80-06-01, part j.

3. Review of NRC Item 50-457/83-18-01-03A; 50-457/83-17-01-03A, section regarding Level II review of Level I data.

4. Review of Quality Assurance Audit QAA 84-122, Open Item #1, Concern #5.

REVIEW OF ANSI N45.2.6-1978 REQUIREMENTS

For completeness and ease of reference, a copy of ANSI N45.2.6-1978 is enclosed.

In the description of the item of non-compliance, paragraph I quoted 10 CFR, Appendix B, Criterion II to establish requirements for indoctrination and training. Commonwealth Edison Company does not dispute this paragraph.

In the description of the item of non-compliance, paragraph II quoted the Commonwealth Edison Company Quality Assurance Manual to establish the applicability of ANSI N45.2.6-1978. Commonwealth Edison Company does not dispute this paragraph.

In the description of the item of non-compliance, paragraph III sentence 1 quotes from paragraph 4 of ANSI N45.2.6-1978. Sentences 2 and 3 of paragraph III of the item of non-compliance, however, are not quotes from ANSI N45.2.6-1978.

In order to understand the intent of the standard, we refer to paragraph 3.2 of ANSI N45.2.6-1978 which states, in part, that:

> "A Level I person shall be capable of performing the inspections, examination, and tests that are required to be performed in accordance with documented procedures and/or industry practices."

The ANSI N45.2.6-1978 furthermore provides in paragraph 1.4 definitions of Inspection, Examination, and Testing as follows:

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"1.4.1 Inspection. A phase of quality control which by means of examination, observation, or measurement determines the conformance of materials, supplies, parts, components, appurtenances, systems, processes, or structures to predetermined quality requirements.

1.4.2 Examination. An element of inspection consisting of investigation of materials, supplies, parts, components, appurtenances, systems, processes, or structures to determine conformance to those specified requirements which can be determined by such investigation. Examination is usually nondestructive and includes simply physical manipulation, gaging, and measurement.

1.4.3 Testing. The determination or verification of the capability of an item to meet specified requirements by subjecting the item to a set of physical, chemical, environmental, or operating conditions."

Therefore, ANSI N45.2.6-1978 does specifically provide that Level I persons are capable of performing inspections, examination, and tests and ANSI N45.2.6-1978 does specifically define these to mean determination of the conformance to predetermined or specified requirements. Commonwealth Edison Company believes that this is how L. K. Comstock Level I weld inspectors were utilized.

The Level II review of the inspection results was performed to determine validity and acceptability. In retrospect neither the procedure nor the documented objective evidence on the inspection checklist were sufficient to determine the method used by the Level II for establishing validity and acceptability of the results during the 4 year period in question.

Review of NRC Item 50-456/80-06-01; 50-457/80-06-01

NRC Inspection Report 50-456/80-06; 50-457/80-06 dated July 9, 1980 addressed the qualification level of individuals performing procedure 4.8.3. Specifically, Item 50-456/80-06-01, 50-457/80-06-01, part j stated:

"In weld procedure 4.8.3, the qualification level for the performance of the inspectors was not indicated."

In response to this NRC concern, L. K. Comstock QC Procedure 4.8.3 was revised to state:

"Inspection and Documentation shall be performed by a Level I or Level II Inspector qualified per Section 4.1.3 of the Q.C. Manual."

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ITEM 50-456/85-006-02 AND 50-457/85-006-02

The NRC Region III personnel reviewed, accepted, and closed this item, as documented in Inspection Report 50-456/80-12 and 50-457/80-11 dated October 23,1980. The NRC stated:

> "...Procedure 4.8.3 has been revised to clarify the functions of the welding inspector and his level of qualification."

Thus NRC Region III reviewed, accepted, and closed the specific subject of L. K. Comstock Level I QC personnel performing inspections of electrical welds in accordance with procedure 4.8.3.

Review of NRC Item 50-456/83-18-01-03A; 50-457/83-17-01-03A

NRC Inspection Report Item 50-456/83-18-01-03A 50-457/83-17-01-03A addressed the subject of review of data by a Level II inspector when a Level I inspector records the data. Specifically, this item stated, in part,

> "(8) Procedure 4.8.5, "Inspection of Class 1E Safety-Related Cable Pan Installation", Revision A, dated February 4, 1983.
>
> Paragraph 3.2.2.1 - This paragraph needs to be revised to require the Level II inspector performing the review of Form 17 for completeness to also review the data for acceptability/rejectability when a Level I inspector records the data. All procedures/forms need to be revised, as required, to clarify this requirement."

In L. O. DelGeorge letter to J. G. Keppler dated March 23, 1984, Commonwealth Edison Company provided the following response to this item:

> "Response/Corrective Action Taken
>
> Commonwealth Edison Company acknowledges the need to revise Procedure 4.8.5 so that the scope of a Level II inspector's review of a Level I inspector's records clearly includes recorded data for acceptability and rejectability. Prior to the NRC Inspection, in an in-house letter, L. K. Comstock's Project Quality Control Manager clarified the level of review to be completed when Level I and Level II inspectors sign reviews. These clarifications will be incorporated into all applicable L. K. Comstock procedures. We further believe that the actual practice of a Level II signing for a Level I has been in accordance with ANSI N45.2.6.

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Date of Completion

Applicable L. K. Comstock procedures are expected to be revised by March 30, 1984."

As a result of this item, various L. K. Comstock procedures were revised. Specifically, Procedure 4.8.5 (Inspection of Class 1i5 Safety-Related Cable Pan Installations) Revision C was revised to address the specific concern. Procedure 4.13.1 (Quality Control Documentation Requirements of Quality Related Records) Revision C paragraph 3.4.2.2 generically specified "When a Level II Inspector reviews the documentation of a Level I, the Level II evaluates the validity and acceptability of the inspection and test results as recorded by the Level I". Procedure 4.8.3 (Weld Inspection) Revision F paragraph 3.24.1 was added to address specific concern.

The NRC Region III personnel reviewed, accepted, and closed this item, as documented in Inspection Report 50-456/84-19; 50-457/84-18.

QUALITY ASSURANCE AUDIT QAA 84-122

The same concern identified by the NRC inspector was previously identified as a concern by Commonwealth Edison Company General Office Audit QAA-84-122 of L. K. Comstock at Braidwood which was performed 9/10/84 through 9/14/84 and documented in a report dated 9/21/84. Specifically, Open Item #1, concern #5 states:

"5. (Question #28) Although Comstock did not currently employ Level I Inspectors, the Welding Inspection Procedure 4.8.3 revision E addressed their utilization in the completion of weld and other related inspections. Level I Inspectors would be required to pass judgement on the acceptability of observed conditions to utilize the checklists supplied by this procedure.

Commonwealth Edison Co's Q.A. Department will only allow a Level I Inspector to operate in the capacity of a data gatherer. That data in turn, must be analyzed for acceptance by an inspector of a higher level.

Recommendations:

Either the references to the employment of Level I inspectors should be deleted from the Comstock's procedures outlining their inspection program or those inspection procedures should be revised to precisely define the limited nature of the Level I capabilities."

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This item was classified as an open item based on the fact that there were no Level I L. K. Comstock Welding Inspectors at the time of the audit. Commonwealth Edison Company has conducted Q.A. Follow-up on this issue by surveillances which documented the following status:

Q.A. Follow-up 12/12/84

Concern #5 - L. K. Comstock has revised procedure 4.8.3 in revision G to eliminate all references to a Level I Q.C. inspector.

Q.A. Follow-up 2/1/85

Concern #5 - Procedure 4.8.3 revision G received final approval on 1-11-85.

Q.A. Follow-up 2/12/85

Concern #5 - This concern remains open pending the establishment of a program for evaluating the acceptability of previous work performed by Level I inspectors.

We feel that, in light of questions raised by Q.A. and the NRC, it is prudent to assure that all parties involved are fully satisfied. The corrective actions listed in our response to this NRC item are also being presented to Q.A.

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ITEM 50-456/85-006-01B AND 50-457/85-006-01B

Item of Noncompliance

2. 10 CFR 50, Appendix B, Criterion XVI, states, in part, that "Measures shall be established to assure that conditions adverse to quality, such as...nonconformances are promptly identified and corrected."

Commonwealth Edison Company Quality Assurance Manual, Quality Requirement No. 16, Section 16.1, states, in part, that "A corrective action system will be used to assure that such items as...nonconformances...which are adverse to quality...are promptly identified and corrected."

Contrary to the above, the following instances of failure to take proper corrective actions were identified:

a. Although the Braidwood Construction Assessment Program (BCAP) had identified that Level I QC inspectors had inspected and accepted construction activities, in violation of the requirements delinated in ANSI N45.2.6, this nonconforming condition was not documented as a BCAP observation.

b. Thirty-seven BCAP observations, which dealt with the lack of QC verified "red-lined" record copy drawings, were invalidated by the BCAP taskforce even though the documented basis for the invalidation of the observations did not support the invalidations.

Response 2.a

Commonwealth Edison Company does not agree that this is an example of an item of non-compliance. Contrary to the description of this item in the notice of violation, this issue was documented on BCAP Observation Record CSR-R-G-ELE-XXX-171 on February 27, 1985. Unfortunately, due to apparently ineffective communications between BCAP personnel and the NRC inspector, the NRC inspector was not aware that this observation was issued during the week prior to his monthly exit interview meeting.

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The NRC inspector has now seen the Observation Record CSR-R-G-ELE-XXX-171.

It is Commonwealth Edison Company's position that BCAP Observations will be documented and processed in accordance with BCAP Procedure BCAP-06, "Observation and Discrepancy/Concern Processing".

Response 2.b

Commonwealth Edison Company disagrees that this item, as stated in the notice of violation, is an example of non-compliance. This is because, contrary to the violations as stated, the BCAP task force did not invalidate any of the 37 BCAP observations in question. We do acknowledge that there does exist a valid concern regarding documentation of review of certain red-line drawings by Phillips Getschow QC inspectors and that this concern was identified and documented by Commonwealth Edison Company Quality Assurance.

In order to fully understand the details of this issue, the following review of events is presented. It is especially noteworthy that several events occurred quickly and in parallel in the January 1985 timeframe.

Phillips Getschow (PGCo) is the contractor responsible for the generation and QC verification of as-constructed drawings for piping systems. PGCP-40 is the procedure governing this activity. Revision 3 of this procedure, which is similar to earlier revisions, requires

> "5.3 the Supervisor-Quality Control shall:
> 5.3.1 Dimensional verify installed piping
> 5.3.2 Compare the As-Constructed drawing to the As-Installed condition...
> 5.3.5 Return verified drawing and form PG/QA-5-33, Section 3(a) properly signed to the Project Engineer."

Paragraph 4.4 allows the delegation of authority to appropriately certified personnel.

The thirty-seven observations were generated by a review by BCAP of the contractor documentation supporting the verification of as-constructed dimensions using BCAP checklist and instruction CSR-R-M-1 Rev. 1. The instructions to the BCAP document reviewer were:

> "2.3 By reviewing the data package, verify the existence of the QC verified red-line record copy isometric leading up to the As-Constructed isometric.

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ITEM 50-456/85-006-01B AND 50-457/85-006-01B

2.4 Verify that the preparer(s) of the red-lined record copy isometric has a minimum certification level of Level II QC inspector ... [Certification Area: Process Piping and Instrumentation]."

Additionally, Sections 2.1 and 2.2 require a QC signature on the final As-Constructed drawing. These instructions were based on BCAP's interpretation of PGCP-40, which indicated that the field verified drawing should be signed.

In their review of the "red-lined" drawings, BCAP found many which were not signed by QC personnel. This resulted in the observations referenced in the item of noncompliance. These observations were processed by BCAP as valid in accordance with procedure BCAP-06 and sent to PCD and S&L for further processing. They were validated because BCAP had no information at that time to indicate that the QC signature on the red-line drawing was not required. S&L reviewed these observations per BCAP-06 Rev. 6 paragraph 4.6.1, at the end of December 1984, with the evaluation recommending that the observation be invalidated:

> "There is no requirement for a "red-lined record copy isometric", as per S&L Specification F/L-2739, Article 301.11 and per Phillips Getschow Procedures QCP-821, Rev. 6 and PGCP-40, Rev. 3."

However, in accordance with BCAP-06 paragraph 4.7.1, it is BCAP which must make the final determination of validity. Step 4.4 must be completed by BCAP before an observation is deemed invalid. This step had not taken place for the thirty-seven observations in question. BCAP has taken no steps to formally invalidate these observations. They remain valid at this time.

On January 14, 1985, the Independent Expert Overview Group (IEOG) identified a concern regarding S&L's recommendations that these observations be invalidated and documented their concern on their observation BCAP-OBS-007 which stated,

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ITEM 50-456/85-006-01B AND 50-457/85-006-01B

> "Observation: S&L has responded to several BCAP Observations ... declaring them to be invalid because no "red-lined record copy isometric" is required. However, Phillips, Getschow Co. Procedures QCP-B21, Revision 6 and PGCP-40, Revision 3 both require some form of verification drawing to be signed by QC. This is a copy of the installation drawing which has been marked in the field to show actual dimensions and configuration of work completed in the plant for that part of construction. Whether it is called a "red line" drawing, a verification drawing, or a field verification installation drawing is a technicality. The name of the drawing was not the subject of the observations listed below. At issue in these observations is the lack of a signature or initials of a certified QC inspector. For this reason, the following S&L responses to BCAP Observations invalidly have been marked "Invalid..."

Also on January 14, 1985, a meeting was held, allowing PCD, PGCo, and S&L to explain their positions to BCAP regarding the contractor's documentation requirements supporting the generation and QC acceptance of "as-constructed" isometrics. At this meeting, an agreement was reached between the involved parties as to what documentation was required by the applicable procedures. The meeting was documented by a January 15, 1985 letter BR/PCD 85-43 from the PCD Superintendent to the BCAP Director.

On this basis, on January 25, 1985 BCAP responded to the IEOG observation as follows,

> "DISCUSSION:
>
> During the preparation phase of Documentation Review Checklist, CSR-R-M-1, Rev. 0, "Small Bore Piping Configuration", the PGCO Procedures, QCP-40, Rev. 3 and QCP-B21, Rev. 6, were reviewed and interpreted to require a "QC Signature" on the verification drawing ("Red-Line"). During the subsequent document review activities, several observations were written by the BCAP Inspectors and processed as valid. As a result of these observations, a meeting was held on January 14, 1985 between CECo PCD, S&L, PGCo, and BCAP in which PGCo provided a clarification of the documentation requirements of the above referenced procedures. A QC Signature on the verification drawing was not required. Rather, QC was to sign section 3(a) of the "Stop Work Order", signifying completion, and to sign the QC approval block on the mylar of "As-Constructed" drawing. PCD later issued a memorandum, BR/PCD 85-43, on

January 15, 1985 confirming this clarification. Based upon this clarification and a subsequent review of the PGCo procedures by BCAP, it has been determined that the referenced observations are invalid. The PGCo Procedures do not require that the verification drawings ("Red-Line") require a QC signature. The inspector performs the field verification, marking as necessary on the verification copy and signs the Stop Work Order to signify completion. The Engineering Department then revises the drawing mylar, as necessary, to reflect the marked-up verification copy. The mylar is then resubmitted to the QC organization for review and approval. These QC signatures on the "Stop Work Order" form and the mylar of the "as-constructed" drawing provide adequate quality documentation of Quality Control's Verification of the as-constructed dimensions.

"CORRECTIVE ACTIONS:

The QC-signed "Stop Work Order" form is the document which signifies QC acceptance of the "red-line" drawing, and will therefore be the document reviewed by BCAP in lieu of the "red-line" drawing. The Small Bore Piping Configuration Documentation Review Checklist will be revised to reflect this change. Those portions of the document reviews performed to date affected by this revision will be redone using the revised checklist and instructions. The Observations describing the lack of a QC signature on the "red-line" drawing previously processed as valid will be reprocessed as invalid Observations."

Immediately following the January 14, 1985 meeting described above, BCAP's discussions with BCAP QA determined a course of action that included revision of the checklist to properly reflect procedural requirements, a re-review of the contractor documentation to the new requirements, a surveillance of the contractor's activities in this area by site QA which was to be arranged by BCAP QA, and subsequent to these activities, the invalidation of the previously generated observations.

The site QA surveillance #4151 was performed on January 22-24 and February 4-5, 1985 and documented on 2/14/85. It identified certain examples of nonadherence to the contractor procedures.

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In accordance with the above specified Corrective Actions, the BCAP instruction CSR-R-M-1 was revised on 2/1/85 and the re-review of the contractor's documentation began shortly thereafter. This re-review documented concerns similar in nature to those identified by the QA surveillance. Because of these concerns, BCAP has not invalidated the 37 observations.

In conclusion, we believe BCAP's actions were prudent. The corrective actions specified in the response to the IEOG observation, in conjunction with the CECo site QA surveillance, would assure that any relevant concerns with the contractor's QC program for the verification of as-constructed drawings would have been identified. The thirty-seven observations in question will remain valid until a determination can be made as to the existence of acceptable documentation supporting certified QC inspectors verification of the as-constructed drawings.

AN AMERICAN NATIONAL STANDARD

Qualifications of Inspection, Examination, and Testing Personnel for Nuclear Power Plants

ANSI/ASME N45.2.6 - 1978

(REVISION OF ANSI N45.2.6-1973)

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This Standard was approved by the ASME Committee on Nuclear Quality Assurance and the ASME Nuclear Power Codes and Standards Committee, and was subsequently approved by the American National Standards Institute on August 31, 1978.

Date of Issuance: January 15, 1979

FOREWORD

(This Foreword is not a part of the American National Standard on Qualification of Inspection, Examination, and Testing Personnel for Nuclear Power Plants.)

This Standard delineates the qualifications required of personnel who perform inspections, examinations, and tests that assure the quality of important parts of nuclear power plants prior to and during the construction, pre-operational, and startup testing and operating phases. The Standard was originally developed by the American National Standards Committee N45 on Reactor Plants and Their Maintenance.

In May of 1969, the N45 Committee of ANSI established an ad hoc committee (N45-2.6) on Qualification of Personnel. The purpose of this committee was to prepare a standard for general industry use that would define the qualifications of personnel whose activities result in or assure attainment of quality construction. The ad hoc committee was composed of representatives of key segments of the nuclear industry including utilities, reactor suppliers, construction contractors, component manufacturers, and consultants. The original version of the Standard was issued in 1973 as ANSI N45.2.6-1973.

In August, 1973, the U.S. Atomic Energy Commission issued Regulatory Guide 1.58–Qualification of Nuclear Power Plant Inspection, Examination, and Testing Personnel. The regulatory position in this guide was that ANSI N45.2.6-1973 should be extended in scope to include pre-operational and startup testing and the operational phase of a nuclear power plant.

Accordingly, the N45-2.6 Work Group met to revise the Standard to satisfy Regulatory Guide 1.58 and to make other improvements in the Standard, especially with regard to education and experience considerations. The Standard contained herein was developed from these activities.

In 1975, the N45-2 Subcommittee was reorganized into the ASME Committee on Nuclear Quality Assurance and began operating under the accredited ASME Procedures for Nuclear Projects which received accreditation on January 15, 1976. The ASME Committee on Nuclear Quality Assurance was chartered to develop the overall nuclear quality assurance codes and standards for nuclear power plant design, construction, and operation.

Suggestions for improvement gained in the use of this Standard will be welcomed. They should be sent to the Secretary, Committee on Nuclear Quality Assurance, American Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, New York, NY 10017.

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AMERICAN NATIONAL STANDARD

QUALIFICATIONS OF INSPECTION, EXAMINATION AND TESTING PERSONNEL FOR NUCLEAR POWER PLANTS

1. INTRODUCTION

1.1 Scope

This Standard delineates the requirements for the qualification of personnel who perform inspection, examination, and testing to verify conformance to specified requirements of nuclear power plant items (structures, systems, and components of nuclear power plants) whose satisfactory performance is required to prevent postulated accidents which could cause undue risk to the health and safety of the public; or to mitigate the consequences of such accidents if they were to occur. The requirements may also be extended to other items of nuclear power plants when specified in contract documents.

1.2 Applicability

The requirements of this Standard apply to personnel who perform inspections, examinations, and tests during fabrication prior to and during receipt of items at the construction site, during construction, during preoperational and startup testing, and during operational phases of nuclear power plants. The requirements of this Standard do not apply to personnel who perform inspections for government or municipal authorities, or who perform as authorized inspectors in accordance with the ASME Boiler and Pressure Vessel Code.

The requirements of this Standard are not intended to apply to personnel who only perform inspection, examination, or testing in accordance with ASNT "Recommended Practice No. SNT-TC-1A", since these personnel are certified in accordance with the requirements of SNT-TC-1A and its applicable supplements. **The requirements of this Standard are optional, at the discretion of the employer, for application to personnel who perform calibration or to craftsmen who perform installation checkouts as part of their basic installation responsibility to ready the installation for preoperational testing.**

This Standard is to be used in conjunction with ANSI N45.2.

The requirements apply to personnel of the owners, architect-engineers, nuclear power plant system designers and system suppliers, plant designers and plant constructors, equipment suppliers, outside testing agencies, and consultants. The ASME Boiler and Pressure Vessel Code, as well as other ANSI Standards, have been considered in the development of the Standard, and this Standard is intended to be compatible with their requirements.

1.3 Responsibility

It is the responsibility of each organization participating in the project to assure that only those personnel within their respective organizations who meet the requirements of this Standard are permitted to perform inspection, examination, and testing activities covered by this Standard that verify conformance to quality requirements.

The organization or organizations responsible for establishing the applicable requirements for activities covered by this Standard shall be identified and the scope of their responsibility shall be documented. The work of establishing selection and training practices and qualification procedures and of providing the resources in terms of personnel, equipment, and services necessary to implement the requirements of this Standard, may be delegated to other qualified organizations and such delegations shall also be documented. It is the responsibility of each organization using personnel covered by this Standard to conform to the requirements of this Standard applicable to the organization's work.

It is the responsibility of the organization performing these activities to specify the detailed methods and procedures for meeting the requirements of this

Standard, unless they are specified in the contract documents.

1.4 Definitions

1.4.1 Inspection. A phase of quality control which by means of examination, observation, or measurement determines the conformance of materials, supplies, parts, components, appurtenances, systems, processes, or structures to predetermined quality requirements.

1.4.2 Examination. An element of inspection consisting of investigation of materials, supplies, parts, components, appurtenances, systems, processes, or structures to determine conformance to those specified requirements which can be determined by such investigation. Examination is usually nondestructive and includes simply physical manipulation, gaging, and measurement.

1.4.3 Testing. The determination or verification of the capability of an item to meet specified requirements by subjecting the item to a set of physical, chemical, environmental, or operating conditions.

1.4.4 Refer to ANSI N45.2.10 for other definitions to be used in conjunction with this Standard.

1.5 Referenced Documents

Other documents that are required to be included as a part of this Standard are either identified at the point of reference or described in Section 6 of this Standard. The issue or edition of the referenced document that is required will be specified either at the point of reference or in Section 6 of this Standard.

2. GENERAL REQUIREMENTS

2.1 Planning

Plans shall be developed for staffing, indoctrination, and training of an adequate number of personnel to perform the required inspections, examinations, and tests and shall reflect the schedule of project activity so as to allow adequate time for assignment or selection and training of the required personnel.

2.1.1 Indoctrination. Provisions shall be made for the indoctrination of personnel as to the technical objectives of the project; the codes and standards that are to be used; and the quality assurance elements that are to be employed.

2.1.2 Training. The need for formal training programs shall be determined, and such training activities shall be conducted as required to qualify personnel who perform inspections, examinations, and tests. On-the-job participation shall also be included in the program, with emphasis on first-hand experience gained through actual performance of inspections, examinations, and tests. Records of training, when used as the basis for certification, shall be maintained.

2.2 Determination of Initial Capability

The capabilities of a candidate for certification shall be initially determined by a suitable evaluation of the candidate's education, experience, training, test results, or capability demonstration.

2.3 Evaluation of Performance

The job performance of inspection, examination, and testing personnel shall be reevaluated at periodic intervals not to exceed three years. Reevaluation shall be by evidence of continued satisfactory performance or redetermination of capability in accordance with Subsection 2.2. 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 inspection, examination, or testing activities in his qualified area for a period of one year shall be reevaluated by a redetermination of required capability in accordance with Subsection 2.2.

2.4 Written Certification of Qualification

The qualification of personnel shall be certified in writing in an appropriate form, including the following information:

(1) employer's name

(2) identification of person being certified

(3) level of capability

(4) activities certified to perform

(5) basis used for certification, including:

  (a) records of education, experience and training
  (b) test results, where applicable
  (c) results of capability demonstration

(6) results of periodic evaluations

(7) results of physical examinations, when required

(8) signature of employer's designated representative

(9) date of certification and date of certification expiration

2.5 Physical

The responsible organization shall identify any special physical characteristics needed in the performance of each activity. Personnel requiring these characteristics shall have them verified by examination at intervals not to exceed one year.

3. QUALIFICATIONS

3.1 General

The requirements contained within this Section define the minimum capabilities that qualify personnel to perform inspections, examinations, and tests which are within the scope of this Standard.

There are three levels of qualification. The requirements for each level are not limiting with regard to organizational position of professional status, but rather, are limiting with regard to functional activities which are within the scope of this Standard.

3.2 Level I Personnel Capabilities

A Level I person shall be capable of performing the inspections, examinations, and tests that are required to be performed in accordance with documented procedures and/or industry practices. The individual shall be familiar with the tools and equipment to be employed and shall have demonstrated proficiency in their use. The individual 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.

3.3 Level II Personnel Capabilities

A Level II person shall have all of the capabilities of a Level I person for the inspection, examination or test category or class in question. Additionally, a Level II person shall have demonstrated capabilities in planning inspections, examinations, and tests; in setting up tests including preparation and set-up of related equipment, as appropriate; in supervising or maintaining surveillance over the inspections, examinations, and tests; in supervising and certifying lower level personnel; in reporting inspection, examination, and testing results; and in evaluating the validity and acceptability of inspection, examination, and test results.

3.4 Level III Personnel Capabilities

A Level III person shall have all of the capabilities of a Level II person for the inspection, examination or test category or class in question. In addition, the individual shall also be capable of evaluating the adequacy of specific programs used to train and test inspection, examination, and test personnel whose qualifications are covered by this Standard.

3.5 Education and Experience—Recommendations

The following is the recommended personnel education and experience for each level. These education and experience recommendations should be treated to recognize that other factors may provide reasonable assurance that a person can competently perform a particular task. Other factors which may demonstrate capability in a given job are previous performance or satisfactory completion of capability testing.

3.5.1 Level I

(1) Two years of related experience in equivalent inspection, examination, or testing activities, or

(2) High school graduation and six months of related experience in equivalent inspection, examination, or testing activities, or

(3) Completion of college level work leading to an Associate Degree in a related discipline plus three months of related experience in equivalent inspection, examination, or testing activities.

3.5.2 Level II

(1) One year of satisfactory performance as Level I in the corresponding inspection, examination or test category or class, or

(2) High school graduation plus three years of related experience in equivalent inspection, examination, or testing activities, or

(3) Completion of college level work leading to an Associate Degree in a related discipline plus one year related experience in equivalent inspection, examination, or testing activities, or

(4) Four-year college graduation plus six months of related experience in equivalent inspection, examination, or testing activities.

3.5.3 Level III

(1) Six years of satisfactory performance as a Level II in the corresponding inspection, examination or test category or class, or

(2) High school graduation plus ten years of related experience in equivalent inspection, examination, or testing activities; or high school graduation plus eight years experience in equivalent inspection, examination, or testing activities, with at least two years as Level II, and with at least two years associated with nuclear facilities—or if not, at least sufficient training to be acquainted with the relevant quality assurance aspects of a nuclear facility, or

(3) Completion of college level work leading to an Associate Degree and seven years of related experience in equivalent inspection, examination, or testing activities, with at least two years of this experience associated with nuclear facilities—or if not, at least sufficient training to be acquainted with the relevant quality assurance aspects of a nuclear facility, or

(4) Four-year college graduation plus five years of related experience in equivalent inspection, examination, or testing activities, with at least two years of this experience associated with nuclear facilities—or if not, at least sufficient training to be acquainted with the relevant quality assurance aspects of a nuclear facility.

4. PERFORMANCE

Personnel who are assigned the responsibility and authority to perform functions covered by this Standard shall have, as a minimum, the level of capability shown in Table 1. When a single inspection or test requires implementation by a team or group, personnel not meeting the requirements of this Standard may be used in data-taking assignments or in plant or equipment operation provided they are supervised or overseen by a qualified individual participating in the inspection, examination, or test.

5. RECORDS

A file of records of personnel qualification shall be established and maintained by the employer. Collection, storage, and control of records required by this Standard shall be in accordance with ANSI N45.2.9.

6. REVISION OF ANSI STANDARDS REFERRED TO IN THIS DOCUMENT

When any of the Standards referred to in this document is superseded by a revision approved by ANSI, the revision is not mandatory until it has been incorporated as part of a contract.

Revisions to this Standard issued after the date of a specific contract invoking this Standard may be used by mutual consent of the purchaser and the supplier.

Table 1 Minimum Levels of Capability for Project Functions

Project Function	Level		
	L-I	L-II	L-III
Recording inspection, examination, and testing data*	X	X	X
Implementing inspection, examination, and testing procedures	X	X	X
Planning inspections, evaluations, and tests; setting up tests including preparation and set-up of related equipment		X	X
Evaluating the validity and acceptability of inspection, examination, and testing results		X	X
Reporting inspection, examination, and testing results		X	X
Supervising equivalent or lower level personnel		X	X
Qualifying lower level personnel		X	X
Evaluating the adequacy of specific programs used to train and test inspection, examination and testing personnel			X
Qualifying same level personnel			X

*Except as exempted by Section 4 of this Standard.

Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

May 6, 1985

Mr. James G. Keppler
Regional Administrator
Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Il 60137

SUBJECT: Braidwood Station Units 1 and 2
Response to Inspection Reports Nos.
50-456/85-006 and 50-457/85-006
NRC Docket Nos. 50-456 and 50-457

REFERENCE (a): R. F. Warnick letter to C. Reed
dated March 8, 1985

Dear Mr. Keppler:

This letter is in response to the inspection conducted by Mr. R. N. Gardner on February 4 through March 1, 1985, of activities at Braidwood Station. Reference (a) indicated that certain activities appeared to be in noncompliance with NRC requirements. The Commonwealth Edison Company disagrees with the items listed in the Notice of Violation. Our detailed discussion of the bases for our disagreement is provided in the enclosure.

Commonwealth Edison Company has initiated increased interface of the Project Licensing and Compliance group with the NRC BCAP resident inspector. It is our desire to assure that routine onsite communications with the NRC are clear and provide an appropriate level of attention to NRC concerns.

The delay in submitting this response was discussed with Mr. R. F. Warnick on April 8, 1985 and Mr. W. S. Little on April 22, 1985.

If you have any further questions on this matter, please direct them to this office.

Very truly yours,

D. L. Farrar
Director of Nuclear Licensing

/klj
Enclosure
cc: NRC Resident Inspector - Braidwood

0082K

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