



**Commonwealth Edison**  
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*2nd Response*

February 23, 1983

Mr. James G. Keppler, Regional Administrator  
Directorate of Inspection and  
Enforcement - Region III  
U.S. Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, IL 60137

Subject: Byron Station Units 1 and 2  
I & E Inspection Report Nos.  
50-454/82-05 and 50-455/82-04

- References (a): June 24, 1982 letter from C.E. Norelius  
to Cordell Reed
- (b): July 30, 1982 letter from W.L. Stiede  
to J.G. Keppler
- (c): September 22, 1982 letter from C.E.  
Norelius to Cordell Reed
- (d): November 5, 1982 letter from W.L. Stiede  
to J.G. Keppler

Dear Mr. Keppler:

This letter provides a revised response to an item of noncompliance at Byron Station which was identified as Violation 2 in reference (a). In references (b) and (d) we proposed actions to be taken to provide additional assurance that contractor quality control inspectors were properly trained and qualified or to assure that their inspections were valid. This letter documents an alternate plan which supercedes in part the previously proposed programs. We believe this plan will satisfy NRC concerns presented in references (a) and (c) and clarified in discussions with Region III personnel.

During the subject inspection the NRC found that the contractor programs for qualifying Q.A./Q.C. personnel at Byron were inconsistent with their interpretation of the requirements of ANSI N45.2.6-1978. Specifically, they found deficiencies in our contractor's evaluations of initial inspector capabilities, in documentation of initial certification, and in the criteria used to establish inspector qualification. The NRC did not find that these deficiencies had compromised the quality of plant construction. In issuing a violation, however, they made it clear that the qualification programs were to be upgraded and the quality of work completed was to be verified in some manner.

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Before explaining the program which we propose to implement in verifying the quality of the work completed, it is appropriate that we describe the history of changes made to the inspector qualification practices at Byron. This will demonstrate that we have always required qualified inspectors and that the contractor programs for inspector certification have been upgraded over the years to address the changing interpretation of the applicable industry standards.

#### Certification Practices

ANSI N45.2.6 is the standard applicable in establishing qualification programs for nuclear power plant Q.A./Q.C. personnel. Since its inception in the early 1970's the interpretation of acceptable application of this standard has evolved throughout the industry and at Byron.

From 1974 to 1977 our contractors were required to develop quality assurance programs and procedures for certification of inspectors which were directed toward their specific contractual scope of work. The certification programs depended on training and experience as the primary basis for qualification in accordance with the intent of ANSI N45.2.6-1973. To assure that the installations and inspections performed by the various contractor organizations were acceptable, the work was checked by reinspections and surveillances conducted by an on-site independent testing contractor directed by the Commonwealth Edison Quality Assurance Department and by technical audits and surveillances performed by Commonwealth Edison Quality Assurance personnel.

In 1979 and 1980 the contractors' programs and procedures for certification of inspectors were revised to address NRC concerns raised in a 1979 inspection. The procedures were made more specific with regard to the basis for qualification and certification of inspectors; yet they remained directed toward the various activities associated with the contractor's specific scope of work. The work continued to be checked by the independent testing contractor's reinspections and surveillances and the Quality Assurance Department's technical audits and surveillances. In early 1980 an audit was performed of the records of all inspectors who were then certified to assure that their training, qualification and certification activities and records conformed to the augmented requirements established after the 1979 NRC inspection. The NRC reviewed the results of this audit and the implementation of the augmented requirements and closed the deficiency identified in the 1979 inspection. We believed that our inspector qualification activities were acceptable according to the interpretation of ANSI N45.2.6 which was being applied at that time.

In 1982 the NRC has again reviewed the programs for qualification and certification of contractor inspectors at Byron. They found that uniform criteria had not been established for qualification of inspectors of various contractors that chose to develop alternate parameters and limitations.

N45.2.6 specifically states that the parameters contained there are recommended and that alternate means are acceptable. The standard provides no guidance on development of the alternate parameters and limitations so the contractors each developed these differently. The procedures and methodologies set forth by the various contractors have been reviewed, approved and audited for compliance by Commonwealth Edison. They all conform to ANSI N45.2.6-1978. As a result of various other inspection and audit results we are confident that the inspections were and are being performed in an acceptable manner.

To address the inspector's concern, however, minimum parameters and limitations were established in April 1982 to institute a common basis for inspector certification requirements for the various contractors. With input from NRC inspectors these requirements were further enhanced and reissued to the contractors on June 9, 1982. The applicable site contractors' procedures for qualification and certification of inspectors were revised between July and September 1982 to incorporate these new requirements.

To summarize, our contractors' inspector qualification and certification activities have been upgraded to remain consistent with the changing interpretation of acceptable application of ANSI N45.2.6. The certification upgrading activities do not imply deficiencies in work previously inspected. This conclusion has been verified through over-check inspections, audits, and surveillances.

#### Proposed Corrective Action

In responding to Violation 2 in reference (b) we established a program for assuring that all current inspectors are certified to upgraded requirements established in new contractor procedures. That program is not changed by this letter.

A new plan has been developed to address the NRC's concerns regarding work performed by inspectors no longer on site or inspectors who cannot presently be shown to have been qualified. Details of this plan are provided in Attachment A to this letter. Generally, we are proposing various reinspections which verify the adequacy of past QC inspector training/certification practices employed at Byron. For each site contractor we have delineated the manner in which construction quality would be reverified through reinspection of representative portions of the accessible work. In some cases reinspections which would accomplish this goal have been completed or are in progress. For other contractors new inspection programs are described here. We have delineated the scope of reinspections to be performed and the acceptance criteria which would be utilized. Schedules for this work have not yet been set. In the few cases where all of a contractor's work is inaccessible for reinspection we have highlighted the oversight inspections and testing which provide addition assurance of quality.

J. G. Keppler

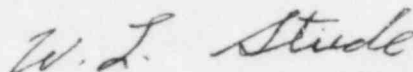
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We understand that NRC concurrence in these corrective actions is necessary to close out this noncompliance. We also understand that the NRC may wish to identify up to three additional inspectors of each contractor's work to be checked. The reinspection program would be conducted most efficiently if these additional names were known at the outset of our records review. Please contact Tom Tramm with these names as soon as possible and no later than March 1, 1983.

Please contact me if additional information is needed.

Very truly yours,



W. L. Stiede  
Assistant Vice-President

TRT/lm

Attachment

6029N

ATTACHMENT A

Byron Generating Station Site Contractors

Actions Taken or To Be Taken Which Verify the  
Adequacy of QC Inspection

6029N

CONTRACTOR : Chicago Bridge & Iron  
SCOPE OF WORK : Containment Liner  
DURATION : 12/75 - 7/79

ACTION TO BE TAKEN IN RESPONSE TO VIOLATION 2 (454/82-05-19; 455/82-04-19)

All inspectors were certified to SNT-TC-1A. No additional action is to be taken in response to Violation 2.

6029N

CONTRACTOR : Chicago Bridge & Iron  
SCOPE OF WORK : Field Erected Tanks  
DURATION : 9/77 - 12/78

ACTION TO BE TAKEN IN RESPONSE TO VIOLATION 2 (454/82-05-19; 455/82-04-19)

All inspectors were certified to SNT-TC-1A. No additional action is to be taken in response to Violation 2.

6029N

CONTRACTOR : Pittsburgh - Des Moines  
SCOPE OF WORK : Stainless Steel Liner  
DURATION : 3/78 - 11/79

ACTION TO BE TAKEN IN RESPONSE TO VIOLATION 2 (454/82-05-19; 455/82-04-19)

All inspectors were certified to SNT-TC-1A. No additional action is to be taken in response to Violation 2.

6029N



CONTRACTOR : Ebasco  
SCOPE OF WORK : Inservice Inspection  
DURATION : 5/81 - Continuing

ACTION TO BE TAKEN IN RESPONSE TO VIOLATION 2 (454/82-05-19; 455/82-04-19)

All inspectors were certified to SNT-TC-1A. No additional action is to be taken in response to Violation 2.

6029N

CONTRACTOR : Delta - Delta Midstates  
SCOPE OF WORK : Reinforcing Steel  
DURATION : 3/76 - 5/79

ACTION TO BE TAKEN IN RESPONSE TO VIOLATION 2 (454/82-05-19; 455/82-04-19)

All work is encased within concrete and therefore not accessible for reinspection. The size and spacing of rebar were the only parameters originally checked. Before each pour this contractor's work was reviewed and signed off by representatives of Blount, CECO QA, and CECO construction. No additional action is to be taken in response to Violation 2.

CONTRACTOR : Contracting & Materials Co.  
SCOPE OF WORK : Essential Service Water Make-Up Liner  
DURATION : 2/77 - 11/78

ACTION TO BE TAKEN IN RESPONSE TO VIOLATION 2 (454/82-05-19; 455/82-04-19)

All work is encased in concrete and buried, and therefore not accessible for reinspection. The ANI inspected all fitups and other hold points including the witnessing of some of PTL's mag particle inspections of welds. No additional action is to be taken in response to Violation 2.

6029N

CONTRACTOR : Ceramic Cooling Towers/Contracting & Materials Co.  
(Subcontractor)  
SCOPE OF WORK : Essential Service Water Cooling Towers Accessories  
DURATION : 6/78 - 4/79

ACTION TO BE TAKEN IN RESPONSE TO VIOLATION 2 (454/82-05-19; 455/82-04-19)

All work is encased within concrete and fill of cooling towers; and therefore not accessible for reinspection. The ANI inspected all fitups and other hold points including the witnessing of some of PTL's mag particle inspections of welds. The adequacy of fill placement will be assured through initial performance testing of the cooling towers. No additional action is to be taken in response to Violation 2.

CONTRACTOR : Reliance Truck  
SCOPE OF WORK : Transport & Lift NSSS  
DURATION : 7/76 - 4/80

ACTION TO BE TAKEN IN RESPONSE TO VIOLATION 2 (454/82-05-19; 455/82-04-19)

The scope of their work was confined to rigging, transporting, and lifting operations. Their inspections were limited to handling devices and rigging details and are not reproducible at this stage. Any damage caused by these operations would have been detected and corrected during other erection activities. No additional action is to be taken in response to Violation 2.

CONTRACTOR : Reliable Sheet Metal  
SCOPE OF WORK : HVAC Installation  
DURATION : 11/77 - Continuing

ACTION TO BE TAKEN IN RESPONSE TO VIOLATION 2 (454/82-05-19; 455/82-04-19)

Their work is presently being reinspected to revised techniques which are more complex than previously employed. Hardware is being reinspected to the following attributes: weld quality, member size and configuration, material traceability, etc. of ductwork, accessories, equipment and supports. All work is in scope of reinspection, even though it may have been previously inspected. No additional action is to be taken in response to Violation 2.

CONTRACTOR : Johnson Controls  
SCOPE OF WORK : HVAC Controls  
DURATION : 2/78 - Continuing

ACTION TO BE TAKEN IN RESPONSE TO VIOLATION 2 (454/82-05-19; 455/82-04-19)

An additional reinspection will be performed. The reinspection will be conducted on a sample size established as follows:

Each quality control inspector who has been certified since beginning of project will be selected and each individual inspection performed during the inspectors first three months will be reinspected, where accessible. Inaccessible shall be defined as: condition where dismantling would be required to gain access, or condition where process was an event which can not be recreated.

The acceptable quality level (i.e. maximum percent rejections) will be established as follows:

The reinspection shall be accomplished utilizing the inspection criteria applicable to the initial inspection period. For attributes which are objective in nature and therefore have a higher degree of repeatability the acceptable quality level will be 5%. For attributes which are subjective in nature and therefore have a lower degree of repeatability the acceptable quality level will be 10%. Reinspection rejections on attributes which are subjective in nature will be evaluated by independent third party inspectors to establish true rejectability; additionally reinspection rejections on attributes which are objective in nature will be evaluated by independent third party inspectors to establish true rejectability if trends and quantities appear to require evaluation.

The sample size expansion will be established as follows:

Where true rejectability is greater than 10% for subjective attributes or greater than 5% for objective attributes for an individual inspector, then an additional three months of inspection work will be reinspected, where accessible, for that individual for the type of inspection attribute exceeding the acceptable quality level. If the rejections continue to exceed the acceptable quality level after the completion of the additional three month period for that individual, then all the individual inspections, of that attribute, performed by that inspector for the remainder of his work will be reinspected, where accessible.

APPENDIX:

Definitions:

Inaccessible - condition where dismantling would be required to gain access; examples: fit-up gap of piping and fittings, internal cleanliness, et.al., note: the requirement to remove fire proofing and insulation will not classify an item as inaccessible.

- condition where process was an event which can not be recreated; examples: interpass temperature, element has been reworked as a result of revision or other cause, et.al.

Objective Inspection Attribute - feature which by its physical nature has a high degree of repeatability; examples: material size, shape, traceability, dimensional configuration, examination reporting, et. al.

Subjective Inspection Attribute - feature which by its nature has a lower degree of repeatability due to its dependence upon human sensory qualities; examples: visual weld examination, et. al.



CONTRACTOR : Powers-Azco-Pope  
SCOPE OF WORK : Instrumentation Installation  
DURATION : 8/78 - Continuing

ACTION TO BE TAKEN IN RESPONSE TO VIOLATION 2 (454/82-05-19; 455/82-04-19)

An additional reinspection will be performed. The reinspection will be conducted on a sample size established as follows:

Each quality control inspector who has been certified since beginning of project will be selected and each individual inspection performed during the inspectors first three months will be reinspected, where accessible. Inaccessible shall be defined as: condition where dismantling would be required to gain access, or condition where process was an event which can not be recreated.

The acceptable quality level (i.e. maximum percent rejections) will be established as follows:

The reinspection shall be accomplished utilizing the inspection criteria applicable to the initial inspection period. For attributes which are objective in nature and therefore have a higher degree of repeatability the acceptable quality level will be 5%. For attributes which are subjective in nature and therefore have a lower degree of repeatability the acceptable quality level will be 10%. Reinspection rejections on attributes which are subjective in nature will be evaluated by independent third party inspectors to establish true rejectability; additionally reinspection rejections on attributes which are objective in nature will be evaluated by independent third party inspectors to establish true rejectability if trends and quantities appear to require evaluation.

The sample size expansion will be established as follows:

Where true rejectability is greater than 10% for subjective attributes or greater than 5% for objective attributes for an individual inspector, then an additional three months of inspection work will be reinspected, where accessible, for that individual for the type of inspection attribute exceeding the acceptable quality level. If the rejections continue to exceed the acceptable quality level after the completion of the additional three month period for that individual, then all the individual inspections, of that attribute, performed by that inspector for the remainder of his work will be reinspected, where accessible.

APPENDIX:

Definitions:

Inaccessible - condition where dismantling would be required to gain access; examples: embedded or buried piping, internal diameter alignment of piping, and fittings, fit-up gap of piping and fittings, et.al., note: the requirement to remove fire proofing and insulation will not classify an item as inaccessible.

- condition where process was an event which can not be recreated; examples: interpass temperature, element has been reworked as a result of revision or other cause, et.al.

Objective Inspection Attribute - feature which by its physical nature has a high degree of repeatability; examples: material size, shape, traceability, dimensional configuration, examination reporting, et. al.

Subjective Inspection Attribute - feature which by its nature has a lower degree of repeatability due to its dependence upon human sensory qualities; examples: visual weld examination, et. al.

CONTRACTOR : Blount Brothers  
SCOPE OF WORK : Plant Structures  
DURATION : 6/75 - Continuing

ACTION TO BE TAKEN IN RESPONSE TO VIOLATION 2 (454/82-05-19; 455/82-04-19)

An additional reinspection will be performed. The reinspection will be conducted on a sample size established as follows:

From a chronological listing based on date of certification of each quality control inspector who has been certified since beginning of project, every 5th inspector beginning with the 5th will be selected and each individual inspection performed during the inspectors first three months will be reinspected, where accessible. Inaccessible shall be defined as: condition where dismantling would be required to gain access, or condition where process was an event which can not be recreated. If an inspector is selected who has no inspections accessible, the next succeeding inspector will be selected.

The acceptable quality level (i.e. maximum percent rejections) will be established as follows:

The reinspection shall be accomplished utilizing the inspection criteria applicable to the initial inspection period. For attributes which are objective in nature and therefore have a higher degree of repeatability the acceptable quality level will be 5%. For attributes which are subjective in nature and therefore have a lower degree of repeatability the acceptable quality level will be 10%. Reinspection rejections on attributes which are subjective in nature will be evaluated by independent third party inspectors to establish true rejectability; additionally reinspection rejections on attributes which are objective in nature will be evaluated by independent third party inspectors to establish true rejectability if trends and quantities appear to require evaluation.

The sample size expansion will be established as follows:

Where true rejectability is greater than 10% for subjective attributes or greater than 5% for objective attributes for an individual inspector, then an additional three months of inspection work will be reinspected, where accessible, for that individual for the type of inspection attribute exceeding the acceptable quality level. If the rejections continue to exceed the acceptable quality level after the completion of the additional three month period for that individual, then all the individual inspections, of that attribute, performed by that inspector for the remainder of his work will be reinspected, where accessible; and the original sample size of inspectors being reviewed will be increased by 50%.

APPENDIX:

Definitions:

Inaccessible - condition where dismantling would be required to gain access; examples: encased structural steel and encased block wall columns, shear studs and deformed wire anchors encased in concrete, concrete and block wall reinforcement, et.al., note: the requirement to remove fire proofing and insulation will not classify an item as inaccessible.

- condition where process was an event which can not be recreated; examples: concrete placement, receiving inspection, post tensioning pre-load values, element has been reworked as a result of revision or other cause, et.al.

Objective Inspection Attribute - feature which by its physical nature has a high degree of repeatability; examples: material size, shape, traceability, dimensional configuration, examination reporting, et. al.

Subjective Inspection Attribute - feature which by its nature has a lower degree of repeatability due to its dependence upon human sensory qualities; examples: visual weld examination, et. al.

CONTRACTOR : Hunter Corporation  
SCOPE OF WORK : Piping System Installation  
DURATION : 1/77 - Continuing

ACTION TO BE TAKEN IN RESPONSE TO VIOLATION 2 (454/82-05-19; 455/82-04-19)

An additional reinspection will be performed. The reinspection will be conducted on a sample size established as follows:

From a chronological listing based on date of certification of each quality control inspector who has been certified since beginning of project, every 5th inspector beginning with the 5th will be selected and each individual inspection performed during the inspectors first three months will be reinspected, where accessible. Inaccessible shall be defined as: condition where dismantling would be required to gain access, or condition where process was an event which can not be recreated. If an inspector is selected who has no inspections accessible, the next succeeding inspector will be selected.

The acceptable quality level (i.e. maximum percent rejections) will be established as follows:

The reinspection shall be accomplished utilizing the inspection criteria applicable to the initial inspection period. For attributes which are objective in nature and therefore have a higher degree of repeatability the acceptable quality level will be 5%. For attributes which are subjective in nature and therefore have a lower degree of repeatability the acceptable quality level will be 10%. Reinspection rejections on attributes which are subjective in nature will be evaluated by independent third party inspectors to establish true rejectability; additionally reinspection rejections on attributes which are objective in nature will be evaluated by independent third party inspectors to establish true rejectability if trends and quantities appear to require evaluation.

The sample size expansion will be established as follows:

Where true rejectability is greater than 10% for subjective attributes or greater than 5% for objective attributes for an individual inspector, then an additional three months of inspection work will be reinspected, where accessible, for that individual for the type of inspection attribute exceeding the acceptable quality level. If the rejections continue to exceed the acceptable quality level after the completion of the additional three month period for that individual, then all the individual inspections, of that attribute, performed by that inspector for the remainder of his work will be reinspected, where accessible; and the original sample size of inspectors being reviewed will be increased by 50%.

APPENDIX:

Definitions:

Inaccessible - condition where dismantling would be required to gain access; examples: embedded or buried piping, internal diameter alignment of piping and fittings, fit-up gap of piping and fittings, et.al., note: the requirement to remove fire proofing and insulation will not classify an item as inaccessible.

- condition where process was an event which can not be recreated; examples: post-weld heat treatment, interpass temperature, element has been reworked as a result of revision or other cause, et.al.

Objective Inspection Attribute - feature which by its physical nature has a high degree of repeatability; examples: material size, shape, traceability, dimensional configuration, examination reporting, et. al.

Subjective Inspection Attribute - feature which by its nature has a lower degree of repeatability due to its dependence upon human sensory qualities; examples: visual weld examination, et. al.

CONTRACTOR : Hatfield Electric  
SCOPE OF WORK : Electrical Installation  
DURATION : 7/76 - Continuing

ACTION TO BE TAKEN IN RESPONSE TO VIOLATION 2 (454/82-05-19; 455/82-04-19)

An additional reinspection will be performed. The reinspection will be conducted on a sample size established as follows:

From a chronological listing based on date of certification of each quality control inspector who has been certified since beginning of project, every 5th inspector beginning with the 5th will be selected and each individual inspection performed during the inspectors first three months will be reinspected, where accessible. Inaccessible shall be defined as: condition where dismantling would be required to gain access, or condition where process was an event which can not be recreated. If an inspector is selected who has no inspections accessible, the next succeeding inspector will be selected.

The acceptable quality level (i.e. maximum percent rejections) will be established as follows:

The reinspection shall be accomplished utilizing the inspection criteria applicable to the initial inspection period. For attributes which are objective in nature and therefore have a higher degree of repeatability the acceptable quality level will be 5%. For attributes which are subjective in nature and therefore have a lower degree of repeatability the acceptable quality level will be 10%. Reinspection rejections on attributes which are subjective in nature will be evaluated by independent third party inspectors to establish true rejectability; additionally reinspection rejections on attributes which are objective in nature will be evaluated by independent third party inspectors to establish true rejectability if trends and quantities appear to require evaluation.

The sample size expansion will be established as follows:

Where true rejectability is greater than 10% for subjective attributes or greater than 5% for objective attributes for an individual inspector, then an additional three months of inspection work will be reinspected, where accessible, for that individual for the type of inspection attribute exceeding the acceptable quality level. If the rejections continue to exceed the acceptable quality level after the completion of the additional three month period for that individual, then all the individual inspections, of that attribute, performed by that inspector for the remainder of his work will be reinspected, where accessible; and the original sample size of inspectors being reviewed will be increased by 50%.

APPENDIX:

Definitions:

Inaccessible - condition where dismantling would be required to gain access; examples: embedded conduit, buried and embedded duct runs, cable splices, et.al., note: the requirement to remove fire proofing and insulation will not classify an item as inaccessible.

- condition where process was an event which can not be recreated; examples: cable pulling, handling of equipment, receiving inspection, et.al.

Objective Inspection Attribute - feature which by its physical nature has a high degree of repeatability; examples: material size, shape, traceability, dimensional configuration, examination reporting, et. al.

Subjective Inspection Attribute - feature which by it nature has a lower degree of repeatability due to its dependence upon human sensory qualities; examples: visual weld examination, et. al.



CONTRACTOR : Nuclear Installation Services Co.  
SCOPE OF WORK : NSSS Assembly  
DURATION : 6/78 - Continuing

ACTION TO BE TAKEN IN RESPONSE TO VIOLATION 2 (454/82-05-19; 455/82-04-19)

An additional sampling reinspection will be performed. The sample size will be established as follows:

From a chronological listing based on date of certification of each quality control inspector who has been certified since beginning of project, every 5th inspector beginning with the 5th will be selected and each individual inspection performed during the inspectors first three months will be reinspected, where accessible. Inaccessible shall be defined as: condition where dismantling would be required to gain access, or condition where process was an event which can not be recreated. If an inspector is selected who has no inspections accessible, the next succeeding inspector will be selected.

The acceptable quality level (i.e. maximum percent rejections) will be established as follows:

The reinspection shall be accomplished utilizing the inspection criteria applicable to the initial inspection period. For attributes which are objective in nature and therefore have a higher degree of repeatability the acceptable quality level will be 5%. For attributes which are subjective in nature and therefore have a lower degree of repeatability the acceptable quality level will be 10%. Reinspection rejections on attributes which are subjective in nature will be evaluated by independent third party inspectors to establish true rejectability; additionally reinspection rejections on attributes which are objective in nature will be evaluated by independent third party inspectors to establish true rejectability if trends and quantities appear to require evaluation.

The sample size expansion will be established as follows:

Where true rejectability is greater than 10% for subjective attributes or greater than 5% for objective attributes for an individual inspector, then an additional three months of inspection work will be reinspected, where accessible, for that individual for the type of inspection attribute exceeding the acceptable quality level. If the rejections continue to exceed the acceptable quality level after the completion of the additional three month period for that individual, then all the individual inspections, of that attribute, performed by that inspector for the remainder of the job will be reinspected, where accessible; and the original sample size of inspectors being reviewed will be increased by 50%.

APPENDIX:

Definitions:

- Inaccessible - condition where dismantling would be required to gain access; examples: components and assemblies contained within reactor vessel shroud, et.al., note: the requirement to remove fire proofing and insulation will not classify an item as inaccessible.
- condition where process was an event which can not be recreated; examples: interpass temperature, element has been reworked as a result of revision or other cause, et.al.

Objective Inspection Attribute - feature which by its physical nature has a high degree of repeatability; examples: material size, shape, traceability, dimensional configuration, examination reporting, et. al.

Subjective Inspection Attribute - feature which by it nature has a lower degree of repeatability due to its dependence upon human sensory qualities; examples: visual weld examination, et. al.

CONTRACTOR : Peabody Testing  
SCOPE OF WORK : Independent Inspection  
DURATION : 6/75 - 8/79

ACTION TO BE TAKEN IN RESPONSE TO VIOLATION 2 (454/82-05-19; 455/82-04-19)

An additional sampling reinspection will be performed. The sample size will be established as follows:

From a chronological listing based on date of certification of each quality control inspector who has been certified since beginning of project, every 5th inspector beginning with the 5th will be selected and each individual inspection performed during the inspectors first three months will be reinspected, where accessible. Inaccessible shall be defined as: condition where dismantling would be required to gain access, or condition where process was an event which can not be recreated. If an inspector is selected who has no inspections accessible, the next succeeding inspector will be selected.

The acceptable quality level (i.e. maximum percent rejections) will be established as follows:

The reinspection shall be accomplished utilizing the inspection criteria applicable to the initial inspection period. For attributes which are objective in nature and therefore have a higher degree of repeatability the acceptable quality level will be 5%. For attributes which are subjective in nature and therefore have a lower degree of repeatability the acceptable quality level will be 10%. Reinspection rejections on attributes which are subjective in nature will be evaluated by independent third party inspectors to establish true rejectability; additionally reinspection rejections on attributes which are objective in nature will be evaluated by independent third party inspectors to establish true rejectability if trends and quantities appear to require evaluation.

The sample size expansion will be established as follows:

Where true rejectability is greater than 10% for subjective attributes or greater than 5% for objective attributes for an individual inspector, then an additional three months of inspection work will be reinspected, where accessible, for that individual for the type of inspection attribute exceeding the acceptable quality level. If the rejections continue to exceed the acceptable quality level after the completion of the additional three month period for that individual, then all the individual inspections, of that attribute, performed by that inspector for the remainder of the job will be reinspected, where accessible; and the original sample size of inspectors being reviewed will be increased by 50%.

APPENDIX:

Definitions:

Inaccessible - condition where dismantling would be required to gain access; examples: embedded structural bolts, cadwelds, soils tests, et.al., note: the requirement to remove fire proofing and insulation will not classify an item as inaccessible.

- condition where process was an event which can not be recreated; examples: concrete placement, et.al.

Objective Inspection Attribute - feature which by its physical nature has a high degree of repeatability; examples: torque checks, et. al.

Subjective Inspection Attribute - feature which by it nature has a lower degree of repeatability due to its dependence upon human sensory qualities; examples: visual weld examination, et. al.

CONTRACTOR : Pittsburgh Testing  
SCOPE OF WORK : Independent Inspection  
DURATION : 9/79 - Continuing

ACTION TO BE TAKEN IN RESPONSE TO VIOLATION 2 (454/82-05-19; 455/82-04-19)

An additional sampling reinspection will be performed. The sample size will be established as follows:

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The acceptable quality level (i.e. maximum percent rejections) will be established as follows:

The reinspection shall be accomplished utilizing the inspection criteria applicable to the initial inspection period. For attributes which are objective in nature and therefore have a higher degree of repeatability the acceptable quality level will be 5%. For attributes which are subjective in nature and therefore have a lower degree of repeatability the acceptable quality level will be 10%. Reinspection rejections on attributes which are subjective in nature will be evaluated by independent third party inspectors to establish true rejectability; additionally reinspection rejections on attributes which are objective in nature will be evaluated by independent third party inspectors to establish true rejectability if trends and quantities appear to require evaluation.

The sample size expansion will be established as follows:

Where true rejectability is greater than 10% for subjective attributes or greater than 5% for objective attributes for an individual inspector, then an additional three months of inspection work will be reinspected, where accessible, for that individual for the type of inspection attribute exceeding the acceptable quality level. If the rejections continue to exceed the acceptable quality level after the completion of the additional three month period for that individual, then all the individual inspections, of that attribute, performed by that inspector for the remainder of the job will be reinspected, where accessible; and the original sample size of inspectors being reviewed will be increased by 50%.

APPENDIX:

Definitions:

Inaccessible - condition where dismantling would be required to gain access; examples: embedded structural bolts, non-destructive examination of field welds embedded in concrete, et.al., note: the requirement to remove fire proofing and insulation will not classify an item as inaccessible.

- condition where process was an event which can not be recreated; examples: concrete placement, in process non-destructive examinations of welds, electrical cable pulling, calibrations, et.al.

Objective Inspection Attribute - feature which by its physical nature has a high degree of repeatability; examples: final inspection non-destructive examination of welds, torque checks, et. al.

Subjective Inspection Attribute - feature which by its nature has a lower degree of repeatability due to its dependence upon human sensory qualities; examples: visual weld examination, et. al.

CONTRACTOR : Mid-City Architectural Iron  
SCOPE OF WORK : Gallery Work (included structural steel)  
DURATION : 3/77 - 12/80

ACTION TO BE TAKEN IN RESPONSE TO VIOLATION 2 (454/82-05-19; 455/82-04-19)

Structural steel installations are being reinspected on a sampling basis. No additional action is to be taken in response to Violation 2.

The structural steel reinspections are being performed on the following basis:

A reinspection is being performed on structural steel members to verify that structural steel is in conformance with design requirements. The structural steel members are being reinspected on a statistical sample established in accordance with MIL Std. 105D with data base parameters to establish 95% confidence/95% reliability. Reinspection program has been named Quality Control Structural Steel Review (QCSSR).

CONTRACTOR : American Bridge  
SCOPE OF WORK : Structural Steel Erection  
DURATION : 2/77 - 5/78

ACTION TO BE TAKEN IN RESPONSE TO VIOLATION 2 (454/82-05-19; 455/82-04-19)

Structural steel installations are being reinspected on a sampling basis. No additional action is to be taken in response to Violation 2.

The structural steel reinspections are being performed on the following basis:

Structural steel bolting was reinspected on a statistical sample established in accordance with MIL Std. 105D with data base parameters to establish 95% confidence/95% reliability. The reinspection was the subject of a 10CFR50.55.e, reference reportable deficiency 82-08, which was communicated by final report dated January 14, 1983. Additionally, a reinspection is being performed on structural steel members to verify that structural steel is in conformance with design requirements. The structural steel members are being reinspected on a statistical sample established in accordance with MIL Std. 105D with data base parameters to establish 95% confidence/95% reliability. Reinspection program has been named Quality Control Structural Steel Review (QCSSR).



CONTRACTOR : Midway Industrial  
SCOPE OF WORK : Field Finish Coating  
DURATION : 5/78 - Continuing

ACTION TO BE TAKEN IN RESPONSE TO VIOLATION 2 (454/82-05-19; 455/82-04-19)

The field finish coating work has been overview inspected by the Commonwealth Edison Operational Analysis Department. The overview inspection consisted of a check of ambient conditions, inspection of surface preparation, batch mixing, film thickness measurements and visual examination of finish coatings, and inspection of stored materials. Due to the comprehensiveness of overview inspections no additional action is to be taken in response to Violation 2.