



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

PRC

OCT 5 1984

Docket Nos: STN 50-454  
and STN 50-455

MEMORANDUM FOR: The Atomic Safety and Licensing Board for Byron:

Ivan W. Smith  
Dr. Dixon Callihan  
Dr. Richard F. Cole

The Atomic Safety and Licensing Appeal Board for Byron:

Alan S. Rosenthal  
Dr. Reginald L. Gotchy  
Howard A. Wilber

FROM: Thomas M. Novak, Assistant Director  
for Licensing  
Division of Licensing

SUBJECT: FOLLOW-UP ON ALLEGATIONS AT BYRON (BOARD NOTIFICATION  
84-165)

In accordance with the present NRC procedures for Board Notifications, the following information is being provided:

1. Letter from D. J. McDonald, Charles W. Allison, Michael F. Sullivan and Robert P. Holt (National Board of Boiler and Pressure Vessel Inspectors) to Cordell Reed (Commonwealth Edison), Subject: "National Board Audit of the Byron Nuclear Station Units 1 & 2; Byron, Illinois," dated July 16, 1984.
2. Letter from V. I. Schlosser (Commonwealth Edison) to D. J. McDonald (National Board of Boiler and Pressure Vessel Inspectors), Subject: "National Board Audit of the Byron Nuclear Station Units 1 and 2," dated August 1, 1984.
3. Letter from D. J. McDonald, Charles W. Allison, Michael F. Sullivan, Robert P. Holt and Ronald J. Scott, (National Board of Boiler and Pressure Vessel Inspectors) to Cordell Reed (Commonwealth Edison), Subject: "National Board Audit of the Byron Nuclear Station Units 1 & 2; Byron, Illinois," dated August 17, 1984.

N005

8410120254

OCT 5 1984

-2-

4. Memo to John Streeter (NRC) from S. F. Harrison (National Board of Boiler and Pressure Vessel Inspectors), Subject: "Allegations Listed in J. M. Hind's Memo to D. W. Hayes Dated March 14, 1984 Concerning Intimidation of Authorized Nuclear Inspectors (ANI's) and Improprieties on the Part of ANI Supervision - Hartford Steam Boiler Inspection and Insurance Company," dated August 31, 1984.

These documents relate to the allegations enclosed in Board Notification 84-070, dated April 16, 1984. The first two documents were provided to the Atomic Safety and Licensing Board and parties during the Byron hearing the week of August 20, 1984.

The National Board of Boiler and Pressure Vessel Inspectors concluded in its August 31, 1984 memo that "the allegations in most instances were correct, however, it appears that they were programmatic and additional audits by the audit team revealed supporting documentation that assured there was not apparent effect on the hardware. Furthermore, procedures were revised and corrective action has been proposed and is being implemented to assure Code compliance."



Thomas M. Novak, Assistant Director  
for Licensing  
Division of Licensing

Enclosures:  
As stated

cc: EDO  
ACRS (10)  
Parties to the Proceeding  
See next page

DISTRIBUTION LIST FOR BOARD NOTIFICATION

Byron Units 1&2  
Docket No. 50-454,455

Dr. A. Dixon Callihan  
Doug Cassel, Esq.  
Ms. Diane Chavez  
Dr. Richard F. Cole  
Joseph Gallo, Esq.  
Dr. Reginald L. Gotchy  
Mrs. Phillip B. Johnson  
Michael Miller, Esq.  
Ms. Pat Morrison  
Alan S. Rosenthal, Esq.  
Ivan W. Smith, Esq.  
John Streeter, Reg. III  
Dr. Bruce von Zellen  
Howard A. Wilber, Esq.  
Steven P. Zimmerman, Esq.  
Mr. Dennis L. Farrar  
Mr. William Kortier  
Atomic Safety and Licensing  
Board Panel  
Atomic Safety and Licensing  
Appeal Panel  
Docketing and Service Section  
Document Management Branch  
Mr. Edward R. Crass  
Mr. Julian Hinds  
Mr. James G. Keppler  
David C. Thomas, Esq.  
Ms. Lorraine Creek

# The National Board of Boiler and Pressure Vessel Inspectors

S. F. HARRISON, Executive Director

## BOARD OF TRUSTEES

B. L. WHITLEY, Chairman  
Raleigh, North Carolina

R. K. BLOSCH, 1st Vice Chm.  
Salt Lake City, Utah

C. H. WALTERS, 2nd Vice Chm.  
Portland, Oregon

1055 CRUPPER AVENUE  
COLUMBUS, OHIO 43229 U.S.A.  
Phone 614-868-8320  
Telex 246-625



WILLIAM CIMINO  
State of Colorado

B. W. COLE  
Province of British Columbia

J. J. DUFFY  
State of Wisconsin

J. T. CROSBY, Past Chairman  
Little Rock, Arkansas

July 16, 1984

Mr. Cordell Reed, Vice President  
Commonwealth Edison Company  
PO Box 767  
Chicago, Illinois 60690

SUBJECT: National Board Audit of the Byron Nuclear Station  
Units 1 & 2; Byron, Illinois

Dear Mr. Reed:

Commonwealth Edison, in a letter dated April 25, 1984, to Mr. S. F. Harrison, Executive Director, The National Board of Boiler and Pressure Vessel Inspectors, requested the National Board to perform an independent audit of the Byron Nuclear Station. The purpose of this audit was to determine the confidence in the quality of work at the Byron station.

As a result of this request, a meeting was held in the National Board of Boiler and Pressure Vessel Inspectors' offices in Columbus, Ohio, on May 21, 1984, with representatives of Commonwealth Edison Company, where arrangements were made to begin the audit.

On June 11, 1984, the National Board audit team consisting of Charles W. Allsion, team leader, Robert P. Holt, team member and Michael F. Sullivan, team member, met with the following personnel at the Byron Nuclear Power Station:

G. Sorensen	Construction Superintendent Commonwealth Edison Company
M. E. Lohmann	Assistant Construction Superintendent Commonwealth Edison Company
V. Schlosser	Project Manager/Byron Commonwealth Edison Company
P. R. Donavin	Field Engineering Coordinator Commonwealth Edison Company
R. J. Moravec	Mechanical Supervisor Commonwealth Edison Company
G. F. Marcus	Director of Quality Assurance Commonwealth Edison Company

JUL 18 1984

Mr. Cordell Reed, Vice President  
Commonwealth Edison Company  
July 16, 1984  
page 2

W. J. Shewski	Manager, Quality Assurance Commonwealth Edison Company
J. L. Woldridge	Quality Assurance Supervisor Commonwealth Edison Company
K. J. Hansing	Quality Assurance Superintendent Commonwealth Edison Company
B. Krasawski	Project Manager Hunter Corporation
M. L. Somsag	Quality Assurance Supervisor Hunter Corporation
Kenneth V. Jackson	Lead Engineer Nuclear Installation Services Company
Paul Deeds, Jr.	Quality Assurance Manager Nuclear Installation Services Company
R. P. Larkin	Quality Assurance Manager Powers Asco Pope J.V.
R. T. Rainey	Assistant Regional Manager Hartford Steam Boiler Inspection & Insurance Company
J. L. Hendricks	Authorized Nuclear Inspector Hartford Steam Boiler Inspection & Insurance Company
David M. Reynolds	Authorized Nuclear Inspector Hartford Steam Boiler Inspection & Insurance Company
David A. Tarkowski	Authorized Nuclear Inspector Hartford Steam Boiler Inspection & Insurance Company
Leonard McGregor	Senior Resident Inspector U.S. Nuclear Regulatory Commission

Mr. Allison stated that the National Board audit was being conducted at the request of Commonwealth Edison Company. The audit is to be a comprehensive and complete independent audit of ASME Code construction and related activities of Commonwealth Edison and their subcontractors to demonstrate the quality of the construction as related to ASME Code requirements.

Commonwealth Edison and its subcontractors were advised that the audit team would review the QA programs and QA/QC activities of all site certificate holders with special emphasis on the following areas:

Mr. Cordell Reed, Vice President  
Commonwealth Edison Company  
July 16, 1984  
page 3

1. Authorized Nuclear Inspector, Authorized Nuclear Inspector Supervisor and Authorized Nuclear Inspection Agency activities.
2. Documentation review and data reports.
3. Control of processes and inspection.
4. Special processes, procedures and qualification of personnel.

The audit team informed Commonwealth Edison and its subcontractors that although the audit was being categorized into four general areas, that if, in the investigation of findings or concerns the team was led to other areas not specifically within the scope of the audit, they would be pursued to determine if there was an impact upon the quality of the hardware.

Commonwealth Edison was also advised that monthly reports would be issued to the following organizations:

1. Commonwealth Edison Company
2. U.S. Nuclear Regulatory Commission
3. Chief Boiler Inspector, State of Illinois

The team advised Commonwealth Edison and its subcontractors that all findings would be reported. If a finding was closed prior to the issuance of the monthly report, the finding would be reported and identified as closed. The National Board audit team will verify the closure of all findings.

#### 1.0 Introduction

- 1.1 Commonwealth Edison Company is the owner of the Byron Nuclear Power Station Units 1 & 2. Commonwealth Edison Company is in possession of ASME Owners Certificate of Authorization Owners 115 and Owners 116 for the Byron Nuclear Power Station Units 1 & 2. Both certificates were issued on April 21, 1982, and are due to expire on April 21, 1985. ASME Owners certificates were originally issued for Units 1 & 2 on April 21, 1976.

Commonwealth Edison is also in possession of the following ASME Certificates of Authorization:

"N"	N-2020	issued 12/30/83	expires 02/03/87
"NPT"	N-1072-5	issued 07/23/82	expires 07/23/85
"NA"	N-1073-5	issued 07/23/82	expires 07/23/85

- 1.2 The Architect Engineer (AE) and subcontractors at this site are:

- 1.2.1 A/E Sargent & Lundy Engineers; Chicago, Illinois

Mr. Cordell Reed, Vice President  
Commonwealth Edison Company  
July 16, 1984  
page 4

- 1.2.2 Hunter Corporation; Hammond, Indiana, is the prime contractor. Hunter Corporation is the holder of "NA" Certificate of Authorization N-2268-1 and "NPT" Certificate of Authorization N-2269-1, both due to expire January 5, 1985. These certificates are issued for the Byron Nuclear Station Units 1 & 2 only.
- 1.2.3 Nuclear Installation Services Company; Nitro, West Virginia, holds "NA" Certificate of Authorization N-2159-2, Class 1, 2 & 3, installation of parts, appurtenances, piping subassemblies and component supports; Class 1 installation of control rod drive housings and CS installation of core support structures at the Byron Nuclear Station Units 1 & 2; Byron, Illinois only.
- 1.2.4 Powers Azco Pope, an unincorporated joint venture, holds "NA" Certificate of Authorization N-2571, Class 1, 2 & 3 installation of components, penetration assemblies and component supports at the Byron Nuclear Station Units 1 & 2; Byron, Illinois only.
- 1.2.5 Chicago Bridge and Iron Company; Oak Brook, Illinois. Fabricated and erected the containment vessels. The containment vessels are built to the draft rules of ASME Section III, Division II and were not inspected or stamped ASME Code.
- 1.2.6 Hartford Steam Boiler Inspection and Insurance Company is the Authorized Inspection Agency for the owner and all certificate holders at the Byron site. As such, they provide the Authorized Nuclear Inspectors for the site.
- 1.3 Based on the information from Commonwealth Edison, the ASME Code of record is ASME Section III 1974 Edition with addenda summer 1975.
- 1.4 Charles W. Allison, Robert P. Holt and Michael F. Sullivan were the National Board audit team members on site for this report period of June 11 through July 6, 1984.
- 1.5 The following lists the organizations audited or scheduled to be audited and the findings or concerns to date.
- 1.6 This report will identify six (6) findings and two (2) concerns.

2.0 Commonwealth Edison Company

2.1 As of this date, the audit team has not audited the activities performed by Commonwealth Edison. These activities are scheduled to be audited during the next report period and will be reported in this section (2.0).

3.0 Hunter Corporation

NA-4210  
NA-5241

3.1 There appears to be a conflict between the requirements of the Hunter QA manual and the requirements of the site implementation procedures (SIP's) which implement the manual.

Paragraph 4.3(b) of the Quality Assurance manual requires continuation sheets which are generated in the field to be presented to the ANI for review prior to issuance to the field.

Paragraph 8.2 and 8.3 of the SIP 4000 allows the production supervisor to initiate continuation sheets and distribute to production workers without ANI or Hunter QC review.

3.1.1 The National Board audit team is of the opinion that the development of a continuation sheet is a revision to the process sheet and must be presented to the ANI for review prior to issuance. This is considered a finding.

NX-5520

3.2 Hunter Corporation SIP 6.501, paragraph 6.4 addresses the certification of personnel of the NDE subcontractor. The subject procedure allows Hunter Corporation to approve and use subcontractor NDE personnel based on a review and acceptance by the Owners Level III of the NDE personnel certifications.

3.2.1 The audit team is of the opinion that this method of accepting NDE personnel certifications is at variance with the requirements of ASME Section III, paragraph NX-5520. This is considered a finding.

NA-3400  
NCA-3700  
Interp.  
III-1-83-107R

3.3 The team reviewed the nondestructive examination interface "agreement" between Hunter Corporation and Pittsburgh Testing Laboratories, dated 4/27/77. Of prime concern to the National Board audit team is the contents of paragraph 9 titled, "Arbitration". This paragraph states,



Mr. Cordell Reed, Vice President  
Commonwealth Edison Company  
July 16, 1984  
page 6

"in the event there is a disagreement in the application of the governing Code, and associated standards or on the interpretation of any examination or test results, the NDE contractor and installer agree to submit the details of the disagreement to Commonwealth Edison Company. The installer shall abide by the decision of Commonwealth Edison Company."

3.3.1 It is the opinion of the National Board audit team that this portion of the agreement does not meet the requirements of ASME Section III, subarticle NA-3400/NCA-3700. The team is further concerned that there appears to be a number of instances where Commonwealth Edison's Level III examiner reversed interpretations of PTL's Level II examiner from "reject" to "accept". These reversals were done without concurrence or acceptance of either PTL's Level III or Hunter Corporation Level III examiners. This is considered a finding.

NX-4231.1 3.4 The National Board audit team noted that Hunter Corporation did not document visual examinations of tack welds on small bore piping or component supports.  
Interp.  
III-80-213

3.4.1 The National Board audit team is of the opinion that tack welds which are to be incorporated into the final weld shall be prepared and examined in accordance with the requirements of the appropriate subsection of ASME Section III. The team is further of the opinion that these examinations must be documented. This is considered a finding.

3.5 Hunter Corporation issued letter HC-QA-170 which invalidated hold points established by Hunter Corporation's quality assurance and the Hartford Steam Boiler Inspection and Insurance Company's Authorized Nuclear Inspectors. The letter invalidated established hold points on final visual inspection of welds. The intent of this letter was to delay these inspections until the hydrostatic or pneumatic tests were performed, not to invalidate or waive the hold points as indicated on the process sheets.

3.5.1 The use of this letter and its reference on process sheets is that it does not verify that

these delayed inspections have been performed at hydrostatic or pneumatic tests as the letter intended. This is a concern.

3.5.1.1 Additionally, the use of letters from the certificate holder invalidating or waiving ANI established hold points is a concern of the National Board audit team.

4.0 Nuclear Installation Services Company (NISCO)

4.1 As of this report period, the activities of NISCO have not been audited. Audit results of NISCO will be reported in this section.

5.0 Powers Azco Pope J.V. (PAP)

5.1 As of this report period, the activities of PAP have not been audited. Audit results of PAP will be reported in this section.

6.0 Hartford Steam Boiler Inspection & Insurance Company (HSB)

6.1 Authorized Nuclear Inspectors at the Byron site waived review of process sheets for ASME Section III, Class 1, 2 & 3 pipe hangers and component supports from a period starting in November of 1979 until May of 1984.

NA-5241  
HSB SIS  
Inspection  
Handbook

Sec. 7410  
par. 3.4.3

The HSB's ANI's also waived review of process sheets for small bore piping from May of 1980 to November, 1980.

6.1.1 The National Board audit team is of the opinion that review of process sheets prior to issuance to production is a Code requirement and that the ANI's and their supervisors deviated from the requirements of ASME Code Section III and the HSB SIS Inspection Handbook requirements by permitting this practice. This is considered a finding.

HSB SIS  
Inspection  
Handbook  
Sec. 7410  
par. 3.4.3

6.2 HSB's ANI's signed letter HC-QA-170 (reference paragraph 3.5, Section 3 of this report). As stated earlier, the intent of this letter was to postpone the established hold point until final pressure test. The process sheets however, indicate waiver of the hold points. The HSB inspectors who witnessed final pressure tests have not documented on the process sheets or associated documents the completion of the final inspection required by these hold points.

Mr. Cordell Reed, Vice President  
Commonwealth Edison Company  
July 16, 1984  
page 8

6.2.1 The National Board audit team is of the opinion that when the final visual inspection was performed, the established hold points should have been signed off. This is considered a finding.

6.3 HSB's Authorized Nuclear Inspectors instituted a system in which a red star was used to indicate ANI review of specific documents. The star was uncontrolled and not uniquely identified to an individual ANI.

6.3.1 The National Board audit team is concerned about the use of this system and the possibility of abuse by individuals other than HSB who may have had access to these symbols. The National Board audit team is further of the opinion that the red star is a status indicator and should be used and controlled as such. This is a concern.

#### SUMMARY

During this report period, the National Board audit team has focused all of its attention on the activities of the Hunter Corporation and the activities of the Authorized Nuclear Inspectors, the Authorized Nuclear Inspector Supervisor and the Authorized Inspection Agency.

Commonwealth Edison activities and those of its subcontractors, NISCO and PAP, are scheduled to be reviewed and audited during the next report period.

The National Board audit team requests that all findings and concerns identified be responded in writing. The responses shall propose the corrective action that will be taken to resolve these findings or concerns. These responses shall be presented to the National Board audit team within thirty (30) days of the date of this report. (July 16, 1984).

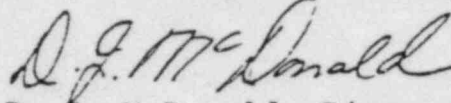
It is the opinion of the National Board audit team that to date, with the exception of findings 3.2 and 3.3, there appears to be no findings which will impact on the hardware.

The National Board audit team is further of the opinion that both Hunter Corporation and the Authorized Inspection Agency have deviated from ASME Code requirements in some instances. These deviations appear to be programmatic in nature; however, the National Board audit team is of the opinion that these deviations must be corrected to preclude the possibility of ASME Code violations.

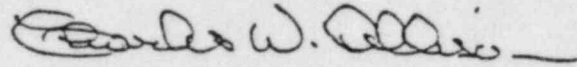
The National Board audit team appreciates the cooperation of all persons contacted during this audit.

Mr. Cordell Reed, Vice President  
Commonwealth Edison Company  
July 16, 1984  
page 9

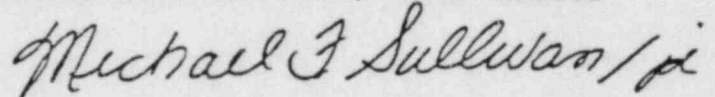
Respectfully submitted,



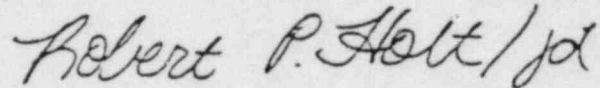
D. J. McDonald, Director of Inspections



Charles W. Allison, Team Leader



Michael F. Sullivan, Team Member



Robert P. Holt, Team Member

/jd

cc: J. F. Streeter, USNRC ✓  
J. G. Keppler, USNRC  
D. Gallup, State of illinois



Commonwealth Edison  
Byron Nuclear Station  
4450 North German Church Road  
Byron, Illinois 61010

ENCLOSURE 2

August 1, 1984

LTR: PM-84-49

Mr. D. J. McDonald  
Director of Inspections  
National Board of Boiler and  
Pressure Vessel Inspectors  
1044 Chupper Avenue  
Columbus, Ohio 43220

SUBJECT: National Board Audit of the Byron Nuclear Station  
Units 1 and 2

REFERENCE: (i) Commonwealth Edison (C. Reed) Letter dated  
April 25, 1984, to National Board of Boiler and  
Pressure Vessel Inspectors (S. F. Harrison)

(ii) National Board of Boiler and Pressure Vessel  
Inspectors (D. J. McDonald) Letter dated July 16, 1984  
to Commonwealth Edison Company (C. Reed)

(iii) Commonwealth Edison (V. Schlosser) Letter dated  
July 31, 1984, to National Board of Boiler and Pressure  
Vessel Inspectors (D. J. McDonald)

Dear Mr. McDonald:

As a result of re-review of reference item (iii), we find that certain phrases require clarification. We, therefore, have rewritten the body of this letter incorporating revisions to the necessary paragraphs. Locations of revisions are indicated by (\*). The response is presented in its entirety hereafter.

As a result of reference item (i), the National Board has been conducting the subject audit. The scope of the audit as identified in reference item (ii) is the audit team is conducting a review of the QA programs and QA/QC activities of all site certificate holders with special emphasis on the following areas:

1. Authorized Nuclear Inspector, Authorized Nuclear Inspector Supervisor, and Authorized Nuclear Inspection Agency activities.
2. Documentation review and data reports.
3. Control of processes and inspection.
4. Special processes, procedures, and qualification of personnel.

LTR: PM-84-49  
August 1, 1984  
Page 2

The first monthly report for the period of June 11 through July 6, 1984 was documented by reference (ii) above and identified six findings and two concerns. In conjunction with Hunter Corporation (HC) and Hartford Steam Boiler Inspection and Insurance Company (HSB), Commonwealth Edison (CE) hereby provides the response to these identified findings and concerns. The findings and concerns are identified to article number presented in reference (ii) above.

### ARTICLE 3.1

There appears to be a conflict between the requirements of the Hunter QA manual and the requirements of the site implementation procedures (SIP's) which implement the manual.

Paragraph 4.3(b) of the Quality Assurance manual requires continuation sheets which are generated in the field to be presented to the ANI for review prior to issuance to the field.

Paragraph 8.2 and 8.3 of the SIP 4.000 allows the production supervisor to initiate continuation sheets and distribute to production workers without ANI or Hunter QC review.

#### FINDING 3.1.1

The National Board audit team is of the opinion that the development of a continuation sheet is a revision to the process sheet and must be presented to the ANI for review prior to issuance. This is considered a finding.

#### DISCUSSION 3.1

ASME III Subsection NA-4210 and NA-5241 establish requirements for "Process Control Checklists" and "Stipulation of Inspections Prior to Issuance of Process Sheets or Controls". Hunter Corporation SIP 4.000 and 4.201 implemented our interpretation of these requirements by the development of isometrics and process sheets, collectively known as the process plan. These developed process plans were made available to the ANI for review. As conditions of installation required modification of configuration of assembly, additions were made to the process plan under the programmatic feature of a continuation process sheet. In that these additions were associated with quantity changes as a result of dimensional conditions, the established special processes, materials, and associated inspections which were established in the original process plan were expanded by the continuation process sheets. The procedure(s) which programmatically established this practice had been accepted by the ANI.

The procedurally conducted inspections and reviews of the completed process plans assured that the correct materials, special processes, examinations and inspections were included in the work associated with the continuation process sheets. This assurance is provided by 100% in process and final inspection by Hunter Quality Control inspections, essentially 100% final inspection by Hartford ANI's, and 100% review of developed documentation by Hunter Quality Control and Hartford ANI's.

LTR: PM-84-49  
August 1, 1984  
Page 4

RESPONSE 3.1.1

In response to the concerns raised by the finding, the appropriate procedures will be revised to require that continuation process sheets be made available to the ANI for review prior to implementation. It is our intent to initiate an inquiry with ASME III to address the specific requirements with regard to requiring the ANI to review process plans, including revisions thereto.

In order to address the effects of the practice of utilizing process continuation sheets in the past, an audit of twenty process plans which contain continuation sheets will be performed by Hunter Corporation Quality Assurance to verify that the continuation work was performed utilizing correct materials, special processes, examinations, and inspections. Commonwealth Edison Quality Assurance will conduct a surveillance during the period of the audit to assure the audit objectives are met. The audit will be conducted and completed by August 31, 1984.

The revision, approval for use, and implementation of the revised procedure(s) is expected to be complete by November 16, 1984.



LTR: PM-84-49  
August 1, 1984  
Page 5

### ARTICLE 3.2

Hunter Corporation 6.501, paragraph 6.4 addresses the certification of personnel of the NDE subcontractor. The subject procedure allows Hunter Corporation to approve and use subcontractor NDE personnel based on a review and acceptance by the Owners Level III of the NDE personnel certifications.

#### FINDING 3.2.1

The audit team is of the opinion that this method of accepting NDE personnel certifications is at variance with the requirements of ASME Section III, paragraph NX-5520. This is considered a finding.

### DISCUSSION 3.2

ASME III as delineated in the specific guidance of ASME Interpretation III-1-77-183 establishes that the N Certificate Holder (in this case Commonwealth Edison) may contract for the nondestructive examination services to be used by the Installer (in this case Hunter Corporation). This has been implemented at Byron and as a function of implementation the Commonwealth Edison Quality Assurance Department has performed reviews of personnel certifications of the NDE contractor personnel prior to performance of examinations. This has been documented to the Installer (Hunter Corporation) as an interim acceptance contingent upon Installer Level III review and acceptance of certification.

#### RESPONSE 3.2.1

Hunter Corporation SIP 6.501 is being revised to eliminate the allowance for acceptance of NDE personnel certification based on review and acceptance of Owners Level III. All NDE personnel certifications have been reviewed and accepted by Hunter Corporation's Level III and, therefore, this finding does not impact the hardware. The revision and approval for use of Procedure 6.501 is expected to be complete by August 31, 1984.

ARTICLE 3.3

The team reviewed the nondestructive examination interface "agreement" between Hunter Corporation and Pittsburgh Testing Laboratories, dated 4/27/77. Of prime concern to the National Board audit team is the contents of paragraph 9 titled, "Arbitration". This paragraph states, "in the event there is a disagreement in the application of the governing Code, and associated standard or on the interpretation of any examination or test results, the NDE contractor and installer agree to submit the details of the disagreement to Commonwealth Edison Company. The installer shall abide by the decision of Commonwealth Edison Company.

FINDING 3.3.1

It is the opinion of the National Board audit team that this portion of the agreement does not meet the requirements of ASME Section III, subarticle NA-3400/NCA-3700. The team is further concerned that there appears to be a number of instances where Commonwealth Edison's Level III examiner reversed interpretations of PTL's Level II examiner from "reject" to "accept". These reversals were done without concurrence or acceptance of either PTL's Level III or Hunter Corporation Level III examiners. This is considered a finding.

DISCUSSION 3.3

It was our interpretation that NA-3400/NCA-3700 did not preclude the allowance of the Owner's Level III examiner from performing an arbitration function when disagreements existed between NDE contractor and Installer.

RESPONSE 3.3.1

Irrespective of our interpretation, the subject Interface Agreement is being revised to eliminate the arbitration clause. All of the examinations affected by the arbitration clause have been reviewed or have been re-examined and found acceptable by Hunter Corporation's Level III and, therefore, this finding does not impact the hardware. The revision and approval for use of the Interface Agreement is expected to be complete by August 31, 1984.

ARTICLE 3.4

The National Board audit team noted that Hunter Corporation did not document visual examinations of tack welds on small bore piping or component supports.

FINDING 3.4.1

The National Board audit team is of the opinion that tack welds which are to be incorporated into the final weld shall be prepared and examined in accordance with the requirements of the appropriate subsection of ASME Section III. The team is further of the opinion that these examinations must be documented. This is considered a finding.

DISCUSSION 3.4

ASME III as delineated in the specific guidance of ASME Code Case N-302 and ASME Interpretation III-80-19 discusses welder involvement in tack welds and implied examinations of NX-4000, respectively. The practices which have been employed are as follows. The tack welds associated with full penetration piping welds have been inspected and documented by Quality Control inspectors. For tack welds associated with fillet weld operations of component supports and piping socket welds, the individual welders have been charged with the task of tack weld examination and evaluation. All welders have been trained to the welding procedure criteria, and this training has been documented. These examinations and evaluations have not, however, been specifically documented. All fillet welds have had a finished weld inspection performed, and where required by ASME Code NX-5000 magnetic particle and liquid penetrant examinations have been performed.

RESPONSE 3.4.1

In response to the concerns raised by the finding, the appropriate procedures will be revised to require documented examination of ASME Code tack welds on component supports and piping socket welds. These examinations will be performed by persons other than those who performed the activity being examined. In developing the revisions to the procedures, we will use the specific guidance of ASME III Interpretation III-80-189. The revision, approval for use, and implementation of the revised procedure(s) is expected to be complete by November 16, 1984.

It is our intent to initiate a Code Case with ASME III to address the specific requirements with regard to examination of tack welds which will be incorporated into fillet welds. Should the response be favorable to the practices which have been previously employed, we will change our practices to revert back to the present methods.

ARTICLE 3.5

Hunter Corporation issued letter HC-QA-170 which invalidated hold points established by Hunter Corporation's Quality Assurance and the Hartford Steam Boiler Inspection and Insurance Company's Authorized Nuclear Inspectors. The letter invalidated established hold points on final visual inspection of welds. The intent of this letter was to delay these inspections until the hydrostatic or pneumatic tests were performed, not to invalidate or waive the hold points as indicated on the process sheets.

CONCERN 3.5.1

The use of this letter and its reference on process sheets is that it does not verify that these delayed inspections have been performed at hydrostatic or pneumatic tests as the letter intended. This is a concern.

RESPONSE 3.5.1

As identified on process control sheets, two specific visual examinations of welds were identified; one being "finished weld inspection", the other being "final visual inspection". The "finished weld inspections" involved completed weld quality inspections which have been performed and documented on process control sheets by Hunter Quality Control Inspectors and by Hartford Steam Boiler ANI's, where applicable, and are not a subject of HC-QA-170. The "final visual inspection" was checkpoint for performing and notating acceptance of welds at time of hydrostatic or pneumatic testing. At the point in time that HC-QA-170 was written, it was recognized and agreed to that the pressure testing procedure scenario identified the scope of the tests adequately so that sign off on the process sheets would have been a redundant activity. Any welds with the hold points established in the process sheets would be captured by the pressure test scenario. Therefore, the purpose of HC-QA-170 was to remove the inspection and documentation from the process control sheets and recognize it would be included in pressure test packages.

CONCERN 3.5.1.1

Additionally, the use of letters from the certificate holder invalidating or waiving ANI established hold points is a concern of the National Board audit team.

DISCUSSION 3.5.1.1

As evidenced by letter HC-QA-170, the ANI documented concurrence of invalidating and eliminating ANI established hold points. HC-QA-170 was directed to the production and quality control personnel in order to eliminate requirement for notification. At the point in time the decision was mutually agreed upon by Hartford and Hunter it was not considered that a one-letter approach would be a sensitive issue. In the future, if a similar circumstance arises, a letter from each organization will be developed to demonstrate agreement of the parties.

ARTICLE 6.1

Authorized Nuclear Inspectors at the Byron site waived a review of process sheets for ASME Section III, Class 1, 2, & 3 pipe hangers and component supports from a period starting in November of 1979 until May of 1984.

The HSB's ANI's also waived review of process sheets for small bore piping from May of 1980 to September, 1980.

FINDING 6.1.1

The National Board audit team is of the opinion that review of process sheet prior to issuance to production is a Code requirement and that the ANI's and their supervisors deviated from the requirements of ASME Code Section III and the HSB SIS Inspection Handbook requirements by permitting this practice. This is considered a finding.

RESPONSE 6.1.1

We believe an error exists in the audit report of July 16, pertaining to lack of review of Class 1 component support packages prior to release to production. In fact, 100% review of Class 1 packages was accomplished.

Review of Class 2 and 3 component support drawings and process sheets was stopped on November of 1979. This action was due to the ANI's misunderstanding of NA-5241.

There was no intent to circumvent code requirements. This is evidenced in the open manner that this action was documented by the ANI.

We are sure these actions created no impact on the installation processes because of the activities of the ANI prior to and after stopping the aforementioned review.

Prior to November of 1979, all component support drawings and process control sheets were reviewed by the ANI. Hold points were set and satisfied.

There was one standard drawing used on all types of supports. There was one type process sheet for welded supports and another for bolted supports. Any welded attachments to pressure boundaries were done on piping process sheets.

There are five basic types of hangers:

1. Anchors
2. Snubbers
3. Rigid Struts
4. Spring
5. Rigid Component Standards Supports

RESPONSE 6.1.1 (continued)

These are all bolted or fillet welded. Rather than setting hold points, the ANI determined he could do his verifications through Hunter QC inspection, his observation of the support program, and randomly selected inspections. Due to this, the ANI determined that review of tens of thousands of essentially duplicate hanger Process Control Sheets (PCS) and drawings was not necessary.

The procedures (SIP's) that controlled the various functions (i.e., document control, design change control, material control, and process control) were in effect and had been reviewed and accepted by the ANI. All changes to procedures, drawing format and PCS format were presented to the ANI for review and acceptance prior to implementation. Any programmatic changes would have been noted by the ANI and appropriate action taken.

The ANI's review of all Class 1 support drawings and PCS helped to assure him that no changes were made in the programs.

The following actions were taken by the ANI to assure compliance to the QA/QC program and to assure that code requirements were met.

- 100% review of Welding Procedures and Qualifications
- 100% review of Welder Qualifications
- 100% review of N.D.E. Procedures and all procedures demonstrated to the ANI's satisfaction.
- 100% review of material certification
- 100% review of N.D.E. reports
- 100% review and acceptance of nonconformance reports

A surveillance of component support system covering Purchase Order (P.O.) initiation, receiving inspection, hanger laydown areas, hanger warehouse and field orders.

Monitoring of Q.A. Manual.

Surveillance of various procedures (SIP's).

Review of all rework requests prior to issuance.

N.F. weld inspections during hydro test walkdowns.

100% review of all component support drawings and process control sheets was reinstated on 5/17/84.

NOTE: A detailed listing of the ANI activities mentioned above can be provided to the audit team.

LTR: PM-84-49  
August 1, 1984  
Page 11

RESPONSE 6.1.1 (continued)

The concern is that the ANI did not review isometric drawings and process sheets for 2" and under Code piping during the period between 5/1/80 and 9/23/80.

The circumstances that led to the memo of 5/1/80 are as follows:

Hunter Corporation's work load gradually increased and the ANI's work load increased correspondingly.

The ANI determined that he could better keep up with his inspection activities by adjusting his work habits. The order of the priorities were hardware inspection and review of CMTR's, WPS, WPQ, NDE reports and review of radiographs. He went to the review of randomly selected isometric drawings and process sheets on 2" and under piping. The records indicate \* that he did approximately 10% review of the aforementioned documents prior to issuance. Review of 100% of 2" and under isometric drawings and process sheets was resumed on 9/23/80.

The quality of the 2" and under piping systems for which isometric drawings and process control sheets were not reviewed was not compromised. The ANI activities listed below helped him assure himself that the Hunter Corporation programs were being properly followed. The randomly selected review of drawings and process control sheets assured that the program for organization, Q.A. review and distribution was properly implemented. Inspections were made on 2" and under to assure continued quality of work and inspection. Hunter Corporation Q.C. also completed their inspection \* activities.

LTR: PM-84-49  
August 1, 1984  
Page 12

RESPONSE 6.1.1 (continued)

The Quality Assurance Program was being monitored as required, including referenced procedures.

- 10% of Process Control Sheets were reviewed prior to issuance for Construction.
- 100% of Code related Welding Procedure Specifications were reviewed.
- 100% of Welder Performance Qualification Records were reviewed.
- 100% of Certified Material Test Reports were reviewed.
- 100% of NDE Reports were reviewed.
- 100% of Visual Weld Inspection during Hydro/Pneumatic Tests were accomplished.
- 100% of Job Traveler Packages were reviewed prior to signing the data reports.

The actions of the ANI were calculated to accomplish his duties as he believed was proper. His documenting of this decision and of his actions show that there was no intent to circumvent the Code requirements. It was an error in judgment that existed for approximately five months.

NOTE: Where inference to records have been made, tabulations have been presented to the audit team and are not attached to this reply. \*



ARTICLE 6.2

HSB's ANI's signed letter HC-QA-170 (reference paragraph 3.5, Section 3 of this report). As stated earlier the intent of this letter was to postpone the established hold point until final pressure test. The process sheets however, indicate waiver of the hold points. The HSB inspectors who witnessed final pressure tests have not documented on the process sheets or associated documents the completion of the final inspection required by these hold points.

FINDING 6.2.1

The National Board Audit team is of the opinion that when the final visual inspection was performed, the established hold points should have been signed off. This is considered a finding.

RESPONSE 6.2.1

The concern is that the ANI hold points were waived on the process sheets. The use of the word "invalidate" on HC-QA-170 was misinterpreted by the Quality Control inspectors and they entered the words "waived per HC-QA-170" on the process sheets next to the ANI hold points. \*

The system prior to HC-QA-170 was to document ANI witnessing of pressure tests of welds and his final weld inspections in the "final visual inspection area of the process sheets. This system was substituted with the use of Pressure Test Directive and Report system provided by Hunter's pressure testing procedure. The hold points were satisfied or substituted by this new system, and documentation was accomplished with the new method on the test directive. The intent of HC-QA-170 was to allow the Hunter QA/QC administrative process to continue past what appeared to be a bypassed ANI hold point. \*

The intent of the apparently bypassed inspection hold points were in fact satisfied during the pressure testing. This is substantiated by entries in the ANI's log showing weld examination pressure during the test. It is also substantiated by ANI initials and date on the "Pressure Test Directive and Report" in area #6 stating "The Weld examination pressure was attained and held for weld examination." \*

Standard operating procedure for pressure test was a QC Welding Inspector and the ANI to visually examine each weld during a pressure test. This ANI inspection had a twofold purpose: to check for leaks and to assure that the weld met Code requirements.

A pipe-fitter accompanied them at all times and was occasionally used to file or wirebrush a weld, when necessary, to accomplish a proper inspection.

LTR: PM-84-49  
August 1, 1984  
Page 14

RESPONSE 6.2.1 (continued)

The ANI group accomplished a large majority of final inspections, the \*  
exception being when he and the Q.C.W.I. would split, for some logistical  
reason, and then the ANI observed the inspections being accomplished by the  
Q.C.W.I.

A list was compiled from the ANI's logs and reflects the following: \*

1. Log Book Number.
2. Date of entry and test.
3. Either Hydro or Pneumatic test.
4. That the welds were inspected.
5. Pressure Test Directive number.

The test directive I.D. number is traceable to the individual directive.  
The directive is traceable to the P&ID (Piping and Identification Drawing).  
Through the P&ID, the Iso drawings, which list the individual welds, can be  
traced.

We realize now that this is a cumbersome method of tracing those particular \*  
inspection activities. We are collaborating with Hunter QA personnel to  
proceduralize a more definitive method of documenting final weld  
inspections. An outline of these methods will be presented to the audit  
team in the near future.

NOTE: The referenced lists have been presented to the audit team and are \*  
not attached to this reply.

LTR: PM-84-49  
August 1, 1984  
Page 15

ARTICLE 6.3

HSB's Authorized Nuclear Inspectors instituted a system in which a red star was used to indicate ANI review of specific documents. The star was uncontrolled and not uniquely identified to an individual ANI.

CONCERN 6.3.1

The National Board audit team is concerned about the use of this system and the possibility of abuse by individuals other than HSB who may have had access to these symbols. The National Board audit team is further of the opinion that the red star is a status indicator and should be used and controlled as such. This is a concern.

RESPONSE 6.3.1

The control and use of the Red Star is a concern of the audit group. More specifically, the concern is that the use of the red star indicates final ANI review and acceptance of a Hunter Document in the Job Traveler Package (JTP).

The red star, used by the ANI's at Hunter, is an internal method of expediting review of documents. The red star is meaningless unless a corresponding ANI initial and date is placed on the Final Inspection Report (FIR) or a tabulation sheet (essentially accomplishes the same purpose). The red star, stamped on a document, is not a proof of acceptance that can be used by any organization. The proof of final acceptance is the ANI's initials and date on the FIR.

Any revisions to a JTP would call for an additional FIR or tabulation sheet and review of revised documents would be shown on the new FIR or tabulation sheet.

We have decided to discontinue the use of the red star. This decision is based on the fact that there are other methods of accomplishing this task that are more acceptable from an audit standpoint. In addition, an audit of randomly selected document packages will be accomplished by the ANI to assure that the red star was not improperly used. The following stamp shall be used to show review of individual documents by the ANI's.

2      8/1/84

---

A. N. I. REVIEW DATE

<input checked="" type="checkbox"/> ACCEPT	<input type="checkbox"/> SEE COMMENT
<input type="checkbox"/> PRELIMINARY	<input checked="" type="checkbox"/> FINAL

LTR: PM-84-49  
August 1, 1984  
Page 16

SUMMARY

In the summary of reference (ii), two findings, 3.2 and 3.3, were identified with potential hardware impact. The actions taken and information developed subsequent to July 16th have demonstrated that there are no hardware concerns as a result of these issues.

The summary also identified that the audit team was of the opinion that Hunter Corporation and the Authorized Inspection Agency had deviated in some instances from ASME Code requirements. In that the findings and concerns identified are of a nature which result from the variances of interpretation of requirements, we do not believe that these items are significant deviations. The actions being undertaken are responsive to the audit team's opinion that these must be corrected to preclude the possibility of ASME Code violations. In certain cases we possess a strong enough dissenting opinion to initiate a formal inquiry to ASME III for establishment of specific guidance. In the interim we will implement practices which we believe will align with the audit team's opinion(s).

We trust that the information provided in the response, and directly to the audit team during the course of their audit has been responsive.

*R. Zuttler* 8/1/84  
V. I. Schlosser  
Project Manager  
Byron Station

VIS/RPT/sg/0081k

cc: V. Schlosser  
G. Sorensen  
M. Lohmann  
K. Hansing  
W. Shewski  
M. Somsag, HC  
B. Rainey, HSB  
B. Shelton  
D. Stewart, HSB  
J. Hinds, NRC  
C. Allison, NBB  
M. Sullivan, NBB  
R. Holt, NBB  
R. Jaeger, NBB

# The National Board of Boiler and Pressure Vessel Inspectors

S. F. HARRISON, Executive Director

## BOARD OF TRUSTEES

B. L. WHITLEY, Chairman  
Raleigh, North Carolina

R. K. BLOSCH, 1st Vice Chm.  
Salt Lake City, Utah

C. H. WALTERS, 2nd Vice Chm.  
Portland, Oregon

1055 CRUPPER AVENUE  
COLUMBUS, OHIO 43229 U.S.A.  
Phone 614-888-8320  
Telex 246-625



WILLIAM CIMINO  
State of Colorado

B. W. COLE  
Province of British Columbia

J. J. DUFFY  
State of Wisconsin

J. T. CROSBY, Past Chairman  
Little Rock, Arkansas

August 17, 1984

Mr. Cordell Reed, Vice President  
Commonwealth Edison Company  
PO Box 767  
Chicago, Illinois 60690

Subject: National Board Audit of the Byron Nuclear Station  
Units 1 & 2; Byron, Illinois

- Reference: (i) Commonwealth Edison (C. Reed) letter dated April 25, 1984, to The National Board of Boiler and Pressure Vessel Inspectors (S. F. Harrison)
- (ii) The National Board of Boiler and Pressure Vessel Inspectors (D. J. McDonald) letter (interim report) dated July 16, 1984, to Commonwealth Edison Company (C. Reed)
- (iii) Commonwealth Edison (V. Schlosser) letter (response) dated August 1, 1984, to The National Board of Boiler and Pressure Vessel Inspectors (D. J. McDonald)

Dear Mr. Reed:

The National Board of Boiler and Pressure Vessel Inspectors' special audit team, on August 10, 1984, concluded its on-site activities at the Byron station (reference i).

This report documents the findings identified in the teams' report dated July 16, 1984 (reference ii) and includes the additional findings or concerns disclosed since the issuance of that report.

In addition, the audit team has reviewed the responses to the report (reference iii). This report will provide the audit teams consideration of those responses listed under each item as sub-articles, identified as OPINION(S).

The audit team is scheduled to return to the Byron site on September 4, 1984, to conduct a corrective action follow-up. It is requested that Commonwealth Edison Company take the necessary actions to have the sub-contractors provide Commonwealth Edison and the audit team with written responses to the findings and concerns in this report as well as documentation of any corrective action implemented to date.

AUG 20 1984

The audit team will conduct a meeting at 1:30 PM on September 4, 1984, at the Byron site with Commonwealth Edison and its subcontractor certificate holders identified in this report. At that time, the team intends to discuss the contents of this report and any corrective action identified to date.

## 1.0 Introduction

- 1.1 Commonwealth Edison Company is the owner of the Byron Nuclear Power Station Units 1 & 2. Commonwealth Edison Company is in possession of ASME Owners Certificate of Authorization, Own---115 and Own---116 for the Byron Nuclear Power Station Units 1 & 2. Both certificates were issued on April 21, 1985, and are due to expire on April 21, 1985. ASME Owners certificates were originally issued for Units 1 & 2 on April 21, 1976. Commonwealth Edison is also in possession of the following ASME Certificates of Authorization:

"N"	N-2020	issued 12/30/83	expires 02/03/87
"NPT"	N-1072-5	issued 07/23/82	expires 07/23/85
"NA"	N-1073-5	issued 07/23/82	expries 07/23/85

- 1.2 The Architect Engineer (AE) and subcontractors at this site are:

- 1.2.1 A/E Sargent & Lundy Engineers; Chicago, Illinois and Nuclear Power Services under subcontract to Sargent and Lundy for design service.
- 1.2.2 Hunter Corporation; Hammond, Indiana, is the prime contractor. Hunter Corporation is the holder of "NA" Certificate of Authorization N-2268-1 and "NPT" Certificate of Authorization N-2269-1, both due to expire January 5, 1985. These certificates are issued for the Byron Nuclear Station Units 1 & 2 only.
- 1.2.3 Nuclear Installation Services Company; Nitro, West Virginia, holds "NA" Certificate of Authorization N-2159-2, Class 1, 2 and 3, installation of parts, appurtenances, piping subassemblies and component supports; Class 1 installation of control rod drive housings and CS installation of core support structures at the Byron Nuclear Station Units 1 & 2; Byron, Illinois only.
- 1.2.4 Powers Azco Pope, an unincorporated joint venture, holds "NA" Certificate of Authorization N-2571, Class 1, 2 & 3 installation of components, penetration assemblies and component supports at the Byron Nuclear Station Units 1 & 2; Byron, Illinois only.
- 1.2.5 Chicago Bridge & Iron Company; Oak Brook, Illinois, fabricated and erected the containment vessels. The containment vessels are built to the draft rules of ASME Section III, Division II and were not inspected or stamped ASME Code.

- 1.2.6 Hartford Steam Boiler Inspection and Insurance Company is the Authorized Inspection Agency for the owner and all certificate holders at the Byron site. As such, they provide the Authorized Nuclear Inspectors for the site.
- 1.2.7 Westinghouse Electric Corporation, Nuclear Services Integration Division; Pittsburgh, Pennsylvania, holds "NA" Certificate of Authorization N-2115, Class 1, 2 & 3 installation of components, parts, appurtenances, piping sub-assemblies and component supports and Class CS core support structures.
- 1.2.8 McCartin McAuliffe Mechanical Contractors, Inc.; East Chicago, Indiana, holders of Certificate of Authorization "NA" N-2535, Class 1, 2, 3 & CS installation of components, parts, appurtenances, piping subassemblies and component supports.
- 1.2.9 Contracting Materials Corporation; Wheeling, Illinois, holders of Certificates of Authorization "NA" N-1900, field installation of Class 3 valves, piping subassemblies and component supports, "NPT" N-1901, field fabrication of Class 3 valves, piping subassemblies. These certificates were extended to the Byron Station under certificate numbers N-1900-1 and N-1901-1.

## 2.0 Commonwealth Edison Company

- 2.1 During the audit of Commonwealth Edison Company, the audit team reviewed the activities of Commonwealth Edison as the "N" Certificate of Authorization holder assuming overall responsibility for the piping systems. Particular attention was given to the procurement and supply of materials as provided for under Certificate of Authorization "NPT" N-1072-5, issued to Commonwealth Edison at the Byron Station. There were no findings identified as a result of this audit.

## 3.0 Hunter Corporation

NA-4210  
NX-5241

- 3.1 There appears to be a conflict between the requirements of the Hunter Corporation's quality assurance manual and the requirements of the site implementation procedures (SIP's) which implement the manual.

Paragraph 4.3(b) of the quality assurance manual requires continuation sheets which are generated in the field to be presented to the Authorized Nuclear Inspector for review prior to issuance to the field.

Paragraph 8.2 and 8.3 of the SIP 4000 allows the production supervisor to initiate continuation sheets and distribute to production workers without Authorized Nuclear Inspectors or Hunter Corporation quality control review.

3.1.1 The National Board audit team is of the opinion that the development of a continuation sheet is a revision to the process sheet and must be presented to the Authorized Nuclear Inspector for review prior to issuance. This is considered a finding.

3.1.2 OPINION - The National Board audit team is of the opinion that the response paragraph 3.1.1 (reference iii) revising the site implementation procedure to require that "continuation process sheets" be reviewed by the Authorized Nuclear Inspectors prior to implementation is correct. It should be noted, however, that interpretations of Code requirements may only be tendered by the appropriate ASME Code sub-committee and the utilization of such interpretations is permitted only with the consent of the jurisdiction and the Nuclear Regulatory Commission.

In any event, the audit team remains of the opinion that the use of "continuation process sheets" constitutes a revision to the process control documentation, therefore requiring review by the Authorized Nuclear Inspectors prior to usage.

In regards to the proposed audit of continuation process sheets used in the past, the audit team is of the opinion that the proposed sample size of twenty process plans is inadequate in relation to the quantity of continuation process sheets used to date and should be expanded. Further, if during the audit, discrepancies or deviations from the requirements of the implementing procedures in effect at the time the process plans were used are disclosed, the sample size should be expanded and the audit continued and corrective action taken. This finding remains open pending verification of corrective action.

NX-5520

3.2 Hunter Corporation SIP 6.501, paragraph 6.4, addresses the certification of personnel of the NDE subcontractor. The subject procedure allows Hunter Corporation to approve and use subcontractor NDE personnel based on a review and acceptance by the Owner's Level III of the NDE personnel certification.

3.2.1 The National Board audit team is of the opinion that this method of accepting NDE personnel certifications is at variance with the requirements of ASME Section III, paragraph NX-5520. This is considered a finding.

3.2.2 OPINION - The National Board audit team has given consideration to the response as stated in paragraph 3.2.1 (reference iii) and considers it adequate. This finding remains open until verification of implementation of the revised procedures for the corrective action can be verified.



NA 3400      3.3 The audit team reviewed the nondestructive examination interface  
NCA-3700      "agreement" between Hunter Corporation and Pittsburgh Testing  
Interpretation      Laboratories, dated April 27, 1977. Of prime concern to the  
III-1-83-107R      National Board audit team is the contents of paragraph 9, titled,  
"Arbitration". This paragraph states, "in the event there is a  
disagreement in the application of the governing Code, and associ-  
ated standards or the interpretation of any examination or test  
results, the NDE contractor and installer agree to submit the  
details of the disagreement to Commonwealth Edison Company. The  
installer shall abide by the decision of Commonwealth Edison  
Company".

3.3.1      It is the opinion of the National Board audit team that  
this portion of the agreement does not meet the require-  
ments of ASME Section III, sub-article NA-3400/NCA-3700.  
The team is further concerned that there appears to be a  
number of instances where Commonwealth Edison Level III  
examiner reversed interpretation of Pittsburgh Testing  
Laboratories Level II examiner from "reject" to "accept".  
These reversals were done without concurrence or accept-  
ance of either Pittsburgh Testing Laboratories Level III  
or Hunter Corporation Level III examiners. This is  
considered a finding.

3.3.2      OPINION - Prior to the audit team's departure from the  
site, a final draft copy of the revised "agreement" was  
presented to the team. Our review found the draft  
acceptably edited to exclude the "arbitration" clause  
(reference iii, paragraph 3.3.1).

In regards to identification and review of RT film iden-  
tified as having the interpretations reversed by Commonwealth  
Edison Level III examiner, the audit team participated in  
this review and has determined the corrective action taken  
as acceptable. This item remains open until such time that  
a signed final agreement is reviewed by the audit team.

NX-4231.1      3.4 The National Board audit team noted that Hunter Corporation did not document  
Interpretation      visual examinations of tack welds on small bore piping or component supports.  
III-80-213

3.4.1      The National Board audit team is of the opinion that tack  
welds which are to be incorporated into the final weld shall  
be prepared and examined in accordance with the requirements  
of the appropriate subsection of ASME Section III. The team  
is further of the opinion that these examinations must be  
documented. This is considered a finding.

3.4.2      OPINION - The audit team has considered your response as stated  
in reference iii, paragraph 3.4.1, and finds it acceptable in  
regards to the revision of your procedures to require the exam-  
ination of tack welds on component supports and small bore  
piping socket welds, including subsequent documentation of

Cordell Reed, Vice President  
August 17, 1984  
page 6

those activities. However, the audit team is of the opinion that while these actions provide for corrective actions in the future installations, your response does not address corrective actions for those items previously installed.

This finding remains open pending an acceptable corrective action and verification of the completed corrective action. The audit team was advised by Commonwealth Edison Company in a meeting conducted on August 10, 1984, that a site directive would be issued to all subcontractor certificate holders, ie. (Hunter Corporation, NISCO and Powers Azco Pope) requiring immediate implementation of the examination and documentation requirements.

3.5 Hunter Corporation issued letter HC-QA-170 which invalidated hold points established by the Hunter Corporation's quality assurance manager and the Hartford Steam Boiler Inspection and Insurance Company Authorized Nuclear Inspector (ANI). The letter invalidated established hold points of final visual inspection of welds. The intent of this letter was to delay these inspections until the hydrostatic or pneumatic tests were performed, not to invalidate or waive the hold points as indicated on the process sheets.

3.5.1 The use of this letter and its reference on process sheets is that it does not verify that these delayed inspections have been performed at hydrostatic or pneumatic tests as the letter intended. This is a concern.

3.5.1.1 Additionally, the use of letters from the certificate holder invalidating or waiving Authorized Nuclear Inspectors established hold points is a concern of the National Board audit team.

3.5.2 OPINION - The audit team has considered your response as stated in reference iii, paragraph 3.5.1, recognizing that this item has not been escalated to a finding. The team accepts your response as adequate when consideration is given to the commitments stated in reference iii, paragraph 6.2.1, which states in part that, "a more definitive method of documenting final weld inspections" is being proceduralized. As indicated in paragraph 6.2.1, an outline of these methods is to be presented to the audit team. Upon receipt and review of that outline, if found acceptable, the audit team will close out this concern.

#### 4.0 Nuclear Installation Services Company (NISCO)

The audit team concluded a comprehensive audit of NISCO on July 27, 1984. There were no reportable findings noted with the exception of the tack weld examination and documentation finding discussed in article 3.4 of this

report for Hunter Corporation. Our response is the same as stated in paragraph 3.4.2 of this report.

5.0 Powers Azco Pope JV (PAP)

The audit team concluded their audit of Powers Azco Pope Joint Venture on August 3, 1984. There were no reportable findings noted during the audit, with the exception of the tack weld examination and documentation finding discussed in Article 3.4 of this report for Hunter Corporation. Our response remains as stated in paragraph 3.4.2 of this report.

6.0 Hartford Steam Boiler Inspection and Insurance Company (HSB)

NA-5241  
HSB SIS  
Inspection  
Handbook

6.1 Authorized Nuclear Inspectors at the Byron site waived review of process sheets for ASME Section III, Class 2 & 3 pipe hangers and component supports from a period starting in November of 1979 until May of 1984.

Sec. 7410  
para. 3.4.3

The Hartford Steam Boiler's Authorized Nuclear Inspectors also waived review of process sheets for small bore piping from May of 1980 to September, 1980.

6.1.1 The National Board audit team is of the opinion that review of process sheets prior to issuance to production is a Code requirement and that the Authorized Nuclear Inspectors and their supervisors deviated from the requirements of ASME Code Section III and the Hartford Steam Boiler SIS Inspection Handbook requirements by permitting this practice. This is considered a finding.

6.1.2 OPINION - The audit team has considered your response as stated in reference iii, paragraph 6.1.1. We also are aware that these practices have not been used since May, 1984, and September 23, 1980, respectively.

The audit team, however, remains of the opinion that your response does not provide corrective action for items previously installed. This finding remains open until such time as satisfactory corrective action is provided and verified as completed by the audit team.

HSB SIS  
Inspection  
Handbook  
Sec. 7410  
par. 3.4.3

6.2 Hartford Steam Boiler's Authorized Nuclear Inspectors signed letter HC-QA-170 (reference paragraph 3.5, Section 3 of this report). As stated earlier, the intent of this letter was to postpone the established hold point until the final pressure test. The process sheets however, indicate waiver of the hold points. The Hartford Steam Boiler inspectors who witnessed final pressure tests have not documented on the process sheets or associated documents the completion of the final inspection required by these hold points.

6.2.1 The National Board audit team is of the opinion that when the final visual inspection was performed, the established hold points should have been signed off. This is considered a finding.

6.2.2 OPINION - The audit team has considered your response as stated in reference iii, paragraph 6.2.1, and additionally the information provided the team by the Authorized Nuclear Inspectors on June 29, 1984. The audit team is of the opinion that your response is acceptable with the following suggestion. The team feels that the listing of activities provided by the Authorized Nuclear Inspectors from the Authorized Nuclear Inspector's daily N-626 diary should be duplicated and attached to each of the pressure test reports affected as part of the final documentation package for each system documented as an N-5 report.

As indicated in paragraph 3.5.2 of this report, "Upon receipt and review of that outline, if found acceptable the audit team will close out this" finding.

6.3 Hartford Steam Boiler's Authorized Nuclear Inspectors instituted a system in which a red star was used to indicate ANI review of specific documents. The star was uncontrolled and not uniquely identified to an individual Authorized Nuclear Inspector.

6.3.1 The National Board audit team is concerned about the use of this system and the possibility of abuse by individuals other than Hartford Steam Boiler who may have had access to these symbols. The National Board audit team is further of the opinion that the red star is a status indicator and should be used and controlled as such. This is a concern.

6.3.2 OPINION - The audit team has reviewed your response as stated in reference iii, paragraph 6.3.1. The audit team is of the opinion that your response is acceptable as stated in the last paragraph of 6.3.1.

This concern will be closed by the team upon receipt and review of the report of the audit of the document packages as discussed.

## 7.0 Westinghouse Electric Corporation

7.1 The audit team began its audit of Westinghouse activities on August 6, 1984. At this time, the audit activities are incomplete, pending receipt of information from Westinghouse Electric Corporation regarding concerns raised by the audit team in relation to "modifications" made

to the Unit #1 steam generators.

The audit team will discuss these concerns during the meeting on September 4, 1984, and complete these activities during that week.

#### 8.0 Contracting Materials Corporation

8.1 The audit team has concluded its audit activities on this organization. Contracting Materials Corporation is no longer on site, and the audit was based on a review of selected final document packages and the company's quality assurance manual requirements. The audit generated no reportable findings or concerns.

#### 9.0 McCartin McAuliffe Mechanical Contractors, Inc.

The audit team has concluded its audit of McCartin, McAuliffe based on review of final documentation package reviews. There were no reportable findings or concerns identified.

#### Summary

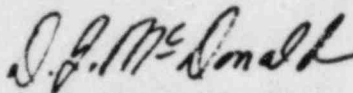
During the audit, the National Board audit team focused its attention on the activities of the organizations holding ASME Certificates of Authorization at the Byron Station. The audit also specifically addressed the interface and activities of the Authorized Inspection Agencies and the Certificate of Authorization holders.

The National Board audit team is of the opinion that in some instances, both the certificate holders and the Authorized Inspection Agency have deviated from ASME Code requirements. These deviations however, appear to be programmatic in nature and with the exception of the finding identified in paragraph 3.4 of this report, none would impact on the quality of hardware at the Byron Station.

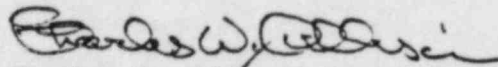
While the National Board audit team identified the deviations in this report, we are of the opinion that they were permitted to occur through errors in judgement by Authorized Nuclear Inspectors, certificate holders and subcontractors personnel regarding activities required to achieve ASME Code compliance and its subsequent documentation. The National Board audit team found no evidence of intentional efforts to circumvent Code requirements by any organization or personnel. The audit team appreciates the cooperation of all persons contacted during the audit.

Cordell Reed, Vice President  
August 17, 1984  
page 10

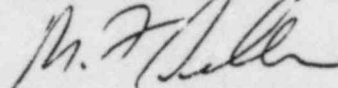
Respectfully submitted,



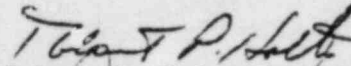
D. J. McDonald, Director of Inspections



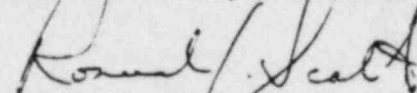
Charles W. Allison, Team Leader



Michael F. Sullivan, Team Member



Robert P. Holt, Team Member



Ronald J. Scott, Team Member

/jd

cc: J. F. Streeter, USNRC ✓  
J. G. Keppler, USNRC  
D. Gallup, State of Illinois