

Docket: STN 50-482

Kansas Gas and Electric Company
ATTN: Glenn L. Koester
Vice President - Nuclear
P. O. Box 208
Wichita, Kansas 67201

NOV 26 1984

Gentlemen:

Enclosed is a copy of a report of an NRC inspection conducted by the Vendor Program Branch at Cardinal Industrial Products Corporation, one of your suppliers. This inspection revealed practices which were contrary to the vendor's quality assurance manual and applicable ASME Code requirements. We request that you review this report, evaluate the effect of these findings on the quality of fasteners supplied to you by this vendor, and maintain records of this evaluation for future review by an NRC inspector from our office.

Should you have questions concerning this matter, contact L. E. Martin or Ian Barnes of the office.

Sincerely,

Original Signed By:
Richard P. Denise

R. P. Denise, Director
Division of Reactor Safety
and Projects

Enclosure:
As stated

cc w/enclosure:
Kansas Gas and Electric Company
ATTN: Gene P. Rathbun, Manager
of Licensing
P. O. Box 208
Wichita, Kansas 67201

Forrest Rhodes, Plant Superintendent
Wolf Creek Generating Station
P. O. Box 309
Burlington, Kansas 66839

bcc to DMB (IE01)
bcc distrib. by RIV:

P. O'Connor, NRR
RPB2
EP&RPB
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11/18/84

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

10 CFR 2.790 INFORMATION IS
CONTAINED IN THIS REPORT AND
HAS BEEN DELETED

AUG 29 1984

Docket No. 99900840/84-01

Cardinal Industrial Products
Corporation
ATTN: Mr. D. Fielder
President
3827 W. Oquendo
Las Vegas, NV 89118

Gentlemen:

This refers to the inspection conducted by Mr. I. Barnes of the Vendor Program Branch on May 29-June 1, 1984, of your facility at Las Vegas, Nevada, and to the discussions of our findings with you and members of your staff at the conclusion of the inspection.

This inspection was made to complete a review of concerns expressed to the Nuclear Regulatory Commission pertaining to compliance of furnished fastener materials with the quality assurance provisions contained in Subarticle NCA-3800 of Section III of the ASME Boiler and Pressure Vessel code. Areas examined during the inspection and our findings are discussed in the enclosed report. Within these areas, the inspection consisted of an examination of procedures and representative records, interviews with personnel, and observations by the inspector.

During the inspection it was found that the implementation of your QA program failed to meet certain NRC requirements. The specific findings and references to the pertinent requirements are identified in the enclosures to this letter.

This Notice of Violation is sent to you pursuant to the provisions of Section 206 of the Energy Reorganization Act of 1974. You are required to submit to this office within 30 days from the date of this letter a written statement containing: (1) a description of steps that have been or will be taken to correct these items; (2) a description of steps that have been or will be taken to prevent recurrence; and (3) the dates your corrective actions and preventive measures were or will be completed. Consideration may be given to extending your response time for good cause shown.

DJP
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10 CFR 2.790 INFORMATION IS CONTAINED
IN THIS REPORT AND HAS BEEN DELETED

AUG 29 1984

You are also requested to submit a similar written statement for each item which appears in the enclosed Notice of Nonconformance. Where appropriate, it is permissible to reference corrective action commitments made in response to NRC Inspection Report No. 99900840/83-01.

The responses requested by this letter are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

The findings of this inspection are confirmatory in nature with respect to the types of deficiencies which were identified during our initial October 11-14 and November 14-18, 1983, inspection of your facility. As a result of your existing commitment to perform a general review of nuclear orders, we have essentially limited identification of items of nonconformance to those inspection findings with tangible product significance and/or which directly pertain to potential use of stock materials for nuclear orders. Consideration should be given, however, during your general review and determination of the necessary quality assurance program corrective actions, to the full scope of deficiencies identified in the enclosed inspection report.

In accordance with 10 CFR 2.790 of the Commission's regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you believe to be exempt from disclosure under 10 CFR 9.5(a)(4), it is necessary that you (a) notify this office by telephone within 10 days from the date of this letter of your intention to file a request for withholding; and (b) submit within 25 days from the date of this letter a written application to this office to withhold such information. If your receipt of this letter has been delayed such that less than 7 days are available for your review, please notify this office promptly so that a new due date may be established. Consistent with Section 2.790(b)(1), any such application must be accompanied by an affidavit executed by the owner of the information which identifies the document or part sought to be withheld, and which contains a full statement of the reasons on the basis which it is claimed that the information should be withheld from public disclosure. This section further requires the statement to address with specificity the considerations listed in 10 CFR 2.790(b)(4). The information sought to be withheld shall be incorporated as far as possible into a separate part of the affidavit. If we do not hear from you in this regard within the specified periods noted above, the report will be placed in the Public Document Room.

AUG 29 1984

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,



Gary G. Zech, Chief
Vendor Program Branch
Division of Quality Assurance,
Safeguards, and Inspection Programs

Enclosures:

1. Appendix A - Notice of Violation
2. Appendix B - Notice of Nonconformance
3. Appendix C - Inspection Report No. 99900840/84-01
4. Appendix D - Inspection Data Sheets (2 pages)

APPENDIX A

Cardinal Industrial Products
Corporation
Docket No. 99900840/84-01

NOTICE OF VIOLATION

As a result of the inspection conducted on May 29-June 1, 1984, and in accordance with Section 206 of the Energy Reorganization Act of 1974 and its implementing regulation 10 CFR Part 21, the following violation was identified and categorized in accordance with the NRC Enforcement Policy (10 CFR 2, Appendix C), 49 FR 8583 (March 8, 1984):

Section 21.21 of 10 CFR Part 21 dated August 31, 1983, states, in part, "(a) Each individual, corporation, partnership or other entity subject to the regulations in this part shall adopt appropriate procedures to: (1) Provide for: (i) Evaluating deviations or (ii) informing the licensee or purchaser of the deviation in order that the licensee or purchaser may cause the deviation to be evaluated unless the deviation has been corrected"

Contrary to the above, the Cardinal Industrial Products Corporation adopted procedure, Cardinal Standard Practice No. 17.003, did not provide for informing the licensee or purchaser of an identified deviation that would require their evaluation.

This is a Severity Level V violation (Supplement VII).

DVP
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APPENDIX B

Cardinal Industrial Products
Corporation
Docket No. 99900840/84-01

NOTICE OF NONCONFORMANCE

Based on the results of an NRC inspection conducted on May 29-June 1, 1984, it appears that certain of your activities were not conducted in accordance with NRC requirements.

Criterion V of Appendix B to 10 CFR Part 50 states: "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished."

Nonconformances with these requirements are as follows:

- A. Paragraph NCA-3866.6 in Section III of the ASME Code states, in part, "Measures shall be established for controlling and identifying material throughout the manufacturing processes and during shipment"

Paragraph 3.2 in Cardinal Standard Practice (CSP) No. 12.001 states, "The Receiving Department shall be responsible for verifying quantities to the purchase order requirements." Paragraphs 2 and 3.1 in CSP No. 9.002-A state, in part, "Scope: To assure all Bolt Blanks on receipt and after receipt inspection and acceptance are stored in a segregated condition with proper identification, marking and the usage is recorded for inventory control. After the Receiving Inspection has been performed in accordance with CSP 12.001 the Bolt Blanks ... shall be moved to the stockroom."

Contrary to the above, material control quantity verification activities were observed to be not effectively implemented as evidenced by the following:

1. The final operation on a Customer Production Record (CPR) for 1-1/2" x 6-1/2" hex head bolts, of which a portion were furnished for Arizona Public Service Purchase Order (PO) No. 10407-F-140441, showed in the final operation that a total of 110 bolt blanks were placed in stock on November 25, 1981.

DWP

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2. Records for prior operations on the CPR (i.e., heading, heat treating, receiving inspection) showed, however, that a total of only 100 bolt blanks had been produced.

This quantity discrepancy brings into question whether a loss of traceability occurred.

- B. Paragraph 15-3 in Section 15 of the Quality Assurance Manual (QAM) states, in part, "... The test requirements shall be in accordance with the customer requirements; invoked codes, standards and specifications."

Paragraph NB-2581 in Section III of the ASME Code states, in part, "Bolts, studs, and nuts shall ... be examined in accordance with the requirements of paragraphs RU (visual examination), RZ (ultrasonic examination-for sizes greater than 2" nominal bolt size), and either RW (magnetic particle examination) or RX (liquid penetrant examination-greater than 1" nominal bolt size) of SA-614."

Contrary to the above, test and examination requirements have not been performed in accordance with customer requirements, invoked codes, standards and specifications as evidenced by the following:

1. Cardinal Industrial Products Corporation (CIPC) failed to perform required ultrasonic examination of 4, 3-1/2" -8 x 26" studs which were ordered in PO No. 5008-3634-QA (Midland) by Consumers Power Company to ASME Section III Code, Class 1 requirements.
2. Required magnetic particle examination or liquid penetrant examination was not performed on 300, 1-1/4" -8 nuts which were ordered by Daniels Construction (Wolf Creek) in PO No. 7158-SR-6620 to ASME Section III Code, Class 1 requirements.

- C. Paragraph 3.1 in CIPC CSP No. 7.002 states, "On receipt of a shipment of material and/or fastener(s), the Cardinal Quality Assurance Department Representative will verify the Certification and Documentation for completeness in accordance with Invoked Codes, Standards, and/or Specification, i.e., ASTM, ASME, SAE, ANSI, and the Cardinal Purchase Order."

Contrary to the above, vendor certification/documentation packages were accepted by CIPC which were not in accordance with invoked codes, standards, and/or specifications as evidenced by the following:

1. Acceptance of numerous CMTRs from a material vendor which reported Izod impact test results rather than the material specification and ASME Code required Charpy V-notch impact tests.
 2. Acceptance of vendor certified material test reports which did not contain the required QA statement pertaining to the material being manufactured and supplied in accordance with the QA program as approved by CIPC.
- D. Paragraph NCA-3867.4(e) in Section III of the ASME Code states, in part, "The Material Manufacturer who certifies material made from stock produced by a manufacturer whose Quality System Program has not been qualified under NCA-3800 may accept the certification of the requirements of the material specification which must be performed during the melting and of the heat analysis from the manufacturer of the stock provided ... (1) ... The Material Manufacturer performs or subcontracts all other requirements of the material specification on each piece of stock material. Alternatively, the Material Manufacturer may perform or subcontract all other requirements of the material specification on each heat and lot of material, provided traceability has been established by this Program or the Program of the Certificate Holder who uses the material ... (2) The Material Manufacturer performs or subcontracts a product analysis to verify the chemical composition of each piece of stock material furnished by the stock material manufacturer"

Contrary to the above, CIPC improperly certified stock materials (i.e., materials procured from manufacturers without specification that the material be produced using a Quality System Program that had been verified by survey to be in accordance with the requirements of Subarticle NCA-3800 in Section III of the ASME Code) as being in compliance with Section III of the ASME Code. Material specification requirements other than those applicable during melting had, however, not been performed on either a piece or heat basis and product analysis was not performed on each piece of stock material.

- E. Paragraph 11.1.2 in Section 11 of the QAM states, "Receipt, in-process and final inspections shall be performed and documented by QA inspectors in accordance with customer requirements."

Paragraph NC-2580 in Section III of the ASME Code states that bolts, nuts, and stocks shall be examined in accordance with the material specification. Material Specification SA-614 in Section II of the ASME Code states that bolts, nuts, and studs shall receive visual inspection. Article 9 in Section V of the ASME Code states that written procedures and checklists shall be used if the code requires visual inspection.

Contrary to the above, written procedures were neither developed nor used for performing visual inspections of ASME Section III Code Class 2 and Class 3 bolting material.

ORGANIZATION: CARDINAL INDUSTRIAL PRODUCTS CORPORATION
LAS VEGAS, NEVADA

REPORT NO.: 99900840/84-01	INSPECTION DATE(S): 5/29-6/1/84	INSPECTION ON-SITE HOURS: 75
CORRESPONDENCE ADDRESS: Cardinal Industrial Products Corporation ATTN: Mr. D. Fielder President 3827 W. Oquendo Las Vegas, NV 89118		
ORGANIZATIONAL CONTACT: Mr. N. Henderson, Director, Quality Assurance TELEPHONE NUMBER: (702) 739-1966		
PRINCIPAL PRODUCT: Fasteners		
NUCLEAR INDUSTRY ACTIVITY: Approximately 75 percent of Cardinal Industrial Products Corporation (CIPC) sales are made to the commercial nuclear industry.		
ASSIGNED INSPECTOR: <u><i>E. W. Merschoff</i></u> E. W. Merschoff, Inspector, Region IV		<u>8/20/84</u> Date
OTHER INSPECTOR(S): L. E. Ellershaw, Region IV E. W. Merschoff, Office of Inspection and Enforcement		
APPROVED BY: <u><i>E. W. Merschoff</i></u> E. W. Merschoff, Chief, Reactive Inspection Section		<u>8/20/84</u> Date
INSPECTION BASES AND SCOPE: A. <u>BASES</u> : 10 CFR Part 21 and 10 CFR Part 50, Appendix B. B. <u>SCOPE</u> : This inspection was made to complete a review of concerns expressed to the Nuclear Regulatory Commission (NRC) pertaining to compliance of furnished fastener materials with the quality assurance provisions contained in Subarticle NCA-3800 of Section III of the ASME Boiler and Pressure Vessel (cont. on next page)		
PLANT SITE APPLICABILITY: Material control deficiency, 50-528/529/530; non-performance of required nondestructive examinations, 50-329/330, 50-482; NCA-3800 deficiencies, 50-482. Note: Multiple docket nos. have been included where purchase orders (POs) did not identify a specific unit.		

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<p><u>SCOPE</u> (cont.) Code. These concerns were evaluated by an inspection of procurement source selection and an integrated procurement and process control inspection. The inspection included a review of visual examination criteria and completion of a review of 10 CFR Part 21 implementation.</p> <p>A. <u>VIOLATIONS:</u></p> <p>Contrary to Section 21.21 of 10 CFR Part 21, the CIPC adopted procedure, Cardinal Standard Practice (CSP) No. 17.003, did not provide for informing the licensee or purchaser of an identified deviation that would require their evaluation.</p> <p>B. <u>NONCONFORMANCES:</u></p> <ol style="list-style-type: none">1. Contrary to Criterion V of Appendix B to 10 CFR Part 50, paragraph NCA-3866.6 in Section III of the ASME Code and CIPC CSP Nos. 12.001 and 9.002-A, material control quantity verification activities were observed to be not effectively implemented as evidenced by the following:<ol style="list-style-type: none">a. The final operation on a Customer Production Record (CPR) for 1-1/2" x 6-1/2" hex head bolts, of which a portion were furnished for Arizona Public Service Purchase Order (PO) No. 10407-F-140441, showed in the final operation that a total of 110 bolt blanks were placed in stock on November 25, 1981.b. Records for prior operations on the CPR (i.e., heading, heat treatment, receiving inspection) showed, however, that a total of only 100 bolt blanks had been produced. This quantity discrepancy brings into question whether a loss of traceability occurred.2. Contrary to Criterion V of Appendix B to 10 CFR Part 50, Section 15 in the QA Manual and paragraph NB-2581 in Section III of the ASME Code, test and examination requirements have not been performed in accordance with customer requirements, invoked codes, standards and specifications as evidenced by the following:<ol style="list-style-type: none">a. CIPC failed to perform required ultrasonic examination (UT) of 4, 3 1/2"-8 x 25" studs which were ordered in PO No. 5008-3634-QA (Midland) by Consumers Power Company (CP) to ASME Section III Code Class 1 requirements.		

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<p>b. Required magnetic particle examination (MT) was not performed on 300, 1½"-8 nuts which were ordered by Daniels Construction (Wolf Creek) on PO No. 7158-SR-6620 to ASME Section III Code Class 1 requirements.</p> <p>3. Contrary to Criterion V of Appendix B to 10 CFR Part 50 and CSP No. 7.002, vendor certification/documentation packages were accepted by CIPC which were not in accordance with invoked codes, standards and/or specifications as evidenced by the following:</p> <p>a. Acceptance of numerous CMTRs from a material vendor which reported Izod impact test results rather than the material specification and ASME Code required Charpy-V notch impact tests.</p> <p>b. Acceptance of vendor CMTRs which did not contain the required QA statement pertaining to the material being manufactured and supplied in accordance with the QA program as approved by CIPC.</p> <p>4. Contrary to Criterion V of Appendix B to 10 CFR Part 50 and paragraph NCA-3867.4(e) in Section III of the ASME Code, CIPC improperly certified stock materials (i.e., materials procured from manufacturers without specification that the material be produced using a Quality System Program that had been verified by survey to be in accordance with the requirements of Subarticle NCA-3800 in Section III of the ASME Code) as being in compliance with Section III of the ASME Code. Material specification requirements other than those applicable during melting had, however, not been performed on either a piece or heat basis and product analysis was not performed on each piece of stock material.</p> <p>5. Contrary to Criterion V of Appendix B to 10 CFR Part 50, Section 11 of the CIPC QA Manual, Material Specification SA-614, paragraph NC-2580 in Section III of the ASME Code and Article 9 in Section V of the ASME Code, written procedures were neither developed nor used for performing visual inspections of ASME Section III Code, Class 2 and Class 3 bolting material.</p> <p>C. <u>UNRESOLVED ITEMS:</u></p> <p>None</p>		

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D. STATUS OF PREVIOUS INSPECTION FINDINGS:

Review of previous inspection findings (i.e., Inspection Report No. 99900840/83-01 - Notice of Violation, Items A and B; Notice of Nonconformance, Items A through J) was restricted during this inspection to providing clarifications and additional examples to CIPC. Formal review of implementation of corrective actions will be performed in a future inspection after completion of corrective action correspondence.

E. OTHER FINDINGS AND COMMENTS:

1. General: Records from and pertaining to the following CIPC material and service vendors were utilized to perform this inspection:

- a. Vendor 1 10 CFR 2790 INFORMATION
- b. Vendor 2 10 CFR 2790 INFORMATION
- c. Vendor 3 10 CFR 2790 INFORMATION
- d. Vendor 4 10 CFR 2790 INFORMATION
- e. Vendor 5 10 CFR 2790 INFORMATION
- f. Vendor 6 10 CFR 2790 INFORMATION
- g. Vendor 7 10 CFR 2790 INFORMATION
- h. Vendor 8 10 CFR 2790 INFORMATION
- i. Vendor 9 10 CFR 2790 INFORMATION
- j. Vendor 10 10 CFR 2790 INFORMATION
- k. Vendor 11 10 CFR 2790 INFORMATION
- l. Vendor 12 10 CFR 2790 INFORMATION
- m. Vendor 13 10 CFR 2790 INFORMATION
- n. Vendor 14 10 CFR 2790 INFORMATION
- o. Vendor 15 10 CFR 2790 INFORMATION
- p. Vendor 16 10 CFR 2790 INFORMATION

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- q. Vendor 17 10 CFR 2790 INFORMATION
- r. Vendor 18 10 CFR 2790 INFORMATION
- s. Vendor 19 10 CFR 2790 INFORMATION
- t. Vendor 20 10 CFR 2790 INFORMATION
- u. Vendor 21 10 CFR 2790 INFORMATION

The NRC inspectors utilized the documented QA program which was in effect prior to the November 1983 ASME survey for performance of this inspection. The current ASME accepted QA program was not reviewed because the inspection concentrated on procurement and process control activities that occurred before the ASME survey took place.

2. Procurement Source Selection: The procurement source selection files including survey and audit records were reviewed for Vendors 1 through 10 to determine the adequacy of CIPC's program for evaluating suppliers of ASME Code and safety-related equipment. Each of these ten vendors had been surveyed and audited by CIPC and their QA programs accepted by CIPC as being consistent with the requirements of Subarticle NCA-3800 in Section III of the ASME Code. The results of the NRC review were as follows:

- a. Vendor 1 (Nut Manufacturer) - A copy of the vendor's QA manual was available in both the vendor's native language and in English. The English language version did not fully meet the requirements of NCA-3860, "Quality System Identification and Verification Programs." Specifically, adequate provisions were not established to assure control of purchased materials and services (NCA-3866.3) or for controlling and identifying material throughout the manufacturing process (NCA-3866.6).

One day surveys or audits were conducted by CIPC on April 17, 1979 (survey); April 16, 1980 (audit); October 19, 1981 (audit); and September 6, 1982 (survey). The April 16, 1980, audit was incomplete in that the portion of the audit checkoff list dealing with the requirement to maintain personnel records (NCA-3864.3) was left blank. Vendor 1 was maintained on CIPC's Approved Vendor List (AVL) after performance of the April 16, 1980, audit.

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<p>b. <u>Vendor 2 (Steel Mill)</u> - An English language version of the Quality System Program dated November 22, 1982, was available for review.</p> <p>This document was actually a brief (i.e., 5-1/2 pages, double spaced) overview of the QA program rather than a detailed QA manual and, as such, did not fully address the requirements of NCA-3800 in Section III of the ASME Code. For example, the requirements to control and identify material throughout the manufacturing process (NCA-3866.6) and the requirements for certification of materials (NCA-3867.4) were not adequately addressed.</p> <p>One day surveys or audits were conducted by CIPC on November 2, 1980 (survey); March 31, 1982 (audit); January 31, 1983 (survey); and February 13, 1984 (survey). The only portion of the February 13, 1984, checklist which was filled out was the section dealing with personnel qualification. All other NCA-3800 criteria were left blank. Vendor 2 is currently listed on CIPC's AVL based on the February 13, 1984, survey.</p> <p>c. <u>Vendor 3 (Steel Mill)</u> - An English translation of this vendor's QA program was available for review. This document did not fully address the requirements of NCA-3800 in Section III of the ASME Code in that the QA program did not include any form of an identification and verification program to assure traceability of materials.</p> <p>One day surveys or audits were conducted by CIPC on November 21, 1980 (survey); November 9, 1981 (audit); September 22, 1982 (survey); and October 6, 1983 (survey). The September 22, 1982, survey was incomplete in that the checklist sections dealing with responsibility and QC procedures were left blank.</p> <p>d. <u>Vendor 4 (Nut Manufacturer)</u> - The only QA manual available for review was not in the English language and, therefore, a determination could not be made in regard to the adequacy of the QA program it described.</p>		

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One day surveys or audits were conducted by CIPC on April 12, 1979 (survey); April 17, 1980 (audit); October 28, 1980 (audit); October 20, 1981 (not specified); and September 28, 1982 (not specified). The September 28, 1982, checkoff sheet was entirely blank except for the section dealing with organization, yet the vendor was listed on the CIPC AVL based on this report. When asked why a complete survey or audit was not performed, the auditor (CIPC Senior Vice President) indicated that the September 28, 1982, report reflected simply a "visit" and was neither a survey nor an audit. He further stated that placing the vendor on the AVL based on this visit was a mistake. It is currently not known whether CIPC purchased any fastener material from this vendor during the time period it was inadvertently approved as a vendor.

- e. Vendor 5 (Product not identified) - A QA manual was not on file for this vendor and, therefore, an independent determination could not be made in regard to QA program adequacy.

One day surveys or audits were conducted on November 6, 1980 (survey); October 14, 1981 (audit); April 6, 1982 (audit); and April 21, 1983 (survey). Only the April 21, 1983, survey checkoff sheet was completely filled out. The portion of the November 6, 1980, survey checkoff list dealing with the requirement to maintain personnel records (NCA-3864.3) was left blank. The portion of the October 14, 1981, audit checklist dealing with the requirement to maintain QA records (NCA-3867.2) was left blank and portions of the April 6, 1982, audit checklist were also left blank with respect to requirements for audits (NCA-3869.1); handling, storage, and shipping (NCA-3866.5); control of purchased materials and services (NCA-3866.3); and QA organization (NCA-3864).

- f. Vendor 6 (Steel Mill) - A QA manual was not on file for this vendor and, therefore, an independent determination could not be made in regard to QA program adequacy. The CIPC survey and audit reports for this vendor were not reviewed in their entirety.

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g. Vendor 7 (Nut and Bolt Manufacturer) - A QA manual was not on file for this vendor and, therefore, an independent determination could not be made in regard to QA program adequacy. One day surveys or audits were conducted by CIPC on November 3, 1980 (survey); October 17, 1981 (audit); and April 7, 1982 (survey). All portions of these survey and audit checkoff sheets were completed.

h. Vendor 8 (Nut and Bolt Manufacturer) - The only QA manual available for review was not in the English language and, therefore, a determination could not be made in regard to the adequacy of the QA program it described.

One or two day surveys or audits were conducted by CIPC on April 24, 1979 (survey); April 23, 1980 (audit); October 27 and November 13, 1980 (audit); October 21, 1981 (audit); and September 20, 1982 (survey). All survey and audit checkoff sheets were completed except for the April 23, 1980, audit in which the following sections were left blank: quality assurance records; corrective actions; control of nonconformances; control of inspection, test, and operation; and control of handling, storage, and shipping. The vendor was maintained on the CIPC AVL after the April 23, 1980, audit.

i. Vendor 9 (Steel Mill) - An English language version of the vendor's QA program dated February 13, 1978, was available for review. The portions reviewed were found to be consistent with the requirements of NCA-3800 in Section III of the ASME Code.

One day surveys or audits were conducted by CIPC on April 9, 1979 (survey); April 15, 1980 (audit); October 21, 1980 (audit); November 2, 1981 (audit); April 14, 1982 (survey); April 29, 1983 (audit); and April 27, 1984 (survey). The April 29, 1983, audit checklist was not completed in the areas of: corrective action; certification of material; identification of material; and handling, storage, and shipping. The April 27, 1984, survey checklist was not completed in the areas of: identification and marking of material; control of purchased material and services; examinations, tests, and reports;

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certification of materials; and internal audits. The CIPC auditor (CIPC Senior Vice President) was asked why, in light of the incomplete April 27, 1984, survey, was the vendor identified on the current CIPC AVL. He replied that he knew the vendor's QA program was consistent with the requirements of NCA-3800 in Section III of the ASME Code based on the notations made in the comments column of the survey checklist, and he then checked off all incomplete sections of the survey as being satisfactory.

- j. Vendor 10 (Steel Mill) - A QA manual was not on file for this vendor and, therefore, an independent determination could not be made in regard to QA program adequacy.

One or two day surveys or audits were conducted by CIPC on November 19, 1980 (survey); October 5, 1981 (audit); March 29, 1982 (audit); and September 26 and 28, 1983 (survey). The 1983 survey, which provided the basis for placing the vendor on the CIPC AVL, did not evaluate the vendor with respect to QA organization independence, control and documentation of heat treatment, and corrective action.

- k. Summary Comments -

- (1) Audit Performance - All surveys and audits reviewed for Vendors 1 through 10 were conducted by the CIPC Senior Vice President. The auditor stated that in all cases he was accompanied by an interpreter who was familiar with the steel industry and who, as part of each survey or audit, verbally translated the vendor's QA manual or changes made to it since the last visit. These verbal translations apparently formed the basis for CIPC acceptance of the QA manual with respect to the requirements of NCA-3800 since, in most cases, no notes or supporting documentation were included in the file. From discussion with the auditor, it was ascertained that the auditor perceived that there was general QA program compliance with the requirements of NCA-3800 by steel mills in the country where vendors 1 through 10 are located. The NRC inspector was also informed that the auditor had never rejected a steel mill in that country based on a survey or audit he had performed.

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- (2) Objective Evidence of Satisfactory Performance of Audits and Surveys - Of the ten vendor files inspected, four did not contain a QA manual in any language and two had native language versions only without an English language translation. Four had some form of English language translation of the vendor's QA program, of which three were clearly inadequate with respect to the requirements of NCA-3800 in Section III of the ASME Code.

A nonconformance was identified during the previous inspection of CIPC (i.e., Item B, Notice of Nonconformance, NRC Inspection Report No. 99900840/83-01) with respect to survey/audit records not providing objective evidence of either satisfactory performance of surveys and audits or that vendor manuals were a major basis for demonstration of ASME Code compliance. The findings made during this inspection are applicable to and supportive of this nonconformance and will be factored into NRC planned CIPC vendor QA program evaluation activities.

3. Integrated Procurement and Process Control Inspection:

A detailed evaluation was made of CIPC compliance with the requirements of selected CIPC customer POs. The evaluation included: (a) a review of CIPC vendor test and certification data with respect to CIPC PO, material specification, and applicable ASME Code requirements; (b) examination of Customer Production Records (CPRs) for control of processing and specification and performance of required mechanical tests and nondestructive examination (NDE); (c) review of supporting NDE and mechanical test records; (d) control of sub-contracted operations; and (e) review of CIPC Certified Material Test Reports (CMTRs) against supporting data for correctness and compliance with ASME Code requirements. The findings of this inspection with respect to specific customer POs are detailed below:

- (a) Arizona Public Service Company (APS) PO No. 10407-F-140441 (Palo Verde) - APS ordered 28 hex head bolts, 1-1/2"x 6-1/2" long, on this PO dated December 14, 1981, in accordance with ASME Material Specification SA-325 and the requirements of Section III, Class 1 of the ASME Code.

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<p>The material used to fill this order had been previously purchased by CIPC from Vendor 15 on PO No. 8960 dated May 30, 1980. This PO, in addition to other items, called for 2500' of 1½" AISI 4140 hot rolled bar totalling 1500 lbs. This material was subsequently received by CIPC on September 4, 1981, with final acceptance occurring on September 8, 1981. CIPC commenced to process some of this material (127' of bar) on September 9, 1981. CPR No. 1245209, which was the applicable traveler, shows that the bars were cut to the specified size on September 10, 1981, resulting in 100 pieces and 2-6" test coupons.</p> <p>The 100 pieces were sent to Vendor 18 for heading, with the vendor invoice (No. 8324 dated September 28, 1981) showing that 100 pieces were headed. The NRC inspector was informed that this figure should be an actual count, in that the heading machine has a counter. The next identified CPR operation was heat treatment. CIPC placed blanket PO No. 12338 dated May 6, 1981, with Vendor 17, in which Line Item 13 showed 100 each, 1-1/2" x 12", 4140 Bolt Blanks and Coupon. This PO also required Vendor 17 to spot check the hardness and certify the heat number, with this information appearing on all certifications. Certified Test Report No. 33513 dated September 28, 1981, from this vendor shows that 100, 1½" x 12", bolt blanks were heat treated, but the certification did not, as required, identify or certify the heat number.</p> <p>The next operation on the CPR, No. 50, shows that 100 pieces were received back from the heat treat vendor and inspected on September 30, 1981. The last CPR operation, No. 75, states, "Put In Stock." The CPR record shows, however, that 110 pieces were placed in stock on November 25, 1981. The origins of the extra ten pieces could not be determined from available records. As a result of this condition, nonconformance B.1 was identified.</p> <p>To fill the APS PO, CIPC generated CPR No. 2599801 dated December 14, 1981, which shows that 28 bolt blanks were pulled from stock on December 28, 1981. Processing of the bolts was completed on January 8, 1982. It was noted that both the Internal Order Form and the CPR stated that NDE was not required and that this was to be confirmed with the customer. Apparently, confirmation was not made and ASME Code Section III Class 1 required NDE was not performed. The 28 heavy hex bolts were shipped to APS with a certification dated January 11, 1982, which attested to the bolts meeting ASME Code Section III, Class 1 requirements. Notice of Nonconformance Item F.5, NRC Inspection Report No. 99900840/83-01, was previously written with respect to this inspection finding.</p>		

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- b. CP PO No. 5008-3634-QA (Midland) - CP ordered, in addition to other items, 32 stud bolts, 3-1/2" x 24" long, on this PO dated January 27, 1983, in accordance with ASME Specifications SA-193 Grade B7 and SA-614, and the requirements of ASME Code Section III, Class 1.

The NRC inspector did not identify any problems in regard to 2 shipments totalling 28 stud bolts. The following was identified, however, with respect to four stud bolts that were shipped to the CP Midland Plant on March 16, 1983. CIPC placed PO No. 19958 with Vendor 19 on February 7, 1983, for a total of 60' of 3-1/2" ASTM A-193 Grade B7 rod, hot rolled and heat treated. This material had been previously purchased by Vendor 19 from Vendor 21. The material was received and accepted by CIPC with a Vendor 19 CMTR dated February 9, 1983.

CIPC commenced to process 16' of this material on February 28, 1983, as shown on CPR No. 2879612. A scheduled initial operation was for the performance of UT. This operation was not signed off as having been completed, nor were there any UT reports or other documentation available to show that UT had been performed. Manufacturing of the four bolts continued and was completed on March 15, 1983, with shipment being made on March 16, 1983, with CMTR No. 28969 dated March 16, 1983. The CMTR attested to performance of UT in accordance with the requirements of Section II Specification SA-614 and Section V of the ASME Code and that the results had been found acceptable.

Nonconformance B.2.a has been identified as a result of these inspection findings.

- c. Daniel Construction Co. (DC) PO. No. 7158-SR-66208 (Wolf Creek) -

- (1) DC ordered 100, ASME SA-194 Grade 7, 2"-8, heavy hex nuts on Release 2 of this blanket PO dated May 25, 1983. This blanket PO invoked the requirements of Section III, Class 1 of the ASME Code (1974 Edition through the Summer 1975 Addenda). Fasteners were required to be examined in accordance with paragraph NB-2580 in Section III of the ASME Code and Charpy-V notch (CVN) impact tests at 30° F maximum were specified for fasteners greater than 1" in diameter.

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Review of CIPC and CIPC vendor documentation for the 2"-8 heavy hex nuts showed the following anomalies and deficiencies in regard to QA records and demonstration of compliance with NCA-3800 by the nut supplier. The nuts were procured from Vendor 8 by a now defunct affiliated company of CIPC on their PO. No. 0018661 dated November 24, 1982. Standard certification requirements attached to the PO included a requirement that the fastener vendor report that the product was provided in accordance with their QA program as surveyed and approved by CIPC on the date of the latest survey in 1982. Certification to that effect from Vendor 8 was not contained in the documentation provided to the NRC inspector.

Review of heat treatment certification from a subvendor showed that their customer was another manufacturer and not Vendor 8. It would thus appear that the nuts may have been produced by this other manufacturer and not by the organization receiving the PO. The heat treat subvendor and the other manufacturer were identified on the CIPC AVL in this procurement time frame. It was additionally noted that the mechanical test data required by ASME SA-194 and the PO standard certification requirements had not been furnished by the nut supplier. Required testing was obtained by CIPC from Vendor 16 after receipt of the nuts. A CMTR from the raw material manufacturer, Vendor 11, was present in the documentation package which attested to, as required by the PO standard certification requirements, use of a QA program that had been surveyed and approved by CIPC on September 22, 1982. A survey report for this date was not, however, located for Vendor 11, during this inspection.

- (2) Release 6 to DC PO No. 7158-SR-6620 included orders for ASME SA-194 Grade 2H, 1-1/4" -8, nuts; ASME SA-193 Grade B7, 1-1/2" -8 x 1', threaded studs; ASME SA-193 Grade B7, 1 3/4"-8 x 1' studs; ASME SA-193 Grade B7, 2"-8 x 1' threaded studs; and ASME SA-193 Grade B7, 1 3/8"-8 x 1' threaded studs. As stated above in 3.c.(1), the requirements of Section III, Class 1 of the ASME Code were applicable to these orders.

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SA-194 Grade 2H, 1-1/4"-8, Nuts - Review of CIPC and CIPC vendor documentation for the ASME SA-194 Grade 2H, 1-1/4"-8, nuts showed that a total of 14,580 pieces was procured from Vendor 8 by handwritten CIPC PO No. 10396 dated November 27, 1980. This PO required that the product be manufactured in accordance with the Vendor 8 QA program which was approved by CIPC in November 1980. The bar steel was also to be obtained from a CIPC approved mill. The standard certification requirements which were referenced by the PO were not attached to the PO copy reviewed by the NRC inspector. An undated certification from the raw material manufacturer, Vendor 3, was present in the documentation package which attested to manufacture of the bar material using the quality program that had been surveyed and approved by CIPC on November 7, 1980. A survey date of November 21, 1980, was indicated, however, on the CIPC 1980 survey report for this manufacturer. The Vendor 8 CMTR dated April 24, 1981, did not indicate use of a CIPC surveyed and approved QA program for manufacture of the nuts. It was additionally noted that the CMTR did not include a statement of heat treated condition as required by paragraph NCA-3867.4 in Section III of the ASME Code. Only the tempering cycle was documented on the CMTR. This type of deficiency was previously identified as a nonconformance; i.e., Item J, Notice of Nonconformance, NRC Inspection Report No. 99900840/83-01.

Review of the CPR for the 1-1/4" -8 nuts showed that required MT (i.e., for ASME Section III Code, Class 1 compliance) had been accomplished by CIPC PO No. 17561-E. Examination of the applicable MT report from Vendor 16 for this PO showed, however, that this report applied to a sample of 50 nuts which had been examined in accordance with MIL-S-1222G. All 50 nuts had been rejected by MT because of linear indications. No records were available to indicate that MT in accordance with ASME Section III Code requirements had been performed on the nuts furnished to Wolf Creek. CIPC CMTR No. 0035174 dated November 15, 1983, attested, however, to MT compliance with the provisions of paragraph NB-2580 in Section III of the ASME Code.

The failure to perform required MT has been identified as nonconformance B.2.b. Acceptance of Vendor 8 certification for the 1-1/4"-8 and 2"-8 (c.(1) above) nuts, which did not provide the required confirmation of use of the CIPC surveyed and approved QA program, has been identified as nonconformance B.3.b.

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SA-193 Grade B7, 1-1/2"-8 x 1', Threaded Studs - Review of CIPC and CIPC vendor documentation showed that the material had been supplied by Vendor 10 in response to CIPC PO No. 16805 dated July 14, 1982. Examination of the vendor CMTR identified that Izod impact test values had been reported by Vendor 10 and not the required CVN impact test results. The Izod impact test values were transcribed, however, on the CIPC CMTR as being the results of CVN impact tests.

This finding and the other examples noted later in this report have been identified as nonconformance B.3.a. This nonconformance was previously identified in NRC Inspection Report No. 99900840/83-01 as Item E.1, Notice of Nonconformance.

It was additionally noted that Vendor 10 heat treatment information had been transcribed onto CIPC CMTRs to show only the maximum temperatures of the ranges reported for hardening, tempering, and stress relief. This condition was previously identified in Item I.1, Notice of Nonconformance, NRC Inspection Report No. 99900840/83-01. The use of a stress relief temperature range by this vendor which allowed the minimum temperature to be below that specified by the material specification was similarly documented as Item E.2 in the Notice of Nonconformance of NRC Inspection Report No. 99900840/83-01. No basis was seen in Vendor 10 documentation to support the statement made on the CIPC CMTR with respect to impact specimen location.

SA-193 Grade B7, 1 3/4"-8 x 1', Studs - Review of CIPC and CIPC vendor documentation showed that this material had been supplied by Vendor 10 in response to CIPC PO No. 0013308 dated August 6, 1981. The same conditions, as noted above for the 1 1/2"-8 studs, were observed with respect to heat treatment information and transcription by CIPC of reported Izod impact values as CVN impact test results.

SA-193 Grade B7, 2"-8 x 1', All Threaded Studs - These items were also furnished by Vendor 10 in response to CIPC PO No. 14101 dated October 20, 1981. The same conditions, as noted above, were observed with respect to transcription of reported Izod impact test values as CVN impact test results on the CIPC CMTR. In this instance, CIPC did not list on their CMTR the stress relief performed by Vendor 10 after cold drawing. It was additionally noted that Vendor 10 had referenced on their CMTR the use of the steelmaker's QA program and not their own. This latter condition was previously identified as Item E.4, Notice of Nonconformance NRC Inspection Report No. 99900840/83-01.

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SA-193 Grade B7, 1 3/8"-8 x 1', All Threaded Studs - These items were furnished by Vendor 10 in response to CIPC PO No. 12140 dated April 21, 1981. The same findings were made, as noted previously, with respect to transcription of reported Izod impact test values as CVN values, heat treatment information, and no apparent basis for the impact specimen location statement on the CIPC CMTR.

- (3) Release 5 to DC PO No. 7158-SR-6620 included orders for ASME SA-194 Grade B7, 1-1/2"-6, heavy hex nuts; and ASME SA-193 Grade B7, 1-1/2"-6 x 1", all threaded rod.

SA-194 Grade 7, 1-1/2"-6, Heavy Hex Nuts - Review of CIPC documentation showed that a memorandum dated September 30, 1983, had been sent to DC which confirmed the CIPC understanding that the nuts were to be furnished in accordance with Section III, Subsection NF of the ASME Code, with Class 2 being provided since a class had not been specified by DC. No DC documentation was seen confirming this apparent change in PO requirements from Subsection NB of Section III of the ASME Code. Subsequently, the nuts were returned by DC to CIPC for upgrading to Subsection NB requirements. These nuts were manufactured by Vendor 1 in response to CIPC PO No. 10402 dated November 25, 1980. CIPC reported only the vendor tempering information in their CMTR and did not include either the vendor hardening heat treatment information or a statement reflecting performance of a hardening heat treatment. This is contrary to paragraph NCA-3867.4 in Section III of the ASME Code.

On performing required MT examination of returned nuts for upgrading to Subsection NB requirements, a total of 279 were accepted and 31 rejected for cold shuts and cracked flats.

SA-193 Grade B7, 1-1/2"-6 x 1', All Threaded Rod - Review of CIPC and CIPC vendor documentation showed that CIPC had purchased the material from Vendor 12 on CIPC PO No. 7888 dated March 19, 1980. The material was procured as ASTM A-193 Grade B7, with no requirements invoked in regard to either use of a documented surveyed QA program or the applicability of Section III of the ASME Code. The vendor handwritten CMTR similarly attested to furnishing only ASTM A-193 Grade B7

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and contained no information with respect to heat treatment, other than tempering, or use of an NCA-3800 QA program. Survey/audit checklists were not present at CIPC for this vendor which was previously identified in Item B.2, Notice of Nonconformance, NRC Inspection Report No. 99900840/83-01. No information was made available to indicate upgrading had been performed in accordance with the provisions of NCA-3867.4(e) in Section III of the ASME Code. The furnishing of apparent stock materials for Class 1 application has been identified as nonconformance B.4. This nonconformance subject was previously identified as Item D, Notice of Nonconformance, NRC Inspection Report No. 99900840/83-01.

Additional rod of this size was provided to DC for Release 5 of the PO using material furnished by Vendor 10 in response to CIPC PO No. 16805 dated July 14, 1982. The same conditions were noted with respect to CIPC transcription of reported Izod impact test values as CVN values and heat treatment information as described previously for other items furnished by this vendor.

4. 10 CFR Part 21 Implementation: To complete the review of CIPC 10 CFR Part 21 implementation initiated in the prior inspection of CIPC (NRC Inspection Report No. 99900840/83-01), a detailed review was performed of the adopted CIPC procedure (i.e., CIPC Standard Practice No. 17.003) for compliance with the procedural requirements of the regulation. In this area of the inspection, the violation identified in paragraph A was identified.
5. Visual Examination Criteria: The NRC inspectors reviewed CIPC's practices for performing NDE on ASME Section III fasteners. Although the ASME Code requires visual inspections to be performed in accordance with written procedures (i.e., Section II, SA-614; Section III, NC-2580; and Section V, Article 9), written procedures were not used when performing the required visual inspections for Class 2 and 3 fasteners. Methods for performing visual inspections, and inspection acceptance criteria based on IFI-105, "Recommended Practice on Surface Discontinuities on Bolts & Screws for Automotive Applications," as well as other Society of Automotive Engineers (SAE) sources are included as part of the inspector training program. However, specific procedures detailing how to perform a visual inspection and what constitutes a rejectable indication have not been developed. Nonconformance B.5 was identified in this area of the inspection.

INSPECTOR BARNES/ELLERSHAW
 SCOPE _____

DOCUMENTS EXAMINED

DOCKET NO. 79900840
 REPORT NO. 84 - 01
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ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
1	QAM	-	3	1/22/82	Quality Assurance Manual
2	CSP	17.003			100.FE Part 21 Procedure
3	CSP	12.001		3/17/82	Rawing Inspection, Purchased Materials, Parts or Services
4	CSP	7.002		7/6/80	Certification Procedure
5	CSP	14.002		9/6/80	Handling, Packing, Shipping and/or Storage
6	-	-		-	Documentation Packages for 8 Customary Purchase Orders
7	-	-		-	APPROVED VENDOR LISTS
8	-	-		-	Audit/Survey File For Various Suppliers

TYPE OF DOC:
 DWG - DRAWING
 SPEC - SPECIFICATION
 1 PRO - PROCEDURE
 QAM - QA MANUAL
 QCD - QC DOCUMENT
 P.O. - PURCHASE ORDER
 I.N.H. - INTERNAL MEMO

LTR - LETTER
 SP - Standard Procedure