



*Gordon - Here is the review. ... no sign until we hear from you
Faust has not read it yet*

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

MEMORANDUM FOR: Robert L. Tedesco, Assistant Director for Licensing
Division of Licensing
FROM: Themis P. Speis, Assistant Director for Reactor Safety
Division of Systems Integration
SUBJECT: IDENTIFICATION OF PROTECTION SYSTEM INSTRUMENT
SENSING LINES X271

This letter is for the purpose of delineating the Instrumentation and Control Systems Branch position on the identification of protection system instrument sensing lines and requesting that the position (Enclosure 1) be transmitted to Near Term Operating License applicants. We would like the position to be forwarded to all applicants having plants for which the ICSB site visit has not been completed. The Project Manager should contact the ICSB reviewer for his plant if there is a question as to whether the ICSB site visit has been completed.

Paragraph 4.22, Identification, of IEEE 279-1971 states: "In order to provide assurance that the requirements given in this document can be applied during the design, construction, maintenance, and operation of the plant, the protection system equipment (for example, interconnecting wiring, components, modules, etc.) shall be identified distinctively as being in the protection system. This identification shall distinguish between redundant portions of the protection system." IE Region III has taken the position that the above IEEE-279 requirement applies to sensing lines used for transmitters in the protection system. Most recently, IE Region III has asked that the Callaway applicant color code the instrument sensing lines. As a result of the IE Region III position, ICSB was asked to delineate its position with respect to identification (color coding) of sensing lines.

ICSB believes that a strict interpretation of IEEE-279 would not include sensing lines within its scope. The reason for this is that the IEEE has been careful to restrict the scope of its standards efforts to power, instrumentation, and control portions of the safety systems. However, the sensing lines are essential to the reliable operation of the protection system and should, thus, be designed and installed with the same care as any other equipment in the protection system. In particular, the sensing lines for redundant protection channels should be appropriately separated and protected from external hazards. In order to facilitate verification that sensing lines for redundant protection channels are appropriately separated and protected from external hazards initially and throughout the life of the plant, ICSB considers that

CONTACT: E. Rossi,
x27140

ENCLOSURE

Paragraph 4.22, Identification, of IEEE 279-1971 states: "In order to provide assurance that the requirements given in this document can be applied during the design, construction, maintenance, and operation of the plant, the protection system equipment (for example, interconnecting wiring, components, modules, etc.) shall be identified distinctively as being in the protection system. This identification shall distinguish between redundant portions of the protection system." Although a strict interpretation of IEEE-279 may not include sensing lines within its scope, the sensing lines are essential to the reliable operation of the protection system and should, thus, be designed and installed with the same care as any other equipment in the protection system. In particular, the sensing lines for redundant protection channels should be appropriately separated and protected from external hazards. In order to facilitate verification that sensing lines for redundant protection channels are appropriately separated and protected from external hazards initially and throughout the life of the plant, the sensing lines for transmitters in the protection system should be appropriately identified. This identification should distinguish between redundant channels. You are requested to confirm that the sensing lines for transmitters in the protection system will be identified distinctively as being in the protection system and that the identification will distinguish between redundant channels.

the sensing lines for transmitters in the protection system should be appropriately identified and that the identification should distinguish between redundant channels. The attached enclosure requests that Near Term Operating License applicants confirm on the docket that the sensing lines for transmitters in the protection system will be identified distinctively as being in the protection system and that the identification will distinguish between redundant channels.

It should be noted that ISA Standard ISA-567.02 (1980), "Nuclear-Safety-Related Instrument Sensing Line Piping and Tubing Standards for Use in Nuclear Power Plants," recommends identification and color coding of sensing lines pertaining to nuclear-safety-related-instrument channels. Although currently not formally endorsed by an MRC Regulatory Guide, this standard does represent an industry consensus that the protection system sensing lines be identified and color coded.

Thomas P. Spefs, Assistant Director
for Reactor Safety
Division of Systems Integration

Enclosure:
As stated

cc: R. Mattson
F. Rosa
G. Edison
C. Rossi
T. Dunning
R. Capra

DEC 22 1980

yellow

Docket No. 50-329 *80-20-01*
Docket No. 50-330

Consumers Power Company
ATTN: Mr. James W. Cook
Vice President
Midland Project
1945 West Parnall Road
Jackson, MI 49201

Gentlemen:

Thank you for your letters dated August 25, 1980 and November 7, 1980, informing us of your position relative to an item of noncompliance concerning welding material control (329/80-20-01 and 330/80-21-01).

Our position still stands that the purchase order and Attachment 1 could not be tied together and hence the item of noncompliance stands. However, based on the improvements in the QA program made since the 1973 purchase we conclude that you have taken action to preclude repetitions and as such, no further response to this item is required.

Your cooperation with us is appreciated.

Sincerely,

G. Fiorelli, Chief
Reactor Construction and
Engineering Support Branch

cc w/encl:
Central Files
Reproduction Unit NRC 20b
PDR
Local PDR
NSIC
TIC
Ronald Callen, Michigan
Public Service Commission
Myron M. Cherry

RI.I *RC* RIII *RC* RIII *5/11/81* RIII
Knop/jp Sutphin *for* Danielson Fiorelli
12/15/80

~~5187050595~~



CONSUMERS
POWER
COMPANY

James W Cook
Vice President, Midland Project

General Offices: 1945 West Parnall Road, Jackson, Michigan 49201 • (517) 788-0640

November 7, 1980

80-20

Mr J G Keppler, Regional Director
Office of Inspection and Enforcement
US Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

MIDLAND NUCLEAR PLANT - NRC ITEM OF NONCOMPLIANCE
INSPECTION REPORT NO 50-329/80-20 AND NO 50-330/80-21
FILE: 0.4.2 UFI: 73*60*13 SERIAL: 10054

- References: (a) Letter, J W Cook to J G Keppler; Subject: "Midland Nuclear Plant - NRC Item of Noncompliance, Inspection Report No 50-329/80-20 and No 50-330/80-21;" Serial 8818; dated August 25, 1980
- (b) Letter, G Fiorelli to J W Cook; IE Inspection Report No 50-329/80-28 and No 50-330/80-29; dated October 8, 1980

Reference (a) provided the Consumers Power response to the item of noncompliance concerning welding material control (329/80-20-01 and 330/80-21-01) resulting from the inspection conducted by Mr E W K Lee on July 8-10, 1980. Reference (b) reports on a further inspection by Mr Lee on September 23-25, 1980 and requests a further response to the item of noncompliance.

In reference (a), we stated that we thought the infraction was not appropriate based on finding the attachment to the Field Material Request (FMR) utilized at that time for ordering weld filler materials.

Reference (b) provides in part under DETAILS on page 2 the following:

"The inspector reviewed the Field Material Request (FMR) No FM-124 and the attachment No 1. It was determined that (1) the attached sheet to FMR No FM-124 cannot be established; (2) the tie between the subject PO and the attachment No 1 cannot be established; and (3) evidence that attachment No 1 was transmitted to the vendor is unavailable."

The items listed stem from the fact that the purchase order and attachment No 1 lack any unique identifiers which tie the two documents conclusively together. Evidence does exist that the purchase order was transmitted to

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the vendor. The purchase order, Attachment No 1, and the receiving reports can be tied together by the fact they all contain identical ordering data (ie, sizes and quantity and correlation between requirements and the quality verification documents). This is a 1973 purchase order. No cases have been discovered where the weld filler materials were in nonconformance to the applicable requirements. The paragraphs below describe improvements that were made in 1977 to the program for procurement of welding materials. Based on the additional information in this letter, we request that you reconsider the appropriateness of making this item an infraction.

In May 1977, Bechtel's Project Special Provisions (PSP) Notice G-10.1, Revision 0, was implemented which required review and approval of field material requisitions and purchase orders, for Q-listed and ASME III Code materials, by a Level II Quality Control Engineer.

Prior to May 1977, this item was covered by the Field Inspection Manual (FIM) which required that the Project Field Quality Control Engineer review all Q-listed field purchase orders. Also, prior to May 1977, requisitions and purchase orders were reviewed and approved by Bechtel's Field Weld Engineering.

The May 1977 change requires that a checklist be used by Quality Control to verify that the required specifications, test requirements, and other ordering data is as required by the applicable specifications and codes. Verification is confirmed by signature and date of a Level II Quality Control Engineer.

Regarding receipt of welding consumables, all material through the construction period, regardless of the designated classification (ie, Q-listed, ASME III, or non-Q-listed), is receipt inspected by Quality Control for acceptance to the applicable codes and specifications.

A review was made of approximately 20 (post-May 1977) purchase orders or changes to purchase orders which verified that the ordering data, such as mechanical and chemical tests and the subsequent documentation is as required. An audit (M-01-26-0) was initiated by Consumers Power to cover the ordering and receipt records of weld filler material. Seventeen specific orders were included in this audit. This audit is completed now except for the audit exit and the issuance of the audit report. This review and audit provides us confidence that the filler materials purchased, along with their quality verification documents, are proper in that they meet the applicable Code and specification requirements. It is our observation that since May 1977, the purchase orders that CPCo looked at in the above review and audit had the complete ordering data incorporated into the purchase order proper and did not use an "attachment."

The ordering of filler materials since May 1977 appears to be in compliance with the Quality Assurance Program elements covering this subject. To date, all weld consumables utilized meet the applicable specifications and codes as confirmed by Quality Control review and verification of certified material test reports and as further confirmed by CPCo review and audit. This is

further substantiated by the results of your inspection as given in Inspection Report 329/80-20 and 330/80-21 where eight specific heats of material were reviewed.

The above information is intended to provide the final response needed to close out this item.

James W. Cook

WRB/lr

CC: R Cook, USNRC Resident Inspector
Midland Nuclear Plant (1)

Docket No. 50-329
Docket No. 50-330

80-20

SEP 10 1980
James W. Cook
Vice President, Midland Project

Consumers Power Company
ATTN: Mr. James W. Cook
Vice President
Midland Project
1945 West Parnall Road
Jackson, MI 49201

Gentlemen: Enforcement
Division

Thank you for your letter dated August 25, 1980, informing us of the steps you have taken to correct the items of noncompliance which we brought to your attention in Inspection Reports No. 50-329/80-20 and No. 50-330/80-21 forwarded by our letter dated July 18, 1980. We will examine these matters during a subsequent inspection to determine if the additional data you located subsequent to our inspection is adequate to withdraw the item of noncompliance. We will inform you of our decision.

Your cooperation with us is appreciated.

Sincerely,
James W. Cook

Our further investigation, subsequent to your reply, has located procurement data which does contain the applicable Code information required for the purchase of the subject G. Fiorelli, Chief. We have also determined that the heat treatment Reactor Construction and Effluent coupons is in compliance with the Engineering Support Branchure provides our detailed response and substantiation of the above statements. cc w/ltr dtd 8/25/80:

Central Files
Reproduction Unit NRC 20b you revise your findings.

PDR
Local PDR
NSIC
TIC

Ronald Callen, Michigan
Public Service Commission
Myron M. Cherry, Chicago

Enclosure

James W. Cook

OFFICE	RIII	RIII	RIII	RIII	RIII
SURNAME	Lee/cw 9/4/80	Danielson	Sutphin	Knop	Fiorelli
DATE		9/5/80			

Supp 9-29-80



James W Cook
Vice President, Midland Project

General Offices: 1945 West Parnall Road, Jackson, Michigan 49201 • (517) 788-0640

August 25, 1980

Mr J G Keppler, Regional Director
Office of Inspection and Enforcement
US Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

MIDLAND NUCLEAR PLANT - NRC ITEM OF NONCOMPLIANCE
INSPECTION REPORT NO 50-329/80-20 AND NO 50-330/80-21
FILE: 0.4.2 UFI: 73*60*13 SERIAL: 8818

This letter, with its enclosure, is in response to your letter of July 10, 1980 which transmitted the results of your inspection of the Midland construction site on July 8-10, 1980 and which requested our written reply to a single item of noncompliance concerning welding material purchase controls.

Our further investigation, subsequent to your inspection, has located procurement data which does contain the applicable Code information required for the purchase of the subject welding material. We have also determined that the heat treatment of the weld material qualification coupons is in compliance with the applicable Code. The enclosure provides our detailed response and substantiation of the above statements.

Based on the additional information, we believe that the infraction is not appropriate and request that you revise your findings.

James W. Cook

WRE/lr

Enclosure

AUG 28 1980

CONSUMERS POWER COMPANY RESPONSE
TO THE ITEM OF NONCOMPLIANCE
DESCRIBED IN NRC INSPECTION REPORT
NO 50-329/80-20 AND NO 50-330/80-21

NONCONFORMANCE-WELDING MATERIAL CONTROL (329/80-20-01 & 330/80-21-01)

Description of Noncompliance

Appendix A of Report No 50-329/80-20 and 50-330/80-21 provides in part the following:

"Based on the inspection conducted on July 8-10, 1980, it appears that certain of your activities were in noncompliance with NRC requirements, as noted below. This item is an infraction."

"Bechtel Corporation Welding Standard WFMC-1, Revision 8, dated January 4, 1971, 'Welding Filler Material Control Procedure Specification' paragraph 2.1, states, in part, that, '... Welding filler material ordering information shall include the appropriate requirements of the job engineering specification, the applicable Code, and this procedure specification. ...'

"Contrary to the above, on July 10, 1980, the inspector established Bechtel Purchase Order No. 7220-F-5780, dated November 2, 1973 for 60,000 lbs. of E7018 electrodes did not specify the applicable code."

Response

Subsequent to your inspection of July 8-10, 1980, a review of procurement documents and weld filler material ordering specification was conducted. In particular, procurement records for the cited purchase order No. 7220-F-5780, dated November 2, 1973 were further investigated. Purchase order No. 7220-F-5780 was for 30,000 lbs of .1/8 inch diameter and 30,000 lbs of 3/32 inch diameter, type E-7018, Arc Welding Electrodes.

Investigation of the subject purchase order revealed the following additional information:

- 1) The Bechtel specification for procurement of welding filler material, applicable at the time of procurement was WFMC-1, Rev 0, dated May 1973.

NOTE: The noncompliance cited Bechtel Specification WFMC-1, Rev 8, dated January 4, 1971.

- 2) Field Material Request (FMR) No. FM-124, dated October 11, 1973, prepared for the subject purchase order, noted in the description, "No Subs per attached sheet."

NOTE: The attached sheet was not available for review at the time of your inspection during the period July 8-10, 1980.

- 3) Subsequent to your inspection of July 8-10, 1980, attachment No. 1 to FMR FM-124, prepared for P.O. 7220-F-5780 was located.
- 4) Attachment No. 1, to FM-124, specifies weld filler material procurement to Specification SFA 5.1 (ASME Section II, Part C). Attachment No. 1 also specifies the mechanical, chemical tests, and conditions required for verification of weld filler materials. Attachment No. 1 consists of two pages; one page for 3/32" diameter electrode, and one page for 1/8" diameter electrode. It is noted that Attachment No. 1 is page 12 of 13 of welding filler material Specification WFMC-1, Rev 0, dated May 1973. Page 12 of 13 of Specification WFMC-1 format provides space for the addition of the required ordering particulars, such as item no., quantity, and shipping destination.
- 5) Review of material (certificate of analysis) receiving reports for the subject purchase order, shows that they state that the material conforms to Specification AWS A 5.1-69. Results of the required tests are reported and the results meet all of the requirements of the Bechtel Specification, the attachment to the field material requisition, WFMC-1, Rev 0, and ASME SFA 5.1. It is noted that AWS A 5.1-69 is identical to SFA 5.1, which is so stated in the ASME Code.

Consumer Power has initiated an audit of weld filler materials procurement and receiving documentation and includes documentation related to weld filler materials procured from 1973 to the present.

It is felt that the statement in the report that the stress relieving time appeared to be in violation of the Code is in fact incorrect and that the subject E7018 electrodes meet the applicable Code in all respects.

The statement is found on page 4, from the "Details" section of the report. Item 5 from this page says in part:

"It was further determined from the material certification that the 60,000 lbs of E7018 electrodes purchased under this order was stress relieved for 15 hours at 1150°F. This stress relieved time appeared to be in violation of the 1971 Edition of ASME Section III; however, the inspector determined it is technically acceptable."

The applicable Section of the 1971 ASME Code which covers this subject is NB-2430 "Weld Metal Test." The conclusion of the inspection report appears to be based on the fact that per paragraph NB-2431.2b, test coupons shall be subject to the requirement that "the time at post weld heat-treatment shall be eight hours (this qualifies post weld heat treatment of ten hours or less)." This Code section further states, "Where the post weld heat treatment of the component exceeds ten hours, the general test of NB-2431.1 shall be used." This section requires that

the test coupons post weld heat treatment holding time shall be at least 80 percent of the maximum time to be applied to the weld metal in the component. The total holding PWHT time is the cumulative PWHT time that the component will receive and includes the time during installation and any repair cycles. The purpose of this extended PWHT holding time is to qualify the welding materials for fabrication conditions expected to be experienced in recognition that the mechanical properties will be reduced with PWHT time.

FAP
8/22/80

Appendix A

NOTICE OF VIOLATION

Consumers Power Company

Docket No. 50-329
Docket No. 50-330

Based on the inspection conducted on July 8-10, 1980, it appears that certain of your activities were in noncompliance with NRC requirements, as noted below. This item is an infraction.

10 CFR 50, Appendix B, Criterion IV, states, in part, that, "Measures shall be established to assure that applicable regulatory requirements, design bases, and other requirements which are necessary to assure adequate quality are suitable included or referenced in the documents for procurement of material, equipment, and services. . . ."

Consumers Power Company Quality Assurance Program Policy No. 4, Revision 9, states, in part that, "During design and construction, and during the operations phase including the Palisades SGRP and major modifications; these reviews are accomplished to assure that Consumers Power Company procurement documents contain or reference provisions such as the following:

- a. Basic technical requirements including drawings, specifications, codes, and standards with applicable revision data, test and inspection requirements, and special requirements, such as for designing, fabricating, cleaning, erecting, packaging, handling, shipping, and storage. . . ."

Bechtel Corporation Welding Standard WFMC-1, Revision 8, dated January 4, 1971, "Welding Filler Material Control Procedure Specification" paragraph 2.1, states, in part, that, ". . . Welding filler material ordering information shall include the appropriate requirements of the job engineering specification, the applicable Code, and this procedure specification. . . ."

Contrary to the above, on July 10, 1980, the inspector established Bechtel Purchase Order No. 7220-F-5780, dated November 2, 1973 for 60,000 lbs. of E7018 electrodes did not specify the applicable code.

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- c. Unit 1 Make-up Purification System Weld No. 10 of line No. 1CCA-12.

It was determined that (1) work was conducted in accordance with traveller; (2) proper welding materials were used; (3) welding procedure requirements were met; (4) work area was free of weld rod-stubs; and (5) physical appearance was acceptable.

No items of noncompliance or deviations were identified.

4. Reactor Coolant Pressure Boundary Piping - Welder Qualification (Units 1 and 2)

- a. The inspector established that B & WQC procedure for welder qualification has not been revised since the last review. (IE Inspection Reports No. 50-329/80-01 and No. 50-330/80-01, paragraph 4).
- b. The inspector reviewed the randomly selected qualification records of five welders who performed welding on welds stated in paragraph 3 of this report.

No items of noncompliance or deviations were identified.

5. Safety Related Piping - Welding Material Control (Units 1 and 2)

The inspector reviewed the following documents:

- a. Bechtel Power Corporation (Bechtel) Procedure No. WFMP-1, Revision 3, "Welding Filler Material Procurement Requirements".
- b. Bechtel Procedure No. WFMC-1, Revision 6, "Welding Filler Material Control Procedure Specification".
- c. Purchase Orders, Receiving Inspection Reports and Material Certification for E7018 electrodes with heat No. 401W1991 and lot No. B612N1AD; heat No. 18479 and lot No. C623N1AC heat No. 05L644 and lot No. B610M1AE; heat No. 432C2502 and lot No. 02-1-H826P; heat No. 432C3491 and lot No. 02-3S807S; heat No. 645K407 and lot No. H309H1AD; heat No. 09T480 and lot No. K308H1AD; heat No. 629485 and lot No. L305J1AC.

It was determined that the above met the PSAR, 10 CFR 50, Appendix B, and the applicable code requirements except Purchase Order No. 7220-F-5780 which did not specify the applicable code. This condition represents an item of noncompliance as identified in Appendix A (329/80-20-01 and 330/80-21-01). It was further determined from the material certification that the 60,000 lbs of E7018 electrodes purchased under this order was stress relieved for 15 hours at 1150°F. This stress relieved time appeared to be in violation of the 1971 Edition of ASME Section III; however, the inspector determined it is technically acceptable.

CONSUMERS POWER COMPANY RESPONSE TO THE DRAFT
SALP REPORT FOR THE MIDLAND NUCLEAR PLANT

Reference: 1. NRC letter; J A Hind to J W Cook; dated April 20, 1982; with Enclosures 1 and 2.

This response is in three parts. The first part provides a general response to the SALP appraisal and SALP process as a whole. The second part provides our detailed response to Enclosure 1 of the reference, the Significant SALP Report Findings. The third part provides a detailed response to Enclosure 2 of the reference, the Preliminary SALP Report, dated March, 1982, covering the assessment period of July 1, 1980 to June 30, 1981.

Part 1 - General Response

- A. We are encouraged by the general statements to the effect that the NRC sees progress in Consumers Power Company's overall quality assurance program and in its management. Undoubtedly, there has been improvement in our regulatory performance from the 79/80 assessment period to the 80/81 period and from the 80/81 period to the present. Literally, dozens of actions have been taken in order to achieve this improvement. These actions have been communicated to the NRC.

In May, 1981, Mr Keppler and members of his staff performed an extensive team inspection from which they concluded that ". . . the scope and depth of this NRC inspection was such that the identified noncompliances do not contravene our conclusion that Consumers Power Company has established an effective organization for the management of construction and implementation of quality assurance at the site."

- B. We are, however, disappointed by the overall negative tone of the draft SALP Report. Nonetheless, we continue to be dedicated to attaining two goals:
1. First and foremost, to ultimately assure that the as-built configuration of the plant is in conformance with all regulatory and design requirements; and,
 2. To continue to improve our regulatory performance.
- C. We welcome feedback relative to our regulatory performance--the sooner the better. We have encouraged such feedback in a number of ways, and we shall continue to do so. A number of meetings with Region III management and staff have been at our initiative. On numerous occasions we have proposed the establishment of routine, periodic meetings to exchange information with Region III's home office staff. On our own initiative, we submitted our Preoperational Testing Manual in order to obtain Region III review and comments at an early date. Our specific invitation may have contributed to Mr Keppler's personal participation in the NRC team inspection conducted in May, 1981. We have proposed that an NRC Inspector be on site as much of the time as possible to assess our remedial soils work. Of course, at the completion of NRC inspections, exit interviews with the Inspectors are a routine feedback mechanism.

- D. In reviewing how to improve the Company's overall regulatory performance, it becomes evident that the most timely regulatory feedback is that which is received before the accomplishment of the work in question. While both Consumers and the NRC attempt to achieve this objective, we believe both our organizations have fallen short in this area.

It is our recommendation that the NRC consider scheduling seminars for the various ongoing nuclear construction jobs as they approach each major phase. One purpose of these seminars would be to review the detailed quality programs and procedure for each major new activity at each job. This review would verify that all programmatic requirements at the detailed level were in place prior to the work or could be upgraded before the fact to meet Region III expectations. In addition, the NRC inspection specialists could review with the applicant's quality personnel typical detailed inspection plans used by the NRC in their on-site inspections. At the same time, discussions of actual experience from other earlier construction sites could make the Licensees for current construction sites more aware of and responsive to potential problems in the work area about to begin.

We in industry have tried to accomplish this objective with our various regional and industry groups, and by reviewing inspection reports from other jobs. However, these efforts suffer by lack of NRC input at detailed working levels. We urge the NRC to consider this type of an approach to supplement their other inspection programs.

A specific benefit to Midland's future performance has already occurred as a result of this concept. It was mentioned at the SALP meeting that we had submitted our Test Program Manual to Region III some time ago in order to obtain feedback prior to the start of detailed systems testing. Even though some testing has already taken place, we are delighted to report that follow-up from the April 26 meeting has resulted in the scheduling of a detailed NRC review of the Midland test program for later this month.

- E. We recognize that the SALP process is a relatively new one and that the NRC is attempting to develop an approach to the SALP reviews that will be timely, fair and based on the best available information. This second SALP Report is a major improvement over the first, National SALP Report which was issued in the fall of 1981. Nonetheless, our review of this SALP Report discloses additional improvements which can be achieved in meeting the objectives of the SALP process.

First, there appears to be no consistent format in characterizing the areas which are being evaluated. The assessment can be made by functional engineering areas such as soils, containment, piping, etc; or it can be made on the basis of discrete engineering activities such as design, procurement, construction, etc. The current SALP Report has both categorizations which leads to an inevitable double counting of deficiencies identified during a reporting period. The report itself recognizes this problem, but discounts it. We appreciate the need perceived by Region III for singling out certain specific activities, such as design control, for separate treatment in the SALP Report. However, the overlap of function and activity categories detracts substantially from the systematic nature of the appraisal. Certainly, there are mechanisms available to

Region III to express its particular concern with a designated activity other than the SALP Report.

Second, the rankings do not appear to be consistent. For example, no items of noncompliance were identified with respect to the Fire Protection, Containment and other Safety-Related Structures, and Preservice Inspection areas. Yet Fire Protection was rated a "Category 1" while Containment and other Safety-Related Structure and Preservice Inspection were rated a "Category 2."

We believe that the major criteria in evaluating licensee performance should be the number and seriousness of items of noncompliance identified by NRC for a given unit of inspection time. We are not suggesting that there is no room for subjective judgment in the appraisals of each area. What seems to occur, however, is a lack of consistency from area to area in applying the factors which shape that judgment. Moreover, we note that most of the specific items discussed were the subject of testimony before the ASLB conducting the soils hearings. Yet no review of that testimony seems to have taken place.

Finally, the time period during which the Licensee's performance is being evaluated is unclear. Part V of the Preliminary SALP Report does indicate that the noncompliances and deviations in the HVAC area were reported also in the first SALP report. However, one item of noncompliance listed in the Piping Systems and Support Performance Evaluation related to an apparent nonconformance that took place in November, 1973, but was identified during an NRC inspection during the SALP evaluation period. In addition, all of the 50.55(e) reports cited in the Preliminary SALP Report represented design deficiencies which occurred long before the SALP period. If those are the groundrules for the SALP process, they should be clearly stated. The Licensee and the public will then recognize that the evaluation rests not only on events which occurred during the evaluation process, but also on events identified during the evaluation period, regardless of when they took place.

What follows is a response to specific statements in the Preliminary SALP Report. Those specific statements are either direct quotations from, or characterizations of, items which were included in various NRC inspection reports. We have responded in writing to each inspection report and refer you to those responses for the details of the Company's position regarding each item. However, some of the characterizations of the findings of the inspection reports in the Preliminary SALP Report are incomplete. For your convenience, we have summarized our responses to each of the inspection findings, as well as clarifying the content in which those findings arose, as appropriate.

Part 2 - Response to Enclosure 1, Significant SALP Report Findings

A. General Observations

1. We are pleased that the Preliminary SALP Report noted the "improvements in the overall quality assurance program"; that we have "established an effective organization for the management of QA/QC activities"; and that "the numbers and qualifications of personnel in the QA/QC organization(s)

and the overview and audit functions performed were found to be above that normally found at other construction sites."

2. Also, we are pleased that for the Support Systems (HVAC) area the Preliminary Report recognized our resolution of the problems which existed during the previous SALP period prior to July 1, 1980. This resolution was realized through considerable expenditures of resources. We believe this demonstrates our responsiveness to problems with concrete actions.
3. The general observations relative to the less technical administrative areas are of concern to us. We do not view our past responses as argumentative merely because they provide additional facts or reasoning which may not have been available for presentation to the NRC Inspector at the time of the exit interview or because they provide information with which the NRC Inspector disagrees. The Staff, in at least two instances in the soils hearing, testified that making legitimate appeals is entirely proper, and is part of the normal give and take between the NRC Staff and the licensee. It is disappointing that the Preliminary SALP Report does not embrace the essence of that testimony and also of our management conference on this subject. At that conference, we were told not to be reluctant to appeal on any legitimate issue, but to discuss our differences with Region III prior to submitting any written appeal in order to facilitate its resolution. This suggestion has been adopted.

B. Piping Systems and Supports

1. We agree with the Preliminary SALP Report item relating to the unavailability of Committed Preliminary Design Calculations (CPDCs) to support the drawings for small bore piping. This, in our opinion, was the major quality deficiency that occurred during this SALP period. Upon discovery of the unavailability of the CPDCs, we stopped the design work, began immediate corrective action, and did not resume the work until both we and the NRC Staff were assured that the process had been corrected. Even with the design process deficiency identified, it is heartening to report that not a single pipe segment required rework as a result of this situation.
2. We also note with pleasure that the informal current rating in the Piping Systems and Supports area as of this time is "Category 2" based on Mr R Cook's statements made during the April 26 presentation of the Preliminary SALP Report. This improved rating is, we assume, based upon recognition of our positive and effective corrective actions in this area.

C. Electrical Power Supply and Distribution

1. While we understand that any noncompliance is "less than desired" and also understand the Staff's particular interest in our ambitious cable pulling schedule, we do not understand the apparently negative observations in this area. The implication given is that were it not for the NRC's advice, we would have had an inadequate number of QA/QC personnel available to support the cable pulling schedule. This is an erroneous implication. We believe we have always supported the cable pulling activities with the appropriate

number of QA/QC personnel. In fact, the amount of cable pulling carried out by the Company could not have been completed without adequate QC personnel, because in process inspection is required to verify cable pulling tensions.

2. We also believe that the seven items identified during this period were not excessive and were of relatively low consequence. These items are discussed more fully in the third part of this Attachment.

D. Soils and Foundations

1. We view the finding in this area especially harsh because it is predicated on some relatively minor items of noncompliance, and on misinformation in the Preliminary SALP Report, as demonstrated in the third part of this Attachment.
2. Reference is made to "limited QA/QC coverage." At no time has the QA/QC staff been insufficient to cover the ongoing work. At one time the NRC advised us of the need for additional personnel to cover future work. We were fully aware of and agreed with that need, and we have staffed and are staffing to meet it. Also, in our opinion, there has never been any inadequacy in the qualifications of the QA/QC personnel assigned to the remedial soils work. The QA Engineers so assigned are all degreed civil engineers.

Part 3 - Response to Enclosure 2, Preliminary SALP Report

A. Section I, Introduction

Our comments on this section are found in our general comments provided in Part 1, above.

B. Section II, Criteria

1. Our general comments relating to the manner in which evaluations are made are contained in Part 1, Paragraph E, above.

C. Section III, Summary of Results

1. Our comments on this section are found in our general comments provided in Part 1, Paragraphs A and B, above.

D. Section IV.1, Performance Analysis of Quality Assurance

1. It is gratifying, as noted earlier, that the NRC recognizes our above normal efforts with regard to the Quality Assurance organization and program, with regard to our overinspections and audits, and with regard to our aggressiveness in assuming the primary inspection responsibility for the HVAC installation.
2. Seven of the eight items identified from the May, 1981, inspection and referenced in this section of the Preliminary Report are duplicated elsewhere in the report under the Soils, Piping and Supports, and Electrical

Sections. Therefore, we will address these noncompliances specifically in the other sections.

3. The eighth item from the May, 1981 inspection dealt with the correction of adverse quality trends. Action was taken to provide a procedural change to cause the more timely closeout or verification that correction has been made in response to an adverse trend.

Our trend analysis activity is among the most comprehensive anywhere, in terms of scope and sophistication. Such an activity is not specifically required by NRC regulations or ANSI standards. Should not credit be given for this?

4. This section of the Preliminary Report also refers to another inspection

"indicating questionable QA managerial control (because) the licensee failed to fully evaluate the technical capability of the principal supplier of services for soil boring activities."

This is an unfair and incorrect summary of what occurred. The original NRC Inspection Report states:

"The technical capabilities of Woodward-Clyde (principal supplier of services for soil boring activities) were not evaluated prior to commencement of drilling operations on April 2, 1981."

Our original letter of response stated:

"On March 31, 1981, Consumers Power Company approved Woodward-Clyde consultants as the principal supplier of services for the soils boring and sample program based upon meetings (between March 3 and 11, 1981) with Woodward-Clyde consultants. . . . Woodward-Clyde consultants were considered qualified as documented by letter serial 12134, dated April 8, 1981, N Ramanujam to File B.2.5.4 (Attachment 1). Even though this letter is dated April 8, 1981, it documents steps taken prior to April 2, 1981, in qualifying Woodward-Clyde. Woodward-Clyde consultants were approved by Oral Communication Report serial 11883, R C Hirzel to R C Bauman, dated April 2, 1981, (Attachment 2). Both of these documents (Serials 12134 and 11883) were presented to Dr Ross Landsman of the Nuclear Regulatory Commission on April 9, 1981."

This is not "questionable QA managerial control." This is not "failure to fully evaluate the technical capability of the principal supplier." The documentation was provided to the NRC Inspector.

The actual noncompliance was failure to provide our Procurement Department with the letter documenting the approval of Woodward-Clyde prior to the commencement of activities on April 2.

- 4 5. Also, this same paragraph of the Preliminary SALP Report states:

"The NRC identified 15 deficiencies in the principal supplier's quality assurance program manual indicating that the licensee had not adequately reviewed and approved the procedures prior to preparation of drilling activities."

We are concerned both about the substantive and procedural implications of this comment. The 15 items referred to were generated as a result of our quality assurance programmatic requirements. The NRC Inspector participated with us in the initial and timely review of Woodward & Clyde's quality assurance manual. We welcomed his participation and anticipate that it will continue, at least through the conclusion of the soils remedial work. But it is simply counterproductive and unnecessarily adversarial for the NRC Inspector to "take credit" for having identified these deficiencies. Indeed, he did not do so. In any event, the important point is these items were uncovered in a routine review, in accordance with established quality assurance practices. Had they gone undetected past the review stage, some might have risen to the level of "deficiencies." Our timely handling of these matters is inappropriately characterized as a deficiency in the Preliminary SALP Report, when in fact it represents the proper functioning of the Quality Assurance Program.

E. Section IV.2, Performance Analysis of Soils and Foundations

1. The second paragraph of this section of the Preliminary SALP Report, states:

"Every inspection involving regional based inspectors and addressing soils settlement issues has resulted in at least one significant item of noncompliance."

The correctness of this statement depends upon how the term "inspection" is defined. It has been customary to define an inspection in terms of the duration of the inspection trip. For example, if an Inspector visits the site for three days in the first week, leaves and does not return until the third week, at which time he visits the site for two days, the practice has been to view these as two separate inspections. However, the practice of the NRC Inspector in this area has been to combine, into a single NRC Inspection Report, the results of two or more inspection trips. If an NRC inspection is defined as the inspection performed during a single trip, this statement in the Preliminary SALP Report is incorrect.

2. The Preliminary SALP Report states:

"There was a failure to initiate audit corrective action concerning the rereview of the FSAR and references to determine if design documents had modified the FSAR and if so that changes had been made to the FSAR."

This item is duplicated in the Preliminary SALP Report in the section dealing with Design Control. Read carefully, the item reflects a failure to initiate audit corrective action, not a failure to perform an adequate

rereview of the FSAR. The need for the corrective action was, in our view, of minor importance.

The FSAR rereview was an extensive, as well as intensive effort spanning 18 months and involving three companies--Consumers Power Company, Bechtel, Babcock & Wilcox. Bechtel, alone, spent an excess of 10,000 manhours on this effort prior to its completion in September, 1980. This effort resulted in a clarification and upgrading of the content of the FSAR. Two audits were made by the Consumers Power Company Quality Assurance Department to assess the adequacy of the FSAR rereview effort. Both audit teams concurred that the rereview had been accomplished conscientiously and effectively, assuring that design changes had not modified the FSAR or, if so, that such changes had been subsequently reflected in the FSAR.

The item given in the Preliminary SALP Report stems from our audit finding to the effect that all of the design documents which were rereviewed were not listed in block 8 of the rereview form as required by the rereview procedure. The instructions for block 8 indicated that the rereviewers were to list the design documents to be rereviewed, to indicate whether or not any conflicts existed between the design documents and the FSAR, and then to indicate the necessary resolution. The audit showed that some rereviewers had listed only the design documents which contained conflicts, and had indicated the required resolutions. In essence, therefore, these rereviewers did not understand the block 8 instructions to require a complete listing of documents--those which did not contain conflicts as well as those which did.

Nevertheless, the technical correctness of the rereview was validated, as follows: Rereview packages which did not provide a complete list of the reviewed documents were identified, and a large sample of them was selected. The packages selected were those which were most likely to contain design document conflicts. The packages were re-rereviewed. From this re-rereview, it was ascertained that not a single package contained even a single unresolved conflict. At this point, the rereview process was approximately 80 percent complete (recall that it was an 18 month effort). While there appeared to be some misinterpretation of the block 8 procedural requirement, all the rereviewers appeared to understand the intent of the rereview effort and were adequately resolving any conflicts between the design documents and the FSAR. Based on this, it was decided not to rewrite the procedure for block 8 and not to redo the block 8 document listings. It was thought that such actions only would have confused the process at this point in time. After an exchange of correspondence with the NRC on this item, however, we agreed to change the procedure and to provide additional training to the reviewers.

At the completion of the FSAR rereview effort, another sample of packages was re-rereviewed by the audit team with the same results, thus verifying the adequacy of the remaining 20 percent of the effort which had not been subject to the initial audit re-rereview. In essence, then, the two audit re-rereviews confirmed the adequacy of the entire effort.

In testimony before the Soils Hearing Board, Dr Landsman indicated that the block 8 condition did not call into question the technical effectiveness of the rereview, which Dr Landsman specifically found adequate (TR.p-4857, 4930).

3. The Preliminary SALP Report notes:

"Three examples of failure to translate applicable regulatory requirements and design criteria into design documents."

This item is also duplicated in the Design Control section of the Preliminary SALP Report.

a. The first example given is:

"Failure to maintain a coordination log of Specification Change Notices (SCNs)."

In response, there are three separate coordination logs in the civil discipline. These logs are maintained by three different people. The Drafting Supervisor maintains the coordination log for drawings and drawing change notices. The remaining documents, including SCNs, are covered by two other coordination logs which are maintained by Discipline Aides.

During the Region III inspection, the Company could not immediately document that all coordination had been included on an SCN log. The problem was made worse by the fact that the NRC Inspector was inadvertently shown the wrong log. Also the NRC Inspector felt that applicable procedures required all revisions of specifications, whether technical or clerical in nature, including those merely incorporating previously approved or coordinated SCNs, be reviewed by Geotech and so noted in the log. Although the Company disagreed with this interpretation, the procedure was modified, making it clear that clerical revisions merely incorporating previously reviewed changes need not be re-coordinated or re-reviewed by Geotech. At the request of the Region III Inspector, the Company also committed to review current revisions of civil, Q specifications to insure appropriate coordination of changes was carried out.

In any event, this is hardly something which can be properly characterized as a "failure to translate applicable regulatory requirements and design criteria into design documents."

b. The second example given is:

"Failure to correctly translate Specification Change Notice No SCN-9004 as a requirement into Revision 20 of Specification C-208."

This item arose as a result of a slight difference in wording between an SCN and the specification, after incorporation of the SCN into the

specification, relative to the Geotechnical Engineer's responsibilities for establishing the laboratory compaction test frequency. The SCN was issued to describe the responsibilities of the newly assigned on-site Geotechnical Engineer. The specification after incorporation of the SCN, used terms different from and more general than the SCN to describe the geotechnical engineer's responsibility for the establishment of the frequency for laboratory compaction testing. In our view, the intent of both the SCN and the specification was the same, although the NRC Inspector did not agree. Subsequently, any difference in wording was eliminated. Again, this situation appears to be very harshly characterized as a "failure to translate applicable regulatory requirements and design criteria into design documents."

- c. The third example given in the Preliminary SALP Report is:

"Failure of Engineering Department Project Instruction No EDPI 4.25.1, Revision 8 to establish adequate measures for design interface requirements."

In response, the EDPI was revised to state that it is the responsibility of the originator of a design change to coordinate the change with all groups which are affected by, or involved with, the revised portion of the document, regardless of whether the change is technical or editorial. This procedural change was made to eliminate the previous option of the Group Supervisor to waive the need for the coordination or interface when, in his judgment, it was unnecessary. This coordination is now required even for editorial changes. Adequate coordination had been accomplished prior to the EDPI revision.

The need for this added conservatism introduced by the EDPI revision is a matter of opinion and Consumers Power Company has accommodated the NRC's concern in this regard. However, there was never any "failure to translate applicable regulatory requirements and design criteria into design documents" and to characterize this item in that way is erroneous and unfair.

4. The Preliminary SALP Report gives the following item:

"Failure to establish test procedures for soils work activities."

The NRC Inspector found that US Testing did not previously determine the rheostat setting which produced the maximum density. However, US Testing did previously determine the rheostat setting that produced the maximum amplitude required by ASTM D2049. Tests were reperformed to verify that the maximum rheostat setting yields the maximum amplitude given in the relative density table used for the project. Results were documented and supplied to the NRC. This is far different from a "failure to establish test procedures" as stated in the Preliminary SALP Report. Again, the Report's comments are a gross generalization and a misrepresentation of the factual situation.

In this situation, the NRC Inspector did not accept an ASTM Standard procedure called out in the specification and imposed his own personal preference as to the technical requirement.

4 5. The Preliminary SALP Report also indicates a:

"Failure to supply a qualified on-site Geotechnical Engineer."

As part of the original response to soils issues, a Geotechnical Engineer was assigned to be on site. The resumes of the assigned engineer ("the first engineer") and of another applicant to the position ("the second engineer") were reviewed by Mr E Gallagher, then the cognizant NRC Inspector. Mr Gallagher expressed his opinion to our Mr Horn that the second engineer was preferable because of his many years of field experience. We cannot say whether or not Mr. Gallagher noticed that the second engineer was not a degreed engineer (although Mr. Gallagher reviewed the man's resume). On the basis of Mr. Gallagher's opinion, the first engineer was removed and the second engineer was assigned to the site. Subsequently, another NRC Inspector, Dr Landsman, became cognizant in this area. Dr Landsman who was accompanied by Mr. Gallagher during this inspection, was advised of the original coordination with Mr. Gallagher, but Dr. Landsman held an opinion different from Mr. Gallagher because the second engineer did not have a civil engineering degree. Dr. Landsman then cited the Company with a deviation for failure to provide a qualified Geotechnical engineer for the job. Immediately thereafter, the first engineer was reassigned to the on-site position. Dr Landsman concurred with this assignment. In view of these facts, the citation seems to us unfair.

6. The Preliminary Report also states:

"It was noted in NRC Inspection Reports No. 50-329/81-12; 50-330/81-12 that a sufficient number of qualified personnel were not available for the complex nature of the remedial soils work. This had previously been identified in NRC Inspection Reports No. 50-329/81-01; 50-330/81-01, referenced previously as a deviation to a commitment."

Inspection Reports No. 50-329/81-01; 50-330/81-01 deal with the deviation relative to the on-site Geotechnical Engineer. This was covered in Paragraph 5, immediately above. By the placement of this item in two different parts of the Preliminary Report, the appearance is given of two different items when, in fact, there is only one.

NRC Inspection Reports No. 50-329/81-12; 50-330/81-12 merely indicated the NRC's advice to the effect that additional QA/QC personnel would be needed to accommodate the forthcoming remedial soils work. We agreed with this NRC observation. We were not cited for any noncompliance on that score in these inspection reports. We now have 8 full time and 2 part time QA/QC persons employed in MPQAD and 27 QA/QC persons employed by both MPQAD and Bechtel Quality Control to cover remedial soils work--appropriate for the current workload, also taking into account the time necessary to assure their adequate training and certification. Five more persons are due on site by

mid May. Additional personnel are being sought to fill the 2 remaining authorized positions. The Preliminary SALP Report gives the impression of an inadequacy with regard to the quantity of personnel when, in fact, quite the opposite situation exists.

7. Finally, another item referenced in this section of the Report is duplicated in the Quality Assurance Section of the Report. Please refer to Part 3, Paragraph D.4, above.
8. In summary, while we find this section of the Preliminary Report inaccurate and overstated, we fully recognize the special sensitivities involved in the remedials soils area, and we are especially dedicated to the implementation of the quality controls and assurances required by law and engineering prudence.

F. Section IV.3, Performance Analysis of Containment and Other Safety-Related Structures

1. The cracks in the FWST foundation are also referred to in the section of the Preliminary SALP Report dealing with Design Control.

G. Section IV.4, Performance Analysis of Piping Systems and Supports

1. Item a(1) of this section of the Preliminary SALP Report states that:

"Bechtel Purchase Order did not specify applicable codes for purchase of 60,000 pounds of E-7018 electrode."

The original statement of the item, from NRC Inspection Reports No. 329/80-20-01 & 330/80-21-01 was as follows:

"Bechtel Corporation Welding Standard WFMC-1, Revision 8, dated January 4, 1971, 'Welding Filler Material Control Procedure Specification,' Paragraph 2.1, states, in part, that'. . . welding filler material ordering information shall include the appropriate requirements of the job engineering specification, the applicable Code and this procedure specification. . . .'

'Contrary to the above, on July 10, 1980, the (NRC) Inspector established (that) Bechtel Purchase Order No. 7220-F-5780, dated November 2, 1973, for 60,000 pounds of E-7018 electrodes did not specify the applicable Code.'"

First, note that the Preliminary SALP Report statement omits any reference to the November 2, 1973, date. The Bechtel Purchase Order for the E-7018 electrode was issued on November 2, 1973. We question whether we should be cited in this assessment period for an event which occurred 7 years prior to the assessment period.

Second, at the time of the procurement, a revision of WFMC-1, dated May, 1973, was applicable, whereas the citation referenced the January 4, 1971

revision of WFMC-1. The procurement was made in accordance with the May, 1973 specification. The procurement documentation reflected complete compliance with the requirements. Although these facts were not available immediately during the period of July 8-10, 1980, when the NRC Inspector was making the inspection, these facts were provided in our original response to the citation on August 25, 1980.

In addition, Consumers Power Company has performed an audit of the procurement documentation for weld filler materials procured from 1973 through 1980. This, too, was reported to the NRC in the August 25, 1980 response.

2. Item a(2) in this section of the Preliminary Report indicates that an Authorized Nuclear Inspector's hold point was bypassed for the pressurizer surge piping.

This item was detected by the NRC Inspector on September 24, 1980. By September 25, corrective action had been taken and verified by the NRC Inspector.

3. Items a(3) and (4) indicate that large bore pipe restraints, supports and anchors were installed incorrectly and that QC Inspectors did not detect the incorrect installations.

It is highly unusual to cite a licensee twice for what is essentially a single QA defect (one citation for the construction defect and another for not having detected the defect).

The NRC Inspector found 7 cases of apparent nonconformances to design requirements. He stated that he was using cursory inspection techniques. Upon our further inspection, we agreed that 3 of the cases were defects, but with more refined inspection techniques our investigation indicated that 2 cases were within tolerance, 1 case was a result of obvious post-inspection damage that would be checked for during walkdown inspection, and 1 case was for work yet to be inspected initially. The 3 real defects were of a relatively minor nature, and none of them impaired the function of the hangers even though they constitute a legitimate basis for the NRC's finding.

On the basis of these findings, we agreed to make an extensive sampling reinspection of hanger installations which were made prior to 1981. The results of this reinspection have indicated the presence of additional minor defects and may necessitate further reinjection. The results have been made available to the NRC and now are being analyzed by both the NRC and Consumers Power Company.

4. Item a(5) in this section of the Preliminary Report, dealing with the availability of Committed Preliminary Design Calculations for small bore pipe and piping suspension systems, is duplicated in another section of the draft SALP Report dealing with Design Control and Design Changes and is the major contributor to the Significant SALP Report Findings for Piping Systems

and Supports given in Enclosure 1 to the Reference. Correspondingly, our response to this item is covered in Part 2, Paragraph B of this attachment.

5. Item a(6) indicates:

"Failure to adequately control documents used in site small bore piping design activities."

The original item from NRC Inspection Report No 50-329/81-12 and 50-330/81-12 stated that:

"An (one) outdated specification was maintained at the small bore piping design group work location and revised calculations were not marked 'superseded' in accordance with the procedural requirements (our emphasis)."

After careful checking, this finding was determined to have been an isolated case.

Nevertheless, the calculations were checked and were found to be correct. Training was conducted of all personnel in this group. An audit was made. A procedure was changed to require that the specific revision number of the specification on which the calculation is based be documented in the calculation package.

6. Item a(7) indicates that Consumers Power Company audits did not:

"Include a detailed review of system stress analysis and (did not) follow up on previously identified hanger calculation inconsistencies."

In response, the above statement refers to the fact that we did not audit for the availability and correctness of the Committed Preliminary Design Calculations as discussed in Part 2, Paragraph B, and Part 3, Paragraph G.4, above. The audits that were made previously in this area concentrated on the completed calculations, rather than the preliminary calculations. The audit checklist for this area has since been adjusted to reflect a requirement relative to the preliminary calculations.

H. Section IV.5, Performance Analysis of Safety-Related Components

1. As a result of the two original items, from which the two items in this section of the Preliminary SALP Report are drawn, Consumers Power Company issued a formal Stop Work Order to Babcock & Wilcox and a letter to the NRC stating that the work stoppage would remain in effect until the corrective actions had been completed and reviewed by the NRC. Corrective actions were taken, as follows: The installation procedure for this activity was revised to clarify the method of installation and to specify the required dimensional checks. The indoctrination and training of the personnel performing the installation and of the personnel inspecting the work was strengthened. The Consumers Power Company overview inspection plan for this activity was revised. The NRC Resident Inspector verified these actions.
2. Again, it is encouraging that today's rating in this area, as stated by Mr R Cook during the April 26 meeting, is a strong "Category 2," or even, perhaps, a "Category 1," based on the aggressiveness of our overview efforts. We recognize the particular importance of this area, and we intend to continue our aggressive overview of this area.

I. Section IV.6, Performance Analysis of Support Systems (HVAC)

1. We appreciate the "Category 1" rating for the period in question and on an informal basis for the current period, as well, as stated by Mr R Cook during the April 26 meeting.
2. It should be noted that the civil penalty was imposed for conditions which existed prior to the assessment period in question.
3. The 17 items referred to were all identified as a result of investigations which were completed prior to June 30, 1980, and, therefore, prior to the start of the assessment period in question. This may be observed by review of the individual items given in NRC Inspection Reports No. 50-329/80-10; 50-330/80-11. Although these Inspection Reports are dated January 12, 1981, they clearly provide findings that were available prior to June 30, 1980. During management meetings held on March 24 and 28, 1980, these investigation findings were discussed extensively.

J. Section IV.7, Performance Analysis of Electrical Power Supply and Distribution

1. Item a(1) in this section of the Preliminary SALP Report indicates a failure to establish procedures for temporary support of cable.

The four damaged cables were repaired. The procedure was revised to require that coiled cables be properly supported, protected from damage and prevented from violating the minimum bend radius.

2. Item a(2) in this section of the Report indicates that electrical contractors did not verify conformance to Paragraph 3.1 of Project Quality Control Instruction E-5.0.

This item was an isolated incident of two wires violating separation standards inside a control panel. The cable routing was rearranged to provide the required separation, and the separation was verified by inspection. Electrical crafts and inspection personnel were formally reinstructed with regard to the separation requirements. Installation and inspection aids were provided to these personnel.

3. Item a(3) indicates a:

"Failure to identify and control nonconforming components."

Because of the general nature of this item, we are not sure to what it refers. After a thorough review of the NRC Inspection Reports for this assessment period, however, we believe that it refers to an item from NRC Inspection Reports No. 50-329/81-11; 50-330/81-11, as follows:

"On April 23, 1981, the (NRC) Inspectors identified 14 instances in which cable tray in the upper and lower cable spreading areas were not installed in accordance with the separation requirements delineated in the Midland FSAR and which had not been identified and controlled to prevent inadvertent use or installation. . . ."

Consumers Power Company documented the nonconforming condition for a few cases on a Nonconformance Report issued in May, 1979, long before the NRC Inspectors' finding. Late in 1979, it was determined that the existing Marinite barriers were not the most suitable separation device for our plant configuration. This resulted, in January, 1980, in the removal of the requirement for the Marinite barriers. In the spring of 1980, a study was conducted to determine which kind of barriers would be more suitable when the required spatial separation is not possible. Two things resulted from this study--first, that barrier installation would be accomplished best after cable pulling was complete; and second, that there was no risk in reworking cable trays after cable pulling to install the barriers, if needed. In August, 1980, a new barrier was chosen and SAR and design changes were made in April and June, 1981, respectively to reflect these changes.

This is a lengthy discourse, we realize, but in essence, the main points are as follows: we were well aware of the condition. At the time, we made a conscious decision not to provide any more inspection to identify additional specific cases where separation was not maintained. We were aware that the design was being changed, that the construction process was being changed, and that the final Bechtel Quality Control inspection for this condition would be carried out at the conclusion of the construction process. The Bechtel Project Quality Control Instruction E-3.0, "Final Electrical Area Completion Activities," was revised to reflect the inspection for separation and, as needed, for the installation of barriers at the completion of the cable pulling activities. Correspondingly, we were holding open our Nonconformance Report to assure that these changes were correctly implemented. There was no inadvertent "failure to identify and control." It was a conscious and knowledgeable decision.

This information was provided to the NRC on July 16, 1981, in our response to the NRC Inspection Report. Considering the explanation supplied to the Staff, we believe that there was no item of noncompliance and that this item should not have been in this Preliminary SALP Report.

4. Item a(4) indicates a:

"Failure to translate design criteria into drawings and specifications."

This inspection finding related to whether or not the color coding of instrumentation process lines was required. Based on our reading of the applicable codes and standards, it was not, and we stated this position in our original response to the NRC. At least one other licensee has the same position and is maintaining it. However, we have acceded to the NRC concern in this area by agreeing to identify the instrument process lines with a two digit alpha designator, and the specification has been changed to add this new requirement. We are also not clear whether this requirement applies generally or only in Region III, since the Draft Regulatory Guide on this subject makes no mention of the requirement.

5. Item a(5) indicates a:

"Failure to identify during inspection that a nonconforming condition with regard to minimum installed cable bend radius existed."

The condition referred to was discovered by a Consumers Power Company employee who was accompanying the NRC Inspector during his inspection. A Consumers Power Company Nonconformance Report was written to document the condition for the single cable in question. In addition to physically correcting the condition, the Bechtel Quality Control Inspector who originally inspected the cable was given an 8-hour training program in all phases of cable termination.

6. Item a(6) indicates:

"Failure to take prompt corrective action with regard to the lack of approval of procedures for the rework of electrical raceways."

We agreed that this was an entirely appropriate finding and Bechtel Construction and Bechtel Quality Control developed and issued the necessary administrative guidelines and instructions. Recently NRC Inspectors have conducted a follow-up inspection and determined that the rework controls have been properly implemented and carried out.

7. Item a(7) indicates:

"Failure to provide adequate storage conditions for (three items)."

The storage conditions for each of the items was immediately corrected. The Bechtel Maintenance Engineers were given additional training in accordance with the requirements of the field maintenance procedure. Consumers Power Company performed a comprehensive audit in this area to assure compliance with the field maintenance procedure.

8. It should be noted that each of the foregoing items is a Severity Level V or VI, relatively low severity levels.

We are gratified that our informal current rating is "Category 2," as stated by Mr R Cook during the April 26 meeting.

9. In two places in this section of the Preliminary SALP Report reference is made to the quantity of Bechtel Quality Control personnel being employed, with the implication that this quantity may be insufficient. To our knowledge it was not; nor is it now. In addition, in response to NRC concerns we have demonstrated both the qualifications of these personnel and the process by which they are certified.

K. Section IV.8, Performance Analysis of Instrumentation and Control Systems

No comment.

L. Section IV.9, Performance Analysis of Licensing Activities

Comments pertaining to our responsiveness to Staff requests for information regarding the "Soils" issue should certainly be qualified by noting the novelty or uniqueness of this technical review and the evolutionary nature of the Staff's positions. It is useful to note that as this review draws to its conclusion, the Advisory Committee on Reactor Safeguards (ACRS) subcommittee on the Midland soils questions characterized the Staff review as exhaustive and possibly an example of overkill. In addition, the ACRS subcommittee questioned the Staff extensively on whether portions of their review and requirements went beyond what was necessary to protect public health and safety. We are gratified that the Staff finds our more recent replies to be responsive and of high quality. We are striving to maintain this trend and improve communications with the Staff.

M. Section IV.10, Performance Analysis of Fire Protection

We appreciate NRC's "Category 1" rating in this area and its recognition of our efforts.

N. Section IV.11, Performance Analysis of Preservice Inspection

In view of the extensive amount of preservice inspection which was performed during the period corresponding to this SALP Report and continuing into the current period, with no items of noncompliance, we fail to understand why this area is not rated as "Category 1" instead of "Category 2,".

O. Section IV.12, Performance Analysis of Design Control and Design Changes

1. Items a(1)(a) and (b) given in this section of the Preliminary SALP Report are duplicates of items given in Section IV.2. As such, our specific response to these items is given in Part 3, Paragraphs E. 2 and 3, and will not be repeated here.
2. Item a(2) in this section of the Report is a duplicate of an item covered in Section IV.4. As such, our specific response is provided in Part 3, Paragraph G.4 and will not be repeated here.
3. Item a(3) in this section of the Report is a duplicate of an item given in Section IV.7 of the Report. As such, our specific response is given in Part 3, Paragraph J.4 and will not be repeated here.
4. The five 10CFR50.55(e) items listed in this section of the Preliminary Report relate to designs which were completed long before the start of the SALP period in question--in fact, years before. Our identification of these items during this assessment period indicates continuing design reviews, improved design control and our rigid compliance with the reporting requirements of 10CFR50 55(e).
5. We also call your attention to five inspections of Bechtel Power Corporation, Ann Arbor Division, engineering firm for the Midland Plant, conducted between January, 1979 and September, 1981 by the Vendor Inspection Branch of Region IV. The inspection covered a wide variety of design activities. For example, the October 7-10, 1980 inspection encompassed design verification, design interface, and design inspection activities. The March 31-April 3, 1981 inspection covered computer program control, technical personnel background verification, design change control and design corrective action. The two specifically referenced inspections were conducted during the SALP appraisal period. In all five inspections, there were a total of 6 nonconforming items identified, all of a relatively minor nature (nonconformances or deviations rather than violations). In two of the inspections no items of noncompliance were found. In our view, these inspections are indicative of a high degree of compliance within design segments of the Midland Project, and would clearly support a higher rating than the one given in this area.

(The five inspection reports are documented in letters dated April 16, 1981; October 14, 1981; November 5, 1980; June 15, 1979; and January 19, 1979, to the Bechtel Power Corporation, Ann Arbor Division, from Uldis Potapors, Chief Vendor Inspection Branch.)

6. Considering the nature of Items a(1)(a) and (b) and a(3), and the unfairness of a citation for activities long before the period in question, we are disappointed by a "Category J" rating in this area.

We believe that design control is one of the most difficult and important aspects of nuclear power plant projects. Design control has been doubly difficult for the Midland Project mainly because of the duration of the project and the incorporation of a multitude of new regulatory requirements

into the design as it progressed. We do not dismiss for a moment our obligation to monitor and improve our own efforts in this area and we continue to institute our own internal programs to increase our confidence in the quality of the overall design effort. We raise this concern with the preliminary SALP evaluation because the only significant finding in the SALP period that indicates a design control problem was the small bore piping lack of design package cover sheet, which was concluded to be an isolated event. On the other hand, we believe that the Region IV inspection reports and the seven 50.55(e) reports referenced provide strong indications that the design control area is improving.

* P. Section IV.13, Performance Appraisal of Reporting Requirements and Corrective Action

1. In this section of the Report, it is stated that:

"The licensee failed to make a timely determination for the need to submit a 10CFR50.55(e) Report to the NRC based on a 10CFR Part 21 Report from TransAmerica DeLaval, Inc."

Consumers Power Company has always adopted a conservative attitude towards reporting under 10 CFR 50.55(e). We believe the industry practice in this regard varies, depending upon the amount of analysis undertaken and discretion exercised in determining whether a deficiency could have an adverse impact on safety. In the past, Region III has stated that the Company does a "good job" reporting under 10 CFR 50.55(e).

In this specific case, the DeLaval Part 21 Report was sent to Bechtel and was misrouted, such that Consumers Power Company and the appropriate Bechtel personnel were not aware of the Part 21 Report on a timely basis. In the final analysis, the condition was determined not to be 50.55(e) reportable.

Corrective actions were taken. They included issuing letters to suppliers to advise them of the person to whom Part 21 Reports should be submitted, conducting training sessions at the site for key personnel to assure that misdirected Part 21 Reports get correctly redirected, and issuing periodic memos reiterating the information offered in the training session.

2. This section of the Preliminary SALP Report also states:

"Expeditious resolution of noncompliances is often delayed by inadequate licensee responses. The licensee has a tendency to spend too much time trying to justify why a finding is not a noncompliance rather than devoting the time to correcting the basic problem. Nine of 22 items of noncompliance were contested (excluding HVAC system noncompliances). Two of the contested noncompliances were retracted, but time and effort were lost in timely resolutions. Similar attitudes and responses have been observed regarding Company audit findings. This attitude is reflective of the licensee corrective action system and becomes a detriment to quality."

In response, let's deal with the statistics first. Two of the nine appeals (excluding HVAC) were granted, or 22 percent. Five other HVAC items were appealed, and two of those appeals were granted, or 40 percent. Combined, 14 items were appealed, 4 appeals were granted, or 29 percent. Of those not granted, the merits of the appeal are well documented.

While there may be some unavoidable delay because of appeals, in no instance has an appeal precluded timely corrective action. In addition, the Staff has repeatedly testified in the Soils Hearing that the Applicant should appeal when necessary or appropriate.

During a meeting on October 5, 1981, NRC's Region III management made it clear that NRC's concern was with the administrative process by which appeals were made, not with the appeals themselves. They stated that appeals should be made and dispositioned informally, if possible, prior to the issuance of NRC Inspection Reports or, at the latest, prior to our written response to the NRC findings. We agreed with this suggestion and assured the NRC that such appeals, if any, would be made accordingly. It is disappointing that the substance of this management discussion was not reported in the Preliminary SALP Report.

Q. Section V.A, Noncompliance Data

1. It is important to recognize that the noncompliances and deviations given in the table for Midland Unit 1 are identical to those given in the table for Midland Unit 2 in the large majority of cases. We recognize that this is so stated in the footnote to both tables in the Report.
2. At this point, it is appropriate to reiterate from our response given in Part 3, Paragraph I.3, that the 17 items associated with the HVAC were all identified as a result of investigations which were completed prior to June 30, 1980 and, therefore, prior to the start of the assessment period in question. This can be seen by review of the individual items given in NRC Inspection Reports No. 50-329/80-10; 50-330/80-11. Although these Inspection Reports are dated January 12, 1981, they clearly provide findings that were available prior to June 30, 1980. During management meetings held on March 24 and 28, 1980, these investigation findings were extensively discussed. In conversations with NRC Inspectors, we were advised that these items are included in this SALP Report because they were inadvertently excluded from the earlier Report, and that they have to be covered somewhere. We believe that the earlier SALP Report should be revised to reflect these items. The presence of these items in this SALP Report bears unfavorably and unfairly upon the overall impression offered by the Report for the period in question.

R. Section V.B, Licensee Report Date

1. The twelve 50.55(e) Reports listed herein further demonstrate our cooperative approach with regard to the submittal of 50.55(e) Reports, as stated earlier in our response given in Part 3, Paragraph O. 4 and 5.

S. Section V.C, Licensee Activities

No comment.

T. Section V.D, Inspection Activities

1. The results of the May 18-22, 1981, NRC team inspection evoked the following conclusion, as given in NRC Inspection Reports No. 50-329/81-12; 50-330/81-12:

"This was an in-depth inspection to examine the implementation status and effectiveness of the current QA Program, to determine whether previously identified quality assurance problems were sufficiently precluded from occurrence in other areas, and to ascertain whether management involvement in the QA Program was sufficient and effective.

Although eight items of noncompliance were identified during this inspection, it is our (NRC) judgment that the scope and depth of this NRC inspection was such that the identified noncompliances do not contravene our conclusion that Consumers Power Company has established an effective organization for the management of construction and implementation of quality assurance at the site."

U. Section V.E, Investigations and Allegations Review

No investigations or allegations were pursued during the assessment period corresponding to this SALP Report, including investigations and allegations for HVAC. This supports our earlier assertions that reference to the 17 HVAC items should be deleted entirely from this Report.

V. Section V.F, Escalated Enforcement Actions

1. The civil penalty was imposed for conditions which existed prior to the assessment period corresponding to this SALP Report.
2. Under the heading of "Confirmatory Action Letter" are two examples of inspection findings that appear to be characterized in an overly harsh manner. We have been told in prior conversations that letters of commitment by the licensee with regard to inspection findings and which commit to actions desired by the NRC do not constitute an escalated enforcement action. Obviously, we misunderstood. Not only are these letters categorized under the escalated enforcement heading, but the text directly states that these were in fact the licensee equivalent of an immediate action letter. It was our understanding that Region III agreement to a licensee letter of commitment represented a Region III management decision that the item in question was downgraded in severity and did not represent an escalated enforcement action.

W. Section V.G, Management Conferences

1. Two of these management conferences were at Consumers Power Company's request.
2. We strongly support the need for more management conferences with top and intermediate level NRC management participation, especially focused on attaining mutual understanding as to the standards that will be applicable to Midland inspections.

Gardner



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

MAIL 1 2 1981

Docket No. 50-329
Docket No. 50-330

Consumers Power Company
ATTN: Mr. James W. Cook
Vice President
Midland Project
1945 West Parnall Road
Jackson, MI 49201

Gentlemen:

Thank you for your letter dated July 16, 1981, informing us of the steps you have taken to correct the four items of noncompliance which we brought to your attention in Inspection Reports No. 50-329/81-11; 50-330/81-11 forwarded by our letter dated June 16, 1981.

With respect to Items 1 and 2, your actions will be reviewed during a subsequent inspection.

With respect to Item 3, we reiterate our position that NCR M-01-4-9-048 did not specifically identify and control the numerous instances in which required separation barriers were removed from raceway drawings. To the extent that cable pulling activities continued unrestrained without this identification and control, we view this as an item of noncompliance. However, we conclude that the measures delineated in your response will be adequate in providing the necessary corrective action, thus no further response to this item is required.

With respect to Item 4, we disagree with your position that the instrument impulse lines are not required to be identified distinctively as being in the protection system. This requirement, as stated in Appendix A of the report, is delineated in IEEE 279-1971, Section 4.22. It is our position that the impulse lines constitute part of an instrument component and thus shall be distinctively identified as indicated in the subject standard.

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AUG 12 1981

Therefore, we request that you submit a second letter to this office within 30 days of the date of this letter to respond to our concerns regarding Item 4. Your response should be submitted under oath or affirmation.

Your cooperation with us is appreciated.

Sincerely,

C. E. Norelius

C. E. Norelius, Director
Division of Engineering and
Technical Inspection

cc w/ltr dtd 7/16/81:
DMB/Document Control Desk (RIDS)
Resident Inspector, RIII
Ronald Callen, Michigan
Public Service Commission
Myron M. Cherry

RIII
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8/4/81

RIII
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Love

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Williams

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Boyd

RIII
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Norelius
8/11/81

8/4/81



**Consumers
Power
Company**

James W Cook
Vice President - Projects, Engineering
and Construction

General Offices: 1945 West Parnall Road, Jackson, MI 49201 • (517) 788 0453

July 16, 1981

Mr J G Keppler, Regional Director
Office of Inspection and Enforcement
US Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

MIDLAND NUCLEAR PLANT -
INSPECTION REPORT NO 50-329/81-11 AND 50-330/81-11
FILE: 0.4.2 SERIAL: 12046

Reference: 1. NRC Letter, C E Norelius to J W Cook, dated June 16, 1981

This letter, including all attachments, provides Consumers Power Company's response to Reference 1 which transmitted the subject Inspection Report and which requested our written statement regarding four items of noncompliance described in Appendix A of Reference 1.

Consumers Power Company

By

James W. Cook
James W Cook

Sworn and subscribed to before me on this 16th day of July, 1981.

Beverly A. Avery Beverly A. Avery
Notary Public, Jackson County, Michigan
My commission expires January 16, 1985

MJS/lr

CC: RJCook, USNRC Resident Inspector
Midland Nuclear Plant (1)

~~810818562~~

JUL 20 1981

CONSUMERS POWER COMPANY'S RESPONSE
TO NOTICE OF VIOLATIONS
DESCRIBED IN NRC INSPECTION REPORT
NC 50-329/81-11 AND 50-330/81-11

- 1) Items 1(a) and 1(b) from Appendix A (Item of Noncompliance 329/81-11-02; 330/81-11-02 and 329/81-11-06; 330/81-11-05) provide:

"10CFR50 Appendix B, Criterion V, states in part: '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.'

Consumers Power Company's Quality Assurance Program Policy No 5, Revision 9, Paragraph 1.0, states in part: 'Instructions for controlling and performing activities affecting quality of equipment or operations during the design, construction and operation phases of nuclear power plants, such as . . . construction, installation . . . are documented in instructions, procedures, specifications, checklists and other forms of documents.'

Contrary to the above, as of May 1, 1981, the following instances of failure to develop appropriate procedures were identified:

- a. Appropriate procedures had not been developed for temporarily supporting cable and cable coils in that Bechtel Power Corporation Procedure FPE-4.000, Installation of Electrical Cable, Revision 3, dated March 13, 1979, did not require that care be exercised to assure that the method of support of pulled or partially pulled cables would not result in damage to the cable jacket or exceeding the minimum bend radius criteria (Paragraph 6.7 of FPE-4.000). As a result, four cable jackets were damaged by the single coil of rope from which they were supported, and two cables were supported such that the minimum bend radii were exceeded.
- b. Appropriate procedures had not been developed for the routing of cables into the equipment to which they are terminated in that Bechtel Power Corporation Procedure FPE-7.000, Cable Terminations, Revision 7, dated December 26, 1979, did not establish measures to assure that the bend radius criteria (Paragraph 6.7 of FPE-4.000) were not exceeded. As a result, cable 1B26404A was observed to be routed into Motor Control Center (MCC) 1B64 such that a minimum bend radius was exceeded."

Consumers Power Company's Response to Item 1(a)

The corrective action of Bechtel NCR 3418 was to repair the four damaged cable jackets with Raychem WCSF-N Shrink Tube per vendor print 7220-E-26-19-4. This was accomplished on July 6, 1981.

Bechtel NCRs 3417 and 3404 were written as a result of the NRC inspector's identification of two cables supported such that the minimum bend radii were exceeded. Project Engineering is scheduled to provide dispositions of NCR 3417 and NCR 3404 by July 17, 1981.

Process corrective action was to revise FPE-4.000, "Installation of Electrical Cable," to include requirements that coiled cables are properly supported, protected from damage and do not violate the minimum bend radius. Inter-office memorandum O-3885 was issued on May 15, 1981, to field construction to provide interim instructions for coiling of cable until FPE-4.000, which is presently in the review cycle, is approved.

Consumers Power Company's Response to Item 1(b)

Bechtel NCR 3405 was written on the violation of minimum bend radius of cable LBB6404A terminated in MCC 1B64. Field Engineering evaluated the discrepancy and determined that the portion of these cables of indeterminate quality could be cut off and the remaining cable reterminated to meet design requirements. The Field Engineering disposition is presently in the approval cycle.

FPE-7.000, "Cable Terminations," Revision 8, was implemented on May 21, 1981, to include the requirement that "bend radius for training cable/conductor shall be per vendor's requirements." This will establish measures to assure that the bend radius criteria will not be exceeded.

2) Item 2 from Appendix A (Item of Noncompliance 329/81-11-03) provides:

"10CFR50 Appendix B, Criterion X, states in part: 'A program for inspection of activities affecting quality shall be established and executed by or for the organization performing the activity to verify conformance with the documented instructions, procedures and drawings for accomplishing the activity.'

Consumers Power Company's Quality Assurance Program Policy No 10, Revision 8, Paragraph 1.0, states in part: 'Inspection and surveillance are performed to assure that activities affecting quality comply with documented instructions, design documents and applicable codes and standards.'

Contrary to the above, the electrical contractor's QC inspection of cable termination activities on September 25, 1980, failed to verify conformance to Paragraph 3.1 of Project Quality Control Instruction

E-5.0 which states in part: 'Verify that the cables . . . are routed within the equipment without violation of minimum separation requirements . ' As a result, the violation of the six-inch minimum separation requirement between class 1E cable 1AY001C and non-class 1E cables 1NB1705A and 1NA0500LA was not identified."

Consumers Power Company's Response to Item 2

Consumers Power Company's NCR M-01-9-1-041 was written to address the non-conformance. As a result, the corrective action taken was to provide the required separation between the class 1E and non-class 1E cables and verify that the separation requirements of Drawing E-47 had been met. The cables were independently verified by CPCo inspection to be re-arranged to meet the requirements on May 18, 1981.

Process corrective action to prevent recurrence was: 1) provide instruction to termination crews on the need to meet the separation requirements of Drawing E-47 in equipment, and 2) reinstruct all termination Quality Control Engineers (QCEs) on separation requirements for class 1E cables, internal wiring of control panels and equipment.

The lead electrical superintendent confirmed that electrical termination superintendents and craft personnel were instructed on the need to meet the separation requirements on Drawing E-47 in equipment. Instructions were documented on an inter-office memorandum dated May 28, 1981. Furthermore, a plastic coated criteria card with do's and don't's referencing color coding and separation distance between channels is given to each termination electrician on the jobsite.

The QCE involved was reinstructed in the requirements stated in Drawing E-47 for cable separation.

3) Item 3 of Appendix A (Item of Noncompliance 329/81-11-05 and 330/81-11-04) provides:

"10CFR50 Appendix B, Criterion XV, states in part: 'Measures shall be established to control materials, parts or components which do not conform to requirements in order to prevent their inadvertent use or installation. These measures shall include, as appropriate, procedures for identification, documentation . . . disposition and notification to affected organizations.'

Consumers Power Company's Quality Assurance Program Policy No 15, Revision 9, Paragraph 3.2, states in part: 'When a nonconforming item or activity is discovered or observed during design and construction for the Midland Project . . . the responsible . . . Consumers Power organization assures that the condition is documented and that nonconforming items are tagged, marked, segregated or controlled to prevent inadvertent use or installation . . .'

Contrary to the above, on April 28, 1981, the inspectors identified 14 instances in which cable tray in the upper and lower cable spreading areas were not installed in accordance with the separation

requirements delineated in the Midland FSAR and which had not been identified and controlled to prevent inadvertent use or installation. Furthermore, documentation, disposition and notification to all affected organizations of these nonconformances was not in accordance with the established Quality Assurance Program requirements even though similar significant discrepancies had been identified 16 months earlier."

Consumers Power Company's Response to Item 3

As noted in the body of the NRC report, Consumers Power Company documented the nonconforming condition on a Nonconformance Report (NCR) in May 1979. Part corrective action on the two trays specifically covered by the NCR was initiated in July 1979 by physically moving one of the trays to provide space for barrier installation. The NCR has remained open to track completion of the part corrective action and the process corrective action. Late in 1979, the project determined that Marinite barriers were not the most suitable design approach for the present plant configuration. This resulted in removing from the drawings the barrier requirement in January 1980.

In the spring of 1980, a study was initiated as to the approach that should be taken to provide barriers when the required physical separation is not possible. A Bechtel inter-office memorandum (IOM) dated March 14, 1980, documents the implementation of the study and acknowledges the hold placed on the use of the Marinite barriers. The same IOM recognized that the barrier installation would best be accomplished after cable pulling was complete. In eliminating the Marinite approach, Project Engineering was confident that there was no serious risk in having to rework cable tray in order to install the barriers under evaluation. It was known that physical conditions were being created that would require barriers. A SAR Change Notice was originated on August 21, 1980, which reflects the results of the study and the project's decision to use Kaowool or Cerablanket as a barrier or to utilize completely enclosed raceways. The lengthy time to obtain approval and incorporation of the SAR change was due to the further extensive reviews by Consumers and Bechtel Engineering. Specifically, this change affected the design approach to be used to meet new requirements on fire protection separation (twenty (20)-foot requirement). Revision 33 of the FSAR, dated April 1981, now reflects in Section 8.3.3.3.1 the design approach to be used where the physical separation distances specified in the SAR are unattainable.

On June 11, 1981, Bechtel's Project Engineering issued a Drawing Change Notice against Drawing E-641, Sheet 7, Revision 1, to indicate proper barriers for cable trays 2AGCO5 and 2NHL01 which are identified on Consumers Power NCR M-01-4-9-048. Engineering is presently in the process of generating a set of drawings to be issued for construction showing areas of the plant where separation barriers are required to be installed. It is anticipated that the subject drawings will be issued for construction by September 1, 1981.

The inspection for incorporation of barriers will be incorporated in PQCI E-3.0 (Final Electrical Area Completion Activities). This is consistent with installing barriers at the completion of cable pulling activities. As stated to various members of the Region III staff on May 14, 1981, we feel

there are no significant constructability problems anticipated with the installation of the separation barriers.

Consumers Power Company will close out NCR M-01-49-048 when all of the part corrective action is complete on the two specific trays covered by the NCR and when we have assured the effectiveness of the process corrective action. This will be accomplished by the drawings showing the required barriers and overinspection of the PQCI E-3.0 inspection requirements.

- 4) Item 4 of Appendix A (Item of Noncompliance 329/81-11-07 and 330/81-11-06) provides:

"10CFR50 Appendix B, Criterion III, states in part: 'Measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in 50.2 and as specified in the license application . . . , are correctly translated into specifications, drawings, procedures and instructions.'

Consumers Power Company's Quality Assurance Program Policy No 3, Revision 9, Paragraph 3.3, states in part: 'Each group or organization performing detailed design translates the applicable regulatory requirements, design bases, codes, standards and design criteria into design documents such as: specifications, drawings . . . '

The FSAR in Paragraph 8.3.1.3 states in part: 'All class 1E equipment, with the exception of the main and local control boards, are marked with an adhesive-backed color coded symbol.' IEEE 279-1971, Criteria for Protection Systems for Nuclear Power Generating Stations, in Section 4.22 states in part: 'In order to provide assurance that the requirements given in this document can be applied during the design, construction, maintenance and operation of the plant, the protection system equipment . . . shall be identified distinctively as being in the protection system. This identification shall distinguish between redundant portions of the protection system.'

Contrary to the above, as of May 1, 1981, the above commitments had not been translated into specifications, drawings, procedures and instructions pertaining to the installation of field-mounted class 1E instrumentation."

Consumers Power Company's Response to Item 4

Bechtel Project Engineering will revise Specification 7220-J-218(Q) to reference the requirements for color coding class 1E instruments per 7220-E-47(Q) on or about July 31, 1981. These requirements are currently specified in FSAR, Volume 14, Section 8.3.1.3, per class 1E terminal equipment. This requirement does not apply to instrument process lines.

In addition, Specification 7220-J-218(Q), Section 5.3.7, states that the instrument Installation Summary (7220-J-705(Q)) is used to identify all

redundant safety-related instruments and their impulse lines. The summary lists the "Q" status of the instrument. This specification provides the criteria for channel separation, however, it does not require any specific marking of the impulse lines.

MJS/lr
7/16/81

Gardner

NOV 25 1981

Docket No. 50-329
Docket No. 50-330

Consumers Power Company
ATTN: Mr. James W. Cook
Vice President
Midland Project
1945 West Parnall Road
Jackson, MI 49201

Gentlemen:

Thank you for your letter dated November 10, 1981, informing us of the additional measures you have taken to correct the item of noncompliance which we brought to your attention in Inspection Reports No. 50-329/81-11; 50-330/81-11 forwarded by our most recent letter dated October 23, 1981. We will examine this matter during a subsequent inspection.

Your cooperation with us is appreciated.

Sincerely,

C. E. Norelius

C. E. Norelius, Director
Division of Engineering and
Technical Inspection

cc w/ltr dtd 11/10/81:
DMB/Document Control Desk (RIDS)
Resident Inspector, RIII
Ronald Callen, Michigan
Public Service Commission
Myron M. Cherry
Barbara Stamiris
Mary Sinclair
Wendell Marshall

~~8112018047~~

OFFICE ▶ RIII	RIII	RIII	RIII	RIII	RIII	RIII
SURNAME ▶ <i>R. Gardner</i> Gardner	Love <i>RL</i>	Hawkins <i>7 11/23</i>	Williams <i>2/24</i>	Boyd <i>RCH</i>	Norelius <i>RLH</i>	
DATE ▶ 11/20/81			11/23/81	11/23/81	11/24	



Consumers
Power
Company

James W Cook
Vice President - Projects, Engineering
and Construction

General Offices: 1945 West Parnall Road, Jackson, MI 49201 • (517) 788-0453

November 10, 1981

Mr J G Keppler, Regional Director
Office of Inspection & Enforcement
US Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

MIDLAND PROJECT -
INSPECTION REPORT NO 50-329/81-11 AND 50-330/81-11
FILE: 0.4.2 SERIAL: 14614

- References:
1. Consumers Power Company letter, J W Cook to J G Keppler, dated July 16, 1981 (Serial 12046).
 2. NRC letter, C E Norelius to J W Cook, dated August 12, 1981.
 3. Consumers Power Company letter, J W Cook to J G Keppler, dated September 11, 1981 (Serial 13667).
 4. NRC letter, C E Norelius to J W Cook, dated October 23, 1981

Reference 4 requested a written statement describing our planned corrective actions and the proposed date of completion regarding Item 4 of Appendix A of Inspection Report 50-329/81-11 and 50-330/81-11. The requested response is given in Attachment 1 of this letter.

Consumers Power Company

By

James W. Cook
James W Cook

Sworn and subscribed to before me on this 10th day of November, 1981.

Barbara Johnson
Notary Public, Jackson County, Michigan
My commission expires September 8, 1984

WRB/lr

~~8712712649~~

NOV 12 1981

2

Serial 14614

CC: RJCook, USNRC Resident Inspector
Midland Nuclear Plant (1)

CONSUMERS POWER COMPANY RESPONSE
TO ITEM OF NONCOMPLIANCE 50-329/81-11-07 AND 50-330/81-11-06
DESCRIBED IN NRC INSPECTION REPORT 50-329/81-11 & 50-330/81-11

Item 4 from Appendix A states in part, "...The FSAR in Paragraph 8.3.1.3 states, in part, 'All Class 1E equipment, with the exception of the main and local control boards, are marked with an adhesive-backed color coded symbol.' IEEE279-1971, 'Criteria for Protection Systems for Nuclear Power Generating Stations', in Section 4.22 states, in part, 'In order to provide assurance that the requirements given in this document can be applied during the design, construction, maintenance, and operation of the plant, the protection system equipment ... shall be identified distinctively as being in the protection system. This identification shall distinguish between redundant portions of the protection system.' Contrary to the above, as of May 1, 1981, the above commitments had not been translated into specifications, drawings, procedures and instructions pertaining to the installation of field mounted Class 1E instrumentation."

From Page 9 of the body of the report the following is provided:

- "a. In reviewing Specification J-216 and in discussions with the licensee, it was determined that there is no requirement that either the field mounted Class 1E impulse lines or the associated process system instruments (e.g. flow transmitters, pressure transmitters, temperature detectors, etc.) be identified in such a manner which distinctively identifies that item as being a part of the protection system.

The above condition is contrary to the requirements of Paragraph 8.3.1.3 of the Midland FSAR which states, in part, 'All Class 1E equipment, with the exception of the main and local control boards are marked with an adhesive-backed color coded symbol.' Further, IEEE279-1971, 'Criteria for Protection Systems for Nuclear Power Generating Stations', in Section 4.22 states, in part, 'In order to provide assurance that the requirements given in this document can be applied during the design, construction, maintenance, and operation of the plant, the protection system equipment ... shall be identified distinctively as being in the protection system. This identification shall distinguish between redundant portions of the protection system.'

Consumers Power Company's Response

The cover letter lists four references which document the different interpretations of Consumers Power and the NRC concerning the identification requirements contained in IEEE-279, 1971. Reference 4

acknowledges Consumers Power's position to provide identification on the process lines to meet the NRC's interpretation of that standard. Reference 1 provided our corrective action to identify the process system instruments. This response addresses identification of the Class 1E impulse lines.

Each safety grade impulse line will be identified with a two-letter designator. The letter designators are provided by Bechtel Engineering Document 7220-J-705(Q), "Instrument Installation Summary for the Midland Plants 1 and 2." The two-letter designator provides both a system and safety channel designation, thus providing visual evidence of the line being part of a protection system and providing for distinguishing between redundant portions of the protective system.

The marking requirement will be to identify the process lines at the root valve at each bulkhead (both sides) where the lines pass through and at the instrument. The physical means of identification requires further engineering detailing and may be different for different situations.

Specification 7220-J-218Q will be revised by December 31, 1981 to provide generic identification requirements. This revision will be retroactive to include all Class 1E instrument installations. The Bechtel Quality Control Inspection Plan (PI-1.40) will be revised following the specification change to verify that the identification is accomplished on each system. The revision to Specification 7220-J-218Q will eliminate the cited nonconformance, thus achieving conformance to 10CFR50 Criterion III. The actual identification of each line will occur as the systems are installed except where retrofit is required for systems installed prior to the specification change. A schedule will be provided by January 15, 1982 for marking the lines which were installed and inspected prior to the issuance of the identification criteria. It is expected that there will not be many lines that will fall in this category due to the limited installation of instrument systems to date.

WRB/lr



Consumers
Power
Company

James W Cook
Vice President - Projects, Engineering
and Construction

General Offices: 1945 West Parnell Road, Jackson, MI 49201 • (517) 788-0453

September 30, 1982

PRINCIPAL STAFF			
RA		CI	
D/PA		ENC	
AVP		✓ P. Aug 13	
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Director of Office of Inspection
and Enforcement
Att Mr Richard C DeYoung
US Nuclear Regulatory Commission
Washington, DC 20555

MIDLAND PROJECT - ALAB-106 QUARTERLY REPORT
DOCKETS NOS 50-329 AND 50-330
FILE: 0.4.6 SERIAL: 19047

Pursuant to the second and third conditions of the Memorandum and Order
ALAB-106 dated March 26, 1973, and Amendment No 1 to the Midland Plant
Construction Permits, we are submitting ten copies of our thirty-ninth (39th)
report covering the period October 1, 1982 through December 31, 1982.

James W. Cook

JWC/WRB/jac

CC: RJCook, USNRC Resident Inspector
Midland Nuclear Plant

~~6210080115-820930~~
PDR ADOCK 05000329
R PDR

OC0982-0020A-MP01

OCT 18 1982

*Equivalent to
It 24
Add: E. C. Janslan,
It
J. M. Taylor,
It*

CONSUMERS POWER COMPANY -

REPORT # 39 SEPTEMBER 30, 1982

Pursuant to Conditions 2FB and 2FC of Construction Permits CPPR-81 and CPPR-82, the following report covers the period October 1, 1982 through December 31, 1982.

- A) Construction work to be performed during this period. See Attachment A.
- B) Personnel with quality related duties who were assigned to the Midland Project during the period June 30, through September 30, 1982, and who are expected to be on site through September 30, 1982, and who will be trained as necessary to perform the functions required to them, are as follows:

1) Midland Project Quality Assurance

RBudrick	Fluids & Mechanical IE&TV	CPCo
MCarlson	QC Inspector/HVAC	VOLT
RCarlson	QC Inspector/HVAC	VOLT
KClements	QC Inspector/HVAC	VOLT
JFoley	Civil Quality Assurance Eng.	Gilbert Commonwealth
DGingras	Fluids & Mechanical IE&TV	Applied Eng.
JGreiner	Civil Quality Assurance Eng.	Bechtel Power
WHeiberger	Mechanical QAE/HVAC	EG & G
JHeimpold	Electrical IE&TV	SAI
LKettren	Soils QAE	Gilbert Commonwealth
JKozelouzek	Fluids & Mechanical IE&TV	Applied Eng.
LbGinnis	QC Inspector/HVAC	VOLT
JKMeisenheimer	Civil Remedial Soils QA Superintendent	Gilbert Commonwealth
WLMelton	Civil Soils IE&TV	PDS
JJPetrosino	Electrical IE&TV	SAI
FPointe	Fluids & Mechanical IE&TV	PTI
JRobbins	Associate QA Consultant	CPCo
JSelvidio	Welding NDE	Butler
GTrumper	Electrical IE&TV	CPCo

2) Bechtel Quality Assurance/Quality Control

GRichardson	Assist. Project Manager/Quality	Bechtel AnnArbor
DCaldwell	Electrical QC	Bechtel
RIvy	Quality Control	Bechtel
LLizotte	Quality Control	Bechtel
JPogue	Quality Control	Bechtel

3) B & W Construction Company

TAlcott	Quality Control	B&W
PCaropino	Quality Control	B&W
BCaspary	Quality Control	B&W
JCox	Quality Control	B&W
KFennell	Quality Control	B&W
DKarol	Quality Control	B&W
HWong	Quality Control	B&W
TYurick	Quality Control	B&W

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SEP 15 1982

QUALITY ASSURANCE

- C) Quality Assurance qualifications of supervisors and engineers listed in B above are attached to this report.
- D) The following personnel no longer are performing quality-related tasks at the site:

Midland project Quality Assurance
 JLDonnell
 Bechtel Quality Assurance/Quality Control

Civil QAE

B&W/CPCo

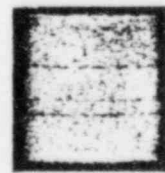
HChadej
 CCross
 RHiron
 MMacGlashen
 FMansfield
 WMartin
 ERule
 FVanBlarcom

Quality Control
 Quality Control
 Civil QC
 Quality Control
 Quality Control/Underpinning
 Quality Control
 Quality Control Electrical
 Quality Control/ M/P

Bechtel
 Bechtel
 Bechtel
 Bechtel
 Bechtel
 Bechtel
 Bechtel

B & W Construction Company
 None

additions and deletions to the personnel with quality related duties will be reported in the next quarterly report.



QUARTERLY REPORT
SEPTEMBER 1982 THROUGH DECEMBER 1982

1. Continue installation of large and small pipe and hangers in the Auxiliary building.
2. Continue installation of mechanical and electrical instruments and tubing throughout the plant.
3. Continue to install raceway, and pull and terminate wire and cable throughout the plant.
4. Continue installation of radiation monitors and associated control panels in the Auxiliary Building.
5. Receive and install balance of remaining airtight doors, wire mesh gates, and pressure relief panels, and continue installation of watertight doors in the Auxiliary and Containment Buildings.
6. Continue blockwall pours and fixes, and installation of new masonry blockwalls in the Auxiliary Building.
7. Continue installation of large and small pipe and hangers in Containments 1 and 2.
8. Continue installation of Auxiliary Feedwater Header.
9. Complete installation of snubber tubing and supports for reactor coolant pumps in both Containment Buildings (with exception of two snubbers in Unit 1).
10. Complete work on the control rod drive mechanisms in both Containment Buildings.
11. Continue work on the reactor coolant pumps in both Containment Buildings.
12. Continue HVAC installation in all facilities.
13. Subcontractor to complete insulation of equipment in Containment 2, and continue work on piping and equipment in both units.
14. Subcontractor to begin penetration sealant work.
15. Continue underpinning activities for Auxiliary Building remedial soils work.
16. Subcontractor to begin underpinning activities on the Service/Circulating Water Buildings.
17. Continue to complete and turnover Start-Up Systems to the client.
18. Continue to complete and turnover area/facility packages to the client.

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
MPQAD	Budrick	Ronald	8/27/82	499

EDUCATION:

SCHOOL	NAME	CITY STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	Allen Park	Allen Park, MI	College Prep.	4	
COLLEGE	Wayne State University	Detroit, MI	Metallurgical Engineering	4.5	BS 1968
OTHER	Westinghouse Bettis Atomic Power Lab.	W. Mifflin, Penna	Control of core manufacturing	1	1970
OTHER					

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
9/78	7/82	Rolled Alloys Inc. 125 W. Sterns Rd. Temperance, MI	Mgr - Quality Assurance & Product Mgr. Eastern Region	Establish & maintain corporate mat. & chem labs. Establish QA Corp. program per 10CFR50 app.B, ANSI 45.2 mil Q 9858A, ASME Sec. III & VIII. Director of Employee Assist. Program
4/76	9/78	Owned own Company Caseville, MI Also Big Brothers/Big Sisters 122 N. Hanselman Bad Ave, MI	Partner/Owner Assoc. Director	Design & manufacturing of ceramic holds. Agency funding, marketing & Public Relations.
9/68	10/72	Westinghouse Bettis Atomic Power Lab W. Mifflin Penna	Metallurgical Engineer	Fuel Rod QA including development of detailed inspection and mfg. procedures. Also liaison QA Between design, field rep. & mfg. Also project design mfg. & QA procedures & disposition of DSR (degradation of Spec. Req
10/72	10/75	KMS Fusion Inc. Ann Arbor, MI	Research Metallurgical Engineer	Research & development for fusion reactor fuel pellet development. Patents Issued: 4,017 "Method & apparatus for mfg of uniform pellets for fusion reactors."
				4,021, 253 "method for mfg. glass frit"

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
MPQAD	Carlson,	Mary	8-16-82	

EDUCATION

SCHOOL	NAME	CITY STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	Milford High School	Milford, MI	College Prep	4	
COLLEGE	Michigan Tech.	Houghton, MI	Civil Tech.	3	
OTHER	South West Oakland Vocational Education Center	Walled Lake, MI	Architectual Drafting	2	cert. 1975
OTHER					

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
8/82	Prs.	Consumers Power Co. Midland Nuclear Plt. MPQAD HVAC Midland, MI	QCI Inspector	
4/82	8/82	Daniel International Callaway Nuclear Plant Fulton, Mo.	Level II Welding Doc. Review Tech. (Turnover)	Reviewed "Q" documentation prior to hydrotesting and turnover.
7/78	4/82	Tennessee Valley Authority Nuclear Plant P.O. Box 2000 Hartsville, TN	Level II Inspector (Civil)	Organized the protective Coating Program at Hartsville Inspected shop and field protective coatings (surface prep and final inspection) in Stride and BOP areas. Initiated QCIR'S and NCR'S and maintained QA documentation. Also certifie as a cadwelding inspector, shop fabrication inspector and a stu welding inspector. For 3 months lead an internal audit on Cadwell documentation per a disposition on a significant NCR.

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
MPQAD	Carlson	Randy S.	8-11-82	

EDUCATION

SCHOOL	NAME	CITY	STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	L.L. Wright	Ironwood	MI	College Prep	4	
COLLEGE	Gogebic Comm. College	Ironwood	MI	Mech. Eng.	1/2	
OTHER	Michigan Tech. Univ.	Houghton	MI	Civil Eng. Tech	2 1/2	A.A.S 1978
OTHER						

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
4/82	7/82	Daniel Intl. Corp. Callaway Nuclear Plant Fulton, Mo.	Mech. Insp. Level II	Performed Mech. Inspection on pipe Hangers
7/78	4/82	Tennessee Valley Authority P.O. Box 2000 Hartsville, TN	9/81 to 4/82 Hanger QC Level II	Performed Mech. & Weld Inspection on pipe hangers
7/78	4/82	Tennessee Valley	3/80 to 9/81 Concrete and Materials QC Level II	Inspected and tested concrete at concrete lab and later at cooling tower
7/78	4/82	Tennessee Valley	7/78 to 3/80 Surveyor	Established building control and inspected concrete form work

ORGANIZATION MPQAD HVAC QA	LAST NAME Clements	FIRST NAME Kevin	DATE 7/26/82	EMPLOYEE NO. 108
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EDUCATION

SCHOOL	NAME	CITY STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	Bangor John Glenn	Bay City, Mi.	Tech. Drawing Welding	4	
COLLEGE	N/A				
OTHER	Bay Area Skill Center	Bay City, Mi.	Constr. Bldg. Design	1	6/4/80
OTHER					-

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
4/81	7/82	Consumers Power Co. 2742 N. Weadock Hwy. Essexville, Mi.	Quality Inspector	Inspect quality of work performed by contractors.
9/79	4/81	Newkirk Electr. 700 Marquette Bay City, Mi.	E.C.O. Quality Insp. Electr. Help Purchase Agt.	Follow job to assure quality and accuracy. Assist Electricians Purchase Material
9/79	4/81	Northern Boiler Inc. (Field Office) 2742 N. Weadock Essexville, Mi.	Laborer Part-time	Assist craftsman, clean, sweep floor, build scaffold on construction site.
6/78	10/78	Lynch Party Store 1021 Wilder Road Bay City Mi.	Summer Help	Install new cooler units and air compressors, clean-up, stock-boy.

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
MPQAD	Foley	Joseph P.	8/10/82	CPCo-GC-376

EDUCATION

SCHOOL	NAME	CITY	STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	Union Catholic Boys High	Scotch Plains	NJ	College Prep.	4	
COLLEGE	Manhattan College	Bronx	NY	Civil Engineering	4	
OTHER						
OTHER						

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
12/77	Pres.	Gilbert/Commonwealth 209 E. Washington Ave. Jackson, MI 49201	Project Eng.	Analysis, design & construction inspection of foundations including H & Pipe piles, drilled piers, spread footings and screw type soil anchors. Supervision data reduction of pile load tests.
				Design & inspection of sheet pile bulkheads including ground movement monitoring. Principal investigator for subsurface investigations including geophysical testing & determination of dynamic properties of soil.
				Design & Preparation of construction drawings for grading, drainage and site improvements for Ohio Edison Company's Erie Nuclear Plant.
9/75/	12/77	North Jersey District Water Supply Commission Ringwood Ave. Wanaque, NJ	Assistant Engineer	Computing & Organizing data for water supply development projects reviewing plans & specifications for proposed 100 MGD Treatment Plant.
Summer	1974	Edwards & Kelcey New York	Assistant Eng.	Assistant Eng. in the surveying and plotting of street intersections in the Bronx and analysis of data pertaining to the need for traffic signals at these intersections.
Summer	1972	E.T. Killam Assoc. Inc. Milburn, NJ	Surveyor	Involved in the preliminary survey for an interceptor sewer route. Performed a survey of the terrain along the Passaic River for a flood study.

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
MPQAD	Gingras	Dean	7-19-82	

EDUCATION

SCHOOL	NAME	CITY	STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	Killingly High School	Killingly, Ct			4	
COLLEGE	Manchester Comm College	Manchester, Ct		Business Mgmt.	2	
OTHER						
OTHER						

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
4-81	7-82	Wisner & Becker Contract Engineers Enrico Fermi II Monroe, MI	Field Supervisor of instrumentation and controls, Hydro and flush group.	Included: field training of employ- ees, delegation of job assignments, review of documentation and NCRs, coordinate between field inspectors and management. Perform surveil- lances on inspections.
3-80	4-81	Pittsburgh Testing Lab Surry Nuclear Power Plants I & II Surry, Virginia	Lead Inspector Civil, Mechan- ical, welding inspectors.	Included: Supervising and assisting in the inspections of the steam generator replacement program, seis- mic support program, and plant operations and maintenance program.
9-79	1-80	Catalytic, Inc. Salem Nuclear Power Plants I & II Salem, N.J.	Mechanical Level II inspector	Inspections of installation and repairs of seismic I hanger program. Mechanical Equipment and Hydro Insp. Documentation of inspections, Q.A. task force team member.
5-79	9-79	United States Testing Co Turkey Point Power Plants III Homestead, Florida	Asst Radiographer	Assisting in U.T. and R.T. inspec- tions of main steam generator feed- water pipes. Set up and care of equipment and cassetts, assisting in documentation of all inspections.
4-79	4-79	United States Testing Co Turkey Point Power Plant #4 Homestead, Florida	Civil & Mechanical	Responsibilities as inspector in Anchor Bolt Program included, identi- fication, walkdown and tagging of system lines, testing, inspection of repair work and all related documen- tation.
5-78	4-79	United States Testing Co Saint Lucie Nuclear Power Plant #2 Saint Lucie, Florida	Civil Inspector	Responsibilities include inspections in all phases of concrete, soils, structural welding, protective coat- ings, and all applicable documenta- tion.

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
MPQAD	GREINER	JOHN E.	7/13/82	651958

EDUCATION

SCHOOL	NAME	CITY	STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	St. John's High School	Ypsilanti,	MI	-----	4	
COLLEGE	Eastern Mich. Univ.	Ypsilanti,	MI	Pre-Engineering	2	
OTHER	Univ. of Michigan	Ann Arbor,	MI	Civil Engineering	3	BSCE 1971
OTHER	George Washington Univ.	Washington,	D.C.	Engin. Admin.	4	MEA 1981

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
7/82	Present	Bechtel, Ann Arbor	Senior QA Eng. (MPQAD)	QA Engineer reviewing submitted instruction, procedures and drawings for compliance with Quality Plans. Will perform Quality Audits, prepare inspection plans, coordinate problems, etc. on quality.
2/81	6/82	Bechtel 600 5th St. N.W. Washington, D.C. 20001	Senior Construction Engineer (on WMATA Subway Sections 10, 11 & 110)	Office Engineer responsible for the field office administration for three below grade subway finish contracts. The functions for which I was responsible include schedule monitoring, claim and changes monitoring and associated actions, coordinating survey work, job records maintenance, contractor payment and correspondence preparation. Additional duties include coordination of elect., mech., struct. & arch. problems.
1/81	2/81	Bechtel Washington, D.C.	Sr. Construction Engineer (On WMATA Subway Section A15F)	Office Engineer responsible for field office admin. of two rapid rail contracts. These duties included pay requisition, claim analysis, change issuing and finalizing and status reports.
8/80	12/80	Bechtel Washington, D.C.	Construction Engineer (Contract Support Group on WMATA Subway Project)	As an office engineer in the Contract Support Group, I was responsible for drafting contract modifications paperwork for several contract settlements.
1/79	8/80	Bechtel Washington, D.C.	Field Engineer (Close-out Group on WMATA Subway Project)	Contract Coordinator responsible to the Resident Engineer for all aspects of contract close-out.

JOB HISTORY

MO/YR:		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
6/77	12/78	Bechtel Washington D.C.	Field Engineer (On WMATA Subway Section A6B)	Office Engineer involved with payment requisitions, contractor drawing control & approval, correspondence, CPM progress monitoring & updating, change order issuing, negot. & finalization, and report preparation on 70 million dollar contract. This contract included soil and rock excavation & support and utility underpinning.
1/75	6/77	Bechtel Washington D.C.	Field Engineer (On WMATA Subway Sections A6A, A6B)	Field Engineer in inspection (QC) on rock tunneling (both conventional and tunnel boring machine) from excavation through concreting, support of excavation, utility relocation, underpinning and safety.
				I was Field Engineer in charge of QC on Remedial Underpinning for 20 foot diameter brick and concrete sewer across excavation.
11/74	1/75	Bechtel Washington, D.C.	Field Engineer (On WMATA Subway Section L2A)	Field Engineer in inspection (QC) on substructure of rail bridge across Potomac River, involved with cofferdams, piling, all concrete and safety.
8/74	11/74	Bechtel Washington, D.C.	Field Engineer (On WMATA Subway Section C4)	Field Engineer in inspection (QC) on rock tunnels beneath the Potomac River, involved with grouting, concrete operations and safety.
6/73	8/74	Bechtel Washington, D.C.	Field Engineer (On WMATA Subway Section L2B)	Field Engineer in inspection (QC) on cut & cover construction including support of excavation & utilities excavation, backfill, concrete structures including embedments, utility relocations and safety.
9/72	12/72	U.S. Army Ft. Belvoir, VA	2nd Lieutenant	Completed Engineer Officer Basic course, and worked a short troop assignment.
10/71	8/72	Norman L. Dietrich, Associates 670 Church St. Plymouth, Mich.	Development Engineer	Development Engineer designing storm, sanitary and water main systems. Also prepared cost estimates and did survey work.

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
MPQAD HVAC QA	Heiberger	William	6/17/82	

EDUCATION

SCHOOL	NAME	CITY . STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	Bridgewater High	Bridgewater, S.D.	Science	4	
COLLEGE	S. D. State Univ.	Brookings, S.D.	Mech. Engr.	4	BS
OTHER					
OTHER					

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
1977		EG&G Edaho Falls, ID	Project Engineer	Project Engineering
1974	1977	Self Employed	President	
1973	1974	A. Research Industrial Los Angeles, CA	Field Engr.	Field Engineering
1970	1973	Martin Marietta Corp. Denver, CO	Engineer	Design Engineer
1969	1970	Traveling		

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
MPQAD	Heimbold	Joann		

EDUCATION

SCHOOL	NAME	CITY	STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH						
COLLEGE	U S Grant Vocational School	Bethel, Ohio		Welding Technique & Visual Examination	1	N/A
OTHER	University of Cincinnati Liberal Arts	Cincinnati, Ohio			10 mos.	
OTHER						

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
12/79	present	Henry J Kaiser Co. Wm H Zimmer Nuclear Power Plant Moscow, Ohio	Quality Control Inspector	Performed quality inspections of electrical/instrumentation systems & components. Certified Level II inspector in electrical & instrumentation. Level I in visual welding.
8/79	12/79	Foothill Electrical Corp Wm H Zimmer Nuclear Power Plant Moscow, Ohio	Electrician Apprentice	Assisting journeyman electricians with installations of electrical equipment & components.
2/79	6/79	Bio-Resources, Inc. Cincinnati, Ohio	phlebotmist	Extraction of plasma from donors. General office duties & coordination with doctors. Activities.
7/76	12/78	Dr E A Kindel, Jr Cincinnati, Ohio	Dermatologist Assistant	Assist in minor surgery. General office duties.
11/75	6/76	Davolos Geiss Mediservice, Inc. Cincinnati, Ohio	Medical Assistant	Preparation of examinations and assisting medical procedures. General office duties.
8/75	10/75	Pet Center, Inc. Cincinnati, Ohio	Sales clerk.	Retail sales duties.

ORGANIZATION MPQAD	LAST NAME Kettren Leroy P. Jr.	FIRST NAME	DATE 8/10/82	EMPLOYEE # CPCo-GC-375
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EDUCATION

SCHOOL	NAME	CITY	STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	Dormont HS	Dormont	PA		4	
COLLEGE	Kent State University	Kent, OH		Geology	4	BS 1968
OTHER	Virginia Polytechnic Inst.	Blacksburg, VA		Geology	4	MS 1970
OTHER						

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
1/81	PRES.	Commonwealth Associates Jackson, MI	Senior Engineering Geologist	Supervise Geotechnical Projects including; train technician for inspection at drilled piers. Summarize existing geotech data, prepare prelim. reports, prepare prelim. specs for two shallow soils tunnels.
10/73	1/81	Dames & Moore Park Ridge, IL	Staff Geologist Project Geologist Senior Geologist/ 80-81 - Project Manager	Performed geotechnical investigations including site investigations for nuclear plants at LaSalle County, Clinton & Dresden, IL and Callaway County, MS. Proj. Mgr at Geotech. Study for mine shaft const, Springfield, IL and rock mechanics studies at underground coal mines in IL and Ohio. Principal investigator of safety study at shaft construction practices.
2/71	10/73	GAI Consultants, Inc. Monroeville, PA	Geologist	Performed geotechnical studies, earthwork, & foundation const. control. including inspection of drilled pier foundations, subsurface study for proposed subway tunnel in Pittsburgh, PA
10/70	1/71	US Army Engineer School Ft. Belvoir, VA	Student Officer 2nd LT. Corps of Engineers	Engineer Office Basic Course.

ORGANIZATION MPQAD	LAST NAME Kozelouzek James	FIRST NAME	DATE 6/15/82	EMPLOYEE NO.
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EDUCATION

SCHOOL	NAME	CITY	STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	Lakeland High	Moheganlake	NY	Business	4	
COLLEGE	Slippery Rock	Slippery Rock,	PA	Parks & Recreation	2	BS 1977
OTHER						
OTHER						

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
1-78	6/82	Courter & Co. Inc. 317 W. 13th St. N.Y. NY 10014	QA Supervisor QC Supervisor QA Engineer QC Inspector	Supervised QA/QC personnel performing review work on ASME related systems Inspected 1st line field work. performed final review of ASME completed work.
9/77	12/77	Thomas O'Connor Co. INC 45 Industrial Dr. Canton, Mass. 02021	QC Inspector	Inspections of class 1,2,3 Piping & welding.
8/75	8/77	Grove City Recreational Dept. Box 328 Grove City, PA 16127	Assistant Director	Supervise personnel, monitor rec. programs, budget preparation.
9/72	8/75	Branch Radiographic Labs 28 S. Ave. W. Cranford, NJ	QC Inspector	Inspections of Class 1,2,3 Piping welding, hangers.

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
MPQAD HVAC QA	McGINNIS	LESLIE	7/28/82	

EDUCATION

SCHOOL	NAME	CITY STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	PHOENIX HIGH SCHOOL	PHOENIX, OREGON	SCIENCE	4	
COLLEGE	OREGON STATE UNIVERSITY	CORVALLIS, OR.	HORTICULTURE	3½	B.S. 6/80
OTHER	S. OREGON STATE COLL.	ASHLAND, OREGON	SCIENCE	1½	
OTHER					

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
10/81	5/82	O.B. CANNON P.O. Box 519 RICHLAND, WA.	Q.C. INSPECTOR	CALIB. OF INSTRUMENTS DAILY/WK FIELD INSP. OF STEEL/CONCRETE CLEANLINESS OR COATING. ASSISTED IN RECORD REV., FILED, REPORTS
3/81	10/81	ARLENES FLOWERS 117760 BLVD. RICHLAND, WA.	GREENHOUSE MANAGER	ORDER MAT./PLANTS FROM DI STR. GENERAL CARE OF PLANTS, FERTILIZE SPRAY MAINTENANCE PROG., CARE OF COMMERICAL/PRIVATE HOMES PLANT
6/80	7/81	WILBOR-ELLIS 419 N OREGON AVE. PASCO, WA.	WAREHOUSER	CHEMICAL DELIVERY, OVER-COUNTER SALES, CHEMICAL ORDERING, MONTHLY/ DAILY INVENTORY, FILING/POSTING C INVOICES. SECURED MY STATE-WIDE CONSULTANT LICENSE.
6/79	9/79	BEAR CREEK CORP. 2518 S. PACIFIC HWY. MEDFORD, OREGON	FIELD SCOUT	MONITORING POP. OF PEAR P SYLLA/ SPIDER MITES. INSPECTED ORCHARDS FOR HALL/CHLORIAS. PRESSURE TEST PEARS FOR RIPENESS, ANALYZED WEED DENSITY OF WEEDS IN NON-BEARING
1/78	6/78	DR. MAXINE THOMPSON OREGON STATE UNIV. CORVALLIS, OREGON	LAB TECH.	PREP SLIDES, ASSISTED IN FILBERT NUT YIELD STUDIES, GENERAL LAB. WORK.
4/77	9/77	BLACK BIRD W. MAIN STREET MEDFORD, OREGON	CASHIER	WORKED THE FRONT CASH REGISTER RESTOCKED SHELVES, ASSISTED IN PLANT CARE.

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
MPQAD	Meisenheimer	James K	9/9/82	CPCo 387

EDUCATION

SCHOOL	NAME	CITY	STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	MacArthur High School	Decatur	Illinois	General	4	
COLLEGE	University of Missouri	Rolla	Missouri	Civil Engineering	BS	1967
OTHER	University of Missouri	Rolla	Missouri	Geological Eng	MS	1969
OTHER						

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
July 1982	Pre-sent	Gilbert Commonwealth Jackson, Michigan	Superintendent of Soils MPQAD	
Jan 1982	July 1982	Gilbert Commonwealth Jackson, Michigan	Geotechnical Consultant & Coordinator	His work activities have been directed toward the remedial soils issues at Midland and working with the NRC staff for resolution.
1977	Jan	Gilbert Commonwealth Jackson, Michigan	Supervisor - Geotechnical Serv Section of Env System Div	Responsibility for a soils lab & geotech and geological work performed by his staff. Work responsibilities included: consultation, exploration, analysis, spec & procedure preparation, quality control
				inspection and testing for 2 nuclear plants, fossil, industrial & mining projects.
1971	1977	Dames & Moore Park Ridge, Illinois	Project Engineer/ Project Manger/ Principal Investigator	Geotechnical work at Wolf Creek Nuc Gen Station and served as the Owners Resident Geotech Eng. In this position, he was directly responsible for the quality control
				activities for geotech work. He also coordinated quality control for other soils related field & lab testing, as well as interfaced with project quality assurance organization, for 5 other nuclear plants.

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
1969	1970	US Army Fort Belvoir, Virginia	Engineering Const Officer	Involved in development, design & analysis of military construction of 75 miles of S Vietnam highway. 1 year as Instructor in soil analysis & construction engineering
		—		at the US Army School in Ft Belvoir Virginia.
1969	(3 months)	US Army Corps of Eng's Kansas City, Missouri	Civil Engineer Consultant	Project on \$1 million troop housing and facilities.
1967 1965 1964	summer summer summer	Illinois Dept of Transportation Paris, Illinois	Asst Resident Engineer	On two miles of state highway & storm sewers: quality control and construction inspection of concrete and asphalt mix for high-repair work.
1963	1962	Illinois Dept of Transportation Paris, Illinois	Asst Maintenance Field Eng	Involved in design, management and maintenance of 600 miles of state highway.

ORGANIZATION MPQAD CIVIL	LAST NAME Melton	FIRST NAME Walter L.	DATE 5/14/82	EMPLOYEE NO. CPCo-PDS-25
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EDUCATION

SCHOOL	NAME	CITY STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	Douglas Freeman	Richmond, VA		3	
COLLEGE	Campbell College	Buies Creek, NC	History	4	BS-1968
OTHER	Univ. of N. Iowa	Cedar Falls, IA		1/2 yr.	72-73
OTHER	VA PolyTechnique Inst.SV	Blacksburg, VA		1	75-76

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
2/82	4/82	Daniel Const. Co. Fulton, MO Callaway Nuclear Plant	Quality Inspector Level II	Inspection of Civil Construction activities relating to concrete placement & post placement on Nuclear Power Plant.
12/81	2/82	Daniel Const. Co. Homestead, FL Turkey Point Nuclear Pl.	QC Inspector Level II	Concrete preplacement, placement, postplacement, cadweld, and soils backfill inspections on Steam Generator backfit for a Nuclear Power Plant.
10/81	11/81	Brown & Root, Inc. Bay City, TX South Texas Nuclear Plnt.	Lead Civil QC Inspector	Coordinated activities of Civil QC batching & placing inspectors during concrete placement & post placement activities. Responsible for manpower allocation & QC support of Construction activities.
12/79	10/81	Brown & Root, Inc. Bay City, TX South Texas Nuclear Plnt.	Civil QC Insp. Level II	Inspection of civil construction activities including concrete preplacement, placement, & postplacement. Also performed surveillance of site GeoTechnical & Non-safety related activities.
8/79	11/79	Stone & Webster Engineering Corp. St. Francisville, LA River Bend Nuclear Plnt.	Civil QC Insp. Level II	Inspection of concrete preplacement, placement, postplacement, cadwelding and GeoTechnical activities.
12/78	8/79	Brown & Root, Inc. Bay City, TX South Texas Nuclear Plnt.	Civil QC Insp. Level I & II	Assured compliance to applicable codes, regulations & job specifications & procedures during civil construction activities.

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO. CPCO-SAI
MPQAD	Petrosino	Joseph J.	6/22/82	301

EDUCATION

SCHOOL	NAME	CITY	STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	W.H. Lynch High School	Amsterdam,	NY	Vocational	3	
COLLEGE						
OTHER	USN Schools Electrical/ Electriconic AEC Art #107	Great Lakes, West Milton,	IL NY	Electrical/Elect- ronics Rad-Decont.	4mos. 1mo.	Grad 1966 1974
OTHER	AEC NNSY Reactor I&C school ICS Electrical	Windsor Locks Home Study	Conn.	Nuclear Reactor I&C Electrical Review	2mos.	1974 1979

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
6/82	Present	Consumers Power Co. Midland Nuclear Project (SAI Contract)	QAE	QA surveillance/inspection/overlook.
2/82	6/82	Toledo Edison Co. Davis Besse Station 200 Madison Ave. Toledo, OH	QA/QC Eng.	QA/QC surveillance/Inspections Refueling outage & TMI Modifications
4/78	2/82	Bechtel Power Co. 3500 E. Miller Rd. Midland, MI	Craft Electrician QC Engineer Field Elect. Eng.	Electrical Construction - Level II Area Lead for Aux. 634' up to roof. Responsibilities: Spreader rooms, control room, 659' elect. rooms CRDM room & assoc. wing walls.
5/77	12/77	General Dynamics (Electric Boat Div) West Milton NY Groton, Conn.	Craft Electrician West Milton, NY	Nuclear Navy Prototype-"Trident" N.I. cabinet & device Installation, wiring, terminations, etc.
2/77	5/77	Colonie Electric Latham, NY	Craft Electrician	General construction wiring for shop- ping mall - completion of job.
9/76	12/76	General Dynamics West Milton, NY Groton, Conn.	Craft Electrician West Milton, NY	Nuclear Navy Prototype-"Trident" N.I. Cabinet & device installation, wiring, terminations, and Marine cable installation, N.I. wiring.

ORGANIZATION MPQAD	LAST NAME Pointe	FIRST NAME Frank	DATE 8/4/82	EMPLOYEE NO. CPCo-PTI 369
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EDUCATION

SCHOOL	NAME	CITY STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	Hamtramack	Hamtramack, MI	General	4	
COLLEGE	LaSalle	Chicago, IL	Business Manage.	4	BA 1970
OTHER	National Tech	Los Angeles, CA	Electronics	2	1958
OTHER	Chicago Trade	Chicago, IL	Drafting	1	1957

JOB HISTORY

MO/YR		COMPANY/ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
2/82	8/82	Toledo Edison Davis-Bessie	Lead Auditor	Performed audits relative to company procedures in maint., QC, fire & safety and storage areas and rework of steam generator auxiliary feed water system.
10/79	1/82	Bechtel Power Corp. Midland, MI	S.Q.R	Audited quality verification documentation furnished by suppliers. Performed site audits on diesel generator.
6/77	10/79	Pointe Ford Tractor Mt. Pleasant, MI	President	Ford Tractor & Implement Business.
12/75	7/77	American Hoist & Derrick Bay City, MI	QC Manager	Performed management audits relative to the company quality program in addition to management duties.
1/65	12/75	Massey Ferguson Detroit, MI	Chief Inspector	Chief Inspector of two plants. Supervised inspection dept, performed scheduled audits; as QA rep performed auditing vendor surveillance.
10/60	12/64	Burroughs Corp. Detroit, MI	Inspection Supervisor	Supervised inspection dept. in receiving. Performed Audits.

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
CPCo	Robbins	Jill Marie	8-11-82	366762869

EDUCATION

SCHOOL	NAME	CITY STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	H.H. Dow High School	Midland, MI	College Prep.	4	
COLLEGE	University of MI	Ann Arbor, MI	Social Sciences	4	B.A. Ed.
OTHER	N/A				
OTHER					

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
PRESENTLY		CPCo., Midland Nuclear Site, Midland, MI	Associate QA Consultant	Verification/Inspection Activities
6/81	7/82	CPCo, Midland Nuclear Site, Midland, MI	QA Clerk	Quality record filing/retrieving, Training records and schedule, Updating action item lists, anchor bolt intaller list, welder quals., Input to monthly activity report.
1978	1981	Girl Friday, Inc. Midland, MI	Secretary/ Receptionist	Secretarial
1978	1978	The Plumed Serpent	Clerk	Sales
1975	1978	Midland Derm. Clinic, Midland, MI	Lab. Ass./ Receptionist	Assisted with minor surgeries, skin culture tests and basic lab duties, room supplies./ Secretarial

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
MPQAD NDE/WELDING	SELVIDIO	JEFFREY	7/19/82	044-52-1520

EDUCATION

SCHOOL	NAME	CITY	STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	St Bernards	Uncasville,	CT	College Prep	4	
COLLEGE	Thames Valley State Technical College	Norwich,	CT	Chemical Technology	1	N/A
OTHER	N/A					
OTHER	N/A					

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
5/82	7/82	Space Science Services Orlando, FL	Visual Welding Inspector	Visual inspections to AWS D1.1-75 of monorail system at the Dade County Zoo, Miami, FL. Required to maintain extensive documentation and photographs of re-work for proper fit-up of track systems.
1/82	3-82	Nuclear Energy Services Shelter Rock Road Danbury, CT 06810	Mechanical/Visual Welding Inspector Level II	Visual welding inspections to AWS D1.1-72 and documentation of results as part of a structural steel inspection program.
9/81	1/82	National Inspection and Consultants 315 W. 1st Ave Kennewick, WA 99336	Mechanical/Visual Welding Inspector Level II	Re-inspection of hangers, piping & equipment installations to verify compliance with drawings, procedures and specs. Weld record and work package review. Building surveillance. Monitor welding procedure variables.
2/81	9/81	United States Testing Co 1415 Park Ave Hoboken, NJ 07030	NDE/Mechanical Inspector Level II	MT, PT, RT and visual inspection of piping, hangers & structural steel. Issue and review process control sheets & weld records. At Turkey Point, FL & Calvert Cliffs, MD
7/79	2/81	Advanced Testing Services 11216 Satellite Blvd Orlando, FL 32809	NDE/Visual Welding Inspector Level II	MT, PT, RT and visual inspections. Welder and procedure qualifications to AWS D1.1-79. Control & distribution of inspection records. Location: Kennedy Space Center Launch Complex 39B.
12/78	5/79	Boothe & Twining Inc 2621 Saddle Lane Oxnard, CA 93030	Level II Radiographer	Radiography of refinery piping systems.

ORGANIZATION MPQAD	LAST NAME Trumper Gerry	FIRST NAME	DATE 8/25/82	EMPLOYEE NO. 871-44-5495
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EDUCATION

SCHOOL	NAME	CITY STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	Hillsdale High School	Hillsdale, MI	General	4	
COLLEGE	Jackson Comm. College	Jackson, MI	Associates Degree in Applied Arts & Science	2.5	1978
OTHER	Spartan School of Aeronautics	Tulsa OK	NDT	4 mos.	2/81
OTHER	US Army	Aviation School Ft. Rucker AL	Maintenance on UH-1B-D-C-AHIG	3 mos.	

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
6/82	8/82	L.K. Constock Company Enrico Fermi II Nuclear Station New Port, MI	Level II Electrical Insp. in Conduit	Electrical inspection of conduit and supports of all class I and class II systems along with swing buss, checked all bend radius, pull points, checked on blue prints to as built drawings.
2/82	5/82	Nuclear Energy Services Virgil C. Summer Nuclear Station Parr. South Carolina	Level II Electrical Inspector in OP. QC/QA/18C to N45-2.6	Electrical inspection of terminations, heat shrink mod, rebuilding of Asco Pressure Valves with I&C, worked with Inryco on post tension system to Spec, lift off spec, and insp. of Anchor head, broken wires, cracks in concrete and rust on wires.
6/81	2/82	Universal Testing Labs Susquehanna Steam & Electric Station Berwick PA	Level II Elect. Inspector/QA in the C.S.G. to code standard N45-2.6	Electrical Insp., over insp. of Bechtel QC on terminations, meggering, cable pulling and hypotting of cables. Review & preparation of turnover packages to PP&L, also safety insp. of all turned over equipment on special prof. was performed at this Nuclear Station.
2/81	6/81	Universal Testing Labs Niagara Mohawk 9-Mile Point Nuclear Station Cswego NY	Electrical, Mech. QA/QC Cert. in MI/PT/V Level II Insp.	Performed insp. on smoke det. systems also terminations, meggering, continuing checks, cable pulling, cable tray inst. conduit supports for class I & class II systems. Replacement of Station Battery Racks & Batteries.
10/80	2/81	Seismograph Service Corp. Tulsa Oklahoma	Electrical Tech.	Progressed from production machine operator to floor insp. with direct responsibility for programming and testing of (ITT) computerized machine. Other duties of inspecting blue print reading, leak testing, hardness test, magnetic particulate test, acid penetrant testing.

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
75	79	Self Employed at home	Retail Sales & Service for Consumers Elect- ronic Parts.	Valuable exposure to fundamental and advances aspects of small business management, including budgeting, cost control, purchasing, bookkeeping, market- ing & advertising. Testing & the eval- uation of electronic devices with the diagonistic test equipment was per- formed in depth with trouble shooting
4/66	4/69	United States Army	Aviation Mech (Rank - 5E)	Assignment as member of maint. crew with the responsibility for test fli- ghts, airframe inspections, general maintenance and service of the Bell Helicopter, UHI-B,C,D and AHIG.
11/65 4/69	4/66 10/72	Jonesville Products Inc. Jonesville, MI	Assistant Foreman Repairman, Insp. Stock Controller	Progressed from General Production Laborer to Assist. Forman with the responsibility of stock controller, repairman of the automatic punch pres- s machines and power tubing bending machines.
1/65	11/65	City Wide Delivery Los Angeles, CA	Small truck, Delivery Driver	Pick-up and delivery of business forms and supplies with responsibilit of delivery on time with spec. docc. for business use.
7/63	1/65	Ellay Rubber Co. Inc. LA, Cal.	Machine Operator Inspector Stock Controller	Progressed from General Laborer to Machine operator with the direct re- sponsibility for quality of product to amount and conf. of print. to each order, working with close toll in vinal upholstery for auto and home use.
	1963	Odd Jobs, Farm Work Auto Mechanic Michigan		worked on farm doing all types of odd jobs, worked on cars as auto mchanic with no real special duties.

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
Bechtel Power	Caldwell	David	8/82	

EDUCATION

SCHOOL	NAME	CITY	STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	Moss Power High School GED	Charleston Naval Base		Electrical Apprentice		
COLLEGE						
OTHER						
OTHER						

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
6/45	6/49	US Navy Charleston Naval shipyard	Electrician Apprentice	Repair & overhaul of electrical system.
6/49	6/50	South Carolina	Sgt 1/c Student	Radio & Linesman School
6/50	8/52	Lumber Mill & Village	Electrician	Operation of Company owned power plant. Maintenance of electrical & telephone system in plant and Co. Village
3/52	3/56	Civil Service Charleston Shipyard	Electrician	Test & Repair of power plant system (Marine)
3/56	2/57	Civil Service Charleston AF Base	Aircraft	Inspection & Repair of air craft.

Galdwell, David
Page 2

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
2/57	5/57	Charleston Shipyards	Electrician	Overhaul & Repair of Elec. Systems (Marine)
5/57	7/57	Norfolk Shipyard	Electrician	Overhaul & Repair of Elec. Systems (Marine)
7/57	9/57	Jacksonville Shipyard, Inc.	Electrician	Overhaul & Repair of Elec. Systems (Marine)
1/58	6/58	Ingalls Shipbuilding Corp.	Electrician	New Construction, Communication and fire control systems (Marine)
6/58	5/67	Ingalls Shipbuilding Corp.	Q.C. Inspector Nuclear	Inspection of installation of nuclear equipment and witness of pre-test of systems in reactor plant.
5/67	11/67	Ingalls Shipbuilding Corp.	Electrical Specialist	Installation and checkout (test) of fire control systems.
1/68	10/69	Lovis Dreffus Corp.	Electrician	Maintenance of telephone, Power & Lighting systems of grain elevator
10/69	5/72	Ingalls Shipbuilding Corp.	Electrical Specialist	Craft inspector and checkout of nuclear electrical systems.
5/72	6/74	Ingalls Shipbuilding Corp.	Electrical Specialist	Team member - Reactor Refueling

ORGANIZATION Q.C.	LAST NAME Ivey, Robert E.	FIRST NAME	DATE 6-24-82	EMPLOYEE NO. 871717
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EDUCATION

SCHOOL	NAME	CITY STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	Academy of Richmond Co.	Augusta, GA		4	
COLLEGE					
OTHER	Jacksonville Tech. High School	Jax Fla.	Sheet Metal App. Program	4	9-20-67
OTHER					

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
July 1973	April 1974	Ladd Sheet Metal Titusville, Fla.	Foreman	Sheet metal foreman over 20 story highrise motel & resturant.
June 1974	Dec. 1975	Robert Insay	Foreman	Foreman in containment St. Luey Unit I.
Jan. 1976	May 1978	Atlanta & West Palm Beach Sheet Metal Locals	Sheet Metal Mechanic	General sheet metal work.
May 1978	Sept. 1979	McCroskey Sheet Metal Grand Gulf	Draftsman	Checking, measuring and designing duct; ordering duct, measuring & designing hangers, making drawing changes (DCN & DCR).
Oct. 1979	Dec. 1979	Bechtel Grand Gulf	Foreman	Sheet metal foreman over sheet metal in Auxiliary Building, Unit II.
Jan. 1980	Sept. 1980	McCroskey Sheet Metal Grand Gulf	General Foreman & Mechanic	General foreman over testing crew and other mechanic duties.

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
AAPD, Midland, MI	Lizotte	Leo	1982 August	495756

EDUCATION

SCHOOL	NAME	CITY STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	A. M. Sormany	Edmundston, N.B.		73	
COLLEGE	Universite of Moncton, New Brunswick	N.B. Canada	Civil Eng.	78	
OTHER					
OTHER					

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
8/78	12/78	Bechtel Quebec SEBJ/Dykes & Dams	Dykes & Dams	Study of plans and specification. Inspection of the works to assure execution quality.
1/79	10/80	Bechtel Quebec	Dykes & Dams	Inspection of work regarding embankment (dykes & dams), general foundation grouting and spillway. Redaction of weekly, monthly and annual reports giving work progress. Maintain communication between Inspection Division, specialists, laboratories and Contract Administration to assure work conformity. Estimation, preparation and redaction of recommendation following changes to plans and technical specifications. Verification of the landscaping done by the contractor for the post job clean up and enviornmental services.

Lizotte, Leo
Page 2

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
11/80	5/81	Bechtel Quebec Limited SEBJ/Centrale et Structures LG 4 Superior: Gilles Gauthier		Study of plans and specifications. Inspection of the work regarding concrete (intake and spillway), excavation of penstocks and general foundation grouting.
				Inspection of the work to assure execution quality. Study and verification of inspection reports done during construction work mentioned in preceeding para-
				graph. Maintain communication between inspection division, engineering department and labora- tories, contract administration to assure work conformity. Classify and verify the documents (plans,
				plans revision, modifications, etc.) Keep up to date a file of photos on every construction phase. Similar tasks described in preceeding paragraph.
				Coordinate the work of the inspectors and keep an effective communication with the con- tractor's foremen and supervisors. Examine the daily reports and approve them.

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
Bechtel QC	Pogue	Joseph		

EDUCATION

SCHOOL	NAME	CITY STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	Quachita High School	Monroe, Louisiana			
COLLEGE	Northeast La. University	Monroe, Louisiana	Construction	12/77	B.S./ 12/77
OTHER					
OTHER					

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
8/75	11/76	Twin City Glass	Draftsman	Designed storefront systems for buildings.
12/76	12/77	Madden & Assoc. C.E.	Draftsman	Layouts for subdivisions, development of large scale maps, and construction drawings for sewage treatment facility.
1/78	9/79	Ford, Bacon, & Davis, Inc.	Cost Analyst, Estimator, Scheduler	Development of bid packages; infield material expediter, work documentation, job supervision, Subcontracts.
10/79	7/80	Heuer, Johns, Neel, Rivers, & Webb, Arch.	Draftsman	Development of construction drawings for malls and major dept. stores; reviewed architect's lease space drawings. Being trained as project director.
11/80	6/82	Bechtel Power G.G.N.S.	Construction Engineer	Monitoring installation of small pipe supports. Duties: pre-inspecting designs, issuing work to suprv., interfacing with craft, inspecting and accepting installations.

LAB RESUME

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
Bechtel Ann Arbor QA	Richardson,	Gary L.	7/15/82	565-776

EDUCATION

SCHOOL	NAME	CITY	STATE	MAJOR	YEARS ATT.	DEGREE DATE
HIGH	Lincoln High	Lincoln	CA		4	
COLLEGE	Sierra College	Rockland,	CA	Engineering	2	AA 1958
OTHER						
OTHER						

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
PRESENT		Bechtel Power Corp. Ann Arbor, MI	Assistant to Project Manager Quality.	PLEASE SEE ATTACHED RESUME.

GARY L. RICHARDSON

077042
POSITION Quality Assurance Supervisor
EDUCATION AA, Engineering Technology, Sierra College
PROFESSIONAL DATA Licensed Professional Engineer, State of California
Member, American Nuclear Society
Member, American Society for Quality Control

SUMMARY
1 year: Quality assurance supervisor
1 year: Quality assurance staff engineer
5 years: Lead quality assurance engineer
5-1/2 years: Construction supervisor for testing and inspection of major construction
9-1/2 years: Inspection, testing, and surveying for heavy construction

EXPERIENCE
Mr. Richardson is currently assigned as quality assurance supervisor for operating plant projects. In this capacity he reports directly to the division manager of quality assurance and is responsible for supervision of quality personnel assigned to projects involving operating plants. Mr. Richardson is also the assigned project quality assurance engineer for the Palisades modifications project. In this capacity he is responsible for implementation of the quality assurance program for engineering, procurement, and construction, and client interface for quality-related matters. Duties include audits, monitoring corrective action, program development, approval of all program documents, approval of procedures, specifications, purchase orders, vendor QA programs, and measurement of the effectiveness of the QA programs.

Previously, Mr. Richardson was a staff quality assurance engineer in the Ann Arbor Power Division, responsible for program control, the generic corrective action program, and training. He was a member of the San Francisco Power Division management audit team and performed special assignments.

GARY L. RICHARDSON (Cont'd)

077042

Mr. Richardson's field assignments include lead site quality assurance engineer at the Midland nuclear power plant construction site, responsible for supervision of quality assurance engineers at the site and for implementation of the quality assurance program. This program included auditing systems and construction processes, client interface, development of effective corrective action, training, identifying trends, measuring effectiveness of program implementation, and related activities.

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
B & W CC	Alcott	Tom	6/30/82	1172

EDUCATION

SCHOOL	NAME	CITY STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	Washington	St. Paul MN		4	
COLLEGE					
OTHER	St. Paul Technical Vocational Institute	St. Paul MN	Data Processing	2	Cert. 1970
OTHER	Alan Hancock Jr. College	Santa Maria, CA	Welding	1 Sem.	

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
6/80	Present	Arremony Associates 240 Rio Del Mar Rio Del Mar-Aptos, CA	NDE Consultant Talcott & Assoc.	NDE Services: UT, PT, MT VT Level II, QA/QC
1/78	6/80	Lambert MacGill & Thomas 771 E. Erikaw Rd. San Jose, CA	NDE Technician	Level II, UT & ET

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
B & W Const. Co. QC	Caropino	Paul	8/16/82	1179

EDUCATION

SCHOOL	NAME	CITY	STATE	MAJOR	YEARS ATT.	DEGREE DATE
HIGH	Alhambra	Alhambra,	CA	General	4	
COLLEGE	Lewis Clark State	Lewiston	ID	General	2	
OTHER	Rockwell International	L.A.	CA	U.T.	40 hrs UT	
OTHER						

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
9/81	5/82	L.M.T. Inc. 771 E. Brokaw Rd. San Jose, CA	NDT Mechanical Tech.	Responsible for the maintenance and operation of various recording and mechanical equipment.
4/81	9/81	WHS - Boecon-Geri General Energy Resources P.O. Box 1040 Richland, WA	Certified Level II Visual Welding Inspector	Inspection of work performed by pipe-fitters and ironworkers to ANSI-N45.2.6, ASME/ANSI-B31.1 ASME Section III & IX.
1/81	4/81	Pullman Power Products P.O. Box 367 Avila Beach CA	Level II Visual Welding Inspector	Inspection of Class I Nuclear Piping Pipe supports, including anchors, restraints, seismic limiters, and pipe hangers.
5/79	10/80	Reinhart & Associates P.O. Box 982 Suite 173 Austin, TX	Level II VT NDT Level II MT NDT Level I Tech UT Level I Tech PT	Examination of nuclear and fossil Power Plant components.
6/78	5/79	L.M.T. Inc. 771 E. Brokaw Rd. San Jose, CA	NDT Tech Level I UT	Manual and mechanized examination of nuclear power plants PSI & ISI.

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
B&W Const. Co.	Caspary	Bert	6/23/82	1168

EDUCATION

SCHOOL	NAME	CITY	STATE	MAJOR	YEARS ATT.	DEGREE DATE
HIGH	Windsor Community HS	Windsor,	IL		4	
COLLEGE						
OTHER						
OTHER						

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
9/77	Present	B&W Const. Co 29 S. LaSalle St. Chicago, IL 60603	Supt.	Over see different types of boiler, Const. repair & assoc. equipment.
6/72	9/77	Caspary Electric Sullivan, IL	Owner Manager, Estimator	Estimating, manager & supervisor
12/69	6/71	Burriss Tri-County Electric Pana, IL	Estimator & Supervisor	Estimating & Supervision
1/69	12/69	Burriss Hubbard Elect. Shelbyville, IL	Estimator Supt. & Manager	Estimating, Supervision & Manager
6/63	1/69	City of Sullivan Electric Dept. Sullivan, IL	Supt. & Manager	Supt. & Manager of Electric Generation & distribution system
7/54	6/63	Young & Foote Electric Co. Mattoon, IL	J. Electrician Estimator Supt. & Manager	J. Electrician, Estimator, Supt. & Manager.

ALAB RESUME

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
B & W Const. Co. QC	Cox	James	8/11/82	1528

EDUCATION

SCHOOL	NAME	CITY	STATE	MAJOR	YEARS ATT.	DEGREE DATE
HIGH	Berkley High	Berkley,	MI		1	
COLLEGE						
OTHER	Magnaflux Corp.	Chicago	IL	MT & PT RT UT		10/76 4/80 8/80
OTHER		Hartford, Conn. Minn, Minn.		UT Basic Turbine Insp.		9/79 6/81

JOB HISTORY

MO/YR		COMPANY/ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
PRESENT		B&W Const. Co 3333 Copley Rd. Copley, OH	NDE Tech.	MT/PT of Welds & basic material.
2/76	8/82	Magnaflux Quality Serv. 32063 Townley Ave. Madison, Hts. MI	NDT Inspector	MT,PT,UT,RT, and visual inspections/ Examinations.

ORGANIZATION B&W Const. Co. QC	LAST NAME Fennell	FIRST NAME Keith	DATE 8/16/82	EMPLOYEE NO. 1159
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EDUCATION

SCHOOL	NAME	CITY	STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	Wettermark High	Boyce	LA		4	
COLLEGE						
OTHER						
OTHER						

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
5/82	present	B&W Const. Co Midland, MI	Asst. Radiographer & radiographer Level I	Miscellaneous Radiographic operations
11/79	5/81	B&W Const. Co New Roads, LA	Timekeeper Welding Tech	Misc. office work in charge of stress relieving on job and blue print control.
6/79	11/79	B & W Const. Co Houston, TX	Timekeeper Material Man	Misc. repair jobs, misc. office work & material & purchasing.
2/79	6/79	Luhr Bros. Const. Co. Boyce, LA	Deck hand Surveyor	Deck hand on tug boat, surveyor for misc. dirt work.

ORGANIZATION B&W Const. Co. QC	LAST NAME Karol, Dennis	FIRST NAME	DATE 8/16/82	EMPLOYEE NO. 1178
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EDUCATION

SCHOOL	NAME	CITY STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	Taunton High School	Taunton, MA	College Prep	4	
COLLEGE	Southwestern Mass. Univ.	N. Dartmouth, MA	Mechanical Engineering Technology	4	B.S.
OTHER					
OTHER					

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
5/82	8/82	Barclay Int's Ltd. 3405 E. Wackerly Rd. Midland, MI 48640 Davis-Besse I Oak Harbor, OH	Mechanical Insp.	Aux. Feedwater modification. Inspecting layout for new nozzles, dimensional & surface finish verification & visual exam of welds. Also inspected inst. of new header & risers.
10/81	2/82	Butler Service Group 150 Wood Rd. Braintree, MA Pilgram I Plymouth, MA	Construction Engineer	Concrete block wall modification. Coordinated effort between installation super. & cognizant eng. Resolved Field problems to meet design & installation requirements. Duties included mat'l insp., fit-up & weld inspections.
7/81	10/81	Ian Martin Inc. 96 River Oaks Center Calumet City, IL Lasalle County 1&2 Morris, IL	Field Engineer	Small bore pipe supports, redesigned supports to accomodate field install. Inspected Const. problems with foreman to determine possible resolutions. Duties included providing calculations & documentation of changes.
10/80	6/81	Stone & Webster Eng. Corp 245 Summer St. Boston, MA	Lead Senior Designer	Responsible for all phases of design work of pipe supports. Duties included reviewing all drawings for issuing, providing tech. assist. coordinating design effort with const. effort & scheduling of manpower.
8/78	9/80	Stone & Webster Eng. Corp 245 Summer St. Boston, MA	Senior Designer	Responsible for complete design of various pipe support systems for lg. & sm. bore piping. Duties included supervision of other designers, issuing drawings, answering technical questions
6/74	7/78	Stone & Webster Eng. Corp 245 Summer St. Boston, MA	Designer	Responsible for layout, design, & calibrations of pipe supports for lg. bore piping. Supervised other designers. Knowledgeable in structural design & pipe stress attachment programs.

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
B&W CC QC	Wong	Harold	6/24/82	1171

EDUCATION

SCHOOL	NAME	CITY	STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	Boston Technical H.S.	Boston	MA	College Prep.	3	
COLLEGE	Franklin Institute of Boston	Boston	MA	Civil Engineering Technology	2	AS June 69
OTHER	Northeastern University	Boston	MA	BSCE		
OTHER						

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
6/1/82	6/11/82	Barclay International 3405 E. Wackerly Midland, MI	QC	Assigned to B&W at Davis-Besse, Oak Harbor, Ohio. Inspection of Aux Feed water modification to steam generators.
6/81	3/82	Additional Technical Services Main St. Waltham, Mass.	Lead Construction Engineer	Construction Management for the implementation of IEB 80-11 Bulletin relating to Block Walls at Boston Edison's Pilgrim Station.
9/79	6/81	Lehigh Design Park Rd. Charlott, NC	Design Eng.	Assigned to Duke Power's McGuire Units 1&2. Design support of Pipe support erection crew.
8/77	8/79	Stone & Webster 245 Summer St. Boston, Mass.	Structural Designer	Assigned to Vepco's North Anna Units 1&2. Design of Platforms seismic cable tray support, struct. mods. and design support to electricians.
1/72	8/77	Stone & Webster 245 Summer St. Boston, Mass	Structural Designer/ Draftsman Senior	Design/draft various nuclear projects.
3/71	1/72	Sasari Assoc. Pleasant St. Watertown, Mass.	Civil Draftsman	Layout & calc. of roadways

ORGANIZATION	LAST NAME	FIRST NAME	DATE	EMPLOYEE NO.
B & W QC	Yurick	Thomas	6/23/82	1170

EDUCATION

SCHOOL	NAME	CITY STATE	MAJOR	YEARS ATT.	DEGREE & DATE
HIGH	McKeesport Senior High	McKeesport, PA	General Ed.	3	
COLLEGE	Newbury Junior College	Boston, MA	Management	1½	Assoc. 6/74
OTHER	American Society for Metals - MEI	Metals Park, OH	Quality control	1	N/A
OTHER					

JOB HISTORY

MO/YR		COMPANY / ADDRESS	YOUR TITLE	DUTIES
FROM	TO			
6/79	4/82	Arremony Associates 240 Rio Del Mar Aptos, CA 95003	Quality Assur. Quality Control	Documentation, Procedure Development QC Supervisor.
4/78	3/79	Materials Assurance Saratoga Ave. San Jose, CA	Quality Control	NDE Level I and Level II

7-16-82

Walt Byrd Phone Call

①

Civil Site Superintendent (Jim M.)

1 Eq/TV(30)

QAE
Don

Other
Ron

Take over
Bechtel QC

②

M.P.Q.P.-2

③

INT Meeting - not informed

d7-6
7-6-82

11
1
2

Conference Call with Frank R of CPIC

NAK occurs

