

August 27, 1985

DOCKETED
USNRC

'85 SEP -4 A10:22

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSIONOFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCHBEFORE THE ATOMIC SAFETY AND LICENSING BOARDIn the Matter of:
COMMONWEALTH EDISON COMPANY(Braidwood
Station, Units 1 and 2)Docket Nos. 50-456
50-457APPLICANT'S SIXTH PARTIAL RESPONSE TO
ROREM'S FIRST SET OF QUALITY ASSURANCE
INTERROGATORIES AND REQUESTS TO PRODUCE

On July 2, 1985, Intervenors Rorem, et al. ("Intervenors"), filed their First Set of Quality Assurance Interrogatories and Request to Produce. On July 30, 1985, Commonwealth Edison Company ("Applicant") filed objections to certain of those discovery requests and provided to Intervenors' counsel a partial response to Intervenors' discovery requests. Applicant's first partial response was revised and resubmitted on August 1, 1985. Applicant filed a second partial response on August 5, 1985, a third on August 10, 1985, a fourth on August 13, 1985, and a fifth on August 14, 1985. This submission, which is Applicant's sixth partial response to Intervenors' discovery requests, provides responses to Specific Interrogatories 58 and 59. Investigation continues for responses to all of the requests to which Applicant has not objected and Applicant expects to supplement certain responses previously filed. In addition, Applicant will provide at a later date additional affidavits and updated indices of documents made available for inspection and copying.

Each document referenced in Applicant's responses to Interrogatories 58 and 59 has been identified with a number. In addition, Applicant has provided indices for these documents organized by interrogatory number, which identify for each numbered document the date, author, recipient, and type of document. Updated indices will be provided as appropriate.

With regard to requests for addresses and telephone numbers of individuals employed by Commonwealth Edison or its contractors, onsite personnel can be located by contacting Braidwood Nuclear Power Station, Braceville, Illinois 60407 (phone 815-458-2801). Other Commonwealth Edison personnel can be located by contacting 72 W. Adams St., P. O. Box 767, Chicago, Illinois 60690 (phone 312-294-4321).

SPECIFIC INTERROGATORY 58 AND 59

58. For each quality assurance violation or unresolved or open item referred to by Intervenor's in their amended quality assurance contention (served upon all parties May 24, 1985), please describe in detail the circumstances involved, including the name and address of each person involved, the manner in which such deficiency was identified, the manner in which the deficiency was investigated and evaluated for significance, root cause and generic implications, the manner in which the deficiency was remedied and corrected, including any corrective action taken with regard to the existence of other related deficiencies. Set forth any facts upon which you rely to show that the deficiency and its root cause have been effectively corrected. Please identify any documents which reflect these answers.
59. With respect to the deficiencies referred to in Interrogatory 58 above, identify in detail all documentation and hardware changes or re-work undertaken in the course of remedial or corrective actions including numbers of items changed or reworked. Please identify any documents reflecting these answers.

RESPONSE

A review has been made of Intervenor's amended quality assurance contention to identify each example of a violation, unresolved item or open item with respect to quality assurance. These examples, in fact, generally restate items reported by the NRC Staff as appearing to indicate discrepancies with respect to specific provisions of 10 CFR50 Appendix B. Each of those items are addressed in the response to these interrogatories. As is discussed in certain of the specific responses which follow, Commonwealth Edison may not have agreed with the validity of the alleged discrepancy. In those cases in which a discrepancy was acknowledged to exist, the specific response will so indicate.

SPECIFIC INTERROGATORY 58 AND 59

Each of the specific responses describes the name of each person involved to the extent now known to CECo (the addresses of each individual are the Braidwood Site), the manner in which the deficiency was identified, remedied and corrected and certain facts relied on to show that the deficiency and its cause have been effectively corrected. Documentation and hardware changes are described, where appropriate.

Not all specific responses describe the manner in which the deficiency was investigated and evaluated for significance, cause and generic implications; nor are all the facts set forth on which CECo relies to show that the deficiency and its cause have been effectively corrected. Similarly, the corrective actions taken with respect to related deficiencies are not set forth in every specific response. For certain of the deficiencies, specific information on these subjects is lacking and CECo's general programs addressing those subjects, which are discussed in this introduction, are applicable.

The manner of evaluation or investigation is in large part a function of the significance of the concern being reviewed. The significance of the concern is determined by project personnel including CECo's site licensing organization with management review, as appropriate. The involvement of CECo Senior Management in organizing and implementing the Quality Assurance Program at Braidwood is described in response to Specific

SPECIFIC INTERROGATORY 58 AND 59

Interrogatory 56. In so far as that response describes the responsibilities of Mr. O'Connor, Mr. Maiman and Mr. Wallace in implementing the Quality Assurance Program at Braidwood, it is incorporated herein by reference. The Quality Assurance Department has taken an increasingly active role in this process.

To assure that all items of concern identified receive appropriate attention for their generic implications and the effectiveness of corrective action, a diverse program of quality assurance oversight is ongoing at Braidwood. This program provides the necessary confidence that discrepancies, when they exist, are identified and effectively remedied. The following portion of this introduction therefore supplements the specific responses with respect to the investigation of the deficiency for significance, cause and generic implication, corrective actions taken with respect to related deficiencies and the facts on which CECO relies to show that the deficiency and its cause have been effectively corrected.

Site Quality Assurance uses a variety of techniques to ensure that the cause of a deficiency has been effectively corrected, or that generic implications or related deficiencies are addressed.

First, the site Quality Assurance organization provides for a Special Projects Group which focuses its efforts on corrective action programs at the site. For the longer duration activities plans have been developed for covering the activities through the

SPECIFIC INTERROGATORY 58 AND 59

audit and surveillance schedules. This assists us in assuring problems and their cause are adequately addressed. For example this Group has been involved in the review of the following items which are specifically addressed in this interrogatory:

- 1) Mechanical Equipment Installation (1.A, 6.A, 13.A)
- 2) HVAC Welding (3.A.1, 3.A.2, 3.A.3)
- 3) Pipe Support Installation and Welding (10.C, 10.E)
- 4) Nuclear Coating Applications (5.B)
- 5) Small Bore Pipe Wall Thickness (6.F, 11.C)
- 6) Structural Steel Installation and Welding (9.A, 9.D, 9.E)
- 7) Steam Generator Bolting (10.A, 11.A)
- 8) Pipe Heat Number Reverification (MTV) (10.B)

Site Quality Assurance uses Hold Points as one means of assuring that an activity is being properly performed when a problem area is identified and corrective actions established. Hold Points are often established and maintained as necessary at key points in the work activity to assure that corrective action and action to prevent recurrence have been effective. Examples of such hold points which were appropriate for application and were employed in relation to the following items specifically addressed in this interrogatory:

SPECIFIC INTERROGATORY 58 AND 59

- 1) Mechanical Equipment Installation (1.A, 6.A, 10.A, 13.A)
- 2) Small Bore Pipe Routing (3.A.4.b)
- 3) HVAC Welding and Equipment (3.A.1, 3.A.2, 3.A.3)
- 4) Structural Steel Welding (9.A)
- 5) Electrical Q.C. Inspector Qualifications (3.C, 4.A)
- 6) Electrical Cable Routing (6.E)

Site Quality Assurance also has had in place since late 1983 a follow-up program for closed audit findings. This program of re-looking at the area approximately quarterly allows Site Quality Assurance to verify in a systematic way, that committed corrective actions and actions to prevent recurrence have been effective in resolving the cause of the deficiency. To date this program has been applied to the following items which are specifically addressed in this interrogatory:

- 1) Small Bore Pipe Routing (3.A.4.B)
- 2) Small Bore Pipe Support Selection (3.A.4.C; 14.B.4)
- 3) Phillips, Getschow Training Program (3.A.4.E)
- 4) Level I Q.C. Inspector Certifications (3.C)
- 5) Field Change Requests Stamped on Phillips, Getschow Drawings (5.A, 6.B.1)
- 6) Calibrated Instrument for Measuring Pipe Bends (6.B.3)
- 7) Control of Voided L. K. Comstock Drawings (6.B.5)
- 8) Pullman Sheet Metal Q.A. Auditing to their Audit Schedule (14.B.3)

SPECIFIC INTERROGATORY 58 AND 59

In addition, closed NRC items of noncompliance are being followed up by Site Quality Assurance to verify the committed corrective actions and action to prevent recurrence have been accomplished. To date such follow-up has taken place with respect to four (4) of the ten (10) items specifically addressed in this interrogatory which have been closed by the NRC. Those items are:

- 1) L. K. Comstock Cable Routing (6.E)
- 2) Purchasing of Services for Pipe Cleaning (6.G)
- 3) Pipe Strap Restraint Material (6.I)
- 4) Loose crimps at determination blocks (11.B)

It should be noted that very few of the noncompliances identified in the contention have been closed at this time by the NRC Staff. This program will cover all other NRC noncompliances as they are closed.

Trending at the site is accomplished by a combination of efforts by the individual contractors and CECO. Each contractor is required to perform quarterly trends of audit deficiencies, non-conformances and lesser deficiency reports. Recurring deficiencies are examined in an effort to identify patterns or trends. When trends are identified, an analysis for cause is performed and corrective actions established. Subsequent trending reports demonstrate the adequacy of the corrective action. Site Quality Assurance reviews the contractor trend reports as they are

SPECIFIC INTERROGATORY 58 AND 59

issued. Site Quality Assurance also performs analyses on CECO audit deficiencies in an effort to identify any trends. When trends are identified corrective action is requested of appropriate parties and its completion monitored.

During close-out of Non-Conformance Reports (NCR's) Site Quality Assurance verifies not only corrective actions, but also the action to prevent recurrence. Since final NCR close-out is usually several months after the NCR was prepared and issued, the effectiveness of any actions to prevent recurrence gives a good indication of whether the cause has been properly addressed. This process would be implemented for NCR's in connection with the following specific items addressed in this interrogatory:

- 1) HVAC Component Weld Joint Fit-Up (3.A.2)
- 2) Torched Opening Cut into Structural Beams (3.B)
- 3) GE "VULKENE" Wire (8.B)
- 4) ASTM 307 Fasteners for L. K. Comstock Hangers & Battery Racks (8.C)
- 5) Reactor Coolant Pump Lateral Supports (9.B)
- 6) Structural Steel Flux Core Welder (9.D)
- 7) Napoleon Steel Constructors Lack of Q.C. Fit-Up Inspection (9.E)
- 8) Phillips, Getschow Pipe Supports (10.C and 10.E)
- 9) Rusted Pipe (11.C)

SPECIFIC INTERROGATORY 58 AND 59

- 10) Pullman Sheet Metal Welder Identification (12.B.3)
- 11) Improper Closure of NCR 600 (12.C)
- 12) Internal Cleanliness on Mechanical Equipment (12.G)
- 13) Napoleon Steel Constructors Multi-Pass Welds (12.I)

In addition, over the past several years Site Quality Assurance has upgraded its review of audit deficiencies prior to close-out. This upgrade has included assurance that corrective action was complete, action to prevent recurrence has been effective and the acceptability of past work has been assessed. The extensive close-out process permits Quality Assurance to identify related deficiencies when evaluating the actions to correct the original deficiencies.

The Unit Concept Inspection Program is performed by the Independent Testing Agency, PTL, under the direction of Site Quality Assurance. This program was initiated in September, 1982 to provide Quality Assurance with an additional level of assurance in the quality of the plant and equipment installed at Braidwood.

The inspections are performed using basic design documents. Safety related areas of the plant are examined as a unit with the objective of assuring that the work in a given area conforms to design requirements. Because the inspections generally involve mechanical, electrical, structural and HVAC elements within a given area, this type of inspection is well suited to the identification

SPECIFIC INTERROGATORY 58 AND 59

of related or generic deficiencies. Inspection results are evaluated and when related deficiencies or generic deficiencies are identified, separate actions are initiated to investigate the cause. Corrective actions and action to prevent recurrence are then undertaken. Examples of these inspections which apply to the areas which are addressed in this interrogatory are as follows:

- 1) Electrical Penetration Terminations (11.B)
- 2) Mechanical Equipment Installation (1.A, 6.A, 10.A, 13.A)
- 3) Cable Routing (6.E)
- 4) Reactor Coolant Pump Support Installation (9.B)
- 5) Small Bore Pipe Routing (3.A.4.a, 3.A.4.b)

Pittsburgh Testing Laboratory, the site Independent Testing Agency, has also been directed by Site Quality Assurance to initiate a formal program of overinspection. The program provides for reinspection of completed construction work which has been recently Q.C. inspected. The overinspection program examines a wide range of work activities and provides for trending by work activity as well as by individual Q.C. inspection attributes. This trending approach allows for identification of related deficiencies as well as identifying other areas which should be inspected for similar deficiencies.

SPECIFIC INTERROGATORY 58 AND 59

In addition Site Quality Assurance has meetings with Contractor Q.A./Q.C. Supervisors about every two weeks. These meetings are used to discuss current site issues and communicate concerns to all contractors. This has facilitated the examination of concerns in one contractor's area by the other contractors, so that related concerns can be avoided or can be readily identified.

Other general actions taken that provide increased assurance and confidence that causes are effectively corrected and that generic implications or related deficiencies are addressed consist of the Site Quality Assurance organizational changes made, particularly over the past 18 months, and the audit program enhancements implemented in early 1984.

The total number of personnel assigned to Site Quality Assurance increased 160 percent between January 1984 and January 1985. These staff increases were necessary to keep pace with the increased audit and surveillance activities and extensive involvement by Site Quality Assurance in following corrective action programs, among other reasons. As the staff size increased, whenever possible experienced personnel were added, many with previous construction Quality Assurance experience at LaSalle Station or experience at other nuclear facilities. In addition we increased the number of CECO Site Q.A. Supervisors from two (2) to five (5), and ultimately to six (6), and assigned an experienced

SPECIFIC INTERROGATORY 58 AND 59

individual with sole responsibility of acting as the audit coordinator. These organizational changes have been instrumental in increasing Site Quality Assurance's effectiveness and coverage.

Furthermore, in 1984 a great deal of attention was focused on improving the depth and thoroughness of our Site Quality Assurance Audit Program. In addition to the assignment of a full time audit coordinator, we enhanced our pre-audit preparation, took steps to involve the audit coordinator and the lead auditors more deeply in the audits, expanded audit team debriefings prior to audit exit meetings and placed additional emphasis on review of audit responses and corrective actions, and on prompt resolution of deficient responses.

These steps have contributed to a significant enhancement in our audit program. The elements of our audit program, including audit reports, schedules, and follow-up to audit findings, were reviewed during the NRC CAT Inspection (Inspection Report 50-456/84-44, 50-457/84-40). This inspection determined that the Site Quality Assurance Audit Program is comprehensive and capable of identifying both implementation and programmatic problems.

Finally, it is anticipated that the results of the BCAP program will demonstrate that there are no design significant construction deficiencies and that there are no programmatic procedural deficiencies.

CONTENTION ITEM 1.A

1. Contrary to Criterion I, "Organization" of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison has failed to effectively oversee the quality assurance activities of its site contractors for which it retains responsibility. Widespread deficiencies have occurred in the quality assurance activities and workmanship of the principal Braidwood site contractors including the mechanical (piping and supports/restraints) equipment and instrumentation installation contractor Phillips, Getschow Company; the electrical contractor, L.K. Comstock Company; the heating ventilation and air conditioning (HVAC) contractor, Pullman Sheet Metal Company; and the concrete contractor, G.K. Newberg Company.
- A. On February 2, 1983, Commonwealth Edison Company was cited a \$100,00 Civil Penalties for severity level III violations at Braidwood "evidenced by a breakdown of your quality assurance (QA) program as it related to the installation and installation inspection of mechanical safety-related equipment." (Keppler (NRC) to O'Connor (CECo) transmitting Notice of Violation and Proposed Imposition of Civil Penalties, Exh. 3.) The serious quality assurance deficiencies involved activities by the site mechanical equipment installation contractor, Phillips, Getschow Company, and related to the installation of the four Unit 1 Steam Generators, the four Unit 1 and 2 Residual Heat Removal Pumps and the four Safety Injection Pumps. Edison failed to take timely and effective corrective action after identifying related significant problems that occurred at its Byron station. Edison failed to report this significant breakdown in the quality assurance program to the NRC as required by 10 C.F.R. 50.55(e)(1), although it had identified the problems with Phillips, Getschow Company over 2 years earlier (Exh. 3.).

RESPONSE

A description of the circumstances which led to the subject civil penalty as well as a discussion of the deficiencies identified, the manner of evaluation of those deficiencies, and the action taken to correct those deficiencies are provided in the individual responses to Specific Interrogatory #58, Items 6.A, 8.A., 10.A, 11.A, 12.A, 13.A, and 14.A. except for the deficiency concerning the untimely reporting in accordance with 10 CFR 50.55(e) of the work-related deficiencies addressed in the above listed responses to Interrogatory #58.

CONTENTION ITEM 1.A

That reporting deficiency was identified during the routine NRC safety-inspection conducted during the period April 19 through July 20, 1982, of activities related to the erection of safety-related mechanical equipment at Braidwood Station, Units 1 and 2. The results of the inspection relative to this reporting deficiency were discussed during an enforcement conference conducted at the NRC Region III office on August 31, 1982. The reports setting forth the results of the inspections and the enforcement conference are documented in Inspection Report 50-456/82-05; 50-457/82-05. The reporting deficiency was identified in those reports as item 82-05-05. Commonwealth Edison responded to this item.

Commonwealth Edison verbally notified the NRC on September 2, 1982 that certain safety-related equipment items had been erected by PG&E the mechanical contractor "without adherence to its quality assurance procedure pertaining to this activity". That notification was made after the August 31, 1982 enforcement conference at which the work activities in question were discussed. Commonwealth Edison had been aware of the deficiencies involved prior to August 31, 1982, but those deficiencies were not considered reportable because the corrective action necessary was not judged to be extensive within Applicant's understanding of the context of the wording of 10 CFR 50.55(e). In retrospect, that judgement was not appropriate. This notification was later documented by letter to the NRC.

CONTENTION ITEM 1.A

Although the wording of 10 CFR 50.55(e) is simple, certain of its provisions are amenable to different interpretations. Specifically, the terms "significant breakdown" and "extensive" as it relates to a construction deficiency require the exercise of engineering judgment before a determination can be made.

In the spring of 1982, Commonwealth Edison was in the process reassessing the basis used to evaluate a deficiency for reportability under 10 CFR 50.55(e). Subsequently, guidance was communicated to each of our three construction sites. That process ultimately led to the implementation at all sites of a new review methodology which included a checklist for the review of a potentially reportable deficiency. At Braidwood that procedure is now designated PM-04, 10 CFR 50.55(e) Determination and Reporting. This procedure required the documented review of all CECo Nonconformance Reports, CECo Operating Department Deviation Reports, Preop/Start-up performance deficiencies, and CECo Audit Reports. Although contractor Non-Conformance reports which required CECo concurrence for disposition were being reviewed for reportability by the responsible CECo Project Engineer, documentation of that review was made a formal requirement in December, 1984.

The procedure implemented at Braidwood was first implemented at Byron Station in December 1982. That procedure was acknowledged by the NRC Staff to be adequate in an inspection reported in December, 1983. More recently, the NRC staff has reviewed the Braidwood program for evaluation of construction deficiencies. No violations of NRC requirements were identified during the course of this inspection. Two

CONTENTION ITEM 1.A

unresolved items were identified which require additional information be provided the NRC staff to facilitate their disposition of those items. That information is currently being prepared.

Reportability reviews of CECO NCR's are checked as part of the normal Site QA review process for CECO NCR's. A General Office Audit (20-85-A) was conducted in March, 1985 to examine the reportability review activities of the Project Construction Department (PCD) which identified no deficiencies. In addition, Site QA has been performing periodic surveillances to assure the routine reportability review for audit findings is being performed by PCD. An example of such a surveillance is #3621, dated June 15, 1984. All site audit findings now have a documented evaluation of reportability.

CONTENTION ITEM 1.A

REFERENCES

1. J.G. Keppler letter to James J. O'Connor, dated February 2, 1983. (Proposed Imposition of Civil Penalties) as revised by J.G. Keppler letter to James J. O'Connor dated February 7, 1983 (pages A0001021-A0001060).
2. Inspection Report 50-456/82-05, 50-457/82-05 (pages A0001005-A0001028).
3. C. Reed letter to J.G. Keppler, dated April 4, 1983 (pages A0001063-A0001084).
4. T.R. Tramm letter to James G. Keppler, dated October 8, 1983 (pages A0001087-A0001093).
5. L.O. DelGeorge letter to J.J. Maley dated August 19, 1982 (pages A0014103-A0014121).
6. Braidwood Nuclear Station Project Procedure, PM-04, Rev. 0, dated 5/22/84; 10 CFR 50.55(e) Determination and Reporting (pages C0003379-C0003391).
7. J. Streeter letter to C. Reed, dated December 5, 1983. Inspection Report 50-454/83-53 (pages G0000910-G0000918).
8. W.S. Little letter to Cordell Reed, dated August 21, 1985. Inspection Report 50-456/85027(DRP); 50-457/85027(DRP) (pages A0014063-A0014063).
9. Braidwood Construction Audit #20-85-A, dated March 14, 1985 (pages B0006029-B0006046).
10. Braidwood QA Surveillance Report No. 3621, dated June 15, 1984 (pages B0006025-B0006028).
11. Licensing File on Item 82-05-01, Contention 1.A (pages A0005663-A0005719).

CONTENTION ITEM 1.A

NAMES AND ADDRESSES

L. G. McGregor	NRC Region III
W. J. Key	NRC Region III
T. R. Tramm	Commonwealth Edison Company
Cordell Reed	Commonwealth Edison Company
L. O. DelGeorge	Commonwealth Edison Company
R. Tuetken	Commonwealth Edison Company
D. Shamblin	Commonwealth Edison Company
M. Wallace	Commonwealth Edison Company
G. Groth	Commonwealth Edison Company
S. Hunsader	Commonwealth Edison Company
E. Fitzpatrick	Commonwealth Edison Company
M. Dougherty	Commonwealth Edison Company (Consultant)
T. Quaka	Commonwealth Edison Company
J. Stewart	Phillips Getschow

CONTENTION ITEM 3.A.1

3. Contrary to Criterion II, "Quality Assurance Program," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to establish a quality assurance program which complies with the requirements of Appendix B and which is documented by written policies, procedures, and instructions and is carried out in accordance with those instructions. Edison has failed to assure that its QA program provides controls over activities affecting quality and that such activities are accomplished under suitably controlled conditions and are appropriately verified for quality by inspection.

A. A special NRC QA inspection reported May 7, 1984 that:

- * Instructions were not appropriate to the circumstances in that welding procedures specifying the essential variables were not prescribed on drawings or welding sequences (travelers) for each specific HVAC installation and Quality Control inspections during the welding process were not of adequate scope and frequency to assure the use of correct welding variables.

RESPONSE

NRC Quality Assurance Program inspections were performed on 06/20/83 - 06/24/83, 06/27/83 - 07/01/83, 08/01/83 - 08/05/83, 08/09/83, 10/04/83 - 10/07/83, 10/24/83, 01/11/84 - 01/13/84, 01/26/84 and 02/09/84 by Messrs. T. E. Vandel, I. T. Yin, C. C. Williams, R. D. Schulz, D. E. Keating, and D. R. Hunter of NRC Region III. The results of the inspections were recorded in NRC Inspection Report 50-456/83-09; 50-457/83-09.

During the NRC inspection review of the Pullman Sheet Metal Works, Inc. (PSM) Quality Assurance Program, NRC inspectors noted that welding procedures to be used for each specific HVAC installation were not stipulated on drawings, travelers or predetermined by any documentation form. Additionally, during the installation process, quality control did not verify welding position or polarity for electrode classification.

CONTENTION ITEM 3.A.1

Also, quality control did not verify that acceptable welding procedures were employed for each HVAC installation nor adequately inspect welders compliance with the welding procedure essential variables.

Commonwealth Edison acknowledges that PSM did not issue written instructions telling the welder what procedure to use prior to the above referenced NRC inspection. However, it is the Commonwealth Edison Company position that the up front programmatic controls provided by Pullman Sheet Metal were and still are adequate to control the welding activities performed by Pullman Sheet Metal. Overall, the quality assurance controls applied to welding activities performed by Pullman Sheet Metal provided adequate controls necessary to ensure confidence that HVAC structures, systems and components will perform satisfactorily in service.

Specification L-2782 and the Byron/Braidwood FSAR call out AWS D1.1-1977 as the applicable code to which structural welds for HVAC hangers are to conform at Braidwood Station. The applicable code section for duct welding is AWS D1.3-1978. Contained within AWS D1.1 and D1.3 are many references requiring that "the weld inspector shall make certain" that prerequisites have been met before the start of welding. Such prerequisites include, but are not limited to, such items as welder qualifications, acceptable filler materials, and the use of correct welding processes and procedures.

CONTENTION ITEM 3.A.1

Assurance of compliance with the applicable welding code can be provided in different ways. The individual inspector can document that all such prerequisites have been met before the welding begins. Equally acceptable is the implementation of up-front programmatic controls which do not rely solely on a Quality Control inspector's pre-welding checks coupled with post-weld Quality Control visual inspection. The following items provided confidence that such programmatic controls were in place at Pullman Sheet Metal and were functioning to assure that the required welding quality was being provided:

- (1) Sargent & Lundy (S&L) reviewed and approved all field and shop welding procedures prior to their use by Pullman Sheet Metal in the field. This review was performed to judge the technical adequacy of the procedures and their adherence to the applicable welding code and Specification L-2782.
- (2) Pullman purchased and shipped only acceptable materials, including filler material, to Braidwood Station. This was verified by Commonwealth Edison in the field and in the Chicago shop.
- (3) Documentation of training exists for all Pullman Sheet Metal welders in the approved procedures to which they are qualified. Such training covered the following welding aspects

CONTENTION ITEM 3.A.1

and requirements: material specifications, welding processes, position of welding, filler metal classification, single or multiple pass requirements, welding current, polarity, welding progression, pre-heat and interpass temperature, electrode size, amperes range, voltage range, and type of joint detail. This training documentation has been verified by Commonwealth Edison Site Quality Assurance.

- (4) Commonwealth Edison Site Quality Assurance witnessed site welder qualification tests and ensured that welders were qualified.
- (5) There are only three or four basic welding processes in use for HVAC welding. For the most part, joint configuration dictated choice of weld process. In those cases where a choice of process could be made, any of the available processes were adequate if properly performed. The number of different available filler material types was small, and in all but one process, type was dictated by the nature of the process. In addition, training would have assured the use of correct filler materials. The relatively small numbers of welders working with familiar configurations and details provide confidence that the proper welding procedure and filler material were used without the use of a documented process sheet.

CONTENTION ITEM 3.A.1

- (6) Between February 1983 and May 1983, prior to the use of process sheets, Pullman Sheet Metal Quality Control had performed 55 documented in-process welding surveillances. No instances of incorrect use of filler material or improper procedure implementation were observed. Between June 1983 and December 1983, including a period after the process sheet system was in place from August 1983 onward, an additional 583 in-process surveillances were performed with no instances noted of the incorrect placement of filler material.

In August, 1983, Pullman Sheet Metal revised Procedure B9.4.F to incorporate a process sheet. The process sheet is utilized to pre-assign the welding procedure.

At the same time, at the direction of CEC Co, PSM QC implemented an in-process quality control surveillance of each welding process utilized on a weekly basis by each welder. This surveillance activity continued until February 1984. At that time, it was reduced due to Commonwealth Edison Q.A.'s high confidence in the Pullman Sheet Metal welder's ability to follow procedures properly.

As of March, 1984, Pullman Quality Control performed surveillances as follows:

CONTENTION ITEM 3.A.1

- (1) 10% of the active welder work force or 10 welders, whichever is greater, have in-process surveillances each week.
- (2) Each welding process has a surveillance each month.
- (3) Each active welder has at least one in-process surveillance every three months (one within each calendar quarter).
- (4) For each new welder or returning welder, ten (10) consecutive in-process surveillances are completed before beginning the above requirements. These in-process surveillances must be acceptable.

A review of filler metal controls determined:

- (1) All carbon steel electrode has a tensile strength greater than 70 ksi. Thus even if E-6013 filler metal had been erroneously used in place of E-7018, the tensile strength of the weld would still meet specifications.
- (2) Appropriate quantities of the various types of filler materials were purchased consistent with project needs.

CONTENTION ITEM 3.A.1

(3) Misuse of silicon bronze filler metal would have been reported in the results of visual weld inspection performed on all welds due to its distinctive color.

(4) A random sample magnetic inspection of welds was performed. This inspection determined that there was no evidence of stainless steel filler metal having been used.

Under Commonwealth Edison's direction, Pullman Sheet Metal is now performing a destructive testing program. Welds are selected on the basis of criteria agreed to between Commonwealth Edison and the NRC Staff. These welds are cut out and pull tested to destruction to verify strength. The results of this program are pending.

Commonwealth Edison has also directed that the following overview activities be conducted:

(1) Pittsburgh Testing Laboratory, working for Site Quality Assurance, performed the following surveillance activities to assure that Pullman Sheet Metal was performing adequately:

(a) A 10% overview inspection of all Pullman Sheet Metal safety related field weld inspections from the beginning of the job until the present.

CONTENTION ITEM 3.A.1

- (b) Random overview surveillances directed by Site Quality Assurance for specification compliance. Such surveillances cover configuration, housekeeping and storage, and welding details. A qualified inspector was utilized by Site Quality Assurance to perform this activity.
 - (c) Unit Concept Inspections (a planned series of surveillance modules) which provide independent design compliance verification performed on Pullman Sheet Metal.
- 2) Site Quality Assurance audits of Pullman's activities addressed not only Pullman Sheet Metal Quality Assurance Manual commitments and selected Pullman Sheet Metal's procedures, but also Regulatory Guides, Specification L-2782 requirements, and AWS requirements.
- (3) Commonwealth Edison's auditing activities to assure the adequacy of Pullman's Quality Assurance program and procedure implementation in October 1982 resulted in Pullman performing a 100% visual inspection of all ongoing welding and of all previous welding which had not previously been visually inspected.

CONTENTION ITEM 3.A.1

While Commonwealth Edison does not believe that the revision to Procedure B9.4F is a regulatory requirement, it acknowledges that the revised procedure results in improvements to quality documentation and control over the HVAC welding activities.

CONTENTION ITEM 3.A.1

REFERENCES

1. NRC Inspection Report 456/457/83-09 (pages A0001440-1507).
2. L. O. DelGeorge letter to J. G. Keppler, dated 07/06/84 Enclosure: Response to inspection report numbers 50-456/83-09 and 50-457/83-09 (pages A0001508-1572).
3. E. D. Swartz letter to J. G. Keppler, dated 08/31/84 (pages A0001577-1581).
4. D. H. Smith letter to J. G. Keppler, dated 03/11/85 (pages A0001654-1661).
5. D. H. Smith letter to J. G. Keppler dated 03/27/85 (pages A0005749 - 5751).
6. Pullman Procedure B9.4.F " Installation Procedure" (pages M0000001-249).
7. Pullman Procedure B16.1.F "Non-Conformance/Corrective Action" Revision 1 (pages M0001081 - M0001088).
8. Pullman Procedure B17.1.F "Q. A. Records" Revision 0 (pages M0001074 - M0001080).
9. Licensing file on item 83-09-10A, Contention 3.A.1 (pages A0005720-5777).

CONTENTION ITEM 3.A.1

NAMES AND ADDRESSES

R. D. Schulz	NRC Region III
D. E. Keating	NRC Region III
D. R. Hunter	NRC Region III
L. O. Del George	Commonwealth Edison Company
E. D. Swartz	Commonwealth Edison Company
D. Brown	Commonwealth Edison Company
G. Groth	Commonwealth Edison Company
K. Croft	Commonwealth Edison Company (Consultant)
M. Jarigese	Pullman Construction Industries
D. Lawler	Pullman Sheet Metal Works
R. Ewald	Pullman Sheet Metal Works
C. Holt	Pullman Sheet Metal Works
D. Grant	Pullman Sheet Metal Works

CONTENTION ITEM 3.A.2

3. Contrary to Criterion II, "Quality Assurance Program," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to establish a quality assurance program which complies with the requirements of Appendix B and which is documented by written policies, procedures, and instructions and is carried out in accordance with those instructions. Edison has failed to assure that its QA program provides controls over archives affecting quality and that such archives are accomplished under suitably controlled conditions and are appropriately verified for quality by inspection.

- A. A special NRC QA inspection reported May 7, 1984 that:

- * Quality Control was not required to examine the HVAC components for fit-up prior to welding on those components where fit-up tolerances cannot be determined after welding, such as all-around fillet welds and full penetration welds. Consequently, there was lack of records documenting the conformance with the requirements of AWS D1.1-1977, Section 3, and the Edison QA Manual. Additionally, instructions to the quality control inspectors regarding fillet weld gaps after welding were not appropriate to the circumstances in that the HVAC contractor Visual Weld Inspection Procedure, B10.2.F, stated that a 3/16" gap was acceptable whereas AWS D1.1-1977, Section 3.3, states that a 3/16" gap is allowed only if the leg of the fillet weld is increased by the amount of the separation or the contractor demonstrates that the required effective throat has been obtained.

RESPONSE

NCR Quality Assurance Program inspections were performed on 06/20/83 - 06/24/83, 06/27/83 - 07/01/83, 08/01/83 - 08/05/83, 08/09/83, 10/04/83 - 10/07/83, 10/24/83, 01/11/84 - 01/13/84, 01/26/84 and 02/09/84 by Messrs. T. E. Vandel, I. T. Yin, C. C. Williams, R. D. Schulz, D. E. Keating, and D. R. Hunter of NRC Region III. The results of the inspections were recorded in NRC Inspection Report 50-456/83-09; 50-457/83-09.

During the NRC inspection review of the Pullman Sheet Metal Works, Inc. (PSM) Quality Assurance Program, NRC inspectors noted that Quality Control had not inspected HVAC components for fit-up prior to welding on

CONTENTION ITEM 3.A.2

components. Fit-up inspection is the review of the proximity of mating surfaces to be joined prior to being welded together. PSM Procedure B10.2.F "Visual Weld Inspection Procedure" did not explicitly spell out the requirements of AWS D1.1-1977 specifically with respect to checking for the increased fillet weld size when a 1/16" to 3/16" fit up gap exists.

Commonwealth Edison believes that programmatic control, specifically that Q.C. inspectors were trained in the requirements of AWS D1.1-1977 and would therefore have been aware of the requirement for an increased fillet size for enlarged fit-up gaps, was adequate to ensure correct fit-up of the duct hangers, equipment bases and gallery supports. A discussion of the programmatic controls that were in place at PSM is provided in the response to Contention Item 3.A.1.

Pullman Sheet Metal inspected 100% of all welds to assure compliance with AWS D1.1 requirements. These initial inspection activities included inspections for proper fit-up. If improper fitup was found, this item was identified on a Correction Notice. Fewer than 2% of the Correction Notices written identified failure to increase fillet weld size for fitup as a deficiency indicating both that QC inspectors were aware of the requirement and were documenting instances where the requirement was not implemented, and that failure to meet this requirement was not widespread.

CONTENTION ITEM 3.A.2

In addition, PSM has implemented the following procedures:

- (1) PSM Procedure B10.2.F "Visual Weld Inspection" was revised in September 1983 to specifically address checking for increased fillet size when a fit-up gap exists.
- (2) PSM Procedure B9.4.F "Installation Procedure" was revised in September 1983 to establish fit-up checks prior to welding in cases where fit-up cannot be checked after completion of the weld.

Commonwealth Edison NCR 656 was written in October 1984 to disposition welds which could not be inspected for fit-up after weld completion. Disposition of this NCR is currently expected by October, 1985.

CONTENTION ITEM 3.A.2

REFERENCES

1. NRC Inspection Report 456/457/83-09 (pages A0001440-1507).
2. L. O. DelGeorge letter to J. G. Keppler, dated 07/06/84
Enclosure: Response to inspection report numbers 50-456/83-09
and 50-457/83-09 (pages A0001508-1572).
3. E. D. Swartz letter to J. G. Keppler, dated 08/31/84 (pages
A0001577-1581).
4. Pullman Procedure B9.4.F "Installation Procedure" Revision 4 (pages
M0000035-51).
5. Pullman Procedure B10.2.F "Visual Weld Inspection" Revision 2
(pages A0005802-5812).
6. Pullman Procedure B16.1.F "Non-Conformance/Corrective Active"
Revision 1 (pages M0001081 - M00010887)
7. Pullman Procedure B17.1.F "Q. A. Records" Revision 0
(pages M0001074 - M0001080).
8. Commonwealth Edison Company NCR 656 (pages B0000680-699).
9. Licensing file on Item 83-09-10B, Contention 3.A.2 (pages
A0005778-5830).

CONTENTION ITEM 3.A.2

NAMES AND ADDRESSES

R. D. Schulz	Region III NRC
D. E. Keating	Region III NRC
D. R. Hunter	Region III NRC
L. O. DelGeorge	Commonwealth Edison Company
D. Brown	Commonwealth Edison Company
G. Groth	Commonwealth Edison Company
K. Croft	Commonwealth Edison Company (Consultant)
M. Jarigese	Pullman Construction Industries
D. Lawler	Pullman Sheet Metal Works
R. Ewald	Pullman Sheet Metal Works
C. Holt	Pullman Sheet Metal Works
D. Grant	Pullman Sheet Metal Works

CONTENTION ITEM 3.A.3

3. Contrary to Criterion II, "Quality Assurance Program," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to establish a quality assurance program which complies with the requirements of Appendix B and which is documented by written policies, procedures, and instructions and is carried out in accordance with those instructions. Edison has failed to assure that its QA program provides controls over activities affecting quality and that such activities are accomplished under suitably controlled conditions and are appropriately verified for quality 6, inspection.

- A. A special NRC QA inspection reported May 7, 1984 that:

- * Quality Control was not required to examine the base metal prior to welding to assure that surfaces and edges were free of discontinuities. Consequently, there was a lack of records documenting conformance with the requirements of AWS D1.1-1977, Section 3, and the Edison QA Manual.

RESPONSE

NRC Quality Assurance Program inspections were performed on 06/20/83 - 06/24/83, 07/01/83, 08/01/83 - 08/05/83, 08/09/83, 10/04/83 - 10/07/83, 10/24/83, 01/11/84 - 01/13/84, 01/26/84 and 02/09/84 by Messrs. R. D. Schulz, T. F. Vendel, I. T. Yin, C. C. Williams, D. E. Keating, and D. R. Hunter of NRC Region III. The results of the inspections were recorded in NRC Inspection Report 50-456/83-09; 50-457/83-09.

During the NRC inspection review of the Pullman Sheet Metal Works, Inc. (PSM) Quality Assurance Program, NRC inspectors noted that Quality Control was not required to examine the base metal prior to welding to assure that surfaces and edges were free of discontinuities (such as fins, tears, crack, etc.).

CONTENTION ITEM 3.A.3

PSM Quality Control Inspection Procedure B10.2.F "Visual Weld Inspection" did not explicitly require examination of base metal prior to welding as required by AWS D1.1-1977. However, PSM Quality Control has, by the time an item is fit-up in the field, inspected PSM supplied sheet and structural items at least once. Items are inspected at the time of shipping for shop fabricated items. Materials for field fabricated items are inspected at the time of receipt at the Braidwood site. These inspections include a check for discontinuities. Job site fabricated items are saw cut and not oxygen cut. This practice virtually eliminates the likelihood of irregular edges.

In response to the NRC findings, Pullman Sheet Metal Procedure B10.2.F "Visual Weld Inspection" was revised in October 1984 to formally include checking for surface and edge discontinuities during fit-up inspection.

Commonwealth Edison believes the necessary controls have been and are in place to preclude the use of substandard materials. A discussion of the programmatic controls that were in place at PSM are provided in the response to Contention Item 3.A.1.

CONTENTION ITEM 3.A.3

REFERENCES

1. NRC Inspection Report 456/457/83-09 (pages A0001440-1507).
2. L. O. DelGeorge letter to J. G. Keppler, dated 07/06/84
Enclosure: Response to inspection report numbers 50-456/83-09 and
50-457/83-09 (pages A00001508-1572).
3. E. D. Swartz letter to J. G. Keppler, dated 08/31/84
(pages A0001577-1581).
4. Pullman Procedure B10.2.F "Visual Weld Inspection" Revision 7 on
Item 83-09-10C, Contention 3.A.3 (pages M0001089-1103).
5. Licensing file on Item 83-09-10C, Contention 3.A.3
(pages A0005831-5880).

CONTENTION ITEM 3.A.3

NAMES AND ADDRESSES

R. D. Schulz	NRC Region III
D. E. Keating	NRC Region III
D. R. Hunter	NRC Region III
L. O. DelGeorge	Commonwealth Edison Company
D. Brown	Commonwealth Edison Company
M. Jarigese	Pullman Construction Industries
D. Lawler	Pullman Sheet Metal Works
R. Ewald	Pullman Sheet Metal Works
C. Holt	Pullman Sheet Metal Works

CONTENTION ITEM 3.A.4.A

3. Contrary to Criterion II, "Quality Assurance Program," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to establish a quality assurance program which complies with the requirements of Appendix B and which is documented by written policies, procedures, and instructions and is carried out in accordance with those instructions. Edison has failed to assure that its QA program provides controls over activities affecting quality and that such activities are accomplished under suitably controlled conditions and are appropriately verified for quality by inspection.
- A. A special NRC QA inspector reported May 7, 1984 that:
 - * Edison's control of site designed small bore (2" and under) process and instrumentation piping systems was considered inadequate and ineffective based on the following deficiencies:
 - The programs and procedures established by Edison and the Architect-Engineer Sargent and Lundy prior to October 1983 did not provide sufficient assessments and verifications of Phillip, Getschow Co. design capabilities prior to authorizing field routing of Class 2 and 3 small bore piping and field design of supports/restraints. The lack of assessments and verification resulted in inadequate understanding of the S&L specifications by Phillips, Getschow to ensure the field routing of small bore piping was performed within the design requirements. Furthermore, the field routing of Class 2 and 3 small bore pipes, without detailed drawings being issued by S&L or Phillips, Getschow, resulted in the Applicant's established QA Program requirements being bypassed and prevented the timely identification of nonconforming conditions.

RESPONSE

For the response to Interrogatory 58, Contention Item 3.A.4.A, see Applicant's responses to Specific Interrogatories 28, 37 and 38, contained in Applicant's Fourth Partial Response to Rorem's First Set of Quality Assurance Interrogatories and Request to Produce. See also response to Interrogatory 58, Contention 14B.4. It should be noted that Phillips, Getschow Company was not assigned and did not perform any

CONTENTION ITEM 3.A.4.A

design work, but rather their activities included piping installations in compliance with specification guidance and selection of Architect/Engineer pre-designed supports/restraints. Subsequent to the events described in response to Specific Interrogatories 28, 37 and 38, PGCo has implemented additional procedural requirements which effectively preclude field routing of Class 2 and 3 small bore pipe by establishing quantitative piping tolerances and dimensional tolerances for clearances with all other components. These quantitative acceptance criteria provide a more prescriptive basis on which QC inspections are based.

CONTENTION ITEM 3.A.4.A

NAMES AND ADDRESSES

D. Danielson	NRC Region III
I. Yin	NRC Region III
R. Schulz	NRC Region III
J. Schimmels	Sargent & Lundy
D. Gallagher	Sargent & Lundy
W. Cleff	Sargent & Lundy
D. Shamblin	Commonwealth Edison Company
G. Groth	Commonwealth Edison Company
R. Farr	Commonwealth Edison Company
J. Stewart	Phillips Getschow Company
S. Forbes	Phillips Getschow Company

CONTENTION ITEM 3.A.4.B

3. Contrary to Criterion II, "Quality Assurance Program," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to establish a quality assurance program which complies with the requirements of Appendix B and which is documented by written policies, procedures, and instructions and is carried out in accordance with those instructions. Edison has failed to assure that its QA program provides controls over activities affecting quality and that such activities are accomplished under suitably controlled conditions and are appropriately verified for quality by inspection.

- A. A special NRC QA inspection reported May 7, 1984 that:

- * Edison's control of site designed small bore (2" and under) process and instrumentation piping systems was considered inadequate and ineffective based on the following deficiencies:

The Phillips, Getschow small bore pipe routing procedures lacked specific quantitative field design, installation, and inspection criteria to provide clearance and/or separation from equipment and components as required by S&L specification, F/L-2739, Paragraph 301.11.

RESPONSE

A special NRC quality assurance program inspection was conducted by Messrs. T. E. Vandel, R. D. Schulz, I. T. Yin, D. E. Keating, C. C. Williams, August 9, October 4-7, and October 24, 1983, and January 11-13, January 26, and February 9, 1984. The results of these inspections were recorded in Report Numbers 50-456/83-09 and 50-457/83-09. During a review of the PGCo QCPs and PGCPs, the inspector identified a lack of specific quantitative acceptance criteria to provide small bore Class 2 and 3 piping with sufficient clearance from electrical switchgear, instrument panels, etc., as discussed in the Sargent & Lundy specification (F/L-2739, Paragraph 301.11).

CONTENTION ITEM 3.A.4.B

The matter of piping clearance to adjacent components and component clearances generally had been under review at the Braidwood site in advance of the NRC inspection previously referenced. The earlier review focused on the question of the extent to which clearance problem notifications were required to be made by the Braidwood site contractors to Sargent & Lundy for evaluation. Contemporary experience at the Byron site had identified the benefit of conducting a comprehensive area walkdown of safe-shutdown mechanical and electrical systems prior to fuel loading. That planned walkdown provided an acceptable alternative to on-going clearance problem notifications.

It was judged that clearance questions were unlikely to exist with respect to the electrical system installation because of the separation requirements imposed on those systems. However, to provide added assurance that the piping installation provided adequate clearance, close clearance points (less than 3") were being identified as a matter of general practice on the piping as-builts. The HVAC system was evaluated generically and judged not to present a problem at that time although the review was not then complete. In each of these areas, the area walkdown prior to fuel loading referred to earlier was established as the mechanism to assure adequate clearances had been maintained.

CONTENTION ITEM 3.A.4.B

In response to the NRC finding, Commonwealth Edison agreed to upgrade the Phillips Getschow (PGCo) small bore pipe routing procedures and the Sargent & Lundy (S&L) Specification, F/L-2739, to clearly delineate quantitative clearance requirements for re-routed piping although an informal program was being implemented at that time. Procedure PGCP-40, Verification Preparation and Transmittal of "As Constructed" Drawings, dated May 31, 1983, was revised to include a requirement to note on the "as-constructed" drawing when the piping installation was within 3 inches of another installation and indicate the location of that condition. This post-installation check went beyond the current Specification requirement, and provided the Architect/Engineer, S&L, the opportunity to evaluate clearances between piping and other installations. This commitment was intended to resolve the NRC concern. However, the final area walkdown continued to be viewed as adequate to assure proper clearance.

In addition, Sargent & Lundy Specification F/L-2739 was revised to require a 3 inch clearance requirement between piping components and all other installations where possible, whereas this requirement had previously been limited to other piping or instrument lines. Phillips, Getschow revised their piping installation procedures, presently QCP-B21, to require a PGCo Engineering Department review of proposed field re-routes for conformance with Specification F/L-2739 requirements prior to installation. The notation on the "as-constructed" drawing of piping installations within 3 inches of another installation per PGCP-40 then could be used to determine whether previous installations met necessary clearance requirements.

CONTENTION ITEM 3.A.4.B

Recalling the fact that Commonwealth Edison had already determined through evaluations made by S&L that the present clearance control mechanisms in place at the site were adequate and that the area walkdown prior to fuel load provided an extra measure of assurance that acceptable clearances had been maintained, further detailed clearance requirements were not considered to be mandated to satisfy code and specification requirements. That evaluation had, as previously discussed, considered mechanical, electrical and HVAC clearances.

However, to resolve the concern expressed by the NRC Staff in IE Report 83-09-09(B) documented in May, 1984 and the related concern in IE Report 84-09-01 which was documented in July, 1984, Commonwealth Edison enhanced the applicable specifications and practices of all site contractors whose work was affected.

Commonwealth Edison and Sargent & Lundy performed an assessment of other site contractors' specifications and drawings. Engineering Change Notices (ECN) were issued by S&L adding improved installation clearance guidelines to each Contractors' Specifications. These guidelines have been incorporated into working procedures by each contractor.

As a result, Engineering Change Notice (ECN) 22822 was issued for Phillips, Getschow which added improved clearance installation guidelines to the PGC0 specification. Braidwood Project Construction letter provided further direction on implementation of these guidelines. Furthermore, the PGC0 specification guidelines now require

CONTENTION ITEM 3.A.4.B

that PGCo establish a program to ensure that the installation clearance guidelines are met. In addition, a Clearance Notification Form was identified for use to document the clearance concerns identified.

These guidelines require PGCo to follow good workmanship and judgment when installing or modifying components and materials and to consider whether reasonable clearance exists between items when installation is completed. Reasonable clearance shall be construed to mean that clearance has been provided (except where otherwise allowed for in the design documents) for items such as inspection access, maintenance access, equipment removal, repair access, functional operability of valves and equipment, and thermal expansion.

Installation of any component in direct contact with any other unassociated component (except where called for in the design documents) is not acceptable unless approved by the Consulting Engineer. This stipulation includes installation of components in direct interference with installed insulation. Instances of installation of items in direct contact with other items will be brought to the attention of the Consulting Engineer for disposition.

Necessary piping installation procedures revisions are complete and will assure that proper clearance requirements are reviewed prior to re-routing. Additionally, a comprehensive walkdown of appropriate plant areas is planned prior to Fuel Load to ascertain and resolve apparent component clearance problems.

CONTENTION ITEM 3.A.4.B

Site QA has verified the implementation of this activity through the following audits: No. 20-84-518; No. 20-84-535; and No. 20-85-533. These audits have examined the installation of small bore piping in general with audit 20-85-533 focusing on installation in accordance with both the clearance criteria and installation tolerances specified by Sargent & Lundy. Small bore piping installation affectively adhered to the prescribed clearance and any changes were made within the allowances delineated in procedure QCP-B21.

Development of a mechanical clearance walkdown procedure has been tracked by Q.A. along with the incorporation of the clearance criteria into applicable mechanical installation procedures through surveillance 3846, which is a follow-up surveillance to audit 20-84-508 Finding #4. Project instruction procedure PI-BB-96 developed by Sargent & Lundy has been approved and adequately addresses the clearance walkdown activity.

For completeness, it should be pointed out that PI-BB-96 addresses, as one walkdown element, certain pipes that reach a temperature in excess of 180° to determine whether they expand or move when heated in such a manner that they violate minimum clearance requirements. This particular walkdown will also be implemented in accordance with Braidwood Procedure BWPT-EM-10 entitled Pre-Operational Test/Thermal Expansion - Primary Side (EM). The procedure will provide guidance on the inspection points (for possible clearance problems) required to be performed for each affected piping system. These inspection points, together with the clearance notification forms and PGCo piping "As-Constructs" (which indicate locations of clearance violations), will be reviewed and each violation

CONTENTION ITEM 3.A.4.B

will be evaluated and dispositioned by S & L. (Note: Piping components are the only items which will move due to thermal conditions. Therefore, the piping As-Constructs are reviewed in depth for clearance, as well as tolerance requirements).

The clearance reports, together with "Limited Clearance Walkdowns", contractor hot pipe walkdowns, As-Constructs, and installation tolerance will assure that all previous and future installations of components do not adversely affect their operations or that of adjacent components.

CONTENTION ITEM 3.A.4.B

REFERENCES

1. Inspection Report 456/83-09; 457/83-09 (pages *A0001040-A0001507).
2. L. O. DelGeorge letter to J. G. Keppler dated July 6, 1984 (pages A0001508-A0001572).
3. K.J. Green letter to J.D. Deress dated January 20, 1983 (pages J0001274-J0001275).
4. K.J. Green letter to J.D. Deress dated July 19, 1983 (pages D0000116-D0000121).
5. D. L. Shamblin letter to T. O'Connor dated October 19, 1984, #BR/PCD84-328 (pages C0002203-C0002204).
6. Phillips Getschow Procedure PGCP-40, Rev. 4 (pages K0015513-K0015523).
7. Phillips Getschow Procedure QCP-B21, Rev. 11 (pages K0015446-K0015478).
8. Engineering Change Notice 22822 (pages C0002198-C0002202).
9. Licensing File on Item 83-09-09B, Contention 3.A.4.b (pages A0005904-A0006006).

CONTENTION ITEM 3.A.4.B

NAMES AND ADDRESSES

I. Yin	NRC Region III
D. Boone	Commonwealth Edison Company (Consultant)
M. Gorski	Commonwealth Edison Company
S. Hunsader	Commonwealth Edison Company
D. Shamblin	Commonwealth Edison Company
J. Stewart	Phillips Getschow
T. O'Connor	Phillips Getschow

CONTENTION ITEM 3.A.4.C

3. Contrary to Criterion II, "Quality Assurance Program," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to establish a quality assurance program which complies with the requirements of Appendix B and which is documented by written policies, procedures, and instructions and is carried out in accordance with those instructions. Edison has failed to assure that its QA program provides controls over activities affecting quality and that such activities are accomplished under suitably controlled conditions and are appropriately verified for quality by inspection.

A. A special NRC QA inspection reported May 7, 1984 that:

- * Edison's control of site designed small bore (2" and under) process and instrumentation piping systems was considered inadequate and ineffective based on the following deficiencies:
 - Procedure Phillips, Getschow (sic) CP 22 requirements had not been completely followed for small bore piping calculations performed by Phillips, Getschow (sic) for lines 1CCE3AA-1/2", 1CCE3BA-1/2", 1DOD8BC-2", and 1DOD8BA-01.

RESPONSE

For the response to Interrogatory 58, Contention Item 3.A.4.C, see Applicant's response to Specific Interrogatory 28, contained in Applicant's Fourth Partial Response to Rorem's First Set of Quality Assurance Interrogatories and Requests to Produce. It should be noted that the supports for line 1DOD8BC-2", and support 1DOD8BA-01 were included within the population of 172 supports that were reviewed by Sargent & Lundy. Supports for 1CCE3AA-1/2" and 1CCE3BA-1/2" were reviewed and accepted by Sargent & Lundy independent of the 172 support review. Further, it should be noted that calculations for small bore piping supports, not calculations for small bore piping, were the subject of the NRC report.

CONTENTION ITEM 3.A.4.C

REFERENCES

1. L. O. Del George letter to J. G. Keppler dated July 6, 1984, response to Inspection Report Nos. 50-456/83-09 and 50-457/83-09, response to Item 6.C (pages A0001508-A0001572).
2. J. G. Keppler letter to J. J. O'Connor dated May 7, 1984 transmitting Inspection Report 50-456/83-09 and 50-457/83-09 (pages A0001440-A0001507) See also references in answer to Specific Interrogatory No. 28.
3. Licensing File on Item 83-09-09c, Cont. 3.A.4.C (pages A0006007-A0006215).

CONTENTION ITEM 3.A.4.C

NAMES AND ADDRESSES

I. Yin	NRC Region III
J. Schimmels	Sargent & Lundy
D. Gallagher	Sargent & Lundy
D. Shamblin	Commonwealth Edison Company
G. Groth	Commonwealth Edison Company
J. Stewart	Phillips Getschow Company
M. Gorski	Commonwealth Edison Company
S. Hunsader	Commonwealth Edison Company

CONTENTION ITEM 3.A.4.D

3. Contrary to Criterion II, "Quality Assurance Program", of 10 CFR Part 50, Appendix B, Commonwealth Edison Company has failed to establish a quality assurance program which complies with the requirements of Appendix B and which is documented by written policies, procedures, and instructions and is carried out in accordance with those instructions. Edison has failed to assure that its Q.A. program provides controls over activities affecting quality and that such activities are accomplished under suitably controlled conditions and are appropriately verified for quality by inspection.
 - A. A special NRC Q.A. inspection reported May 7, 1984 that:
 - * Edison's control of site designed small bore (2" and under) process and instrumentation piping systems was considered inadequate and ineffective based on the following deficiencies:
 - Field Engineer authorities, duties, and qualifications were not fully delineated in the Phillips, Getschow Q.A. Manual, Rev. 0, dated September 26, 1983, in that some of the specific work functions being performed by field engineering, such as pipe hanger design and calculation, were not adequately described.

RESPONSE

A special quality assurance program (QA) inspection was conducted by Messrs. T. E. Vandel, R. D. Schulz, I. T. Yin, D. E. Keating, C. C. Williams, and D. R. Hunter of the NRC on June 20-24, June 27-July 1, August 1-5, August 9, October 4-7, and October 24, 1983, and January 11-13, January 26, and February 9, 1984. The results of the inspections were recorded in NRC Inspection Report Number 50-456/83-09; 50-457/83-09.

The NRC inspector noted that Phillips Getschow Company's (PGCo) September 21, 1983 QA manual failed to adequately delineate all of the job duties, functions, and qualifications of PGCo's Field Engineers. Specifically, the basis for the item of non-compliance was that the QA manual did not fully describe the Field Engineer's functions relating to pipe hanger design and calculation.

CONTENTION ITEM 3.A.4.D

PGCo Field Engineers have no design responsibilities at Braidwood. Accordingly, no document describes design responsibilities of PGCo field engineers at Braidwood. For explanation of the difference between "pipe hanger design and calculation" and the small bore support selection process as actually practiced, see answer to Specific Interrogatory No. 28.

Commonwealth Edison acknowledged that the Field Engineer's duties and qualifications could have been more fully delineated in the PGCo QA manual. As a result, specific qualifications, duties and responsibilities of each engineering classification, including those of the Field Engineer, were fully delineated by PGCo management in Phillips, Getschow Engineering Policy EP-1 entitled Engineering Personnel Qualifications and Review Criteria for Responsibility Assignment. EP-1 was developed from the combination of concepts regarding personnel qualifications and responsibilities familiar to both PGCo management and the NRC inspector involved, and PGCo Site Staff Braidwood Nuclear Power Project Job Description, dated December 26, 1982. This 12/26/82 document described the responsibilities of various personnel classifications in an effort to aid numerous auditing agencies with an understanding of the PGCo organization and personnel responsibilities. EP-1 not only delineated more fully the qualifications and duties of each engineering classification, but it also defined the title of Project Engineer and outlined the qualifications for that position. A comparison of the qualifications and duties described in EP-1 with the responsibilities actually being carried out by the existing PGCo engineers resulted in no discrepancies.

CONTENTION ITEM 3.A.4.D

REFERENCES

1. Inspection Report 50-456/83-09(d); 50-457/83-09(d)
(pages A0001440-A0001507).
2. L. O. Del George letter to J. G. Keppler, dated July 6, 1984
transmitting Commonwealth Edison's response to Notice of
Violation (pages A0001508-A0001572).
3. R. L. Spessard letter to Cordell Reed dated July 26, 1984,
acknowledged receipt of Commonwealth Edison's response
(page A0001575).
4. Phillips Getschow Company Engineering Policy EP-1, Revision 0,
dated February 27, 1984; see also Revision 1, dated August 15,
1985 (pages L0001433-1461).
5. Phillips Getschow Company Site Staff Braidwood Nuclear Power
Project (Contract #19459) Job Description, dated December 26,
1982 (pages L0001462-1469).
6. Licensing File on Item 83-09-09D, Cont. 3.A.4.d
(pages A0006216-A0006264).

CONTENTION ITEM 3.A.4.D

NAMES AND ADDRESSES

T. E. Vandel	NRC Region III
R. D. Schulz	NRC Region III
I. T. Yin	NRC Region III
D. E. Keating	NRC Region III
C. C. Williams	NRC Region III
D. R. Hunter	NRC Region III
R. L. Spessard	NRC Region III
L. O. Del George	Commonwealth Edison Company
D. Shamblin	Commonwealth Edison Company
S. Hunsader	Commonwealth Edison Company
J. R. Stewart	Phillips Getschow Company

CONTENTION ITEM 3.A.4.E

3. Contrary to Criterion II, "Quality Assurance Program," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to establish a quality assurance program which complies with the requirements of Appendix B and which is documented by written policies, procedures, and instructions and is carried out in accordance with those instructions. Edison has failed to assure that its QA program provides control over activities affecting quality and that such activities are accomplished under suitably controlled conditions and are appropriately verified for quality by inspection.
 - A. A special NRC QA inspection reported May 7, 1984 that:
 - * Edison's control of site designed small bore (2" and under) process and instrumentation piping systems was considered inadequate and ineffective based on the following deficiencies:
 - The Phillips, Getschow training program was considered to be inadequate and ineffective based on the numerous errors identified in the Phillips, Getschow hanger calculations.

RESPONSE

A special NRC quality assurance program inspection conducted by Messrs. T. E. Vandel, R. D. Schulz, I. T. Yin, D. E. Keating, C. C. Williams, and D. R. Hunter on June 20-24, June 27-July 1, August 1-5, August 9, October 4-7, and October 24, 1983 and January 11-13, January 26, and February 9, 1984. The results of these inspections were documented in Inspection Report Number 50-456/83-09 and 50-457/83-09.

The subject report indicated that during the NRC inspector's review of PGCo support selection calculations, errors were identified. Based on these errors, the inspector considered the PGCo support selection training program to be inadequate and ineffectual.

CONTENTION ITEM 3.A.4.E

Commonwealth Edison did not dispute the NRC assessment of the Phillips, Getschow Company support selection training program. Commonwealth Edison Site Quality Assurance Audit No. QA-20-83-33 (July, 1983) had also identified the need for improvements in this program.

The response to Specific Interrogatory 28 and Interrogatory #58 Item 3.A.4.C, in part, addresses this contention.

As a result of CECo Site QA Audit No. 20-83-33 and the NRC inspector's findings and assessments, PGCo management reviewed PGCP-29, Qualifying and Training Procedure for Phillips, Getschow Company Field Hanger Selection Personnel, Revision 3, modified it and incorporated it into new PGCP-22, Revision 8. This newly revised procedure established the minimum education and experience levels for personnel participating in support selection activities. The basic requirements for qualifications and training of support selectors under PGCP-22, Rev. 8 included the following:

- a. A high school diploma and a requirement that the individual must pass a proficiency examination upon completion of training.
- b. Two hours of classroom and read/study training in PGCP-22.
- c. Ten hours of documented on-the-job training.

CONTENTION ITEM 3.A.4.E

- d. Familiarization with applicable project documents (i.e. piping line lists, piping design tables, support detail drawings, etc.).
- e. A two-week probationary period during which time the support selection supervisor monitors the individual's work.

Audits and surveillances which have addressed this matter are discussed in Applicant's response to Specific Interrogatory #28 contained in Applicant's Fourth Partial Response to Rorem's First Set of Quality Assurance Interrogatories and Request to Produce. Those audits and surveillances indicate that acceptable corrective actions were achieved.

CONTENTION ITEM 3.A.4.E

REFERENCES

1. Inspection Report 456/83-09; 457/83-09
(pages *A0001440-1507).
2. L. O. DelGeorge letter to J. G. Keppler dated July 6, 1984
(pages *A0001508-1572).
3. CECO Site QA Audit 20-83-33
(pages B0000175-225).
4. Phillips Getschow Procedure PGCP-29, Rev. 3
(pages K0014991-14999).
5. Phillips Getschow Procedure PGCP-22, Rev. 8
(pages K0012247-12292).

CONTENTION ITEM 3.A.4.E

NAMES AND ADDRESSES

I. Yin	NRC Region III
M. Gorski	Commonwealth Edison Company
S. Hunsader	Commonwealth Edison Company
J. Stewart	Phillips Getschow Company

CONTENTION ITEM 3.A.4.F

3. Contrary to Criterion II, "Quality Assurance Program," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to establish a quality assurance program which complies with the requirements of Appendix B and which is documented by written policies, procedures, and instructions and is carried out in accordance with those instructions. Edison has failed to assure that its QA program provides controls over activities affecting quality and that such activities are accomplished under suitably controlled conditions and are appropriately verified for quality by inspection.

A. A special NRC QA inspection reported May 7, 1984 that:

- * Edison's control of site designed small bore (2" and under) process and instrumentation piping systems was considered inadequate and ineffective based on the following deficiencies.
- The use of the Information Request System by Phillips Getschow, in lieu of the Field Change Request (FCR) system, compromised the final design change acceptance review and approval. (Inspection Report 83-09, Exh. 5.)

RESPONSE

A special NRC quality assurance program inspection was conducted by Messrs. T. E. Vandel, R. D. Schulz, I. Y. Yin, D. E. Keating, C. C. Williams, and D. R. Hunter on June 20-24, June 27-July 1, August 1-5, August 9, October 4-7, and October 24, 1983, and January 11-13, January 26, and February 9, 1984. The results of these inspections were documented in Inspection Report 50-456/83-09; 50-457/83-09.

As noted in the subject report, the NRC inspector identified an instance where Sargent & Lundy approved a material substitution on a Phillips, Getschow Information Request (IR) System form. The use of the IR in lieu of the field change request (FCR) system is contrary to Commonwealth Edison's QA design control program and may have compromised final design change acceptance review and approval.

CONTENTION ITEM 3.A.4.F

In response to this finding, Phillips, Getschow initiated a review of all previous IRs to ascertain whether other design information was obtained via the IR system. The review included a check to ensure that any applicable design information that may have been received by PGCo was, in fact, incorporated into permanent design drawings and specifications. Eight IR's, substantially less than 1% of all previous IR's, were identified where PGCo had received design data without a properly authorized design change document (i.e. FCR or ECN). These conditions were documented on PGCo NCR 1568 dated May 30, 1984. The NCR disposition was to obtain the design data through properly authorized design change documents for these 8 IR's. This action was accomplished and ECN's were issued by Sargent & Lundy. NCR 1568 was closed on September 21, 1984. These ECN's did not modify the previous IR responses and therefore validated those responses. The lack of any need for modification after issuance of the ECN demonstrated that the final design change acceptance review and approval had not been compromised.

The IR form was revised in October 1983 to include a statement that "This document, in and of itself, cannot be used as a directive for design change information." Since the addition of this statement, Phillips, Getschow Project Engineering review of all outgoing IRs indicates that the proper utilization of FCR's and ECN's does exist.

CONTENTION ITEM 3.A.4.F

REFERENCES

1. NRC Inspection Report 456/83-09; 457/83-09 (pages A0001440-1507).
2. L. O. DelGeorge letter to J. G. Keppler dated July 6, 1984, Attachment A, Response to Item 6F (pages A0001508-1572).
3. PGCo NCR 1568 (pages K0015000-K0015045).
4. Licensing file on Item 83-09-09F, Cont. 3.A.4.F. (pages A0006415-6538).

CONTENTION ITEM 3.A.4.F

NAMES AND ADDRESSES

I. T. Yin	NRC Region III
L. O. DelGeorge	Commonwealth Edison Company
R. J. Farr	Commonwealth Edison Company
S. Hunsader	Commonwealth Edison Company
J. Stewart	Phillips, Getschow Company

CONTENTION ITEM 3.B

3. Contrary to Criterion II, "Quality Assurance Program", of 10 C.F.R Part 50, Appendix B, Commonwealth Edison Company has failed to establish a quality assurance program which complies with the requirements of Appendix B and which is documented by written policies, procedures, and instructions and is carried out in accordance with those instructions. Edison has failed to assure that its QA program provides controls over activities affecting quality and that such activities are accomplished under suitably controlled conditions and are appropriately verified for quality by inspection.
- B. Phillips, Getschow piping crews failed to adequately control the modifications of beams. The Applicant had not established an inspection program for structural beams that were modified during piping installations, and had not established an adequate craft training program with regard to nonsafety-related piping installation activities resulting in field design modifications to safety-related structural steel. (Inspection Report 85-15/16, Exh. 17.)

RESPONSE

An NRC routine safety inspection was conducted by Messrs. R. D. Schulz, W. J. Kropp and R. N. Gardner on March 25 through May 3, 1985. The results of the inspection were recorded in NRC Inspection Report Number 456/85-015-01; 456/85-016-01.

As noted in the subject report, the NRC, during a plant tour, noted that three beams in the auxiliary building had torched openings cut into them to permit the routing of 4" diameter drain piping through the web of the beam. After investigating the installation documentation and structural drawings, the NRC identified that the engineering drawings for two of the beams failed to indicate that a hole was to be cut in the beam. In addition, although the drawings for the third beam indicated that a hole was to be cut into the beam to allow piping to pass through the beam, the actual hole was much larger than that permitted by the

CONTENTION ITEM 3.B

drawing. In each instance, no field design change request was issued to allow for these discrepancies. Finally, oval openings were cut into the webs of beams when circular openings were specified on the drawings.

A surveillance (#4338) was performed on April 12, 1985 by CEC Co Site Quality Assurance to address the NRC's concerns. Following the surveillance, QA requested that a nonconformance report (NCR) be initiated. Prior to the issuance of an NCR, the Project Construction Department (PCD) ordered a complete inspection of the drain piping systems by the architect engineer, Sargent and Lundy (S&L). S&L performed this investigation concurrently with its review of hanger design. S&L discovered 49 affected beams, some due to holes not shown on the design drawings and others due to holes cut different than design drawing requirements.

In response to the surveillance, the NRC's Inspection Report, and S&L's inspection, Commonwealth Edison directed G.K. Newberg to conduct a walkdown of the affected beams. As a result of this walkdown, G.K. Newberg created as-built drawings showing the location and configuration of the holes in the 49 beams. PCD initiated Commonwealth Edison NCR No. 740, and these as-built drawings were included in that NCR. After PCD initiated NCR No. 740, QA reviewed the NCR and sent it to engineering to review for acceptability. NCR No. 740 is currently awaiting engineering disposition and is, therefore, an open item.

CONTENTION ITEM 3.B

No additional actions are currently planned to determine whether further cases of this type exist in other piping systems. PCD believes that the problem is confined solely to the drain piping system for two reasons. First, there have been other structural steel review programs looking at similar work practices in other areas, such as the Quality Control Structural Steel Review Program, Unit Concept Inspections, the Instrument Retrofit Verification Program, and BCAP. No similar problems have been identified through these programs and Commonwealth Edison has thus concluded that the problem is isolated to the floor drain system. Second, PCD feels that the problem is unique to the drain piping system because the required slope needed to allow pipes to drain prevents a re-route of pipe around a beam, whereas piping that is not related to a drainage system can be re-routed around a structural steel beam.

Nevertheless, policies and procedures in existence today are designed to prevent such a problem from recurring. S&L's design drawings would include a detail of piping penetration through a beam and would show any necessary reinforcements of the beam to account for the penetration. If the design drawings failed to indicate necessary penetrations, Phillips, Getschow Company (PGCo) would initiate a field problem report to S&L when PGCo needed to penetrate a structural beam. S&L would then issue an Engineering Change Notice (ECN) to reflect that the pipe could penetrate the beam and to show what, if any, beam reinforcements would be necessary. Finally, either PGCo or Gust K. Newberg, the structural steel contractor, would penetrate the beam in accordance with S&L's ECN.

CONTENTION ITEM 3.B

In addition, PGCo has instituted two craft training programs which are designed to prevent unauthorized interferences with other contractors' completed work. First, all new PGCo employees attend an orientation program which explains, among other topics, QC rules prohibiting a PGCo craft worker from altering another contractor's installation without following prior authorization procedures. Furthermore, when PGCo inspectors discover that an employee has failed to follow proper procedure for modifying another contractor's installations, that employee undergoes a further training program designed to clarify proper procedures for any such modifications.

CONTENTION ITEM 3.B

REFERENCES

1. NRC Inspection Report Numbers 50-456/85-015; 50-457/85-016 (pages A0003386-A0003409).
2. D. L. Farrar letter to J. G. Keppler dated June 21, 1985 (pages A0003410-A0003415).
3. Braidwood Q.A. Surveillance Report No. 4338 dated April 12, 1985 (pages B0005070-5073)
4. D. L. Shamblin letter to T. E. Quaka dated May 14, 1985 (pages B0002519-2520)
5. CECO NCR 740 (pages B0005486-5555)
6. Phillips Getschow Procedure PGCP No. 1, Rev. 14 (pages L0001153-1169).
7. Phillips Getschow Procedure PGCP No. 1.1, Rev. 10 (pages L0001170-1190).
8. Phillips Getschow Procedure PGCP No. 1.2, Rev. 1 (pages L0001131-1152).
9. Licensing file on Item 85-45-01, Cont. 3.B (pages A0006539-A0006571).

CONTENTION ITEM 3.B

NAMES AND ADDRESSES

R. D. Schulz	NRC Region III
W. J. Kropp	NRC Region III
R. N. Gardner	NRC Region III
S. C. Hunsader	Commonwealth Edison Company
D. L. Shamblin	Commonwealth Edison Company
R. J. Farr	Commonwealth Edison Company
C. Gray	Commonwealth Edison Company

CONTENTION ITEM 3.C

3. Contrary to Criterion II, "Quality Assurance Program", of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to establish a quality assurance program which complies with the requirements of Appendix B and which is documented by written policies, procedures, and instructions. Commonwealth Edison Company has failed to assure that its Q.A. Program provides controls over activities affecting quality and that such activities are accomplished under suitably controlled conditions and are not appropriately verified for quality by inspection.
- C. The applicants electrical contractor (Comstock) utilized Level I Quality Control Inspectors for inspection and acceptance of electrical welds. This involved fourteen different Level I Inspectors over four years (Inspection Report 85-06, Exhibit 11).

RESPONSE

An NRC safety inspection of the Braidwood Construction Assessment Program (BCAP) activities was conducted by Mr. R. N. Gardner on February 4 through March 4, 1985. The results of the inspection were recorded in NRC Inspection Report Number 50-456/85-006; 50-457/85-006. The inspector observed that the BCAP documentation review checklist instructions for population AWS D1.1 "Electrical Welds" delineated acceptable certification level for L. K. Comstock electrical weld inspectors, who inspected and accepted welds, as a minimum of Level I. The NRC Inspector contended that this did not meet the requirements of ANSI N45.2.6 which in his view required, as a minimum, a Level II certification for Quality Control (QC) inspectors who inspect and accept construction activities.

The thrust of this issue concerns the acceptability of inspections performed solely by a Level I inspector and accepted subsequently by Level II QC inspectors on the basis of written observations by the Level

CONTENTION ITEM 3.C

I inspector. Prior to December 7, 1984, L. K. Comstock Weld Inspection Procedure 4.8.3 allowed a Level I inspector to perform weld inspections and required a Level II inspector to determine acceptability of the welds based on written records of the Level I inspection. The NRC inspectors questioned the acceptability of the welds inspected by Level I inspectors.

Commonwealth Edison Company's response to this Notice of Violation is included in a letter (D. L. Farrar to J. G. Keppler) dated May 6, 1985. Commonwealth Edison Company does not agree that this is an example of noncompliance. However, resolution of this issue does lead to an enhanced inspection program.

The response provided a detailed analysis of ANSI N45.2.6-1978. It concluded that ANSI N45.2.6-1978 specifically provides that Level I inspectors are capable of performing inspections, examinations and tests. Also, ANSI N45.2.6-1978 specifically defines these to mean determination of conformance to predetermined or specific requirements. Under Commonwealth Edison's interpretation of ANSI N45.2.6-1978, Comstock's use of Level I inspectors met this standard's requirements.

The Level II review of the inspection results was performed to determine validity and acceptability. Commonwealth Edison acknowledged that neither the procedure nor the documented objective evidence on the inspection checklist identified the methods used by the Level II for establishing validity and acceptability of the inspection results.

CONTENTION ITEM 3.C

The subject of inspector activities had been previously reviewed by NRC personnel and Commonwealth Edison Company General Office QA personnel. No prior NRC review of the use of Level I inspectors by Comstock had required any change in Comstock's practice regarding utilization of Level I inspectors.

Commonwealth Edison Company believes that no corrective action is necessary. However, Commonwealth Edison General Office QA audit No. QA 84-122 in September, 1984 observed that Comstock's procedure did not preclude the use of Level I inspectors. This audit concern led to the change in Comstock's Weld Inspection Procedure 4.8.3 of December 7, 1984 to require use of only Level II's. At the time of this audit, Comstock used only Level II inspectors for weld inspections. Further confirmation of the quality of installed hardware, including welds by the electrical contractor, is provided by BCAP and other reinspection/overinspection programs already in progress.

In order to resolve the issue with the NRC, Commonwealth Edison's response to the NRC acknowledged the previous practices and clarified its position for inspections in the future. Commonwealth Edison Company directed that only Level II or Level III inspectors are to be used for inspection and acceptance of welds (letter D. L. Shamblin to F. Rolan, dated April 2, 1985; BR/PCD 85-309). The use of Level I inspectors was

CONTENTION ITEM 3.C

discussed with Site Contractor QA/QC Supervisors in January 1985. It was confirmed that no Level I's were currently performing weld inspections for any of the contractors. Additionally, the use of Level I's for Field inspections was discussed in detail and the importance of limiting their activities to the data collection function was reiterated.

The NRC acknowledged the response to the Notice of Violation (letter Norelius to C. Reed dated June 27, 1985) in which Commonwealth Edison did not agree that this was a violation of their commitment to the requirements of ANSI N45.2.6-1978. The item has been referred by NRC Region III to NRC Headquarters for guidance.

CONTENTION ITEM 3.C

REFERENCES

1. NRC Inspection Report Numbers 50-456/85-06, 50-457/85-06; March 8, 1985 (pages A0003250-3275).
2. Letter (R. F. Warnick to C. Reed) and Notice of Violation, March 8, 1985 transmitting Reference 1 (pages A0003250-3275).
3. Letter (D. L. Farrar to J. G. Keppler), response to Notice of Violation, May 6, 1985 (pages A0003276-3289).
4. Letter (D. L. Shamblin to F. Rolan - BR/PCD 85-309) Level I Inspections, April 2, 1985 (pages A0014004-14005).
5. ANSI N45.2.6-1978 (pages A0013781-A0013788).
6. L. K. Comstock Work Procedures 4.8.3 and 4.13.1 (pages 00002582-2630).
7. NRC Inspection Report Nos. 50-456/84-07, 40-457/84-07; July 20, 1984 (pages A0002059-2073).
8. NRC Inspection Report Nos. 50-456/80-12; 50-457/80-11; October 23, 1980 (pages A0000692-698).
9. NRC Inspection Report Nos. 50-456/83-18; 50-457/83-17 (pages A0001732-1749).
10. NRC Inspection Report Nos. 50-456/84-13; 50-457/84-18 (pages A0002341-2363).
11. CECO QA Audit Report No. QA 84-122 (pages B0005400-B0005416).
12. L. K. Copstock Work Procedures 4.13.1 (pages 00002653-00002667).
13. Licensing file on Item 85-006-02, Cont. 3.C (pages A0006572-6615).

CONTENTION ITEM 3.C

NAMES AND ADDRESSES

R. N. Gardner	NRC Region III
W. Forney	NRC Region III
R. F. Warnick	NRC Region III
M. J. Wallace	Commonwealth Edison Company
D. L. Shamblin	Commonwealth Edison Company
G. Marcus	Commonwealth Edison Company
J. Gieseke	Commonwealth Edison Company
R. Seltmann	L.K. Comstock and Company, Inc.
F. Rolan	L. K. Comstock and Company, Inc.

CONTENTION ITEM 4.A

4. Contrary to Criterion II, "Quality Assurance Program", of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to effectively provide for the indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained.
 - A. Comstock failed to establish program for identifying the required reading for weld inspectors and conducting practical tests. G.K. Newberg failed to implement the personnel indoctrination and training for QC inspector tests. (Inspection Report 84-07, Exh. 18.)

RESPONSE

A NRC special safety inspection was conducted by R. Schulz, J. Malloy and W. Kropp on March 26, 28-29; April 3-5, 10-12 and May 23 and 31, 1984. The results of the inspections were recorded in Report Number 50-456/84-07 (DRS); 50-457/84-07 (DRS). The item was transmitted to Commonwealth Edison Company on July 20, 1984, on a Notice of Violation (Items A.1 and A.2) to Inspection Reports 50-456/84-07; 50-457/84-07.

L. K. Comstock

In addition to the NRC's concern regarding required reading, in the same time frame a Commonwealth Edison Site QA identified a deficiency with respect to consistency of required reading in Braidwood Quality Assurance Audit QA-20-84-521. The item was reported as Finding 4 in the audit report dated 4-30-84.

In response to Commonwealth Edison Braidwood QA Audit Finding 4 and the NRC inspection finding, L. K. Comstock developed a matrix of required reading. The matrix was designed to assure uniformity of required reading prior to inspector certification. It was based on the reading required

CONTENTION ITEM 4.A

for an QC Inspector to be knowledgeable in their area(s) of certification. Subsequently, L.K. Comstock revised their procedure for "Qualification Classification, and Training of QC personnel" to include the required reading matrix. The matrix was incorporated as part of Form 58 in procedure 4.1.3, revision C, dated August 14, 1984.

Following the procedure revision, L. K. Comstock initiated review of their QC Inspector Certification packages for consistency of required reading in accordance with the new matrix for related sign-offs to verify acceptable completion of initial certification requirements. Items in the certification package found deficient as a result of this review are documented and addressed on a case by case basis on L.K. Comstock nonconformance reports. These NCR's are currently being dispositioned by evaluating the discrepancies identified for impact on the adequacy of the inspector's qualifications. To date the evaluation has raised no questions as to the adequacy of past inspections.

On July 27, 1984, Commonwealth Edison Company Braidwood QA conducted a follow-up surveillance (#3748) to review the status of Finding 4 and to discuss the Notice of Violation. This follow-up found that the required reading "matrix" had been established and was submitted for CECO review. Approval was given on 8/14/84.

In order to upgrade the portion of the training program pertaining to conducting a practical test, L. K. Comstock has revised Procedure 4.1.3 to strengthen the requirements for practical examinations. In most

CONTENTION ITEM 4.A

cases, actual field installations are used for practical tests. In some instances mock installations or word problems are used where field installations are not available. Where practical, items with and without known defects will be used for practical examinations (Paragraph 3.5.1.2). Also, on practical exams for certification, a score of 100% must be achieved on attributes related to accept/reject criteria. These changes were implemented in L. K. Comstock Procedure 4.1.3, Revision C, dated 8/14/84.

The NRC reviewed Commonwealth Edison's action taken for item 50-456/84-02A and 50-457/84-02A relative to required reading for inspector certification, found it acceptable and closed the item in Inspection Report 50-456/84-42; 50-457/84-38. To provide added assurance that this program is effective, Commonwealth Edison QA continues to review 100% of the certification packages prior to an individual performing any inspection. In addition, L. K. Comstock QA and Edison QA perform periodic audits of the certification program.

G. K. Newberg

The NRC inspectors noted that Gust K. Newberg Construction Company failed to implement a specific portion of its personnel indoctrination and training program adequately, namely, G.K. Newberg Procedure No. 37, with regard to the grading of General Tests given to QC inspectors. The specific violation was that three of the six tests reviewed were graded incorrectly. One Newberg Level II inspector answered 31 of 40 questions, constituting a failing score of 77.5% (80% passing). This general test was erroneously scored 80% due to human error, in that the reviewer

CONTENTION ITEM 4.A

mistakenly added up the test results. General tests for two other inspectors were incorrectly graded in that two wrong answers for each individual were marked correct. However, after correction, the scores for both individuals were still above 80%. In response to the NRC finding Commonwealth Edison instructed G.K. Newberg to write an NCR, (No. 213-767), and to perform a review of all personnel qualifications. If tests were found that were graded incorrectly, Newberg was to correct scores and retest any individual who did not pass the tests and perform an inspection of a small sample of that individual's inspection work prior to the individual's satisfactory completion of retesting.

G. K. Newberg QA performed a complete review of all certification tests and found that two individuals did not satisfactorily pass the general tests after a 100% review of personnel qualifications records. This was documented on NCR NO. 213-767. These individuals were retested (both individuals successfully passed) and ten of their first inspections were reinspected by a qualified Level II and found acceptable. In addition, the Commonwealth Edison Site Quality Assurance performed a review (surveillance #3523) of these qualifications for proper grading of tests and found them to be acceptable. G. K. Newberg QA also audited the QC inspector certification procedural packages to applicable requirements. This audit found a number of documentation discrepancies. In order to close out this audit, G. K. Newberg QA recertified all active QC inspectors and wrote NCR Nos. 213-912 and 213-1115 to document procedural violations. These NCR's were closed out based on correction of documentation or of supplemental documentation. The process used to close out these NCR's determined that none of the problems identified

CONTENTION ITEM 4.A

raised concerns about prior hardware inspections. In completing these corrective actions G. K. Newberg's training implementation came into compliance with its QC Inspector Qualification Procedure No. 37.

As a result of NCR 213-912, G. K. Newberg QA initiated a Corrective Action Request ("CAR") No. 008 dated February 29, 1985 to investigate the generic implications, if any, of the inspector certification problems and to assure that effective action was taken to correct any underlying problems. The specific adverse condition addressed was that review of QC inspector certification packages indicated that they were not complete. Problems included failure to maintain mock inspection checklists, training documented on incorrect form, missing documentation etc. The CAR identified the probable cause of the deficiencies as improper attention to detail to assure quality of previous items. As a result of this CAR, QCP 37 was revised to add a checklist to verify completion of certification activities prior to certifying an inspector. A training coordinator was added in March 1985 to provide better tracking of the certification process.

CONTENTION ITEM 4.A

REFERENCES

1. D.L. Farrar letter to J.G. Keppler dated August 20, 1984; Enclosure, Response to Inspection Report 50-456/84-07; 50-457/84-07 (pages A0002074-2082).
2. G.K. Newberg Nonconformance Report No. 213-767 dated 4/23/84 (pages R0000133a-R0000154).
3. Braidwood Q.A. Surveillance Report No. 3523 dated 4/18/84 (pages B0005693-B0005695).
4. Q.C. Inspector Qualification Procedure No. 37 (pages Q0000117-Q0000133).
5. R. D. Walker (NRC) letter to Cordell Reed, dated July 20, 1985, transmitting Notice of Violation (pages A0002059-2073).
6. NRC Region III Inspection Report Numbers 50-456/84-07; 50-457/84-07 (pages A0002059-2073).
7. L. K. Comstock Procedure 4.1.3, Qualification Classification and Training of Q.C. Personnel, Revision C, dated 8-14-84 (pages O0000176-O0000252).
8. Braidwood QA Surveillance Report Number 3748, Follow-Up Audit Report Number QA-20-84-521 (pages B0005696-B0005713).
9. NRC Region III Inspection Report Numbers 50-456/84-42; 50-457/84-38 (pages A0002785-A0002803).
10. G. K. Newberg Nonconformance Report No. 213-912 dated October 25, 1984 (pages Q0000155-O0000179).
11. G. K. Newberg nonconformance report No. 213-1115 dated April 24, 1985 (pages Q0000180-Q0000230).
12. G. K. Newberg Audit Report No. 84-5 issued May 15, 1984 (pages Q0000338-Q0000345).
13. G. K. Newberg Corrective Action Report No. 008 dated February 28, 1985 (pages Q000256).

CONTENTION ITEM 4.A

NAMES AND ADDRESSES

J. G. Keppler	NRC Region III
R. D. Walker	NRC Region III
R. Schulz	NRC Region III
J. Malloy	NRC Region III
W. Kropp	NRC Region III
R. C. Tate	Commonwealth Edison Company
J. Gieseke	Commonwealth Edison Company
R. Spence	Commonwealth Edison Company (Consultant)
J. J. Hariston	Road #1, Box 338 Vernon, VT 05354 (Work Ph: 802-254-5199)
R. Donica	G. K. Newberg Construction Company
R. Seltmann	L. K. Comstock

CONTENTION ITEM 4.B

4. Contrary to Criterion II, Quality Assurance Program, of 10 C.F.R Part 50, Appendix B, Commonwealth Edison Company has failed to effectively provide for the indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained.
- B. Four L.K. Comstock weld inspectors were not proficient in American Welding Society Structural Welding Code (Inspection Report 84-07, Exh. 18).

RESPONSE

A special NRC safety inspection was conducted on March 26, 28-29; April 3-5, 10-12; and May 23 and 31, 1984 by R. Schulz, J. Malloy, and W. Kropp from the U.S. Nuclear Regulatory Commission, Region III. The report setting forth the results of these inspections is documented in NRC Inspection Report 50-456/84-07; 50-457/84-07. It was determined from the inspection report that a Severity Level IV violation of 10 CFR 50, Appendix B, Criterion II had occurred.

The scope of this inspection consisted of a selective examination of procedures and representative records, observations, and interviews with personnel. The inspector concluded from personnel interviews that four L.K. Comstock (Comstock) weld inspectors were not proficient in the American Welding Society Structural Welding code, AWS D1.1-1975. This conclusion was based on the Comstock weld inspectors' inability to answer questions regarding the AWS code description for the repair of weld cracks and fit-up tolerances.

CONTENTION ITEM 4.B

In response to the NRC Commonwealth Edison stated that it believes "that the L.K. Comstock weld inspectors are competent and have been competent to perform their assigned weld inspection task." The Comstock weld inspectors had not received specific training in AWS D1.1-1975. The response noted that such training was not required by applicable Comstock procedures or by other more general regulatory requirements. Rather, inspector training addressing weld inspection had concentrated on Comstock Procedure 4.8.3 (Weld Inspection) which implements AWS D1.1-1975 as the applicable welding code as interpreted in Sargent & Lundy (S&L) Specification L-2790 requirements. This specification specifically addresses the inspector's responsibilities with respect to the repair of weld cracks and fit-up tolerances.

Although Comstock Procedure 4.8.3 always incorporated AWS D1.1-1975 as interpreted in S&L Specification L-2790, that procedure was revised prior to the NRC finding to further clarify the weld inspection requirements of AWS D1.1-1975 as interpreted in S&L Specification L-2790. In addition, after the NRC finding, Comstock weld inspectors received on-site training on the AWS D1.1-1975 Structural Welding Code by the Level III Corporate Welding Engineer of L.K. Comstock Engineering Inc. Moreover, Comstock Procedure 4.1.3 (Qualification Classification and Training of QC Personnel) was revised subsequent to the NRC finding to specify which inspectors were required to read AWS D1.1-1975 and S&L Specification L-2790.

CONTENTION ITEM 4.B

Further confirmation of the quality of installed hardware, including welds by the electrical contractor, is provided by the BCAP program and other corrective action programs. See answers to specific Interrogatories 58 and 59, Contention Items 9.A and 12.I.

CONTENTION ITEM 4.B

REFERENCES

1. R.D. Walker letter to Cordell Reed, dated July 20, 1984 Enclosures: Appendix, Notice of Violation Inspection Reports 50-456/84-07 (DRS); 50-457/84-07 (DRS) (pages A0002059-2073).
2. D.L. Farrar letter to J.G. Keppler, dated August 20, 1984 transmitting Commonwealth Edison Company, Response to Inspection Report 50-456/84-07 and 50-457/84-07 (pages A0002074-2082).
3. I.F. DeWald memorandum to C. Mennecke, dated August 11, 1984 Enclosure: L.K. Comstock Procedure 4.1.3 (Qualification Classification and Training of QC Personnel). L.K. Comstock Procedure 4.8.3 (Weld Inspection) Rev. F. (5-10-84) (page 00000495).
4. Licensing file on Item 84-07-04, Contention 4.B (pages A0006773-6844)

CONTENTION ITEM 4.B

NAMES AND ADDRESSES

R. Warnick	NRC Region III
R. Schulz	NRC Region III
J. Malloy	NRC Region III
W. Kropp	NRC Region III
C. Mennecke	Commonwealth Edison Company
D. Hoffer	Commonwealth Edison Company
J. Gieseke	Commonwealth Edison Company
R. Seltmann	L.K. Comstock Company
I. DeWald	L.K. Comstock Company

CONTENTION ITEM 5.B

5. Contrary to Criterion III, "Design Control," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to establish measures to assure that applicable regulatory requirements and design bases are correctly translated into specifications, drawings, procedures, and instructions including provisions to assure that appropriate quality standards are specified in design documents and that deviations from such standards are controlled. Applicant has also failed to require that measures are established for the identification and control of design interfaces and for the coordination among participating design organizations, that the measures include the establishment of procedures among participating design organizations, that the measures include the establishment of procedures among participating design organizations for the review, approval, release, distribution, and revision of documents involving design interfaces; and that the design control measures provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program.
- B. Repairs to coating by Midway Industrials in the Unit 1 and 2 containments were performed utilizing a coating system not qualified for the Design Basis Accident in accordance with Section 5 of ANSI N101.2 (1972). (Inspection Report 85-15, Exh. 17.)

RESPONSE

A routine NRC safety inspection was conducted by Messrs. R. D. Schulz, W. J. Kropp, and R. N. Gardner on March 25 through May 3, 1985. The results of the inspections were recorded in Inspection Report Number 50-456/85-015 (DRP); 50-457/85-016 (DRP).

The NRC inspectors noted that repairs to coatings in the Unit 1 and Unit 2 containments were performed utilizing a coating system not qualified for the Design Basis Accident (DBA) in accordance with Section 5 of ANSI N101.2 (1972) "Protective Coatings (Paints) for Light Water Nuclear Reactor Containment Facilities".

CONTENTION ITEM 5.B

Repairs to coating on the Unit 1 and 2 containment liner and equipment hatch were performed in 1978 and 1979 with a repair procedure not qualified for DBA conditions. The coating, which consists of a layer of phenoline 305 top coat on top of zinc CZ-11 primer, should have been applied on steel which was sand blasted. Instead, the steel was prepared by power tool cleaning. DBA tests had been performed in accordance with ANSI N101-2 for power cleaning in conjunction with the coating system using CZ-11 primer only. Power tool cleaning was not qualified for use with phenoline 305 applied over CZ-11. The inspection documents correctly recorded the repair system for application of the CZ-11 primer coat as being the same as the repair system presently being used on coatings for containment structural steel. However, in addition, a topcoat of phenoline 305 finish was erroneously applied to an area which had not been re-sandblasted, thereby rendering the application system qualification inapplicable. The amount of area affected was tentatively identified as approximately 250 square feet total for both units.

Commonwealth Edison agreed to take immediate corrective action consisting of either repairing the coating areas that were repaired with the unqualified coating system or placing these areas on a "Coating Exception List". (This list, which records the undocumented coatings, is used by CECO and S&L to evaluate the final acceptability of all coatings applied inside containment). Midway NCR Nos. 23, 24, 25 and 26 were generated, and their disposition will determine the final course of

CONTENTION ITEM 5.B

action to be taken. Action to preclude recurrence consisted of revising the repair procedure to specify a coating system qualified to ANSI N101.2. This coating system has not been applied since 1978. Midway's review as part of the preparation of these NCR's identified all areas where power tooled CZ-11, 305 finish coating was applied and determined that there were no wide spread implications of this nonconformance.

Inspection by NRC of corrective action showed the above actions to be satisfactory prior to the NRC Exit Meeting. The NRC determined that a written response to this item was not required.

CONTENTION ITEM 5.B

REFERENCES

1. NRC Inspection Report 50-456/85-015; 50-457/85-016
(pages A0003386 - A0003409).
2. Midway Industrial NCR's Nos. 23, 24, 25, 26
(pages S0000655 - S0000701).
3. Licensing file on item 85-015-07, cont. 5.B
(pages A0006880 - A0006909).

CONTENTION ITEM 5.B

NAMES AND ADDRESSES

R. D. Schulz	NRC Region III
W. J. Kropp	NRC Region III
R. N. Gardner	NRC Region III
C. Gray	Commonwealth Edison Company
W. Bruns	Commonwealth Edison Company
J. Tolar	Commonwealth Edison Company
R. Leigh	Midway Industrial Corporation
K. Kostal	Sargent & Lundy

CONTENTION ITEM 5.C

5. Contrary to Criterion III, "Design Control," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to establish measures to assure that applicable regulatory requirements and design bases are correctly translated into specifications, drawings, procedures, and instructions including provisions to assure that appropriate quality standards are specified in design documents and that deviations from such standards are controlled. Applicant has also failed to require that measures are established for the identification and control of design interfaces and for the coordination among participating design organizations, that the measures include the establishment of procedures among participating design organizations for the review, approval, release, distribution, and revision of documents involving design interfaces; and that the design control measures provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program.
- C. Edison employed designs for safety-related HVAC duct supports based on chapter E36-0 of S&L's Structural Standard Document which did not limit the slenderness ratio for ceiling mounted duct supports. (Inspection Report 84-43/39, Exh. 19.)

RESPONSE

A special safety inspection was conducted by Messrs. J. W. Muffett, K. D. Ward, R. S. Love, J. A. Jacobson, and J. Schapker on September 24, 1984 through February 4, 1985. The results of this inspection were documented in Inspection Report 50-454/84-71(DRS), 50-455/84-49 (DRS), 50-456/84-43 (DRS), and 50-457/84-39 (DRS).

The omission of slenderness ratio limits (also called Kl/r ratio limits) was an isolated occurrence. Both NRC and S&L have reviewed the S&L Structural Design Standards used to design Safety Related supports for other components such as cable trays, conduits and piping. These documents contained appropriate limits for slenderness ratios.

CONTENTION ITEM 5.C

The omission of the slenderness ratio limits from SDS-E36 (the Structural Design Standard for Safety Related HVAC Duct Supports) did not result in any deficient design. Because of the commonality of design, a total of 1,137 Byron duct supports and 1,121 Braidwood duct supports were reviewed to determine whether any members exceeded acceptable slenderness ratio limits. HVAC hanger member design is not sensitive to slenderness ratio limits, as was demonstrated by the fact that thousands of hanger members were designed without the limits being specified, while none of them exceeded the limits. The omission of these limits from SDS-E36 is not indicative of a situation that caused any unacceptable design to be issued. The limits on Kl/r ratios contained in the manual of Steel Construction issued by American Institute of Steel Construction (AISC) are arbitrary limits intended for application to large building columns. The HVAC hangers are designed to the proper AISC allowable stresses based on actual Kl/r ratios and the actual allowable stresses in the hanger members do not exceed these AISC code allowable stresses.

As stated in Inspection Report 84-43/39, "...the Kl/r limitation in the AISC Manual does not affect the stability or strength of the ceiling mounted members which experience compressive load only during a seismic event. However, failure to reflect the Kl/r ratio limit of the AISC Manual in the documents governing design in this area is a violation...."

SDS-E36 has been revised to incorporate appropriate limits for slenderness ratios.

CONTENTION ITEM 5.C

Further information responsive to this Interrogatory is found in the last paragraph of the answer to Interrogatories 58 and 59, Contention Item 13B which is incorporated by reference herein.

CONTENTION ITEM 5.C

REFERENCES

1. J.F. Streeter letter to Cordell Reed dated March 15, 1985 transmitting Inspection Report 50-454/84-71; 50-455/84-49; 50-456/84-43; 50-457/84-39 (pages A0002867-A0002976).
2. D.L. Farrar letter to J.G. Keppler dated April 15, 1985 responding to the item of noncompliance (pages A0002980-A0002983).
3. L.O. DelGeorge letter to J.G. Keppler, dated October 22, 1984 transmitting design information to the NRC (pages A002837-A0002866).
4. T.R. Tramm letter to J.G. Keppler, dated December 11, 1984 transmitting design related information to the NRC (pages A0002812-A000286).
5. T.R. Tramm letter to J.G. Keppler, dated April 22, 1985, transmitting corrected pages to previous transmitted letter to NRC (pages A0013995-A0014000).
6. Licensing file on Item 82-43-02, Cont. 5.C (pages A0006910-A0007066).

CONTENTION ITEM 5.C

NAMES AND ADDRESSES

J. W. Muffett	NRC Region III
R. Hooks	Sargent & Lundy
K. Kostal	Sargent & Lundy

CONTENTION ITEM 6.A

6. Contrary to Criterion V, "Instruction, Procedures and Drawings," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that activities affecting quality are prescribed by documented instructions, procedures, or drawings, and are accomplished in accordance with these instructions, procedures, or drawings.
 - A. Approved procedures for the installation or installation inspection of mechanical safety-related equipment did not exist until July 16, 1980, although numerous pieces of this equipment were finally or partially installed prior to this date. Equipment installed prior to July 16, 1980, included the four Unit 1 Steam Generators, the four Unit 1 and Unit 2 Residual Heat Removal Pumps and the four Safety Injection Pumps. Further, the procedure developed by the installation contractor, Phillips, Getschow Company, subsequent to July 16, 1980, was not consistently implemented in that the four Unit 2 Steam Generators and seven of the eight Primary Reactor Coolant Pumps were installed without use of the installation procedure. This violation was in part the basis for the imposition of the 2/2/83 civil penalty for "a breakdown of your Quality Assurance (QA) program." (Exhibit 3)

RESPONSE

A routine safety inspection was conducted during the period April 19 through July 20, 1982, and a special inspection was conducted on September 8-10, 1982, of activities at Braidwood Station, Units 1 and 2. The results of the inspections were discussed during an enforcement conference conducted at the NRC Region III office on August 31, 1982, and at the Commonwealth Edison Company corporate offices in Chicago, Illinois on November 19, 1982. The reports setting forth the results of the inspections and the enforcement conferences are documented in Inspection Report 50-456/82-05; 50-457/82-05.

CONTENTION ITEM 6.A

The subject report stated that prior to July 16, 1980, no procedures existed with respect to the installation and inspection of safety-related equipment. The report further stated that the procedures developed subsequent to July 16, 1980 were not consistently implemented.

The response to Specific Interrogatory 24 in part, responds to this Contention. In addition, a draft report was prepared entitled "Historical Account of Safety Related Mechanical Equipment Installations at Braidwood Station" which sets forth a chronology of the circumstances and events associated with the installation of safety-related mechanical equipment from early 1979 through completion of the activities performed in accordance with Revision 0 of Procedure QCP-B22. These activities included reinspection, document collection and review, and rework as required. Implementation of this procedure resulted in the generation of documentation describing the status of the installation of the safety-related mechanical equipment. Implementation of the Revision 0 program, which was completed on December 31, 1982, was designed to establish conformance with the requirements of ANSI Standard N45.2.8, "Supplementary Quality Assurance Requirements for Installation, Inspection and Testing of Mechanical Equipment and Systems for the Construction Phase of Nuclear Power Plants" but, in retrospect, did not fully resolve all issues associated with the installation of the equipment installed prior to August 10, 1982. Specifically, the activities performed under QCP-B22 Revision 0 created a documented record of installation and status for each piece of safety-related equipment. Field inspections were performed to verify compliance with the requirements of ANSI N45.2.8 and verify other necessary attributes

CONTENTION ITEM 6.A

identified by PGCo engineering. The field inspections included full quality control involvement. The documented record created by this program, established a basis for controlling future installation activities on the equipment.

Revision 1 was written to proceduralize additional reinspection activities which had been accomplished during the Revision 0 review of all the safety-related equipment. Equipment installed after the approval of Revision 1 was installed in accordance with the provision of Revision 1. Revision 2 was issued on April 16, 1983 marking minor changes in the procedure.

In September 1983, on its own initiative, PGCo management at Braidwood reviewed the results of the reinspections under Revisions 0, 1, and 2. Based on this review, it was deemed necessary to perform a complete review of the documentation created during the inspection and rework activities prior to that date and to reformat the documentation in a clear and auditable fashion. In the process of reformatting the documentation, it became apparent that further inspection and engineering activities were required to establish that the installation of safety-related mechanical equipment was in accordance with all design requirements. Procedure B-22 was then reviewed and revised several times by PGCo to accomplish these enhancements. This effort resulted in Revision 5 of the procedure, which became effective in May 1984.

CONTENTION ITEM 6.A

Subsequent to the approval of Revision 5 PGCo initiated a program to correlate and review all previous equipment documentation and perform the required field inspection. This program proceeded temporarily on a low priority basis due to other project activities.

In March 1985, Revision 7 was initiated to clarify certain programmatic attributes of Revision 5 which relate to the documentation for auditing and tracking deficiencies. Revision 7 required no additional reinspection activities beyond those activities required by Revision 5. Completion of the current review of the reinspection program, which includes both field inspections and document reviews and correlations, will ensure that all safety related mechanical equipment will meet all appropriate specifications and quality requirements.

CONTENTION ITEM 6.A

REFERENCES

1. NRC Inspection Report 50-456/82-05; 50-457/82-05
(pages A0001005-A0001018).
2. T.R. Tramm letter to J.G. Keppler dated October 8, 1982 transmitting
Commonwealth Edison's Report for 10 CFR 50.55(e) 82-07
(pages *A0003558-A0003564).
3. Cordell Reed letter to J.G. Keppler dated April 4, 1983 transmitting
Commonwealth Edison response to Inspection Report 82-05
(pages A0001063-A0001084).
4. Phillips, Getschow procedure QCP-B22, "Equipment Installation
Record," Revisions 0, 1, 2, 5 and 7 (pages K0015128-15387).
5. "Historical Account of Safety Related Mechanical Equipment
Installation at Braidwood Station" - Draft report
(pages A0014008-14053).

CONTENTION ITEM 6.A

NAMES AND ADDRESSES

L. G. McGregor	NRC Region III
W. J. Key	NRC Region III
T. R. Tramm	Commonwealth Edison Company
G. Groth	Commonwealth Edison Company
S. Hunsader	Commonwealth Edison Company
J. Stewart	Phillips, Getschow
M. Dougherty	Commonwealth Edison Company (Consultant)

CONTENTION ITEM 6.B.1

6. Contrary to Criterion V, "Instruction, Procedures and Drawings," of 10 C.F.R 50, Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that activities affecting quality are prescribed by documented instructions, procedure, or drawings, and are accomplished in accordance with these instructions, procedures, or drawings.
- B. A special NRC QA inspection reported May 7, 1984 that:
 - * Phillips Getschow Company, Field Drawing M-2539C-4, Revision D, was not stamped with Field Change Request No. L-9194 and Field Drawing M-2542C-121, Revision A, was not stamped with Field Change Request No. 9988.

RESPONSE

A special NRC quality assurance program inspection was conducted by Messrs. T. E. Vandell, R. D. Schulz, I. T. Yin, D. E. Keating, C. C. Williams, and D. R. Hunter on June 20-24, June 27-July 1, August 1-5, August 9, October 4-7, and October 24, 1983, and January 11-13, January 26 and February 9, 1984. The results of these inspections were documented in Inspection Report Number 50-456/83-09 (DE); 50-457/83-09 (DE).

The NRC inspectors noted that contrary to Phillips Getschow Company Construction Procedure 1.1, Revision 4, "Control of Engineering Change Notices and Field Change Requests," Section 5.3, two Field Drawings were not stamped with the Field Change Request numbers.

In response to the NRC finding, Commonwealth Edison Company acknowledged that the two Phillips Getschow Company (PGCo) drawings were not stamped with the appropriate Field Change Request numbers. PGCo subsequently stamped the drawings with the Field Change Request numbers.

CONTENTION ITEM 6.B.1

It should be noted that the "Field Drawings" examined by the NRC inspectors were PGCo office drawings and were not used to provide the production direction nor did they represent Q.C. inspection documents utilized for installation by the field. The latter documents indicated the appropriate FCR number notations. Subsequent revisions of those documents also noted the appropriate FCR indications.

Additionally, PGCo conducted an extensive internal audit (#83-BR15) of document control and design document stamping which found additional examples of improper stamping. Due to that audit and previous concerns, PGCo management placed extensive emphasis on Document Control. PGCo intensified and increased training, stressing that great attention to detail must be placed on all Document Control activities. PGCo started the Document Control Station method of document issuance to minimize errors in keeping documents up-to-date. Subsequently, Commonwealth Edison Quality Assurance and PGCo QA audits and surveillances have reviewed the current design change stamping efforts and have found that the corrective actions have been acceptably implemented.

The NRC CAT Inspection Report (Inspection Report 50-456/84-44; 50-457/84-40) also documented a review for proper stamping. On page VIII-4, the NRC stated:

CONTENTION ITEM 6.B.1

(7) About 50 design documents were reviewed for legibility and stamping (i.e., "Controlled") at PGCo document control station Number 1 (Engineering Files), and the revision numbers and ECNs/FCRs annotated were recorded and checked against the Document Distribution Cards, hand-updated G&L ECN Status Report and PGCo FCR log. All design documents were in accordance with the Document Distribution Cards, ECN Status Report and FCR log except where new design documents and design change documents had been received within about five working days. PGCo procedure QCP B-29 does not contain any time limit for replacing superseded design documents or annotating ECNs/FCRs on design documents.

Thus, the recent CAT Inspection further confirmed that adequate corrective action has been taken.

CONTENTION ITEM 6.B.1

REFERENCES

1. NRC Inspection Report No. 50-456/83-09 (DE); 50-457/83-09 (DE) as transmitted by J. G. Keppler letter to J. J. O'Connor dated May 7, 1984 (pages A0001440 - A0001507).
2. L. O. DelGeorge letter to J. G. Keppler dated July 6, 1984 (pages A0001508 - A0001572).
3. R. L. Spessard letter to Cordell Reed dated July 26, 1984 (page A0001575).
4. CEC Quality Assurance Surveillance No. 3450 (pages K0014825-14834), 3862 (pages B0005164-5166), 3984 (pages B0005167-5169).
5. Phillips Getschow Procedure PGCP 1.1 (pages L0001170-1190).
6. Phillips Getschow Internal Audit #83-BR15 with follow-ups on 9/20/83, 10/5/83, 11/18/83, 12/13/83, and 4/16/84 (pages L0001208-1253).
7. NRC Inspection Report No. 50-456/84-44; 50-457/84-40 as transmitted by T.M. Taylor letter to C. Reed dated February 20, 1985 (pages A0002984 - A0003121).
8. Licensing file on Item 09-02A, Cont. 6.B.1 (pages A0007067-A0007164).

CONTENTION ITEM 6.B.1

NAMES AND ADDRESSES

J. G. Keppler	NRC Region III
T. E. Vandel	NRC Region III
R. D. Schulz	NRC Region III
I. T. Yin	NRC Region III
D. E. Keating	NRC Region III
C. C. Williams	NRC Region III
D. R. Hunter	NRC Region III
R. L. Spessard	NRC Region III
G. E. Groth	Commonwealth Edison Company
T. R. Sommerfield	Commonwealth Edison Company
S. C. Hunsader	Commonwealth Edison Company
S. Forbes	Phillips Getschow Company
J. Stewart	Phillips Getschow Company

CONTENTION ITEM 6.B.2

6. Contrary to Criterion V, "Instruction, Procedures and drawings," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that activities affecting quality are prescribed by documented instructions, procedures, or drawings, and are accomplished in accordance with these instructions, procedures, or drawings.
- B. A special NRC QA inspection reported May 7, 1984 that:
 - * Edison's Quality Assurance Manual, Revision 77, Q.P. No. 7-1, "Control of Procured Material and Equipment - Receiving and Inspection," Section 5.2.1.5.7, "Dimensional," requires visual checks be performed on a random basis to assure that interface dimensions conform to drawings and/or specifications. However, random visual checks of interface dimensions of piping components were not being done.

RESPONSE

For the response to Interrogatory 58, Contention Item 6.B.2, see Applicant's response to Specific Interrogatory 45, contained in Applicant's Fourth Partial Response to Rorem's First Set of Quality Assurance Interrogatories and Requests to Produce.

CONTENTION ITEM 6.B.2

NAMES AND ADDRESSES

R. Schulz	NRC Region III
D. Shamblin	Commonwealth Edison Company
G. Groth	Commonwealth Edison Company
R. Farr	Commonwealth Edison Company
J. Carlson	Phillips Getschow Company
J. Schimmels	Sargent & Lundy

CONTENTION ITEM 6.B.3

6. Contrary to Criterion V, "Instruction Procedures and Drawings," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that activities affecting quality are prescribed by documented instructions, procedures, or drawings, and are accomplished in accordance with these instructions, procedures, or drawings.
- B. A special NRC QA inspection reported May 7, 1984 that:
*Contrary to Phillips, Gettschow Company Quality Procedure, there was no documented record on log specifying that a calibrated instrument was used to measure numerous pipe bends for ovality requiring inspection measurements to the thousands of an inch. Examples include the bends on Drawings M-2546C-22, M-2546C-44, MC-2546C-42, and M-2546C-31.

RESPONSE

NRC Quality Assurance Program inspections were performed on 6/20/83 - 6/24/83, 6/27/83 - 7/1/83, 8/1/83 - 8/5/83, 8/9/83, 10/4/83 - 10/7/83, 10/24/83, 1/11/84 - 1/13/84, 1/26/84 and 2/9/84 by T. E. Vandel, R. D. Schulz, I. T. Yin, D. E. Keating, C. C. Williams and D. R. Hunter. The results of the inspections were recorded in NRC Inspection Report Number 50-456/83-09(DE); 50-457/83-09(DE).

During the NRC review of the cold bending program for small-bore safety-related piping, bends on four drawings were identified that had no documented record of the use of calipers for measuring the ovality of the piping after the bend. This is contrary to PGCO Procedure QAP-7, Revision 7, "Control of Inspection Equipment" which required a record of the use of inspection equipment be maintained.

CONTENTION ITEM 6.B.3

For a partial response to this Item, see Applicant's response to Specific Interrogatory 45, contained in Applicant's Fourth Partial Response to Rorem's First Set of Quality Assurance Interrogatories and Request to Produce.

In addition to NRC findings noted in their Inspection Report No. 83-09, CECQ QA Audit No. QA-20-83-33 performed between July 5 and July 12, 1983, reconfirmed in finding #2 that PGCO QC Inspectors were not recording the instrument control number of the caliper used to measure pipe bend ovality. In addition, the ovality calculations were being determined from a printed calculation sheet which was unapproved and had not been verified for accuracy.

PGCO Corrective Action for conditions noted above included a directive issued on 7-5-83 instructing QC Inspectors to record the use of inspection tools in the Tool/Instrument Issue Log and on the Bend Data Traveler with a revision to Procedure PGCP-11 approved for site use by CECQ on 9-14-83 which included an approved ovality calculation sheet.

Between the dates of 1-24-84 and 2-14-84, CECQ QA performed a follow-up surveillance (#3346) to verify adequacy of the PGCO Corrective Action. Nine out of eighteen small bore and instrumentation data packs that were reviewed did not contain documentation of the caliper used for inspection. Based on these results, the corrective action was determined to be inadequate.

CONTENTION ITEM 6.B.3

In order to address the installation portion of this NCR, PGCO NCR 1403 was initiated to address this problem . PGCO performed a review of the Tool Instrument Issue log and personnel inspection records to determine all the bend inspections performed from 07/05/83 to 02/14/84. The results of this review indicated 32 percent of bend inspections had the caliper ID number referenced.

To address the procedural aspects of this NCR, PGCO Procedure PGCP-11, Rev. 10, approved on 3-10-84, incorporated a space on the forms which are to be used by QC Inspectors for recording the measuring equipment used during inspections. PGCO QC inspectors received training on the proper methods of recording measuring equipment during inspections.

Implementation of the revised procedure was examined by CECO in QA Audit 20-84-518 and was found to be acceptable (i.e., the inspection tool used to measure pipe bend ovality was verified recorded on bend travelers). Also, implementation of Rev. 10 to PGCP-11 is verified during final document review through the use of final review checklist for Bend Data Travelers which list ID numbers of calibrated equipment recorded by inspectors on the process documents. PGCo Procedure QCP-B30 for final document review requires the initiation of Document Deficiency Reports or NCR's as applicable when failure to complete records is noted during final document review.

CONTENTION ITEM 6.B.3

It should be noted that a pipe bend inspection cannot be made without use of a dial caliper. Thus, there was never any question about whether an instrument had been used. The only question raised by the lack of identification of a instrument number was whether the dial caliper used it or the particular inspection had been properly calibrated.

Disposition of NCR #1403 included a review of caliper calibration records which verified all were within calibration during the period of 7-5-83 to 2-14-84 with exception of DC-1 and D-3 which were out of service prior to 7-5-83. This NCR was closed on 6-22-84.

CONTENTION ITEM 6.B.3

REFERENCES

1. Inspection Report 50-456/83-09; 50-457/83-09 (pages A0001440-1507).
2. Phillips, Getschow NCR#3962 (pages K0013704-13723).
3. Phillips, Getschow Procedure PGCP-11 (pages L0001488-L0001497).
4. Phillips, Getschow Procedure QAP-7 (pages L0001606-L0001631).
5. Phillips, Getschow Procedure QCP-B30 (pages B0000175-225).
6. Commonwealth Edison QA Audit No. QA-20-83-33 (pages B0000175-225).
7. Commonwealth Edison QA Surveillance No. 3346 (pages B0005435-5436).
8. Phillips, Getschow NCR #1403 (pages K0013347-13374).
9. Licensing file on Item 83-09-02C, Cont. 6.B.3 (pages A0007238-7289).

CONTENTION ITEM 6.B.3

NAMES AND ADDRESSES

R. Schulz	NRC Region III
G. Groth	Commonwealth Edison Company
S. Hunsader	Commonwealth Edison Company
J. Carlson	Phillips Getschow Company
J. Stewart	Phillips Getschow Company

CONTENTION ITEM 6.B.4

6. Contrary to Criterion V, "Instruction, Procedures and Drawings," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that activities affecting quality are prescribed by documented instructions, procedures, or drawings, and are accomplished in accordance with these instructions, procedures, or drawings.
- B. A special NRC QA inspection reported May 8, 1984 that:
 - * Contrary to Phillips, Getschow Company Construction Procedure, Field Change Orders were not written for revisions involving ASME Section III, Subsection NF welds for component support Drawings M-1RH02017R, Revision E, and M-1SI16021X, Revision B.

RESPONSE

A special NRC quality assurance program inspection was conducted by Messrs. T. E. Vandel, R. D. Schulz, I. T. Yin, D. E. Keating, C. C. Williams, and D. R. Hunter on June 20-24, June 27-July 1, August 1-5, August 9, October 4-7, and October 24, 1983, and January 11-13, January 26, and February 9, 1984. The results of these inspections were documented in Inspection Report Number 50-456/83-09 (DE); 50-457/83-09 (DE).

This report noted that contrary to Phillips Getschow Company Procedure PGCP-4, Revision 0, "Control of Rework of Component Supports," Field Change Orders were not written for revisions involving ASME Section III, Subsection NF welds for two component support drawings.

In response to this NRC finding, Commonwealth Edison stated that the Phillips Getschow Company Procedure PGCP-4, Revision 0 was not intended to be the governing procedure for revision work to the two component

CONTENTION ITEM 6.B.4

support examples examined at the time of the NRC inspection. Rather, Phillips Getschow Company Procedure QCP-B23, "Installation and Inspection of Component Supports", (Revision 4 was in place at the time of the inspection) was intended to control the revision work of component supports. QCP-B23 did not require the use of field change orders to control pipe supports changes.

PGCP-4 was an ingredient in the development of QCP-B23. When PGCo issued QCP-B23, it failed to formally withdraw PGCP-4 from use. The apparently active, but superseded, criteria of PGCP-4 caused the NRC inspectors' concern. In order to correct this condition, Phillips Getschow formally requested that PGCP-4 be withdrawn from use, based upon the earlier modification and incorporation of PGCP-4 requirements into QCP-B23. Commonwealth Edison authorized this procedural withdrawal.

The consolidation of PGCP-4 into QCP-B23 was a portion of an extensive review of PGCo procedures which took place in 1983 following Inspection Report 82-05. This review was initiated by PGCo to reorganize and clarify the then-existing procedures. As a part of this process certain procedures were deleted. Since that time, no procedures have been superceded in full or withdrawn from use.

CONTENTION ITEM 6.B.4

REFERENCES

1. NRC Inspection Report No. 50-456/83-09 (DE); 50-457/83-09 (DE) as transmitted by J. G. Keppler letter to J. J. O'Connor dated May 7, 1984 (pages *A0001440-A0001507).
2. L. O. DelGeorge letter to J. G. Keppler dated July 6, 1984 (pages *A0001508-A0001572)
3. R. L. Spessard letter to Cordell Reed dated July 26, 1984 (pages *A0001575)
4. Phillips Getschow Company Procedure PGCP-4, Revision 0 (pages L0001198-1201).
5. Phillips Getschow Company Procedure QCP-B23, Revision 4 (pages K0014938-14960).
6. Licensing file on item 83-09-02d Cont. 6.B.4 (pages A0007290-A0007313).

NAMES AND ADDRESSES

R. D. Schulz	NRC Region III
G. E. Groth	Commonwealth Edison Company
T. R. Sommerfield	Commonwealth Edison Company
R. J. Farr	Commonwealth Edison Company
S. Hunsader	Commonwealth Edison Company
S. Forbes	Phillips Getschow Company
J. R. Stewart	Phillips Getschow Company

CONTENTION ITEM 6.B.5

6. Contrary to Criterion V, "Instruction, Procedures and Drawings," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that activities affecting quality are prescribed by documented instructions, procedures, or drawings, and are accomplished in accordance with these instructions, procedures, or drawings.
- B. A special NRC QA inspection reported May 7, 1984 that:
 - * Contrary to L. K. Comstock Quality Assurance Manual, drawings located in site document Station Number 5 were voided in that they were up to four revisions old and were neither returned to document Control as voided drawings nor marked as being voided drawings for information only. (Inspection Report 83-09, Exhibit 5.).

RESPONSE

NRC Quality Assurance Program inspections were performed on 6/20/83 - 6/24/83, 6/27/83 - 7/1/83, 8/1/83 - 8/5/83, 8/9/83, 10/4/83 - 10/7/83, 10/24/83, 1/11/84 - 1/13/84, 1/26/84 and 2/9/84 by T. E. Vandel, R. D. Schulz, I. T. Yin, D. E. Keating, C. C. Williams and D. R. Hunter. The results of the inspections were recorded in Report Number 50-456/83-09(DE); 50-457/83-09(DE).

The subject report noted that when the NRC reviewed the drawing racks at document station 5, the inspector identified a superseded drawing (revision (N) of drawing 1-3515). The current revision of the drawing was (S). This occurrence was contrary to L. K. Comstock Quality Assurance Program manual, Procedure 4.2.1 which requires the return of voided drawings to Document Control within three days. Comstock then performed a complete review of the drawings at document station 5. The review identified additional superseded drawing revisions which were removed from the current stick files.

CONTENTION ITEM 6.B.5

In response to the NRC findings, Comstock QC increased the surveillance activity of the Document Control Department. Specifically, the Quality Control Department conducted sixteen surveillances of the 15 document stations and a 100% audit of the engineering office drawings, and performed random monthly drawing control surveillances of document stations between July, 1983 and January, 1984 in accordance with Comstock Procedure 4.8.15.

In April of 1984, Comstock completed an internal audit (L.K. Comstock QA Audit No. I-059-084) of all document stations performing safety-related work. Also, Commonwealth Edison Site Quality Assurance Department completed document audit 20-84-585 in May 1984 which resulted in a 100% review of all drawings controlled by L. K. Comstock. Both audits identified document control problems and resulted in the implementation of a plan to streamline the document control system. Specifically, the plan a) reduced the number of document stations, b) reduced the number of drawings at each station, c) reduced the number of document master cards, d) eliminated void print files, e) computerized and reduced the number of transmittals, and f) restructured the Document Control Department.

Notwithstanding the fact that cases were discovered in which stick drawings used by crafts did not have the most up to date revision, the inspection process required Quality Control to use the latest revision of a drawing in its inspections irrespective of what was on the stick drawings. Thus QC would identify any hardware not in accordance with the

CONTENTION ITEM 6.B.5

latest drawing. Commonwealth Edison Audit No. 20-84-585 found that all L.K. Comstock QC drawings sampled were the current revision.

Site QA is monitoring this activity with the results documented in surveillance 4212, 4451 and 4719. These results indicate that L. K. Comstock drawings are being controlled properly and maintained up to date. Other major contractors' drawing control is subject to CECO surveillances on at least a quarterly frequency. Presently, Comstock is involved in other activities which will provide an additional measure of confidence that the correct revision of drawings has been used. Comstock is initiating a drawing review program to ensure that revisions prior to April 1984 were properly implemented or corrected and documented. This program may involve a field walk down of current installations and/or a review of Comstock installation and Quality Control documentation with respect to the current field drawings. If the field installations are not installed and inspected to the latest drawing revisions, rework/inspections will be implemented in accordance with current site procedures.

Furthermore, under L.K. Comstock Procedure 4.13.1.1, Comstock is conducting a review of all inspection checklists. This review includes a check of the inspection checklist attribute recording drawing revision to assure that the proper drawing revision was used at the time of inspection. Any discrepancy found will be evaluated as part of the above referenced drawing review program to assure conforming of installed

CONTENTION ITEM 6.B.5

hardware to the appropriate design documents. Commonwealth Edison believes that the combination of the above programs will provide confidence that the as-built configuration of the plant is in accordance with the latest revisions of design drawings.

CONTENTION ITEM 6.B.5

REFERENCES

1. NRC Inspection Report 456/457/83-09 (pages A0001440-1507).
2. L. O. Del George letter to J. G. Keppler, dated 7/6/84 Enclosure: Response to inspection report numbers 50-456/83-09 and 50-457/83-09 (pages A0001508-1572).
3. L. K. Comstock drawing review program, dated 4/25/85 (work instruction 4.2.2-01 is not approved) (pages 00002698-00002722).
4. L. K. Comstock Procedure 4.2.2, "Design Control," dated 09/18/84 (pages 00002546-2553).
5. L. K. Comstock Procedure 4.2.1, "Document Control" (pages 00002535-2545).
6. L. K. Comstock Procedure 4.8.15, "Quality Control Inspection of Document Stations" (pages 00002648-2652).
7. L.K. Comstock Audit No. I-59-084 dated April 18, 1984 (pages 00002724-00002775).
8. Commonwealth Edison QA Audit No. 20-84-585 dated May 18, 1984 (pages C0003357-C0003378).
9. Licensing file on Item 83-09-02E, Cont. 6.B.5 (pages A0007314-7345).

CONTENTION ITEM 6.B.5

NAMES AND ADDRESSES

T. E. Vandel	NRC Region III
R. D. Schulz	NRC Region III
I. T. Yin	NRC Region III
D. E. Keating	NRC Region III
C. C. Williams	NRC Region III
L. O. DelGeorge	Commonwealth Edison Company
C. Mennecke	Commonwealth Edison Company
J. Gieseke	Commonwealth Edison Company
D. Hoffer	Commonwealth Edison Company
I. Dewald	L. K. Comstock
F. Rolan	L. K. Comstock
J. Klena	L. K. Comstock
R. Seltsmann	L. K. Comstock

CONTENTION ITEM 6.C

6. Contrary to Criterion V, "Instruction, Procedures and Drawings," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that activities affecting quality are prescribed by documented instructions, procedures, or drawings, and are accomplished in accordance with these instructions, procedures, or drawings.
- C. The piping contractor, Phillips, Getschow, did not have a procedure or documented instruction stipulating a systematic method for producing an accurate In-service Inspection drawing, including determining the number and location of all field welds and shop welds. (Inspection Report 85-07, Exhibit 14.)

RESPONSE

A routine NRC safety inspection conducted by Messrs. R. D. Schulz, W. J. Kropp, and R. N. Gardner on February 14 through March 22, 1985. The results of these inspections are documented in NRC Inspection Report and Number 50-456/85-007; 50-457/85-007.

The NRC inspectors noted that there was no formal procedure or documented instruction specifying a systematic method which produces accurate In-service Inspection (ISI) drawings.

During the examination of a PG&E as-constructed drawing, the inspector discovered that shop weld five on piping spool SI-8-6 was not identified on the as-constructed drawing. Since this was an ASME Boiler and Pressure Vessel Code, Section III, Class I piping line, the inspector was concerned that the shop weld may not have been identified on the In-service Inspection drawing. Subsequent examination of the In-service Inspection drawing, ISI-06, revealed that the weld was identified in the right location on the drawing. However, the weld was listed in the

CONTENTION ITEM 6.C

drawing weld numbering index list as being on spool SI-8-7 instead of on SI-8-6. The inspector requested the procedure that detailed the method by which an In-service Inspection drawing was produced. From discussions with PGCco engineering personnel he learned that a procedure or instruction document did not exist. The inspector did find that PGCco engineering personnel used various documents and a checklist to produce an In-service Inspection drawing. Those documents include Field Change Orders, rework sketches, as-constructed drawings, and vendor supplied Code Data Reports.

In response to this finding, Commonwealth Edison stated that it believed that the necessary documented instructions and procedures of a type appropriate to the circumstances were in place to systematically control preparation of accurate ISI drawings. The Item of Non-Compliance reference to 10 CFR 50, Appendix B, Criterion V omitted key wording applicable to this issue. 10 CFR 50, Appendix B, Criterion V states "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished." (Emphasis added.)

CONTENTION ITEM 6.C

Phillips, Getschow (PGCo) has in place the necessary systematic quality procedures and training programs to control the production of accurate In-service Inspection (ISI) Drawings. Essentially, PGCo develops these drawings for the Commonwealth Edison Production Department Technical Staff. The Technical Staff has the assigned responsibility for performance of Pre-Service/In-Service Inspection activities, including the review of ISI Drawing's for conformance with pre-service conditions. PGCo performs this activity under a Commonwealth Edison-PGCo Pre-Service Interface Agreement. There are no unique processes involved in this activity that require extra controls to be established at PGCo. The drawings prepared by PGCo do receive an independent PGCo engineering review using the aforementioned checklist.

The controlling procedure under the Interface Agreement is Commonwealth Edison Company Braidwood Nuclear Station Project Procedure PCD-25, "Distribution and Control of Site PSI Drawings". This procedure already provides the necessary instruction and the direction to accurately and efficiently control the In-service Inspection ISI Drawings. PGCo maintains a controlled copy of PCD-25. Specifically, Paragraph 4.1 of the subject procedure states that "The PSI Isometric Drawings (PSIID) shall be prepared by PGCo from Byron PSI Isometrics, Southwest Fabrication Isometrics, PGCo As-Construct Isometrics, actual walkdowns and guidance from Project Engineering/Sargent & Lundy". As stated above, the completed ISI drawings receive a PGCo "in-house" review to ensure that all attributes specified on the ISI checklist are included correctly on the ISI drawings.

CONTENTION ITEM 6.C

Commonwealth Edison believes that the incorrect spool identification referred to in the subject NRC inspection report was a transposition error and did not constitute a need for additional procedures and/or instructions. The necessary documented instructions and procedures of a type appropriate to the circumstances were in place to control preparation of accurate ISI drawings. However, to better define the activities relating to the generation of ISI drawings, procedure PCD-25 was revised to include the PGCo ISI drawing checklist currently in use.

NRC Region III reviewed the Commonwealth Edison response and maintained the item to still be an example of noncompliance. The NRC acknowledged the steps taken to clarify the procedure and stated that they would review them in a future inspection.

CONTENTION ITEM 6.C

REFERENCES

1. NRC Inspection Report 50-456/85-007; 50-457/85-007 (pages A0003292-A0003313).
2. D. L. Farrar letter to J. G. Keppler, dated May 3, 1985, enclosure, response to Item 456/85-08 and 457/85-007-08 (pages A0003314-A0003317).
3. W. S. Little letter to Cordell Reed, dated June 6, 1985 (page A0003318).
4. Braidwood Project Procedure PCD-25, Revision 1, dated June 26, 1985 (pages C0003174-3178).
5. Licensing File on Item 83-009-08E, Cont. 6.C (pages A0007346-7374).

CONTENTION ITEM 6.C

NAMES AND ADDRESSES

R. D. Schulz	NRC Region III
W. J. Kropp	NRC Region III
R. N. Gardner	NRC Region III
W. S. Little	NRC Region III
D. L. Shamblin	Commonwealth Edison Company
R. Schofield	Commonwealth Edison Company (Consultant)
J. Stewart	Phillips, Getschow Company

CONTENTION ITEM 6.D

6. Contrary to Criterion V, "Instruction, Procedures and Drawings," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that activities affecting quality are prescribed by documented instructions, procedures, or drawings, and are accomplished in accordance with these instructions, procedures, or drawings.
- D. Support plates were installed between the concrete pedestal base and the anchor bolt hold down plate for the Unit 1 and 2 containment spray pumps. However, they were not specified on the drawings and therefore these plates, including the size, type or grade of material, were not analyzed for design basis. Furthermore, these additional plates were not identified during quality control installation inspections. (Inspection Report 85-07, Exh. 14).

RESPONSE

A routine NRC safety inspection was conducted by Messrs. R. D. Schulz, W. J. Kropp, and R. N. Gardner on February 13 through March 22, 1985. The results of these inspections were documented in Inspection Report 50-456/85-007; 50-457/85-007.

As noted in the subject report, the inspector identified a deficiency in the containment spray pump base installation. Specifically, support plates had been installed between the hold down setting plate and the concrete pedestal base but were not detailed on the drawings. Although the additional support plates were not identified during quality control installation inspection, the installations were accepted. These support plates or shims are placed during installation of the pumps or other equipment as necessary to level the equipment and, if not removed, are covered with grout which is applied between the setting plate and the base.

CONTENTION ITEM 6.D

In response to this NRC finding, Commonwealth Edison acknowledged that the deficiency existed in the containment spray pump base installation and inspection. During the equipment reinspection program (see response to Contention Item 6A), the QC inspectors verified the existence of the grout but were unable to identify the presence of the shims since they were encased in grout. In July 1984, INPO identified that the grout was in contact with the pump bowl which violated a Westinghouse requirement for an 1/8" clearance between the grout and the pump bowl. As a result, the rear face of the grout was chipped away exposing the shims, which the NRC inspector later identified as an item of noncompliance.

As a result of the NRC's finding, Phillips Getschow initiated Nonconformance Report No. 3963 to document the deficiency on the containment spray pump base installation. Subsequently, similar deficiencies were identified by Phillips, Getschow and Commonwealth Edison on four residual heat removal pumps of the same design as the containment spray pumps. Nonconformance Report No. 3961-3 was initiated to document these similar deficiencies. The Sargent & Lundy disposition of these two NCR's requires that the installations be reworked to conform to design documents.

CECo initiated Nonconformance Report No. 6083 to provide for reviews of other safety related mechanical equipment. Prior to the NRC inspection, Phillips Getschow Equipment Installation Procedure, QCPB-22 Revision 5, dated 5/2/84, had established guidelines for a review of previously installed mechanical equipment, including the pumps in

CONTENTION ITEM 6.D

question. These guidelines were carried forward to Revision 7 of that procedure. The review pursuant to this established program had not yet been completed for the containment spray or residual heat removal pumps when the NRC inspection occurred. The provision of QCP-B22 provide for a review of the subject attributes by specifying a review of the manufacturer's installation assembly manual, and the design engineers requirements. That review identifies if the manufacturer requires that shims used for the installation of the equipment be removed during grouting. If the manufacturer allows the use of shims, this condition will not be evaluated since if they exist they are presently encased in grout.

Sargent & Lundy has issued ECN 27436 which determines that shims may be left in place without affecting the performance of all safety-related mechanical except for the four containment spray pumps and four residual heat removal pumps described above. These eight pumps, because of their specific configuration, will be removed from their base, the shims removed, and the pumps reinstalled without use of shims.

Phillips Getschow Company's Equipment Installation Procedure covering both the installation and inspection activities associated with safety-related mechanical equipment, had already been revised (Revision 5) to preclude similar deficiencies during new equipment installations.

CONTENTION ITEM 6.D

REFERENCES

1. Inspection Reports 50-456/85-007; 50-457/85-007 dated April 4, 1985 (pages A0003292-A0003313).
2. D. L. Farrar letter to J. G. Keppler dated May 3, 1985 provided Commonwealth Edison response (pages A0003314-A0003317).
3. W. S. Little letter to Cordell Reed dated June 6, 1985 acknowledged receipt of Commonwealth Edison's response of May 3, 1985 (page A0003318).
4. Commonwealth Edison Nonconformance Report 6083 (pages B0005074-B0005101).
5. Phillips Getschow Nonconformance Report 3963 (pages K0013487-K0013492).
6. Phillips Getschow Nonconformance Report 3961 (pages K0013490-K0013492).
7. Phillips, Getschow Equipment Installation Procedure, QCP-B22, Revision 5 (pages K0015046-K0015103).
8. Licensing file on Item 83-007-02, Cont. 6.D (pages A0007375-A0007408).

CONTENTION ITEM 6.D

NAMES AND ADDRESSES

R. D. Schulz	NRC Region III
W. S. Kropp	NRC Region III
R. N. Gardner	NRC Region III
G. Groth	Commonwealth Edison Company
D. A. Boone	Commonwealth Edison Company
B. Berglin	Commonwealth Edison Company (Consultant)

CONTENTION ITEM 6.E

6. Contrary to Criterion V, "Instruction, Procedures and Drawings," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that activities affecting quality are prescribed by documented instructions, procedures, or drawings, and are accomplished in accordance with these instructions, procedures, or drawings.
- E. Cables 2AF307 and 2AF154 were not routed by Comstock per pull cards, and the QC inspector accepted the cable pulls documenting that the cables were pulled in accordance with the pull cards. (Inspection Report 84-31/29, Exhibit 13.)

RESPONSE

The NRC Region III Office conducted routine safety inspections on October 8 through November 9, 1984, which included the review of cable pulling. The results of the inspections were documented in NRC Inspection Report Numbers 50-456/84-31(DRP); 50-457/84-29(DRP).

It was noted in the report that two QC accepted cables were not routed in accordance with the cable pull cards. Specifically, two out of approximately eight routing points in each of the cable routings were incorrect.

To assess the extent of the deficiency, Commonwealth Edison directed that twenty-four randomly chosen cables that had been accepted by the inspector who inspected the misrouted cables be reinspected by another qualified cable inspector. All twenty-four cables were found correctly routed. The acceptable sample reinspection results indicate that the misrouting of two cables was an isolated occurrence by the QC inspector involved.

CONTENTION ITEM 6.E

A review of the two cable routings revealed that the cables were identical (the same type and segregation code) and that their routings were identical except for certain intermediate points. Installation was inadvertently interchanged at these intermediate points. This misrouting had no safety implications.

In response to the NRC findings, L. K. Comstock generated Nonconformance Reports 3433 and 3494 to address the deficiencies. These NRC's were dispositioned with respect to the installation by changing the cable pull cards to reflect the as-installed conditions. In addition, the QC inspector involved was retrained in applicable cable installation and cable inspection procedures (Comstock procedures 4.3.8 and 4.8.8) and appropriate craft personnel were also retrained in installation. These NCRs were closed on February 2, 1985.

Commonwealth Edison Site QA surveillances 4051, 4099, 4152, 4577, 4647, and 4781 have reviewed the routing of cables and are not limited to the specific inspector involved in the identified NRC item of noncompliance. These surveillances are part of an on-going program by CECO QA to conduct periodic surveillances to verify proper cable routing. These surveillances select a cable pan riser at random and check the routing of all cables in the riser. The first surveillance took place in November, 1984. Surveillance 4051 found a cable routing deficiency that has been corrected. The remaining surveillances found cable routing to be acceptable.

CONTENTION ITEM 6.E

REFERENCES

1. NRC Report Numbers 50-456/84-31; 50-457/84-29 (pages A0002627-2640).
2. D. L. Farrar letter to J. G. Keppler, dated 12/21/84, transmitting Commonwealth Edison's Response to I.R. 50-456/84-31; 50-457/84-29 (pages A0002641-2643).
3. L. K. Comstock Nonconformance Report 3433 (page O0000352).
4. Licensing File on Item 84-29-09, Cont. 6.E (pages A0007409-7483).
5. Commonwealth Edison Company QA Surveillance 4051 (page B0002422-2424).
6. Commonwealth Edison Company QA Surveillance 4099 (pages B0002425-2425a).
7. Commonwealth Edison Company QA Surveillance 4152 (pages B0002426-B00002429).
8. Commonwealth Edison Company QA Surveillance 4577 (pages B0002441-2442).
9. Commonwealth Edison Company QA Surveillance 4677 (pages B0002443-2446).
10. Commonwealth Edison Company QA Surveillance 4781 (pages B0005295-B0005296).
11. L.K. Comstock Nonconformance Report 3494 (page O0000354).

CCNTENTION ITEM 6.E

NAMES AND ADDRESSES

R. Schulz	NRC Region III
L. Tapella	Commonwealth Edison Company
J. Gieseke	Commonwealth Edison Company
I. DeWald	L. K. Comstock
F. Rolan	L. K. Comstock
R. Seltman	L. K. Comstock

CONTENTION ITEM 6.F

6. Contrary to Criterion V, "Instruction, Procedure and Drawings," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that activities affecting quality are prescribed by documented instructions, procedures, or drawings, and are accomplished in accordance with these instructions, procedures, or drawings.
- F. In June, 1984, Phillips Getschow, piping contractor, found piping that violated minimum wall requirements. This defect was not reported to owner in accordance with 10 C.F.R. 21.21. (Inspection Report 84-21/20, Exhibit 20.)

RESPONSE

A routine NRC safety inspection was conducted by Messrs. L. G. McGregor and R. D. Schulz on September 4 through October 5, 1984. The results of these inspections were recorded in Report Numbers 50-456/84-21, 50-457/84-20. As noted in the subject report, during receipt inspection Phillips, Getschow Company had identified a ten foot length of pipe of which two feet of the length was under the minimum wall requirement. Contrary to 10 C.F.R. 21.21 and PGCO Procedure QAP-110, entitled, "Reporting of Defects and Noncompliance" the minimum wall defect was not reported to the owner.

In fact, the deficiency referred to by the NRC inspectors was incorrectly categorized. Minimum wall refers to the smallest wall thickness allowed by engineering for a particular application. Since this pipe had not yet been installed, this concept was inapplicable to the pipe in question. Instead, the pipe did not conform to the minimum thickness requirement of the material specification used for purchase. This deficiency had already been identified and documented at receipt

CONTENTION ITEM 6.F

inspection on NCR No. 1615 and the disposition was to remove and scrap the nonconforming section of pipe. The sample consisted of only a ten foot length of which two feet were nonconforming. A 10 C.F.R. Part 21 evaluation had been performed (but not documented as required by Phillips, Getschow Procedure QAP-110, Rev 0). This evaluation had determined that this condition was not reportable under the provisions of 10 C.F.R. Part 21 and therefore Commonwealth Edison was not notified.

As a result of the concerns raised by the NRC Inspector, Phillips Getschow issued a Report of Noncompliance to Commonwealth Edison in accordance with QAP-110 Rev. 1 (Rev. 1 had been issued for use in August, 1984 and included the standardized form for documenting reportable noncompliances). Braidwood Project Field Engineering performed a review for reportability under 10 C.F.R. Part 21. Commonwealth Edison Project Field Engineering subsequently requested CECO Project Field Engineering Department to perform an evaluation pursuant to 10 C.F.R. Part 21. The Project Engineering Department evaluation determined the condition to be not reportable, however, the piping supplier was also notified of the nonconforming condition.

Commonwealth Edison has discussed this item with appropriate Phillips, Getschow personnel to enhance awareness of the reporting requirements of procedure QAP-110 "Reporting of Defects and Noncompliance". At this time, Phillips Getschow Company performs a

CONTENTION ITEM 6.F

documented review of all NCR's for reportability per the requirements of QAP-110, Rev. 1. "Control of Nonconformance Reports". Furthermore PGCo Procedure QAP-12, Rev. 6 gives specific requirements to submittal of NCR's to CECo for review. Furthermore, Braidwood Project Construction reviews contractor nonconformance reports, including those of Phillips, Getschow, submitted to Commonwealth Edison for disposition concurrence and reportability per CECo Procedure PM-04, Rev. 0, "10 C.F.R. 50.55e Determination and Reportings". The nonconformance reports which Phillips, Getschow submits to Commonwealth Edison for review include those highly likely to have a reportable deficiency. This provides a check on contractor reporting of defects. Commonwealth Edison QA verifies that this review has been done as part of their review of contractor NCR's. The methodologies are in place to prevent this item from recurring.

CONTENTION ITEM 6.F

REFERENCES

1. NRC Inspection Report 50-456/84-21; 50-457/84-20 (pages A0002364-A0002384).
2. D. L. Farrar letter to J. G. Keppler dated January 31, 1985
Enclosure: Response to Item 456/84-21-03 and 457/84-20-03 (pages A0002385-A0002396).
3. Phillips Getschow NCR No. 1615 (pages K0014961-K0014980).
4. Phillips Getschow Procedure QAP-110 "Reporting of Defects and Noncompliance" Revision 1 dated May 15, 1984 (pages K0014981-K0014990).
5. Letter, Warren E. Vahle to J.D. Deress dated September 25, 1984 (PFE/BWD #132) (pages D0000143-D0000144).
6. CEC Co Procedure PM-04, Rev. 0 (10 C.F.R. 50.55e Determination and Reportings) (pages C0003379-3391).
7. Site Quality Instruction 01, Rev. 6 (Review of On-Site Contractor NCR's) (pages B0006061-B0006070).
8. Licensing file on Item 84-21-03, Cont. 6.F (pages A0007484-A0007570).

CONTENTION ITEM 6.F

NAMES AND ADDRESSES

R. D. Schulz	NRC Region III
L. G. McGregor	NRC Region III
D. L. Shamblin	Commonwealth Edison Company
M. A. Gorski	Commonwealth Edison Company
D. A. Boone	Commonwealth Edison Company (Consultant)
G. M. Gorski	Phillips Getschow Company

CONTENTION ITEM 6.G

6. Contrary to Criterion V, "Instruction, Procedures and Drawings," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that activities affecting quality are prescribed by documented instructions, procedures, or drawings, and are accomplished in accordance with these instructions, procedures, or drawings.
- G. Applicant placed purchase orders with an unapproved bidder, H. H. Howard Corp. of Chicago, that did not have an approved QA program. Purchase orders were for cleaning of 206,744 feet of safety-related piping. (Inspection Report 84-17, Exhibit 21.)

RESPONSE

A routine NRC safety inspection was conducted by Messrs. L. G. McGregor, R. D. Schulz, and J. F. Schapker on July 7 through August 31, 1984. The results of the inspection were recorded in NRC Inspection Report Number 50-456/84-17 (DRP); 50-457/84-17 (DRP). During the NRC review of the installation of some small bore piping, the NRC inspectors discovered that the Commonwealth Edison site organization had placed various purchase orders with a bidder that did not have an approved quality assurance program. The purchase orders were for the cleaning of safety-related piping which was to be installed in ASME Section III, Class 2 and 3 systems and safety-related instrumentation piping systems. The purchase orders were not reviewed and accepted by the Commonwealth Edison QA organization to assure that necessary technical and quality requirements were addressed. Also, the purchase orders had no reference to Quality Assurance Program requirements.

CONTENTION ITEM 6.G

In response to this NRC finding, Commonwealth Edison acknowledged that the cleaning service was incorrectly purchased as a non-safety related process. Instead of being treated as a safety-related vendor procedure subject to Quality Assurance Department review, the process used for chemical cleaning was reviewed by Sargent & Lundy on FCR L-1450 for technical adequacy. The purchase orders for chemical cleaning did not undergo review by Quality Assurance because the cleaning process was not deemed to be safety related. This error occurred through an error in judgment as to the safety impact of the service. The error went undetected because the procedure controlling the purchase of services did not require review of all purchase orders relating to safety-related equipment. To avoid further noncompliance, Braidwood Project Procedure PCD-07 "Site Purchasing Instructions" was revised to require future purchases of services relating to safety-related equipment to include reviews by QA. Also, the procedure requires that Construction Supervisors will review purchase requests to ensure Quality Assurance requirements are included. Commonwealth Edison reviewed other purchases of this type of service and found no other purchases affecting safety-related pipe.

As reported in NRC Inspection Report Number 84-42, the NRC reviewed the corrective action taken by Commonwealth Edison, found it acceptable, and closed the issue.

Other information regarding the disposition of the pipe in question is addressed in the Response to Contention Item 11.C in this answer and in 10 C.F.R 50.55(e) Report No. 84-10.

CONTENTION ITEM 6.G

REFERENCES

1. NRC Inspection Report 50-456/84-17; 50-457/84-17 (pages *A0002303-A0002325).
2. NRC Inspection Report 50-456/84-42; 50-457/84-38 (pages A0002785-A0002803).
3. D. L. Farrar letter to J. G. Keppler dated November 28, 1984; enclosure, response to Inspection Report 50-456/84-17; 50-457/84-17 (pages A0002326-A0002320).
4. E.D. Swartz letter to James G. Keppler, dated July 20, 1984 transmitting 30-day report for 55(e) 84-10 (pages *A0003613-A0003614).
5. D.H. Smith letter to James G. Keppler dated, September 18, 1984 transmitting interim report for 55(e) 84-10 (pages *A0003615-A0003616).
6. D.H. Smith letter to James G. Keppler dated, November 2, 1984, transmitting interim report for 55(e) 84-10 (pages *A0003617-A0003618).
7. D.H. Smith letter to James G. Keppler dated, February 27, 1985, transmitting interim report for 55(e) 84-10 (pages *A0003621-A0003622).
8. A.D. Miosi letter to James G. Keppler dated, May 2, 1985, transmitting interim report for 55(e) 84-10 (pages *A0003623-A0003624).
9. Sargent and Lundy FCR L-1450 (pages *L0000995-1000).
10. Licensing file on Item 84-17-01, Cont. 6.G (pages A0007571-A0007668).

CONTENTION ITEM 6.G

NAMES AND ADDRESSES

R. D. Schulz	NRC Region III
L. McGregor	NRC Region III
J. Schapker	NRC Region III
M. A. Gorski	Commonwealth Edison Company

CONTENTION ITEM 6.H

6. Contrary to Criterion V, "Instruction, Procedures and Drawings," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that activities affecting quality are prescribed by documented instructions, procedures, or drawings, and are accomplished in accordance with these instructions, procedures, or drawings.
- H. Sargent and Lundy did not prescribe clearance criteria for safety-related HVAC components or safety related large bore piping and electrical items in relation to other items such as equipment, conduit, etc. (Inspection Report 84-09, Exhibit 22).

RESPONSE

A routine safety inspection was conducted by Messrs. L.G. McGregor and R.D. Schulz on May 1 through June 4, 1984. The results of this inspection were documented in Report Numbers 50-456/84-09 and 50-457/84-09.

Historically, each construction discipline had a set of design drawings from Sargent & Lundy containing specific dimensions and routing. Interfaces and interferences between different components of plant installation were considered during development of these drawings. Any interferences encountered during actual installation were to be reported to Sargent & Lundy. This practice of clearance problem notification was discussed in the response to Interrogatory #58, Item 3.A.4.B.

Because the concerns identified in this inspection were similar to those expressed in IE Report 83-09-09(B) and because the corrective action agreed upon by Commonwealth Edison after lengthy interactions with the NRC Staff were developed contemporaneously with the issuance of IE

CONTENTION ITEM 6.H

Report 84-09, the responses rely heavily on the same corrective action. That action (which is discussed in detail in the response to Interrogatory #58, Item 3.A.4.B) included the evaluation and enhancement where necessary of all applicable site contractor procedures and work specifications to clarify clearance requirements.

CONTENTION ITEM 6.H

REFERENCES

1. NRC Inspection Report No. 50-456/84-09 and 50-457/84-09 (Pages A0002115-A0002128).
2. D.L. Farrar letter to J.G. Keppler outlining Commonwealth Edison's response to 50-456/84-09 and 50-457/84-09 (Pages A0002129-A0002134).
3. D.L. Shamblin letter to Phillips Getschow, dated October 3, 1984, transmitting Engineering Change Notice 22822 (pages C0002198-C0002202).
4. D.L. Shamblin letter to Pullman Sheet Metal, dated October 3, 1984, transmitting Engineering Change Notice 22823 (pages C0000075-C0000079).
5. D.L. Shamblin letter to L.K. Comstock, dated October 3, 1984, transmitting Engineering Change Notice 22824 (pages C0002624-C0002628).
6. D.L. Shamblin letter to Gust K. Newberg, dated October 3, 1984, transmitting Engineering Change Notice 23055 (pages C0002629-C0002633).
7. D.L. Shamblin letter to Phillips Getschow, Revision 1, dated October 19, 1984 (pages C0002203-C0002204).
8. D.L. Shamblin letter to Pullman Sheet Metal, Revision 1, dated October 19, 1984 (pages C0000080-C0000081).
9. D.L. Shamblin letter to L.K. Comstock, Revision 1, dated October 19, 1984 (pages C0002651-C0002652).
10. D.L. Shamblin letter to Gust K. Newberg, Revision 1, dated October 19, 1984 (pages C0002646-C0002647).
11. Sargent & Lundy Project Instruction PI-BB-96, Rev. 0 (pages C0003179-C0003191).
12. Clearance Notification Form for Braidwood Unit 1 & 2 (page C0003192).
13. Braidwood Procedure BWPT-EM-10 (pages S0001308-S0001373).
14. Licensing File on Item 84-09-01, Contention 6.H (pages A0007669-A000774).

CONTENTION ITEM 6.H

NAMES AND ADDRESSES

L. McGregor	NRC Region III
R. Schulz	NRC Region III
D. Boone	Commonwealth Edison Company (Consultant)
E. Wendorf	Commonwealth Edison Company
M. Gorski	Commonwealth Edison Company
L. Tapella	Commonwealth Edison Company
J. Dierbeck	Commonwealth Edison Company
D. Shamblin	Commonwealth Edison Company
D. Gallagher	Sargent & Lundy

CONTENTION ITEM 6.I

6. Contrary to Criterion V, "Instruction, Procedures and Drawings", of 10 C.F.R Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that activities affecting quality are prescribed by documented instructions, procedures, or drawings, and are accomplished in accordance with these instructions, procedures, or drawings.
- I. Material installed for the pipe whip restraint plate was not of proper specifications. (Inspection Report 84-09, Exh. 22.)

RESPONSE

A routine safety inspection was conducted by Messrs. L. G. McGregor and R. D. Schulz of the NRC on May 1 through June 4, 1984. The results of the inspection were recorded in NRC Inspection Reports 50-456/84-09; 50-457/84-09. The subject report noted that documentation for two safety-related whip restraints was reviewed, including stores requests, material test reports for installed steel, filler metal test reports, welding procedures, and installation inspection reports. The NRC determined that ASTM A572 GR50 plate material was required for the reactor coolant whip restraints. However, documentation and physical inspection of the reactor coolant whip restraint showed that ASME SA-516 GR.60 material was installed.

In response to this finding, Commonwealth Edison Company noted the subject of material substitutions on whip restraints had previously been identified by Phillips Getschow Company (PGCo) in an internal Quality Assurance Audit. The response to that audit included commitments to review all whip restraint packages to determine if similar conditions existed and to issue nonconformance reports for any discrepancies identified. At the time of the NRC inspection, the review of all whip

CONTENTION ITEM 6.I

restraint packages had been completed and the nonconforming installations were identified on a log, but all of the nonconformance reports had not yet been written, as was the case for this item.

The procedure which governs whip restraint installation activities had also been revised as a result of the PGCo Quality Assurance audit. The revised procedure requires documented approval by the contractor's engineering organization prior to implementing material substitutions. In addition, the revision requires that the PGCo Production Superintendent enter the heat number of the material being installed on the production drawing and provides for Quality Control verification of material traceability. As documented in Inspection Report 50-456/85-015; 457/85-016 the NRC subsequently reviewed the identified corrective actions, found them acceptable, and closed this issue.

CONTENTION ITEM 6.I

REFERENCES

1. NRC Inspection Report 50-456/84-09; 50-457/84-09 dated July 2, 1984 (pages A0002115-A0002128).
2. D. L. Farrar letter to J. G. Keppler dated July 31, 1985, provided Commonwealth Edison Company's response to the Notice of Violation (pages A0002129-A0002134).
3. R. F. Warnick letter to Cordell Reed, dated August 15, 1984 acknowledging receipt of Commonwealth Edison Company's response (pages A0002135-A0002136).
4. Inspection Report 80-456/85-015; 80-457/85-016, dated May 16, 1985 closing report (pages A0003386-A0003409).
5. Phillips, Getschow, Quality Assurance, Internal Audit #83-BR22, dated January 24, 1984 (pages L0001254-1358).
6. B. Clover/T. Johnson memo to M. Gorski/P. Barnes dated July 6, 1985 (pages L0001470-1475).
7. Licensing File on Item 84-09-05, Cont. 6.I (pages A0007775-A0007930).

CONTENTION ITEM 6.I

NAMES AND ADDRESSES

L. G. McGregor	NRC Region III
R. D. Schulz	NRC Region III
D. A. Boone	Commonwealth Edison Company
J. Stewart	Phillips, Getschow Company
S. Forbes	Phillips, Getschow Company

CONTENTION ITEM 7.A

7. Contrary to Criterion VI, "Document Control," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures are established to control the issuance of documents and these measures assure that changes to those documents are reviewed for adequacy and approved for release by authorized personnel and are distributed to and used at the location where the prescribed activity is performed.
- A. A special NRC QA inspection reported May 7, 1984 that adequate measures had not been established to control field changes to drawings being made during the installation of ASME Boiler and Pressure Vessel Code, Section III, Class 2 and 3, 2" and under piping. Craft personnel had been making field changes to the drawings by rerouting lines, assigning weld numbers, and adding material which resulted in a lack of necessary control of approving, updating, and releasing drawings. (Inspection Report 83-09, Exh. 5.)

RESPONSE

For the response to Interrogatory 58, Contention Item 7.A, see Applicant's responses to Specific Interrogatories 37 and 38, contained in Applicant's Fourth Partial Response to Rorem's First Set of Quality Assurance Interrogatories and Requests to Produce.

CONTENTION ITEM 7.A

NAMES AND ADDRESSES

I. Yin	NRC region III
R. Schulz	NRC Region III
J. Schimmels	Sargent & Lundy
D. Gallagher	Sargent & Lundy
W. Cleff	Sargent & Lundy
G. Groth	Commonwealth Edison Company
D. Shamblin	Commonwealth Edison Company
J. Stewart	Phillips Getschow Company
S. Forbes	Phillips Getschow Company

CONTENTION ITEM 8.A

8. Contrary to Criterion VIII, "Identification and Control of Materials, Parts and Components," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures are established for the identification and control of materials, parts and components including partially fabricated assemblies in order to prevent the use of incorrect or defective materials, parts or components.
- A. Identification of traceability records were not maintained as required for some of the large cap screws used to secure the steam generator to its supporting columns. At least 19 of 192 screws were cut off and the identifying numbers were neither transferred nor marked on tags and records traceable to the screws. Further, adequate traceability records were not maintained for several hundred of these screws which were transferred back and forth between the Byron Station, the Braidwood Station, Rockwell Engineering (for QC checks) and Teledyne Brown Engineering (the installation contractor). This violation was in part the basis for the imposition of the 2/2/83 civil penalty for "a breakdown of your Quality Assurance (QA) program." (Exhibit 3)

RESPONSE

A routine safety inspection was conducted during the period April 19 through July 20, 1982, and a special inspection was conducted on September 8-10, 1982, of activities at Braidwood Station, Units 1 and 2. The results of the inspections were discussed during an enforcement conference conducted at the NRC Region III office on August 31, 1982, and at the Commonwealth Edison Company corporate offices in Chicago, Illinois on November 19, 1982. The reports setting forth the results of the inspections and the enforcement conferences are documented in Inspection Report 50-456/82-05; 50-457/82-05.

CONTENTION ITEM 8.A

As noted in the subject inspection report, the NRC identified an example where adequate traceability records were not maintained for large caps screws used on steam generator supports. In response to this issue, Commonwealth Edison noted that a portion of this traceability discrepancy was self-identified in PGCo NCR 612 and Edison NCR 332 which were written on October 13, 1981, prior to the NRC inspection. PGCo NCR 612 identified that traceability markings were cut-off bolt ends when 19 bolts were shortened pursuant to Field Change Order (FCO) 3272 and were not transferred to applicable bolt heads. This action rendered traceability of these bolts indeterminate. As part of the disposition and corrective action for this discrepancy, determination was made that the 19 bolts had been received on Material Receiving Report (MRR)#5954 and that all bolts received on that MRR were from heat number 8084327. Therefore, each bolt was reidentified in accordance with FCO 6762 with heat #8084327. Upon completion of this reidentification, Edison was in compliance with Criterion VIII.

With regard to the traceability and control of steam generator support cap screws (bolts) transferred to and/or from Braidwood, records exist which establish the traceability of those bolts and their respective movements back and forth. At the time of NRC Inspection 82-05, the NRC was not made aware of these records because the proper correlation of the records had not been accomplished to make them readily retrievable.

CONTENTION ITEM 8.A

A correlation to establish traceability of the steam generator bolts utilized at Braidwood has since been undertaken. Preliminary results of this correlation establish that, for all bolts transferred to and/or from Braidwood, records were maintained and exist today which demonstrate control and traceability. No transfers of bolts between Braidwood and either Byron or Rockwell Engineering, occurred after June 27, 1979. The only steam generator bolts received at Braidwood after June 27, 1979 were new purchases from Teledyne Brown Engineering. The correlation for all steam generator bolts utilized at Braidwood is continuing at this time.

CONTENTION ITEM 8.A

REFERENCES

1. Inspection Report 56/82-05; 50-457/82-05 (pages A0001005-A0001018).
2. Commonwealth Edison Nonconformance Report 332 (pages B0006071-B0006092).
3. Phillips-Getschow Nonconformance Report 612 (pages K0011650-11664).
4. FCO #3272, dated September 30, 1981 (pages L0001632-1635).
5. FCO #6762, dated October 20, 1982 (pages L0001636-1637).
6. MRR #5954 (pages 0003351-3354).
7. Licensing file on Item 82-05-04, Cont. 8.A (pages A0008022-A0008143).

CONTENTION ITEM 8.A

NAMES AND ADDRESSES

L. G. McGregor	NRC Region III
W. J. Key	NRC Region III
Cordell Reed	Commonwealth Edison Company
G. Groth	Commonwealth Edison Company
S. Hunsader	Commonwealth Edison Company
M. Dougherty	Commonwealth Edison Company (Consultant)
J. Stewart	Phillips Getschow Company

CONTENTION ITEM 8B

8. Contrary to Criterion VIII, "Identification and Control of Materials, Parts and Components," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures are established for the identification and control of materials, parts, and components including partially fabricated assemblies in order to prevent the use of incorrect or defective material, parts or components.
- B. "10,500 feet of General Electric "VULKENE" switchboard wire was received at Braidwood. Some of this wire has been installed without appropriate qualification to IEEE 383-1974. (CAT Inspection Report 84-44/40, Exh. 10.)

RESPONSE

This item was identified during the NRC Construction Appraisal Team (CAT) inspection conducted by the Office of Inspection and Enforcement on December 10-20, 1984 and January 7-18, 1985. The item was reported in the Inspection Report Numbers 50-456/84-44; 50-457/84-40, dated 2-20-85. The item was also transmitted to Commonwealth Edison Company on April 11, 1985 on a Notice of Violation (Item 2a) to Inspection Report 50-456/84-44 and 50-457/84-40.

In the subject inspection report it was noted that G.E. "VULKENE" switchboard wire was installed without adequate qualification to IEEE 383-1974. The purchase orders for the safety-related "VULKENE" switchboard wire did not invoke the requirements of any Braidwood equipment specification but rather referred to a Commonwealth Edison Company system standard EM-30105 "Switchboard wire for stations and substations".

CONTENTION ITEM 8B

The initial purchase order P.O. #207116 for switchboard wire dated 11/29/76 did invoke the requirements of specification L-2823 "600V Power and Control Cable". A subsequent change order to the purchase order dated 10/28/77 deleted the L-2823 specification requirements and correctly specified Rockbestos standard "Off the Shelf" Firewall SIS 600V switchboard wire. The subsequent "VULKENE" switchboard wire purchase orders were unrelated to the initial switchboard wire purchase order #207116 and are, for the most part, Commonwealth Edison Co. Blanket P.O.'s.

Commonwealth Edison Company issued Nonconformance Report (NCR) Number 707 to document and track the G.E. "VULKENE" switchboard wire (SI57275) which was received at Braidwood. NCR 707 was subsequently revised to set the received total for Vulkene wire at 13,500 feet. This NCR was submitted to Sargent & Lundy for review. After reviewing environmental qualification for G.E. SI57275 switchboard wire, Sargent & Lundy recommended that the G.E. wire currently on hold be removed from the site and any GE "VULKENE" wire which has been field installed in harsh environments be replaced with Rockbestos type SIS switchboard wire. Documentation is on file at Sargent & Lundy to support environmental qualification of the G.E. "VULKENE" switchboard wire in mild environments.

Commonwealth Edison Company and L. K. Comstock performed a field survey to identify and place on Hold uninstalled G.E. "VULKENE" switchboard wire documented as being received on Site on the Material Receiving Reports (MRR) listed in NCR 707, Revision 1.

CONTENTION ITEM 8B

A program is being developed to inspect safety-related electrical equipment located in harsh environments in order to identify field installed G.E. "VULKENE" switchboard wire received at Braidwood under the MRRs listed on NCR 707, Rev. 1. This identified wire will be replaced with Rockbestos SIS wire.

Switchboard wire is the only safety related wire/cable purchased for use at the Braidwood site which is not purchased pursuant to an S&L Specification, but rather on a purchase order basis. All S&L specifications for cable require qualification for use in harsh environments, as applicable. Accordingly, the use of G.E. "VULKENE" switchboard wire in a harsh environment at the Braidwood site is an isolated case.

FSAR Table 3.11.2 identifies the normal, abnormal and accident environmental conditions which would be encountered in all plant areas. These areas are then assigned an alpha-numeric code by building. Areas which are to be considered harsh by L.K. Comstock are shown on S&L drawings.

In addition, ECN (Engineering Change Notice) 27578 has been issued to revise Edison Standard EM 30105 B/B to identify approved suppliers of SIS wire for the Braidwood site. An amendment to S&L Specification F/L 2790 will incorporate the changes implemented by the above ECN. Current methods of receipt inspection per CECO procedure PCD-07 should prevent recurrence.

CONTENTION ITEM 8B

REFERENCES

1. NRC Construction Appraisal Team Inspection Report Numbers 50-456/84-44; 50-457/84-40, dated February 20, 1985 (pages A0002984-3121).
2. C. E. Norelius letter to Cordell Reed, dated April 11, 1985 transmitting Notice of Violation to Inspection Report 50-456/84-44; 50-457/84-40 (pages A0003122-3126).
3. D. L. Farrar letter to J. G. Keppler, dated May 16, 1985 (pages A0003127-3144).
4. Commonwealth Edison Company Nonconformance Report Number 707, Revision 1 (pages B0005714-B0005730).
5. Purchase Order Number 207116 (pages C0003279-C0003285).
6. Sargent & Lundy Engineering Change Notice 27578 (pages J0001278-J0001316).
7. Braidwood Final Safety Analysis Report Table 3.11-2 (pages A0014054-A0014062).
8. Commonwealth Edison Company System Standard EM-30105 B/B (pages C0003355-C0003356).
9. Licensing file on Item 84-44-03, Cont. 8.B (pages A0008144-8176).

CONTENTION ITEM 8B

NAMES AND ADDRESSES

S. Stein	NRC CAT
D. Ford	NRC CAT
W. Kropp	NRC Region III
J. Phelan	Commonwealth Edison Company
J. Gieseke	Commonwealth Edison Company
E. Netzel	Commonwealth Edison Company
M. Teras	Commonwealth Edison Company
J. D. Regan	Sargent & Lundy

CONTENTION ITEM 8.C

- 8. Contrary to Criterion VIII, "Identification and Control of Materials, Parts and Components," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures are established for the identification and control of materials, parts and components including partially fabricated assemblies in order to prevent the use of incorrect or defective material, parts or components.
- C. Phillips-Getschow hangers in lower cable spreading room did not utilize ASTM A307 fasteners per Sargent & Lundy standard. Also battery racks had bolting material that did not meet the requirements of ASTM A307 (CAT Inspection Report 84-44/40, Exhibit 10).

RESPONSE

The condition referred to was observed during a CAT Team Inspection. The results were recorded in NRC Inspection Report 50-456/84-44; 50-457/84-40. The observation was identified in the portion of the inspection on material traceability and control. The observation as stated in Section VI.B.1.b(2) of the CAT Inspection Report is as follows:

"Sargent & Lundy Standard EB 115.0 required the use of ASTM A307 bolting material for Class IE seismic cable tray hangers. Hangers in the lower cable spreading room were examined and found to have fasteners installed that did not comply with ASTM A307. Also, the generic qualification document issued by Gould Inc. for Braidwood's ASTM A307 bolts for battery racks. The battery racks were inspected and found to have bolting material that did not meet the requirements of ASTM A307. Commonwealth Edison issued NCR L-692 to identify these items."

This observation was subsequently identified as a severity Level IV non-compliance in a Notice of Violation (C. E. Norelius to Cordell Reed) on April 11, 1985.

CONTENTION ITEM 8.C

The relevant cable tray hangers in the lower cable spreading room have been installed by L. K. Comstock not Phillips-Gettschow as stated in the contention. Subsequently, it was determined that some ASTM A307 bolts purchased and installed by other site contractors also lacked a manufacturer's identification mark as observed by the CAT Inspection Team.

ASTM A307, Section 8.1, states in part: "bolt heads shall be marked (by raised or depressed mark at the option of the manufacturer) to identify the manufacturer". Commonwealth Edison and/or its contractors did not identify the lack of manufacturer's identification markings during receipt inspections. There is no requirement for material grade markings on ASTM A307 bolt heads.

The apparent cause of the non-conformance is that ASTM A307 bolts do not require grade marking as do ASTM high strength bolts such as A325 and A490. They were thus accepted with no marking, provided the supplier furnished certificates of conformance to ASTM A307. Suppliers typically purchase these bolts from more than one manufacturer. Commonwealth Edison has purchased approximately 500,000 A307 bolts from various suppliers. The number of bolts previously supplied without manufacturer's marking is unknown. It is only known that some of the bolts supplied as ASTM A307 with certificates of conformance from the supplier failed to have a manufacturer's identification mark.

CONTENTION ITEM 8.C

Commonwealth Edison has initiated NCR No. L-692 to document and track this issue. A sample of bolts has been tested. The test results show that in all cases the bolts exceed the minimum strength requirements of ASTM A307 (by a minimum of 20%). The battery racks are currently being reworked due to other reasons and, as this work takes place, L.K. Comstock is also installing bolts with proper ASTM markings. Additional sampling and other corrective actions necessary to close NCR L-692 are under consideration.

Commonwealth Edison Company Project Procedure PCD-01, "Material and Equipment Receiving, Inspection, Storage Removal and Inventory", has been revised to indicate manufacturers identification mark on bolt heads as a receiving inspection attribute as added assurance for the future. Commonwealth Edison issued a directive letter (BR/PCD 85-381) to all site contractors to clarify procurement/receiving requirements for ASTM A307 bolts.

CONTENTION ITEM 8.C

REFERENCES

1. CAT Inspection Report Number 50-456/84-44; 50-457/84-40, February 20, 1985 (pages A0002984-3121).
2. Letter (C.E. Norelius to Cordell Reed) Notice of Violation referring to CAT Inspection Report Number 50-456/84-44; 50-457/84-40, April 16, 1985 (pages A0003386-3409).
3. Letter (D. L. Farrar to J. G. Keppler) Response to Notice of Violation and Inspection Reports Numbers 50-456/84-44 and 50-457/84-40, May 16, 1985 (pages A0003127-3144).
4. Commonwealth Edison Non-conformance Report L-692, January 3, 1985 (pages B0006047-B0006060).
5. Letter (L. V. Jacques to W. Vahle) Sargent & Lundy interim response to NCR L-692, April 18, 1985 (pages P0000262-265).
6. Systems Material Analysis Department Report on the Evaluation of Carbon Steel Hex Head Bolts for Braidwood Generating Station; M-2239-85, June 11, 1985 (pages P0000254-259).
7. Letter (L. V. Jacques to W. Vahle) Sargent & Lundy final response to NCR L-692, July 9, 1985 (pages D0000103-110).
8. ASTM A307; Standard Specification for Carbon Steel Externally and Internally Threaded Standard Fasteners (page P0000273).
9. Commonwealth Edison Project Procedure PCD-01, Material and Equipment Receiving, Inspection, Storage Removal and Inventory (pages C0003234-3269).
10. Letter (D. L. Shamblin to All Site Contractor Project Managers; BR/PCD 85-381) Manufacturers Identification Markings on ASTM A307 Bolt Heads, April 26, 1985 (pages P0000260-261).
11. Licensing file on Item 84-44-04, Cont. 8C (pages A0008177-8209).

CONTENTION ITEM 8.C

NAMES AND ADDRESSES

C. E. Norelius	NRC
N. A. Schryer	Commonwealth Edison Company
J. W. Gieseke	Commonwealth Edison Company
T. Quaka	Commonwealth Edison Company
D. L. Shamblin	Commonwealth Edison Company
W. A. Vahle	Commonwealth Edison Company
J. Phelan	Commonwealth Edison Company
J. S. Caturano	Commonwealth Edison Company
N. J. Mares	Commonwealth Edison Company
L. V. Jacques	Sargent & Lundy

CONTENTION ITEM 8.D

- 8. Contrary to Criterion VIII, "Identification and Control of Materials, Parts and Components," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures are established for the identification and control of materials, parts and components including partially fabricated assemblies in order to prevent the use of incorrect or defective material, parts or components.
- D. Shoe covers were not worn by personnel entering the recirculation sump area during BWPT EF-11 and some debris was noted in the sump water during preoperational test. (Inspection Report 85-08, Exhibit 23.)

RESPONSE

A routine NRC safety inspection was conducted by Messrs. D. L. Williams, A. Dunlop Jr., M. J. Farber and M. A. Ring on February 14 through March 27, 1985. The results of these inspections were recorded in NRC Inspection Report Number 50-456/85-008 (DRS); 50-457/85-008 (DRS).

The subject report noted that, while the NRC inspectors were viewing a test of the activation of the recirculation mode of the Emergency Core Cooling System (ECCS) pumps and containment spray pump, cleanliness controls were either being ignored or not enforced. This was considered contrary to Criteria XIII, not VIII as quoted in the Contention. ANSI N45.2.1-1973 requires that, in order to maintain cleanliness classification, certain precautions are to be adhered to in order to prevent the introduction of foreign material into the Reactor Coolant System. These precautions require access control, material accountability, personnel accountability, and shoe coverings. The inspector observed that shoe covers were not being worn while in the containment sump area cleanliness zone, although they were being worn in the refueling cavity.

CONTENTION ITEM 8.D

In addition, during observation of water flow during testing, while ECCS pumps were taking suction from the containment recirculation sumps, the inspector noted some debris, primarily paper, in the sump and surrounding area that had entered the suction flow path.

In order to place this item of noncompliance in perspective, it is necessary to discuss the general system configuration during this test. During this test water is taken from the containment sump by the ECCS pumps. These pumps force the water through the ECCS piping to the Reactor Coolant System and into the Reactor Pressure Vessel (RPV). Water overflows the RPV and begins to fill the reactor cavity. Water from the reactor cavity is moved back to the containment sumps via a temporary line. During the test both the containment sump and the Reactor Cavity reassemble pools filled to various levels with water the surface of which is open to the atmosphere. This test is performed and this configuration is employed only a few times (once or twice) during the preoperational testing phase of the unit.

The cleanliness program established by Commonwealth Edison was designed to maintain system cleanliness resulting from system flush, to prevent the accidental or inadvertant dropping of material into the containment sump and reactor cavity (and its subsequent ingestion into the ECCS pumps) and, finally, for personnel protection. The cleanliness program established by Commonwealth Edison ECCS Full Flow (integrated system) test was an extensive detailed program which included the use of guards, restriction of personnel, and construction of a building around

CONTENTION ITEM 8.D

the sump area and the reactor cavity. Although the cleanliness program established by Edison for the full flow test had been reviewed with the NRC prior to its implementation, Commonwealth Edison agreed that shoe covers were neither required by that program nor provided for nor worn by personnel entering the recirculation sump area during this test. Further, Commonwealth Edison agreed that it is ultimately responsible for setting requirements and maintaining cleanliness during testing. Commonwealth Edison took immediate action to place shoe covers in the area and to change its program to require that the shoe covers be worn in the sump area for the remaining portion of the test.

Edison took a number of steps to ensure the cleanliness of the system and its freedom from debris prior to the test. For example, prior to commencing the test the sump was hand wiped to remove any foreign material. Immediately prior to the test the sump area was again examined by the testers and shift personnel. Some debris was found and removed at that time. Edison believes that the paper debris noticed by the inspector was purge dam material. Approved purge dam material does not have a deleterious effect on plant equipment. Moreover, system flushing removes this type of material.

A training session was conducted with start-up testing personnel apprising them of this incident. The training included a discussion that specification of cleanliness requirements needs follow-up and that any established cleanliness requirements should be discussed during testing

CONTENTION ITEM 8.D

briefings. This training also included a discussion of general housekeeping requirements to be employed during testing. This test configuration is an infrequent event. Current procedures combined with the training referred to above, plus the infrequency of this test configuration, are sufficient to prevent recurrence of a similar incident.

CONTENTION ITEM 8.D

REFERENCES

1. NRC Inspection Report 50-456/85-008; 50-457/85-008.
(pages A0003319-3330).
2. D. L. Farrar letter to J. G. Keppler dated, May 15, 1985,
transmitting response to Item of Noncompliance
(pages A0003331-A0003335).
3. Licensing file on Item 85-008-10C, Contention 8.D.
(pages A0008210-8230).

CONTENTION ITEM 8.D

NAMES AND ADDRESSES

D. L. Williams	NRC Region III
A. Dunlop, Jr.	NRC Region III
M. J. Farber	NRC Region III
M. A. Ring	NRC Region III
R. J. Farr	Commonwealth Edison Company
H. A. Zimmerman	Commonwealth Edison Company
C. J. Tomashek	Commonwealth Edison Company

CONTENTION ITEM 8.E

8. Contrary to Criterion VIII, "Identification and Control of Materials, Parts and Components," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures are established for the identification and control of materials, parts and components including partially fabricated assemblies in order to prevent the use of incorrect or defective material, parts or components.
- E. Permanent spool pieces for Residual Heat Removal Suction Lines and Containment Spray Pump Suction Lines were found with inadequate or non-existent coverings for protection against damage or deterioration of these components. (Inspection Report 85-08, Exh. 23.)

RESPONSE

A routine NRC safety inspection was conducted by Messrs. D. L. Williams, A. Dunlop Jr., M. J. Farber and M. A. Ring on February 14 through March 27, 1985, of activities at Braidwood Nuclear Power Station, Units 1 and 2. The results of this inspection were documented in the Inspection Report No. 50-456/85-008 (DRS); 50-457/85-008 (DRS).

This report noted that contrary to Criteria XIII (not VIII as quoted in the Contention) and to the regulatory positions of Regulatory Guide 1.37, Revision 0; Regulatory Guide 1.38, Revision 2; and Regulatory Guide 1.39, Revision 2, on March 15 and 21, 1985, the permanent spool pieces for Residual Heat Removal Suction lines and Containment Spray Pump suction lines were found with inadequate or non-existent coverings for protection from damage.

CONTENTION ITEM 8.E

Commonwealth Edison has recognized the need to maintain piping cleanliness during installation. Commonwealth Edison believes that tape, when intact, is an adequate protective covering method. Commonwealth Edison acknowledged the example of tape coverings not intact which the Inspector cited.

At Commonwealth Edison's direction, because of the length of time these covers would be in use, Phillips Getschow Company (PGCo) replaced all spool piece covers for residual heat removal and containment spray suction lines with wooden covers. Cleanliness of piping is also verified by PGCo at the time of installation in accordance with procedures QCP-B28 and PGCP-15.

In practice, these procedures assure that at the time of final assembly all significant dirt and debris are removed from piping segments. PGCo management issued a memo to appropriate foremen reminding them of requirements necessary for maintaining cleanliness of piping during installation.

In addition, there are two additional programs which will assure the effectiveness of the above-described corrective actions. In connection with resolution of an item of non-compliance described in NRC Inspection Report 82-05, PGCo is disassembling items of mechanical equipment previously installed in piping systems. The piping systems are inspected for cleanliness at that time. Finally, the flushing of each system prior to startup will assure its cleanliness.

CONTENTION ITEM 8.E

REFERENCES

1. NRC Inspection Report No. 50-456/85-008 (DRS); 50-457/85-008 (DRS) as transmitted by J. J. Harrison letter to Cordell Reed dated April 18, 1985 (pages A0003319-A0003330).
2. D. L. Farrar letter to J. G. Keppler dated May 15, 1985 (pages A0003331-A0003335).
3. W.T. Nicholson memo to distribution dated May 16, 1985 (page L0000030).
4. PGCo Procedure QCP-B28 (pages L0001580-L0001605).
5. Licensing file on Item 85-008-10B, Cont. 8.E (pages A0008231-A0008251).
6. NRC Inspection Report No. 50-456/82-05 (DPRP); 50-457/82-05 (DPRP) as transmitted by J.G. Keppler dated February 2, 1983 (pages A0001021-1060).
7. PGCo Procedure PGCP-15 (pages L0001498-L0001519).

CONTENTION ITEM 8.E

NAMES AND ADDRESSES

J. J. Harrison	NRC Region III
D. L. Williams	NRC Region III
A. Dunlop	NRC Region III
M. J. Farber	NRC Region III
M. A. Ring	NRC Region III
M. A. Gorski	Commonwealth Edison Company
R. J. Farr	Commonwealth Edison Company
T. O'Connor	Phillips Getschow Company

CONTENTION ITEM E.F

8. Contrary to Criterion VIII, "Identification and Control of Materials, Parts and Components," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures are established for the identification and control of materials, parts and components including partially fabricated assemblies in order to prevent the use of incorrect or defective material, parts or components.
- F. During tours of the 1A positive displacement charging pump room, the following was observed: empty cans in the room cooler, plastic sheeting strewn about the area, partially eaten food items, accumulation of flammable material and a layer of dust on all equipment in the room. (Inspection Report 85-08, Exh. 23.)

RESPONSE

A routine NRC safety inspection was conducted by Messrs. D. L. Williams, A. Dunlop Jr., M. J. Farber and M. A. Ring on February 14, through March 27, 1985. The results of these inspections were documented in Inspection Report 50-456/85-008; 50-457/85-008 which cited this item as an example of violation against criteria XIII, not VIII. The subject report noted that, during a plant tour, the inspector found an accumulation of debris in the 1A positive displacement charging pump room.

Clean up crews are assigned on continual basis to clean plant areas. The changing nature of construction necessitates housekeeping changes as well. Areas in which construction work is currently active are cleaned more frequently than areas with no ongoing construction. Construction changes and the late arrival of field housekeeping crews to an area or failure to direct housekeeping crews to clean this area on a more frequent basis caused the item which the NRC identified. While at any given time isolated areas of the plant may appear untidy, QA walk through surveillances indicate no generic breakdown of housekeeping measures.

CONTENTION ITEM 8.F

Commonwealth Edison verbally instructed G.K. Newberg (GKN), the contractor responsible for cleanliness control in this area, to clean the area. This area has been cleaned.

Commonwealth Edison also issued a letter to GKN discussing this discrepancy in the cited area and directing that appropriate field personnel be informed of this problem. GKN has informed the appropriate personnel. Commonwealth Edison and site contractors will continue to implement the provisions of Project Procedure PCD-05, Project Housekeeping. That procedure, which was instituted July 6, 1984, replaced earlier, less formal guidance to the contractors which had been periodically issued since the project began. 267 surveillances of housekeeping activities have been implemented since PCD-05 was issued.

CONTENTION ITEM 8.F

REFERENCES

1. NRC Inspection Report 50-456/85-008; 50-457/85-008 (pages A0003319-3330).
2. D. L. Farrar letter to J. G. Keppler dated May 15, 1985, transmitting Response to Item 456/85-008-10A (pages A0003331-3335).
3. P. G. Hoffman letter to D. Craven dated May 7, 1985 (page C0003392).
4. Site Quality Assurance Surveillance Numbers 4164, 4305, 4308, 4347, 4367, 4461, 4500, 4502, 4519, 4537, 4539, 4541, 4561, 4584, 4649, 4662, 4676, 4707, 4737 and 4788 (pages B0005641-5692).
5. Project Procedure PCD-05, Project Housekeeping (pages 0003193-3233).
6. Licensing file on Item 85-008-10A, Cont. 8.F (pages A0008252-A0008273).

NAMES AND ADDRESSES

D. L. Williams	NRC Region III
A. Dunlop, Jr.	NRC Region III
M. J. Farber	NRC Region III
M. A. Ring	NRC Region III
P. G. Hoffman	Commonwealth Edison Company (Consultant)
D. Shamblin	Commonwealth Edison Company
D. Craven	G. K. Newberg

CONTENTION ITEM 9.A

9. Contrary to Criterion IX, "Control of Special Processes," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures be established to assure that special processes, including welding are controlled and accomplished in accordance with applicable codes, standards, specifications, criteria and other special requirements.
- A. 127 safety-related structural steel fillet welds were painted prior to acceptance of the work and the welds were subsequently visually inspected for acceptance, with 79 accepted in the painted condition. In addition, visual weld inspections were not performed on safety-related full penetration welds completed under the jurisdiction of Structural Specifications F/L-2735 and F/L-2722 prior to May 1, 1984. The welds were accepted based on other methods of nondestructive examination, but were not accepted in accordance with the requirements of Section 9.15, Quality of Welds, Visual Inspection. (Inspection Report 84-21/20, Exh. 20.)

RESPONSE

A routine NRC inspection was conducted by Messrs. L.G. McGregor and R. D. Schulz from September 4 through October 5, 1984. The results of the inspection as recorded in Report Number 50-456/84-21 (DRP); 50-457/84-20 (DRP). The inspectors noted that during their review of visual weld inspections, Commonwealth Edison had determined that 120 (not 127 as stated in the contention) safety-related structural steel fillet welds were painted prior to acceptance of the work and that the welds were subsequently visually inspected by the Pittsburgh Testing Laboratory for acceptance, with 79 accepted in the painted condition.

In response to this finding, Commonwealth Edison agreed that certain structural steel fillet welds were painted prior to acceptance of work. (71, not 79, of these had actually been accepted in the painted

CONTENTION ITEM 9.A

condition. The other 51 of the actual 122 painted welds (not 120 as reported by the NRC) had been rejected. A 100% review of the Napoleon visual weld reports indicated that inspection of structural welds "through paint" was performed by a single inspector during a nine calendar day period in 1980 and was limited to the five reports identified encompassing 122 welds. These inspections were performed "through paint" at the direction of CECO Site Quality Assurance and are deemed to be an isolated occurrence. Upon removal of the paint from the 122 painted welds, including the 71 welds which had been accepted, all 122 welds were reinspected and 23 welds are being repaired. Pittsburgh Testing Laboratories Nonconformance Report Number 191 Revision 1 provides detail of the weld inspection records review and subsequent weld repair reinspections.

To prevent recurrence, Pittsburgh Testing Laboratory was directed to perform first line weld inspection only in the unpainted condition. Commonwealth Edison NCR's 628, 629 and 700, and G. K. Newberg NCR 213-993 address inaccessible, missing, and reduced size welds. The Commonwealth Edison NCR's dispositioned two inaccessible welds and one missing weld, and one reduced size weld "use as is" based on engineering evaluation which demonstrated that those welds were no longer required by the design. Disposition of G. K. Newberg NCR 213-993 relating to reduced size welds is still pending.

The NRC inspection report also noted that visual weld inspections, which identify acceptable workmanship, size, length, location of welds,

CONTENTION ITEM 9.A

and that no unspecified welds were added, were not performed on safety-related full penetration welds completed under the jurisdiction of structural specifications F/L-2722 and 2735 prior to May 1, 1984. The report stated welds were accepted based on other methods of nondestructive examination as defined in these specifications, but were not accepted in accordance with the requirements of Section 9.15 of AWS D1.1-1977, "Quality of Welds, Visual Inspection".

In response to this NRC item, Commonwealth Edison agreed that in accordance with the requirements of AWS D1.1, a visual inspection of full penetration groove welds is required even if other nondestructive examination (NDE) is specified. However, Commonwealth Edison pointed out that AWS D1.1 does not preclude the architect engineer from performing an engineering evaluation of weld inspections and establishing weld inspection methods other than visual inspections as appropriate for weld acceptance. S&L had established such alternate inspection methods as delineated in Specifications F/L-2722 and 2735. Nevertheless, Commonwealth Edison initiated NCR 616 Revision 1 which requested an evaluation of the NDE actually used in lieu of the visual examination as defined in AWS D1.1. The architect/engineer has accepted magnetic particle and liquid penetrant examination results for acceptance of the quality of the welds in question in lieu of the separate AWS visual examination.

CONTENTION ITEM 9.A

Further documentation review indicated one other instance in which 8 fillet welds which were not full penetration welds were accepted on the basis of visual inspection through paint plus magnetic particle testing. The same procedure as stated above will be used to disposition these welds.

In addition, NCR 616, Revision 1 was revised to include the size, length, and location aspects of all partial and full penetration groove weld installed prior to May 1, 1984 for evaluation by Sargent & Lundy. This evaluation is not yet complete. Specification F/L-2722 has been revised to more clearly identify the requirements for visual inspection of full and partial penetration groove welds and Gust K. Newberg procedure No. 55 has been revised to incorporate the revised specification requirements for visual weld inspection. At this time current activities are now in compliance.

It has been verified that other contractors at the Braidwood site performing welds in accordance with AWS D1.1 (Comstock and Pullman) had specific procedures which required that visual weld inspections be made when the weld was in an unpainted condition.

CONTENTION ITEM 9.A

REFERENCES

1. NRC Inspection Report 456/84-21; 457/84-21
(pages A0002364 - A0002384).
2. NRC Inspection Report 456/84-08; 457/84-08
(pages A0002086 - A0002103).
3. D.L. Farrar letter to J.G. Keppler dated January 31, 1985,
enclosure: Response to Inspection Report Item 456/84-21-01;
457/84-21-01 and 456/84-21-02; 457/84-21-02
(pages A0002385 - A0002396).
4. Commonwealth Edison Nonconformance Report No. 616, Revision 1
(pages B0002398 - 2404).
5. Commonwealth Edison Nonconformance Report No. 616, Revision 2
(pages B0000858 - B0000871).
6. Commonwealth Edison Nonconformance Report No. 628
(pages B0000886 - B0000894).
7. Commonwealth Edison Nonconformance Report No. 629
(pages B0000878 - B0000885).
8. Commonwealth Edison Nonconformance Report No. 700
(pages B0000872 - B0000877).
9. Pittsburgh Testing Laboratory Nonconformance Report No. 191, Rev 1
(pages B0000984 - B0000998).
10. G. K. Newberg Nonconformance Report No. 213-993
(pages B0000919 - B0000921).
11. G. K. Newberg Procedure No. 55 (pages R0000064 - 77).
12. General Structures Work, Specifications F/L-2722, 2735
13. BRD. letter No. 13067, Sept 19, 1984 (pages B00001030).
14. Licensing file on Item 84-21-01, cont. 9.A.
(pages A0008274 - A0008319).

CONTENTION ITEM 9.A

NAMES AND ADDRESSES

L. G. McGregor	NRC Region III
R. D. Schulz	NRC Region III
B. Tanouye	Commonwealth Edison Company
W. Bruns	Commonwealth Edison Company
K. Miller	Commonwealth Edison Company
F. Forrest	Pittsburgh Testing Laboratory

CONTENTION ITEM 9.B

9. Contrary to Criterion IX, "Control of Special Processes," 10 C.F.R Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures be established to assure that special processes, including welding are controlled and accomplished in accordance with applicable codes, standards, specifications, criteria and other special requirements.
- B. A newly designed reactor coolant pump lateral support anchorage was installed in Units 1 and 2 without records to establish the material heat number, charpy impact tests, lamination tests, welder identification, weld procedure, weld filler material, in-process inspections and other quality related records. (Inspection Report 84-21/20, Exh. 20.)

RESPONSE

A routine safety inspection was conducted by Messrs. L. G. McGregor and R. D. Schulz on September 4 through October 5, 1984. The results of these inspections were documented in Inspection Report 50-456/85-007; 50-457/85-007.

As noted in the subject report, the inspector identified that during the installation of the reactor coolant pump lateral supports, an interference caused by a box beam between the support brace and the embedment, to which the support brace was to be bolted, was identified. The interference was resolved by a new design that called for a gusset plate to be welded to the lower side of the box beam and for the reactor coolant pump lateral support to be bolted to this gusset plate. This newly designed reactor coolant pump lateral support anchorage was installed in Units 1 and 2 without ASME-type records that would have established the material heat number, Charpy impact tests, lamination tests, welder identification, weld procedure, weld filler material,

CONTENTION ITEM 9.B

in-process inspections and other quality related records. According to the inspection report, these records were required by Sargent & Lundy Specification L-2797.

In response to this NRC finding, Commonwealth Edison agreed that the subject lateral support was installed without Charpy impact tests and that the welder identification could not be established by records. This data was required by the FCR and the contractor's work procedures, respectively. The other inspections/records identified by the NRC inspector are not required because this installation is not within the established jurisdictional boundary of the ASME Section III Subsection NF Code. The design change and subsequent field modification to the subject Reactor Coolant Pump Lateral Support was handled in accordance with the Commonwealth Edison Company Quality Assurance Manual and with the applicable approved contractor procedures in effect at the time of the modification.

Commonwealth Edison took exception to the statement that necessary records to support the design change are inadequate or nonexistent. When the interference was identified, a Field Change Request was initiated by Commonwealth Edison, in accordance with the Commonwealth Edison Quality Assurance Manual, to obtain the necessary design change prior to continuing installation activities. Upon approval of the FCR, the modification was assigned to the structural steel contractor for implementation.

CONTENTION ITEM 9.B

Commonwealth Edison contends the design meets the FSAR requirements and the design changes were made in accordance with the approved Quality Assurance Program.

The installation of the gusset plates was performed by Napoleon Steel Contractor, Inc. under their approved Quality Program in accordance with Sargent and Lundy Specification L-2722 which governed the work activities of the contractor. The reference to Specification L-2797 for installation is not applicable. Specification L-2797 is the specification for fabrication of the NSSS Supports performed by Teledyne Brown. The installation of the gussets was performed by qualified welders using approved welding procedures and safety related material. The weld inspections were performed by Commonwealth Edison Company's Independent Inspection Agency. The qualifications of the welders employed by Napoleon is described in answer to Interrogatories 50 and 59, Contention Item 12.I, which is incorporated herein by reference.

During the review of this item, Commonwealth Edison Company identified that A588 material, procured and installed as gusset plates, did not have the required testing. Subsequently, Commonwealth Edison Company NCR No. 661 was initiated to identify and resolve this newly identified nonconforming condition. As a result of the NCR, Sargent and Lundy issued ECN 23836 deleting the additional testing requirements. The deletion of the testing requirement is consistent with the Sargent and Lundy design specification for structural steel. NCR 661 was closed by CECO Site QA on February 19, 1985.

CONTENTION ITEM 9.B

REFERENCES

1. Inspection Report 50-456/84-21; 50-457/84-20, dated November 20, 1984 (pages A0002364-A0002384).
2. D. L. Farrar letter to J. G. Keppler dated January 31, 1985 provided Commonwealth Edison's response (pages A0002385-A0002396).
3. Commonwealth Edison Nonconformance Report No. 661 (pages B0005013-B0005069).
4. Licensing file on Item 84-21-08, Cont. 9.B (pages A0008320-A0008391).

CONTENTION ITEM 9.B

NAMES AND ADDRESSES

L. G. McGregor	NRC Region III
R. D. Schulz	NRC Region III
D. A. Boone	Commonwealth Edison Company (Consultant)

CONTENTION ITEM 9.C

9. Contrary to Criterion IX, Control of Special Processes, of 10 C.F.R Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures be established to assure that special processes, including welding are controlled and accomplished in accordance with applicable codes, standards, specifications, criteria and other special requirements.
- C. Nine L. K. Comstock filler metal withdrawal authorization forms documented the release of E7018 weld rod for cable pan welds between May 25, 1982 and July 28, 1982. (Inspection Report 84-13, Exhibit 24.)

RESPONSE

A routine NRC safety inspection was conducted by L. G. McGregor and R. D. Schultz from June 5 through July 6, 1984. The results of the inspection are documented in NRC Inspection Report Number 50-456/84-13 and 50-457/84-13.

The scope of the inspection included the review of structural supports for ten cable pans in the Auxiliary Building. The inspector examined these supports to determine compliance with the applicable drawings and procedures. Attributes examined consisted of support configuration, dimensions, and welding details. In addition, L. K. Comstock (Comstock) and Pittsburgh Testing Lab inspection reports were reviewed, as well as L. K. Comstock Procedures 4.8.3 (Weld Inspection) and 4.3.10 (Storage, Issue, and Control of Welding Material).

CONTENTION ITEM 9.C

During the review of over 300 filler metal withdrawal authorization forms, which document the release of weld rods, NRC inspectors noted that nine filler metal withdrawal authorization forms documented the assignment of E7018 weld rod for use in cable pan welding. According to Sargent & Lundy drawing 20E-0-3251, Revision AC and L. K. Comstock Procedures 4.3.3 (1/29/82), use of E60 series weld rod is required for cable pan welding (see reference 1 for the specific filler metal withdrawal authorization forms cited). The NRC also noted that on the nine forms identified, several E7018 weld rod heat numbers were incorrectly listed as E6013 weld rod heat numbers.

Based on a review of the finding by Commonwealth Edison and Sargent & Lundy it was determined that the use of E70 series electrodes for cable pan welding was technically acceptable with no hardware problems implied. Commonwealth Edison's response cited the following reasons.

1. The weld rod heat numbers identified are acceptable heat numbers traceable to valid certification papers.
2. The welds made utilizing either of these electrodes meet or exceed the strength requirements specified by AWS D1.1-75.

CONTENTION ITEM 9.C

3. The welders making these welds were qualified to use either filler metal.
4. Welding always required a 100% visual inspection and any unacceptable welds would have been identified.

In Inspection Report 456/457-85-005, March 12, 1985, the NRC stated that "the problems identified were the result of documentation error". The NRC has closedout this item because filler metal of either type met the design requirements. As stated in Commonwealth Edison response the following corrective action was taken to avoid further noncompliance:

1. LKC NCR 3275 has been issued to identify and disposition other possible violations of L.K. Comstock welding procedure 4.3.3. The initial disposition, which required review of all past weld filler metal withdrawal authorization forms, is being re-evaluated.
2. L. K. Comstock Procedure 4.3.10, (Storage, Issue and Control of Welding Material), has been revised to amplify and clarify the control of weld filler metal. Personnel responsible for weld rod control have been trained in this procedure.

In addition to the above items, NCR 3275 states that the Sargent & Lundy drawings were revised per ECN 23028 to allow the use of either E60 or E70 series electrode for cable pan welding.

CONTENTION ITEM 9.C

See also CECO's answer to Specific Interrogatories 58 and 59,
Contention Item 3.A.1.

CONTENTION ITEM 9.C

REFERENCES

1. R. F. Warnick letter to Cordell Reed dated, August 7, 1984
(pages A0002251-A0002268).
Enclosure: Appendix, Notice of Violation
Inspection Report: Number 50-456/84-13 (DRP); and
50-457/84-13 (DRP)
2. D. L. Farrar letter to J. G. Keppler, dated September 21, 1984
transmitting Commonwealth Edison Company Response to Inspection
Report 50-456/84-13 and 50-457/84-13 (pages A0002269-A0002273).
3. NRC Inspection Report 456/457-85-005, dated March 12, 1985
(pages A0003250-A0003275)
4. L.K. Comstock NCR 3275 (pages 00000655-00000683).
5. L.K. Comstock Procedure 4.3.10 (Rev. D.) (pages
00002554-00002581)
6. Licensing file on Item 84-13-09, Cont. 9.C (pages
A0008392-A0008449)

CONTENTION ITEM 9.C

NAMES AND ADDRESSES

J. G. Keppler	NRC Region III
R. F. Warnick	NRC Region III
C. Reed	Commonwealth Edison Company
J. Gieseke	Commonwealth Edison Company
R. Seltsman	L. K. Comstock

CONTENTION ITEM 9.D

9. Contrary to Criterion IX, "Control of Special Processes," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures be established to assure that special processes, including welding are controlled and accomplished in accordance with applicable codes, standards, specifications, criteria and other special requirements.
- D Quality structural steel was not approved for use by the Architect-Engineer, Sargent & Lundy, but was released for use in installation by the structural steel contractor and documented as being used for cover plate welds. Furthermore, the welder documented as performing the welding was not qualified. In addition, RPS Division loop B, reactor coolant flow, completed socket weld joints, have no piping records identifying the welder or weld filler metal utilized. (Inspection Report 84-17, Exh. 21.)

RESPONSE

A routine safety inspection was conducted by Messrs. L. G. McGregor, R. D. Schulz and J. F. Schapker of the NRC office on July 7 through August 31, 1984. The results of these inspections were documented in Inspection Report 50-456/84-17, 50-457/84-17. As noted in the subject report, the NRC inspector identified two examples of deficient welding control.

The first example quoted in the contention regarding structural steel was misquoted. The actual violation, as stated in Inspection Report 456/84-17 and 457/84-17 was that a quality control structural steel, flux core welding procedure, 43GW-11, Revision 0, June 11, 1984, was not approved for use by the architect engineer, but was released for use in installation traveler Number 5832 by the structural steel contractor, and documented as being used for cover plate welds. Furthermore, the welder documented as performing the welding, was not qualified to utilize quality welding procedure 43GW-11, Revision 0, dated June 11, 1984.

CONTENTION ITEM 9.D

Gust K. Newberg (GKN) engineering personnel authorized the use of AWS welding process that had not been incorporated into the procedures for flux core welding. GKN ironworkers welded AWS prequalified details that were not approved by Commonwealth Edison and Sargent & Lundy for flux core procedure and were not specified by GKN engineering. Although GKN ironworkers used the correct process they indicated the wrong procedure in the traveler package blank for welding procedure.

The inspector brought these findings to the attention of Commonwealth Edison at which time Commonwealth Edison initiated an investigation. After investigating the issues, all structural steel welding was stopped and the NRC was notified of an item potentially reportable under 10 CFR 50.55(e). GKN's initial investigation indicated that this problem was confined to flux core arc welds on some cover plate installations in Unit 1 and Unit 2 Containments and box beam end connection modifications in Unit 1 Containment. After GKN revised procedures numbers 26 and 43, reviewed the traveler packages, and re-trained engineering and craft personnel, the stop work order was lifted. Since the procedures utilized were subsequently reviewed and approved for the application in question, no negative impact on installed hardware was indicated.

During the inspection, the NRC inspector determined that adequate action had been taken to correct these deficiencies and prevent recurrence. Consequently, no written response to the NRC was required.

CONTENTION ITEM 9.D

NRC staff reviewed this issue again as documented in Inspection Report Number 456/84-40 and 457/84-37. This review concluded that previous corrective actions taken were adequate and that the NRC considered these items closed.

GKN is conducting a review of completed structural steel installation traveler packages in accordance with their Procedure 29. Any documentation corrections, as necessary, are being made in accordance with this procedure. Commonwealth Edison NCR 646 will not be closed until this review program is acceptably completed.

The second example of noncompliance, as stated in the NRC inspection report was that RPS Division Loop B, reactor coolant flow, completed socket weld joints, identified as FW21 and FW22 on drawing LFT-426, Sheet 2, Revision B, have no piping records identifying the welder or weld filler metal utilized for the pipe-elbow connections.

This item identified that a completed "socket weld joint" welding package for an instrument line did not document the welder or the weld filler metal used. Upon notification of this finding, the piping contractor immediately documented the nonconformance on a Nonconformance Report Number 1886. The undocumented welds were removed and replaced with fully documented welds.

CONTENTION ITEM 9.D

Corrective action to prevent recurrence, addressed on NCR #1886, indicated that the piping contractor's procedure, QCP-B21, was revised to require the production superintendent to record the weld rod heat and/or lot numbers, welders' identification, and rod size. Prior revisions of QCP-B21 did not address the responsibility for entering heat/lot numbers of weld filler metal used.

Prior to this requirement, the piping contractor's weld material control Procedure QCP-B, Revision 5 (in effect on the date of occurrence), required the QC Supervisor to review the information on the Weld Rod Withdrawal Slip and, if acceptable, enter that information on the Field Fabrication Process and Data Sheet.

The piping contractor's document review under its Procedure QCP-B30, Revision 2, and later, would have identified the presence of blanks in weld documentation in the course of document review activities. This document review process would identify any similar deficiencies.

CONTENTION ITEM 9.D

REFERENCES

1. Inspection Report 50-456/84-17; 50-457/84-17 dated October 16, 1984 (pages A0002303-A0002305).
2. D. L. Farrar letter to J. G. Keppler dated November 28, 1984 documenting Commonwealth Edison response (pages A0002326-A0002330).
3. Inspection Report 50-456/84-40; 50-457/84-37 dated January 18, 1985 closing Report (pages A0002770-A0002777).
4. Phillips, Getschow Nonconformance Report #1886 (pages K0015405-K0015412).
5. Commonwealth Edison Nonconformance Report 646 (pages B0005437-B0005485).
6. Gust K. Newberg procedures 26, 29, 43 (pages Q0000257-Q0000307, Q0000322-Q0000337).
7. Phillips, Getschow Company Procedure QCP-B21 (pages K0015446-K0015478).
8. Phillips, Getschow Company Procedure QCP-B8 (pages L0001568-1579).
9. Phillips, Getschow Company Procedure QCP-B30 (pages K0012860-K0012907).
10. 50.55(e) Report 84-15 (pages A0014073-A0014074).
11. Licensing File on Item 84-17-08, Contention 9.D (pages A0008450-A0008462).

CONTENTION ITEM 9.D

NAMES AND ADDRESSES

L. G. McGregor	Region III NRC
R. D. Schulz	Region III NRC
J. F. Schapker	Region III NRC
M. A. Gorski	Commonwealth Edison Company
B. Tanouye	Commonwealth Edison Company
R. A. Donica	Gust K. Newberg
J. Carlson	Phillips, Getschow Company

CONTENTION ITEM 9.E

9. Contrary to Criterion IX, "Control of Special Processes," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures to established to assure that special processes, including welding are controlled and accomplished in accordance with applicable codes, standards, specifications, criteria and other special requirements.
- E. Napoleon Steel Contractors, Inc. QA program did not require fit-up inspections for safety-related structural steel members joined by welds and therefore, QC personnel did not inspect and insure acceptable gaps for weld joints. (Inspection Report 84-08, Exh. 25.)

RESPONSE

A routine NRC safety inspection was conducted by Messrs. L. G. McGregor and R. D. Schulz of the NRC on April 1 through April 30, 1984. The results of the inspections were recorded in Report Number 50-456/84-08 (DRS); 50-457/84-08.

The subject report noted that Napoleon Steel Contractors, Inc.'s Quality Assurance Program did not require fit-up inspection for safety related structural steel members joined by welds and, therefore, Quality Control personnel did not inspect and assure that acceptable gaps for weld joints existed.

In response to the NRC findings, Commonwealth Edison acknowledged that the Napoleon Steel Contractor's QA Program for welding in-process inspections did not explicitly require documented fit-up verifications. A review of their welding and inspection program showed the following:

- (1) Structural steel welding activities were performed and welding inspection activities were controlled to assure that welding foremen,

CONTENTION ITEM 9.E

welders and quality control inspectors were aware of the procedural fit-up requirements of the implementing work procedure and the weld procedure specifications and all welders were qualified for full penetration welding. All full penetration welding was subject to a complete volumetric examination, i.e., either ultrasonic examination (UT) or radiographic testing (RT). As a result of this examination, any fit-up problems would have been discovered. Partial penetration welding was subject to magnetic particle examination. (2) Napoleon Steel Contractor's Quality Control Inspectors did monitor, at suitable intervals, the use of the proper procedures and fit-up checks. (3) During welding operations FCRS were generated when structural steel fit-ups could not be suitably obtained. (4) The extent of required documenting of welding and welding inspection has changed significantly since 1982. Commonwealth Edison is confident that the proper structural steel fit-up was completed as a part of the Napoleon Steel Contractor's welding program.

Commonwealth Edison's Nonconformance Report 636 was initiated to disposition the lack of documented fit-up gap inspections. A Sargent & Lundy review resulted in the recommendation that the identified welds be accepted without any rework. The NRC reviewed this issue, as documented in Inspection Report 50-456/85-005; 50-457/85-005, found the corrective action taken acceptable, and closed this issue.

CONTENTION ITEM 9.E

The cause of the concern was that, in the pre-1982 period, documentation of visual QC fitup inspections was not required. Fit up was considered a workmanship item. Related work now done by G.K. Newberg is governed by their procedure QCP-55 which requires 100% fit-up inspection by Quality Control.

The concern applies to the work done by Napoleon Steel which is addressed by NCR 636. Another concern related to lack of documented HVAC AWS fitup inspections is addressed by the response to Contention Item 3.A.2 (NRC Item 83-09-10B).

CONTENTION ITEM 9.E

REFERENCES

1. Inspection Report 50-456/85-005; 50-457/85-005 (pages A0003251-3249)
2. D. L. Farrar letter to J. G. Keppler, dated June 21, 1984 transmitting Commonwealth Edison response to Inspection Report 84-08 (pages A0002104-2109).
3. R. F. Warnick letter to Mr. Cordell Reed, dated June 29, 1984 transmitting NRC's acknowledgment of Commonwealth Edison's response to Inspection Report 84-08 (page A0002110)
4. D. L. Farrar letter to J. G. Keppler, dated August 16, 1984 transmitting Commonwealth Edison's Supplemental Response to Inspection Report 84-08 (page A0002111).
5. Commonwealth Edison Noncompliance Report 636 (pages B0005106-5110)
6. Inspection Report 50-456/84-08; 50-457/84-08 (pages A0002086-2103).
7. Licensing file on Item 84-08-01, Cont. 9.E. (pages A0008463-8498).

CONTENTION ITEM 9.E

NAMES AND ADDRESS

L. McGregor	NRC Region III
R. Schulz	NRC Region III
D. Shamblin	Commonwealth Edison Company
B. Tanouye	Commonwealth Edison Company

CONTENTION ITEM 10.A

10. Contrary to Criterion X, "Inspection," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that a program for inspection of activities affecting quality was 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.
 - A. An inspection program was not developed to verify the proper installation, including bolting, of the main steam generators in either Braidwood Unit 1 or 2. Although the manufacturer's procedure for setting major nuclear steam supply system (NSSS) components, including bolt installation, was available and suggested that the installation contractor provide a detailed setting procedure for the manufacturer's review, such a procedure was not developed. No records exist indicating that travelers, or process sheets, were used or reviewed by the quality control department to establish either surveillance or hold points. As of August 1982, installation inspections of the majority of mechanical safety-related equipment were either not conducted, were inadequate, were incomplete or were not documented. This violation was in part the basis for the imposition of the 2/2/83 civil penalty for "a breakdown of your Quality Assurance (QA) program." (Exhibit 3)

RESPONSE

A routine safety inspection was conducted during the period April 19 through July 20, 1982, and a special inspection was conducted on September 8-10, 1982, of activities at Braidwood Station, Units 1 and 2. The results of the inspections were discussed during an enforcement conference conducted at the NRC Region III office on August 31, 1982, and at the Commonwealth Edison Company corporate offices in Chicago, Illinois on November 19, 1982. The reports setting forth the results of the inspections and the enforcement conferences are documented in Inspection Report 50-456/82-05; 50-457/82-05.

CONTENTION ITEM 10.A

The response to this Contention Item is contained in Commonwealth Edison's responses to Specific Interrogatory 58 with respect to Contention Items 1.A, 6.A, and 8.A. In addition, corrective action programs PGCP-33 and 34 were created, approved and implemented to resolve the concern relative to steam generator bolt installation and documentation.

CONTENTION ITEM 10.A

REFERENCES

1. Inspection Report 50-456/82-05; 50-457/82-05
(pages A0001005-A0001018).
2. T. R. Tramm letter to J. G. Keppler, dated October 8, 1982,
transmitting Commonwealth Edison Report for 10CFR50.55(e) 82-07
(pages *A0003558-A0003564).
3. Phillips, Getschow Company Nonconformance Report 612
(pages K0011650-11664)..
4. PGCP-33 (pages K0015400-15404).
5. PGCP-34 (pages K0015388-15399).

CONTENTION ITEM 10.A

NAMES AND ADDRESSES

L. G. McGregor	US NRC Region III
W. J. Key	US NRC Region III
T. R. Tramm	Commonwealth Edison Company
Cordell Reed	Commonwealth Edison Company
G. Groth	Commonwealth Edison Company
M. Dougherty	Commonwealth Edison Company (Consultant)
S. Hunsader	Commonwealth Edison Company
J. Stewart	Phillips, Getschow

CONTENTION ITEM 10.B

10. Contrary to Criterion X, "Inspection," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that a program for inspection of activities affecting quality was 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.
- B. A special NRC QA inspection reported May 7, 1984 that deficiencies concerning piping material control resulted in the quality of some installed piping being indeterminate and resulted in some material being installed that did not meet design requirements. A documented inspection program had not been implemented to assure correct material installation for 2"-and-under safety-related piping prior to July 1983; therefore, inspection records verifying correct material installation prior to that date do not exist. A documented inspection program had not been implemented to assure correct material installation for safety-related piping over 2" prior to November 1982; therefore, inspection records verifying correct material installation prior to that date do not exist. During the March 7, 1984, enforcement conference Edison described a verification program which will include a 100% inspection of all installed piping and associated records. The results of that program and the completion of any necessary corrective actions that might result are required to ensure that all installed piping material meets design requirements. Since the NRC will need to evaluate the results of this verification effort in order to fully assess the significance of the programmatic deficiencies, enforcement action was not being taken on this violation at that time. Following the NRC's review of Edison's efforts, it will determine the appropriate enforcement action. Until that time, this matter is being classified as Unresolved Items. This violation is extremely serious and has been classified as a potential severity level II depending upon the extent of deficient hardware identified in the on-going corrective action program. (Exh. 6.)

RESPONSE

For the response to Interrogatory 58, Contention Item 10.B, see Applicant's responses to Specific Interrogatories 26, 30, 31, 36, 38, and 41 and to the first two paragraphs of Specific Interrogatory 42, contained in Applicant's Third and Fourth Partial Response to Rorem's First Set of Quality Assurance Interrogatories and Request's to Produce.

CONTENTION ITEM 10.B

NAMES AND ADDRESSES

R. Schulz	NRC Region III
D. Skoza	Commonwealth Edison Company
R. Francouer	Commonwealth Edison Company
D. Buffo	Phillips Getschow Company

CONTENTION ITEM 10.C and 10.E

10. Contrary to Criterion X, "Inspection," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that a program for inspection of activities affecting quality was 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.
- C. Applicant's QA inspectors failed to identify areas where Phillips-Getschow seismic category I and other pipe supports/restraints have not been constructed in accordance with design requirements. (CAT Inspection Report 84-44/40, Exh. 10.)
- E. Program for inspection of activities affecting quality was not effectively implemented in that weld sizes in structural pipe support/restraints were not identified to be proper weld configurations. (CAT Inspection Report 84-44/40, Exh. 10)

RESPONSE

An NRC Construction Appraisal Team (CAT) inspection was conducted by the Office of Inspection and Enforcement (IE) on December 10-20, 1984 and January 7-18, 1985 at the Braidwood site.

As noted in the subject report, the NRC CAT inspectors observed a number of installation deficiencies on QC accepted supports/restraints. These conditions included improper or undersized welds, wrong material installed, attachment locations out of tolerance, and excessive snubber to rear bracket angularity. Based on the observations of installed hardware, the NRC CAT inspectors considered that QC inspectors did not always have clear inspection/acceptance criteria.

CONTENTION ITEM 10.C and 10.E

The number and type of discrepancies identified indicated to the NRC CAT Inspectors that the QC/Production inspection programs had not been effective in assuring that installed hardware conformed to design requirements. The inspected welding activities were found in general to comply with the requirements of the applicable codes and specifications. However, the NRC CAT found some structural welds on pipe supports/restraints that did not meet the specified acceptance criteria. Most of these supports were evaluated by the Architect Engineer and determined to be adequate for the intended application. The NRC CAT concluded that the identification of undersized welds showed that the original weld inspection of the supports was not effective in the identification of weld deficiencies, which thereby indicates a program weakness in this area.

The NRC CAT concluded that the effectiveness of first level quality control inspection activities needed to be improved, particularly in the pipe support/restraint and welding areas and that this area required increased management attention.

In response to this item, on March 15, 1985, Commonwealth Edison personnel presented to Messrs. E. Greenman, R. F. Warnick, W. S. Little and other NRC personnel actions taken and planned to address a Category 3 rating in piping, safety related equipment, and quality assurance as identified in the most recent SALP Report. A

CONTENTION ITEM 10.C and 10.E

summary of the discussions and copies of presentation materials were sent to Mr. J. G. Keppler (Reference D. H. Smith letter to J. G. Keppler, dated April 25, 1985.).

During these discussions, Commonwealth Edison management outlined certain actions taken or planned to improve the effectiveness of first level quality control personnel. These actions include additional training in the meaning and use of tolerance drawings. Many of these actions are focused on the piping support/restraint and welding quality control personnel. Commonwealth Edison is proceeding with these actions and extending them as necessary to other Project area quality control inspectors on an on-going basis.

For each deficient support/restraint identified by the NRC CAT a document has been generated to track and disposition it with the exception of three which are under review by Commonwealth Edison Project Construction or Field Engineering. As stated in the NRC CAT report, preliminary Architect Engineer review of individual pipe support welding and dimensional deviations indicates these items are not design significant. Nonconformance Report No. 705 has been issued to track the investigation and evaluation of skewed tee fillet welds on a generic basis.

CONTENTION ITEM 10.C and 10.E

REFERENCES

1. NRC Inspection Report 50-456/84-44; 50-457/84-40 (pages A0002984-A0003121).
2. C. E. Norelius letter to Cordell Reed dated April 11, 1985 transmitting Notice of violation (Pages A0003122-A0003126).
3. D. H. Smith letter to J. G. Keppler dated April 25, 1985 (pages A0001665-1667).
4. D. L. Farrar letter to J. G. Keppler dated May 16, 1985 (pages A0003127-A0003144).
5. Commonwealth Edison NCR 705 (pages B0004972-5012).
6. Licensing File on Item 84-44-05, Cont. 10.C (pages A0008621-A0008654).

CONTENTION ITEM 10.C and 10.E

NAMES AND ADDRESSES

D. L. Farrar	Commonwealth Edison Company
D. H. Smith	Commonwealth Edison Company
D. L. Shamblin	Commonwealth Edison Company
M. A. Gorski	Commonwealth Edison Company
D. A. Boone	Commonwealth Edison Company (Consultant)

CONTENTION ITEM 10.D

10. Contrary to Criterion X, "Inspection," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that a program for inspection of activities affecting quality was 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.
- D. Applicant failed to provide an adequate inspection program in that electrical separation criteria were not sufficient to identify installations of raceway and cables by Comstock violating design requirements for separation. (CAT Inspection Report 84-44/40, Exh. 10.)

RESPONSE

NRC Construction Appraisal Team (CAT) Inspections were performed by the Office of Inspection and Enforcement on December 10-20, 1984, and January 7-18, 1985. The inspectors involved were Mr. Steven Stein and Mr. Daniel Ford. The results of the inspections were recorded in NRC Inspection Report Numbers 50-456/84-44; 50-457/84-40.

The item of non-compliance was issued by letter from C.E. Norelius to C. Reed dated April 11, 1985. This item is listed as Example 3.b in the Notice of Violation and states:

- "3. 10 CFR 50, Appendix B, Criterion X as implemented by Commonwealth Edison Company's Quality Assurance Manual, Quality Requirement No. 10.0, requires that a program for inspection of activities affecting quality be established and executed to verify conformance with design documents:

CONTENTION ITEM 10.D

Contrary to the above, the inspectors found at the time of this inspection, that the licensee's inspection programs had:

- b. Not provided an inspection program containing sufficient electrical separation acceptance criteria to verify that design requirements in this area had been met. (Section II.B.1.b(1)) (456/84-44-06; (457/84-40-06)"

The NRC inspectors noted that eighty-five segments of installed Class 1E cable tray, with a total length of about 1200 feet, were selected from various plant areas for detailed examination by the NRC CAT. In addition, forty-three runs of installed Class 1E conduit, with an aggregate length of approximately 1050 feet, were inspected.

During the inspection, the NRC inspectors selected seven segments on which they identified deficiencies and reviewed the applicable design drawings to ascertain whether separation barriers were specified for these installations. The results of this review indicate that in three of the seven examples identified, design details had not specified barriers. Two of these three installations were previously identified and addressed by Sargent & Lundy on Cable Separation Criteria Violation Report Numbers 332 (dated 9/24/82) and 590 (dated 3/16/85). The third installation which did not meet the minimum separation criteria was due to the installations of raceways out of tolerance rather than being due to a Sargent & Lundy design not meeting the minimum separation criteria.

CONTENTION ITEM 10.D

A review by the NRC CAT inspectors of the Quality Control inspection procedures indicated that the 12" vertical and 3" horizontal cable tray separation requirements were not included.

Maintenance of separation distances is included as part of design and is reflected on the installation drawings. Prior to the CAT inspection, Commonwealth Edison was formulating a program to ensure that these cable pan separation criteria requirements were met. This program, which is being implemented in accordance with the requirements of Sargent & Lundy Project Instruction PI-BB-77 "Cable Tray Separation Walkdown Procedure" dated 10-12-84, was initiated on March 2, 1985. The program requires a walkdown of all installed safety-related cable trays in order to identify any cable tray that is installed with less than the basic separation distance (12" vertical and 3" horizontal) required between redundant safety-related raceway and between safety-related and non-safety-related raceway. This program is ongoing.

Identified installations are then reviewed to determine if they are correct. If the installation is in violation of the separation criteria, analyses are performed to justify the existing separation or modifications are implemented to correct the installation. Analyses that are performed to justify lesser separation are allowed by and prepared in accordance with the requirements of IEEE 384-1974. This walkdown program is being implemented using L.K. Comstock quality control inspectors and under Commonwealth Edison direction.

CONTENTION ITEM 10.D

L. K. Comstock procedures regarding the installation and inspection of safety-related cable tray are being revised to expand and clarify the electrical separation requirements. The revisions will address the maintenance of the electrical separation criteria with respect to installation tolerances.

CONTENTION ITEM 10.D

REFERENCES

1. NRC Construction Appraisal Team Inspection Report 50-456/84-44, 50-457/84-40 (pages A0002984-3121)
2. C. E. Norelius (NRC) letter to Cordell Reed, dated 4-11-85, transmitting Notice of Violation (pages A0003122-3126)
3. Sargent & Lundy Project Instruction PI-BB-77, "Cable Tray Walkdown Procedure", Revision 0, dated 10-12-84
4. Licensing file on Item 84-44-06, Cont. 10.D (pages A0008655-8694)

CONTENTION ITEM 10.D

NAMES AND ADDRESSES

D. Ford	NRC
S. Stein	NRC
W. Kropp	NRC
L. G. McGregor	USNRC Senior Resident Inspector Braidwood
L. J. Tapella	Commonwealth Edison Company
J. F. Phelan	Commonwealth Edison Company
W. E. Vahle	Commonwealth Edison Company
J. W. Gieseke	Commonwealth Edison Company
B. G. Treece	Sargent & Lundy
J. D. Regan	Sargent & Lundy
K. T. Kostal	Sargent & Lundy
G. C. Jones	Sargent & Lundy
J. E. Kelnosky	Sargent & Lundy

CONTENTION ITEM 10.F

10. Contrary to Criterion X, "Inspection" of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that a program for inspection of activities affecting quality was 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.
- F. Electrical contractor, Comstock, inspected and accepted a junction box which was later determined to have deficiencies in the location of the anchors used for mounting of the junction box. Anchors were accepted even though they were 3" from the required location specified by Sargent & Lundy drawing 20E-1-3571.

RESPONSE

The NRC conducted a routine safety inspection on March 25 through May 3, 1985. The inspection involved selective examination of procedures and representative records, observations, and interviews. The results of the inspections are documented in report numbers 50-456/85015(DRP); 50-457/85-016(DRP).

The report noted that L. K. Comstock inspected and accepted a junction box with an incorrectly located expansion anchor. This inspection was performed by a junction box/equipment inspector. A second inspection of the junction box was then performed by another L. K. Comstock junction box/equipment inspector who confirmed the incorrect expansion anchor location and documented this on NCR 4139.

CONTENTION ITEM 10.F

In response to this finding all junction box inspection activity of by the junction box/equipment inspector involved, was halted until an evaluation could be made. All safety related junction boxes inspected by the subject inspector (a total of seven) were reinspected by another L. K. Comstock inspector. No additional discrepancies were noted, indicating that this was an isolated case.

Sargent & Lundy is now evaluating NCR 4139.

CONTENTION ITEM 10.F

REFERENCES

1. NRC Inspection Report Numbers 50-456/85-015(DRP); 50-457/85-016(DRP) (pages A0003386-3409).
2. L. K. Comstock NCR 4139 (pages O0002517-2526a).
3. L. K. Comstock memorandum from R. Seltmann to L. Tapella, dated 5/31/85 (page O0002723).
4. D. L. Farrar letter to J. G. Keppler, dated 6/21/85
Enclosure: Response to inspection report numbers 50-456/85-015
and 50-457/85-016 (pages A0003410-415).
5. Licensing file on Item 85-15-08, Cont. 10. F
(pages A0008695-8726).

CONTENTION ITEM 10.F

NAMES AND ADDRESSES

W. J. Kropp	NRC Region III
R. N. Gardner	NRC Region III
J. G. Keppler	NRC Region III
J. W. Gieseke	Commonwealth Edison Company
L. J. Tapella	Commonwealth Edison Company
R. Seltman	L. K. Comstock

CONTENTION ITEM 11.A

11. Contrary to Criterion XV, "Nonconforming Materials, Parts or Components" of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures were established to control materials, parts, or components which do not conform to requirements in order to prevent their inadvertent use or installation.
 - A. Seventy to 72 Steam Generator support bolts (exact number not known by Edison or the contractor) were received in January 1979 and identified as nonconforming. No record exists to show the disposition of these bolts and no Nonconformity Report was issued as required by Phillips, Getschow Company's Quality Assurance Manual, Section 15. This violation was in part the basis for the imposition of the 2/2/83 civil penalty for "a breakdown of your Quality Assurance (QA) program." (Exhibit 3)

RESPONSE

A routine safety inspection was conducted during the period April 19 through July 20, 1982, and a special inspection was conducted on September 8-10, 1982, of activities at Braidwood Station, Units 1 and 2. The results of the inspections were discussed during an enforcement conference conducted at the NRC Region III office on August 31, 1982, and at the Commonwealth Edison Company corporate offices in Chicago, Illinois on November 19, 1982. The reports setting forth the results of the inspections and the enforcement conferences are documented in Inspection Report 50-456/82-05; 50-457/82-05.

The response to Contention Item 8.A in part responds to this Contention Item. Commonwealth Edison has determined that seventy bolts were received at Braidwood from Byron on MRR 3725 on January 8, 1979. The seventy bolts received on MRR 3725 are the "Seventy to 72 Steam Generator Support bolts" referred to in Inspection Report 82-05 and this Item of the Contention. In February 1979, all steam generator bolts which were at the site were sent to Rockwell Engineering for cleaning, testing, and

CONTENTION ITEM 11.A

inspection. (Purchase Order 722186). The bolts sent included 192 originally received at Braidwood on March 10, 1978 plus the seventy bolts received from Byron. Purchase Order 722186 and the process of sending the 262 bolts to Rockwell for cleaning, testing and inspection was the disposition for Phillips - Getschow NCR 334. When the 262 bolts were returned to Braidwood from Rockwell, 162 were considered acceptable based on Rockwell's Inspection results and put into stock for installation. The remaining 100 bolts were scrapped.

CONTENTION ITEM 11.A

REFERENCES

1. Inspection Report 50-456/82-05; 50-457/82-05
(pages A0001005-A0001018).
2. Phillips, Getschow NCR #334 dated February 2, 1979
(pages K0015104-K0015127).
3. Braidwood MRR 3725 dated January 8, 1979
(pages C0003319-C0003350).
4. Byron MRR 3664 dated June 24, 1978 (pages C0003313-C0003318).
5. Braidwood MRR 1750 dated March 10, 1978 (pages C0003293-C0003312).
6. Purchase Order 722186 (pages C0003286-C0003292).

CONTENTION ITEM 11.A

NAMES AND ADDRESSES

L. G. McGregor	NRC Region III
W. J. Key	NRC Region III
T. R. Tramm	Commonwealth Edison Company
G. Groth	Commonwealth Edison Company
M. Dougherty	Commonwealth Edison Company (Consultant)
J. Stewart	Phillips Getschow

CONTENTION ITEM 11.B

11. Contrary to Criterion XV, "Nonconforming Materials, Parts or Components," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures were established to control materials, parts, or components which do not conform to requirements in order to prevent their inadvertent use or installation.
- B. For Penetration Nos. E2 (sic) and E51, I.K. Comstock Inspection Reports were found which documented loose crimps at the determination blocks. No corrective action documents were written to identify and track these nonconforming conditions. Additionally, the cables from Comstock were not terminated and were tagged with orange out-of-service cards which are not controlled by the QA program. (Inspection Report 84-39/36, Exhibit 26.)

RESPONSE

Routine safety inspections were conducted by the NRC Region III Office on December 1, 1984 through February 1, 1985. The inspection involved a selective examination of procedures and representative records, observations, and interviews with personnel. The results of the inspection are documented in NRC Inspection Reports 50-456/84-39(DRP); 50-457/84-36(DRP).

The subject report noted that no corrective action documentation was generated for the deficiencies indicated in certain inspection documentation for electrical containment penetrations E24 and E51. Specifically, General Inspection Reports for the penetrations indicated that three wires had loosely crimped lugs, but no inspection correction report or nonconformance report was initiated. These same three wires were subsequently determined, lugs removed, and orange Station Construction Department (SCD) Out-of-Service cards hung for identification purposes.

CONTENTION ITEM 11.B

L.K. Comstock (Comstock) generated the General Inspection Reports based on a request by Commonwealth Edison Company Project Construction Department to reinspect the Bunker Ramo penetrations. This request was in response to NRC IE Bulletin 82-04, which identified certain deficiencies with the Bunker Ramo penetrations. Although Comstock performed the inspections of the Bunker Ramo penetrations in accordance with the applicable sections of inspection procedure 4.8.9 "Cable Termination Inspection", the results were recorded on a General Inspection Report rather than the procedures checklist forms.

These inspections were unique in that L. K. Comstock does not typically inspect work performed by manufacturers. General Inspection Reports are typically used when checklist forms need to be augmented or when they do not apply to the specific/unique inspection requirements.

Furthermore, despite the lack of documentation to track corrective action, the determinated wires and orange Out-of-Service cards would have been readily apparent in Commonwealth Edison's Operational Analysis Department testing. In addition, after the wires are terminated, construction tests are performed prior to energization of the circuits.

CONTENTION ITEM 11.B

Subsequent to the NRC finding, Comstock generated Inspection Correction Reports 8067 and 8068 to address the hardware deficiencies. In addition, document review procedures require the review of all quality control documentation, to verify the existence of corrective action documentation for deficiencies indicated on inspection reports. General Inspection Reports are currently being reviewed under procedure 4.13.1 In addition, 4.13.1.1 is being revised (Rev. B) to specifically incorporate General Inspection Reports. This revision will require a review of General Inspection Reports to assure that there are no additional discrepant items that are not being tracked through the nonconformance system.

Finally, as an additional prudent step, Commonwealth Edison Company instructed L.K. Comstock to perform an additional review of all Unit 2 containment electrical penetrations with outboard terminal blocks. The results of these reviews indicated additional examples of minor deficiencies in Bunker Ramo hardware. These deficiencies were documented on L.K. Comstock NCR's, and these will be evaluated and dispositioned to repair equipment as required.

CONTENTION ITEM 11.B

REFERENCES

1. NRC Inspection Reports 50-457/84-36(DRP); 50-456/84-39 (pages A0002757-2769)
2. R. F. Warnick letter to Cordell Reed, dated 3/15/85 transmitting Notice of Violation (pages A0002757-2769)
3. L. K. Comstock Inspection Correction Report 8068, dated 2/1/85 (pages O0002531-2534)
4. L. K. Comstock Inspection Correction Report 8067, dated 2/1/85 (pages O0002527-2530)
5. L. K. Comstock Procedure 4.13.1.1 "Turnover Document Review" (O0002668-2697)
6. L. K. Comstock Procedure 4.11.2 "Corrective Action" (pages *O0001050-1059)
7. L. K. Comstock Procedure 4.13.1 "Quality Control Documentation Requirements of Quality Related Documents" (pages O0002653-2667)
8. Inspection Procedure 4.8.9 "Cable Termination Inspection" (pages O0002631-2647)
9. NRC IE Bulletin 82-04, 12/3/82 (pages C0003270-3278)
10. Licensing file Item 84-36-01, Cont. 11.B (pages A0008727-8760)

CONTENTION ITEM 11.B

NAMES AND ADDRESSES

L. G. McGregor	NRC Region III
P. R. Pecke	NRC Region II
D. L. Shamblin	Commonwealth Edison Company
J. W. Gieseke	Commonwealth Edison Company
T. W. Ronkoske	Commonwealth Edison Company
L. M. Kline	Commonwealth Edison Company
I. DeWald	L. K. Comstock
R. Seltmann	L. K. Comstock

CONTENTION ITEM 11.C

11. Contrary to Criterion XV, "Nonconforming Materials, Parts or Components," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures were established to control materials, parts, or components which do not conform to requirements in order to prevent their inadvertent use or installation.
- C. 337,500 feet of safety-related pipe was received in 1977 and rejected on April 9, 1979 due to rust, scale, and failure to cap pipe ends. Some of pipe was installed in plant. In addition, the rejected pipe was not properly disposed in that only 206,744 feet of pipe was chemically cleaned. (Inspection Report 84-17, Exh. 21.)

RESPONSE

A routine NRC safety inspection was conducted by Messrs. L. G. McGregor, R. D. Schulz, and J. F. Schapker on July 7 through August 31, 1984. The results of the inspections are recorded in Inspection Report Numbers 50-456/84-17 (DRP); 50-457/84-17 (DRP). The NRC's investigations of stored piping revealed that Commonwealth Edison did not correct rusted pipe conditions in a timely manner and did not prevent the rusted pipe from being withdrawn from storage areas and installed in safety-related systems. This item had been previously identified on a 50.55(e) report identified as Number 84-10 with respect to one heat of pipe.

Commonwealth Edison acknowledged that after a concern was raised that the subject pipe was observed to have excessive corrosion, the pipe was not placed on hold to prevent withdrawal and installation.

Commonwealth Edison NCR 633 Rev. 1 and PGC Co NCR 2001 were issued to document and disposition this condition. The involved pipe is two inch nominal pipe size and under pipe received in 1977 from Guyon Alloys on purchase order 207003. This item was reported to NRC and is being tracked by 10 CFR 50.55(e) Report 84-10. All suspect pipe installed was

CONTENTION ITEM 11.C

identified, and all suspect pipe in storage was identified and placed on hold. Commonwealth Edison and Sargent & Lundy developed a program to evaluate the effects of chemical cleaning and disposition the installed suspect pipe, whether or not the pipe had been subject to chemical cleaning.

Commonwealth Edison Site Quality Assurance has reviewed implementation of Phillips Getschow's portion of this program (Procedure PGCP-52) and found it to be acceptable. These reviews are documented in Surveillance No. 4507 and Audit 20-85-521. Additionally, Commonwealth Edison Corporate Quality Assurance reviewed the program implementation during the March 1985 General Office Audit (20-85-B) and found that corrective action being taken was organized, effective, and well implemented.

In addition, Phillips-Getschow Company QCP-B4 series of procedures, relating to material receiving, storage, control, and issuance, have been revised significantly since 1981. The revised procedures for receipt inspection include more detailed instructions for visual inspection of ends, visual inspection for rust and scale, verification of placement of protective covers, and an additional requirement for dimensional checks of pipe wall thickness. Also, the revised procedures contain more detailed requirements for outdoor storage, disposition of nonconforming materials found in storage, and monitoring of storage areas.

CONTENTION ITEM 11.C

A further review of this subject was conducted by the NRC as documented in Inspection Report 50-456/84-42; 50-457/84-38, dated March 3, 1985. The NRC reported that further reviews of this subject will be conducted upon completion of identified corrective actions.

CONTENTION ITEM 11.C

REFERENCES

1. NRC Inspection Report 50-456/84-17; 50-457/84-17 (Pages A0002303-A0002325).
2. NRC Inspection Report 50-456/84-42; 50-457/84-38 (Pages A0002785-A0002803).
3. D. L. Farrar letter to J. G. Keppler dated November 28, 1984; enclosure, response to Inspection Report 50-456/84-17; 50-457/84-17 (Pages A0002362-A0002330).
4. E. D. Swartz letter to James G. Keppler, dated July 20, 1984 transmitting 30-day report for 55(e) 84-10 (Pages A0003613-A0003614).
5. D. H. Smith letter to James G. Keppler, dated September 18, 1984 transmitting interim report for 55(e) 84-10 (Pages A0003615-A0003616).
6. D. H. Smith letter to James G. Keppler, dated November 2, 1984 transmitting interim report for 55(e) 84-10 (Pages A0003617-A0003618).
7. D. H. Smith letter to James G. Keppler, dated December 12, 1984 transmitting interim report for 55(e) 84-10 (Pages A0003619-A0003620).
8. D. H. Smith to James G. Keppler, dated February 27, 1985 transmitting interim report for 55(e) 84-10 (Pages A0003621-A0003622).
9. A. D. Miosi letter to James G. Keppler, dated May 2, 1985 transmitting interim report for 55(e) 84-10 (Pages A0003623-A0003624).
10. Commonwealth Edison NCR 633, Rev. 1 (pages *L0000932-941).
11. Site QA Audit 20-85-521 (pages *L0001054-1063).
12. Site QA Surveillance No. 4507 (pages *L0001064-1069).
13. General Office QA Audit No. 20-85-B (pages I0003893-3910).

CONTENTION ITEM 11.C

14. Phillips-Getschow Company Procedure QCP B4 (pages L0000981-994, K0012338-398).
15. Procedure PGCP 52 (pages *L0001029-1053).
16. PGCo NCR 2001 (pages *L0001017-1024).
17. Licensing File on Item 84-17-02, Cont. 11.C (pages A0008761-A0008852).

CONTENTION ITEM 11.C

NAMES AND ADDRESSES

R. Schulz	Region III NRC
L. McGregor	Region III NRC
J. Schapker	Region III NRC
D. Skoza	Commonwealth Edison
M. A. Gorski	Commonwealth Edison
J. R. Stewart	Phillips Getschow Company

CONTENTION ITEM 11.D

11. Contrary to Criterion XV, "Nonconforming Materials, Parts or Components," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures were established to ensure that measures were established to control materials, parts, or components which do not conform to requirements in order to prevent their inadvertant use or installation.
- D. Comstock weld inspectors allowed craft personnel to repair/work weld defects identified during final QC inspections. (Inspection Report 84-07, Exh. 18.)

RESPONSE

A special safety inspection was conducted on March 26, 28-29; April 3-5, 10-12; and May 23 and 31, 1984 by R. Schulz, J. Malloy, and W. Kropp from the U.S. Nuclear Regulatory Commission, Region III. The results of these inspections were documented in NRC Report Inspection 50-456/84-07 and 50-457/84-07.

The scope of the inspection consisted of a selective examination of the procedures and the representative records, observations, and interviews with personnel. The inspector concluded from personnel interviews that L.K. Comstock (Comstock) weld inspectors had allowed the craft personnel to rework/repair defects found during the final QC inspection. These actions circumvented the Comstock nonconformance reporting system.

Commonwealth Edison response noted in reference 2 that to facilitate the completion of an area, inspectors had allowed the craft to rework/repair rejectable areas during the final QC inspection. Commonwealth Edison agreed that this practice did not meet the

CONTENTION ITEM 11.D

requirements of the L.K. Comstock Procedures 4.11.1 (Nonconforming Items) and 4.11.2 (Corrective Action).

An inspector training session was conducted on March 30, 1984, that emphasized the need to issue an ICR or NCR when nonconforming items are identified during the final QC inspection even if the item is immediately reworked.

Additionally, Commonwealth Edison Company Site Quality Assurance issued a letter dated April 18, 1984 to the site contractors which further clarified the method of addressing deficiencies noted during in-process or final inspections. These apply to all L.K. Comstock welding activities. Furthermore, Procedure 4.11.2 was revised to incorporate the process to be used when inspectors note a deficiency and that deficiency is corrected during the inspection process. Under this procedure, such deficiencies and corrections are documented on ICRs.

CONTENTION ITEM 11.D

REFERENCES

1. R.D. Walker letter to Cordell Reed, dated July 20, 1984 (pages A0002059-2073)
Enclosure: Appendix, Notice of Violation
Inspection Reports
50-456/84-07 (DRS);
50-457/84-07 (DRS)
2. D.L. Farrar letter to J.G. Keppler, dated August 20, 1984 transmittting Commonwealth Edison Company, Response to Inspection Report 50-456/84-07 and 50-457/84-07 (pages A0002074-2082).
3. T.E. Quaka letter to site contractors, dated April 18, 1984 (pages B0005638-B0005640).
4. L.K. Comstock Procedures 4.11.1 (Nonconforming Items) (pages *00001028-1049).
5. L.K. Comstock Procedures 4.11.2 (Corrective Action) (pages *00001050-1059).
6. Licensing file on Item 84-07-05, Cont. 11.D (pages A0008853-8863).

CONTENTION ITEM 11.D

NAMES AND ADDRESSES

R. F. Warnick	NRC Region III
J. G. Keppler	NRC Region III
T. E. Quaka	Commonwealth Edison Company
J. Gieseke	Commonwealth Edison Company
R. Seltmann	L. K. Comstock

CONTENTION ITEM 12.A

12. Contrary to Criterion XVI, "Corrective Action," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures were established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. An in the case of significant conditions adverse to quality, Applicant failed to ensure that the cause of the condition is determined and corrective action taken to preclude repetition.

A. Edison did not assure that a matter potentially adverse to quality was promptly identified and corrected at the Braidwood Station. Edison identified a significant problem with bolting of the steam generator supports that occurred at its Byron Station. Timely or adequate corrective action was not taken by Edison to prevent the same or a similar problem from occurring at Braidwood Units 1 and 2. It should be noted that Byron and Braidwood have a common FSAR, a common construction specification, a common system for drawings, ECNs and FCRs and a common architect engineer. Thus, the construction problem at Byron should have indicated a need for a more thorough evaluation for Braidwood. Nonconformity Report No. 332 concerning this bolting problem was issued at Braidwood on December 2, 1981, yet effective corrective action was not taken until August 1982.

In addition, effective corrective action was not taken by Edison relative to Phillips, Getschow Company's failure to implement and utilize installation procedures (identified during Edison audits conducted June 30-July 9, 1980 and June 23-25, 1981), concerning installation and installation inspection of mechanical safety-related equipment. The same deficiencies were again identified during a surveillance conducted by Phillips, Getschow Company on February 19, 1982. This violation was in part the basis for the imposition of the 2/2/83 civil penalty for "a breakdown of your Quality Assurance (QA) program." (Exhibit 3)

RESPONSE

The response to this Contention Item is contained in Commonwealth Edison's response to Specific Interrogatory 58 with respect to Contention Items 1.A and 6.A.; except as the item discusses the relationship between the steam generator bolting activity at the Byron Station. The NRC Staff reached the conclusion after the safety inspection which occurred between the dates of April 19, 1982 and July 20, 1982 that with respect to steam

CONTENTION ITEM 12.A

generator bolting activities at Braidwood, certain bolting problems experienced at Byron station had not been effectively addressed at Braidwood.

The problem was first encountered at Byron in the fall, 1978. The same corrective action defined at Byron was also incorporated into the steam generator bolting plans for Braidwood. Phillips, Getschow NCR 334 was issued on February 8, 1979 to require the Byron bolting solution be incorporated at Braidwood. Subsequently, PGC Co Field Change Order (FCO) 3272 was issued on September 30, 1981 to implement the Byron solution. When it was discovered that problems unrelated to the bolts, which had not to our knowledge been previously encountered, were experienced at Braidwood, CECO NCR 332 was issued on December 2, 1981. That NCR documented the need for different corrective action to be taken at Braidwood and resulted in a stop work order being issued with respect to the affected steam generator bolting activities until adequate additional actions could be identified. In August, 1982 Commonwealth Edison determined, after extensive consultation with the NSSS manufacturer and the architect-engineer, that slotting of the holes into which the bolts were inserted was required to resolve the Braidwood problem. At that point in time, the stop work was lifted and the corrective action was implemented without further problem which demonstrated the effectiveness of the supplemental action specified.

CONTENTION ITEM 12.A

Although Commonwealth Edison was aware of a steam generator bolt installation problem based on experience at Byron and knowledge of similar experience at other plants, the solution found to be effective at those plants was not adequate to resolve the Braidwood bolt installation problem. The unique aspects of the Braidwood problem could not have been foreseen until the Braidwood installation was underway with the remedial modifications resulting from experience elsewhere incorporated.

CONTENTION ITEM 12.A

REFERENCES

1. Inspection Report 50-456/82-05; 50-457/82-05
(pages A0001005-A0001018).
2. Phillips, Getschow Company Nonconformance Report 334
(pages K0015104-K0015127).
3. Phillips, Getschow Company Field Change Order 3272
(pages L0001632-1635).
4. Commonwealth Edison Nonconformance Report 332
(pages B0006071-B0006092).
5. T. R. Tramm letter to J. G. Keppler, dated October 8, 1982,
transmitting Commonwealth Edison Report for 10CFR50.55(e) 82-07
(pages A0001087-A0001093).
6. Cordell Reed letter to J. G. Keppler, dated April 4, 1983,
transmitting Commonwealth Edison Response to Inspection Report 82-05
(pages A0001063-A0001084).
7. Licensing File on Item 82-05-05, Contention 12.A
(pages A0008864-A0008957).

CONTENTION ITEM 12.A

NAMES AND ADDRESSES

L. G. McGregor	US NRC Region III
W. J. Key	US NRC Region III
T. R. Tramm	Commonwealth Edison Company
L. O. DelGeorge	Commonwealth Edison Company
D. Boone	Commonwealth Edison Company (Consultant)
M. Gorski	Commonwealth Edison Company
G. Groth	Commonwealth Edison Company
R. Farr	Commonwealth Edison Company
S. Hunsader	Commonwealth Edison Company

CONTENTION ITEM 12.B.1

12. Contrary to Criterion XVI, "Corrective Action," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures were established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. And in the case of significant conditions adverse to quality, Applicant failed to ensure that the cause of the condition is determined and corrective action taken to preclude repetition.

B. A special NRC QA inspection reported May 7, 1984 that:

- * 1/2" S/80, SA-312, Type 304, ASME Boiler and Pressure Vessel Code, Section III, Class 1, NB pipe heat number 745107 were discovered in Section III installations without material test reports or records of receiving and receipt inspections by either Commonwealth Edison Company or Phillips, Getschow Co. as identified by Phillips, Getschow Co. on September 17, 1982, on Nonconformance Report No. 789. The disposition of the Nonconformance Report resulted in accepting the pipe, after only obtaining material test reports, without examining the pipe, initiating and maintaining receipt inspection records, or determining the total quality of the pipe in storage and installed.

RESPONSE

A special NRC quality assurance program inspection was conducted by Messrs. T.E. Vandel, R.D. Schulz, I.T. Yin, D.E. Keating, C.C. Williams, and D.R. Hunter on June 20-24, June 27-July 1, August 1-5, August 9, October 4-7, and October 24, 1983, and January 11-13, January 26, and February 9, 1984. The results of this inspection were documented in NRC Inspection Report No. 50-456/83-09 (DE); 50-457/83-09 (DE).

This NRC report noted that PGCo Nonconformance #789 indicated that 1/2" Schedule 80, SA-312 ASME Boiler and Pressure Vessel Code, Section III, Class 1, pipe heat number 745107 was discovered in Section III installations without material test reports, records of having been received or records of receipt inspections by either Commonwealth Edison

CONTENTION ITEM 12.B.1

Company or PGCo. The disposition of NCR 789 resulted in PGCO accepting the pipe after only obtaining material test reports, without examining the pipe, without initiating and maintaining receipt inspection records, and without determining the total quantity of the pipe in storage and installed.

In response to the NRC finding, Commonwealth Edison Company acknowledged the disposition of NCR 789 was incomplete. Phillips, Getschow Company initiated NCR 1128 to document the additional disposition required for NCR 789 which was the following:

1. Field engineering to issue copies of drawings showing the installation location of both Schedule 80 and Schedule 160 1/2" pipe, heat number 745107.*
2. Phillips, Getschow Company Quality Control to verify wall thickness with Ultrasonic Examination thickness measurement device.
3. Thickness information to be given to Phillips, Getschow Company field engineering for the determination of proper pipe schedule installation.

*PGCO Records did contain certification and receipt inspections for Schedule 160 1/2" pipe, heat number 745107.

CONTENTION ITEM 12.B.1

4. The warehouse man shall initiate a Receiving Inspection Report to document the receipt of the Schedule 80 pipe. Phillips, Getschow Company Quality Control shall review documentation.
5. Total footage of pipe installed and in storage should be reconciled against the footage received for both Schedule 80 and Schedule 160 pipe.

These five items could not be totally completed because the total footage of pipe installed could not be reconciled against the footage received. Because of this, NCR 1128 was closed and was superceded by NCR 1640. The disposition of NCR 1640 was to locate all material in safety related and ASME Section III systems with heat number 745107 (1/2" Schedule 80 and Schedule 160 pipe) through the Piping Heat Number Material Traceability Verification (MTV) Program and through the Instrument - Retro Program (IRV) for safety-related piping and to verify wall thickness by digital thickness measurements, and obtain a certificate of conformance from the supplier, Guyon Alloys. Phillips Getschow has obtained a certificate of conformance from Guyon Alloy's.

In order to more clearly address the issues and corrective actions involved in this item, PGC Co NCR 1640 has been closed and has been superceded by NCR 4884. This NCR is under review and will address material certification, receipt inspection of the material and material utilization.

CONTENTION ITEM 12.B.1

Phillips, Getschow has since established improved procedural controls for the QC inspection and verification of safety related (Class H) instrument piping materials. These requirements are in procedure PGCP-30.

Phillips, Getschow directed management attention towards improved review and dispositioning of NCRs. Among the changes which PGCO implemented were additional training of personnel, hiring of more experienced personnel for NCR reviews, and reviews and revisions to NCR related procedure and to related Quality Assurance Manual sections. As of March 28, 1984, Phillips, Getschow Procedure QAP-12, "Control of NCRs" was totally rewritten to better control NCR processing.

In April, 1985 Commonwealth Edison Company initiated actions which resulted in the preparation and approval of Phillips Getschow Work Instruction PGWI-37, "Technical Evaluation of Selected Closed NCR's". The program implemented by this work instruction includes a 100% review of closed PGCo NCR's #1 through #1500 (dated 5/4/84) and a sample review of additional closed NCR's through #4500 (dated 4/25/85). This program includes reviews for:

- a) technical adequacy of the disposition to resolve the identified nonconformance.

CONTENTION ITEM 12.B.1

- b) proper closure, including documentation to substantiate the completion of the disposition instructions and corrective action requirements.
- c) appropriate reviews for reportability per 10 CFR 50.55(e) and 10 CFR Part 21.

This program will provide an added level of confidence that previously closed PGC's have been properly and adequately closed.

CONTENTION ITEM 12.B.1

REFERENCES

1. NRC Inspection Report No. 50-456/83-09 (DE), 50-457/83-09 (DE) as transmitted by J.G. Keppler letter to J.J. O'Connor dated May 7, 1984 (pages A0001440-A0001507).
2. L.O. DelGeorge letter to J.G. Keppler dated July 6, 1984 (pages A0001508-A0001572).
3. D.H. Smith letter to J.G. Keppler dated March 11, 1985 (pages A0001654-A0001661).
4. R.L. Spessard letter to Cordell Reed dated July 26, 1984 (page A0001575).
5. PGCo Procedure QAP-12 (pages K00154769-K0015500).
6. PGCo NCRs 789, 1128, 1640 (pages K0013493-13495, K0013542-13631, K0013632-13672).
7. PGCo NCR 4884 6/18/85 - not dispositioned yet (pages K0015413-15445).
8. PGCo Work Instruction PGWI-37 (pages L0001476-1487).
9. Licensing file on Item 83-09-7A, Cont. 12.B.1 (pages A0008958-A0008989).
10. PGCo Procedure PGCP-30 (pages L0001520-1567).

CONTENTION ITEM 12.B.1

NAMES AND ADDRESSES

J.G. Keppler	NRC Region III
T.E. Vandel	NRC Region III
R.D. Schulz	NRC Region III
I.T. Yin	NRC Region III
D.E. Keating	NRC Region III
C.C. Williams	NRC Region III
D.R. Hunter	NRC Region III
D.L. Shamblin	Commonwealth Edison Company
G.E. Groth	Commonwealth Edison Company
R.J. Farr	Commonwealth Edison Company
D. Boone	Commonwealth Edison Company (Consultant)
R. Francouer	Commonwealth Edison Company
M. Gorski	Commonwealth Edison Company
S. Hunsader	Commonwealth Edison Company
G. Marquart	Phillips Getschow Company

CONTENTION ITEM 12.B.2

12. Contrary to Criterion XVI, "Corrective Action," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures were established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. And in the case of significant conditions adverse to quality, Applicant failed to ensure that the cause of the condition is determined and corrective action taken to preclude repetition.

B. A special NRC QA inspection reported May 7, 1984 that:

- * The HVAC contractor, Pullman Sheet Metal Co., had not established a corrective action program to assure that conditions adverse to quality such as deficiencies and deviations were analyzed for significance and subsequently that the causes of any significant conditions were determined and corrective action taken to preclude repetition. Through August 4, 1983, 2,513 Correction Notices had been written by the HVAC contractor for deficiencies and deviations, including numerous welding deficiencies and deviations, but the contractor's Quality Assurance Program did not require that Correction Notices be analyzed for significance.

RESPONSE

NRC Quality Assurance Program inspections were performed on 6/20/83 - 6/24/83, 06/27/83 - 07/01/83, 08/01/83 - 08/05/83, 08/09/83, 10/04/83 - 10/07/83, 01/11/84 - 10/24/83, 01/13/84, 01/26/84 and 02/09/84 by Messrs. T.E. Vandel, I.T. Yin, C.C. Williams, R.D. Schulz, D.E. Keating, and D.R. Hunter of NRC Region III. The results of the inspections were recorded in NRC Inspection Report 50-456/83-09; 50-457/83-09.

The NRC inspectors noted during the NRC inspection review of the Pullman Sheet Metal Works, Inc. (PSM) Quality Assurance Program that Correction Notices written by PSM during the 1982 PSM 100% configuration retroinspection program were not analyzed for significance and as a result the causes of any significant conditions were not determined.

CONTENTION ITEM 12.B.2

This situation occurred because the PSM Quality Assurance program did not require that Correction Notices be analyzed for significance.

When PSM identifies an item as a potential correction notice item, a Correction Notice Number is taken out and is logged on the PSM Correction Notice Log. A date is not assigned to the Correction Notice until the appropriate paperwork is completed. When the NRC reviewed the PSM Correction Notice log, 2513 Correction Notice Numbers had been requested by QA while only 2452 Correction Notice were issued. The remaining 61 were issued after August 2, 1983.

Correction Notices were first used by PSM in December 1980. Between December 1980 and November 1982, seventy-two Correction Notices were written, all against new work. In October 1982, PSM initiated the 100% Weld Quality Retroinspection Program. In November 1982, PSM initiated the Configuration Retroinspection Program. These retroinspections of previously erected work resulted in 912 welding related Correction Notices from a population of approximately 55,000 welds inspected. Approximately 632 Correction Notices were written on non-welding related attributes during retroinspections. The remaining 836 Correction Notices were written for construction activities completed after November 1982, not as a result of the retroinspection program. Correction Notices were written to document and disposition minor items (i.e. paint missing, rusting of material, overspray of fireproofing.)

CONTENTION ITEM 12.B.2

In the context of PSM Correction Notices, analysis for significance means performing a trend analysis. The purpose of performing a trend analysis on Correction Notices is not to identify significant hardware problems, which would be identified through analysis of Nonconformance reports, but rather to identify programmatic problems which would require further corrective action.

In response to the NRC findings, PSM performed a trend analysis for deficiency significance of the 1616 backfit retroinspection program Correction Notices that were written as a result of the November 1982 PSM 100% Configuration Retroinspection Program. This review did not identify any significant trends. In addition, the remaining Correction Notices (of the total 2452 population) through August 2, 1983 were also trended. Again, no significant adverse trends were identified. However, the trend analysis did lead to some procedure revisions and increased training of personnel. Pullman Sheet Metal Quality Assurance has performed a trend analysis of Correction Notices since August 1983, and Pullman has implemented Procedure B15.1.F "Trending". This procedure established the method for identifying and documenting trends for management evaluation of the effectiveness of the Quality Assurance Program and to effect appropriate corrective action when areas of concern or adverse trends are identified.

CONTENTION ITEM 12.B.2

REFERENCES

1. NRC Inspection Report 456/457/83-09 (pages A0001440-1507).
2. L. O. DelGeorge letter to J. G. Keppler, dated 07/06/84
Enclosure: Response to Inspection Report Numbers 50-455/83-09
50-457/83-09 (pages A0001508-1572).
3. Pullman Procedure B15.1.F "Trending" Revision 0 (pages A000900-9011).
4. Pullman Procedure B16.1.F "Nonconformance/Corrective Action"
Revision 1 (pages M0001081-M0001088).
5. Licensing file on Item 83-09-07B, Contention 12.B.2
(pages A0008990-9070).

CONTENTION ITEM 12.B.2

NAMES AND ADDRESSES

R. D. Schulz	NRC Region III
D. E. Keating	NRC Region III
D. E. Hunter	NRC Region III
D. Brown	Commonwealth Edison Company
L. O. DelGeorge	Commonwealth Edison Company
K. Croft	Commonwealth Edison Company (Consultant)
M. Jarigese	Pullman Construction Industries
D. Lawler	Pullman Sheet Metal Works
R. Ewald	Pullman Sheet Metal Works
C. Holt	Pullman Sheet Metal Works
D. Grant	Pullman Sheet Metal Works

CONTENTION ITEM 12.B.3

12. Contrary to Criterion XVI, "Corrective Action," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures were established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. And in the case of significant conditions adverse to quality, Applicant failed to ensure that the cause of the condition is determined and corrective action taken to preclude repetition.

B. A special NRC QA inspection reported May 7, 1984 that:

- * Corrective action was not adequate concerning Nonconformance Report No. BR-08, dated June 15, 1981, since the nonconforming welds completed by unknown welders were "accepted-as-is" after only a visual examination. The acceptance of the weld by visual examination pursuant to AWS D.1.1 is based on the fact that a qualified welder performed the welding in accordance with the qualified process. (Inspection Report 83-09, Exh. 5.)

RESPONSE

NRC Quality Assurance Program inspections were performed on 06/20/83 - 06/24/83, 06/27/83 - 07/01/83, 08/01/83 - 08/05/83, 08/09/83, 10/04/83 - 10/07/83, 10/24/83, 01/11/84 - 01/13/84, 01/26/84 and 02/09/84 by Messrs. R. D. Schulz, D. E. Keating, and D. R. Hunter of USNRC Region III. The results of the inspections were recorded in NRC Inspection Report 50-456/83-09; 50-457/83-09.

The NRC Inspectors noted that during the NRC inspection review of the Pullman Sheet Metal Works, Inc. (PSM) Quality Assurance Program, one of five nonconformances reviewed for corrective action (BR-08) had not been satisfactorily resolved. This nonconformance concerned 53 items for which the welder was unknown. The NRC did not find that Pullman failed

CONTENTION ITEM 12.B.3

to institute corrective action for NCR BR-08, but rather identified a concern relative to the adequacy of the corrective action.

Commonwealth Edison Company believes that the PSM corrective action for PSM NCR BR-08 was adequate. Commonwealth Edison's evaluation of PSM's corrective action stated that if a weld was visually acceptable (except for being marked with the welder's ID) then the weld could be considered acceptable. This conclusion was based on the fact that all Pullman Sheet Metal welders at the Braidwood Site were qualified by testing and trained in applicable welding procedures and that all filler metal used by PSM was certified. Consequently, Commonwealth Edison believes that an AWS Code basis exists to conclude that the subject welds could be accepted by visual inspection.

However, rather than have this issue remain open between Commonwealth Edison and Region III, Commonwealth Edison directed PSM, through the disposition of NCR 558, to either establish welder identification by other production or quality type records, or to replace the welds if no acceptable means of welder identification could be established. In order to make welder identifications, PSM reviewed all existing visual weld inspection reports. This review disclosed other instances in which welder identification was not documented. Through reinspection and intensive review of production records, welder identification has been established for all but a small number of 35 AWS

CONTENTION ITEM 12.B.3

D1.1 items. These are being reworked or replaced. AWS D1.1 is applicable to structural welds. Welds made pursuant to AWS D1.3, which is applicable to sheet metal welds, are being evaluated with respect to welder identification.

In further response to the NRC's concern, Pullman Sheet Metal records the welder I. D. on the process sheet and Quality Control verifies welder I. D. as part of the weld inspection. Since 100% of all safety related welds undergo inspection, QC acceptance of a weld assures that welder ID is recorded.

This issue was also addressed in response to Specific Interrogatory 29 in Applicant's First Partial Response to Rorem's First Set of Audit Assurance Interrogatories and Request to Produce.

CONTENTION ITEM 12.B.3

REFERENCES

1. NRC Inspection Report 456/457/83-09 (pages A0001440-A0001507).
2. L.O. Del George letter to J. G. Keppler, dated 07/06/84
Enclosure: Response to inspection report numbers 50-456/83-09 and
50-457/83-09 (pages A0001508-A0001572).
3. D.H. Smith to J.G. Keppler, dated 03/11/85
(pages *A0001654- A0001661).
4. D.H. Smith to J.G. Keppler, dated 03/27/85 (pages A0001662-A0001664).
5. D.H. Smith to J.G. Keppler, dated 04/25/85 (pages A0001665-A0001666).
6. Pullman Procedure B10.2.F "Visual Weld Inspection" Revision 1
7. Pullman Procedure B16.1.F "Non-Conformance/Corrective Action"
Revision 1 (pages M0001081-1088).
8. Pullman Procedure B16.2.F "Corrective Action", Revision 0.
9. Commonwealth Edison Company NCR 558 (pages C0000430-434).
10. Licensing file on item 83-09-07B, Cont. 12.B.2 and 12.B.3
(pages A0008990-A0009070).

CONTENTION ITEM 12.B.3

NAMES AND ADDRESSES

R. D. Schulz	NRC Region III
D. E. Keating	NRC Region III
D. R. Hunter	NRC Region III
L. O. Del George	Commonwealth Edison Company
K. Croft	Commonwealth Edison Company (Consultant)
J. Dierbeck	Commonwealth Edison Company
M. Jarigese	Pullman Construction Industries
D. Lawler	Pullman Sheet Metal Works
R. Ewald	Pullman Sheet Metal Works
C. Holt	Pullman Sheet Metal Works

CONTENTION ITEM 12.C

12. Contrary to Criterion XVI, "Corrective Action," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures were established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. And in the case of significant conditions adverse to quality, Applicant failed to ensure that the cause of the condition is determined and corrective action taken to preclude repetition.
- C. The Applicant's site QA organization inappropriately closed Nonconformance Report No. 600 and as a result did not assure that conditions adverse to quality were corrected. The inspector subsequently identified two supports detailed in Report 600 and one support not detailed which were not procured and examined in accordance with ASME Section III, Section NF. (Inspection Report 85-15/16, Exh. 17.)

RESPONSE

A routine NRC safety inspection was conducted by Messrs. R.D. Schulz, W.J. Kropp, and R.N. Gardner on March 25 through May 3, 1985. The results of the inspections were recorded in NRC Inspection Report Number 50-456/85-015 (DRP); 50-457/85-016 (DRP). The subject report noted that the site QA organization inappropriately closed Commonwealth Edison NCR 600 and, as a result, did not assure that conditions adverse to quality were corrected. The nonconformance report stated that, for twenty piping supports, there was no traceability of material to a certified material test report and that nondestructive examination for some of the welds had not been performed as required by the ASME Boiler and Pressure Vessel Code. Site quality assurance closed the nonconformance report without verifying that the supports had been corrected or redesigned with regard to material traceability and nondestructive examination to meet ASME code requirements, and did not adequately perform reviews to assure that supports not detailed on NCR No. 600 did not have similar material and

CONTENTION ITEM 12.C

nondestructive examination deficiencies. The NRC inspector subsequently identified two supports detailed on NCR No. 600 and one support not detailed on NCR No. 600 which were not procured or nondestructively examined in accordance with ASME Section III, Subsection NF.

The requirement for traceability of material to a certified material test report and to perform nondestructive examination for certain welds on piping supports only applies to primary linear members, which are the elements of the pipe support assembly which provide primary structural support. The deficiency identified in the NCR showed that the design drawings did not properly designate all primary linear members.

Since the deficiency identified related solely to omissions in design drawings, the disposition of NCR No. 600 was to assure that primary linear members were correctly identified on the design drawings for the listed supports. As a result of the Sargent & Lundy (S&L) review, design document changes were issued that corrected, as necessary, bills of material for listed supports. The Site Quality Assurance close-out of NCR No. 600 was based on review of selected drawing changes initiated by S & L, including all drawing changes identified to have added primary linear members. The decision to close the NCR was also based on a misinterpretation of the S&L letter describing the actions taken to resolve the NCR.

CONTENTION ITEM 12.C

In spite of the necessary documentation changes, the installation contractor issued work packages after the above-referenced drawing changes were made which did not properly specify the necessary material traceability and nondestructive examination requirements because contractor personnel did not immediately recognize the significance of changes in the drawings for primary linear members. The number of such work packages was small because the number of pipe supports containing primary linear members is small. The items identified by the NRC inspector were installed under such work packages.

Commonwealth Edison acknowledged that, in this case, verification of corrective actions would have been more effective if the NCR had not been closed until after work had progressed on the supports covered by the drawings in question.

NCR 600 was re-opened and will not be closed until proper installation of the subject hangers has been verified by Site Quality Assurance.

In order to assure that similar problems with respect to proper identification of primary linear members on drawings were not prevalent with ASME supports, Phillips Getschow (PGCO) Quality Assurance conducted Special Audit No. 85-BR6. This audit and the follow-up actions relating to it will assure not only that documentation problems are identified and corrected, but also that any additional hardware problems will be identified and corrected. This special audit was requested by

CONTENTION ITEM 12.C

Commonwealth Edison, and was conducted between 3-12-85 and 4-24-85. The resulting concerns identified are being addressed by corrective actions related to the PGC0 Special Audit, PGC0 NCR's, and Commonwealth Edison NCR 744. It should be noted that under the requirements of Phillips, Getschow procedure QCP-B30, Rev. 5, entitled "Filing, Storage, Maintenance, and Review of QA Records", a check is made for such matters as material traceability and nondestructive examination as a part of the final document review of a pipe support documentation package. The implementation of this procedure will identify any similar problems to those identified in the item of non-compliance.

To confirm that the inappropriate closure of this NCR was in fact an isolated case, Site Quality Assurance is reviewing ten additional Commonwealth Edison NCRs closed in the September, 1984 time frame. That review is still in progress.

Commonwealth Edison believes this incident was an isolated case, but to highlight the importance of this issue, a training session was presented to Site Q.A. personnel involved with NCR corrective action verifications. NCR No. 600 was discussed to stress the importance of not closing NCRs until all related corrective action is complete and the effectiveness of programmatic controls is verified.

CONTENTION ITEM 12.C

REFERENCES

1. NCR Inspection Report 50-456/85-015; 50-457/85-016 (pages A0003386-A0003409).
2. D.L. Farrar letter to J.G. Keppler dated June 21, 1985, transmitting Response to Item 456/85-015-06 (pages A0003410-A0003415).
3. D.L. Farrar letter to J.G. Keppler dated July 15, 1985, transmitting Supplemental Response to Item 456/85-015-06 (pages A00014001-14003).
4. Commonwealth Edison Nonconformance Report No. 600 (pages B0005128-B0005129).
5. Commonwealth Edison Nonconformance Report No. 744 (pages B0005170-5294).
6. Phillips-Getschow Internal Audit No. 85-BR6 (pages L0001349-1432).
7. Licensing File on Item 85-015-06, Cont. 12.C (pages A0009071-A0009100).

CONTENTION ITEM 12.C

NAMES AND ADDRESSES

R. D. Schulz	NRC Region III
W. J. Kropp	NRC Region III
R. N. Gardner	NRC Region III
T. E. Quaka	Commonwealth Edison Company
D. Boone	Commonwealth Edison Company (Consultant)
S. Forbes	Phillips Getschow Company

CONTENTION ITEM 12.D

12. Contrary to Criterion XVI, "Corrective Action," of 10 CFR Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures were established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. And in the case of significant conditions adverse to quality, Applicant failed to ensure that the cause of the condition is determined and corrective action taken to preclude repetition.
- D. Applicant's corrective actions for NCR's were found to be inadequate: 1) no documentation supporting statement that corrective action concerning defective welds was "N/A", and 2) based on numerous weld deficiencies after rework, the corrective action for this NCR was ineffective. (CAT Inspection Report 84-44/40, Exh. 10.)

RESPONSE

A NRC Construction Appraisal Team (CAT) inspection was conducted by the Office of Inspection and Enforcement on December 10-20, 1984 and January 7-18, 1985. The results of these inspections were documented in Report Number 50-456/84-44; 50-457/84-40. As noted in the subject report, the inspectors found that corrective actions for two specific nonconformance reports, L.K. Comstock (Comstock) report 39 and Commonwealth Edison report 293 were inadequate.

No documentation supporting the conclusion stated in the corrective action block on LKC NCR 39 was available for review during the NRC CAT inspection. During a review, subsequent to the NRC visit, documents were located that clarified and supported certain corrective actions for NCR 39.

CONTENTION ITEM 12.D

L. K. Comstock personnel involved in the disposition and close out of NCR 39 are no longer employed by L. K. Comstock. Since the origination of NCR 39 in 1979, the L. K. Comstock QA/QC program has been improved by implementation of the QC training program, intensification of the internal QA audit program and procedural revisions related to nonconforming items and the QA/QC program has been evaluated by independent audits and surveillances. Final assessment indicates that the documentation relevant to NCR 39 was an isolated occurrence. L. K. Comstock NCR 3776 was initiated to redispotion NCR 39.

Even though the disposition of NCR 39 is not as concise as it could be, Commonwealth Edison believes adequate corrective action was taken then and the current actions being taken to resolve Cable Pan Hanger concerns are adequate to assure that only acceptable Cable Pan Hangers have been installed.

Commonwealth Edison QA audit 20-85-540 in part checked the dispositioning of Comstock NCR's. The audit found that the NCRs in the sample taken were acceptably dispositioned.

L. K. Comstock issued NCR 3770 to document weld discrepancies with certain hangers, which were identified by the NRC inspectors. In the process of review of the conditions leading to this nonconforming condition, Commonwealth Edison found that documentation for the disposition of NCR 293 to with regard to B-Line B22x (spaced back to

CONTENTION ITEM 12.D

back) strut material did not provide sufficient information to support closure of the NCR.

The disposition of Commonwealth Edison NCR 293 states that B22x (spaced back to back) strut material was returned to the vendor. An evaluation subsequent to the CAT team visit revealed that only 800 of the 1000 feet received was returned to the vendor.

Comstock performed field check of all Comstock laydown areas and in the plant. Any spaced back to back strut was removed and put on hold. Because less than 200' feet was found disposition of NCR 293 is ongoing.

Relative to the two hangers identified by NRC that were fabricated with B-Line B22x (spaced back to back) strut material, Commonwealth Edison believes that inadequate corrective actions for NCR 293 was an isolated case. Over the past two years significant improvements have been made to the Commonwealth Edison NCR program, including the extent of applied corrective actions. NCR 293 is dated prior to the implementation of these improvements.

CONTENTION ITEM 12.D

REFERENCES

1. NRC Inspection Report 50-456/84-44; 50-457/84-40 (pages A0002984-A0003121).
2. C. E. Norelius letter to Cordell Reed dated April 11, 1985, transmitting Notice of Violation (pages A0003122-3126).
3. D. L. Farrar letter to J. G. Keppler dated May 16, 1985 (pages A000317-3144).
4. L. K. Comstock Nonconformance Report 3770 (pages 00002505-2513).
5. L. K. Comstock Nonconformance Report 3776 (pages 00002514-2516a).
6. Licensing file on Item 84-44-08, Cont. 12.D (pages A0009101-9155).
7. Licensing file on Item 84-44-09, Cont. 12.D (pages A0009156-9229).

CONTENTION ITEM 12.D

NAMES AND ADDRESSES

L. J. Tapella	Commonwealth Edison Company
J. Gieseke	Commonwealth Edison Company
R. Seltsman	L.K. Comstock

CONTENTION ITEM 12.E

12. Contrary to Criterion XVI, "Corrective Action," of 10 C.F.R Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures were established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. And in the case of significant conditions adverse to quality, Applicant failed to ensure that the cause of the condition is determined and corrective action taken to preclude repetition.
- E. Although BCAP had identified that Level I QC inspectors had inspected and accepted construction activities, this nonconforming condition was not documented as a BCAP observation. (Inspection Report 85-06, Exh. 11.)

RESPONSE

As reported in NRC Inspection Report Nos. 50-456/85-002 and 50-457/85-002 the inspector observed that the BCAP documentation review checklist instructions for population AWS D1.1, Electrical Welds, did not meet the requirements of ANSI N45.2.6 which requires, as a minimum, a Level II certification for Quality Control inspection personnel who inspect and accept construction activities. Also, BCAP personnel were aware of the nonconforming utilization of Level I QC inspectors and had informed the inspector that a BCAP observation would be issued to document this matter.

Subsequently, the inspector was informed that a BCAP observation would not be issued. Thus, BCAP would not identify, as a nonconforming condition, the use of Level I inspectors who inspected and accepted construction activities. This resulted in the violation documented in Inspection Report Number 50-456/85-006 and 50-457/85-006.

CONTENTION ITEM 12.E

Commonwealth Edison Company did not agree in its response to the NRC finding that the condition cited was an example of an item of nonconformance. Contrary to the notice of violation, this inspector issue was documented as a BCAP Observation on February 27, 1985. Unfortunately, due to apparently ineffective communications between BCAP personnel and the NRC inspector, the NRC inspector was not aware that this observation was issued prior to his monthly exit interview meeting.

The NRC acknowledged receipt of Commonwealth Edison's response, agreed that this was not an example of noncompliance, and stated that it would be removed from their records.

For further information on the use of Level I inspectors by L.K. Comstock, see Interrogatory 58 response for Contention Item 3.C.

CONTENTION ITEM 12.E

REFERENCES

1. Inspection Report 50-456/85-006; 50-457/85-006, dated March 8, 1985 (pages A0003250-A0003275).
2. D.L. Farrar letter to J.G. Keppler dated May 6, 1985 transmitting Commonwealth Edison's response to Inspection Report 85-006 (pages A0003276-A0003289).
3. C.E. Noreleus letter to Cordell Reed, dated June 27, 1985 transmitting NRC response to Commonwealth Edison (pages A0003290-A0003291).
4. Inspection Report 50-456/85-002; 50-457/85-002 (pages A0003153-A0003202).
5. BCAP Observation Record No. CSR-R-G-ELE-171 dated February 27, 1985 (pages E0000098-100).
6. Licensing File on Item 85-006-01A, Cont. 12.E (pages A0009230-A0009258).

CONTENTION ITEM 12.E

NAMES AND ADDRESSES

R. Gardner	NRC Region III
G. Orlov	Commonwealth Edison Company (Consultant)
N. Kaushal	Commonwealth Edison Company

CONTENTION ITEM 12.F

12. Contrary to Criterion XVI, "Corrective Action," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures were established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. And in the case of significant conditions adverse to quality, Applicant failed to ensure that the cause of the condition is determined and corrective action taken to preclude repetition.
- F. In addition, 37 BCAP observations were invalidated by S&L even though the documented basis for the invalidations of the observations did not support the invalidations. (Inspection Report 85-06, Exh. 11.)

RESPONSE

A special NRC safety inspection was conducted by Mr. R. N. Gardner on February 4 through March 1, 1985, of Braidwood Construction Assessment Program (BCAP) activities. The results of the inspection were recorded in NRC Inspection Report Numbers 50-456/85-006; 50-457/85-006.

BCAP reviewed the piping contractor's quality documentation associated with the confirmation of piping as-constructed dimensions as documented on marked-up field installation drawings (i.e., red-line drawings). During this review, certain apparent deviations from the contractor's procedures were identified in the available documentation. BCAP's review of contractor's procedures initially indicated the need for a QC inspector's signature on a "marked-up red-line drawing." In many cases, BCAP did not find evidence of this signature. These apparent deviations were documented as BCAP Observations. Thirty-seven of these observations identified "Lack of QC Inspector's signatures on Red-Line drawings."

CONTENTION ITEM 12.F

During the BCAP validation process for these observations, Sargent & Lundy (S&L) was requested to provide comments regarding the validity of each observation. In the case of these observations, S&L recommended that the observations be invalidated due to the lack of a specific requirement for the QC inspector signature on the red-line drawing. In accordance with BCAP-06, BCAP is the only organization authorized to invalidate observations. S&L only makes recommendations regarding the validity of observations which must be reviewed and approved by BCAP. Upon BCAP's further investigation of the contractor's requirements, it appeared that alternative means of documenting QC confirmation of piping as-built dimensional measurements were indicated by the contractor procedure. It was the intent of BCAP to re-review the contractor documentation to the appropriate criteria, and based on acceptable results, to proceed to invalidate the previously written observations. This intention was documented in a BCAP response to an observation written by the Evaluation Research Corporation (ERC) overview organization pertaining to the potential invalidation of these 37 observations. (ERC Observation BCAP-007 and Response). However, these 37 observations were never actually invalidated.

BCAP's intention to go through this further investigation and potential invalidation was identified by the NRC as an item of noncompliance, even though none of these observations had been invalidated. At the time BCAP indicated to ERC that it intended to consider invalidation of these observations, it identified steps it would

CONTENTION ITEM 12.F

take to assure that acceptable, alternative documentation existed prior to invalidation. These steps were to revise BCAP's checklist to reflect properly the contractor's procedural requirements, and re-review the contractor's documentation to the revised checklist. Only after satisfactory results of this re-review would BCAP have invalidated the observations. Based on BCAP's further review of the available contractor's documentation, the 37 observations remain valid. Valid observations are processed on Commonwealth Edison nonconformance reports and dispositioned accordingly.

CONTENTION ITEM 12.F

REFERENCES

1. Inspection Report 50-456/85-006; 50-457/85-006, dated March 8, 1985 (pages A0003250-A0003275).
2. D. L. Farrar letter to J. G. Keppler dated May 6, 1985, transmitting Commonwealth Edison's response to Inspection Report 85-006 (pages A0003276-A0003289).
3. C. E. Norelius letter to Cordell Reed, dated June 27, 1985, transmitting NRC response to Commonwealth Edison (pages A0003290-A0003291).
4. Inspection Report 50-456/85-002; 50-457/85-002 (pages A0003153-A0003202).
5. ERC Observation BCAP-007 and Response (pages E0000145-149).
6. BCAP Procedure BCAP-06 (pages E0000278-307).
7. Licensing File on Item 85-006-01B, Cont. 12.F (pages A0009259-A0009287).

CONTENTION ITEM 12.F

NAMES AND ADDRESSES

R. Gardner	NRC Region III
G. Orlov	Commonwealth Edison Company (Consultant)
N. Kaushal	Commonwealth Edison Company

CONTENTION ITEM 12.G

12. Contrary to Criterion XVI, "Corrective Action," of 10CFR Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures were established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformance are promptly identified and corrected. And in the case of significant conditions adverse to quality, Applicant failed to ensure that the cause of the condition is determined and corrective action taken to preclude repetition.
- G. After an NRC inspection (82-05) identified that the Applicant failed to implement a QA program for the erection of mechanical safety-related equipment, Phillips, Getschow contractor identified numerous pieces of equipment that had been installed without QC verification of internal cleanliness. (Inspection Report 84-21/20, Exh. 20.)

RESPONSE

A routine safety inspection was conducted by Messrs. L.G. McGregor and R.D. Schulz, of the NRC, on September 4 through October 5, 1984. The results of the inspection were recorded in NRC Inspection Report Numbers 50-456/84-21; 50-457/84-20.

The subject report noted that NRC inspections had identified safety-related piping systems and components that were completely installed without a quality assurance program to assure system cleanliness. According to the report, nonconformance reports identified numerous pieces of equipment that were not inspected. However, the corrective action was to waive the cleanliness inspections and "flush the system clean."

This inspection report also noted that Commonwealth Edison had established an effective inspection program to evaluate these safety-related components. This program included visible inspection of

CONTENTION ITEM 12.G

components in difficult areas, use of a flexible borescope; verification of system design pressures and flows; and where necessary, inspection or cleaning of systems which have been welded together by selective cutting to gain access.

The NRC stated that in view of the corrective action program established, which will assure system cleanliness, a response to this item of noncompliance was not necessary.

Although no response was required, Commonwealth Edison did provide a response in order to clarify its position on this issue. This response was amended on February 27, 1985, and Edison provided Supplemental Response on April 16, 1985.

As stated in the Item of Noncompliance, some pieces of equipment had no documentation showing that cleanliness inspections were performed during initial installation activities. Because of programmatic controls in place, the lack of documentation does not necessarily imply cleanliness inspections were not performed at the time of initial installation activities. In its clarification, Commonwealth Edison stated that it had sufficient confidence in system cleanliness during initial installation activities to warrant the disposition of undocumented inspections by waiving equipment disassembly and using the piping system flushing program to demonstrate system cleanliness.

CONTENTION ITEM 12.G

In its amended clarification, Commonwealth Edison additionally informed the NRC that, in retrospect, the piping system flushing program may not reveal any large solid objects left in the system and not caught by cleanliness inspections or lack of cleanliness inspections. Therefore, Commonwealth Edison has instituted a program under NCR 614 to examine equipment which has no documentation of initial installation inspection for internal cleanliness.

A subsequent NRC followup inspection, documented in Inspection Report 85-011, indicated the presence of foreign material in safety-related systems continues to be a concern. The NRC would evaluate the reflush procedures and the performance of flushing activities in future inspections. A D.L. Farrar letter to J.G. Keppler dated April 16, 1985 provides additional information relative to this issue. In this response, Commonwealth Edison stated that better progress could be made in completing flushing activities and closing out open items. In addition, materials discovered during preparation for Full Flow ECCS Test indicated a need to review the flushing program and to take corrective action where appropriate.

Commonwealth Edison has established a flush group within the Project's Start Up organization to concentrate control of the flush program. This group is presently manned with 5 individuals with 67 years of combined commercial and military nuclear and nuclear-related experience. This group's responsibility includes: aiding flush coordination, conducting flush reviews (procedures & results), and developing generic flushing procedures. In addition, two men have been

CONTENTION ITEM 12.G

added to the testing organization to aid in the performance of flushes. These 2 men have a total of 25 years of combined commercial and military nuclear experience.

Commonwealth Edison has reviewed a number of previously performed system flushes. Initially, these systems were those associated with the equipment originally covered in NCR 614. For the future, Commonwealth Edison has written and approved a procedure, PSU-206, which provides for a detailed review of each safety related system flush prior to that system's being released to operation. Those reviews provided for, among other activities, the taking of grab samples and the review of activities performed after flushing. Those reviews performed to date have identified the needs for reflushing where such activities are warranted. These reflushing activities will be conducted as the pieces of equipment become available. Finally, Commonwealth Edison Company has moved to tighten control of the flush program by revising their generic flushing procedure PSU-200. This revision of PSU-200, in general, tightens up the requirements for flush procedure writing and conduct, and provides for the opportunity for a Level III Flush Engineer and QA to place hold points in the performance of flushes. The noncompliance which is the subject of this Contention Item is still open.

CONTENTION ITEM 12.G

REFERENCES

1. Inspection Report 50-456/84-21; 50-457/84-20 (pages A0002364-A0002384).
2. D.L. Farrar letter to J.G. Keppler dated January 31, 1985 transmitting Commonwealth Edison's response to the Notice of Violation (pages A0002385-A0002396).
3. D.L. Farrar letter to J.G. Keppler dated February 27, 1985 transmitting an amendment to Commonwealth Edison response of January 31, 1985 (pages A0002397-A0002399).
4. D.L. Farrar letter to J.G. Keppler dated April 16, 1985 transmitting Supplemental Response to NRC (pages A0002400-A0002401).
5. Inspection Report 50-456/85-011; 50-457/85-001 dated April 12, 1985 (pages A0003346-A0003354).
6. CEC Co NCR 614 (pages B0005803-B0006024).
7. CEC Co Project Procedures PSU 206, PSU 200, Rev. 3 (pages B0005628-5637, B0005570-5627).
8. Licensing file on Item 84-21-07, Cont. 12.G (pages A0009288-A0009336).

CONTENTION ITEM 12.G

NAMES AND ADDRESSES

L.D. McGregor	NRC Region III
R.C. Schulz	NRC Region III
H. Zimmerman	Commonwealth Edison Company
D. Shamblin	Commonwealth Edison Company
G. Groth	Commonwealth Edison Company
C. Tomashek	Commonwealth Edison Company

CONTENTION ITEM 12.H

12. Contrary to Criterion XVI, "Corrective Action," of 10CFR Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures were established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformance are promptly identified and corrected. And in the case of significant conditions adverse to quality, Applicant failed to ensure that the cause of the condition is determined and corrective action taken to preclude repetition.
- H. Edison did not take appropriate corrective action with regard to Audit QA-20-80-22, in that an assessment of QC inspectors qualifications were not performed to address the potential impact on work performed prior to the audit finding. (Inspection Report 84-07, Exh. 18.)

RESPONSE

A special NRC safety inspection was conducted by R. Schulz, J. Malloy and W. Kropp on March 26, 28-29, April 3-5, 10-12 and May 23 and 31, 1984.

The results of the inspections were recorded in Report Numbers 50-456/84-08 (DRS); 50-457/84-08.

The subject report noted that Commonwealth Edison's Quality Assurance audit 20-80-22, had identified Napoleon Steel as not having a procedure for qualifying and certifying QC inspectors. The specified corrective action required Napoleon Steel to write and issue a procedure for certifying QC inspectors, but did not assess the adequacy of the inspectors' qualifications for potential impact on work performed prior to the audit finding.

CONTENTION ITEM 12.H

In response to the NRC finding, Commonwealth Edison acknowledged the close-out of QA Audit 20-80-22 did not clearly address the basis for considering previous inspection activities as being acceptable.

This audit included qualification and certification practices because of increased interest in ensuring that those practices be clearly spelled out in a separate procedure. The concern of the audit was the lack of a detailed procedure rather than the capability of personnel performing the inspections. Thus, Commonwealth Edison believes the cause of the noncompliance is incomplete documentation within the audit report and associated close-out surveillances.

Over the course of the last several years, Commonwealth Edison has made changes to enhance the Audit Program. These changes address both the way in which audits are performed, the method of reviewing corrective actions for close-out of deficient items, and enhanced documentation requirements. In addition, in July, 1983 CEC's QA Manual was revised to state that no audit item is to be closed until corrective action has been verified as completed.

In order to reinforce the importance of addressing past work when closing audit items, CEC's QA added a specific item to its auditor training program which addresses program evaluation and documentation of past work in audit close-out.

CONTENTION ITEM 12.H

All Commonwealth Edison Site Quality Assurance deficiencies found by Edison QA during 1980 audits at Braidwood Station were reviewed to ensure properly documented close-out. Based on the results of this review and further review of completed and on-going corrective actions, CECO determined that less than 6% of the audit deficiencies require further actions to evaluate the item and assure that it is resolved. Based on the information to date, the remaining items will require at most an administrative action rather than additional corrective action in the field. To provide additional assurance that acceptability of past work was addressed or subsequent corrective actions have adequately addressed the original concern, the QA review was extended to 1981 audit deficiencies. Any additional measures will be contingent on the results of this review.

CONTENTION ITEM 12.H

REFERENCES

1. Inspection Report 50-456/84-07; 50-457/84-07 (pages A0002059-A0002073).
2. D.L. Farrar letter to J.G. Keppler dated August 20, 1984 transmitting response to Inspection Report 50-456/84-07 and 50-457/84-07 (pages A0002074-A0002082).
3. R.D. Walker letter to Braidwood dated August 24, 1984 acknowledging receipt of August 20, 1984 letter (pages G0000919-G0000920).
4. D.L. Farrar letter to J.G. Keppler dated December 13, 1984 transmitting supplemental response to Inspection Report 45-456/84-07 and 50-457/84-07 (pages A0002083-A0002084).
5. W.S. Little letter to Cordell Reed dated December 24, 1984 acknowledging receipt of December 13 1984 letter (page A002085).
6. Commonwealth Edison Quality Assurance Audit QA-20-80-22 (pages B0000000-B0000006).
7. Licensing File on Item 84-07-06, Contention 12.H (pages A0009337-A0009368).

CONTENTION ITEM 12.H

NAMES AND ADDRESSES

R.D. Schulz	NRC Region III
J. Malloy	NRC Region III
W. Kropp	NRC Region III
T. Quaka	Commonwealth Edison

CONTENTION ITEM 12.I

12. Contrary to Criterion XVI, "Corrective Action," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that measures were established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. And in the case of significant conditions adverse to quality, Applicant failed to ensure that the cause of the condition is determined and corrective action taken to preclude repetition.
- I. Edison QA identified inspection deficiencies but failed to take corrective action with respect to Napoleon Steel Contractors' past welding inspection activities to assure that defects do not exist in multi-pass welds. (Inspection Report 84-08, Exh. 25.)

RESPONSE

A routine NRC safety inspection was conducted by Messrs. L.G. McGregor and R.D. Schulz of the NRC on April 1 through April 30, 1984. The results of the inspections were recorded in Report Numbers 50-456/84-08 (DRS); 50-457/84-08.

The NRC inspectors noted that Commonwealth Edison's Quality Assurance identified in-process inspection deficiencies in audits but failed to take corrective action with regard to Napoleon Steel Contractors, Inc.'s past welding in-process inspection activities to ensure that defects did not exist in prior multi-pass welds.

Commonwealth Edison acknowledged that its audit close-out did not clearly address the basis for considering previous multi-pass welds as being acceptable. However, at the time of audit deficiency closure Commonwealth Edison QA interpreted the Napoleon Steel Contractors, Inc. response to its inquiry about the audit finding to indicate that the requisite attributes had been evaluated during the Napoleon in-process

CONTENTION ITEM 12.1

surveillances of all past multi-pass (full penetration) welds but that the results had not been properly documented. Commonwealth Edison NCR 636 was prepared to evaluate and resolve the question of acceptability of previous multi-pass (full penetration) welding and to determine whether further action was necessary. A review of the qualifications of welders employed by Napoleon revealed that all were qualified to perform full penetration welds. Thus, through the qualification process, each welder demonstrated that he could properly perform multi-pass welds.

The review also established that the welder qualification coupons had been evaluated by bend test per AWS D1.1. This technique would identify the same types of weld defects as the in-process welding inspections, which could result from improper preheat, interpass temperature, position, weld bead layering, or interpass grinding/cleaning. The welders are required to pass bend tests on welder qualification coupons prior to being certified.

Based on the system of welding controls in place in Napoleon's procedures, the nature of the work, and the qualifications of Napoleon's welders, Commonwealth Edison's engineering organization dispositioned this NCR "accept as is".

Over the course of the last several years, Commonwealth Edison has made changes to enhance the Audit Program. These changes address both the way in which audits are performed, the method of reviewing corrective actions for close-out of deficient items, and enhanced documentation requirements. In addition, in July, 1983 CECO's QA Manual was revised to

CONTENTION ITEM 12.I

state that no audit item is to be closed until corrective action has been verified as completed.

In order to reinforce the importance of addressing past work when closing audit items, CECQ QA, added a specific item to its auditor training program which addresses program evaluation and documentation of past work in audit closeout.

All Commonwealth Edison Site Quality Assurance deficiencies found by Edison QA during 1980 audits at Braidwood Station were reviewed to ensure properly documented close-out. Based on the results of this review and further review of completed and on-going corrective actions, CECQ determined that less than 6% of the audit deficiencies require further actions to evaluate the item and assure that it is resolved. Based on the information to date, the remaining items will require at most an administrative action rather than additional corrective action in the field. To provide additional assurance that acceptability of past work was addressed or subsequent corrective actions have adequately addressed the original concern, the QA review was extended to 1981 audit deficiencies. Any additional measures will be contingent on the results of this review.

CONTENTION ITEM 12.I

REFERENCES

1. Inspection Report 50-456/84-08; 50-457/84-08 (pages A0002086-A0002103).
2. D.L. Farrar letter to J.G. Keppler dated July 21, 1984 transmitting response to Inspection Report 50-456/84-08 and 50-457/84-08 (pages A0002104-A0002109).
3. R.D. Walker letter to Braidwood dated July 29, 1984 acknowledging receipt of July 21, 1984 letter (page A0002110).
4. D.L. Farrar letter to J.G. Keppler dated September 12, 1984 revising Commonwealth Edison's completion date (page A0002112).
5. D.L. Farrar letter to J.G. Keppler dated December 13, 1984 transmitting supplemental response to Inspection Report 50-456/84-08 and 50-457/84-08 (pages A0002113-A0002114).
6. W.S. Little letter to Cordell Reed dated December 14, 1984 acknowledging receipt of December 13, 1984 letter (page A0002085).
7. Commonwealth Edison Quality Assurance Audit QA-20-80-22 (pages B000000-067).
8. Commonwealth Edison Quality Assurance Surveillance Number QAS 1480 (page B0005121).
9. Commonwealth Edison Nonconformance Report 636 (pages (B0005106-5110).
10. Licensing File on Item 84-08-02, Cont. 12.I (pages A0009369-A0009419).

CONTENTION ITEM 12.I

NAMES AND ADDRESSES

R. Schulz	NRC Region III
J. Malloy	NRC Region III
W. Kropp	NRC Region III
T. Quaka	Commonwealth Edison Company
S. Hunsader	Commonwealth Edison Company

CONTENTION ITEM 13.A

13. Contrary to Criterion XVII, "Quality Assurance Records," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that sufficient records were maintained to furnish evidence of activities affecting quality. The records are to include at least the following: results of reviews, inspections, tests audits, monitoring of work performance, and materials analyses. Applicant has failed to make such records identifiable and retrievable.
 - A. With few exceptions, official records were not generated or maintained relative to the installation of mechanical safety-related equipment by either Edison or their erection contractor, L. K. Comstock Company (sic). Records that failed to show compliance with quality assurance, design, and code requirements included: (1) equipment releases to engineering for installation, (2) travelers or process sheets to identify required installation activities and inspections, (3) installation inspections, (4) pretensile loads for bolting, and (5) data on final equipment settings. This violation was in part the basis for the imposition of the 2/2/83 civil penalty for "a breakdown of your Quality Assurance (QA) program." (Exhibit 3)

RESPONSE

A routine safety inspection was conducted during the period April 19 through July 20, 1982, and a special inspection was conducted on September 8-10, 1982, of activities at Braidwood Station, Units 1 and 2. The results of the inspections were discussed during an enforcement conference conducted at the NRC Region III office on August 31, 1982, and at the Commonwealth Edison Company corporate offices in Chicago, Illinois on November 19, 1982. The reports setting forth the results of the inspections and the enforcement conferences are documented in Inspection Report 50-456/82-05; 50-457/82-05.

The response to this Contention Item is contained in Commonwealth Edison's response to Specific Interrogatory 58 with respect to Contention Item 6.A. The five specific matters raised in this Contention Item are elements of the larger question of the installation of safety-related

CONTENTION ITEM 13.A

mechanical equipment. It should be noted that the applicable contractor in this contention is Phillips, Getschow, not L. K. Comstock as identified in this contention.

CONTENTION ITEM 13.A

REFERENCES

1. Inspection Report 50-456/82-05; 50-457/82-05
(pages A0001005-A0001018).
2. T. R. Tramm letter to J. G. Keppler, dated October 8, 1982,
transmitting Commonwealth Edison Report for 10CFR50.55(e) 82-07
(pages *A0003558-A0003564).
3. Cordell Reed letter to J. G. Keppler, dated April 4, 1983,
transmitting Commonwealth Edison Response to Inspection Report
82-05 (pages A0001063-A0001084).

CONTENTION ITEM 13.A

NAMES AND ADDRESSES

L. G. McGregor	NRC Region III
W. J. Key	NRC Region III
T. R. Tramm	Commonwealth Edison Company
G. Groth	Commonwealth Edison Company
M. Dougherty	Commonwealth Edison Company (Consultant)
J. Stewart	Phillips Getschow Company

CONTENTION ITEM 13.B

13. Contrary to Criterion XVII, "Quality Assurance Records," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that sufficient records were maintained to furnish evidence of activities affecting quality. The records are to include at least the following: results of reviews, inspections, tests, audits, monitoring of work performance, and material analyses. Applicant has failed to make such records identifiable and retrievable.
- B. Sargent & Lundy Engineers calculations which provided the original justification for the factor design methodology and magnitude were not retrievable. (Inspection Report 84-43/39, Exh. 19.)

RESPONSE

A special NRC safety inspection was conducted by Messrs. J.W. Muffett, K.D. Ward, R.S. Love, J.A. Jacobson and J. Schapker on September 24, 1984 through February 4, 1985, of activities at Sargent & Lundy Engineers, Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2. The results of the inspection were recorded in Inspection Report Number 50-456/84-43 (DRS); 50-457/84-39 (DRS).

The subject report noted that the Sargent & Lundy Engineers calculations, which provided the original justification for the interaction (ϕ) factor design methodology and magnitude were not retrievable for review.

In response to the NRC finding, calculations to justify ϕ factor methodology were recreated. These calculations were made in addition to the 1982 supplementary calculations which were available. As a result of these two sets of calculations, minor changes were made to a few of the ϕ factor parameters. Support designs where the ϕ factor was used

CONTENTION ITEM 13.B

were identified and reviewed. In those cases where the support design using the phi factor methodology was not bounded by the revised phi factor parameters, detailed individual calculations were performed which showed that the support designs were within code allowable stresses. These detailed calculations were required for less than 10% of the support designs which utilized the phi factor methodology.

Structural Design Standard for Mechanical Component Support Steel Framing (SDS-E37) is the document used by Sargent & Lundy (S&L) to govern their design of mechanical component supports. S&L issued a notification of revision to SDS-E37. The revision incorporated revised bounding parameters for phi factor methodology to be used in conjunction with the simplified analysis procedure in Section 37.6.3 of SDS-E37.

In addition, the technical support documentation for SDS-E37 was microfilmed to ensure retrievability.

The other Structural Engineering Design Standards were reviewed to assure that adequate technical support documentation is available, that the documentation meets QA requirements, and that it has been microfilmed for retrievability. The documentation has now been either microfilmed or scheduled for microfilming.

CONTENTION ITEM 13.B

REFERENCES

1. NRC Inspection Report 50-456/84-43; 50-457/84-39 (pages A0002867-A0002976).
2. D. L. Farrar letter to J. G. Keppler dated April 15, 1984; Attachment A, Response to Notice of Violation (pages A0002980-A0002983).
3. Licensing file on Item 84-43-01, Cont. 13.B (pages A0009420-A0009576).

CONTENTION ITEM 13.B

NAMES AND ADDRESSES

J. W. Muffett	NRC Region III
K. D. Ward	NRC Region III
J. A. Jacobson	NRC Region III
R. S. Love	NRC Region III
J. F. Schopker	NRC Region III
B. R. Shelton	Commonwealth Edison Company
R. W. Hooks	Sargent & Lundy
K. Kostal	Sargent & Lundy

CONTENTION ITEM 14.A

14. Contrary to Criterion XVIII, "Audits," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that a comprehensive system of planned and periodic audits is carried out to verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the program. The Applicant also failed to ensure follow-up action, including reaudit of deficient areas.
 - A. Inadequate audits were performed by Edison prior to June 30-July 9, 1980 relative to mechanical equipment erection and inspection activities of Phillips, Getschow Company. This important activity involves the installation of most of the critical nuclear steam supply system and other mechanical safety-related equipment. Significant amounts of this equipment, including Steam Generators, Residual Heat Removal Pumps and Safety Injection Pumps, had either been finally or partially installed prior to this date. Further, no follow-up audit was conducted by Edison until June 23-25, 1981, to determine the effectiveness of the Phillips, Getschow Company's quality assurance program for these installations, or to verify that proper quality records were being generated and maintained as required, although a major finding during the June-July 1980 audit was that Phillips, Getschow Company had not implemented an approved procedure for installing equipment and inspecting that installation. This violation was in part the basis for the imposition of the 2/2/83 civil penalty for "a breakdown of your Quality Assurance (QA) program." (Exhibit 3)

RESPONSE

A routine safety inspection was conducted during the period April 19 through July 20, 1982, and a special inspection was conducted on September 8-10, 1982, of activities at Braidwood Station, Units 1 and 2. The results of the inspections were discussed during an enforcement conference conducted at the NRC Region III office on August 31, 1982, and at the Commonwealth Edison Company corporate offices in Chicago, Illinois on November 19, 1982. The reports setting forth the results of the inspections and the enforcement conferences are documented in Inspection Report 50-456/82-05; 50-457/82-05.

CONTENTION ITEM 14.A

In response to this issue, Commonwealth Edison took exception to the assertion that 10 C.F.R. 50 Appendix B, Criterion XVIII and Commonwealth Edison (CECo) Q.A. Manual Section QR 18.0 have been violated, although Commonwealth Edison conceded that corrective action for the identified deficiencies had not been undertaken in a timely fashion. A system of planned and periodic audits was carried out to verify compliance with the aspects of the quality assurance program related to mechanical equipment installation and to determine the effectiveness of that program. Follow-up action, including follow-up surveillances and audits of the deficient areas, were performed. Details of these audit activities are delineated in Commonwealth Edison's response to the NRC, dated April 4, 1983. Briefly, these activities can be summarized as follows:

- a) CECo QA audits were performed prior to June 30, 1980 as follows:
 - 1) During the period May 17-21, 1979, General Office QA audited Braidwood and identified that PGC Co QC involvement in equipment setting was not evident.
 - 2) On June 21, 1979, Site Q.A. Audit #20-79-37 was performed that addressed equipment installation.
- b) No QA audits of this area were performed from September, 1979 to March, 1980 because construction activities were stopped for financial reasons.

CONTENTION ITEM 14.A

- c) Another CECo Site QA Audit (#20-80-21) was performed from June 30-July 9, 1980. This audit identified that PGCo had not implemented adequate procedures for equipment installation and inspection. A follow-up surveillance was performed by Site QA on January 9, 1981.
- d) During the period March 11-15, 1982, General Office QA performed an audit that identified that PGCo had not adequately demonstrated or documented QC involvement with regard to mechanical equipment installation.

The CECo current Quality Assurance audit program is described in the introduction to the answer to Specific Interrogatories 58 and 59.

CONTENTION ITEM 14.A

REFERENCES

1. Inspection Report 50-456/82-05; 50-457/82-05 (pages A0001005-1018).
2. Cordell Reed letter to J. G. Keppler, dated April 4, 1983, transmitting Commonwealth Edison Response to Inspection Report 82-05 (pages A0001063-A0001084).

CONTENTION ITEM 14.A

NAMES AND ADDRESSES

L. G. McGregor	NRC Region III
W. J. Key	NRC Region III
Cordell Reed	Commonwealth Edison Company
E. E. Fitzpatrick	Commonwealth Edison Company
T. Quaka	Commonwealth Edison Company

CONTENTION ITEM 14.B.1

14. Contrary to Criterion XVIII, "Audits," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that a comprehensive system of planned and periodic audits is carried out to verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the program. The Applicant also failed to ensure followup action, including readout of deficient areas.

B. A special NRC QA inspection reported May 7, 1984 that:

* Mechanical contractor Phillips, Getschow Co. has not established and executed a plan for auditing the implementing procedures of the quality assurance program on a period (sic) basis to determine the effectiveness of the program in accordance with the Phillips, Getschow QA Manual.

RESPONSE

For the response to Interrogatory 58, Contention Item 14.B.1, see Applicant's response to Specific Interrogatory 49, contained in Applicant's Fourth Partial Response to Rorem's First Set of Quality Assurance Interrogatories and Request's to Produce.

CONTENTION ITEM 14.B.1

NAMES AND ADDRESSES

R. Schulz	NRC Region III
S. Hunsader	Commonwealth Edison Company
G. Gorski	Phillips Getschow Company
S. Forbes	Phillips Getschow Company

CONTENTION ITEM 14.B.2

14. Contrary to Criterion XVIII, Audits of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that a comprehensive system of planned and periodic audits is carried out to verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the program. The Applicant also failed to ensure followup action including reaudit of deficient areas.
- B. A special NRC QA inspection reported May 7, 1984 that: Electrical contractor L.K. Comstock Co./L.K. Comstock Engineering Company auditing activities neither conformed with the comprehensive annual schedule of planned and periodic audits established as required by QA Program Manual Section 4.14.1, nor did they verify compliance with all aspects of the Quality Assurance Program.

RESPONSE

The NRC Region III Office conducted a special quality assurance program inspection June 20-24, 1983, June 17-July 1, 1983, August 1-5, 1983, October 4-7, 1983, October 24, 1983, January 11-13, 1983, January 26, 1984, and February 9, 1984/. The results of these inspections were documented in Report Numbers 50-456/83-09 (DE); 50-457/83-09 (DE).

The NRC inspectors noted that L.K. Comstock did not perform a complete program verification of the Quality Assurance Program in 1982 and 1983. Specifically, the following Quality Assurance Manual Subsections and work procedures were identified as not having been audited:

1. Section 1.0.0, "Policy Statement"
2. Section 1.0.1, "Quality Assurance and Control Program"
3. Section 2.0, "Applicability"

CONTENTION ITEM 14.B.2

4. Section 3.1.3, "Reporting of Defects and Non-compliance"
5. Section 3.1.4, "Program Review and Evaluation"
6. Section 3.2, "Organization"
7. Work Procedure 4.3.3.1, "Welding Procedure for Structural Attachments (6013)"
8. Work Procedure 4.10.4 "Housekeeping"
9. Work Procedure 4.3.23, "Silver Plating"
10. Work Procedure 4.1.2, "Position Delineation"
11. Work Procedure 4.3.16, "Revision/Work Request of All Electrical Equipment"
12. Work Procedure 4.3.13, "Equipment/Junction Box Installation"

In response to the NRC finding, CECo acknowledged that L.K. Comstock did not fully implement their 1983 audit schedule. However, adequate CECo Quality Assurance Audits were performed to cover all applicable L.K. Comstock activities. During the inspection visit, the NRC acknowledged that CECo Quality Assurance provided adequate audit coverage and that Site Quality Assurance was previously aware of the L.K. Comstock shortfall.

L.K. Comstock Corporate Quality Assurance completed audits of the six QA Manual Sections. Four of the six sections were covered specifically by the audits. Sections 1.0.0 (Policy Statement) and 1.0.1 (QA and QC Program) are generic program sections which are implemented throughout other portions of the L.K. Comstock Program. These sections

CONTENTION ITEM 14.B.2

were covered by auditing the portions of the Comstock Program which execute the commitments found within those sections.

Active applicable procedures, specifically Procedures 4.3.16 and 4.3.13, were audited by L.K. Comstock prior to the week of January 9, 1984. Some of the referenced procedures would not have been audited at the time of the NRC inspection even under a 100% procedure audit schedule. Specifically, Procedures 4.3.3.1 and 4.10.4 were issued in December 1983 and, therefore, were not yet scheduled for audit. Procedure 4.3.23 is an infrequently performed operation that requires a 100% in process quality control inspection. Procedure 4.1.2 is normally audited by corporate auditors. Audits of these procedures were complete by December 1984.

L.K. Comstock also placed two fulltime, qualified auditors on site (one activated in September and one in November 1983). Counseling was given to these auditors by Commonwealth Edison Site Quality Assurance to include more descriptive evaluations of audit results in their reports. In addition, L.K. Comstock Procedures 4.14.3 "The Qualification, Certification and Training of Auditors" and 4.14.1 "Internal Audit Program" were revised to clarify the on-site auditing activities and qualification processes for site auditors.

CONTENTION ITEM 14.B.2

L.K. Comstock Site Quality Assurance submitted and executed an audit plan for 1984 that adequately covered the Quality Assurance Program and safety-related activities. Commonwealth Edison Site Quality Assurance reviews the L.K. Comstock QA audit plan and revisions thereto for adequacy.

Site Quality Assurance conducted a surveillance (Surveillance No. 4852) in August 1985, which reviewed L.K. Comstock's committed corrective action and action to prevent recurrence. During this surveillance, Site Quality Assurance requested that L.K. Comstock provide clearer documentation of the corrective actions. Upon review of that documentation, Site Quality Assurance concluded that L.K. Comstock had completed the corrective action and the action to prevent recurrence in an acceptable manner.

CONTENTION ITEM 14.B.2

REFERENCES

1. L.O. DelGeorge letter to J.G. Keppler, dated July 6, 1984 (pages A0001507-A0001572).
2. L.K. Comstock Procedure 4.14.1, "Internal Audit Program" (pages 00001309-00001384).
3. L.K. Comstock Procedure 4.14.3, "The Qualification, Certification and Training of Auditors" (pages 00001217-00001248).
4. NRC Inspection Report Numbers 50-456/83-09 (DE); 50-457/83-09(DE) (pages A0001440-A0001507).

CONTENTION ITEM 14.B.2

NAMES AND ADDRESSES

R.D. Schultz	NRC Region III
D.E. Keating	NRC Region III
C.C. Williams	NRC Region III
T.E. Vandel	NRC Region III
I.T. Yin	NRC Region III
D.R. Hunter	NRC Region III
A.B. Davis	NRC Region III
L.O. DelGeorge	Commonwealth Edison Company
T.E. Quaka	Commonwealth Edison Company
D. Brown	Commonwealth Edison Company
D.A. Hoffer	Commonwealth Edison Company

CONTENTION ITEM 14.B.3

14. Contrary to Criterion XVIII, "Audits," of 10 C.F.R. Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that a comprehensive system of planned and periodic audits is carried out to verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the program. The Applicant has failed to ensure followup action, including reaudit of deficient areas.

B. A special NRC QA inspection reported May 7, 1984 that:

* HVAC contractor Pullman Construction Industries, Inc., did not meet their yearly schedule for audit activities required by their QA Manual, Section 18, in that the following implementing procedures were not audited:

- B 3.1.F, Design Control
- B 5.1.F, HVAC Repair Adjustment
- B 9.3.F, Expansion Anchor Installation
- B 10.2.F, Visual Weld Inspection

RESPONSE

NRC Quality Assurance Program inspections were performed on 06/20/83 - 06/24/83, 06/27/83 - 07/01/83, 08/01/83 - 08/05/83, 08/09/83, 10/04/83 - 10/07/83, 10/24/83, 01/11/84 - 01/13/84, 01/26/84 and 02/09/84 by Messrs. T.E. Vandel, R.D. Schulz, I.T. Yin, D. E. Keating, C.C. Williams and D.R. Hunter of NRC Region III. The results of the inspections were recorded in NRC Inspection Report 50-456/83-09; 50-457/83-09.

The NRC inspectors reported that the Pullman Sheet Metal Works, Inc., (PSM) did not meet their yearly schedule of the PSM Quality Assurance Program for audit activities required by the QA Manual, Section 18, in that the following implementing procedures were not audited:

- B 3.1.F, Design Control
- B 5.1.F, HVAC Repair Adjustment

CONTENTION ITEM 14.B.3

- B 9.3.F, Expansion Anchor Installation
- B 10.2.F, Visual Weld Inspection

Commonwealth Edison agrees that PSM's 1982 and 1983 audit program did not cover all implementing procedures. Evaluating compliance with the eighteen Criteria in an audit under the PSM Quality Assurance Manual has always required examination of both the QA program and the implementing procedures. Auditing to the 18 criteria assured procedure adequacy and procedure implementation by virtue of the sampling of procedures entailed in that process. PSM QA Manual, Section 18 required PSM to audit its program against the eighteen 10 CFR 50 Appendix B Criteria annually but did not specifically require that all implementing procedures be audited annually. PSM's audits dated April 4, 1983 and April 28-29, 1982 assessed compliance with the 18 criteria but did not assess compliance to all current procedures. Prior to the identification of this deficiency, neither the PSM Quality Assurance organization nor Commonwealth Edison viewed compliance with the requirement to audit to the 18 criteria annually to mean that all contractor implementing procedures had to be audited annually.

Commonwealth Edison Site Quality Assurance audit number 20-83-12, performed in March 1983, in part determined that Pullman failed to audit to all of the 18 Criteria of 10 CFR 50 Appendix B, annually. The audit deficiency was closed by Commonwealth Edison Site Quality Assurance Surveillance number 2903 based on PSM's documented reasons for this deficiency and completing their 1982 audit schedule in early 1983.

CONTENTION ITEM 14.B.3

In response to the NRC's concern, PSM performed audits in August and December of 1983. These audits covered all sections of the PSM Quality Assurance Program and assessed compliance with all of PSM's implementing site procedures. In addition, PSM has implemented an audit schedule matrix, listing Appendix B criteria, Quality Assurance manual sections, and procedures to be covered for future audits. This will assure that future audits cover not only Appendix B Criteria, but also the entire population of implementing procedures.

Subsequent to the identification of this deficiency by the NRC inspectors, Commonwealth Edison QA required contractors to audit active implementing procedures, as well as the 18 criteria, annually.

For further information on this subject, see also Commonwealth Edison's response answer to Specific Interrogatory 49.

CONTENTION ITEM 14.B.3

REFERENCES

1. NRC Inspection Report 456/457/83-09 (pages A0001440-A0001507).
2. L. O. DelGeorge letter to J. G. Keppler, dated 07/06/84
(pages A0001508-A0001572).
Enclosure: Response to inspection report numbers 50-456/83-09 and
50-457/83-09
3. Pullman Procedure B17.1.F "QA Records" Revision O
(pages M0001074-M0001080).
4. Licensing file on Item 83-09-08C, Cont. 14.B.3
(pages A0009656-A0009704).

CONTENTION ITEM 14.B.3

NAMES AND ADDRESSES

T. E. Vandel	NRC Region III
R. D. Schulz	NRC Region III
I. T. Yin	NRC Region III
D. E. Keating	NRC Region III
C. C. Williams	NRC Region III
D. R. Hunter	NRC Region III
D. Brown	Commonwealth Edison Company
L. O. DelGeorge	Commonwealth Edison Company
M. Jarigese	Pullman Construction Industries
D. Lawler	Pullman Sheet Metal Works
R. Ewald	Pullman Sheet Metal Works
C. Holt	Pullman Sheet Metal Works

CONTENTION ITEM 14.B.4

14. Contrary to Criterion XVIII, "Audits," of 10 CFR Part 50, Appendix B, Commonwealth Edison Company has failed to ensure that a comprehensive system of planned and periodic audits is carried out to verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the program. The Applicant also failed to ensure follow-up action, including reaudit of deficient areas.

B. A special NRC QA inspection reported May 7, 1984 that:

- * Edison's audits of the installation of small bore instrumentation and process piping were inadequate in that contractor hanger design calculation problems were not identified for more than two years. (Inspection Report 83.09, Exh. 5.)

RESPONSE

A special NRC quality assurance program inspection was conducted by Messrs. T.E. Vandel, R.D. Schulz, I.T. Yin, D.E. Keating, C.C. Williams, and D.R. Hunter on June 20-24, June 17-July 1, August 1-5, August 9, October 4-7, and October 24, 1983, and January 11-13, January 26 and February 9, 1984. The results of these inspections were documented in Inspection Report Number 50-456/83-09 (DE); 50-457/83-09-(DE).

After identifying site installation of small bore instrumentation piping as having begun before March 1981 and the small bore process piping as having begun before July 1981, the NRC concluded that two years had passed prior to the Commonwealth Edison design audit findings. Based on this apparent time lapse, the inspector believed the site design control deficiencies had not been identified and corrected in a timely manner.

CONTENTION ITEM 14.B.4

Commonwealth Edison disagreed with the finding. The Site Quality Assurance Department reviewed and documented its activity in this area. It showed that safety-related instrumentation line support selection started in July 1981 and safety-related small bore process piping support selection started in January 1983. The history demonstrates that Site Quality Assurance was actively involved in these areas in a timely fashion.

INSTRUMENTATION LINE SUPPORTS

Upon approval of Phillips, Getschow Company Procedure PGCP-22, Rev. 1, safety related instrumentation line support selection started in July 1981. After enough work had been completed so that a representative sample could be taken, this area was checked by Commonwealth Edison Company Quality Assurance in an audit of October 1981 (Report No. QA 20-81-30). This audit identified deficiencies that are summarized as follows:

1. Incorrect calculations
2. Improper calculation reviews
3. Three dimensional restraints not used per ECN 2194
4. Adjacent line weights not used in line weight calculations
5. Revision levels of applicable isometric drawings not listed on calculation sheets
6. System component weights obtained from an uncontrolled source (uncalibrated scale)
7. Quality Control not monitoring instrument group activities

CONTENTION ITEM 14.B.4

8. Documented training not given to Procedures PGCP-21 and 22
9. Interface document not clearly written
10. Organization chart in error

The details of these items, including Quality Assurance follow-up work, corrective actions, and item close-outs, are described in the audit close-out surveillance reports attached to the relevant audit report. This audit resulted in a stop work action being placed on Phillips, Getschow Company until February 1982. All items were resolved and closed by March 1982.

As an additional follow-up to the October 1981 audit, an audit was performed in July '82 (Report No. QA-20-82-15). The concerns of the October 1981 audit were re-checked as evidenced by approved checklist questions 1, 2, 3, 4, 5, 10, 11, 12, 14, 15, 16, and 17. All checklist question areas were found acceptably implemented. At that time, based on the audit history, Commonwealth Edison Company Quality Assurance concluded that instrument support selection was being performed in an acceptable manner, and that Phillips, Getschow Company was implementing their procedures in this area.

SMALL BORE PIPE SUPPORTS

Small bore process pipe support selection started in January 1983 upon approval of Revision 2 of PGCP-22 which then added support selection for small bore process pipe. Again, after sufficient work had been completed so that a representative sample could be taken, small bore pipe support selection was checked and instrumentation line support selection

CONTENTION ITEM 14.B.4

was re-checked in July, 1983 during audit QA-20-83-33. It was identified that Phillips, Getschow Company Procedure PGCP-22 did not give the step-by-step method for performing support selection calculations; that the procedure did not reference the current applicable ECN (4566); and that information on the calculation sheets was unclear or incomplete. These resulted in PGCP-22 being revised to define more specifically the methodology of performing support selection calculations. Revision 8 of this procedure was given interim approval by Commonwealth Edison Site Quality Assurance on November 10, 1983 and was accepted by Sargent and Lundy on December 2, 1983.

Although the above deficiencies were identified for the calculations reviewed in Quality Assurance Audit Report No. QA 20-83-33, no cases were identified where calculations were being incorrectly performed or undersized pipe supports were being selected. The first process pipe support package was issued to the field for installation in August 1983.

Also, Audit QA-20-83-33 identified that small bore pipe and instrumentation line support selection personnel training files were incomplete. Corrective actions were defined and implemented to correct this item as well.

CONTENTION ITEM 14.B.4

Subsequent to the NRC inspection, Site Quality Assurance continued to audit this area. Site Quality Assurance Audit QA-20-83-49 dated October 20, 1983 specifically audited support selection activities and design document control related to support selection work. Three findings were identified which are summarized as follows:

- 1) Arithmetic errors were found in support selection calculations.
- 2) Drawings used to locate component supports were not verified, "as constructed" drawings.
- 3) Drawings used as input for calculations were not the most current revision.

Each of these items has had corrective actions defined and completed, and verified by Site Quality Assurance as having been implemented. The details of these items are reflected in the surveillance reports attached to the relevant audit report. This audit was closed on March 16, 1984.

In December 1983, Quality Assurance Audit QA-20-83-62 checked the implementation of Phillips, Getschow Procedure PGCP-22, Rev. 8, which had been revised to more clearly delineate and refine the technical support selection requirements provided by S&L in ECN 5776. Fifty-five (55) supports were reviewed in detail and no errors were identified indicating that the methodology used at that time was adequate to perform the support selection in an acceptable manner. As part of an audit of

CONTENTION ITEM 14.B.4

Phillips, Getschow Company, (Audit QA-20-84-518 dated May 4, 1984), support selection was again checked and in this area, one observation was identified for which corrective action has been taken.

As of June 6, 1985, the activities discussed above were being acceptably performed. Site Quality Assurance is continuing to monitor this activity to ensure proper compliance.

Resolution of this item with the NRC is still pending.

CONTENTION ITEM 14.B.4

REFERENCES

1. NRC Inspection Report 50-456/83-09; 50-457/84-09
(pages A0002115-A0002128).
2. L. O. Del George letter to J. G. Keppler dated July 6, 1984;
Attachment A, Response to Items of Noncompliance 4.d
(pages A0001508-1572).
3. Commonwealth Edison Company Audit Report No. 20-81-30
(pages B0000290-327).
4. Commonwealth Edison Company Audit Report No. 20-82-15
(pages B0000233-252).
5. Commonwealth Edison Company Audit Report No. 20-83-33
(pages B0000175-225).
6. Commonwealth Edison Company Audit Report No. 20-83-49
(pages B0000139-174).
7. Commonwealth Edison Company Audit Report No. 20-83-62
(pages B0000100-138).
8. Commonwealth Edison Company Audit Report No. 20-84-518
(pages B0000053-99).
9. Licensing file on Item 83-09-08D, Cont. 14.B.4
(pages A0009705-A0009737).

CONTENTION ITEM 14.B.4

NAMES AND ADDRESSES

T. E. Vandel	NRC Region III
R. D. Schulz	NRC Region III
I. T. Yin	NRC Region III
D. E. Keating	NRC Region III
C. C. Williams	NRC Region III
D. R. Hunter	NRC Region III
L. O. Del George	Commonwealth Edison Company
S. C. Hunsader	Commonwealth Edison Company
M. A. Gorski	Commonwealth Edison Company

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*A0013805	58		Project Manager & Licensing	10/16/84	Handwritten Notes		
A0001005- 18	58		Licensing	02/02/83	Letter	O'Connor	Keppler
A0001021- 60	58		Licensing	02/02/83	Letter	Keppler	O'Connor
A0001087- 93	58		Licensing	10/08/82	Letter	Keppler	Tramm
A0001095- 1106	58		Licensing	06/27/83	Letter	O'Connor	DeYoung
A0001111- 26	58		Licensing	12/10/82	Letter	Reed	Norelius
A0001127- 36	58		Licensing	01/14/82	Letter	Keppler	Del George
A0001148- 60	58		Licensing	01/19/83	Letter	Reed	Knop
A0001169- 1184	58		Licensing	02/14/83	Letter	Reed	Norelius
A0001205- 1216	53		Licensing	03/23/83	Letter	Reed	Norelius
A0001217- 1223	58		Licensing	04/29/85	Letter	Keppler	Farrar
A0001230- 1233	58		Licensing	09/07/83	Letter	Keppler	Farrar

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*A0001440- 1507	58		Licensing	05/07/84	Letter	O'Connor	Keppler
*A0001582- 1652	58		Licensing	01/12/84	Letter	Davis	DelGeorge
A0001667- 1675	58		Licensing	08/04/83	Letter	Reed	Little
A0002059- 2073	58		Licensing	07/20/84	Letter	Reed	Walker
A0002085	58		Licensing	12/24/84	Letter	Reed	Little
A0002115- 2128	58		Licensing	07/02/84	Letter	Reed	Warnick
A0002251- 68	58		Licensing	08/07/84	Letter	Reed	Warnick
*A0002303- 25	58		Licensing	10/16/84	Letter	Reed	Warnick
A0002364- 84	58		Licensing	11/20/84	Letter	Reed	Warnick
A0002627- 40	58		Licensing	11/26/84	Letter	Reed	Warnick
A0002641- 43	58		Licensing	12/21/84	Letter	Keppler	Farrar
A0002785- 2803	58		Licensing	03/18/85	Letter	Reed	Warnick

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0002837- 66	58		Licensing	10/22/85	Letter	Keppler	DelGeorge
A0002867- 2976	58		Licensing	03/15/85	Letter	Reed	Streeter
A0002980- 83	58		Licensing	04/15/85	Letter	Keppler	Farrar
A0002984- 3121	58		Licensing	02/20/85	Letter	Reed	Taylor
A0003122- 26	58		Licensing	04/11/85	Letter	Reed	Norelius
A0003145- 45a	58		Licensing	05/29/85	Letter	Keppler	Farrar
A0003241- 49	58		Licensing	04/22/85	Letter	Reed	Harrison
A0003250- 75	58		Licensing	03/08/85	Letter	Reed	Warnick
A0003290- 91	58		Licensing	06/27/85	Letter	Norelius	Reed
A0003292- 3313	58		Licensing	04/04/85	Letter	Reed	Warnick
A0003319- 30	58		Licensing	04/18/85	Letter	Reed	Harrison
A0013813- 13818	58		Licensing (Wallace)	08/06/85	Draft Report		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013819-13820	58		Licensing (Wallace)	05/20/85	Memo	Wallace	Witherspoon
A0013821	58		Licensing (Wallace)	05/27/85	Memo	Wallace	Witherspoon
A0013822-13823	58		Licensing (Wallace)	06/10/85	Memo	Wallace	Witherspoon
A0013824-13826	58		Licensing (Wallace)		Handwritten Note	Mike (Wallace?)	Jerry (Witherspoon?)
A0013827	58		Licensing (Wallace)	01/26/84	Memo	Wallace	Witherspoon
A0013828-13867	58		Licensing (Wallace)	04/01/83	Memo	Maley	Witherspoon
A0013868-13875	58		Licensing (Wallace)		Report		
A0013876-13878	58		Licensing (Wallace)	06/17/85	Computer Printout		
A0013879	58		Licensing (Wallace)		Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013880- 13890	58		Licensing (Wallace)	05/02/84	Revision		
A0013891- 13898	58		Licensing (Wallace)	02/05/85	Revision		
A0013899- 13900	58		Licensing (Wallace)	03/16	Handwritten Notes		
A0013901	58		Licensing (Wallace)		Report		
A0013902- 13905	58		Licensing (Wallace)	11/27/84	Handwritten Notes		
A0013906- 13908	58		Licensing (Wallace)		Report		
A0013909- 13911	58		Licensing (Wallace)	11/26/84	Report		
A0013912	58		Licensing (Wallace)		Chart		
A0013913	58		Licensing (Wallace)		Report		
A0013914	58		Licensing (Wallace)		Report		
A0013915- 13916	58		Licensing (Wallace)	06/17/85	Report		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013917-13919	58		CECo Project Manager and Licensing	03/11/85	Report		
A0013920-13923	58		CECo Project Manager and Licensing	11/23/85	Letter	Shamblin et al.	Wallace
A0013924-13925	58		CECo Project Manager and Licensing	02/20/85	Report		
A0013926	58		CECo Project Manager and Licensing		Report		
A0013927-13928	58		CECo Project Manager and Licensing	06/17/85	Report		
A0013929-13933	58		CECo Project Manager and Licensing		Report		
A0013934-13944	58		CECo Project Manager and Licensing		Report		
A0013945-13956	58		CECo Project Manager and Licensing		Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013957- 13994	58		CECo Project Manager and Licensing	09/11/80	Report	CECo	Teledyne McKay

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0003370- Tr 81	58		Licensing	04/15/85	Letter	Reed	Harrison
A0003386- Tr 3409 16	58		Licensing	05/16/85	Letter	Reed	Little
A0003425- Tr 31 17	58		Licensing	06/03/85	Letter	Reed	Little
A0003432- Tr 97 19	58		Licensing	05/16/85	Letter	Reed	Little
*A0003558- Tr 64 re 82	58		Licensing	10/8/82	Letter	Keppler	Tramm
*A0003565- Tr 66 re	58		Licensing	07/29/83	Letter	Keppler	Swartz
*A0003567- Tr 8 Re	58		Licensing	10/31/83	Letter	Keppler	Swartz
*A0003569- Tr 70 Re	58		Licensing	06/26/85	Letter	Keppler	Swartz
*A0003576 Le 6/	58		Licensing	06/21/85	Letter	Wallace	Gallup
*A0003577- Le 78 Il Ma	58		Licensing	07/03/85	Letter	Keppler	Miosi
*A0003579- Le 3612 mi	58		Licensing	07/03/85	Letter	Wallace	Gallup

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0005663- 5719	58		Licensing		Folder		
A0005720- 5777	58		Licensing		Folder		
A0005778- 5830	58		Licensing		Folder		
A0005831- 5880	58		Licensing		Folder		
A0005881- 5903	58		Licensing		Folder		
A0005904- 6006	58		Licensing		Folder		
A0006007- 6215	58		Licensing		Folder		
A0006216- 6264	58		Licensing		Folder		
A0006265- 6414	58		Licensing		Folder		
A0006415- 6538	58		Licensing		Folder		
A0006539- 6571	58		Licensing		Folder		
A0006572- 6613	58		Licensing		Folder		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0006614- 6686	58		Licensing		Folder		
A0006687- 6707	58		Licensing		Folder		
A0006708- 6772	58		Licensing		Folder		
A0006773- 6844	58		Licensing		Folder		
A0006845- 6879	58		Licensing		Folder		
A0006880- 6909	58		Licensing		Folder		
A0006910- 7066	58		Licensing		Folder		
A0007067- 7164	58		Licensing		Folder		
A0007165- 7237	58		Licensing		Folder		
A0007238- 7289	58		Licensing		Folder		
A0007290- 7313	58		Licensing		Folder		
A0007314- 7345	58		Licensing		Folder		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A000/346- 7374	58		Licensing		Folder		
A0007375- 7408	58		Licensing		Folder		
A0007409- 7483	58		Licensing		Folder		
A0007484- 7570	58		Licensing		Folder		
A0007571- 7668	58		Licensing		Folder		
A0007669- 7774	58		Licensing		Folder		
A0007775- 7930	58		Licensing		Folder		
A0007931- 8021	58		Licensing		Folder		
A0008022- 8143	58		Licensing		Folder		
A0008144- 8176	58		Licensing		Folder		
A0008177- 8209	58		Licensing		Folder		
A0008210- 8230	58		Licensing		Folder		
A0008231- 8251	58		Licensing		Folder		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0008252- 8273	58		Licensing		Folder		
A0008274- 8319	58		Licensing		Folder		
A0008320- 8391	58		Licensing		Folder		
A0008392- 8449	58		Licensing		Folder		
A0008450- 8462	58		Licensing		Folder		
A0008463- 8498	58		Licensing		Folder		
A0008499- 8558	58		Licensing		Folder		
A0008559- 8620	58		Licensing		Folder		
A0008621- 8654	58		Licensing		Folder		
A0008655- 8694	58		Licensing		Folder		
A0008695- 8726	58		Licensing		Folder		
A0008727- 8760	58		Licensing		Folder		
A0008761- 8852	58		Licensing		Folder		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0008853- 8853	58		Licensing		Folder		
A0008864- 8957	58		Licensing		Folder		
A0008958- 8989	58		Licensing		Folder		
A0008990- 9070	58		Licensing		Folder		
A0009071- 9100	58		Licensing		Folder		
A0009101- 9155	58		Licensing		Folder		
A0009156- 9229	58		Licensing		Folder		
A0009230- 9258	58		Licensing		Folder		
A0009259- 9287	58		Licensing		Folder		
A0009288- 9336	58		Licensing		Folder		
A0009337- 9368	58		Licensing		Folder		
A0009369- 9419	58		Licensing		Folder		
A0009420- 9576	58		Licensing		Folder		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0009577- 9596	58		Licensing		Folder		
A0009597- 9655	58		Licensing		Folder		
A0009656- 9704	58		Licensing		Folder		
A0009705- 9737	58		Licensing		Folder		
A0010516	58		Licensing	06/21/84	Report		Schroeder Skoza
A0010518- 10521	58		Licensing (Kline)	05/31/84	Report		
A0010522- 10527	58		Licensing	04/02/85	PGCo Memo	Johnson/ Murphy	Schmidt
A0010528	58		Licensing	03/25/85	Handwritten Memo		
A0010529- 10535	58		Licensing	05/17/85	Report (Kline)		Schultz McGregor
A0010536- 10560	58		Licensing	02/13/85	Handwritten Memo (Kline)		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0010561- 10574	58		Licensing	05/03/85	Handwritten Memo (Kline)		Schultz Knopp
A0010575- 10590	58		Licensing	03/22/85	Handwritten Memo (Kline)		Schultz Knopp
A0010591- 10603	58		Licensing	02/22/85	Handwritten Memo		
A0010604- 10749	58		Licensing		Report (PGCo)		
A0010790- 10913	58		Licensing		Report (Comstock)		
A0011981- 11988	58		CeCo PLC Kline		Handwritten Notes		
A0011989- 12002	58		CECo PLC Kline	09/17/84	Cover Memo & Hand- written notes	Schroeder	Fitzpatrick
A0012003- 12005	58		CECo PLC Kline	02/05/85	Handwritten Notes		
A0012006- 12008	58		CECo PLC Kline	07/25/84	Handwritten Notes		
A0012181- 00184	58		CECo Project Licensing and Compliance	10/05/84	NRC Exit Summary		Schroeder

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0012185-00186	58		CECo Project Licensing and Compliance	05/31/84	NRC Exit Summary		Schroeder
A0012187-12189	58		CECo Project Licensing and Compliance	07/06/84	NRC Exit Summary		Schroeder
A0012190-00193	58		CECo Project Licensing and Compliance	08/31/84	NRC Exit Summary		Schroeder
A0012194-00195	58		CECo Project Licensing and Compliance	11/09/84	NRC Exit Summary		Schroeder
A0012196-12203	58		CECo Project Licensing and Compliance	01/18/85	NRC Exit Summary		Schroeder
A0012204-00205	58		CECo Project Licensing and Compliance	01/15/85	NRC Exit Summary		Schroeder
A0012206-12208	58		CECo Project Licensing and Compliance	03/05/85	NRC Exit Summary		Schroeder
A0012209-12211	58		CECo Project Licensing and Compliance	03/21/85 03/29/85	NRC Exit Summary		Schroeder
A0012212-12216	58		CECo Project Licensing and Compliance	05/03/85	NRC Exit Summary		Schroeder
A0012217-12220	58		CECo Project Licensing and Compliance	03/25/85	NRC Exit Summary		Schroeder

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0012221	58		CECo Project Manager	09/01/82	Report	Maley	Wallace
A0012222	58		CECo Project Manager	08/15/83	Report	Maley	Wallace
A0012223	58		CECo Project Manager	09/09/82	Report	Cosaro	Wallace
A0012224	58		CECo Project Manager	09/12/83	Report	Maley	Wallace
A0012225	58		CECo Project Manager	09/13/82	Memo	Cosaro	Wallace
A0012226	58		CECo Project Manager	09/16/83	Report	Maley	Wallace
A0012227	58		CECo Project Manager	09/20/82	Memo	Maley	Wallace
A0012228- 12230	58		CECo Project Manager	09/20/82	Memo	Maley	Wallace
A0012231- 00032	58		CECo Project Manager	09/20/82	Memo	Cosaro	Wallace
A0012233- 00236	58		CECo Project Manager				
A0012241	58		CECo Project Manager	11/28/83	Memo	Maley	Wallace
A0012242	58		CECo Project Manager	12/05/83	Memo	Maley	Wallace

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0012243-00046	58		CECo Project Manager	03/07/84			
A0012247-00259	58		CECo Project Manager	03/02/84			
A0012260	58		CECo Project Manager	09/29/83	Letter	O'Connor	Cosaro Sommerfield Wallace
A0012261-00265	58		CECo Project Manager		Notes		
A0012266-12267	58		CECo Project Manager		Notes		
A0012268-00287	58		CECo Project Manager		Memo	Maley	Wallace
A0012288-02306	58		CECo Project Manager		Report		
A0012307-00326	58		CECo Project Manager		Memo	Cosaro	Wallace
A0012327-00343	58		CECo Project Manager	01/03/83	Note		Wallace
A0012344-12345	58		CECo Project Manager	02/23/83	Memo	Tapella	Wallace
A0012346-12347	58		CECo Project Manager	02/23/83	Memo	VanDerway	Wallace

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0012348	58		CECo Project Manager	04/01/83	Memo	Maley	Wallace
A0012349	58		CECo Project Manager	04/04/83	Memo	Cosaro	Wallace
A0012350	58		CECo Project Manager	04/06/83	Letter	Daniel Construction	Wallace
A0012351- 00352	58		CECo Project Manager	03/25/83	Memo	Maley	Wallace
A0012353	58		CECo Project Manager	09/29/83	Memo	O'Connor PGCo	Cosaro Sommerfiel Wallace
A0012354	58		CECo Project Manager		Report		
A0012356	58		CECo Project Manager		Report		
A0012357 00058	58		CECo Project Manager	03/22/84	Memo	Groth Shamblin	Wallace
A0012359	58		CECo Project Manager	03/22/84	Memo	Groth Shamblin	Wallace
A0012361	58		CECo Project Manager	03/22/84	Memo	Cosaro	Wallace

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0012362- 00363	58		CECo Project Manager	07/24/84	Memo	QA Management	Wallace
A0012364	58		CECo Project Manager	08/20/84	Memo	Shamblin	Wallace
A0012370- 00375	58		CECo Project Licensing (Schroeder)	01/30/85	Memo	DeWald	Seltmann
A0012376	58		CECo Project Licensing (Schroeder)	10/23	Handwritten		
A0012378- 00379	58		CECo Project Licensing (Schroeder)	09/24/84	Letter	Wallace	Jones
A0012380- 00382	58		CECo Project Licensing (Schroeder)	10/22/84	Letter	Keppler	Farrar
A0012383	58		CECo Project Licensing (Schroeder)	06/28	Handwritten Notes		
A0012384	58		CECo Project Licensing (Schroeder)	09/17/84	Handwritten Notes		
A0012385	58		CECo Project Licensing (Schroeder)		Handwritten Notes		
A0012386	58		CECo Project Licensing (Schroeder)		Handwritten Notes		
A0012387- 00390	58		CECo Project Licensing (Schroeder)	10/05/84	Handwritten Notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0012391	58		CECo Project Licensing (Schroeder)	09/18	Handwritten Notes		Schroeder
A0012392- 00395	58		CECo Project Licensing (Schroeder)	05/31/84	Status Report		
A0012396 00399	58		CECo Project Licensing (Schroeder)	02/17/84	Memo	Various	Tapella
A0012400	58		CECo Project Licensing (Schroeder)	09/11/84	Memo	Vahle	Schroeder
A0012401- 00413	58		CECo Project Licensing (Schroeder)	06/12/84	Memo	Various	Schroeder
A0012414- 00448	58		CECo Project Licensing (Schroeder)	06/12/84	Memo	Various	Schroeder
A0012449	58		CECo Project Licensing	08/09/84	Handwritten Memo		Putman

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0012450	58		CECo Project Licensing (Schroeder)	06/07/84	Handwritten Notes	Various	
A0012451	58		CECo Project Licensing (Schroeder)	06/21/84	Memo		
A0012452	58		CECo Project Licensing (Schroeder)		Handwritten Notes		
A0012453	58		CECo Project Licensing (Schroeder)		Handwritten Notes and Drawing		
A0012454- 00457	58		CECo Project Licensing (Schroeder)	04/22/81	FCR		
A0012458- 00461	58		CECo Project Licensing (Schroeder)	04/16/84	Handwritten Memo	Various	Quaka
A0012462	58		CECo Project Licensing (Schroeder)	01/08/85	Action Item		
A0012463- 00464	59		CECo Project Licensing (Schroeder)	01/08/85	Action Item		
A0012465- 00466	58		CECo Project Licensing (Schroeder)	01/08/85	Action Item		
A0012467	58		CECo Project Licensing (Schroeder)	01/08/85	Action Item		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0012468- 00469	58		CECo Project Licensing (Schroeder)	01/08/85	Action Item		
A0012470- 00471	58		CECo Project Licensing (Schroeder)		Handwritten Notes		
A0012472- 00475	58		CECo Project Licensing (Schroeder)	02/20/85	Handwritten Various		
A0012476- 00512	58		CECo Project Licensing (Schroeder)	11/06/84	Letter	Reed	Norelius (Paperiello
A0012513- 00514	58		CECo Project Licensing (Schroeder)	07/15/85	Letter	Keppler	Farrar
A0012515	58		CECo Project Licensing (Schroeder)		Letter	Keppler	Smith
A0012516	58		CECo Project Licensing (Schroeder)	02/20/85	List		
A0012517	58		CECo Project Licensing (Schroeder)	02/20/85	List		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0012518	58		CECo Project Licensing (Schroeder)	02/20/85	List		
A0012519-12526	58		CECo Project Licensing (Schroeder)	01/21/85	Meeting Notes		Schroeder
A0012527-12534	58		CECo Project Licensing (Schroeder)	01/18/85	Handwritten Notes		Schroeder
A0012535-12541	58		CECo Project Licensing (Schroeder)	01/18/85	Handwritten Notes		Schroeder
A0012542-12546	58		CECo Project Licensing (Schroeder)		Handwritten Notes		Schroeder
A0012547-12555	58		CECo Project Licensing (Schroeder)	12/18/84	Presentation Package		Regan
*A0012687-12731	58		CECo Project Manager (Wallace)		Report		
A0012851-12856	58		CECo Project Manager (Wallace)	04/14/83	Letter with Cosaro of Handwritten CECo Notes		Meyers of PGCo
*A0012857-12980	58		CECo Project Manager (Wallace)	03/07/83-03/28/83	Report		
A0012981	58		Licensing	10/10/83	Memo	Stewart	O'Connor

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0012982- 12983	58		Licensing	10/18/83	Memo	Cosaro	Sommerfield
A0012984- 12988	58		Licensing		PGCo Response		
A0012989- 12992	58		Licensing	10/13/83	Outline	Various	Shamblin
A0012993- 12995	58		Licensing	10/07/83	Notes		Sommerfield
A0012996	58		Licensing	10/18/83	Memo	Swartz	Cosaro
A0012997- 13002	58		Licensing	08/12	Outline		
A0013003	58		Licensing	08/05/83	Memo	Lawler	Cosaro Sommerfield
A0013004	58		Licensing	08/19/83	Memo	LKC, GKN, PSM	Sommerfield Cosaro
A0013006- 13007	58		Licensing	08/17/83	Memo	LKC GKN PSM	Sommerfield Cosaro
A0013008- 13013	58		Licensing	08/16/83	Letter	Abraham	Reedy
A0013014	58		Licensing	10/24/83	Handwritten Notes		
A0013015- 13030	58		Licensing	11/04/83	Letter	Davis	McLaughlin

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
AOO13031- 13038	58		Licensing	08/26/84	Memo	Wallace	Tapella
AOO13039- 13040	58		Licensing	10/07/82	Memo		Rolan
AOO13041- 13044	58		Licensing	10/07/82	Memo	Cosaro	Rolan/ Corcoran
AOO13045- 13065	58		Licensing	10/01/82	Memo	Cosaro	Rolan/ Corcoran
AOO13066- 13081	58		Licensing	12/15/82	Memo	Wallace	Tapella
AOO13082- 13090	58		Licensing	10/07/82	Memo	Wallace	Cosaro
AOO13091- 13094	58		Licensing		Memo		Wallace/ Maley
AOO13095- 13113	58		Licensing		Evaluation		
AOO13114- 13147	58		Licensing		Evaluation		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013148-13150	58		Licensing	09/14/82	Evaluation		
A0013151-13178a	58		Licensing	04/26/83	Interoffice Hite Communication		Forbes
A0013179-13180	58		Licensing	05/26/83	Interoffice Hite Communication		Forbes
A0013181-13187	58		Project Manager & Licensing	07/22/83	Memo	Meyers	Forbes
A0013188-13190	58		Project Manager & Licensing	11/05/82	Report		
A0013191-13201	58		Project Manager & Licensing		Report		
A0013202-13221	58		Project Manager & Licensing		Report		
A0013222-13234	58		Project Manager & Licensing		Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013235	58		Project Manager & Licensing		Drawing		
A0013236- 13238	58		Project Manager & Licensing	09/20/82	Memo		Wallace
A0013239	58		Project Manager & Licensing	01/11/83	Letter	Meyers	Wallace
A0013240- 13242	58		Project Manager & Licensing		Drawing		
A0013243	58		Project Manager & Licensing	09/02/82	Letter	Maley et al.	Wallace
A0013244	58		Project Manager & Licensing	09/09/82	Letter	Wallace	Getschow
A0013245	58		Project Manager & Licensing	09/02/82	Memo	Knopp	Cosaro
A0013246	58		Project Man- ager and Licensing	09/02/82	Letter	Rubino	Hunsader
A0013247	58		Project Man- ager and Licensing	09/08/82	Letter	Cosaro	Sommerfiel

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013248	58		Project Manager and Licensing	09/08/82	Letter	Cosaro	Sommerfield
A0013249-13265	58		Project Manager and Licensing	09/02/82	Letter	Cosaro	Sommerfield
A0013266-13267	58		Project Manager and Licensing	09/02/82	Letter	Meyers	Sommerfield
A0013268	58		Project Manager and Licensing	09/01/82	Letter	Maley	Wallace
A0013269-13271	58		Project Manager and Licensing	09/20/82	Memo		Wallace
A0013272-13273	58		Project Manager and Licensing	09/02/82	Letter	Sommerfield	Cosaro
A0013274-13275	58		Project Manager and Licensing	09/02/82	Letter	Meyers	Sommerfield
A0013276-13290	58		Project Manager and Licensing	09/02/82	Letter	Sommerfield	Cosaro
A0013291	58		Project Manager and Licensing	09/02/82	Letter	Cosaro	Sommerfield
A0013292	58		Project Manager and Licensing	09/02/82	Letter	Meyers	

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013293	58		Project Manager and Licensing	09/03/82	Letter	Rubino	Hunsader
A0013294-13299	58		Project Manager and Licensing		Report		
A0013300-13312	58		Project Manager and Licensing	07/03/80	Letter	Meyers	Gorski
A0013398-13425	58		Project Manager and Licensing (Wallace)	05/30/85	Presentation	IL. Division of Boiler Inspection & Illinois Dept. of Nuclear Safety	Mike Walla
A0013426-13455	58		Project Manager and Licensing (Wallace)	05/31/85	Memo	N. Wandke L. DelGeorge T. Maiman	Mike Walla
A0013456	58		Project Manager and Licensing (Wallace)	06/03/85	Memo	D. Shamblin ET AL	Mike Walla
A0013457	58		Project Manager and Licensing (Wallace)	06/03/85	Memo	Tom Maiman ET AL	Mike Walla

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013458	58		Project Manager and Licensing (Wallace)	06/07/85	Memo	Tom Maiman ET AL	Mike Walla
A0013459	58		Project Manager and Licensing (Wallace)	06/07/85	Memo	D. Shamblin ET AL	Mike Walla
A0013460- 13461	58		Project Manager and Licensing (Wallace)	06/11/85	Memo	T. Maiman ET AL	Mike Walla
A0013462- 13463	58		Project Manager and Licensing (Wallace)	06/11/85	Memo	D. Shamblin ET AL	Mike Walla
A0013464- 13466	58		Project Manager and Licensing (Wallace)	06/11/85	Letter	Duane Gallup	Mike Walla
*A0013491 - 13510	58		Licensing	11/09/82	Memo	J. J. Maley	M. J. Wall
*A0013511- 13535	58		Licensing	12/30/83	PGCo	M. Wallace	G. M. Gors
A0013536- 13544	58		Licensing	05/17/85	Letter	Cordell Reed	Nat. Board of Boiler
A0013545- 13631	58		Licensing	12/20/83	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013632- 13654	58		Licensing	12/20/83	Report		
A0013655- 13659	58		Licensing	03/07/84	Report		
A0013660- 13661	58		Licensing		Report		
A0013698- 13727	58		Licensing	05/31/85	Letter	Norm Wandke et al.	Wallace
A0013728	58		Licensing	05/07/85	Revised Letter	Shamblin ET AL	Wallace
A0013729	58		Licensing	05/31/85	Letter	Shamblin	Vahle
A0013733	58		Licensing	05/30/85	Report		
A0013735	58		Licensing		MTV		
A0013737- 13738	58		Licensing		Handwritten Notes		
A0013739	58		Licensing		List		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013740	58		Licensing		Report		
A0013741- 13750	58		Licensing	05/22/85	Draft Report		
A0013751- 13755	58		Licensing	01/04/85	Report Draft re:		
A0013756- 13766	58		Project Managers and Licensing		Material Traceabil- ity Summary		
A0013314- 13352	58		Project Managers and Licensing	08/10/82	Letter	Merwin	Hunsader
A0013353- 13359	58		Project Managers and Licensing		Report		
A0013360	58		CECo PLC	11/28/84	Issue Paper (Wallace)		
A0013361	58		CECo PLC	11/28/84			
A0013362	58		CECo PLC	11/28/84			

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013363	58		CECo PLC		Chart		
A0013364	58		CECo PLC	01/04/85	Memo		
A0013365-13372	58		Project Manager and Licensing	01/15/85	Report		
A0013373-13375	58		Project Manager and Licensing	02/12/85	Meeting Notes	Maiman et al.	Wallace/Lenth
A0013376-13378	58		Project Manager and Licensing	02/18/85	Letter	Shamblin/Gudac	Wallace
A0013379	58		Project Manager and Licensing	02/25/85	Letter	Wallace	Bartel
A0013380	58		Project Manager and Licensing		Report		
A0013382-13397	58		Project Manager and Licensing		Handwritten Lou Notes		
A0013467-13478	58		Project Manager and Licensing	06/17/85	Presentation		
A0013479-13482	58		Project Manager and Licensing	06/17/85	Presentation		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013483	58		Project Manager and Licensing	06/25/85	Agenda		
A0013484-13485	58		Project Manager and Licensing	06/27/85	Summary		
A0013486-13488	58		Project Manager and Licensing	06/27/85	MTV Comments		
A0013489-13490	58		Project Manager and Licensing	07/16/85	Memo	Schroeder et al.	M. Wallace
A0013662-13663	58		Licensing	03/02/84	Report		
A0013664-13669	58		Licensing	08/03/81	NCR		
A0013670	58		Licensing	01/15/85	Report		
A0013671-13677	58		Licensing	01/15/85	Report		
A0013693-13694	58		Licensing	07/29/85	Letter	Groth	Wallace
A0013695-13697	58		Licensing	07/02/85	Letter	McDonald	Wallace

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013995- 14000	58		Licensing	04/22/85	Letter	Keppler	Tramm
A0014001- 14003	58		CECo Licensing	07/15/85	Letter	Keppler	Farrar
A0014008- 14053	58		Licensing (Wallace)		Draft Report		
A0014008- 14053	58		Licensing (Wallace)		Draft Report		
A0014004- 14005	58		Licensing	4/2/85	Letter	Rolan	Shamblin
A0014006- 14007	58		Licensing	4/19/85	Letter	LKC	Cosaro
A0014054- 14062	58		Licensing	5/83	Table		
A0014063- 14072	58		Licensing	8/21/85	Letter	Reed	Little

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0014073-	58		Licensing	8/10/84	Typewritten Notes of 55.55(e)	Forney	Schroeder
A0014074-	58		Licensing	8/10/84	Specific Trouble Report		Schroeder
A0014075- 14076	58		Licensing	8/10/84	Letter	Quaka	Hairston
A0014077-	58		Licensing	8/14/84	NCR		
A0014078- 14079	58		Licensing	8/14/84	Letter	Craven	Wallace
A0014080- 14081	58		Licensing	8/16/84	Letter	Shamblin	Tate/Quaka
A0014082- 14083	58		Licensing	8/20/84	Letter	Craven	Wallace
A0014084- 14091	58		Licensing	8/29/84	Letter	Quaka	Craven/ Hairston
A0014092- 14093	58		Licensing	Undated	Letter	Quaka	Craven/ Hairston

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0014094- 14096	58		Licensing	8/10/84	Letter	Keppler	Smith
A0014097- 14098	58		Licensing	10/22/84	Letter	Keppler	Smith
A0014099- 14100	58		Licensing	3/6/85	Letter	Keppler	Smith
A0014101- 14102	58		Licensing	5/3/85	Letter	Keppler	Miosi
A0014103- 14121	58		Licensing	8/19/82	Letter	Maley	Del George

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0000175- 0225	58		CECo site QA	7/15/83	Audit Report		
B0000328- 0385	58		CECo site QA	4/30/84	Audit Report		
B0000386- 0422	58		CECo site QA	3/14/84	Audit Report		
B0000423- 0447	58		CECo site QA	1/30/85	Audit Report		
B0000448- 0457	58		CECo site QA	12/19/83	Audit Report		
B0000458- 0483	58		CECo site QA	3/23/85	Audit Report		
B0000662	58		CECo site QA (Quaka)	08/03/83	Memo	Grant	Hawkinson
B0000663	58		CECo site QA (Quaka)	08/03/83	Memo	Lawler	Hawkinson
B0000664	58		CECo site QA (Quaka)	08/04/83	Memo	Lawler	Hawkinson
B0000665	58		CECo site QA (Quaka)	08/05/83	Memo	Lawler	Cosaro
B0000666	58		CECo site QA (Quaka)	08/05/83	Letter	Cosaro	Lawler
B0000667	58		CECo site QA (Quaka)	08/05/83	Memo	Lawler	Cosaro

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0000668-0669	58		CECo site QA (Quaka)	08/17/83	Letter	Keppler	Farrar
B0000670-0672	58		CECo site QA (Quaka)	09/09/83	Letter	Bitel/Shewski	Reese Sommerfiel
B0000673	58		CECo site QA (Quaka)		Memo	Lawler	Cosaro Sommerfiel
B0000674	58		CECo site QA (Quaka)		Memo	Lawler	Cosaro Sommerfiel
B0000675-0676	58		CECo site QA (Quaka)		Memo	Lawler	Cosaro Sommerifel
B0000677-0678	58		CECo site QA (Quaka)		Memo	Shewski	Brown Sommerfiel
B0000679	58		CECo site QA (Quaka)		Memo	Lawler	Hawkinson Cosaro
B0000680-0699	58		CECo site QA (Quaka)		Memo	Shamblin	Quaka
B0000700-0700a	58		CECo Site QA (Quaka)	11/20/84	Memo of phone conversation	Jones	Harting
B0000701-0703	58		CECo Site QA (Quaka)	6/11/84	Memo	Various	Shamblin
B0000704	58		CECo Site QA (Quaka)	4/19/83	Letter	LKC	Cosaro

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0000705- 00706	58		CECo Site QA (Quaka)	12/13/84	Memo	Forrest	Hartig
B0000707	58		CECo Site QA (Quaka)	5/12/78	Letter	Sorenson	Cleff
B0000708- 00709	58		CECo Site QA (Quaka)	1/20/83	Letter	Deress	Green
B0000710	58		CECo Site QA (Quaka)	2/23/84	Letter	Cosaro	Sommerfiel
B0000711	58		CECo Site QA (Quaka)	2/28/84	Letter	Lawler	Cosaro
B0000712- 00715	58		CECo Site QA (Hunsader)	Undated	Handwritten Notes		
B0000716	58		CECo Site QA (Hunsader)	Undated	Handwritten		
B0000717	58		CECo Site QA (Hunsader)	Undated	Guidelines		
B0000718- 00719	58		CECo Site QA (Hunsader)	10/22/82	Letter	Merwin	Hunsader
B0000720- 00722	58		CECo Site QA (Hunsader)	6/28/82	Letter	Groth	Hunsader

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0000723- 00727	58		CECo Site QA (Hunsader)	Undated	Report		
B0000728	58		CECo Site QA (Hunsader)	Undated	Report		
B0000729	58		CECo Site QA (Kyrrouac)	3/15/85	Letter	Shamblin	Kyrrouac
B0000730- 00857	58		CECo Site QA (Kyrrouac)	3/15/85	Audit		
B0000858- 00871	58		CECo Site QA (Miller)	1/10/85	Memo	Vahle	Quaka

B0000872- 00877	58		CECo Site QA (Miller)	6/12/85	Letter	Deress	Quaka
--------------------	----	--	--------------------------	---------	--------	--------	-------

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0000878- 00885	58		CECo Site QA (Miller)	10/22/84	Letter	Deress	Quaka
B0000886- 00894	58		CECo Site QA (Miller)	10/22/84	Letter	Deress	Quaka
B0000895- 00896	58		CECo Site QA (Miller)	Undated	Handwritten Notes		
B0000897- 00901	58		CECo Site QA (Miller)	Undated	Handwritten Notes		
B0000902- 00904	58		CECo Site QA (Miller)	Undated	Handwritten Notes		
B0000905- 00918	58		CECo Site QA (Miller)	7/19/84	Traveler		
B0000919- 00921	58		CECo Site QA (Miller)	2/4/85	NCR		
B0000922- 00926	58		CECo Site QA (Miller)	10/13/80	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0000927- 00928	58		CECo Site QA (Miller)	1/15/81	Report		
B0000929- 00930	58		CECo Site QA (Miller)	10/14/80	Report		
B0000931- 00932	58		CECo Site QA (Miller)	1/15/81	Report		
B0000933- 00934	58		CECo Site QA (Miller)	10/20/80	Report		
B0000935	58		CECo Site QA (Miller)	1/19/81	Report		
B0000936- 00937	58		CECo Site QA (Miller)	10/21/80	Report		
B0000938	58		CECo Site QA (Miller)	1/14/81	Report		
B0000939- 00949	58		CECo Site QA (Miller)	05/09/85	Report		
B0000950- 00968	58		CECo Site QA (Miller)	05/22/84	Report		
B0000969- 00970	58		CECo Site QA (Miller)				

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0000971	58		CECo Site QA (Miller)	04/30/85	Letter	Forrest	Miller
B0000972-00973	58		CECo Site QA (Miller)	01/29/85	NCR		
B0000974	58		CECo Site QA (Miller)	08/20/84	Letter	Elias	McCluer
B0000975-00980	58		CECo Site QA (Miller)	02/04/85	NCR		
B0000981-00983	58		CECo Site QA (Miller)	02/04/85	NCR		
B0000984-00998	58		CECo Site QA (Miller)	11/12/77	NCR		
B0000999-01000	58		CECo Site QA (Miller)	07/31/84	NCR		
B0001001-01004	58		CECo Site QA (Miller)		Report		
B0001005-01008	58		CECo Site QA (Miller)		Report		
B0001009-01013	58		CECo Site QA (Miller)		Report		
B0001014-01016	58		CECo Site QA (Miller)		Report		
B0001017-01029	58		CECo Site QA (Miller)		Report		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0001030-01031	58		CECo Site QA (Miller)	09/19/84	Letter	Forrest	Smith
B0002065	58		CECo QA on site	02/13/85	Letter	D. Elias	J. Kolb
B0002066-02067	58		CECo QA on site	10/04/84	Letter	T. Quaka	F. Kosik
B0002068-02069	58		CECo QA on site	07/24/84	Memo	D. Shamblin	Hunsader/Quaka
B0002070-02071	58		CECo QA on site	04/16/85	S&L Notes		
B0002072	58		CECo QA on site	04/16/85	Letter	D. Elias	L. Vetter
B0002073-02089	58		CECo QA on site	09/10/84	Memo	G. Gorski	J. Fata
B0002090-02093	58		CECo QA on site	03/25/85	Memo	Shamblin	Hunsader/Quaka
B0002094-02115	58		CECo QA on site	09/19/84	Letter	Shamblin	G. Gorski
B0002116	58		CECo QA on site	10/10/84	Letter	Gorski	Groth
B0002117	58		CECo QA on site	02/22/84	Letter	Gallagher/Fus	Dierbeck

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0002118-02119	58		CECo QA on site	04/02/84	Letter	O'Connor	Cosaro
B0002120-02122	58		CECo QA on site	04/05/84	Letter	Quaka	Gorski
B0002123	58		CECo QA on site	07/23/84	Letter	Quaka	Carlson
B0002124-02126	58		CECo QA on site	05/23/84	Letter	G. Gorski	M. Gorski/ G. Groth
B0002127-02130	58		CECo QA on site	12/05/83	Memo	D. Brown	Bertain
B0002131	58		CECo QA on site	11/17/83	Memo	D. Brown	Bertain
B0002132	58		CECo QA on site	11/14/83	Memo	D. Brown	Bertain
B0002133	58		CECo QA on site	11/14/83	Memo	Sommerfield	D. Grant
B0002134-02136	58		CECo QA on site	09/09/83	Memo	Shewski/Bitel	Reece/ Sommerfiel
B0002137-02141	58		CECo QA on site	10/03/84	Letter	Craven	Shamblin

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0002142-02168	58		CECo QA on site	07/06/82	Letter	Westermeier	Treece
B0002169	58		CECo QA on site	08/09/82	Memo	Brown	Miller
B0002170	58		CECo QA on site	05/12/83	Memo	All area Managers, Area Grs, & GF's	J. Hii
B0002171-02189	58		CECo QA on site	04/13/83	Memo	Personnel Qualification Files	Corcoran
B0002190	58		CECo QA on site	06/18/85	Memo	D. Cordy/ R. Bower	Dewald
B0002191	58		CECo QA on site	06/27/85	Memo	Rolan/Dewald	Seltmann
B0002192-02193	58		CECo QA on site	03/08/85	Memo	Shamblin	Dewald
B0002194-02195	58		CECo QA on site	06/14/84	Memo	Shamblin	Quaka
B0002196	58		CECo QA on site	06/11/84	Memo	Dewald	Netzel/ Miller

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0002197	58		CECo QA on site	06/11/84	Memo	Dewald	Netzel/ Miller
B0002198	58		CECo QA on site	06/11/84	Memo	Dewald	Netzel/ Miller
B0002199	58		CECo QA on site	06/11/84	Memo	Dewald	Netzel/ Miller
B0002200- 02201	58		CECo QA on site	06/01/84	Letter	Dewald	Shamblin
B0002202	58		CECo QA on site	10/16/84	Memo	Netzel	Dewald
B0002203	58		CECo QA on site	10/10/84	Letter	Netzel/ Gieseke	Dewald
B0002204- 02205	58		CECo QA on site	10/03/84	Letter	Rolan	Shamblin
B0002206	58		CECo QA on site	09/25/85	Memo	Distribution	Dewald
B0002207	58		CECo QA on site	04/18/84	Memo	Dewald/Rolan	Hoffer/ Netzel

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0002208- 02212	58		CECo QA on site	01/11/84	Memo	Rubino, Corcoran, Forrest, Shultz, Bushur, Grant, Hairston, Osweld	Sommerfiel Cosaro
B0002213	58		CECo QA on site	12/08/82		Cosaro	Strasburg/ Hunsader
B0002333- 02334	58		CECo QA	08/13/85	Memo		
B0002335- 02336	58		CECo QA	04/25/85	Memo		
B0002398- 02404	58		CECo QA on site	11/17/83	Report		
B0002405- 02418	58		CECo QA on site	8/3/84	Memo	Quaka	Novak
B0002419- 02421	58		CECo QA on site	11/27/84	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0002422- 02424	58		CECo QA on site	11/27/84	Report		
B0002425- 02425a	58		CECo QA on site	12/28/84	Report		
B0002426- 02429	58		CECo QA on site	2/25/84	Report		
B0002452- 02457	58		CECO Site QA	06/30/80	Report		
B0002433- 02437	58		CECo QA On-Site	02/25/85	Report		
B0002438- 02440	58		CECo QA On-Site	05/14/85 05/15/85	Report		
B0002441- 02442	58		CECo QA On-Site	06/28/85	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0002443- 02446	58		CECo QA On-Site	07/19/85	Report		
B0002447- 02451	58		CECo QA On-Site	07/31/85	Report		
B0005167- 05169	58		CECo QA On Site	10/25/84	Surv. Report		
B0005170- 05294	58		CECo QA On Site	08/01/84	NCR	Shamblin	Quaka
B0004972- 05012	58		CECo QA On Site	05/01/85	Letter w/ attachments	Vahle	Agrowal
B0005013- 05069	58		CECo QA On Site	02/20/85	NCR	Deress	Quaka
B0005070- 05073	58		CECo QA On Site	04/12/85	Surv. Report		
B0005074- 05101	58		CECo QA On Site	07/11/85	NCR	O'Connor	Shamblin
B0005102- 05120	58		CECo QA On Site	04/25/85	Surv. Report		
B0005121	58		CECo QA On Site	10/08/80	Surv. Report		
B0005122- 5163	58		CECo QA On Site	7/5/85	Memo	Elias	Quaka
B0005164- 5166	58		CECo QA On Site	9/24/85	Surv. Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0005570- 5627	58		CECo QA Onsite	7/24/85	CECo Procedure		
B0005628- 5637	58		CECo QA Onsite		CECo Procedure		
B0005297- 5330	58		CECo QA Onsite	7/8/85	Memo	Shamblin	Gruber/ Hansing
B0005331- 5343	58		CECo QA Onsite	1/12/85	Surveill- ance Report		
B0005344- 5347	58		CECo QA Onsite	5/7/85	Surveill- ance Report		
B0005348- 5374	58		CECo QA Onsite	1/17/85	Surveill- ance Report		
B0005375- 5395	58		CECo QA Onsite	2/12/85	Memo	Quaka	Seltmann
B0005396- 5397	58		CECo QA Onsite	Undated	Handwritten Notes		
B0005398- 5397	58		CECo QA Onsite	8/21/84	Letter	Wallace/Quaka	Marcus

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0005399-	58		CECo QA Onsite	1/2/85	Letter	Shamblin	Hayes
B0005400- 5416	58		CECo QA Onsite	9/21/84	Audit Report		
B0005417-	58		CECo QA Onsite	9/21/84	Letter	Quaka/Wallace	Marcus
B0005418- 5434	58		CECo QA Onsite	9/21/84	Audit Report		
B0005435- 5436	58		CECo QA Onsite	1/24/84 & 2/14/84	Surveill- ance Report		
B0005437- 5485	58		CECo QA Onsite	8/7/85	Letter	Shamblin	Quaka
B0005486- 5555	58		CECo QA Onsite	7/22/85	Letter	Vahle	Quaka
B0005556- 5569	58		CECo QA Onsite	6/9/85	Letter	Vahle	Jacques

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0005295- 5296	58		CECo QA Onsite	8/12/85	Surveill- ance Report		
B0005638- 5640	58		CECo Site QA	4/18/85	Memo	Project Managers And Others	T. Quaka
B0005641- 05642	58		CECo Site QA	8/9/85	Surveil- lance Report		
B0005643- 05644	58		CECo Site QA	8/2/85	Surveil- lance Report		
B0005645- 05646	58		CECo Site QA	7/26/85	Surveil- lance Report		
B0005647- 05648	58		CECo Site QA	7/19/85	Surveil- lance Report		
B0005649- 05650	58		CECo Site QA	7/17/85	Surveil- lance Report		
B0005651- 05653	58		CECo Site QA	7/15/85	Surveil- lance Report		
B0005654- 05655	58		CECo Site QA	7/1/85	Surveil- lance Report		
B0005656- 05657	58		CECo Site QA	6/21/85	Surveil- lance Report		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0005658-05659	58		CECo Site QA	6/14/85	Surveillance Report		
B0005660-05661	58		CECo Site QA	6/14/85	Surveillance Report		
B0005662-05665	58		CECo Site QA	6/06/85	Surveillance Report		
B0005666-05667	58		CECo Site QA	6/07/85	Surveillance Report		
B0005668-05671	58		CECo Site QA	5/23/85	QA Surveillance Report		
B0005672	58		CECo Site QA	6/04/85	QA Surveillance Report		
B0005673-05675	58		CECo Site QA	5/23/85	QA Surveillance Report		
B0005676-05677	58		CECo Site QA	4/19/85	QA Surveillance Report		
B0005677-05685	58		CECo Site QA	4/01/85 to 4/16/85	QA Surveillance Report		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0005686-05687	58		CECo Site QA	3/28/85	QA Surveillance Report		
B0005688-05689	58		CECo Site QA	3/27/85	QA Surveillance Report		
B0005690-05692	58		CECo Site QA	1/29/85	QA Surveillance Report		
B0005693-05695	58		CECo Site QA	4/18/84	QA Surveillance Report		
B0005696-05713	58		CECo Site QA	7/27/84	QA Surveillance Report		
B0005714-05730	58		CECo Site QA	6/04/85	Memo	Shamblin	Quaka
B0005731-05734	58		CECo Site QA	12/11/84	Memo	Vahle	Quaka
B0005735-05768	58		CECo Site QA	07/09/85	Memo	Vahle	Quaka
B0005769-05802	58		CECo Site QA	08/13/85	Memo	Vahle	Quaka
B0005803-06024	58		CECo Site QA	12/14/84	Memo	Shamblin	Quaka

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0006025- 06028	58		CECo Site QA	06/15/84	QA Surveil- lance Report		
B0006029- 06046	58		CECo Site QA	03/14/85	Audit Report		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000012-0013	58	(Croft)	CECo Construction	07/06/84	Letter	Wrucke	Croft
C0000014	58	struction	CECo Construction	06/24/83 notes	Handwritten		Hawkinson
C0000015-0017	58		CECo Construction	Undated	Handwritten notes		Croft
C0000018	58		CECo Construction	06/22/84	Letter	Shamblin	Waterfield
C0000019	58		CECo Construction	Undated	Draft Response		Croft
C0000020-0023	58		CECo Construction	12/11/84	Handwritten notes		Croft
C0000024-0026	58		CECo Construction	05/16/84	Handwritten notes		
C0000035-0036	58		CECo Construction	04/19/84	Hand written notes		Croft
C0000037	58		CECo Construction	04/20/84	Handwritten notes		Croft
C0000039	58		CECo Construction	04/04/84	Handwritten meeting notes		
C0000075-0079	58		CECo Construction (Boone)	10/03/84	Letter	Lawler	Shamblin

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000085	58		CECo Construction (Boone)	05/12/78	Letter	Sorenson	Cleff
C000006-0094	58		CECo Construction	08/15/84	Letter	O'Connor	Boone
C0000095-0097	58		CECo Construction (Boone)	03/06/85	Draft Letter	Bedalow	Shamblin
C0000098-0099	58		CECo Construction	04/25/84	Handwritten meeting notes		Croft
C0000100-0101	58		CECo Construction (Boone)	10/05/84	Handwritten meeting notes		
C0000102-0115	58		CECo Construction (Boone)	05/30/84	Handwritten meeting notes		
C0000116	58		CECo Construction (Shamblin)	08/05/83	Memo	Lawler	Cosaro
C0000117-0119	58		CECo Construction (Shamblin)	08/31/83	Memo	Westermeir	Cosaro
C0000120-0123	58		CECo Construction (Shamblin)	10/03/83	Memo	Westermeier	Cosaro
C0000124	58		CECo Construction (Shamblin)	11/21/83	Memo	Lawler	Hawkinson Cosaro

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000125	58		CECo Construction (Shamblin)	03/02/84	Memo	Lawler	Cosaro
C0000126	58		CECo Construction (Shamblin)	05/01/84	Memo	Lawler	Cosaro
C0000127-0128	58		CECo Construction (Shamblin)	10/19/84	Letter	Lawler	Shamblin
C0000129-0133	58		CECo Construction (Shamblin)	10/03/84	Letter	Lawler	Shamblin
C0000135	58		CECo Construction (Dierbeck)	08/03/83	Memo	Lawler	Hawkinson
C0000182-0211	58		CECo Construction (Dierbeck)	6/28/85	Report		
C0000212-0291	58		CECo Construction	undated	Report		
C0000292	58		CECo Construction	5/14/85	Letter	Lawler	Dierbeck
C0000293	58		CECo Construction	5/17/85	Letter	Lawler	Dierbeck
C0000294-0297	58		CECo Construction	2/20/85	Typed outline w/hand-written notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000298- 0325	58		CECo Con- struction	5/6/85	Report		
C0000326- 0338	58		CECo Con- struction	undated	Report		
C0000339- 0341	58		CECo Con- struction	3/27/83	Letter	Keppler	Smith
C0000342- 0356	58		CECo Con- struction		Report		
C0000357- 0365	58		CECo Con- struction	4/2/85	Letter	Shamblin	Hitzeman
C0000366- 0429	58		CECo Con- struction	4/22/85	Report		
C0000430- 0434	58		CECo Con- struction	8/16/83	Memo	Westermeier	Sommerfield
C0000441	58		CECo Con- struction	3/22/84	Letter	Cosaro	Wallace
C0000442- 0444	58		CECo Con- struction	2/14/85	Letter	Shamblin	Donaldson
C0000445- 0451	58		CECo Con- struction	5/20/85	Hand- written notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000452- 0454	58		CECo Con- struction	2/14/85	Letter	Shamblin	Donaldson
C0000455- 0457	58		CECo Con- struction	5/28/85	Letter	Shamblin	Donaldson
C0000458-	58		CECo Con-	7/3/85	Letter	Shamblin	Lawler

Printout cancelled by operator.

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000012- 0013	58		CECo Con- struction (Croft)	07/06/84	Letter	Wrucke	Croft
C0000014	58		CECo Con- struction	06/24/83	Handwritten notes		Hawkinson
C0000015- 0017	58		CECo Con- struction	Undated	Handwritten notes		Croft
C0000018	58		CECo Con- struction	06/22/84	Letter	Shamblin	Waterfield
C0000019	58		CECo Con- struction	Undated	Draft Response		Croft
C0000020- 0023	58		CECo Con- struction	12/11/84	Handwritten notes		Croft
C0000024- 0026	58		CECo Con- struction	05/16/84	Handwritten notes		
C0000035- 0036	58		CECo Con- struction	04/19/84	Hand written notes		Croft
C0000037	58		CECo Con- struction	04/20/84	Handwritten notes		Croft
C0000039	58		CECo Con- struction	04/04/84	Handwritten meeting notes		
C0000075- 0079	58		CECo Con- struction (Boone)	10/03/84	Letter	Lawler	Shamblin

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000085	58		CECo Con- struction (Boone)	05/12/78	Letter	Sorenson	Cleff
C0000086- 0094	58		CECo Con- struction	08/15/84	Letter	O'Connor	Boone
C0000095- 0097	58		CECo Con- struction (Boone)	03/06/85	Draft Letter	Bedalow	Shamblin
C0000098- 0099	58		CECo Con- struction	04/25/84	Handwritten meeting notes		Croft
C0000100- 0101	58		CECo Con- struction (Boone)	10/05/84	Handwritten meeting notes		
C0000102- 0115	58		CECo Con- struction (Boone)	05/30/84	Handwritten meeting notes		
C0000116	58		CECo Con- struction (Shamblin)	08/05/83	Memo	Lawler	Cosaro
C0000117- 0119	58		CECo Con- struction (Shamblin)	08/31/83	Memo	Westermeir	Cosaro
C0000120- 0123	58		CECo Con- struction (Shamblin)	10/03/83	Memo	Westermeier	Cosaro
C0000124	58		CECo Con- struction (Shamblin)	11/21/83	Memo	Lawler	Hawkinson Cosaro

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000125	58		CECo Construction (Shamblin)	03/02/84	Memo	Lawler	Cosaro
C0000126	58		CECo Construction (Shamblin)	05/01/84	Memo	Lawler	Cosaro
C0000127-0128	58		CECo Construction (Shamblin)	10/19/84	Letter	Lawler	Shamblin
C0000129-0133	58		CECo Construction (Shamblin)	10/03/84	Letter	Lawler	Shamblin
C0000135	58		CECo Construction (Dierbeck)	08/03/83	Memo	Lawler	Hawkinson
C0000182-0211	58		CECo Construction (Dierbeck)	6/28/85	Report		
C0000212-0291	58		CECo Construction	undated	Report		
C0000292	58		CECo Construction	5/14/85	Letter	Lawler	Dierbeck
C0000293	58		CECo Construction	5/17/85	Letter	Lawler	Dierbeck
C0000294-0297	58		CECo Construction	2/20/85	Typed outline w/hand-written notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000298- 0325	58		CECo Con- struction	5/6/85	Report		
C0000326- 0338	58		CECo Con- struction	undated	Report		
C0000339- 0341	58		CECo Con- struction	3/27/83	Letter	Keppler	Smith
C0000342- 0356	58		CECo Con- struction		Report		
C0000357- 0365	58		CECo Con- struction	4/2/85	Letter	Shamblin	Hitzeman
C0000366- 0429	58		CECo Con- struction	4/22/85	Report		
C0000430- 0434	58		CECo Con- struction	8/16/83	Memo	Westermeier	Sommerfiel
C0000441	58		CECo Con- struction	3/22/84	Letter	Cosaro	Wallace
C0000442- 0444	58		CECo Con- struction	2/14/85	Letter	Shamblin	Donaldson
C0000445- 0451	58		CECo Con- struction	5/20/85	Hand- written notes		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000452-0454	58		CECo Construction	2/14/85	Letter	Shamblin	Donaldson
C0000455-0457	58		CECo Construction	5/28/85	Letter	Shamblin	Donaldson
C0000458-0459	58		CECo Construction	7/3/85	Letter	Shamblin	Lawler
C0000460-0466	58		CECo Construction	2/19/85	Letter	Shamblin	Donaldson
C0000467-0476	58		CECo Construction	3/11/85	Letter	Keppler	Smith
C0000477-0486	58		CECo Construction	4/25/85	Memo	Shamblin	Quaka
C0000487-0551	58		CECo Construction	5/24/85	Report		
C0000552-0614	58		CECo Construction	2/13/85	Report		
C0000643-0645	58		CECo Construction (Francoeur)	3/4/85	Handwritten Notes		Francoeur
C0000649-0650	58		CECo Construction (Francoeur)	5/21/85	Notes		
C0000668	58		CECo Construction (K. Croft)	5/25/84	Handwritten Notes		Croft

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000669	58		CECo Construction (K. Croft)	4/23/84	Speed Letter	Lawler	Hawkins
C0000670	58		CECo Construction (Shamblin)	9/5/84	Letter	Lawler	Shamblin
C0000673	58		CECo Construction (Shamblin)	2/28/84	Memo	Lawler	Hawkinson/Cosaro
C0000675-0679	58		CECo Construction (Boone)	10/24/84	Letter	Kline	Boone
C0000680	58		CECo Construction (Boone)	10/15/84	Report		
C0000681	58		CECo Construction (Boone)	10/1/84	Audit		
C0000682-0686	58		CECo Construction (Boone)	1/24/84	Memo	Carlson/Stewart	Alcantar
C0000687-0692	58		CECo Construction (Boone)	undated	Handwritten notes		
C0000693	58		CECo Construction (Boone)	3/21/84	Memo	O'Connor	Forbes

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000694	58		CECo Con- struction (Boone)	3/22/84	Memo	Forbes/ Alcanter	Stewart/ Donaldson
C0000703- 0704	58		CECo Con- struction (Boone)	3/28/84	Memo	O'Connor	Forbes
C0000707- 0708	58		CECo Con- struction (Boone)	9/26/84	Field Transmittal Form	Fus	Shamblin/ Groth
C0000709- 0714	58		CECo Con- struction (Gorski)	5/13/85	Letter	O'Connor	Gorski
C0000715- 0722	58		CECo Con- struction (Gorski)	undated	Handwritten Notes		
C0000723- 0729	58		CECo Con- struction (Gorski)	undated	Handwritten Notes		
C0000730- 0743	58		CECo Con- struction (Gorski)	undated	Handwritten Notes		
C0000744- 0746	58		CECo Con- struction (Gray)	6/11/84	Memo	Various	Shamblin
C0000747	58		CECo Con- struction (Gorski)	undated	Handwritten Notes		
C0000748	58		CECo Con- struction (Gorski)	undated	Supple- mental Log		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000749	58		CECo Con- struction (Gorski)	undated	Log		
C0000750	58		CECo Con- struction (Gorski)	undated	Handwritten Notes		
C0000751	58		CECo Con- struction (Gorski)	undated	Log		
C0000752- 0753	58		CECo Con- struction (Gorski)	5/2/85	Letter	Murphy	Gorski
C0000754- 0758	58		CECo Con- struction (Gorski)	undated	Handwritten Notes		
C0000759- 0760	58		CECo Con- struction (Gorski)	undated	Handwritten Notes		
C0000762	58		CECo Con- struction (Dierbeck)	undated	Drawing		
C0000763- 0809	58		CECo Con- struction (Dierbeck)	undated	Drawing		
C0000810	58		CECo Con- struction (Dierbeck)	6/10/85	Letter	Dierbeck	Lawler
C0000811- 0812	58		CECo Con- struction (Dierbeck)	6/7/85	Letter	Vahle	Hitzeman
C0000813- 0814	58		CECo Con- struction (Dierbeck)	3/16/85	Letter	Dierbeck	Donaldson

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000815	58		CECo Con- struction (Dierbeck)	2/4/81	Memo	Lawler	Grant
C0000816	58		CECo Con- struction (Dierbeck)	undated	Handwritten Notes		
C0000818- 0855	58		CECo Con- struction (Dierbeck)	9/11/80	Report		

C0000858	58		CECo Con- struction (Dierbeck)	10/26/83	Memo	Westermeier	Cosaro
C0000863a- 00863b	58		CECo Con- struction	11/21/83	Letter	Cosaro	Kosik
C0000863e	58		CECo Con- struction	12/04/84	Handwritten Shamblin notes		Cosaro

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000864-00919	58		CECo Construction	10/09/84	Memo	Quaka	Shamblin
C0000920	58		CECo Construction	03/28/84	Letter	O'Connor	Cosaro
C0000921-00922	58		CECo Construction	08/20/83	Speed letter	O'Connor	Groth
C0000923	58		CECo Construction (Boone)	03/28/84	Memo	Carlson	Cosaro
C0000924-00972	58		CECo Construction (Boone)	12/05/84	Letter	Carlson	Groth
C0000973-00985	58		CECo Construction (Boone)	02/12/85	Letter	Elias	Lemon
*C0000986-01060	58		CECo Construction (Shamblin)	3/84	Report		
C0001061-01073	58		CECo Construction (Shamblin)	06/20/85	Handwritten Memo	Shamblin Skoza Vahle	Carlson
C0001074	58		CECo Construction (Shamblin)	04/30/85	Handwritten Notes		Francoeur
C0001075-01078	58		CECo Construction (Shamblin)	12/17/84	Letter	O'Connor	Shamblin
C0001079	58		CECo Construction (Shamblin)	09/10/84	Memo		Shamblin

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001080	58		CECo Construction (Shamblin)	07/26/83	Memo	Meyers	Cosaro
C0001081	58		CECo Construction (Shamblin)	03/28/84	Letter	O'Connor	Cosaro
C0001082	58		CECo Construction (Shamblin)	08/07/84	Letter	O'Connor	Groth
C0001083	58		CECo Construction (Shamblin)	03/28/84	Memo		
C0001084-01085	58		CECo Construction (Gorski)		Handwritten notes		
C0001086-01099	58		CECo Construction (Gorski)	12/04/84	Speed Letter	Fus	Gorski
C0001101-01108	58		CECo Construction (Gorski)		Handwritten notes		
C0001109-01110	58		CECo Construction (Gorski)		Handwritten notes		
C0001111-01114	58		CECo Construction (Gorski)	10/11/84	Letter		
C0001115-01117	58		CECo Construction (Gorski)	05/03/84	Speed Letter	Vahle	Gorski
C0001118-01124	58		CECo Construction (Gorski)	07/25/84	Computer Printout		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001125	58		CECo Construction (Gorski)	05/02/84	PGCo Memo	Carlson	Stewart
C0001126	58		CECo Construction (Gorski)		Handwritten		
C0001127	58		CECo Construction (Gorski)		Handwritten		
C0001128-01130	58		CECo Construction (Gorski)		Handwritten		
C0001131-01141	58		CECo Construction (Gorski)	01/15/85	Notes		
C0001142-01143	58		CECo Construction (Gorski)	05/02/85	Speed Letter	Murphy	Gorski
C0001143a-01143b	58		CECo Construction (Gorski)		Handwritten notes		
C0001146	58		CECo Construction (Boone)		Handwritten notes		
C0001147	58		CECo Construction (Boone)	06/21/85	Handwritten notes		
C0001148-01154	58		CECo Construction (Boone)	05/02/85	PGCo Memo	Murphy	Carlson Boone
C0001155-01156	58		CECo Construction (Boone)	02/13/85	Handwritten notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001157	58		CECo Con- struction (Boone)	11/09/84	Handwritten notes		
C0001158- 01160	58		CECo Con- struction (Boone)	04/16/85	NCR		
C0001161- 01162	58		CECo Con- struction (Boone)	08/31/84	Handwritten Notes		
C0001183	58		CECo Con- struction (Boone)	09/29/83	Memo	O'Connor	Cosaro
C0001186	58		CECo Con- struction (Boone)	05/08/85	Speed Letter	Skoza	Boone
C0001187- 01190	58		CECo Con- struction (Boone)	05/31/85	Memo	Murphy	Haley
C0001191- 01193	58		CECo Con- struction (Boone)	05/16/85	Report		
C0001274- 01318	58		CECo Con- struction (Groth)		Report		
C0001319- 01325	58		CECo Con- struction (Groth)	1982	Handwritten List		
C0001326- 01327	58		CECo Con- struction (Groth)	04/08/82	Handwritten notes		Groth

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001328-01333	58		CECo Construction (Groth)	11/16/82	Handwritten List		
C0001334-01336	58		CECo Construction (Groth)	11/18/82	Handwritten notes		Groth
C0001337-01344	58		CECo Construction (Groth)		Handwritten notes		
C0001345-01349	58		CECo Construction (Groth)		Memo	Cosaro	Wallace
C0001350-01368	58		CECo Construction (Groth)		Handwritten notes		
C0001369-01372	58		CECo Construction (Groth)		Handwritten notes		
C0001373-01376	58		CECo Construction (Groth)				
C0001377-01387	58		CECo Construction (Groth)	07/06/81	Letter	Deress	Lane
C0001388-01389	58		CECo Construction (Groth)	08/15/84	Letter w/ handwriting	Elias	Lane
C0001390	58		CECo Construction (Groth)	1985	Graph		
C0001391	58		CECo Construction (Groth)	05/01/85	Chart		Berglin

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001392-01397	58		CECo Construction (Groth)		Handwritten notes		
C0001398-01418	58		CECo Construction (Groth)	07/08/85	Computer Printout w/ Handwriting		Berglin
C0001419-01428	58		CECo Construction (Groth)	09/01/82	Handwritten notes		Berglin
C0001429	58		CECo Construction (Groth)	07/09/85	Handwritten notes		
C0001430-01432	58		CECo Construction (Groth)		Handwritten notes		Berglin
C0001433-01434	58		CECo Construction (Groth)	09/11/84	Speed Letter	Willoughby	Lotarski
C0001435-01436	58		CECo Construction (Gorski)	03/07/84	Handwritten notes		
C0001437-01475	58		CECo Construction (Gorski)	12/11/84-01/16/85	Handwritten notes		Gorski
C0001476-01482	58		CECo Construction (Gorski)	12/19/84	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001483- 1488	58		CECo Con- struction (Gorski)	03/07/85	Handwritten notes		Various
C0001489- 01492	58		CECo Con- struction (MC)	11/02/84	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001493- 01525	58		CECo Con- struction	11/02/84	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001526	58		CECo Con- struction	05/28/85	Letter	Skoza	Gorski
C0001527	58		CECo Con- struction	05/31/85	Letter	Gorski	Erkkson
C0001528	58		CECo Con- struction		File		
C0001529- 01531	58		CECo Con- struction	05/07/85	Handwritten notes		
C0001532- 01537	58		CECo Con- struction	10/01/84	Letter	Gorski	Carlson
C0001538	58		CECo Con- struction	11/08/81	Letter	Merwin	Faul

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001539- 01581	58		CECo Con- struction		Handwritten notes		
C0001582- 01583	58		CECo Con- struction		Handwritten notes		
C0001584- 01593	58		CECo Con- struction	08/20/80	Letter	O'Connor	Gorski
C0001594- 01596	58		CECo Con- struction	08/20/84	Letter	O'Connor	Gorski
C0001597- 01598	58		CECo Con- struction	07/25/85	Handwritten Mike Letter		Olson
C0001599- 01617	58		CECo Con- struction	03/15/85	Letter	Quaka/ Shamblin	Marcus

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001618-01620	58		CECo Construction		Handwritten notes		
C0001621	58		CECo Construction	06/21/84	Letter	Grunthaler	Skoza
C0001622-01624	58		CECo Construction		List		
C0001625	58		CECo Construction	05/15/85	Action Plan Summary		
C0001626	58		CECo Construction		Report		
C0001627	58		CECo Construction		Report w/ Handwritten notes		
C0001628-01629	58		CECo Construction	05/01/85	Action Plan Summary		
C0001630	58		CECo Construction		Tally Sheet		
C0001631	58		CECo Construction	03/07/85	Handwritten notes		
C0001632-01636	58		CECo Construction	07/03/85	Action Plan Summary		
C0001637-01639	58		CECo Construction	06/11/85	Handwritten notes		
C0001640	58		CECo Construction	06/04/85	Handwritten notes		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001641-01643	58		CECo Construction	05/28/84	Report		
C0001644-01646	58		CECo Construction		Report		
C0001647-01649	58		CECo Construction	05/21/85	Handwritten notes		
C0001650-01651	58		CECo Construction	05/07/85	Handwritten notes		
C0001652-01654	58		CECo Construction	05/07/85	Handwritten notes		
C0001655-01656	58		CECo Construction	03/26/85	Handwritten notes		
C0001657	58		CECo Construction		Handwritten notes		
C0001658-01659	58		CECo Construction		Handwritten notes		
C0001660-01665	58		CECo Construction		Tally Sheet		
C0001666-01669	58		CECo Construction		Tally Sheet		
C0001670	58		CECo Construction	04/11/85	Computer Printout		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001671	58		CECo Con- struction		List		
C0001672	58		CECo Con- struction	5/3/85	Letter	Gorski	Knaff
C0001673	58		CECo Con- struction	5/3/85	Letter	Gorski	Knaff
C0001674- 01683	58		CECo Con- struction	06/18/85	Letter	O'Connor	Gorski
C0001684- 01707	58		CECo Con- struction	07/01/85	Letter	Skoza	Gorski
C0001708- 01710	58		CECo Con- struction	03/07/85	Letter	Taylor	Gorski
C0001711- 01712	58		CECo Con- struction	04/29/85	Letter	Mayernik	Gorski
C0001713	58		CECo Con- struction	04/10/85	Letter	O'Connor	Gorski
C0001714- 01715	58		CECo Con- struction	06/27/85	Letter	Gorski	Raft

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001716	58		CECo Con- struction	01/15/85	Letter	Berglin	Byers
C0001717	58		CECo Con- struction	06/25/85	Letter	Skoza	Gorski
C0001718- 01719	58		CECo Con- struction	04/01/85	Letter	Vahle	Jones
C0001720- 01721	58		CECo Con- struction	04/03/85	Letter	O'Connor	Gorski
C0001722- 01725	58		CECo Con- struction (Groth)	Undated	Handwritten notes		
C0001726- 01743	58		CECo Con- struction (Groth)	12/20/83	Report		
C0001744- 01755	58		CECo Con- struction (Groth)	Undated	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001756- 01790	58		CECo Con- struction (Groth)	9/11/80	Report		
C0001791- 01796	58		CECo Con- struction (Groth)		List		
C0001803- 01809	58		CECo Con- struction (Boone)	04/18/84	Memo	Groth	Stewart/ O'Hern
C0001810- 01812	58		CECo Con- struction (Boone)	03/28/84	Letter	Carlson	Hunsader

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001813	58		CECo Con- struction (Boone)	11/10/83	Letter	Sommerfield/ Cosaro	O'Connor
C0001814	58		CECo Con- struction (Boone)	11/10/83	Letter	Stewart	O'Connor
C0001815	58		CECo Con- struction (Boone)	10/10/83	Letter	Stewart	O'Connor
C0001817	58		CECo Con- struction (Brylka)	01/02/84	Report		
C0001818	58		CECo Con- struction (Boone)	06/24/83	Letter	Meyers	Groth
C0001819	58		CECo Con- struction (Boone)	06/29/83	Letter	Cosaro/ Groth	Novak
C0001820- 01821	58		CECo Con- struction (Boone)	06/10/83	Letter	Groth	Hunsader
C0001822- 01823	58		CECo Con- struction (Boone)	11/05/82	Letter	Cosaro	Meyers
C0001824- 01825	58		CECo Con- struction (Boone)	08/11/82	Letter	Cosaro	Meyers
C0001826	58		CECo Con- struction (Boone)	05/19/82	Letter	Cosaro	Hunsader
C0001827	58		CECo Con- struction (Boone)	11/10/82	Letter	Cosaro	Meyers

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001828	58		CECo Construction (Boone)	12/15/83	Letter	Carlson/Green	Kelm
C0001829	58		CECo Construction (Boone)	09/02/82	Letter	Rubino	Hunsader
C0001830	58		CECo Construction (Boone)	10/05/82	Letter	Cosaro	Meyers
C0001831-01835	58		CECo Construction		Handwritten Notes		
C0001836-01841	58		CECo Construction		Handwritten Notes		
C0001842-01857	58		CECo Construction		Report		
C0001858-01859	58		CECo Construction	09/07/82	Revision		
C0001860-01913	58		CECo Construction		Report W/ Handwritten notes		
C0001914-01958	58		CECo Construction		Report W/ Handwritten notes		
C0001959-02003	58		CECo Construction		Report W/ Handwritten notes		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002004-02014	58		CECo Construction		Index Cards		
C0002015-02019	58		CECo Construction		Handwritten notes		
C0002020-02075	58		CECo Construction		Handwritten notes		
C0002076-02085	58		CECo Construction	12/3/82	Memo		
C0002086-02092	58		CECo Construction		Handwritten notes		
C0002095-02097	58		CECo Construction	09/08/82	Letter	Meyer	Merwin
C0003270-03278	58		CECo Construction	12/10/82	I. E. Bulletin		
C0003279-03285	58		CECo Construction	11/29/76	Purchase Order		
C0003286-03292	58		CECo Construction	3/22/79	Purchase Order		
C0003293-03312	58		CECo Construction	3/10/78	Material Receipt order		
C0003313-03318	58		CECo Construction	12/28/78	Material Receipt order		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0003319- 03350	58		CECo Con- struction	Undated	Material Receipt order		
C0003351- 03354	58		CECo Con- struction	5/16/80	Material Receipt order		
C0003355- 03356	58		CECo Con- struction	9/11/73	CECo System Standard		
C0003357- 03378	58		CECo Con- struction	5/18/84	Audit Report Standard		
C0003379- 03391	58		CECo Con- struction	5/29/84	Project Procedure		
C0003392-	58		CECo Con- struction	5/7/85	Letter	Craven	Hoffman
C0002099- 02104	58		CECo Con- struction (Boone)		Handwritten notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002105- 02118	58		CECo Con- struction (Shamblin)	07/18/85	Letter	Vahle	Shamblin
C0002119	58		CECo Con- struction (Shamblin)	06/25/85	Letter	Shamblin	O'Connor
C0002120- 02123	58		CECo Con- struction (Shamblin)	06/29/85	Letter	Tramm	Cosaro
C0002124- 02129	58		CECo Con- struction (Shamblin)	05/31/84	Handwritten notes		
C0002130- 02135	58		CECo Con- struction (Gorski)	10/23/84	Handwritten notes		
C0002136- 02139	58		CECo Con- struction (Gorski)	09/21/84	Meeting Minutes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002140- 02149	58		CECo Con- struction (Gorski)	08/29/84	Memo	Shamblin	Vahle
C0002150	58		CECo Con- struction (Brylka)	07/01/83	Report		
C0002151- 02152	58		CECo Con- struction (Gorski)	03/15/84	Letter	Wendorf	Gorski
C0002153- 02160	58		CECo Con- struction (Gorski)	11/16/84	NCR		
C0002161- 02172	58		CECo Con- struction	Undated	Report		
C0002173- 02178	58		CECo Con- struction (Shamblin)	04/21/83	Letter	Meyers	Cosaro

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002179	58		CECo Construction	04/31/83	Letter	Meyers	Cosaro
C0002180-02182	58		CECo Construction	11/29/84	Letter	O'Connor	Shamblin
C0002183	58		CECo Construction	09/27/84	Letter	Carlson	Quaka
C0002184-02189	58		CECo Construction	02/03/84	Handwritten notes		
C0002190	58		CECo Construction	10/19/84	Letter	Various	Shamblin
C0002198-02202	58		CECo Construction (Shamblin)	10/03/84	Letter	O'Connor	Cosaro
C0002203-02204	58		CECo Construction (Shamblin)	10/19/84	Letter	O'Connor	Shamblin
C0002205-02216	58		CECo Construction (Shamblin)	01/24/85	Training Sheet		
C0002217-02219	58		CECo Construction (Shamblin)	09/10/84	Letter	Various	Shamblin
C0002221-02229	58		CECo Construction (Shamblin)	10/07/82	Letter	Wallace	Cosaro

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002230- 02232	58		CECo Con- struction (Shamblin)	06/11/84	Letter	Various	Shamblin
C0002233- 02235	58		CECo Con- struction (Shamblin)	06/13/84	Letter	Various	Shamblin
C0002236 2253	58		CECo Con- struction (Shamblin)	10/23/84	Letter	O'Connor	Shamblin
C0002254- 02272	58		CECo Con- struction (Shamblin)	01/15/85	Memo to File		Shamblin

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002273	58		CECo Con- struction (Boone)	Undated	Handwritten notes		
C0002274- 02275	58		CECo Con- struction	Undated	Handwritten notes		
C0002277- 02280	58		CECo Con- struction (Gray)	10/22/84	Memo	GKN	Burns
C0002281- 02282	58		CECo Con- struction (Gray)	09/11/84	Letter	QA	Shamblin
C0002283- 02313	58		CECo Con- struction (Gray)	Undated	Revision		
C0002314	58		CECo Con- struction (Gray)	1/23/85	Letter	Shamblin	Hoffman
C0002315- 02318	58		CECo Con- struction (Gray)	2/19/85	Memo	GKN	
C0002319	58		CECo Con- struction (Gray)	01/22/85	Memo	Shamblin	Danica
C0002320- 02350	58		CECo Con- struction (Gray)	01/22/85	Revision		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002351-02355	58		CECo Construction (Shamblin)	03/17/85	Memo	Schroeder	Shamblin
C0002356-02357	58		CECo Construction (Shamblin)	04/26/85	Letter	Various	Shamblin
C0002383-02388	58		CECo Construction (Shamblin)	01/05/85	Report	Dean Draper	
C0002389-2390	58		CECo Construction (Gray)		Handwritten Notes		
C0002391	58		CECo Construction (Gray)	06/11/84	Letter	Bruns	Miller
C0002392-2410	58		CECo Construction (Gray)	05/16/84	Report		
C0002411	58		CECo Construction (Gray)	05/21/84	Letter	Fraser	Bruns
C0002412-2414	58		CECo Construction (Gray)		List		
C0002415-2418	58		CECo Construction (Gray)		List		
C0002419-2421	58		CECo Construction (Gray)		List		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002422- 2424	58		CECo Construction (Gray)		List		
C0002425	58		CECo Construction (Gray)	01/19/81	Report		
C0002426- 2438	58		CECo Construction (Gray)	10/16/80	Report		
C0002439- 2450	58		CECo Construction (Gray)	01/15/81	Report		
C0002451	58		CECo Construction (Gray)	02/05/80	Letter	Buckner	Gray
C0002452	58		CECo Construction (Gray)	06/10/80	Letter	Buckner	Gray
C0002453	58		CECo Construction (Gray)	06/03/80	Letter	Buckner	Gray
C0002454	58		CECo Construction (Gray)	06/13/80	Letter	Segersell	Farr
C0002455	58		CECo Construction (Gray)	06/05/81	Memo		Gray
C0002456	58		CECo Construction (Gray)	09/17/82	Letter	Buckner	Gray

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002457- 2465	58		CECo Construction (Gray)	08/29/78	Report		
C0002466- 2483	58		CECo Construction (Gray)		Report		
C0002484- 2500	58		CECo Construction (Gray)		Report		
C0002501	58		CECo Construction (Gray)	05/12/80	Letter	Buckner	Gray
C0002502	58		CECo Construction (Gray)	08/02/78	Letter	Smetana	Trumbull
C0002503	58		CECo Construction (Gray)	04/05/78	Letter	Gray	Legrer
C0002504- 2507	58		CECo Construction (Gray)	04/24/78	Report		
C0002508	58		CECo Construction (Gray)	08/17/78	Letter	Gray	Cook
C0002509	58		CECo Construction (Gray)	09/18/78	Letter	Salem	Hawkinson
C0002510	58		CECo Construction (Gray)	06/23/78	Letter	Salem	Gray

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002511	58		CECo Construction (Gray)	06/16/78	Letter	Salem	Gray
C0002512	58		CECo Construction (Gray)	06/05/80	Letter	Westermeier	Netzel
C0002513	58		CECo Construction (Gray)	03/02/79	Letter	Midway Indust.	Gray
C0002514	58		CECo Construction (Gray)	03/28/79	Letter	Buckner	Homely
C0002515- 2516	58		CECo Construction (Gray)	04/09/79	Letter	Buckner	Trumbull
C0002517- 2518	58		CECo Construction (Gray)	06/20/79	Letter	Gray	Salem
C0002519- 2520	58		CECo Construction (Gray)	05/14/85	Letter	Quaka	Shamblin
C0002521- 2527	58		CECo Construction (Gray)	10/13/82	Letter	Cosaro	Netzel
C0002528	58		CECo Construction (Gray)		Handwritten Notes		
C0002529	58		CECo Construction (Gray)		Handwritten Notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002530	58		CECo Construction (Gray)		Handwritten Notes		
C0002531- 2532	58		CECo Construction (Gray)	08/31/78	Handwritten Notes		
C0002533- 2542	58		CECo Construction (Gray)		Handwritten Notes		
C0002543- 2544	58		CECo Construction (Gray)		Handwritten Notes		
C0002545	58		CECo Construction (Gray)		Checklist		
C0002546- 2547	58		CECo Construction (Gray)		Index Cards		
C0002548- 2550	58		CECo Construction (Gray)		Index Cards		
C0002551- 2554	58		CECo Con- struction (Gray)		Handwritten notes		
C0002562- 2564	58		CECo Con- struction (Gray)		Report		
C0002565	58		CECo Con- struction (Gray)	11/5/76	Memo	Sullivan	Kelly
C0002566	58		CECo Con- struction (Gray)	3/30/82	Memo	Meyers	Rubino

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002567	58		CECo Construction (Gray)	4/2/82	Letter	Meyers/Rubino	Merwin/Hunsader
C0002568	58		CECo Construction (Gray)	4/15/83	Letter	Engineering Staff	Ken M. (From PFE)
C0002569	58		CECo Construction (Gray)	4/19/82	Letter	Cosaro/Merwin	Hunsader
C0002570-02571	58		CECo Construction (Gray)	8/11/83	Letter	Cosaro	Meyers
C0002572 2573	58		CECo Construction (Gray)	6/2/82	Handwritten Notes		
C0002574 2575	58		CECo Construction (Gray)	5/25/82	Letter	Cosaro/Merwin	Hunsader
C0002576-2578	58		CECo Construction (Gray)	5/14/82	Letters	Meyers/Rubino	Cosaro
C0002579	58		CECo Construction (Gray)	8/16/82	Letter	Meyers	Schlung
C0002580	58		CECo Construction (Gray)	8/17/82	Letter	Meyers	Schlung
C0002581	58		CECo Construction (Gray)	8/16/82	Letter	Meyers	Cosaro

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002582	58		CECo Construction (Gray)	9/24/82	Letter	Meyers	Sommerfield
C0002583	58		CECo Construction (Gray)	9/24/82	Report		
C0002584	58		CECo Construction (Gray)	10/21/82	Letter	Rubino	Groth
C0002585	58		CECo Construction (Gray)	11/5/82	Letter	Cosaro/ Sommerfield	Meyer
C0002586	58		CECo Construction (Gray)	12/9/82	Letter	Gorski	Rubino
C0002587	58		CECo Construction (Gray)	1/7/83	Letter	QC Field Inspectors	Rubino
C0002588- 2590	58		CECo Construction (Gray)	11/18/82	Handwritten Notes		Groth
C0002591 2592	58		CECo Construction (Gray)		Report		
C0002593- 2598	58		CECo Construction (Mennecke)	4/11/84	Letter		Quaka
C0002599- 2600	58		CECo Construction (Mennecke)	5/10/84	Memo	Mennecke	Nelson

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002601- 2606	58		CECo Con- struction (Mennecke)	5/11/84	Letter	Cosaro	Quaka
C0002607- 2608	58		CECo Con- struction (Mennecke)	6/11/84	Memo	Mennecke	Nelson
C0002609- 2612	58		CECo Con- struction (Mennecke)	7/19/84	Memo	Mennecke	Nelson
C0002613- 2616	58		CECo Con- struction (Netzel)	4/12/84	Letter	Mennecke	Koske
C0002617	58		CECo Con- struction (Netzel)		Roster		
C0002618	58		CECo Con- struction (Hoffman)	4/7/84	Letter	Craven	Hoffman
C0002619	58		CECo Con- struction (Boone)	7/6/81	Letter	Enger	Merwin
C0002619	58		CECo Con- struction (Boone)	7/6/81	Letter	Enger	Merwin
C0002620- 2621	58		CECo Con- struction (Tanouye)	10/2/84	Letter		Riedel
C0002622- 2623	58		CECo Con- struction (Tanouye)	10/2/84	Letter		Riedel
C0002624- 02628	58		CECo Con- struction	10/03/84	Letter	Rolan	Shamblin

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002629- 02633	58		CECo Con- struction	10/03/84	Letter	Rolan	Shamblin
C0002634- 02638	58		CECo Con- struction	10/03/84	Letter	Rolan	Shamblin
C0002639- 2643	58		CECo Con- struction (Boone)	10/3/84	Letter	O'Connor	Shamblin
C0002644	58		CECo Con- struction (Boone)		Handwritten Notes		
C0002645	58		CECo Con- struction (Boone)	3/13/85	Letter	O'Connor	Farr
C0002646- 2647	58		CECo Con- struction (Boone)	10/19/84	Letter	Craven	Shamblin
C0002648- 2649	58		CECo Con- struction (Boone)	10/19/84	Letter	O'Connor	Shamblin
C0002650	58		CECo Con- struction (Boone)	10/5/84	Notifica- tion Letter		
C0002651- 02652	58		CECo Con- struction (Boone)	10/19/84	Letter	Rolan	Shamblin
C0002653- 2654	58		CECo Con- struction (Boone)	10/19/84	Letter	Newland	Shamblin
C0002655- 2656	58		CECo Con- struction (Boone)	10/19/84	Letter	Neebaum	Ahamblin
C0002657	58		CECo Con- struction (Boone)	8/22/84	Memo	Farr/ Gorski	Stewart

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002658- 2660	58		CECo Con- struction (Boone)	10/23/84	Letter	Rolan	Shamblin
C0002661- 02663	58		CECo Con- struction (Boone)	10/19/84	Field Transmittal Form	Gallager/ Fus	Shamblin/ Boone
C0002664- 2670	58		CECo Con- struction (Boone)	10/31/84	Memo	Shamblin	Stewart
C0002671 02679	58		CECo Con- struction (Boone)	10/23/84	Letter	Craven	Shamblin
C0002680	58		CECo Con- struction (Boone)	10/22/84	Letter	O'Connor	Shamblin
C0002681	58		CECo Con- struction (Boone)	10/18/84	Memo	Shamblin	Sumrow
C0002682	58		CECo Con- struction (Boone)	10/12/84	Memo	Shamblin	Sumrow
C0002683- 2696	58		CECo Con- struction (Boone)	10/30/84	Handwritten Notes		
C0002697 2699	58		CECo Con- struction (Boone)	7/13/84	Letter Draft	Various	Shamblin
C0002700- 2701	58		CECo Con- struction (Boone)	10/19/84	Letter	O'Connor	Shamblin

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002702-2703	58		CECo Construction (Boone)	01/20/83	Letter Draft	Deress	Green
C0002704	58		CECo Construction (Boone)	11/08/83	Memo	All Personnel	Mennecke
C0002705	58		CECo Construction (Boone)	9/8/83	Memo	All Personnel	Mennecke
C0002706	58		CECo Construction (Boone)	5/10/83	Memo	All Personnel	Hil
C0002707-2711	58		CECo Construction (Boone)	4/30/84	Handwritten Letter	Earl	Dan
C0002712-2713	58		CECo Construction (Boone)	9/25/84	Letter	Shamblin	Boone
C0002714	58		CECo Construction (Boone)	9/25/84	Letter	Shamblin	Boone
C0002715-2717	58		CECo Construction (Boone)		Report		
C0002718-2721	58		CECo Construction (Boone)		Report		
C0002722-2728	58		CECo Construction (Boone)		Report		
C0002729-2733	58		CECo Construction (Boone)		Drawings		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002734-2746	58		CECo Construction (Boone)	10/8/80	F.C.R.		
C0002747-02748	58		CECo Construction (Boone)	9/25/84	Memo (Phone)	McGregor	Putman
C0002749-2750	58		CECo Construction (Boone)	9/25/84	Phone Memo	McGregor	Putman
C0002751	58		CECo Construction (Boone)		Handwritten Notes		
C0002752	58		CECo Construction (Boone)		Handwritten notes		
C0002753-02754	58		CECo Construction (Boone)		Draft memo	Netzel	Putman
C0002755	58		CECo Construction (Boone)		FCR		
C0002756-02758	58		CECo Construction (Boone)		ECN		
C0002759-02761	58		CECo Construction	09/28/84	Telecopy form w/ drawings	Hester	
C0002762-02767	58		CECo Construction (Boone)	08/08/84	Memo	Various	

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002768	58		CECo Construction (Boone)		Handwritten notes		
C0002769-02772	58		CECo Construction (Boone)	05/25/84	Phone memo	Putman	MacGregor
C0002773	58		CECo Construction (Boone)	08/24/84	Handwritten notes		
C0002774	58		CECo Construction (Boone)		Handwritten notes		
C0002775-02777	58		CECo Construction (Boone)		Handwritten notes		
C0002778	58		CECo Construction (Boone)		Handwritten notes		
C0002779	58		CECo Construction (Boone)	06/18/84	NCR		
C0002780	58		CECo Construction (Boone)		Handwritten Notes		
C0002781-02784	58		CECo Construction (Boone)	04/30/84	NCR		
C0002785	58		CECo Construction (Boone)	07/27/84	Meeting notes handwritten		
C0002786-02791	58		CECo Construction (Boone)	07/06/84	Handwritten meeting notes		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002792	58		CECo Construction Meeting Notes	04/19/83	Letter w/ Handwritten notes	LKC, PGC, PSM Cosaro	
C0002793-02794	58		CECo Construction (Boone)		Handwritten notes		
C0002795-02799	58		CECo Construction (Boone)	11/29/82	Memo	Cosaro	Wallace
C0002800-02803	58		CECo Construction (Boone)		Handwritten notes		
C0002804	58		CECo Construction (Shamblin)	10/22/84	Letter	O'Connor	Shamblin
C0002805-02806	58		CECo Construction (Shamblin)	10/19/84	Letter	Craven	Shamblin
C0002807-02808	58		CECo Construction (Shamblin)	10/19/84	Letter	Rolan	Shamblin
C0002809-02810	58		CECo Construction (Shamblin)	10/19/84	Letter	Newland	Shamblin
C0002811-02812	58		CECo Construction (Shamblin)	10/19/84	Letter	Neebaum	Shamblin
C0002813-02817	58		CECo Construction (Shamblin)	10/3/84	Letter	Rolan	Shamblin
C0002818-02822	58		CECo Construction (Shamblin)	10/3/84	Letter	Neebaum	Shamblin

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002823- 02827	58		CECo Con- struction (Shamblin)	10/3/84	Letter	Newland	Shamblin
C0002828- 02832	58		CECo Con- struction (Shamblin)	10/3/84	Letter	Craven	Shamblin
C0002833- 02843	58		CECo Con- struction (Gieseke)	02/19/85	Memo	Quaka	Dewald
C0002844	58		CECo Con- struction (Gieseke)	05/31/85	Letter	Craven	Shamblin
C0002845	58		CECo Con- struction (Gieseke)	05/31/85	Letter	O'Connor	Shamblin
C0002846	58		CECo Con- struction (Gieseke)	05/31/85	Letter	Lantermo	Shamblin
C0002847	58		CECo Con- struction (Gieseke)	05/31/85	Letter	Niebaum	Shamblin
C0002848	58		CECo Con- struction (Gieseke)	05/31/85	Letter	Donaldson	Shamblin
C0002849	58		CECo Con- struction (Gieseke)	06/04/85	Letter	Forrest	Shamblin
C0002850- 02942	58		CECo Con- struction (Gieseke)	1985	Folder		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002947-02949	58		CECo Construction (Gieseke)	03/01/84	Letter	Rolan/Dewald	Mennecke
C0002950	58		CECo Construction (Gieseke)	10/09/84	Letter	Rolan/Dewald/Klena	Gieseke
C0002951	58		CECo Construction (Gieseke)	05/22/85	Handwritten notes		
C0002952-02960	58		CECo Construction (Gieseke)		Report w/handwritten notes		
C0002961	58		CECo Construction (Gieseke)	10/16/84	Memo	Netzel	DeWald
C0002962-02965	58		CECo Construction (Gieseke)	11/09/84	Memo	Netzel	Paserba
C0002966-02969	58		CECo Construction (Gieseke)	09/15/84	Memo	Netzel/Gieseke	DeWald
C0002970	58		CECo Construction (Gieseke)	08/11/84	Memo	Mennecke	DeWald
C0002971-02976	58		CECo Construction (Gieseke)	05/01/85	Letter	Schroeder	Phelan/Vah
C0002977	58		CECo Construction (Gieseke)	09/05/85	Letter	Binder	Elias

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002978- 02997	58		CECo Con- struction (Gieseke)	04/10/85	Memo	Orlov	Simile
C0002978- 02997	58		CECo Con- struction (Gieseke)	04/10/85	Memo	Orlov	Simile
C0003028- 3030	58		CECo Construction (Gieseke)	10/23/84	Letter	Rolan	Shamblin
C0003031- 3033	58		CECo Construction (Gieseke)	10/18/84	Letter	Wallace	Vahle
C0003034- 3039	58		CECo Construction (Gieseke)	10/03/84	Letter	Rolan	Shamblin
C0003052- 3054	58		CECo Construction (Gorski)		Handwritten Notes		
C0003055- 3057	58		CECo Construction (Gorski)		Report w/ handwritten notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0003058	58		CECo Construction (Gorski)		Handwritten Notes		
C0003059- 3064	58		" "		Memo	Carlson	Marquardt
C0003065	58		" "		Memo	Carlson	Marquardt
C0003066	58		CECo Construction (Gorski)	03/26/85	Handwritten Notes		
C0003067	58		CECo Construction (Gorski)	03/26/85	Handwritten Notes		
C0003068	58		CECo Construction (Gorski)		Handwritten Notes		
C0003069- 3071	58		CECo Construction (Gorski)	03/21/85	Handwritten Various Memo		Gorski
C0003072	58		CECo Construction (Gorski)		Handwritten Various Memo		Gorski
C0003073- 3076	58		CECo Construction (Gorski)	11/20/84	Letter	Deress	Kortier

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0003076a- 3078	58		CECo Construction (Gorski)		Handwritten Notes		
C0003116- 03117	58		CECo Construction	04/02/85	Letter	Rolan	Shamblin
C0003118- 03125	58		CECo Construction	04/02/85	Letter	Keppler	Swartz
C0003126- 03136	58		CECo Construction		Report		
C0003137- 03140	58		CECo Construction	05/01/85	Report		
C0003141- 03169	58		CECo Construction		Report		
C0003170- 03173	58		CECo Construction	09/26/84	Letter	Elias	Cleff

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0003174- 03178	58		CECo Construction	06/26/84	Procedure		
C0003179- 03101	58		CECo Construction	07/01/85	Project Instruction		
C0003192	58		CECo Construction		Clearance Notifica- tion Form		
C0003193 3233	58		CECo Construction	03/05/85	Procedure		
C0003234 3269	58		CECo Construction	05/29/85	Procedure		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
D0000001	58		CECo PFE	07/01/85	Speed Letter	Skoza	Gorski
D0000001	58		CECo PFE	07/01/85	Speed Letter	Skoza	Gorski
D0000002-00006	58		CECo PFE		Handwritten Notes		
D0000002-00006	58		CECo PFE		Handwritten Notes		
D0000007-00008	58		CECo PFE		Handwritten Notes		
D0000007-00008	58		CECo PFE		Handwritten Notes		
D0000009-00010	58		CECo PFE		Handwritten Notes		
D0000009-00010	58		CECo PFE		Handwritten Notes		
D0000011	58		CECo PFE		Bar Graph		
D0000011	58		CECo PFE		Bar Graph		
D0000012	58		CECo PFE		Graph		
D0000012	58		CECo PFE		Graph		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
D0000013- 00025	58		CECo PFE Skoza	06/17/85	Notes		
D0000013- 00025	58		CECo PFE Skoza	06/17/85	Notes		
D0000026- 00053	58		CECo PFE Skoza	05/30/85	Notes		
D0000026- 00053	58		CECo PFE Skoza	05/30/85	Notes		
D0000054- 00063	58		CECo PFE	07/15/85	Draft Letter	Keppler	NLA
D0000054- 00063	58		CECo PFE	07/15/85	Draft Letter	Keppler	NLA
D0000064- 00065	58		CECo PFE		Handwritten Notes		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
D0000064-00065	58		CECo PFE		Handwritten Notes		
D0000066-00068	58		CECo PFE		Typed Notes		
D0000066-00068	58		CECo PFE		Typed Notes		
D0000069	58		CECo PFE	03/07/84	Memo		Shamblin
D0000070	58		CECo PFE	03/07/84	Memo		Shamblin
D0000071-00072	58		CECo PFE	01/27/84	Memo	Cosaro	Shamblin
D0000073	58		CECo PFE	03/01/85	Memo		Vahle
D0000074-00075	58		CECo PFE	07/19/83	Letter	Deress	Green
D0000076-00077	58		CECo PFE	01/20/83	Letter	Deress	Green
D0000078-00079	58		CECo PFE				
D0000080-00083	58		CECo PFE		Handwritten Report		
D0000084-00086	58		CECo PFE		Memo	PCD Startup Personnel	Shamblin

Eates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
D0000087- 00096	58		CECo PFE		Notes		
D0000097- 00100	58		CECo PFE		Handwritten Notes	Wendorf	Shamblin
D0000101- 00102	58		CECo PFE (Phalen)	01/31/85	Letter	Shamblin	Berglin
D0000103- 00110	58		CECo PFE (Phalen)	07/09/85	Letter	Vahle	Jacques
D0000111- 00115	58		CECo PFE (Phalen)	85	Handwritten Notes		
D0000116- 00121	58		CECo PFE (Phalen)	04/19/83	Handwritten Notes	LKC/PGCO/PSU	Cosaro
D0000122- 00125	58		CECo PFE (Phalen)	04/30/84	Handwritten Notes	Earl	Dan
D0000126- 00133	58		CECo PFE (Phalen)		Report		
D0000134- 00137	58		CECo PFE (Phalen)	12/27/84	Letter	Teras	Littlehale
D0000138- 00142	58		CECo PFE (Phalen)	Undated	Letter	Vahle	Kurtz

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
D0000143- 00144	58		CECo PFE	08/25/84	Letter	Deress	Vahle
D0000001	59		CECo PFE	07/01/85	Speed Letter	Skoza	Gorski
D0000001	59		CECo PFE	07/01/85	Speed Letter	Skoza	Gorski
D0000002- 00006	59		CECo PFE		Handwritten Notes		
D0000002- 00006	59		CECo PFE		Handwritten Notes		
D0000007- 00008	59		CECo PFE		Handwritten Notes		
D0000007- 00008	59		CECo PFE		Handwritten Notes		
D0000009- 00010	59		CECo PFE		Handwritten Notes		
D0000009- 00010	59		CECo PFE		Handwritten Notes		
D0000011	59		CECo PFE		Bar Graph		
D0000011	59		CECo PFE		Bar Graph		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
E0000278- 00307	58		BCAP		Procedure		
E0000278- 00307	58		BCAP		Procedure		
E0000031- 00039	58		BCAP (Orlov)	04/11/85	Checklist	Patterson	Hall
E0000040- 00052	58		BCAP (Orlov)	02/12/84	Surveil- lance Report		
E0000053- 00070	58		BCAP (Orlov)	09/21/84		Wallace/ Quaka	Marcus
E0000071- 00086	58		BCAP (Orlov)	12/12/84	Letter	Rolan	Shamblin
E0000087- 00088	58		BCAP (Orlov)	04/02/85	Letter	Rolan	Shamblin
E0000089- 00095	58		BCAP (Orlov)	04/19/85	Memo	Shamblin	Seltmann
E0000096- 00097	58			11/15/82	Memo	Sommerfield	Corcoran
E0000098- 00100	58		BCAP (Orlov)	02/27/85	Record		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
E0000101- 00108	58		BCAP (Orlov)	1973	Manual		
E0000109- 00117	58		BCAP (Orlov)	08/11/83	Manual		
E0000118- 00133	58		BCAP (Orlov)	05/10/84	Manual		
E0000134- 00141	58		BCAP (Orlov)	03/19/84	Manual		
E0000142- 00144	58		BCAP (Orlov)		Draft Response		
E0000145- 00149	58		BCAP (Orlov)	01/28/85	Letter	Kaushal	Hansel
E0000150- 00153	58		BCAP (Orlov)	03/25/85	BCAP Memo	Various	Kaushal
E0000154- 00156	58		BCAP (Orlov)	12/11/85	BCAP Obser- vation Record		
E0000157- 00158	58		BCAP (Orlov)	12/11/85	BCAP Obser- vation Record		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
E0000159- 00161	58		BCAP (Orlov)	12/11/85	BCAP Obser- vation		
E0000162- 00164	58		BCAP (Orlov)	12/11/85	BCAP Obser- vation		
E0000165- 00167	58		BCAP (Orlov)	12/11/85	BCAP Obser- vation		
E0000168- 00170	58		BCAP (Orlov)	12/11/85	BCAP Obser- vation		
E0000171- 00173	58		BCAP (Orlov)	12/11/85	BCAP Obser- vation Record		
E0000174- 00176	58		BCAP (Orlov)	12/11/85	BCAP Obser- vation Record		
E0000177- 00179	58		BCAP (Orlov)	12/11/85	BCAP Obser- vation Record		
E0000180- 00182	58		BCAP (Orlov)	12/11/85	BCAP Obser- vation Record		
E0000183- 00185	58		BCAP (Orlov)	12/11/85	BCAP Obser- vation Record		
E0000186- 00188	58		BCAP (Orlov)	12/11/85	BCAP Obser- vation Record		
E0000189- 00191	58		BCAP (Orlov)	12/11/85	BCAP Obser- vation Record		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
E0000192- 00194	58		BCAP (Orlov)		BCAP Obser- vation Record		
E0000195- 00197	58		BCAP (Orlov)		BCAP Obser- vation Record		
E0000198- 00200	58		BCAP (Orlov)		BCAP Obser- vation Record		
E0000201- 00203	58		BCAP (Orlov)		BCAP Obser- vation Record		
E0000204- 00206	58		BCAP (Orlov)		BCAP Obser- vation Record		
E0000207- 00208	58		BCAP (Orlov)		BCAP Obser- vation Record		
E0000210- 00212	58		BCAP (Orlov)		BCAP Obser- vation Record		
E0000213- 00215	58		BCAP (Orlov)	12/11/84	BCAP Obser- vation Record		
E0000216- 00218	58		BCAP (Orlov)	12/11/84	BCAP Obser- vation Record		
E0000219- 00221	58		BCAP (Orlov)	12/11/84	BCAP Obser- vation Record		
E0000222- 00224	58		BCAP (Orlov)	12/11/84	BCAP Obser- vation Record		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
E0000225- 00227	58		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000228- 00229	58		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000230- 00232	58		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000233- 00235	58		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000236- 00238	58		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000239- 00241	58		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000242- 00244	58		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000245- 00247	58		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000248- 00250	58		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000251 00253	58		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
E0000254 00256	58		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000257 00259	58		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000260 00262	58		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000263 00265	58		BCAP (Orlov)	1/14/84	BCAP Obser- vation Record		
E0000266 00270	58		BCAP (Orlov)	1/15/84	Letter	Byers	Hansel
E0000271 00273	58		BCAP (Orlov)	1/15/84	Letter	Kaushal	Shamblin
E0000274 00277	58		BCAP (Orlov)	12/4/84	Memo	Patterson	Duss

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
F0000001- 0022b	58		CECo Execs (DelGeorge)	11/28/84	Letter	DelGeorge	Kostel
F0000026- 0028	58		CECo Execs (DelGeorge)	11/15/83	Letter		Smetang
F0000029- 0031	58		CECo Execs (DelGeorge)	11/15/83	Letter	Shewski	Sommerfield
F0000039- 0045	58		CECo Execs (DelGeorge)	12/01/83	Letter	Sommerfield	Groth
F0000060	58		CECo Execs (DelGeorge)	12/12/83	Memo	Lawler et.al.	Grant
F0000094- 0096	58		CECo Execs (DelGeorge)	06/17/84	Letter	Jarigese	Shamblin

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
F0000101- 0137	58		CECo Execs (DelGeorge)	01/22/85	Letter	Lawler	Hawkinson
F0000142- 0146	58		CECo Execs (DelGeorge)	10/24/83	Meeting notes		Sommerfield
F0000181- 0189	58		CECo Execs (Reed)	3/2/84	Outline		
F0000190	58		CECo Execs (Reed)	11/19/84	Letter	Harrison	Reed
F0000191- 0193	58		CECo Execs (Reed)	1/16/85	Telecopy of List		
F0000194- 0195	58		CECo Execs (Reed)		List		
F0000196- 0197	58		CECo Execs (Reed)		List		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
F0000198	58		CECo Execs (DelGeorge)		Diagram		
F0000199- 0231	58		CECo Execs (DelGeorge)	6/25/85	Report		
F0000393- 00395	58		CECo Executive (Thomas)	06/13/85	Hand- Written Notes		
F0000396- 00420	58		CECo Executive (Thomas)	06/08/83			
F0000396- 00420	58		CECo Executive (Thomas)	06/08/83			
F0000421- 00430	58		CECo Executives	07/15/85	Draft Letter		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
G0000001-0008	58		CECo Licensing/Downtown (Alexander)	07/11/80	Memo w/IE	Gudac	Shewski
G0000021-0032	58		CECo Licensing/Downtown (Miosi)	10/27/83	Meeting Notes		Tapella
G0000033-0040	58		CECo Licensing/Downtown (Miosi)	8/15/83	Handwritten Notes		Smith
G0000064	58		CECo Licensing/Downtown (Miosi)	10/24/83	1 page from Report		
G0000065-0067	58		Licensing Downtown (Miosi)	10/11/83	Report		Schultz/Yin
G0000068-0069	58		Licensing Downtown (Miosi)	10/24/83	Handwritten notes		
G0000070-0076	58		Licensing Downtown (Miosi)	6/5/85	Letter	Various	Miosi
G0000077-0103	58		Licensing Downtown (Miosi)	4/10/85	Letter	Various	Smith

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
G0000119-0125	58		Licensing Downtown (Miosi)	02/21/85	Letter	Maiman	Shelton
G0000150-0159	58		Licensing Downtown (Miosi)	Undated	Report		
G0000160-0163	58		Licensing Downtown (Miosi)	08/15/83	Letter	Gray	Hairston
G0000164-0165	58		Licensing Downtown (Miosi)	08/12/83	Letter	Various	Wallace
G0000166-0167	58		Licensing Downtown (Miosi)	08/12/83	Letter	Various	Wallace
G0000168-0169	58		Licensing Downtown (Miosi)	08/12/83	Letter	Various	Wallace
G0000170	58		Licensing Downtown (Miosi)	08/8/83	Letter	Keppler	Farrar
G0000171-0174	58		Licensing Downtown (Miosi)	08/15/83	Handwritten notes		
G0000194-0197	58		CECo/Licensing Downtown (Miosi)		Handwritten notes		
G0000198-0200	58		CECo/Licensing Downtown (Miosi)	02/20/85	Letter	Smith	

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
G0000201- 0203	58		CECo/Licens- ing Downtown (Miosi)	11/18/83	Letter	Swartz	
G0000204- 0205	58		Licensing/ Downtown (Miosi)	10/04/83	Letter	Swartz	
G0000206- 0207	58		Licensing/ Downtown (Miosi)	08/23/83	Letter	Keppler	Farrar
G0000208- 214	58		CECo/Licens- ing Downtown (Miosi)	11/2/83	Memo	Swartz/ Tramm	Tapella
G0000215- 0220	58		CECo Licens- ing Downtown (Miosi)	8/16/83	Letter	Abraham	Reedy
G0000221- 0222	58		CECo Licens- ing Downtown (Miosi)	8/17/83	Letter	Keppler	Farrar
G0000223- 0225	58		CECo Licens- ing Downtown (Miosi)	11/15/83	Letter	Keppler	Farrar
G0000226	58		CECo Licens- ing Downtown (Miosi)	11/14	Hand- written notes		
G0000227- 0228	56		CECo Licens- ing Downtown (Miosi)	8/23/83	Letter	Keppler	Farrar
G0000229	58		CECo Licens- ing Downtown (Miosi)	8/22/83	Handwritt- en notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
G0000230- 0231	58		CECo Licens- ing Downtown (Miosi)	3/17/83	Letter	Keppler	Farrar
G0000232- 0235	58		CECo Licens- ing Downtown (Miosi)	8/16/83	Letter	Keppler	Farrar
G0000236- 0238	58		CECo Licens- ing Downtown (Miosi)	8/23/83	Hand- written memo		
G0000255-	58		CECo Licensing Downtown Miosi	07/12/85	Hand- written Notes		
G0000256-	58		CECo Licensing Downtown Miosi	06/14/85	Hand- written Notes		
G0000257- 0274	58		Licensing	07/17/84	Report		Farrar
G0000275- 0287	58		Licensing	06/15/84	Report		Farrar
G0000288- 0299	58		Licensing	03/16/84	Report		Farrar
G0000300- 0311	58		Licensing	01/16/84	Report		Farrar
G0000324- 0343	58		Licensing		Response with supporting documents		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
G0000344- 0360	58		Licensing		Response with supporting documents		
G0000361- 0367	58		Licensing		Response with supporting documents		
G0000368- 0398	58		Licensing		Report with supporting documents		
G0000399- 0401	58		Licensing	05/09/83	Handwritten Note		
G0000402- 0475	58		Licensing	07/06/83	Handwritten note with documents attached		
G0000476- 0478	58		Licensing	06/06/83	Handwritten Notes		
G0000479- 0490	58		Licensing	11/07/83	Memo		Tapella
G0000520- 0524	58		Licensing	08/19/82	Memo	Del George	Merwin

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
G0000525- 0534	58		Licensing	08/24/82	Memo	Shewski	Tramm
G0000535- 0541	58		Licensing	09/09/82	Memo	Cosaro	Wallace
G0000542- 0565	58		Licensing	11/12/82	Memo	Cosaro	Wallace
G0000566- 0591	58		Licensing	11/16/82	Letter	Reed	Spessard
G0000592- 0596	58		Licensing	11/19/82	Handwritten Memo		
G0000597- 0623	58		Licensing	04/08/85	Letter	Vahle	Jones
G0000625	58		Licensing	12/06/84	Letter		NRC RIII

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
G0000627- 0628	58		Licensing	09/24/84	Letter	Wallace	Jones
G0000630- 0635	58		Licensing	02/06/85	Letter	Denton	Tramm
G0000636- 00640	58		CECo Licensing Downtown (Smith)	02/28/84	Memo	Various	Swartz
G0000641- 00645	58		CECo Licensing Downtown (Smith)	02/28/85	Memo	Various	Swartz
G0000646- 00649	58		CECo Licensing Downtown (Smith)	01/18/85	Hand- written Notes		
G0000650- 00663	58		CECo Licensing Downtown (Smith)	03/02/84	Report w/Hand- written Notes		
G0000664- 00715	58		Licensing	12/20/83	Report		
G0000716- 00718	58		Licensing	10/24/83	Hand- written Notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
G0000719- 00723	58		Licensing	12/07/83	Hand- written Notes		
G0000724- 00732	58		Licensing	12/20/83	Hand- written Notes		
G0000733- 00735	58		Licensing	12/20/83	Report		
G0000736- 00750	58		Licensing	02/03/84	Hand- written Notes		
G0000751- 00754	58		Licensing	02/22/84	Letter	Shewski	Farrar
G0000755- 00758	58		Licensing	02/28/84	Report		
G0000759- 00761	58		Licensing	03/12/84	Letter	Swartz	Farrar
G0000762- 00767	58		Licensing	10/24/83	Hand- written Notes		
G0000768- 00845	58		Licensing	01/13/84	Report	Reed	Swartz
G0000846- 00848	58		Licensing	08/02/83	Memo	Tramm	Tapella

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
G0000849- 00860	58		CECo Licens- ing/Downtown	03/12/84	Memo	Reed	Farrar
G0000861- 00871	58		CECo Licens- ing/Downtown	11/10/82	Memo	Davis	DelGeorge
G0000872- 00873	58		CECo Licens- ing/Downtown	11/19/82	Handwritten Notes		
G0000874- 00909	58		CECo Licens- ing Downtown	11/06/84	Letter	Reed	Norelius

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
H0000001-	58		PED/SNED	09/12/83	Letter	Cleff	Westermeyer
H0000002- 00081	58		PED/SNED	Various 1983	Package		Groth
H0000082- 00083	58		PED/SNED	10/28/83	Letter	Cosaro	Westermeyer
H0000084- 00089	58		PED/SNED	05/01/85	Memo	Schroeder	Phelan, Vahle
H0000090- 00411	58		PED/SNED		Package		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
I0000095- 0180	58			NOT RESPONSIVE			
I0000214- 0575	58		General	10/17/83	Audit	Wallace	Marcus
I0003833- 3853	58		General Office QA	07-13-21/84	Audit		
I0003854- 3887	58		General Office QA	10/22/82	Audit Report		
I0003833- 03853	58		General Office QA	09/13-21/82	Audit		
I0003854- 03887	58		General Office QA	10/22/82	Audit Report		
I0003893- 03910	58		General Office QA	6/16/85	Letter	Quaka/ Shamblin	Hensing

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0000001- 00014	58		Sargent & Lundy		Report (Jones)		
J0000015- 00021	58		Sargent & Lundy		Report (Jones)		
J0000022- 00023	58		Sargent & Lundy		Report (Jones)		
J0000024	58		Sargent & Lundy	03/26/85	Handwritten Notes		
J0000025	58		Sargent & Lundy	05/22/85	Handwritten Notes		
J0000026	58		Sargent & Lundy	06/19/85	Letter	Jacobs	Taylor
J0000027- 00029	58		Sargent & Lundy	05/21/85	Memo	Vetter	Jones
J0000030- 00031	58		Sargent & Lundy	05/21/85	Memo	Vetter	Jones
J0000032- 00033	58		Sargent & Lundy	04/16/85	Notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0000034- 00035	58		Sargent & Lundy	04/10/85	Memo	Tenwinkel	Hinemann
J0000036- 00063	58		Sargent & Lundy	04/05/85	Form		
J0000064- 00065	58		Sargent & Lundy	03/25/85	Memo	Amin	Jones
J0000066	58		Sargent & Lundy	11/21/84	Memo	Dermanjian	Calwill
J0000067- 00071	58		Sargent & Lundy	11/06/84	Field Transmittal	Vahle	Parduhn
J0000072	58		Sargent & Lundy	10/25/84	Memo	Jones	Fang/Doyle
J0000073- 00102	58		Sargent & Lundy	10/18/84	Design Information Transmittal		
J0000103- 00106	58		Sargent & Lundy	10/09/84	Memo	Vetter	Amin
J0000107	58		Sargent & Lundy	10/19/84	Memo	Parduhn	Yunus
J0000108- 00109	58		Sargent & Lundy	10/01/84	Memo	Dermanjian	Calwill
J0000110- 00114	58		Sargent & Lundy	09/14/84	Report		
J0000115- 00116	58		Sargent & Lundy	09/13/84	Memo	Kostal	Fang

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0000117- 00118	58		Sargent & Lundy		Report (Jones)		
J0000119- 00120	58		Sargent & Lundy	05/15/85	Handwritten Notes		
J0000121- 00122	58		Sargent & Lundy	06/19/85	Handwritten Notes		
J0000123- 00124	58		Sargent & Lundy	06/25/85	Handwritten Notes		
J0000125	58		Sargent & Lundy	03/04/85	Memo	Amin	Jones
J0000126- 00128	58		Sargent & Lundy	05/24/85	Memo	Branch- Various	Jones
J0000129- 00133	58		Sargent & Lundy	03/11/85- 03/13/85	Notes		
J0000134- 00136	58		Sargent & Lundy	02/05/85	Memo	Jones	Lim
J0000137	58		Sargent & Lundy	01/07/85	Memo	Jones	Kosik
J0000138	58		S&L (Cleff)	11/03/82	Meeting Notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0000139	58		S&L (Cleff)	09/23/82	Meeting Notes		
J0000140	58		S&L (Cleff)	05/12/78	Letter	Sorenson	Cleff
J0000141	58		S&L (Cleff)	08/12/82	Meeting Notes		
J0000142	58		S&L (Cleff)	07/01/82	Meeting Notes		
J0000143	58		S&L (Cleff)	04/08/82	Meeting Notes		
J0000144	58		S&L (Cleff)	08/15/80	Meeting Notes		
J0000145	58		S&L (Cleff)	08/07/80	Meeting Notes		
J0000146	58		S&L (Cleff)	03/28/80	Meeting Notes		
J0000147- 0148	58		S&L (Cleff)	09/20/82	Meeting Notes		
J0000149- 0150	58		S&L (Cleff)	05/07/82	Meeting Notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0000151	58		S&L (Cleff)	04/05/82	Meeting Notes		
J0000152	58		S&L (Cleff)	03/22/82	Meeting Notes		
J0000153	58		S&L (Cleff)	02/09/82	Meeting Notes		
J0000154	58		S&L (Cleff)	11/02/81	Meeting Notes		
J0000155	58		S&L (Cleff)	10/19/81	Meeting Notes		
J0000156	58		S&L (Cleff)	10/09/81	Meeting Notes		
J0000157	58		S&L (Cleff)	03/30/81	Meeting Notes		
J0000158- 0159	58		S&L (Cleff)	12/06/83	Meeting Notes		
J0000160- 0161	58		S&L (Cleff)	09/30/83	Meeting Notes		
J0000162	58		S&L (Cleff)	08/17/83	Meeting Notes		
J0000163	58		S&L (Cleff)	11/03/82	Meeting Notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0000164	58		S&L (Cleff)	09/23/82	Meeting Notes		
J0000165- 0174	58		S&L (Cleff)	12/20/83	Handwritten Notes		
J0000175	58		S&L (Cleff)	08/28/84	Letter	Jones/ Gallagher	Vahle
J0000176	58		S&L (Cleff)	08/17/84	Memo	Vahle	Quaka
J0000177	58		S&L (Cleff)	08/14/84	Memo	Vahle	Groth
J0000178- 00179	58		S&L	09/16/82	Letter	Cosaro	Netzel
J0000180- 00186	58		S&L	05/24/85	Memo		Agrawal
J0000187- 00239	58		S & L Downtown	01/04/85	Inter- office Memo	Various	Jones
J0000240- 00247	58		S & L Downtown	04/03/85	Letter	Shelton	Netzel

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0000248- 00255	58		S & L Downtown	04/03/85	Letter	Shelton	Netzel
J0000256- 00261	58		S & L Downtown	04/16/85	Memo	Various	Ainger
J0000262- 00268	58		S & L Downtown	04/09/85	Letter	Shelton	Netzel
J0000269- 00275	58		S & L Downtown	04/09/85	Letter	Shelton	Netzel
J0000276- 00282	58		S & L Downtown	04/09/85	Inter- office Memo	Netzel	Hooks
J0000283- 00339	58		S & L Downtown		Memo		
J0000340- 00369	58		S & L Downtown		Memo		
J0000370- 00408	58		S & L Downtown		Memo		
J0000409- 00417	58		S & L Downtown	05/15/85	Inter- office Memo	Various	McNamara
J0000418- 00428	58		S & L Downtown	07/26/85	Inter- office Memo	Wahlert	Kamba/Babic
J0000429- 00433	58		S & L Downtown	09/10/84	Survey		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0000434- 00454	58		S & L Downtown	11/28/84	Memo	Various	
J0000455- 00497	58		S & L Downtown	07/29/85	Letter	Vahle	Hitzeman
J0000498- 00777	58		S & L Downtown	12/12/84	Inter- office Memo	File	Hooks
J0000778- 00833	58		S & L Downtown	12/21/84	Inter- office Memo	File 3.9	Hooks
J0000834- 00836	58		S & L Downtown	01/21/85	Letter	Tramm	Netzel
J0000837- 00838	58		S & L Downtown	01/22/85	Inter- office Memo	Various	Kostal
J0000839- 00871	58		S & L Downtown	02/13/85	Inter- office Memo	File 3.9	Hooks
J0000872- 00896	58		S & L Downtown	11/26/84	Letter	Tramm	Netzel
J0000897- 00909	58		S & L Downtown	01/21/85	Inter- office Memo	Various	Hooks

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0000910-00921	58		S & L Downtown	12/26/84	Letter	Muffett	Longlais
J0000922-00923	58		S & L Downtown	12/27/84	Inter-office Memo	File	Longlais
J0000924-00949	58		S & L Downtown	12/13/84	Memo	Various	
J0000950-00957	58		S & L	04/02/85	Letter	Shamblin	Hitzeman
J0000958-00967	58		S & L		Letter	Various	Smith
J0000968-00969	58		S & L	12/04/84	Memo	Kurtz	Hitzeman
J0000970-00992	58		S & L	02/27/85	Memo	File	Hitzeman
J0000993-00994	58		S & L	02/19/85	Letter	Vahle	Hitzeman
J0000995	58		S & L	02/12/85	Memo	Hitzeman	Kamba
J0000996-00997	58		S & L	01/28/85	Letter	Hitzeman	Farr

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0000998- 01006	58		S & L	02/20/85	Memo	Hitzeman, Patel, Kazmi	Agrawal
J0001007- 01008	58		S & L	04/18/85	Letter	Vahle	Jacques
J0001009- 01016	58		S & L	07/09/85	Letter	Vahle	Jacques
J0001017 01028	58		S & L	07/24/84	Memo	Voigt	McCluer
J0001029- 01039	58		S & L	08/20/84	Letter	Elias	McCluer
J0001040- 01053	58		S & L	05/01/85	Letter	Various	Smith
J0001054- 01058	58		S & L	05/14/85	Memo	Shamblin	Vahle
J0001059- 01076	58		S & L	04/24/85	Memo	Agrawal	Both/ Lunardini
J0001077	58		S & L	04/01/85	Letter	Vahle	Jacques
J0001078- 01088	58		S & L	01/14/85	Memo	Patel	Hitzeman

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0001089- 01101	58		S & L	08/20/84	Letter	Elias	McCluer
J0001102- 01113	58		S & L	07/24/84	Memo	Voigt	McCluer
J0001114- 01115	58		S & L	12/26/84	Memo	Hitzeman	Kurtz
J0001116- 01117	58		S & L	01/25/85	Memo	Agrawal	Kurtz
J0001118- 01119	58		S&L/ Downtown	11/27/84	Notes of Meeting	Various	Kurtz
J0001120- 01129	58		S&L/ Downtown	11/7/84	Letter	Elias	Agrawal
J0001130	58		S&L/ Downtown	8/6/84	Inter- office Memo	Kurtz	Agrawal
J0001131- 01135	58		S&L/ Downtown	6/18/85	Notes of Meeting	Various	McQuer
J0001136- 01137	58		S&L/ Downtown	5/1/84	Inter- office	Kurtz/ Kosik	Netzel/ McCluer
J0001138	58		S&L/ Downtown	6/7/84	Inter- office Memo	McCluer	Kurtz

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0001139-01145	58		S&L/ Downtown	7/2/85	Inter-office Memo	Agraval	Kurtz
J0001146-01167	58		S&L/ Downtown	5/21/84	Inter-office Memo	Kosik	McCluer
J0001169-01176	58		S&L/ Downtown	7/9/85	Letter	Vahle	Jacques
J0001177-01178	58		S&L/ Downtown	4/18/85	Letter	Vahle	Jacques
J0001179-01186	58		S&L/ Downtown	4/25/85	Letter	Vahle	Treece
J0001187-01188	58		S&L/ Downtown	4/11/85	Letter	Vahle	Treece
J0001189-	58		S&L/	2/19/85	Interoffice Memo	Regan	Treece
J0001196-01207	58		S&L/ Downtown	4/11/85	Letter	Vahle	Treece
J0001208-01216	58		S&L/ Downtown	3/14/85	Letter	Vahle	Treece
J0001217	58		S & L	01/03/83	Letter	Treece	Klopp

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0001218- 01223	58		S & L	01/12/83	Letter	Westermeier	Galanis
J0001224- 01230	58		S & L	12/03/83	Report		
J0001231- 01235	58		S & L	01/21/83	Report		
J0001236- 01250	58		S & L	03/03/83	Report	Reed et al	Swartz
J0001251- 01253	58		S & L	08/15/84	Memo	Cleff et al	Jackson
J0001254- 01263	58		S & L	08/21/84	Letter	Reed et al	Alexander
J0001264- 01273	58		S & L	06/22/84	Letter	Reed et al	Swartz
J0001274- 01275	58		S & L	01/20/83	Letter	Deress	Green

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0001276- 01277	58		S & L	07/19/83	Letter	Deress	Green
J0001278- 01316	58		S & L	08/9/85	Engineering Change Notice		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo QA/QC	Date of Document 07/03/79	Type of Document NCR	To	From
K0011648- 11649	58						
K0011650- 11664	58		PGCo QA/QC	10/13/81	NCR		
K0011665- 11680	58		PGCo QA/QC	01/18/85	NCR		
K0011683- 11689	58		PGCo QA/QC	12/13/84	NCR		
K0011690- 11708	58		PGCo QA/QC	12/17/84	NCR		
K0011709- 11729	58		PGCo QA/QC	12/18/84	NCR		
K0011730- 11734	58		PGCo QA/QC	12/17/84	NCR		
K0011735- 11751	58		PGCo QA/QC	12/17/84	NCR		
K0011752- 11766	58		PGCo QA/QC	12/19/84	NCR		
K0011767- 11781	58		PGCo QA/QC	12/18/84	NCR		
K0011781- 11793	58		PGCo QA/QC	12/18/84	NCR		
K0011794- 11808	58		PGCo QA/QC	12/19/84	NCR		
K0011809- 11823	58		PGCo QA/QC	12/19/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo QA/QC	Date of Document 12/19/84	Type of Document NCR	To	From
K0011824- 11828	58						
K0011829- 11842	58		PGCo QA/QC	12/20/84	NCR		
K0011843- 11863	58		PGCo QA/QC	12/20/84	NCR		
K0011864- 11875	58		PGCo QA/QC	12/31/84	NCR		
K0011876- 11894	58		PGCo QA/QC	12/21/84	NCR		
K0011895- 11909	58		PGCo QA/QC	12/31/84	NCR		
K0011910- 11927	58		PGCo QA/QC	01/04/85	NCR		
K0011928- 11943	58		PGCo QA/QC	12/18/84	NCR		
K0011944- 11954	58		PGCo QA/QC	12/14/84	NCR		
K0011955- 11965	58		PGCo QA/QC	12/31/84	NCR		
K0011966- 11983	58		PGCo QA/QC	12/31/84	NCR		
K0011984- 11997	58		PGCo QA/QC	01/08/85	NCR		
K0011998	58		PGCo QA/QC	01/10/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo QA/QC	Date of Document 01/12/85	Type of Document NCR	To	From
K0011999- 12009	58						
K0012010- 12025	58		PGCo QA/QC	01/12/85	NCR		
K0012026- 12040	58		PGCo QA/QC	01/12/85	NCR		
K0012041- 12053	58		PGCo QA/QC	01/11/85	NCR		
K0012054- 12070	58		PGCo QA/QC	01/11/85	NCR		
K0012071- 12083	58		PGCo QA/QC	01/09/85	NCR		
K0012084- 12096	58		PGCo QA/QC	01/11/85	NCR		
K0012097- 12103	58		PGCo QA/QC	01/15/85	NCR		
K0012104- 12116	58		PGCo QA/QC	01/17/85	NCR		
K0012117- 12130	58		PGCo QA/QC	01/16/85	NCR		
K0012131- 12140	58		PGCo QA/QC	01/17/85	NCR		
K0012141- 12151	58		PGCo QA/QC	01/17/85	NCR		
K0012152- 12160	58		PGCo QA/QC	01/17/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0012161- 12173	58		PGCo QA/QC	01/17/85	NCR		
K0012174- 12184	58		PGCo QA/QC	01/17/85	NCR		
K0012185- 12197	58		PGCo QA/QC	02/12/85	NCR		
K0012198- 12211	58		PGCo QA/QC	02/12/85	NCR		
K0012212- 12219	58		PGCo QA/QC	undated	NCR		
K0013150- 13162	58		PGCo QA/QC	12/27/83	QA Audit		
K0013163- 13164	58		PGCo QA/QC	10/21/83	Audit Survey		
K0013165- 13166	58		PGCo QA/QC	03/08/84	Audit Survey		
K0013167- 13168	58		PGCo QA/QC	03/08/84	Audit Survey		
K0013169- 13171	58		PGCo QA/QC	03/07/84	Audit Survey		
K0013172- 13173	58		PGCo QA/QC	03/08/84	Audit Survey		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0013174- 13181	58		PGCo QA/QC	03/08/84	Audit Survey		
K0013182- 13199	58		PGCo QA/QC	06/14/84	Audit Survey		
K0013200- 13202	58		PGCo QA/QC	07/13/84	Audit Survey		
K0013203- 13208	58		PGCo QA/QC	11/16/84	Audit Survey		
K0013209- 13219	58		PGCo QA/QC	11/30/82	PGCo Procedure		
K0013220- 13262	58		PGCo QA/QC	05/18/84	NCR		
K0013263- 13271	58		PGCo QA/QC	02/15/85	NCR		
K0013272- 13305	58		PGCo QA/QC	02/25/85	NCR		
K0013307- 13314	58		PGCo QA/QC	04/18/85	NCR		
K0013315- 13324	58		PGCo QA/QC	04/14/85	NCR		
K0013325- 13329	58		PGCo QA/QC	06/21/85	NCR		
K0013330- 13333	58		PGCo QA/QC	06/20/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo QA/QC	Date of Document 06/25/85	Type of Document NCR	To	From
K0013334- 13340	58						
K0013341- 13343	58		PGCo QA/QC	06/25/85	NCR		
K0013344- 13346	58		PGCo QA/QC	08/05/85	NCR		
K0013347- 13374	58		PGCo QA/QC	03/12/84	NCR		
K0013375- 13374	58		PGCo QA/QC	03/03/85	NCR		
K0013395- 13401	58		PGCo QA/QC	05/18/84	NCR		
K0013402- 13411	58		PGCo QA/QC	05/18/84	NCR		
K0013412- 13421	58		PGCo QA/QC	05/18/84	NCR		
K0013422- 13427	58		PGCo QA/QC	05/18/84	NCR		
K0013428- 13438	58		PGCo QA/QC	05/18/84	NCR		
K0013439- 13450	58		PGCo QA/QC	07/26/84	NCR		
K0013451- 13465	58		PGCo QA/QC	07/26/84	NCR		
K0013466- 13469	58		PGCo QA/QC	07/27/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0013470- 13478	58		PGCo QA/QC	09/13/84	NCR		
K0013479- 13486	58		PGCo QA/QC	08/21/84	NCR		
K0013487- 13489	58		PGCo QA/QC	03/08/85	NCR		
K0013490- 13492	58		PGCo QA/QC	03/08/85	NCR		
K0013493- 13495	58		PGCo QA/QC	04/27/83	NCR with Supporting Documents		
K0013496- 13541	58		PGCo QA/QC	09/21/84	NCR with Supporting Documents		
K0013542- 13631	58		PGCo QA/QC		NCR with Supporting Documents		
K0013632- 13672	58		PGCo QA/QC		NCR with Supporting Documents		
K0013673- 13692	58		PGCo QA/QC		NCR with Supporting Documents		
K0012220	58		PGCo QA/QC	11/10/83	Memo	Stewart	O'Connor
K0012221	58		PGCo QA/QC	10/11/83	Memo	O'Connor	Cosaro
K0012222	58		PGCo QA/QC	10/10/83	Memo	O'Connor	Stewart

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0012223-12246	58		PGCo QA/QC	04/16/83	Const. Procedure		
K0012247-12292	58		PGCo QA/QC	11/08/83	Const. Procedure		
K0012293-12295	58		PGCo QA/QC	12/21/83	Memo	O'Connor	Cosaro
K0012296	58		PGCo QA/QC	04/30/84	Memo	Various	Grreff
K0012297-12332	58		PGCo QA/QC	01/20/84	Report		
K0012333-12337	58		PGCo QA/QC	11/08/83	Letter	Forbes O'Connor	Groth
K0012338-12395	58		PGCo QA/QC	08/13/84	Report		
K0012396-12413	58		PGCo QA/QC	03/15/85	NCR with Supporting Documents		
K0012414-12433	58		PGCo QA/QC	04/02/85	NCR with Supporting Documents		
K0012434-12438	58		PGCo QA/QC	07/03/85	Memo	Quaka	Marquardt Donaldson
K0012439-12449	58		PGCo QA/QC	02/14/85	Report		
K0012450-12455	58		PGCo QA/QC	09/23/83	NCR with Supporting Documents		
K0012456-12509	58		PGCo QA/QC	07/12/85	NCR with Supporting Documents		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0012510- 12587	58		PGCo QA/QC	07/12/85	NCR with Supporting Documents		
K0012588- 12590	58		PGCo QA/QC	09/09/83	NCR with Supporting Documents		
K0012591- 12645	58		PGCo QA/QC	07/19/83	NCR with Supporting Documents		
K0012646- 12708	58		PGCo QA/QC	05/02/84	NCR with Supporting Documents		
K0012709- 12714	58		PGCo QA/QC	02/20/84	NCR with Supporting Documents		
K0012715- 12731	58		PGCo QA/QC	06/17/83	NCR with Supporting Documents		
K0012732- 12735	58		PGCo QA/QC	09/23/83	NCR with Supporting Documents		
K0012736- 12739	58		PGCo QA/QC	04/26/83	NCR with Supporting Documents		
K0012740- 12753	58		PGCo QA/QC	05/23/83	NCR with Supporting Documents		
K0012754- 12764	58		PGCo QA/QC	04/11/84	NCR with Supporting Documents		
K0010874- 10878	58		PGCo QA/QC	06/15/82	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0010879- 10883	58		PGCo QA/QC	06/29/82	NCR		
K0010884- 10888	58		PGCo QA/QC	09/8/82	NCR		
K0010889- 10890	58		PGCo QA/QC	09/21/82	NCR		
K0010891- 10896	58		PGCo QA/QC	09/28/82	NCR		
K0010897- 10900	58		PGCo QA/QC	09/28/82	NCR		
K0010901- 10902	58		PGCo QA/QC	10/06/82	NCR		
K0010903- 10920	58		PGCo QA/QC	10/18/82	NCR		
K0010921- 10926	58		PGCo QA/QC	10/18/82	NCR		
K0013956- 13962	58		PGCo	12/13/84	NCR		
K0013963- 13969	58		PGCo	12/13/84	NCR		
K0013970- 14010	58		PGCo	12/15/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0014011- 14029	58		PGCo	12/17/84	NCR		
K0014030- 14041	58		PGCo	12/17/84	NCR		
K0014042- 14062	58		PGCo	12/18/84	NCR		
K0014063- 14067	58		PGCo	12/17/84	NCR		
K0014068- 14084	58		PGCo	12/17/84	NCR		
K0014085- 14089	58		PGCo	12/17/84	NCR		
K0014090- 14102	58		PGCo	12/18/84	NCR		
K0014103- 14117	58		PGCo	12/19/84	NCR		
K0014118- 14131	58		PGCo	12/18/84	NCR		
K0014132- 14146	58		PGCo	12/19/84	NCR		
K0014147- 14161	58		PGCo	12/19/84	NCR		
K0014162- 14176	58		PGCo	12/19/84	NCR		
K0014177- 14192	58		PGCo	12/18/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo	Date of Document 12/19/84	Type of Document NCR	To	From
K0014193- 14197	58						
K0014198- 14211	58		PGCo	12/20/84	NCR		
K0014212- 14223	58		PGCo	12/20/84	NCR		
K0014224- 14224	58		PGCo	12/20/84	NCR		
K0014245- 14264	58		PGCo	01/02/85	NCR		
K0014265- 14276	58		PGCo	12/31/84	NCR		
K0014277- 14295	58		PGCo	12/21/84	NCR		
K0014294- 14305	58		PGCo	12/18/84	NCR		
K0014306- 14315	58		PGCo	12/17/84	NCR		
K0014316- 14330	58		PGCo	12/17/84	NCR		
K0014331- 14348	58		PGCo	01/04/85	NCR		
K0014349- 14364	58		PGCo	12/18/84	NCR		
K0014365- 14375	58		PGCo	12/14/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0014376- 14386	58		PGCo	12/31/84	NCR		
K0014387- 14400	58		PGCo	12/26/84	NCR		
K0014401- 14414	58		PGCo	01/08/85	NCR		
K0014415- 14421	58		PGCo	12/18/84	NCR		
K0014422	58		PGCo	01/10/85	NCR		
K0014423- 14442	58		PGCo	12/19/84	NCR		
K0014443- 14453	58		PGCo	01/12/85	NCR		
K0014454- 14462	58		PGCo	01/12/85	NCR		
K0014463- 14477	58		PGCo	01/12/85	NCR		
K0014478- 14492	58		PGCo	01/12/85	NCR		
K0014493- 14505	58		PGCo	01/11/85	NCR		
K0014506- 14522	58		PGCo	01/11/85	NCR		
K0014523- 14535	58		PGCo	01/09/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo	Date of Document 01/11/85	Type of Document NCR	To	From
K0014536- 14548	58						
K0014549- 14555	58		PGCo	01/15/85	NCR		
K0014556- 14563	58		PGCo	01/15/85	NCR		
K0014564- 14576	58		PGCo	01/17/85	NCR		
K0014577- 14591	58		PGCo	01/16/85	NCR		
K0014592- 14607	58		PGCo	01/16/85	NCR		
K0014608- 14617	58		PGCo	01/17/85	NCR		
K0014618- 14628	58		PGCo	01/17/85	NCR		
K0014629- 14637	58		PGCo	01/15/85	NCR		
K0014638- 14646	58		PGCo	01/17/85	NCR		
K0014647- 14659	58		PGCo	01/17/85	NCR		
K0014660- 14670	58		PGCo	01/17/85	NCR		
K0014671- 14684	58		PGCo	02/15/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0014685- 14711	58		PGCo	02/12/85	NCR		
K0014712- 14719	58		PGCo	Undated	NCR		
K0013948- 13955	58		PGCo	12/01/84	NCR		
K0014720- 14753	58		PGCo	09/09/83	Memo	Hite	Alcantar
K0014754- 14799	58		PGCo	08/04/81	Report		
K0014800- 14824	58		PGCo	06/06/83	Report		
K0014825- 14834	58		PGCo	02/24/84 & 03/01/84	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo QA/QC	Date of Document 10/06/82	Type of Document NCR	To	From
K0010927- 10928	58		PGCo QA/QC	10/06/82	NCR		
K0010929- 10949	58		PGCo QA/QC	10/22/82	NCR		
K0010950- 10960	58		PGCo QA/QC	10/25/82	NCR		
K0010961- 10964	58		PGCo QA/QC	10/25/82	NCR		
K0010965- 10979	58		PGCo QA/QC	10/26/82	NCR		
K0010980- 10979	58		PGCo QA/QC	11/20/82	NCR		
K0010984- 10985	58		PGCo QA/QC	11/20/82	NCR		
K0010986- 11004	58		PGCo QA/QC	02/11/83	NCR		
K0011005- 11010	58		PGCo QA/QC	02/11/83	NCR		
K0011011- 11014	58		PGCo QA/QC	04/22/83	NCR		
K0011015- 11020	58		PGCo QA/QC	01/17/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0011021- 11031	58		PGCo QA/QC	07/24/84	NCR		
K0011032- 11039	58		PGCo QA/QC		NCR		
K0011040- 11050	58		PGCo QA/QC		Procedure		
K0011051- 11062	58		PGCo QA/QC		NCR		
K0011063- 11087	58		PGCo QA/QC		NCR		
K0011080a	58		PGCo QA/QC	02/16	Handwritten Carlson Notes		
K0011081a	58		PGCo QA/QC	01/13	Handwritten Carlson Notes		
K0011082a	58		PGCo QA/QC	01/11	Handwritten Carlson Notes		
K0011083a	58		PGCo QA/QC	10/05	Handwritten Carlson Notes		
K0011084a	58		PGCo QA/QC	11/21	Handwritten Carlson Notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0011085a	58		PGCO QA/QC	11/09	Handwritten Notes	Carlson	
K0011086a	58		PGCO QA/QC	11/07	Handwritten Notes	Carlson	
K0011087a	58		PGCo QA/QC	10/24	Handwritten Notes	Carlson	
K0011088a	58		PGCo QA/QC	05/05	Handwritten Notes	Gorski	Carlson
K0011088a	58		PGCO QA/QC	10/13	Handwritten Notes	Carlson	
K0011089a	58		PGCo QA/QC	09/17	Handwritten Notes	Carlson	
K0011090	58		PGCo QA/QC	09/16	Handwritten Notes	Carlson	
K0011091	58		PGCo QA/QC	08/31	Handwritten Notes	Carlson	
K0011093	58		PGCo QA/QC	08/30	Handwritten Notes	Carlson	
K0011094	58		PGCo QA/QC	07/25	Handwritten Notes	Carlson	

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0011095	58		PGCo QA/QC	07/20	Handwritten Notes	Carlson	
K0011096	58		PGCo QA/QC	06/22	Handwritten Notes	Carlson	
K0011097	58		PGCo QA/QC	06/21	Handwritten Notes	Carlson	
K0011098	58		PGCo QA/QC	06/21	Handwritten Notes	Carlson	
K0011099	58		PGCo QA/QC	06/20	Handwritten Notes	Carlson	
K0011100	58		PGCo QA/QC	06/20	Handwritten Notes	Carlson	
K0011101	58		PGCo QA/QC	06/10	Handwritten Notes	Carlson	
K0011102	58		PGCo QA/QC	06/08	Handwritten Notes	Carlson	
K0011103	58		PGCO QA/QC	05/17	Handwritten Notes		Carlson
K0011104	58		PGCO QA/QC	05/19	Handwritten Notes		Carlson
K0011105	58		PGCO QA/QC	04/25	Handwritten Notes		Carlson

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCO QA/QC	Date of Document 05/18	Type of Document Handwritten Notes	To	From Carlson
K0011106	58		PGCO QA/QC	05/18	Handwritten Notes		Carlson
K0011107 11115	58		PGCO QA/QC	05/12	Handwritten Notes		Carlson
K0011116	58		PGCo QA/QC	2/3	Handwritten Notes		Carlson
K0011117	58		PGCo QA/QC	1/26	Handwritten Notes		Carlson
K0011118	58		PGCo QA/QC	1/25	Handwritten Notes		Carlson
K0011119	58		PGCo QA/QC	1/24	Handwritten Notes		Carlson
K0011120	58		PGCo QA/QC	1/13	Handwritten Notes		Carlson
K0011121	58		PGCo QA/QC		Handwritten Notes		Carlson
K0011122	58		PGCo QA/QC	1/16	Handwritten Notes		Carlson
K0011123	58		PGCo QA/QC	12/06/83	Handwritten Notes		Carlson

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo QA/QC	Date of Document 12/07	Type of Document Handwritten Notes	To	From Carlson
K0011124	58						
K0011125	58		PGCo QA/QC	12/06	Handwritten Notes		Carlson
K0011126	58		PGCo QA/QC	11/02	Handwritten Notes		Carlson
K0011127	58		PGCo QA/QC	10/20	Handwritten Notes		Carlson
K0011128	58		PGCo QA/QC	09/07	Handwritten Notes		Carlson
K0011129	58		PGCo QA/QC	08/16	Handwritten Notes		Carlson
K0011130	58		PGCo QA/QC	07/20	Handwritten Notes		Carlson
K0011131	58		PGCo QA/QC	07/06	Handwritten Notes		Carlson
K0011132	58		PGCo QA/QC	06/30	Handwritten Notes		Carlson
K0011133	58		PGCo QA/QC	06/22	Handwritten Notes		Carlson
K0011134	58		PGCo QA/QC	05/12	Handwritten Notes		Carlson

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo QA/QC	Date of Document 03/19	Type of Document Handwritten Notes	To	From Carlson
K0011135	58						
K0011137- 11193	58		PGCo QA/QC	12/07/83	NCR		
K0011194- 11202	58		PGCo QA/QC	05/17/84	NCR		
K0011203- 11210	58		PGCo QA/QC	05/17/84	NCR		
K0011211- 11221	58		PGCo QA/QC	05/21/84	NCR		
K0011222- 11284	58		PGCo QA/QC	06/13/84	NCR		
K0011285- 11477	58		PGCo QA/QC	08/30/84	NCR		
K0011478- 11487	58		PGCo QA/QC		NCR		
K0011488- 11499	58		PGCo QA/QC	09/04/84	NCR		
K0011500- 11507	58		PGCo QA/QC		NCR		
K0011508- 11515	58		PGCo QA/QC	09/06/84	NCR		
K0011516- 11524	58		PGCo QA/QC	09/06/84	NCR		
K0011525- 11538	58		PGCo QA/QC	09/06/84	NCR		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0011539-11572	58		PGCo QA/QC	11/06/84	NCR		
K0011573-11612	58		PGCo QA/QC	10/18/84	NCR		
K0011613-11647	58		PGCo QA/QC	10/18/84	NCR		
K0015000-00045	58		PGCo QA/QC	5/30/84	NCR		
K0000001-00056	58		PGCo QA/QC	12/22/82	NCR		
K0000001-00056	58		PGCo QA/QC	12/22/82	NCR		
K0000057-00077	58		PGCo QA/QC	12/22/82	NCR		
K0000078-00097a	58		PGCo QA/QC	06/13/84	NCR		
K0000098-00102	58		PGCo QA/QC	09/01/84	NCR		
K0000103-00122	58		PGCo QA/QC	11/05/84	NCR		
K0000123-00132	58		PGCo QA/QC	11/21/84	NCR		
K0000133-00138	58		PGCo QA/QC	11/26/84	NCR		
K0000139-00144	58		PGCo QA/QC	12/08/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo QA/QC	Date of Document 12/11/84	Type of Document NCR	To	From
K0000145- 00150	58		PGCo QA/QC	12/11/84	NCR		
K0000151- 00156	58		PGCo QA/QC	12/08/84	NCR		
K0000157- 00164	58		PGCo QA/QC	12/08/84	NCR		
K0000165- 00171	58		PGCo QA/QC	12/13/84	NRC		
K0000172- 00183	58		PGCo QA/QC	12/17/84	NRC		
K0000184- 00197	58		PGCo QA/QC	12/28/84	NRC		
K0000198- 00217	58		PGCo QA/QC	01/02/85	NRC		
K0000218- 00232	58		PGCo QA/QC	12/26/84	NRC		
K0000233- 00244	58		PGCo QA/QC	12/19/84	NRC		
K0000245- 00254	58		PGCo QA/QC	12/27/84	NRC		
K0000255- 00265	58		PGCo QA/QC	01/05/85	NRC		
K0000266- 00272	58		PGCo QA/QC	01/15/85	NRC		
K0000273- 00282	58		PGCo QA/QC	01/05/85	NRC		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0000283- 00292	58		PGCo QA/QC	01/19/85	NRC		
K0000293- 00306	58		PGCo QA/QC	01/21/85	NRC		
K0000307- 00312	58		PGCo QA/QC	01/21/85	NRC		
K0000313- 00321	58		PGCo QA/QC	01/30/85	NRC		
K0000322- 00326	58		PGCo QA/QC	01/30/85	NRC		
K0000327- 00335	58		PGCo QA/QC	01/24/85	NRC		
K0000336- 00342	58		PGCo QA/QC	02/13/85	NRC		
K0000343- 00355	58		PGCo QA/QC	02/11/85	NRC		
K0000356- 00368	58		PGCo QA/QC	02/28/85	NRC		
K0000369- 00381	58		PGCo QA/QC	02/28/85	NRC		
K0000382- 00388	58		PGCo QA/QC	03/05/85	NRC		
K0000389- 00391	58		PGCo QA/QC	02/25/85	NRC		
K0000392- 00405	58		PGCo QA/QC	02/08/85	NRC		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0000406-00414	58		PGCo QA/QC	02/26/85	NRC		
K0000406-00414	58		PGCo QA/QC	02/26/85	NRC		
K0000415-00417	58		PGCo QA/QC	03/18/85	NRC		
K0000418-00452	58		PGCo QA/QC	02/25/85	NRC		
K0000453-00455	58		PGCo QA/QC	03/20/85	NRC		
K0000456-00459	58		PGCo QA/QC	03/05/85	NRC		
K0000460-00468	58		PGCo QA/QC	04/03/85	NRC		
K0000469-00486	58		PGCo QA/QC	03/20/85	NRC		
K0000487-00496	58		PGCo QA/QC	04/19/85	NRC		
K0000497-00499	58		PGCo QA/QC	04/27/85	NRC		
K0000500-00502	58		PGCo QA/QC	04/27/85	NRC		
K0000503-00522	58		PGCo QA/QC	05/03/85	NRC		
K0000523-00529	58		PGCo QA/QC	05/08/85	NRC		

Bates Stamp No	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0000530- 00535	58		PGCo QA/QC	05/09/85	NRC		
K0000536- 00542	58		PGCo QA/QC	05/13/85	NRC		
K0000543- 00548	58		PGCo QA/QC	05/07/85	NRC		
K0000549- 00554	58		PGCo QA/QC	05/07/85	NRC		
K0000555- 00558	58		PGCo QA/QC	06/05/85	NRC		
K0000559- 00562	58		PGCo QA/QC	06/12/85	NRC		
K0000563- 00565	58		PGCo QA/QC	06/07/85	NRC		
K0000566- 00571	58		PGCo QA/QC	06/26/85	NRC		
K0000572- 00573	58		PGCo QA/QC	06/19/85	NRC		
K0000574- 00575	58		PGCo QA/QC	06/19/85	NRC		
K0000576- 00578	58		PGCo QA/QC	06/25/85	NRC		
K0000579- 00580	58		PGCo QA/QC	07/11/85	NRC		
K0000581- 00583	58		PGCo QA/QC	07/23/85	NRC		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0015104- 15127	58		PGCo QA	02/08/79	PGCo NCR		
K0015128- 15157	58		PGCo QA	08/06/82	Procedure		
K0015158- 15210	58		PGCo QA	01/10/83	Procedure		
K0015211- 15262	58		PGCo QA	04/16/83	Procedure		
K0015263- 15320	58		PGCo QA	05/02/84	Procedure		
K0015321- 15387	58		PGCo QA	03/12/85	Procedure		
K0015388- 15399	58		PGCo QA	01/24/83	Procedure		
K0015400- 15404	58		PGCo QA	09/06/83	Procedure		
K0015405- 15412	58		PGCo QA/QC		NCR		
K0015413- 15445	58		PGCo QA/QC		NCR		
K0015446- 15478	58		PGCo QA/QC	01/03/85	Procedure		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document Procedure	To	From
K0015479- 15500	58		PGCo QA/QC	05/07/84			

K0015501- 15512	58		PGCo QA/QC	06/19/85	Procedure		
--------------------	----	--	------------	----------	-----------	--	--

K0015513- 15523	58		PGCo QA/QC	11/02/84	Procedure		
--------------------	----	--	------------	----------	-----------	--	--

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*L0000447	58		PGCo Other	10/10/83	Letter	O'Connor	
*L0000448- 000471	58		PGCo Other	03/23/81	Construc- tion Procedure		
*L0000472	58		PGCo Other	10/11/83	Letter	O'Connor	Cosaro/ Sommerfield
*L0000473 000517	58		PGCo Other	03/23/81	Construc- tion Pro- cedure		
*L0000518	58		PGCo Other	11/10/83	Letter	Stewart	O'Connor
*L0000519 000532	58		PGCo Other	08/04/81	Report		
*L0000533 000543	58		PGCo Other	12/29/83	Report		
*L0000544 000547	58		PGCo Other	12/30/83	Report		
*L0000548 000549	58		PGCo Other	01/03/84	Report		
*L0000550 000555	58		PGCo Other	11/18-22/ 83	Report		
*L0000556 000561	58		PGCo Other	02/10/84	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*L0000562- 00610	58		PGCo Other	11/03/83	ECN		
*L0000611- 00615	58		PGCo Other	11/18/83	Report		
*L0000616- 00624	58		PGCo Other	08/04/81	Report		
*L0000625- 00627	58		PGCo Other	11/08/83	Letter	Sommerfield	O'Connor
*L0000628- 00630	58		PGCo Other	11/21/83	Letter	Sommerfield	O'Connor
*L0000631- 00644b	58		PGCo Other	08/04/81	Report		
*L0000645- 00680	58		PGCo Other	05/16/83	Report		
*L0000681- 00684	58		PGCo Other	03/07/84	Surveill- ance Report		
*L0000685- 00699	58		PGCo Other	05/04/84	Audit Report		
*L0000700- 00703	58		PGCo Other	07/09/84	Surveill- ance Report		
*L0000704	58		PGCo Other	12/27/84	Surveill- ance Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*L0000705- 000709	58		PGCo Other	07/26/85	Memo		
*L0000710	58		PGCo Other	12/12/83	S&L Field Transmittal Form		
*L0000711	58		PGCo Other	02/09/84	S&L Field Transmittal Form		
*L0000712- 000713	58		PGCo Other	05/29/84	S&L Field Transmittal Form		
*L0000714- 000715	58		PGCo Other	09/13/84	S&L Field Transmittal Form		
*L0000716- 000717	58		PGCo Other	05/12/83	Letter	Sommerfield	Kosik
*L0000718	58		PGCo Other	05/16/83	Letter	Cosaro	Hunsader
*L0000719- 000720	58		PGCo Other	12/02/83	Letter	Sommerfield	Kosik/Reddi
*L0000721	58		PGCo Other	12/08/83	Letter	Cosaro	Hunsader

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*L0000722	58		PGCo Other	12/19/83	Manual page, hand- written		
*L0000723	58		PGCo Other	12/13/83	Letter	O'Connor	Groth
*L0000724 000725	58		PGCo Other	12/19/83	Letter	Wallace	Sommerfield
*L0000726	58		PGCo Other	12/19/83	Memo	O'Connor	Cosaro
*L0000727 000738	58		PGCo Other	06/06/83	Surveill- ance Report		
*L0000739- 000746	58		PGCo Other	07/06/82	Audit Report		
*L0000747 000763	58		PGCo Other	12/09/81	Surveil- lance Report		
*L0000764 000776	58		PGCo Other	09/09/80	Audit Report		
*L0000777 000787	58		PGCo Other	08/04/81	Audit Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*L0000788 000797	58		PGCo Other	06/11/85	Surveil- lance Report		
*L0000798 000809	58		PGCo Other	10/20/83	Memo	Hite	Forbes
*L0000810 000814	58		PGCo Other	09/06/84	QA Surveil- lance		
*L0000815 000821	58		PGCo Other	11/08/84	Memo	Schimmels/ Fus	Knaff/Stewa
*L0000822 000843	58		PGCo Other	10/31/84	Memo	Stewart/ O'Connor	Putz
*L0000844 000848	58		PGCo Other	12/03/84	QA Surveil- lance Checklist		
*L0000849 000853	58		PGCo Other	01/10/85	QA Surveil- lance Checklist		
*L0000854 000858	58		PGCo Other	02/23/85	QA Surveil- lance Checklist		
*L0000859 000863	58		PGCo Other	01/21/85	QA Surveil- lance Checklist		

Pates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*L0000864 000866	58		PGCo Other	02/26/85	QA Surveil- lence Checklist		
*L0000867 000871	58		PGCo Other	03/04/85	QA Surveil- lence Checklist		
*L0000872 000876	58		PGCo Other	07/26/85	Memo	O'Connor	Brautigam
*L0000877 000883	58		PGCo	04/01/85	Letter	Reed	National Board of Boiler and Pressure Vessel
*L0000884 000889	58		PGCo	04/25/85	Letter	Shamblin	O'Connor
*L0000890 000911	58		PGCo	05/27/85	Letter	McDonald	Wallace
*L0000912 000913	58		PGCo	07/20/84	Letter	Keppler	Sevorty
*L0000914 000915	58		PGCo	09/18/84	Letter	Keppler	Smith
*L0000916 000918	58		PGCo	11/02/84	Letter	Keppler	Smith
*L0000919 000931	58		PGCo	07/25/84	NCR 633	Westermeier	Quaka
*L0000932 000941	58		PGCo	10/26/84	NCR 633 Rev. 1	Elias	Quaka

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*L0000942 000946	58		PGCo	11/28/84	Letter	Keppler	Smith
*L0000947 000970	58		PGCo	Undated	Procedure PCD-07		
*L0000971 000980	58		PGCo	08/08/85	Flimsies		
*L0000981 000994	58		PGCo	03/21/84	QC Proce- dure QCP-B4		
*L0000995	58		PGCo	04/08/81	Letter	Merwin	Paul
*L0000996 001000	58		PGCo Other	04/22/81	FCR L1450		
*L0001001	58		PGCo Other	05/01/81	List		
*L0001002	58		PGCo Other	07/06/81	Letter	Enger	Merwin
*L0001003 001007	58		PGCo Other	07/09/81	Shipping Manifest	CECo	
*L0001008 001009	58		PGCo Other	07/09/81	Purchase Order		
*L0001010 001011	58		PGCo Other	06/12/84	Letter	Skoca	Simmons

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*L0001012 001016	58		PGCo Other	08/20/84	Report		
*L0001017 001024	58		PGCo Other	08/30/84	NCR		
*L0001025 001028	58		PGCo Other	11/19/84	Surveil- lance No. 3900		
*L0001029 001053	58		PGCo Other	03/28/85	Revision		
*L0001054 001063	58		PGCo Other	08/04/81	Audit Report		
*L0001064 001069	58		PGCo Other	05/3-31/85	Surveil- lance Report		
*L0001070 001075	58		PGCo Other	05/3-31/85	Surveil- lance Report		
*L0001076 001086	58		PGCo Other	09/21/83	Speed Letter	Carlson	Hunsader

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*L0001087 001128	58		PGCo Other	12/20/84	Surveil- lance Report		
*L0001129	58		PGCo Other	06/21/84	Specific Trouble Report	Ramirez	Schroeder/ Skoza
L0000001- 00002	58		PGCo Other	06/03/85	Letter (O'Connor)	Rolan, Lawler	Shamblin
L0000003- 00023	58		PGCo Other	09/19/84	Letter (O'Connor)	Shamblin	Gorski
L0000024-	58		PGCo Other	01/24/85	Letter (Nicolson)	Gardner	Kelm
L0000025- 00028	58		PGCo Other	05/22/85	Letter (Nicholson)	O'Connor	Groth, Quaka
L0000029-	58		PGCo Other	08/25/84	Memo (Nicholson)	Gorski	Carlson
L0000030-	58		PGCo Other	05/16/85	Memo (Nicholson)	O'Connor	Nicholson
L0000034-	58		PGCo Other	04/22/83	Memo (Nicholson)	Forbes	Meyers

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
L0000035- 00037	58		PGCo Other	03/27/84	Memo (Nicholson)	O'Connor	Stewart
L0000145- 00169	58		PGCo Other	04/18/85	Hand- written Notes (O'Connor)		
L0000070- 00071	58		PGCo Other	04/06/84	Form		
L0000072- 00073	58		PGCo Other	01/28/85	Typed Memo		Murphy
L0000074- 00090	58		PGCo Other		Report		
L0000091- 00140	58		PGCo Other	12/18/84	Memo (O'Connor)	CAT File	Carlson
L0000141- 00144	58		PGCo Other	03/07/85	Hand- written Notes (O'Connor)		
L0000170- 00182	58		PGCo Other	10/07/83	Memo (O'Connor)		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
L0000183- 00200	58		PGCo Other	12/21/83	Letters & Memos (O'Connor)		
L0000201-	58		PGCo Other	08/18/84	Memo (Nicholson)		Murphy
L0000202- 00209	58		PGCo Other	05/24/84	Letter (Nicholson)	Enger	Guyon Alloys, Inc
L0000223-	58		PGCo Other	12/17/84	Inspection Form		
L0000224- 00232	58		PGCo Other	12/21/84	Memo	Stewart	Knaff
L0000233- 00238	58		PGCo Other	01/28/85	CAT Summary (O'Connor)		Shue

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
L0000268- 00269	58		PGCo Other	12/27/83	Hand- written Notes		
L0000270- 00274	58		PGCo Other	08/10/83	Hand- written Notes		Butler
L0000275- 00278	58		PGCo Other		Memos & Letters (Stewart)		
L0000279- 00285	58		PGCo Other	04/15/85	Memo (Galloway)		
L0000290- 00290	58		PGCo Other	05/16/85	Memo (O'Connor)		Nicholson
L0000291- 00291	58		PGCo Other		Hand- written Notes (O'Connor)		
L0000292- 00297	58		PGCo Other		Memo	Carlson	Gorski
L0000343- 00350	58		PGCo Other	03/07/85	Memos, Hand- written Notes, Letters, (Stewart)		
L0000351- 00354	58		PGCo Other	02/26/85	Memo		Stewart

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
L0000355-	58		PGCo Other	02/22/85	Memo		Stewart
L0000356- 00357	58		PGCo Other	06/24/85	Form	Farr	Stewart
L0000358- 00363	58		PGCo Other	05/03/85 to 05/31/85	Report		
L0000364-	58		PGCo Other	04/15/85	Memo	Gorski	Galloway
L0000365- 00376	58		PGCo Other	04/10/85	Letter	O'Connor	Gorski
L0000377- 00384	58		PGCo Other	03/20/85	Forms	Farr	Stewart
L0000385- 00399	58		PGCo Other	06/07/85	Typed Notes (Nicholson)		
L0000400- 00403	58		PGCo Other	06/24/85	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
L0000404- 00407	58		PGCo Other	05/17/85	Report		
L0000408-	58		PGCo Other	02/27/85	Hand- written Notes		
L0000409- 00416	58		PGCo Other	03/05/85	Memo	Carlson	Stewart
L0000417- 00418	58		PGCo Other	02/22/84	Report		
L0000419- 00421	58		PGCo Other	03/05/84	Letter	O'Connor	Groth
L0000422- 00427	58		PGCo Other	05/31/85	Letter	Shamblin	Vahle
L0000428- 00429	58		PGCo Other	07/09/85	Report		
L0000430- 00446	58		PGCo Other	12/19/84	Letter	Shamblin	Gorski
L0001130-	58		PGCo Other	04/22/83	Memo	Forbes	Meyers

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
L0001131- 01152	58		PGCo Other		Report		
L0001153- 01169	58		PGCo Other		Report		
L0001170- 01190	58		PGCo Other		Report		
L0001208- 01253	58		PGCO Other	10/07/83	Memo	Forbes	O'Connor
L0001254- 01348	58		PGCo Other	01/24/84	Memo	Carlson/ Stewart	Alcantor
L0001349- 01432	58		PGCo Other	05/08/85	Memo	O'Connor/ Carlson	Forbes
L0001433- 01450	58		PGCo Other	02/27/84	Engineering Policy		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
L0001451- 01461	58		PGCo Other	08/15/84	Engineering Policy		
L0001462- 01469	58		PGCo Other	12/26/84	Report		
L0001476- 01487	58		PGCo Other	7/25/85	Work Instruction		
L0001476- 01487	58		PGCo Other	7/25/85	Work Instruction		
L0001470- 1475	53		PGCO Other	07/26/85	Memo	Gorski/Barnes	Clover/ Johnson
L0001191- 01197	58		PGCo Other	09/26/83	Procedure		
L0001198- 01201	58		PGCo Other	03/02/78	Procedure		
L0001488- 01497	58		PGCo Other	01/02/85	Procedure		
L0001498- 01519	58		PGCo Other	02/11/85	Procedure		
L0001520- 01567	58		PGCo Other	03/07/85	Procedure		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
L0001568- 01579	58		PGCo Other	06/06/85	Procedure		
L0001580- 01605	58		PGCo Other	01/07/85	Procedure		
L0001606- 01625	58		PGCo Other	12/12/84	Procedure		
L0001626- 01631	58		PGCo Other	04/03/85	Procedure		
L0001632- 01635	58		PGCo Other	02/06/84	PGCo FCO		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
L0001636- 01637	58		PGCo Other	06/29/84	PGCo FCO		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
M00000250	58		Pullman QA	8/3/83	Letter	Grant	Hawkinson
M00000251	58		Pullman QA	8/4/83	Letter	Lawler	Hawkinson
M00000252	58		Pullman QA	8/5/83	Letter	Cosaro	Lawler
M00000253	58		Pullman QA	8/5/83	Letter	Lawler	Sommerfield Cosaro
M00000254	58		Pullman QA	8/5/83	Letter	Lawler	Cosaro
M00000255- 0256	58		Pullman QA	8/17/83	Letter	Keppler	Farrar
M00000257	58		Pullman QA	9/13/83	Letter	Lawler	Sommerfield
M00000258	58		Pullman QA	9/22/83	Letter	Sommerfield	Hawkinson
M00000259	58		Pullman QA	10/14/83	Memo	Grant	Lawler
M00000260- 0261	58		Pullman QA	10/17/83	Letter	Cosaro	Grant
M00000262- 0263	58		Pullman QA	10/24/83	Memo	Grant	Lawler

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
M0000264	58		Pullman QA	11/04/83	Letter	Lawler	Sommerfield Cosaro
M0000265- 0266	58		Pullman QA	11/04/83	Memo	Grant	Lawler
M0000267	58		Pullman QA	11/08/83	Letter	Sommerfield	Hawkinson
M0000268	58		Pullman QA	11/09/83	Letter	Sommerfield	Hawkinson
M0000269- 0271	58		Pullman QA	11/15/83	Letter	Shewski	Hawkinson
M0000272	58		Pullman QA	11/21/83	Letter	Lawler	Hawkinson
M0000273	58		Pullman QA	11/21/83	Letter	Lawler	Hawkinson
M0000274- 0275	58		Pullman QA	11/23/83	Memo	Grant	Lawler
M0000276	58		Pullman QA	12/06/83	Letter	Cosaro	Lawler
M0000277	58		Pullman QA	02/21/84	Letter	Lawler	Brown
M0000278	58		Pullman QA	02/23/84	Letter	Cosaro	Brown

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
M0000280	58		Pullman QA	05/01/84	Letter	Lawler	Cosaro
M0000281	58		Pullman QA	05/15/84	Letter	Lawler	Shamblin
M0000386- 0455	58		Pullman QA/ QC	7/3/85	Letter	Shamblin	Lawler
M0000574- 0643	58		Pullman/ QA/QC	01/31/84	Memo	Grant	Ewald
M0000644- 0647	58		Pullman/ QA/QC	10/22/83	Letter	Jundt	Waterfield
M0000648- 0650	58		Pullman/ QA/QC	10/18/83	Training Review Sheet		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
M0000651	58		Pullman/ QA/QC	09/06/83	Training Review Sheet		
M0000652- 0656	58		Pullman/ QA/QC	12/07/83	Training Review Sheet		
M0000657- 0677	58		Pullman/ QA/QC	03/23/84	Training Review Sheet		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
M0000678- 0699	58		Pullman/ QA/QC	06/11/84	Training Review Sheet		
M0000701	58		Pullman/ QA/QC	11/11/83	T/R Sheet		
M0000702	58		Pullman/ QA/QC	09/19/83	T/R Sheet		
M0000703	58		Pullman/ QA/QC	09/19/83	T/R Sheet		
M0000704	58		Pullman/ QA/QC	09/19/83	T/R Sheet		
M0000705- 0737	58		Pullman/ QA/QC	06/07/83	Letter		
M0000738- 00743	58		Pullman QA/QC	05/31/85	NCR		
M0000744- 00753	58		Pullman QA/QC	04/24/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
M0000754	58		Pullman QA/QC	07/18/85	NCR		
M0000755- 00769	58		Pullman QA/QC	03/16/85	NCR		
M0000770- 00792	58		Pullman QA/QC	03/14/85	NCR		
M0000793-	58		Pullman QA/QC	06/28/85	NCR		
M0000794- 00797	58		Pullman QA/QC	06/10/85	NCR		
M0000798- 00801	58		Pullman QA/QC	06/20/85	NCR		
M0000802- 00805	58		Pullman QA/QC	06/20/85	NCR		
M0000806- 00809	58		Pullman QA/QC	06/19/85	NCR		
M0000810- 00815	58		Pullman QA/QC	05/22/85	NCR		
M0000816- 00819	58		Pullman QA/QC	04/30/85	NCR		
M0000820- 00822	58		Pullman QA/QC	04/27/85	NCR		
M0000823- 00825	58		Pullman QA/QC	04/27/85	NCR		
M0000826- 00835	58		Pullman QA/QC	04/30/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
M0000836-	58		Pullman QA/QC	03/07/85	NCR		
M0000837- 00839	58		Pullman QA/QC	04/10/85	NCR		
M0000840- 00843	58		Pullman QA/QC	04/11/85	NCR		
M0000844- 00846	58		Pullman QA/QC	03/26/85	NCR		
M0000847- 00849	58		Pullman QA/QC	04/22/85	NCR		
M0000850- 00853	58		Pullman QA/QC	04/26/85	NCR		
M0000854	58		Pullman QA/QC	07/23/84	NCR		
M0000855	58		Pullman QA/QC	07/25/84	NCR		
M0000856	58		Pullman QA/QC	07/25/85	NCR		
M0000857	58		Pullman QA/QC	07/24/85	NCR		
M0000858- 00865	58		Pullman QA/QC	09/27/84	NCR		
M0000866- 00884	58		Pullman QA/QC	09/28/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
M0000885- 00892	58		Pullman QA/QC	12/08/84	NCR		
M0000893- 00894	58		Pullman QA/QC	02/26/85	NCR		
M0000895- 00898	58		Pullman QA/QC	06/19/85	NCR		
M0000898	58		Pullman QA/QC	06/29/85	NCR		
M0000900- 00901	58		Pullman QA/QC	07/26/85	NCR		
M0000902- 00922	58		Pullman QA/QC	05/17/85	NCR		
M0000923	58		Pullman QA/QC	03/07/85	NCR		
M0000924- 00926	58		Pullman QA/QC	12/07/84	NCR		
M0000927- 00931	58		Pullman QA/QC	11/02/84	NCR		
M0000932- 00976	58		Pullman QA/QC	10/30/84	NCR		
M0000977- 01015	58		Pullman QA/QC	01/09/85	NCR		
M0001016- 01018	58		Pullman QA/QC	10/03/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
M0001019-	58		Pullman QA/QC	03/07/83	NCR		
M0001020- 01027	58		Pullman QA/QC	09/19/84	NCR		
M0001074- 1080	58		Pullman QA	11/30/82	Procedure		
M0001081- 1088	58		Pullman QA	10/15/80	Procedure		
M0001089- 1103	58		Pullman QA	11/12/84	Procedure		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*00001050- 001059	58		Comstock QA/QC	12/04/83	Procedure		
00000506- 00507	58		Comstock QA/QC	03/25/85	Hand- written Notes		
00000345- 00347	58		Comstock QA (Seltmann)	3/31/84	Memo	Donald	Quaka
00000348- 00347	58		Comstock QA (Seltmann)	6/03/85	Memo	Seese	DeWald
00000350- 00357	58		Comstock QA (Seltmann)	12/18/85	Memo	Giesker	DeWald
00000358- 00359	58		Comstock QA (Seltmann)	07/01/85	Memo	Kelnosky	Sandvick Bradfute
00000360- 00362	58		Comstock QA (Seltmann)	10/04/84	ECN		
00000363- 00365	58		Comstock QA (Seltmann)	06/11/85	Memo	Cordy	Gutman
00000366- 00367	58		Comstock QA (Seltmann)		Handwritten Notes		
00000368- 00371	58		Comstock QA (Seltmann)	05/30/85	Memo	Seltmann	Cartier

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000372- 00374	58		Comstock QA/QC	09/17/84	LKC Memo	File	DeWald
00000375- 00379	58		Comstock QA/QC	05/12/84	LKC Memo	Mennecke Quaka	DeWald
00000380	58		Comstock QA/QC		Notes		
00000381- 00383	58		Comstock QA/QC	09/13/84	Memo	DeWald	Simile
00000384	58		Comstock QA/QC	08/17/84	Memo	Saklak	Puckett
00000385	58		Comstock QA/QC	04/15/84	Memo	Saklak	Puckett
00000386	58		Comstock QA/QC	08/22/84	Memo	DeWald	Puckett
00000387	58		Comstock QA/QC	08/24/84	Speed Letter	DeWald	Puckett
00000388- 00389	58		Comstock QA/QC	08/17/84	LKC NCR		
00000390- 00392	58		Comstock QA/QC		LKC Speed Letter	Roland	Giesecker
00000393- 00397	58		Comstock QA/QC	09/12/84	LKC NCR		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000398	58		Comstock QA/QC	08/24/84	Memo	All Engineers	Bradfute
00000399	58		Comstock QA/QC	08/22/84	Memo		DeWald
00000400-00401	58		Comstock QA/QC	05/03/85	LKC Memo	Simile	Seltman
00000402-00404	58		Comstock QA/QC	05/03/85	Hand-written Notes		
00000405	58		Comstock QA/QC	05/03/85	LKC Memo	DeWald	Seese Simile
00000406	58		Comstock QA/QC	05/31/85	LKC Memo	Tapella	Seltman
00000407-00409	58		Comstock QA/QC		Hand-written Notes		Seltman
00000410	58		Comstock QA/QC	02/08/85	Memo	Rolan	Mennecke
00000411-00414	58		Comstock QA/QC		Speed Letter	Mennecke	Ronkoske
00000415-00416	58		Comstock QA/QC	03/25/85	Hand-written Notes		Seltman
00000417-00422	58		Comstock QA/QC	01/30/85	LKC Memo	DeWald	Seltman
00000423-00494	58		Comstock QA/QC	05/01/85	LKC Memo	Shamblin	Seltman

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000495	58		Comstock QA/QC	08/11/84	LKC Memo	Mennecke	DeWald
00000496	58		Comstock QA/QC	11/01/84	LKC	Nash	Seese
00000497- 00498	58		Comstock QA/QC	10/20/84	Hand- written Note	Seltman	Seese
00000499- 00500	58		Comstock QA/QC	04/02/84	LKC Memo	Paserba	DeWald
00000501	58		Comstock QA/QC		Hand- written Notes		
00000502- 00505	58		Comstock QA/QC		LKC Memo	Seltman	Carter
00000506- 00507	58			03/25/85	Handwritten Notes		
00000508	58		Comstock QA/QC	03/15/85	LKC Memo	Dominique	DeWald Seese
00000509	58		Comstock QA/QC	03/13/85	LKC Memo	Seese	DeWald
00000510	58		Comstock QA/QC	01/14/85	LKC Memo	Shamblin	Seese
00000511- 00514	58		Comstock QA/QC	09/15/84	LKC Memo	Netzel	DeWald
00000536- 00537	58		LKC QA/QC	4/2/84	LKC Memo	Paserba	DeWald

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000538	58		LKC QA/QC	5/7/84	LKC Memo	DeWald	Seese
00000539- 00541	58		LKC QA/QC	8/2/84	LKC Memo	DeWald	Seltson
00000542- 00547	58		LKC QA/QC	1/30/84	LKC Memo	DeWald	Seltson
00000550	58		LKC QA/QC	7/6/84	LKC Memo	Puchett	DeWald
00000551- 00561	58		LKC QA/QC	2/19/85	LKC Memo	Quaka	DeWald
00000562- 00605	58		Comstock QA	10/13/84	Memo with audit		
00000606- 00637	58		Comstock QA	05/05/84	Memo with audit		
00000655- 00683	58		Comstock QA (Seltmann)	9/12/84	NCR		
00000684- 00686	58		Comstock QA (Seltmann)	9/18/84	NCR		
00000687- 00690	58		Comstock QA (Seltmann)	9/18/84	NCR		
00000691- 00694	58		Comstock QA (Seltmann)	9/18/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000695- 00700	58		Comstock QA (Seltmann)		NCR		
00000701- 00704	58		Comstock QA (Seltmann)	9/20/84	NCR		
00000705- 00710	58		Comstock QA (Seltmann)	9/26/84	NCR		
00000711- 00712	58		Comstock QA (Seltmann)	9/26/84	NCR		
00000713- 00714	58		Comstock QA (Seltmann)	9/27/84	NCR		
00000715- 00717	58		Comstock QA (Seltmann)	9/26/84	NCR		
00000718- 00719	58		Comstock QA (Seltmann)	9/27/84	NCR		
00000720- 00722	58		Comstock QA (Seltmann)	9/28/84	NCR		
00000723- 00725	58		Comstock QA (Seltmann)	9/29/84	NCR		
00000726	58		Comstock QA (Seltmann)	10/1/84	NCR		
00000727- 00729	58		Comstock QA (Seltmann)	10/1/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000730- 00736	58		Comstock QA (Seltmann)	2/22/85	NCR		
00000737- 00740	58		Comstock QA (Seltmann)	10/1/84	NCR		
00000741- 00747	58		Comstock QA (Seltmann)	3/20/85	NCR		
00000748- 00749	58		Comstock QA (Seltmann)	10/1/84	NCR		
00000750- 00752	58		Comstock QA (Seltmann)	10/1/84	NCR		
00000753- 00755	58		Comstock QA (Seltmann)	10/8/84	NCR		
00000756- 00757	58		Comstock QA (Seltmann)	10/4/84	NCR		
00000758- 00759	58		Comstock QA (Seltmann)	10/4/84	NCR		
00000760- 00761	58		Comstock QA (Seltmann)	10/9/84	NCR		
00000762- 00763	58		Comstock QA (Seltmann)	10/3/84	NCR		
00000764- 00766	58		Comstock QA (Seltmann)	10/8/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000767	58		Comstock QA (Seltmann)	10/15/84	NCR		
00000768- 00770	58		Comstock QA (Seltmann)	10/25/84	NCR		
00000771- 00777	58		Comstock QA (Seltmann)	5/24/85	NCR		
00000778- 00779	58		Comstock QA (Seltmann)	10/23/84	NCR		
00000780- 00783	58		Comstock QA (Seltmann)	1/18/85	NCR		
00000784- 00785	58		Comstock QA (Seltmann)	9/27/84	NCR		
00000786- 00787	58		Comstock QA (Seltmann)	10/31/84	NCR		
00000788- 00789	58		Comstock QA (Seltmann)	10/12/84	NCR		
00000790- 00791	58		Comstock QA (Seltmann)	10/31/84	NCR		
00000792- 00800	58		Comstock QA (Seltmann)	3/6/85	NCR		
00000801- 00802	58		Comstock QA (Seltmann)	11/1/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000803- 00811	58		Comstock QA (Seltmann)	2/4/85	NCR		
00000812- 00813	58		Comstock QA (Seltmann)	11/5/84	NCR		
00000814- 00815	58		Comstock QA (Seltmann)	11/05/84	NCR		
00000816- 00817	58		Comstock QA (Seltmann)	11/06/84	NCR		
00000818- 00821	58		Comstock QA (Seltmann)	2/27/85	NCR		
00000822- 00827	58		Comstock QA (Seltmann)	1/19/85	NCR		
00000828- 00831	58		Comstock QA (Seltmann)	2/5/85	NCR		
00000832- 00837	58		Comstock QA (Seltmann)	2/14/85	NCR		
00000838- 00839	58		Comstock QA (Seltmann)	5/8/85	NCR		
00000840- 00841	58		Comstock QA (Seltmann)	5/8/85	NCR		
00000842- 00843	58		Comstock QA (Seltmann)	5/8/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000844- 00845	58		Comstock QA (Seltmann)	5/13/85	NCR		
00000846- 00847	58		Comstock QA (Seltmann)	5/11/85	NCR		
00000848- 00849	58		Comstock QA (Seltmann)	5/13/85	NCR		
00000850- 00851	58		Comstock QA (Seltmann)	5/13/85	NCR		
00000852- 00853	58		Comstock QA (Seltmann)	5/13/85	NCR		
00000854- 00855	58		Comstock QA (Seltmann)	5/13/85	NCR		
00000856- 00857	58		Comstock QA (Seltmann)	5/14/85	NCR		
00000858- 00859	58		Comstock QA (Seltmann)	5/14/85	NCR		
00000860- 00861	58		Comstock QA (Seltmann)	5/14/85	NCR		
00000862- 00863	58		Comstock QA (Seltmann)	5/14/85	NCR		
00000864- 00865	58		Comstock QA (Seltmann)	5/14/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000866- 00867	58		Comstock QA (Seltmann)	5/14/85	NCR		
00000868- 00869	58		Comstock QA (Seltmann)	5/16/85	NCR		
00000870- 00871	58		Comstock QA (Seltmann)	5/16/85	NCR		
00000872- 00873	58		Comstock QA (Seltmann)	5/17/85	NCR		
00000874	58		Comstock QA (Seltmann)	5/17/84	NCR		
00000875- 00877	58		Comstock QA (Seltmann)	5/17/85	NCR		
00000880- 00881	58		Comstock QA (Seltmann)	5/17/85	NCR		
00000882- 00883	58		Comstock QA (Seltmann)	5/17/85	NCR		
00000884- 00885	58		Comstock QA (Seltmann)	5/17/85	NCR		
00000886- 00887	58		Comstock QA (Seltmann)	5/18/85	NCR		
00000888	58		Comstock QA (Seltmann)	6/21/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000889- 00891	58		Comstock QA (Seltmann)	6/4/85	NCR		
00000892- 00899	58		Comstock QA (Seltmann)	10/17/85	NCR		
00000900- 00906	58		Comstock QA (Seltmann)	10/26/84	NCR		
00000907- 00918	58		Comstock QA/QC	12/07/83	Memo	D.A. Brown	J.A. Hii
00000919- 00930	58		Comstock QA/QC	12/07/83	Nemo	D.A. Brown	J.A. Hii
0000562- 0605	58		Comstock QA	10/13/84	Memo w/Audit		
00000606- 0637	58		Comstock QA	05/05/84	Memo w/Audit		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00002582- 2630	58		Comstock QA/QC	8/2/85	Procedure		
00002631- 2647	58		Comstock QA/QC	3/28/85	Procedure		
00002648- 2652	58		Comstock QA/QC	6/19/85	Procedure		
00002653- 2667	58		Comstock QA/QC	6/20/85	Procedure		
00002668- 2697	58		Comstock QA/QC	3/27/85	Procedure		
00002514- 2516a	58		Comstock QA/QC	5/20/85	NCR		
00002505- 2513	58		Comstock QA/QC	1/15/85	NCR		
00002517- 2526a	58		Comstock QA/QC	4/30/85	NCR		
00002527- 2530	58		Comstock QA/QC	2/7/85	Inspection Correction Form		
00002531- 2534	58		Comstock QA/QC	2/7/85	Inspection Correction Form		
00002535- 2545	58		Comstock QA/QC	12/3/84	Procedure		
00002546- 2553	58		Comstock QA/QC	10/8/84	Procedure		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00002554- 2581	58		Comstock QA/QC	10/19/84	Procedure		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
P0000002-00003	58		Comstock Other (Simms)	08/08/84	Computer Printout		
P0000004-00009	58		Comstock Other (Simms)				
P0000011-00018	58		Comstock Other (Simms)	07/31/81	Report		
P0000019-0046	58		Comstock Corp.	08/09/82	Letter w/Audit	Brown	Gardner
P0000047-0065	58		Comstock Corp.	11/02/83	Letter w/Audit	DeWald	Hubbuck
P0000056-0086	58		Comstock Corp.	06/26/84	Letter w/Audit	DeWald	Hubbuck
P0000087-0101	58		Comstock Corp.	12/14/83	Letter w/Audit	DeWald	Hubbuck
P0000102-0142	58		Comstock Corp.	03/29/85	Letter w/Audit	DeWald	Hubbuck
P0000252-00259	58		Comstock Other	07/09/85	Letter re:	Vahle	S&L
P0000260-00261	58		Comstock Other	04/26/85	Letter re:	All Site Contractor Proj. Mgrs.	Shamblin

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
P0000262- 00265	58		Comstock Other	04/18/85	Letter re:	Vahle	S&L
P0000266	58		Comstock Other	01/22/85	Speed Letter	Jack Berry	Bruce Berg
P0000267	58		Comstock Other	01/05/85	Report		
P0000268- 00269	58		Comstock Other		Hanger Checklist		
P0000270- 00271	58		Comstock Other		Hanger Checklist		
P0000272	58		Comstock Other		Handwritten Notes		
P0000273	58		Comstock Other		Page		
P0000002- 00003	59		Comstock Other (Simms)	08/08/84	Computer Printout		
P0000004- 00009	59		Comstock Other (Simms)				
P0000011- 00018	59		Comstock Other (Simms)	07/31/81	Report		
P0000252- 00259	59		Comstock Other	07/09/85	Letter re:	Vahle	S&L

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
Q0000155- 0179	58		Newberg QA/QC	10/25/84	NCR		
Q0000180- 0230	58		Newberg QA/QC	04/24/85	NCR		
Q0000231- 0255	58		Newberg QA/QC	04/18/84	Handwritten Notes		
Q0000231- 0255	58		Newberg QA/QC	04/18/84	Handwritten Notes		
Q0000256	58		Newberg QA/QC	02/28/84	Corrective Action Request		
Q0000257- 0282	58		Newberg QA/QC	05/28/85	Procedure		
Q0000283- 0307	58		Newberg QA/QC	06/07/85	Procedure		
Q0000308- 0321	58		Newberg QA/QC	05/13/85	Procedure		
Q0000322- 0337	58		Newberg QA/QC	02/20/85	Procedure		
Q0000338- 0345	58		Newberg QA/QC	05/21/84	Audit		
Q0000346- 0373	58		Newberg QA/QC	04/21/84	Memo	Hairston/ Craven	Replogle

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
Q0000374-	58		Newberg QA/QC	05/21/84	Audit Concern Report		
Q0000375- 0379	58		Newberg QA/QC	05/16/84	Memo	Hairston/ Craven	Replogle
Q0000380- 0386	58		Newberg QA/QC	10/26/84	Audit Finding Report		
Q0000387- 0389	58		Newberg QA/QC	06/31/84	Audit Concern Report		
Q0000155- 0179	59		Newberg QA/QC	10/25/84	NCR		
Q0000180- 0230	59		Newberg QA/QC	04/24/85	NCR		
Q0000256	59		Newberg QA/QC	02/28/84	Corrective Action Request		
Q0000257- 0282	59		Newberg QA/QC	05/28/85	Procedure		
Q0000283- 0307	59		Newberg QA/QC	06/07/85	Procedure		
Q0000308- 0321	59		Newberg QA/QC	05/13/85	Procedure		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
R0000002- 0010	58		Newberg other (Dmytryk)	04/04/84	Exam		
R0000011- 0030	58		Newberg other (Dmytryk)	04/16/84	Exam		
R0000031- 0041	58		Newberg other (Dmytryk)	03/05/85	Exam		
R0000042- 0052	58		Newberg other (Dmytryk)	03/05/85	Exam		
R0000053- 0063	58		Newberg other (Dmytryk)	03/19/85	Exam		
R0000133a- 0154	58		Newberg QC/QA (Dmytryk)	04/23/84	NCR		
R0000064- 00077	58		Newberg Other	05/29/85	Letter	Quaka	Kosik/ Redding
R0000002- 0010	59		Newberg other (Dmytryk)	04/04/84	Exam		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
S0001308- 01373	58		Misc. (Braidwood Station)		Procedure		
S0000005- 00053	58		PTL (Misc)	01/29/85	NCR		
S0000054- 00056	58		CECo Project Startup (Zimmerman misc)	03/21/85	Handwritten Report		
S0000057	58		CECo Project Startup (Zimmerman misc.)		Action Plan		
S0000654-	58		PTL (misc)	11/23/77	NCR		
S0000655- 00679	58		Midway (Leigh)	04/17/78	NCR		
S0000680- 00693	58		Midway (Leigh)	04/01/85	NCR		
S0000694- 00697	58		Midway (Leigh)	04/02/85	NCR		
S0000698- 00701	58		Midway (Leigh)	04/02/85	NCR		
S0000702- 00708	58		Midway (Leigh)	05/28/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
S0000709- 00710	58		Midway (Leigh)	06/10/85	NCR		
S0000711- 00717	58		Midway (Leigh)	05/28/85	NCR		
S0000959- 00970	58		Miscellaneous	08/09/85	Memo	Leon et al	S&L Jones
S0001139- 01262	58		Miscellaneous	03/17/83	Report		
S0001263- 01307	58		Miscellaneous		Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
S0000980- 01138	58		Miscellaneous	06/08/84	Memo	Treece et al	S&L Tenwin

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0001063- 84	59		Licensing	04/04/83	Letter	Keppler	Reed
A0001085- 86	59		Licensing	09/01/82	Letter	Keppler	Stiede
A0001087- 93	59		Licensing	10/08/82	Letter	Keppler	Tramm
A0001109- 10	59		Licensing	04/07/85	Letter	Keppler	Farrar
A0001140- 45	59		Licensing	04/31/83	Letter	Keppler	Farrar
A0001161- 67	59		Licensing	02/22/83	Letter	Keppler	Farrar
A0001185- 1193	59		Licensing	03/16/83	Letter	Keppler	Farrar
A0001196- 1198	59		Licensing	05/24/83	Letter	Keppler	Farrar
A0001217- 1223	59		Licensing	04/29/85	Letter	Keppler	Farrar
A0001224- 1229	59		Licensing	07/08/83	Letter	Keppler	Farrar
A0001234- 1236	59		Licensing	11/14/83	Letter	Reed	Farrar
A0001384- 1399	59		Licensing	08/08/83	Letter	Reed	Knop

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0001400- 1411	59		Licensing	09/09/83	Letter	Keppler	Farrar
A0001412- 1413	59		Licensing	10/13/83	Letter	Reed	Nornelius
A0001433- 1434	59		Licensing	08/17/83	Letter	Keppler	Farrar
A0001435- 1436	59		Licensing	08/23/83	Letter	Keppler	Farrar
*A0001508- 1572	59		Licensing	07/06/84	Letter	Keppler	DelGeorge
*A0001573- 1574	59		Licensing	07/23/84	Letter	Keppler	Swartz
*A0001577- 1581	59		Licensing	08/31/84	Letter	Keppler	Swartz
*A0001582- 1652	59		Licensing	01/12/84	Letter	Davis	DelGeorge
*A0001654- 1661	59		Licensing	03/11/85	Letter	Keppler	Smith
A0001662- 1664	59		Licensing	03/27/85	Letter		
A0001665- 1666	59		Licensing	04/25/85	Letter	Keppler	Smith
A0001676- 1690	59		Licensing	08/10/83	Letter	Reed	Little

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0002074- 2082	59		Licensing	08/20/84	Letter	Keppler	Farrar
A0002083- 2084	59		Licensing	12/13/80	Letter	Keppler	Farrar
A0002104- 2109	59		Licensing	06/21/84	Letter	Keppler	Farrar
A0002113- 2114	59		Licensing	12/13/84	Letter	Keppler	Farrar
A0002137- 2139	59		Licensing	10/22/84	Letter	Keppler	Farrar
A0002140	59		Licensing	11/7/84	Letter	Keppler	Farrar
A0002142- 2144	59		Licensing	02/13/85	Letter	Keppler	Farrar
A0002158- 93	59		Licensing	11/6/84	Letter	Reed	Norelius
A0002208- 50	59		Licensing	04/25/85	Letter	Keppler	Smith
A0002269- 73	59		Licensing	09/21/84	Letter	Keppler	Farrar
A0002326- 30	59		Licensing	11/28/84	Letter	Keppler	Farrar
A0002364- 84	59		Licensing	11/20/84	Letter	Reed	Warnick
A0002385- 96	59		Licensing	01/31/85	Letter	Keppler	Farrar

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0002397- 99	59		Licensing	02/27/85	Letter	Keppler	Farrar
A0002400- 01	59		Licensing	04/16/85	Letter	Keppler	Farrar
A0002785- 2803	59		Licensing	03/18/85	Letter	Reed	Warnick
A0002980- 83	59		Licensing	04/15/85	Letter	Keppler	Farrar
A0002984- 3121	59		Licensing	02/20/85	Letter	Reed	Taylor
A0003127- 44	59		Licensing	05/16/85	Letter	Keppler	Farrar
A0003241- 49	59		Licensing	04/22/85	Letter	Reed	Harrison
A0003276- 89	59		Licensing	05/06/85	Letter	Keppler	Farrar
A0013813- 13818	59		Licensing (Wallace)	08/06/85	Draft Report		
A0013819- 13820	59		Licensing (Wallace)	05/20/85	Memo	Wallace	Witherspoo
A0013821	59		Licensing (Wallace)	05/27/85	Memo	Wallace	Witherspoo
A0013822- 13823	59		Licensing (Wallace)	06/10/85	Memo	Wallace	Witherspoo

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013824- 13826	59		Licensing (Wallace)		Handwritten Note	Mike (Wallace?)	Jerry (Witherspoon?)
A0013827	59		Licensing (Wallace)	01/26/84	Memo	Wallace	Witherspoon
A0013828- 13867	59		Licensing (Wallace)	04/01/83	Memo	Maley	Witherspoon
A0013868- 13875	59		Licensing (Wallace)		Report		
A0013876- 13878	59		Licensing (Wallace)	06/17/85	Computer Printout		
A0013879	59		Licensing (Wallace)		Report		
A0013880-	59		Licensing	05/02/84	Revision		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013902- 13905	59		Licensing (Wallace)	11/27/84	Handwritten Notes		
A0013906- 13908	59		Licensing (Wallace)		Report		
A0013909- 13911	59		Licensing (Wallace)	11/26/84	Report		
A0013912	59		Licensing (Wallace)		Chart		
A0013913	59		Licensing (Wallace)		Report		
A0013914	59		Licensing (Wallace)		Report		
A0013915- 13916	59		Licensing (Wallace)	06/17/85	Report		
A0013917- 13919	59		CECo Project Manager and Licensing	03/11/85	Report		
A0013920- 13923	59		CECo Project Manager and Licensing	11/23/85	Letter	Shamblin et al.	Wallace
A0013924- 13925	59		CECo Project Manager and Licensing	02/20/85	Report		
A0013926	59		CECo Project Manager and Licensing		Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013927- 13928	59		CECo Project Manager and Licensing	06/17/85	Report		
A0013929- 13933	59		CECo Project Manager and Licensing		Report		
A0013934- 13944	59		CECo Project Manager and Licensing		Report		
A0013945- 13956	59		CECo Project Manager and Licensing		Report		
A0013957- 13994	59		CECo Project Manager and Licensing	09/11/80	Report	CECo	Teledyne McKay

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0003331- CE 35 IR	59		Licensing	05/15/85	Letter	Keppler	Farrar
A0003355- Tr 62	59		Licensing	04/11/85	Letter	Reed	Warnick
A0003386- Tr 3409 16	59		Licensing	05/16/85	Letter	Reed	Little
A0003410- CE 15 IR	59		Licensing	06/21/85	Letter	Keppler	Farrar
A0003425- Tr 31 17	59		Licensing	06/03/85	Letter	Reed	Little

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*A0003558- 64	59		Licensing	10/8/82	Letter	Keppler	Tramm
*A0003565- 66	59		Licensing	07/29/83	Letter	Keppler	Swartz
*A0003569- 70	59		Licensing	06/26/85	Letter	Keppler	Swartz
*A0003576	59		Licensing	06/21/85	Letter	Wallace	Gallup
*A0003577- 78	59		Licensing	07/03/85	Letter	Keppler	Miosi
*A0003579- 3612	59		Licensing	07/03/85	Letter	Wallace	Gallup
A0005720- 5777	59		Licensing		Folder		
A0005778- 5830	59		Licensing		Folder		
A0005831- 5880	59		Licensing		Folder		
A0006910- 7066	59		Licensing		Folder		
A0007669- 7774	59		Licensing		Folder		
A0010516	59		Licensing	06/21/84	Report		Schroeder Skoza

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0010518- 10521	59		Licensing (Kline)	05/31/84	Report		
A0010522- 10527	59		Licensing	04/02/85	PGCo Memo	Johnson/ Murphy	Schmidt
A0010528	59		Licensing	03/25/85	Handwritten Memo		
A0010529- 10535	59		Licensing	05/17/85	Report (Kline)		Schultz McGregor
A0010536- 10560	59		Licensing	02/13/85	Handwritten Memo (Kline)		
A0010561- 10574	59		Licensing	05/03/85	Handwritten Memo (Kline)		Schultz Knopp
A0010575- 10590	59		Licensing	03/22/85	Handwritten Memo (Kline)		Schultz Knopp
A0010591- 10603	59		Licensing	02/22/85	Handwritten Memo		
A0010604- 10749	59		Licensing		Report (PGCo)		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0010790-10913	59		Licensing		Report (Comstock)		
A0011981-11988	59		CeCo PLC Kline		Handwritten Notes		
A0011989-12002	59		CECo PLC Kline	09/17/84	Cover Memo & Handwritten notes	Schroeder	Fitzpatrick
A0012003-12005	59		CECo PLC Kline	02/05/85	Handwritten Notes		
A0012006-12008	59		CECo PLC Kline	07/25/84	Handwritten Notes		
A0012181-00184	59		CECo Project Licensing and Compliance	10/05/84	NRC Exit Summary		Schroeder
A0012185-00186	59		CECo Project Licensing and Compliance	05/31/84	NRC Exit Summary		Schroeder
A0012187-12189	59		CECo Project Licensing and Compliance	07/06/84	NRC Exit Summary		Schroeder
A0012190-00193	59		CECo Project Licensing and Compliance	08/31/84	NRC Exit Summary		Schroeder
A0012194-00195	59		CECo Project Licensing and Compliance	11/09/84	NRC Exit Summary		Schroeder

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0012196- 12203	59		CECo Project Licensing and Compliance	01/18/85	NRC Exit Summary		Schroeder
A0012204- 00205	59		CECo Project Licensing and Compliance	01/15/85	NRC Exit Summary		Schroeder
A0012206- 12208	59		CECo Project Licensing and Compliance	03/05/85	NRC Exit Summary		Schroeder
A0012209- 12211	59		CECo Project Licensing and Compliance	03/21/85 03/29/85	NRC Exit Summary		Schroeder
A0012212- 12216	59		CECo Project Licensing and Compliance	05/03/85	NRC Exit Summary		Schroeder
A0012217- 12220	59		CECo Project Licensing and Compliance	03/25/85	NRC Exit Summary		Schroeder
A0012243- 00046	59		CECo Project Manager	03/07/84			
A0012260	59		CECo Project Manager	09/29/83	Letter	O'Connor	Cosaro Sommerfield Wallace
A0012261- 00265	59		CECo Project Manager		Notes		
A0012266- 12267	59		CECo Project Manager		Notes		
A0012268- 00287	59		CECo Project Manager		Memo	Maley	Wallace

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0012288- 02306	59		CECo Project Manager		Report		
A0012307- 00326	59		CECo Project Manager		Memo	Cosaro	Wallace
A0012327- 00343	59		CECo Project Manager	01/03/83	Note		Wallace
A0012344- 12345	59		CECo Project Manager	02/23/83	Memo	Tapella	Wallace
A0012346- 12347	59		CECo Project Manager	02/23/83	Memo	VanDerway	Wallace
A0012348	59		CECo Project Manager	04/01/83	Memo	Maley	Wallace
A0012349	59		CECo Project Manager	04/04/83	Memo	Cosaro	Wallace
A0012350	59		CECo Project Manager	04/06/83	Letter	Daniel Construction	Wallace
A0012351- 00352	59		CECo Project Manager	03/25/83	Memo	Maley	Wallace
A0012353	59		CECo Project Manager	09/29/83	Memo	O'Connor PGCo	Cosaro Sommerfiel Wallace

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0012354	59		CECo Project Manager		Report		
A0012356	59		CECo Project Manager		Report		
A0012357 00058	59		CECo Project Manager	03/22/84	Memo	Groth Shamblin	Wallace
A0012359	59		CECo Project Manager	03/22/84	Memo	Groth Shamblin	Wallace
A0012361	59		CECo Project Manager	03/22/84	Memo	Cosaro	Wallace
A0012362- 00363	59		CECo Project Manager	07/24/84	Memo	QA Management	Wallace
A0012364	59		CECo Project Manager	08/20/84	Memo	Shamblin	Wallace
A0012370- 00375	59		CECo Project Licensing (Schroeder)	01/30/85	Memo	DeWald	Seltmann
A0012376	59		CECo Project Licensing (Schroeder)	10/23	Handwritten		
A0012378- 00379	59		CECo Project Licensing (Schroeder)	09/24/84	Letter	Wallace	Jones

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0012380-00382	59		CECo Project Licensing (Schroeder)	10/22/84	Letter	Keppler	Farrar
A0012383	59		CECo Project Licensing (Schroeder)	06/28	Handwritten Notes		
A0012384	59		CECo Project Licensing (Schroeder)	09/17/84	Handwritten Notes		
A0012385	59		CECo Project Licensing (Schroeder)		Handwritten Notes		
A0012386	59		CECo Project Licensing (Schroeder)		Handwritten Notes		
A0012387-00390	59		CECo Project Licensing (Schroeder)	10/05/84	Handwritten Notes		
A0012391	59		CECo Project Licensing (Schroeder)	09/18	Handwritten Notes		Schroeder
A0012392-00395	59		CECo Project Licensing (Schroeder)	05/31/84	Status Report		
A0012396-00399	59		CECo Project Licensing (Schroeder)	02/17/84	Memo	Various	Tapella
A0012400	59		CECo Project Licensing (Schroeder)	09/11/84	Memo	Vahle	Schroeder

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0012401- 00413	59		CECo Project Licensing (Schroeder)	06/12/84	Memo	Various	Schroeder
A0012414- 00448	59		CECo Project Licensing (Schroeder)	06/12/84	Memo	Various	Schroeder
A0012449	59		CECo Project Licensing	08/09/84	Handwritten Memo		Putman
A0012450	59		CECo Project Licensing (Schroeder)	06/07/84	Handwritten Notes	Various	
A0012451	59		CECo Project Licensing (Schroeder)	06/21/84	Memo		
A0012452	59		CECo Project Licensing (Schroeder)		Handwritten Notes		
A0012453	59		CECo Project Licensing (Schroeder)		Handwritten Notes and Drawing		
A0012454- 00457	59		CECo Project Licensing (Schroeder)	04/22/81	FCR		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0012458-00461	59		CECo Project Licensing (Schroeder)	04/16/84	Handwritten Memo	Various	Quaka
A0012462	59		CECo Project Licensing (Schroeder)	01/08/85	Action Item		
A0012463-00464	59		CECo Project Licensing (Schroeder)	01/08/85	Action Item		
A0012465-00466	59		CECo Project Licensing (Schroeder)	01/08/85	Action Item		
A0012467	59		CECo Project Licensing (Schroeder)	01/08/85	Action Item		
A0012468-00469	59		CECo Project Licensing (Schroeder)	01/08/85	Action Item		
A0012470-00471	59		CECo Project Licensing (Schroeder)		Handwritten Notes		
A0012472-00475	59		CECo Project Licensing (Schroeder)	07/20/85	Handwritten	Various	
A0012476-00512	59		CECo Project Licensing (Schroeder)	11/06/84	Letter	Reed	Norelius (Paperiello)

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0012513- 00514	59		CECo Project Licensing (Schroeder)	07/15/85	Letter	Keppler	Farrar
A0012515	59		CECo Project Licensing (Schroeder)		Letter	Keppler	Smith
A0012516	59		CECo Project Licensing (Schroeder)	02/20/85	List		
A0012517	59		CECo Project Licensing (Schroeder)	02/20/85	List		
A0012518	59		CECo Project Licensing (Schroeder)	02/20/85	List		
A0012519- 12526	59		CECo Project Licensing (Schroeder)	01/21/85	Meeting Notes		Schroeder
A0012527- 12534	59		CECo Project Licensing (Schroeder)	01/18/85	Handwritten Notes		Schroeder
A0012535- 12541	59		CECo Project Licensing (Schroeder)	01/18/85	Handwritten Notes		Schroeder
A0012542- 12546	59		CECo Project Licensing (Schroeder)		Handwritten Notes		Schroeder

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
AOO12547-12555	59		CECo Project Licensing (Schroeder)	12/18/84	Presentation Package		Regan
*AOO12687-12731	59		CECo Project Manager (Wallace)		Report		
AOO12851-12856	59		CECo Project Manager (Wallace)	04/14/83	Letter with Cosaro of Handwritten CECO Notes		Meyers of PGC
*AOO12857-12980	59		CECo Project Manager (Wallace)	03/07/83-03/28/83	Report		
AOO12981	59		Licensing	10/10/83	Memo	Stewart	O'Connor
AOO12982-12983	59		Licensing	10/18/83	Memo	Cosaro	Sommerfield
AOO12984-12988	59		Licensing		PGC Response		
AOO12989-12992	59		Licensing	10/13/83	Outline	Various	Shamblin
AOO12993-12995	59		Licensing	10/07/83	Notes		Sommerfield
AOO12996	59		Licensing	10/18/83	Memo	Swartz	Cosaro
AOO12997-13002	59		Licensing	08/12	Outline		
AOO13003	59		Licensing	08/05/83	Memo	Lawler	Cosaro Sommerfield

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013004	59		Licensing	08/19/83	Memo	LKC, GKN, PSM	Sommerfiel Cosaro
A0013006- 13007	59		Licensing	08/17/83	Memo	LKC GKN PSM	Sommerfiel Cosaro
A0013008- 13013	59		Licensing	08/16/83	Letter	Abraham	Reedy
A0013014	59		Licensing	10/24/83	Handwritten Notes		
A0013015- 13030	59		Licensing	11/04/83	Letter	Davis	McLaughlin
A0013031- 13038	59		Licensing	08/26/84	Memo	Wallace	Tapella
A0013039- 13040	59		Licensing	10/07/82	Memo		Rolan
A0013041- 13044	59		Licensing	10/07/82	Memo	Cosaro	Rolan/ Corcoran
A0013045- 13065	59		Licensing	10/01/82	Memo	Cosaro	Rolan/ Corcoran

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013066-13081	59		Licensing	12/15/82	Memo	Wallace	Tapella
A0013082-13090	59		Licensing	10/07/82	Memo	Wallace	Cosaro
A0013091-13094	59		Licensing		Memo		Wallace/Maley
A0013095-13113	59		Licensing		Evaluation		
A0013114-13147	59		Licensing		Evaluation		
A0013148-13150	59		Licensing	09/14/82	Evaluation		
A0013151-13178a	59		Licensing	04/26/83	Interoffice Hite Communication		Forbes
A0013179-13180	59		Licensing	05/26/83	Interoffice Hite Communication		Forbes
A0013181-13187	59		Project Manager & Licensing	07/22/83	Memo	Meyers	Forbes

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013188- 13190	59		Project Manager & Licensing	11/05/82	Report		
A0013191- 13201	59		Project Manager & Licensing		Report		
A0013202- 13221	59		Project Manager & Licensing		Report		
A0013222- 13234	59		Project Manager & Licensing		Report		
A0013235	59		Project Manager & Licensing		Drawing		
A0013236- 13238	59		Project Manager & Licensing	09/20/82	Memo		Wallace
A0013239	59		Project Manager & Licensing	01/11/83	Letter	Meyers	Wallace
A0013240- 13242	59		Project Manager & Licensing		Drawing		
A0013243	59		Project Manager & Licensing	09/02/82	Letter	Maley et al.	Wallace

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013244	59		Project Manager & Licensing	09/09/82	Letter	Wallace	Getschow
A0013245	59		Project Manager & Licensing	09/02/82	Memo	Knopp	Cosaro
A0013246	59		Project Man- ager and Licensing	09/02/82	Letter	Rubino	Hunsader
A0013247	59		Project Man- ager and Licensing	09/08/82	Letter	Cosaro	Sommerfiel
A0013248	59		Project Man- ager and Licensing	09/08/82	Letter	Cosaro	Sommerfiel
A0013249- 13265	59		Project Man- ager and Licensing	09/02/82	Letter	Cosaro	Sommerfiel
A0013266- 13267	59		Project Man- ager and Licensing	09/02/82	Letter	Meyers	Sommerfiel
A0013268	59		Project Man- ager and Licensing	09/01/82	Letter	Maley	Wallace
A0013269- 13271	59		Project Manager and Licensing	09/20/82	Memo		Wallace

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013272-13273	59		Project Manager and Licensing	09/02/82	Letter	Sommerfield	Cosaro
A0013274-13275	59		Project Manager and Licensing	09/02/82	Letter	Meyers	Sommerfield
A0013276-13290	59		Project Manager and Licensing	09/02/82	Letter	Sommerfield	Cosaro
A0013291	59		Project Manager and Licensing	09/02/82	Letter	Cosaro	Sommerfield
A0013292	59		Project Manager and Licensing	09/02/82	Letter	Meyers	
A0013293	59		Project Manager and Licensing	09/03/82	Letter	Rubino	Hunsader
A0013294-13299	59		Project Manager and Licensing		Report		
A0013300-13312	59		Project Manager and Licensing	07/03/80	Letter	Meyers	Gorski

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013398- 13425	59		Project Manager and Licensing (Wallace)	05/30/85	Presen- tation	IL. Division of Boiler Inspection & Illinois Dept. of Nuclear Safety	Mike Walla
A0013426- 13455	59		Project Manager and Licensing (Wallace)	05/31/85	Memo	N. Wandke L. DelGeorge T. Maiman	Mike Walla
A0013456	59		Project Manager and Licensing (Wallace)	06/03/85	Memo	D. Shamblin ET AL	Mike Walla
A0013457	59		Project Manager and Licensing (Wallace)	06/03/85	Memo	Tom Maiman ET AL	Mike Walla
A0013458	59		Project Manager and Licensing (Wallace)	06/07/85	Memo	Tom Maiman ET AL	Mike Walla
A0013459	59		Project Manager and Licensing (Wallace)	06/07/85	Memo	D. Shamblin ET AL	Mike Walla
A0013460- 13461	59		Project Manager and Licensing (Wallace)	06/11/85	Memo	T. Maiman ET AL	Mike Walla
A0013462- 13463	59		Project Manager and Licensing (Wallace)	06/11/85	Memo	D. Shamblin ET AL	Mike Walla

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013464- 13466	59		Project Manager and Licensing (Wallace)	06/11/85	Letter	Duane Gallup	Mike Walla
*A0013491 - 13510	59		Licensing	11/09/82	Memo	J. J. Maley	M. J. Wall
*A0013511- 13535	59		Licensing	12/30/83	PGCo	M. Wallace	G. M. Gors
A0013536- 13544	59		Licensing	05/17/85	Letter	Cordell Reed	Nat. Board of Boiler
A0013545- 13631	59		Licensing	12/20/83	Report		
A0013632- 13654	59		Licensing	12/20/83	Report		
A0013655- 13659	59		Licensing	03/07/84	Report		
A0013660- 13661	59		Licensing		Report		
A0013698- 13727	59		Licensing	05/31/85	Letter	Norm Wandke et al.	Wallace

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013728	59		Licensing	05/07/85	Revised Letter	Shamblin ET AL	Wallace
A0013729	59		Licensing	05/31/85	Letter	Shamblin	Vahle
A0013733	59		Licensing	05/30/85	Report		
A0013736	59		Licensing		MTV		
A0013737- 13738	59		Licensing		Handwritten Notes		
A0013739	59		Licensing		List		
A0013740	59		Licensing		Report		
A0013741- 13750	59		Licensing	05/22/85	Draft Report		
A0013751- 13755	59		Licensing	01/04/85	Report Draft re:		
A0013756- 13766	59		Project Managers and Licensing		Material Traceabil- ity Summary		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013314- 13352	59		Project Managers and Licensing	08/10/82	Letter	Merwin	Hunsader
A0013353- 13359	59		Project Managers and Licensing		Report		
A0013360	59		CECo PLC	11/28/84	Issue Paper (Wallace)		
A0013361	59		CECo PLC	11/28/84			
A0013362	59		CECo PLC	11/28/84			
A0013363	59		CECo PLC		Chart		
A0013364	59		CECo PLC	01/04/85	Memo		
A0013365- 13372	59		Project Manager and Licensing	01/15/85	Report		
A0013373- 13375	59		Project Manager and Licensing	02/12/85	Meeting Notes	Maiman et al.	Wallace/ Lenth

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013379	59		Project Manager and Licensing	02/25/85	Letter	Wallace	Bartel
A0013380	59		Project Manager and Licensing		Report		
A0013382- 13397	59		Project Manager and Licensing		Handwritten Lou Notes		
A0013467- 13478	59		Project Manager and Licensing	06/17/85	Presenta- tion		
A0013479- 13482	59		Project Manager and Licensing	06/17/85	Presenta- tion		
A0013483	59		Project Manager and Licensing	06/25/85	Agenda		
A0013484- 13485	59		Project Manager and Licensing	06/27/85	Summary		
A0013486- 13488	59		Project Manager and Licensing	06/27/85	MTV Comments		
A0013489- 13490	59		Project Manager and Licensing	07/16/85	Memo	Schroeder et al.	M. Wallace
A0013662- 13663	59		Licensing	03/02/84	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0013664- 13669	59		Licensing	08/03/81	NCR		
A0013670	59		Licensing	01/15/85	Report		
A0013671- 13677	59		Licensing	01/15/85	Report		
A0013693- 13694	59		Licensing	07/29/85	Letter	Groth	Wallace
A0013695- 13697	59		Licensing	07/02/85	Letter	McDonald	Wallace
A0013995- 14000	59		Licensing	04/22/85	Letter	Keppler	Tramm
A0014001- 14003	59		CECo Licensing	07/15/85	Letter	Keppler	Farrar
A0014004- 14005	59		Licensing	4/2/85	Letter	Rolan	Shamblin

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0014006- 14007	59		Licensing	4/19/85	Letter	LKC	Cosaro
A0014054- 14062	59		Licensing	5/83	Table		
A0014063- 14072	59		Licensing	8/21/85	Letter	Reed	Little
A0014073-	59		Licensing	8/10/84	Typewritten Forney Notes of 55.55(e)		Schroeder
A0014074-	59		Licensing	8/10/84	Specific Trouble Report		Schroeder
A0014075- 14076	59		Licensing	8/10/84	Letter	Quaka	Hairston
A0014077-	59		Licensing	8/14/84	NCR		
A0014078- 14079	59		Licensing	8/14/84	Letter	Craven	Wallace
A0014080- 14081	59		Licensing	8/16/84	Letter	Shamblin	Tate/Quaka
A0014082- 14083	59		Licensing	8/20/84	Letter	Craven	Wallace

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
A0014084- 14091	59		Licensing	8/29/84	Letter	Quaka	Craven/ Hairston
A0014092- 14093	59		Licensing	Undated	Letter	Quaka	Craven/ Hairston
A0014094- 14096	59		Licensing	8/10/84	Letter	Keppler	Smith
A0014097- 14098	59		Licensing	10/22/84	Letter	Keppler	Smith
A0014099- 14100	59		Licensing	3/6/85	Letter	Keppler	Smith
A0014101- 14102	59		Licensing	5/3/85	Letter	Keppler	Miosi
A0014103- 14121	59		Licensing	8/19/82	Letter	Maley	Del George

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0000662	59		CECo site QA (Quaka)	08/03/83	Memo	Grant	Hawkinson
B0000663	59		CECo site QA (Quaka)	08/03/83	Memo	Lawler	Hawkinson
B0000664	59		CECo site QA (Quaka)	08/04/83	Memo	Lawler	Hawkinson
B0000665	59		CECo site QA (Quaka)	08/05/83	Memo	Lawler	Cosaro
B0000666	59		CECo site QA (Quaka)	08/05/83	Letter	Cosaro	Lawler
B0000667	59		CECo site QA (Quaka)	08/05/83	Memo	Lawler	Cosaro
B0000668- 0669	59		CECo site QA (Quaka)	08/17/83	Letter	Keppler	Farrar
B0000670- 0672	59		CECo site QA (Quaka)	09/09/83	Letter	Bitel/Shewski	Reese Sommerfiel
B0000673	59		CECo site QA (Quaka)		Memo	Lawler	Cosaro Sommerfiel
B0000674	59		CECo site QA (Quaka)		Memo	Lawler	Cosaro Sommerfiel
B0000675- 0676	59		CECo site QA (Quaka)		Memo	Lawler	Cosaro Sommerifel

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0000677-0678	59		CECo site QA (Quaka)		Memo	Shewski	Brown Sommerfiel
B0000679	59		CECo site QA (Quaka)		Memo	Lawler	Hawkinson Cosaro
B0000680-0699	59		CECo site QA (Quaka)		Memo	Shamblin	Quaka
B0000700-0700a	59		CECo Site QA (Quaka)	11/20/84	Memo of phone conversation	Jones	Harting
B0000701-0703	59		CECo Site QA (Quaka)	6/11/84	Memo	Various	Shamblin
B0000704	59		CECo Site QA (Quaka)	4/19/83	Letter	LKC	Cosaro
B0000705-00706	59		CECo Site QA (Quaka)	12/13/84	Memo	Forrest	Hartig
B0000707	59		CECo Site QA (Quaka)	5/12/78	Letter	Sorenson	Cleff
B0000708-00709	59		CECo Site QA (Quaka)	1/20/83	Letter	Deress	Green
B0000710	59		CECo Site QA (Quaka)	2/23/84	Letter	Cosaro	Sommerfiel
B0000711	59		CECo Site QA (Quaka)	2/28/84	Letter	Lawler	Cosaro

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0000712- 00715	59		CECo Site QA (Hunsader)	Undated	Handwritten Notes		
B0000716	59		CECo Site QA (Hunsader)	Undated	Handwritten		
B0000717	59		CECo Site QA (Hunsader)	Undated	Guidelines		
B0000718- 00719	59		CECo Site QA (Hunsader)	10/22/82	Letter	Merwin	Hunsader
B0000720- 00722	59		CECo Site QA (Hunsader)	6/28/82	Letter	Groth	Hunsader
B0000723- 00727	59		CECo Site QA (Hunsader)	Undated	Report		
B0000728	59		CECo Site QA (Hunsader)	Undated	Report		
B0000729	59		CECo Site QA (Kyrouac)	3/15/85	Letter	Shamblin	Kyrouac
B0000730- 00857	59		CECo Site QA (Kyrouac)	3/15/85	Audit		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0000858- 00871	59		CECo Site QA (Miller)	1/10/85	Memo	Vahle	Quaka

B0000872- 00877	59		CECo Site QA (Miller)	6/12/85	Letter	Deress	Quaka
--------------------	----	--	--------------------------	---------	--------	--------	-------

B0000878- 00885	59		CECo Site QA (Miller)	10/22/34	Letter	Deress	Quaka
--------------------	----	--	--------------------------	----------	--------	--------	-------

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0000886- 00894	59		CECo Site QA (Miller)	10/22/84	Letter	Deress	Quaka
B0000895- 00896	59		CECo Site QA (Miller)	Undated	Handwritten Notes		
B0000897- 00901	59		CECo Site QA (Miller)	Undated	Handwritten Notes		
B0000902- 00904	59		CECo Site QA (Miller)	Undated	Handwritten Notes		
B0000905- 00918	59		CECo Site QA (Miller)	7/19/84	Traveler		
B0000919- 00921	59		CECo Site QA (Miller)	2/4/85	NCR		
B0000922- 00926	59		CECo Site QA (Miller)	10/13/80	Report		
B0000927- 00928	59		CECo Site QA (Miller)	1/15/81	Report		
B0000929- 00930	59		CECo Site QA (Miller)	10/14/80	Report		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0000931-00932	59		CECo Site QA (Miller)	1/15/81	Report		
B0000933-00934	59		CECo Site QA (Miller)	10/20/80	Report		
B0000935	59		CECo Site QA (Miller)	1/19/81	Report		
B0000936-00937	59		CECo Site QA (Miller)	10/21/80	Report		
B0000938	59		CECo Site QA (Miller)	01/14/81	Report		
B0000939-00949	59		CECo Site QA (Miller)	05/09/85	Report		
B0000950-00968	59		CECo Site QA (Miller)	05/22/84	Report		
B0000969-00970	59		CECo Site QA (Miller)				
B0000971	59		CECo Site QA (Miller)	04/30/85	Letter	Forrest	Miller
B0000972-00973	59		CECo Site QA (Miller)	01/29/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0000974	59		CECo Site QA (Miller)	08/20/84	Letter	Elias	McCluer
B0000975- 00980	59		CECo Site QA (Miller)	02/04/85	NCR		
B0000981- 00983	59		CECo Site QA (Miller)	02/04/85	NCR		
B0000984- 00998	59		CECo Site QA (Miller)	11/12/77	NCR		
B0000999- 01000	59		CECo Site QA (Miller)	07/31/84	NCR		
B0001001- 01004	59		CECo Site QA (Miller)		Report		
B0001005- 01008	59		CECo Site QA (Miller)		Report		
B0001009- 01013	59		CECo Site QA (Miller)		Report		
B0001014- 01016	59		CECo Site QA (Miller)		Report		
B0001017- 01029	59		CECo Site QA (Miller)		Report		
B0001030- 01031	59		CECo Site QA (Miller)	09/19/84	Letter	Forrest	Smith

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0002065	59		CECo QA on site	02/13/85	Letter	D. Elias	J. Kolb
B0002066-02067	59		CECo QA on site	10/04/84	Letter	T. Quaka	F. Kosik
B0002068-02069	59		CECo QA on site	07/24/84	Memo	D. Shamblin	Hunsader/Quaka
B0002070-02071	59		CECo QA on site	04/16/85	S&L Notes		
B0002072	59		CECo QA on site	04/16/85	Letter	D. Elias	L. Vetter
B0002073-02089	59		CECo QA on site	09/10/84	Memo	G. Gorski	J. Fata
B0002090-02093	59		CECo QA on site	03/25/85	Memo	Shamblin	Hunsader/Quaka
B0002094-02115	59		CECo QA on site	09/19/84	Letter	Shamblin	G. Gorski
B0002116	59		CECo QA on site	10/10/84	Letter	Gorski	Groth
B0002117	59		CECo QA on site	02/22/84	Letter	Gallagher/Fus	Dierbeck
B0002118-02119	59		CECo QA on site	04/02/84	Letter	O'Connor	Cosaro

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0002120-02122	59		CECo QA on site	04/05/84	Letter	Quaka	Gorski
B0002123	59		CECo QA on site	07/23/84	Letter	Quaka	Carlson
B0002124-02126	59		CECo QA on site	05/23/84	Letter	G. Gorski	M. Gorski/ G. Groth
B0002127-02130	59		CECo QA on site	12/05/83	Memo	D. Brown	Bertain
B0002131	59		CECo QA on site	11/17/83	Memo	D. Brown	Bertain
B0002132	59		CECo QA on site	11/14/83	Memo	D. Brown	Bertain
B0002133	59		CECo QA on site	11/14/83	Memo	Sommerfield	D. Grant
B0002134-02136	59		CECo QA on site	09/09/83	Memo	Shewski/Bitel	Reece/ Sommerfield
B0002137-02141	59		CECo QA on site	10/03/84	Letter	Craven	Shamblin
B0002142-02168	59		CECo QA on site	07/06/82	Letter	Westermeier	Treece

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0002169	59		CECo QA on site	08/09/82	Memo	Brown	Miller
B0002170	59		CECo QA on site	05/12/83	Memo	All area Managers, Area Grs, & GF's	J. Hii
B0002171-02189	59		CECo QA on site	04/13/83	Memo	Personnel Qualification Files	Corcoran
B0002190	59		CECo QA on site	06/18/85	Memo	D. Cordy/ R. Bower	Dewald
B0002191	59		CECo QA on site	06/27/85	Memo	Rolan/Dewald	Seltmann
B0002192-02193	59		CECo QA on site	03/08/85	Memo	Shamblin	Dewald
B0002194-02195	59		CECo QA on site	06/14/84	Memo	Shamblin	Quaka
B0002196	59		CECo QA on site	06/11/84	Memo	Dewald	Netzel/ Miller
B0002197	59		CECo QA on site	06/11/84	Memo	Dewald	Netzel/ Miller

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0002198	59		CECo QA on site	06/11/84	Memo	Dewald	Netzel/ Miller
B0002199	59		CECo QA on site	06/11/84	Memo	Dewald	Netzel/ Miller
B0002200- 02201	59		CECo QA on site	06/01/84	Letter	Dewald	Shamblin
B0002202	59		CECo QA on site	10/16/84	Memo	Netzel	Dewald
B0002203	59		CECo QA on site	10/10/84	Letter	Netzel/ Gieseke	Dewald
B0002204- 02205	59		CECo QA on site	10/03/84	Letter	Rolan	Shamblin
B0002206	59		CECo QA on site	09/25/85	Memo	Distribution	Dewald
B0002207	59		CECo QA on site	04/18/84	Memo	Dewald/Rolan	Hoffer/ Netzel

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0002208-02212	59		CECo QA on site	01/11/84	Memo	Rubino, Corcoran, Forrest, Shultz, Bushur, Grant, Hairston, Oswald	Sommerfiel Cosaro
B0002213	59		CECo QA on site	12/08/82		Cosaro	Strasburg/Hunsader
B0002333-02334	59		CECo QA	08/13/85	Memo		
B0002335-02336	59		CECo QA	04/25/85	Memo		
B0002398-02404	59		CECo QA on site	11/17/83	Report		
B0002405-02418	59		CECo QA on site	8/3/84	Memo	Quaka	Novak
B0002419-02421	59		C o QA or site	11/27/84	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0002422- 02424	59		CECo QA on site	11/27/84	Report		
B0002425- 02425a	59		CECo QA on site	12/28/84	Report		
B0002426- 02429	59		CECo QA on site	2/25/84	Report		
B0002452- 02457	59		CECO Site QA	06/30/80	Report		
B0002433- 02437	59		CECo QA On-Site	02/25/85	Report		
B0002438- 02440	59		CECo QA On-Site	05/14/85 05/15/85	Report		
B0002441- 02442	59		CECo QA On-Site	06/28/85	Report		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0002443-02446	59		CECo QA On-Site	07/19/85	Report		
B0002447-02451	59		CECo QA On-Site	07/31/85	Report		
B0005167-05169	59		CECo QA On Site	10/25/84	Surv. Report		
B0005170-05294	59		CECo QA On Site	08/01/84	NCR	Shamblin	Quaka
B0004972-05012	59		CECo QA On Site	05/01/85	Letter w/ attachments	Vahle	Agrowal
B0005013-05069	59		CECo QA On Site	02/20/85	NCR	Deress	Quaka
B0005070-05073	59		CECo QA On Site	04/12/85	Surv. Report		
B0005074-05101	59		CECo QA On Site	07/11/85	NCR	O'Connor	Shamblin
B0005102-05120	59		CECo QA On Site	04/25/85	Surv. Report		
B0005121	59		CECo QA On Site	10/08/80	Surv. Report		
B0005122-5163	59		CECo QA On Site	7/5/85	Memo	Elias	Quaka
B0005164-5166	59		CECo QA On Site	9/24/85	Surv. Report		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0005570-5627	59		CECo QA Onsite	7/24/85	CECo Procedure		
B0005628-5637	59		CECo QA Onsite		CECo Procedure		
B0005297-5330	59		CECo QA Onsite	7/8/85	Memo	Shamblin	Gruber/Hansing
B0005331-5343	59		CECo QA Onsite	1/12/85	Surveillance Report		
B0005344-5347	59		CECo QA Onsite	5/7/85	Surveillance Report		
B0005348-5374	59		CECo QA Onsite	1/17/85	Surveillance Report		
B0005375-5395	59		CECo QA Onsite	2/12/85	Memo	Quaka	Seltmann
B0005396-5397	59		CECo QA Onsite	Undated	Handwritten Notes		
B0005398-5397	59		CECo QA Onsite	8/21/84	Letter	Wallace/Quaka	Marcus

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0005399-	59		CECo QA Onsite	1/2/85	Letter	Shamblin	Hayes
B0005400- 5416	59		CECo QA Onsite	9/21/84	Audit Report		
B0005417-	59		CECo QA Onsite	9/21/84	Letter	Quaka/Wallace	Marcus
B0005418- 5434	59		CECo QA Onsite	9/21/84	Audit Report		
B0005435- 5436	59		CECo QA Onsite	1/24/84 & 2/14/84	Surveill- ance Report		
B0005437- 5485	59		CECo QA Onsite	8/7/85	Letter	Shamblin	Quaka
B0005486- 5555	59		CECo QA Onsite	7/22/85	Letter	Vahle	Quaka
B0005556- 5569	59		CECo QA Onsite	6/9/85	Letter	Vahle	Jacques

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0005295-5296	59		CECo QA Onsite	8/12/85	Surveillance Report		
B0005638-5640	59		CECo Site QA	4/18/85	Memo	Project Managers And Others	T. Quaka
B0005641-05642	59		CECo Site QA	8/9/85	Surveillance Report		
B0005643-05644	59		CECo Site QA	8/2/85	Surveillance Report		
B0005645-05646	59		CECo Site QA	7/26/85	Surveillance Report		
B0005647-05648	59		CECo Site QA	7/19/85	Surveillance Report		
B0005649-05650	59		CECo Site QA	7/17/85	Surveillance Report		
B0005651-05653	59		CECo Site QA	7/15/85	Surveillance Report		
B0005654-05655	59		CECo Site QA	7/1/85	Surveillance Report		
B0005656-05657	59		CECo Site QA	6/21/85	Surveillance Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0005658- 05659	59		CECo Site QA	6/14/85	Surveil- lance Report		
B0005660- 05661	59		CECo Site QA	6/14/85	Surveil- lance Report		
B0005662- 05665	59		CECo Site QA	6/06/85	Surveil- lance Report		
B0005666- 05667	59		CECo Site QA	6/07/85	Surveil- lance Report		
B0005668- 05671	59		CECo Site QA	5/23/85	QA Surveil- lance Report		
B0005672	59		CECo Site QA	6/04/85	QA Surveil- lance Report		
B0005673- 05675	59		CECo Site QA	5/23/85	QA Surveil- lance Report		
B0005676- 05677	59		CECo Site QA	4/19/85	QA Surveil- lance Report		
B0005677- 05685	59		CECo Site QA	4/01/85 to 4/16/85	QA Surveil- lance Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0005686- 05687	59		CECo Site QA	3/28/85	QA Surveil- lance Report		
B0005688- 05689	59		CECo Site QA	3/21/85	QA Surveil- lance Report		
B0005690- 05692	59		CECo Site QA	1/29/85	QA Surveil- lance Report		
B0005693- 05695	59		CECo Site QA	4/18/84	QA Surveil- lance Report		
B0005696- 05713	59		CECo Site QA	7/27/84	QA Surveil- lance Report		
B0005714- 05730	59		CECo Site QA	6/04/85	Memo	Shamblin	Quaka
B0005731- 05734	59		CECo Site QA	12/11/84	Memo	Vahle	Quaka
B0005735- 05768	59		CECo Site QA	07/09/85	Memo	Vahle	Quaka
B0005769- 05802	59		CECo Site QA	08/13/85	Memo	Vahle	Quaka
B0005803- 06024	59		CECo Site QA	12/14/84	Memo	Shamblin	Quaka

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
B0006025- 06028	59		CECo Site QA	06/15/84	QA Surveil- lance Report		
B0006029- 06046	59		CECo Site QA	03/14/85	Audit Report		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000014	59		CECo Construction	06/24/83	Handwritten notes		Hawkinson
C0000018	59		CECo Construction	06/22/84	Letter	Shamblin	Waterfield
C0000019	59		CECo Construction	Undated	Draft Response		Croft
C0000024-0026	59		CECo Construction	05/16/84	Handwritten notes		
C0000027-0034	59		CECo Construction	04/19/84	Handwritten notes		Croft
C0000038	59		CECo Construction	03/25/83	Memo w/ handwritten notes	PSM welders & Foreman	
C0000040-0042	59		CECo Construction	06/15/84	QA Surveillance report w/handwritten comments		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000043- 0073	59		CECo Con- struction	01/15/85	Memo		Shamblin

C0000074	59		CECo Con- struction	Undated	Chart		
C0000075- 0079	59		CECo Con- struction (Boone)	10/03/84	Letter	Lawler	Shamblin
C0000080- 0081	59		CECo Con- struction	10/19/84	Letter	Lawler	Shamblin
C0000082- 0084	59		CECo Con- struction	06/13/84	Memo	Various	Shamblin
C0000085	59		CECo Con- struction (Boone)	05/12/78	Letter	Sorenson	Cleff

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000086-0094	59		CECo Construction	08/15/84	Letter	O'Connor	Boone
C0000095-0097	59		CECo Construction (Boone)	03/06/85	Draft Letter	Bedalow	Shamblin
C0000102-0115	59		CECo Construction (Boone)	05/30/84	Handwritten meeting notes		
C0000116	59		CECo Construction (Shamblin)	08/05/83	Memo	Lawler	Cosaro
C0000117-0119	59		CECo Construction (Shamblin)	08/31/83	Memo	Westermeir	Cosaro
C0000120-0123	59		CECo Construction (Shamblin)	10/03/83	Memo	Westermeier	Cosaro
C0000124	59		CECo Construction (Shamblin)	11/21/83	Memo	Lawler	Hawkinson Cosaro
C0000125	59		CECo Construction (Shamblin)	03/02/84	Memo	Lawler	Cosaro
C0000126	59		CECo Construction (Shamblin)	05/01/84	Memo	Lawler	Cosaro
C0000127-0128	59		CECo Construction (Shamblin)	10/19/84	Letter	Lawler	Shamblin

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000129- 0133	59		CECo Con- struction (Shamblin)	10/03/84	Letter	Lawler	Shamblin
C0000135	59		CECo Con- struction (Dierbeck)	08/03/83	Memo	Lawler	Hawkinson
C0000139	59		CECo Con- struction (Dierbeck)	08/19/83	Memo	Comstock Newberg PSM	
C0000140	59		CECo Con- struction (Dierbeck)	09/14/83	Memo	Lawler	Hawkinson
C0000141- 0164	59		CECo Con- struction (Dierbeck)	09/12/83	Letter	Grant	Hawkinson
C0000165- 0172	59		CECo Con- struction (Dierbeck)	08/31/83	Field Transmittal Form	Cosaro/ Groth	Hilton
C0000173- 0178	59		CECo Con- struction (Dierbeck)	09/27/83	Letter	Cosaro	Grant
C0000179- 0180	59		CECo Con- struction (Dierbeck)	10/17/83	Letter	Cosaro	Grant
C0000181	59		CECo Con- struction (Dierbeck)	10/21/83	Memo	LKC/GKN	Sommerfield
C0000182- 0211	59		CECo Con- struction (Dierbeck)	6/28/85	Report		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000212-0291	59		CECo Construction	undated	Report		
C0000292	59		CECo Construction	5/14/85	Letter	Lawler	Dierbeck
C0000293	59		CECo Construction	5/17/85	Letter	Lawler	Dierbeck
C0000294-0297	59		CECo Construction	2/20/85	Typed outline w/hand-written notes		
C0000298-0325	59		CECo Construction	5/6/85	Report		
C0000326-0338	59		CECo Construction	undated	Report		
C0000339-0341	59		CECo Construction	3/27/83	Letter	Keppler	Smith
C0000342-0356	59		CECo Construction		Report		
C0000357-0365	59		CECo Construction	4/2/85	Letter	Shamblin	Hitzeman
C0000366-0429	59		CECo Construction	4/22/85	Report		
C0000435-0440	59		CECo Construction	2/2/83	Letter	Westermeier	Planjery

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000441	59		CECo Con- struction	3/22/84	Letter	Cosoro	Wallace
C0000442- 0444	59		CECo Con- struction	2/14/85	Letter	Shamblin	Donaldson
C0000445- 0451	59		CECo Con- struction	5/20/85	Hand- written notes		
C0000452- 0454	59		CECo Con- struction	2/14/85	Letter	Shamblin	Donaldson
C0000455- 0457	59		CECo Con- struction	5/28/85	Letter	Shamblin	Donaldson
C0000458- 0459	59		CECo Con- struction	7/3/85	Letter	Shamblin	Lawler
C0000460- 0466	59		CECo Con- struction	2/19/85	Letter	Shamblin	Donaldson
C0000467- 0476	59		CECo Con- struction	3/11/85	Letter	Keppler	Smith
C0000477- 0486	59		CECo Con- struction	4/25/85	Memo	Shamblin	Quaka
C0000487- 0551	59		CECo Con- struction	5/24/85	Report		
C0000552- 0614	59		CECo Con- struction	2/13/85	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000615- 0620	59		CECo Con- struction (Francoeur)	9/20/84	Agenda		
C0000621	59		CECo Con- struction (Francoeur)	9/27/84	Memo	Hunsader	Carlson
C0000622	59		CECo Con- struction (Francoeur)	9/13/84	Typed Notes		
C0000623	59		CECo Con- struction (Francoeur)		Handwritten Notes		
C0000624	59		CECo Con- struction (Francoeur)	7/17/85	Handwritten Shamblin notes		Francoeur
C0000625	59		CECo Con- struction (Francoeur)	6/25/85	Handwritten notes		
C0000626	59		CECo Con- struction (Francoeur)		Handwritten notes		
C0000627	59		CECo Con- struction (Francoeur)	5/22	Handwritten notes		
C0000628- 0631	59		CECo Con- struction (Francoeur)		Handwritten notes		
C0000632	59		CECo Con- struction (Francoeur)	5/14/85	Handwritten notes		
C0000633	59		CECo Con- struction (Francoeur)	4/19/85	List		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000634	59		CECo Construction (Francoeur)	4/30/85	Handwritten Notes		
C0000635	59		CECo Construction (Francoeur)		Handwritten Notes		Francoeur
C0000636-0637	59		CECo Construction (Francoeur)	3/13/85	Draft Meeting Notes		Kurtz
C0000638-0642	59		CECo Construction (Francoeur)	3/8/85	Draft Letter	Shamblin	Francoeur
C0000643-0645	59		CECo Construction (Francoeur)	3/4/85	Handwritten Notes		Francoeur
C0000646-0648	59		CECo Construction (Francoeur)	9/21/84	Notes		Francoeur
C0000649-0650	59		CECo Construction (Francoeur)	5/21/85	Notes		
C0000651	59		CECo Construction (Francoeur)	4/23/85	Handwritten Notes	Shamblin	Francoeur
C0000652	59		CECo Construction (Francoeur)	9/10/84	Memo		Shamblin
C0000653-0655	59		CECo Construction (Francoeur)	5/14/85	Notes		
C0000656-0659	59		CECo Construction (Francoeur)	5/8/85	Notes		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000660	59		CECo Construction (Francoeur)	4/25/85	Handwritten Notes		
C0000661	59		CECo Construction (Francoeur)	4/17/85	Handwritten Notes	Shamblin	Francoeur
C0000662-0663	59		CECo Construction (Francoeur)	3/29/85	Handwritten Notes		Francoeur
C0000664	59		CECo Construction (Francoeur)		Notes		
C0000665-0666	59		CECo Construction (Francoeur)	3/19/85	Handwritten Notes	Shamblin	Francoeur
C0000667	59		CECo Construction (Francoeur)	11/7/84	Speed Letter	Francoeur	Washington
C0000668	59		CECo Construction (K. Croft)	5/25/84	Handwritten Notes		Croft
C0000669	59		CECo Construction (K. Croft)	4/23/84	Speed Letter	Lawler	Hawkins
C0000670	59		CECo Construction (Shamblin)	9/5/84	Letter	Lawler	Shamblin
C0000673	59		CECo Construction (Shamblin)	2/28/84	Memo	Lawler	Hawkinson/Cosaro

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000675- 0679	59		CECo Con- struction (Boone)	10/24/84	Letter	Kline	Boone
C0000680	59		CECo Con- struction (Boone)	10/15/84	Report		
C0000681	59		CECo Con- struction (Boone)	10/1/84	Audit		
C0000682- 0686	59		CECo Con- struction (Boone)	1/24/84	Memo	Carlson/ Stewart	Alcantar
C0000687- 0692	59		CECo Con- struction (Boone)	undated	Handwritten notes		
C0000693	59		CECo Con- struction (Boone)	3/21/84	Memo	O'Connor	Forbes
C0000694	59		CECo Con- struction (Boone)	3/22/84	Memo	Forbes/ Alcantar	Stewart/ Donaldson
C0000695- 0700	59		CECo Con- struction (Boone)	4/18/84	Memo	Groth/ Quaka	Stewart/ O'Hern
C0000701- 0702	59		CECo Con- struction (Boone)	4/11/84	Revision		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000703- 0704	59		CECo Con- struction (Boone)	3/28/84	Memo	O'Connor	Forbes
C0000705	59		CECo Con- struction (Boone)	5/21/84	Memo	Various	Stewart/ Donaldson
C0000706	59		CECo Con- struction (Boone)	4/26/84	Memo	Various	Forbes
C0000707- 0708	59		CECo Con- struction (Boone)	9/26/84	Field Transmittal Form	Fus	Shamblin/ Groth
C0000709- 0714	59		CECo Con- struction (Gorski)	5/13/85	Letter	O'Connor	Gorski
C0000715- 0722	59		CECo Con- struction (Gorski)	undated	Handwritten Notes		
C0000723- 0729	59		CECo Con- struction (Gorski)	undated	Handwritten Notes		
C0000730- 0743	59		CECo Con- struction (Gorski)	undated	Handwritten Notes		
C0000744- 0746	59		CECo Con- struction (Gray)	6/11/84	Memo	Various	Shamblin

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000747	59		CECo Con- struction (Gorski)	undated	Handwritten Notes		
C0000748	59		CECo Con- struction (Gorski)	undated	Supple- mental Log		
C0000749	59		CECo Con- struction (Gorski)	undated	Log		
C0000750	59		CECo Con- struction (Gorski)	undated	Handwritten Notes		
C0000751	59		CECo Con- struction (Gorski)	undated	Log		
C0000752- 0753	59		CECo Con- struction (Gorski)	5/2/85	Letter	Murphy	Gorski
C0000754- 0758	59		CECo Con- struction (Gorski)	undated	Handwritten Notes		
C0000759- 0760	59		CECo Con- struction (Gorski)	undated	Handwritten Notes		
C0000762	59		CECo Con- struction (Dierbeck)	undated	Drawing		
C0000763- 0809	59		CECo Con- struction (Dierbeck)	undated	Drawing		
C0000810	59		CECo Con- struction (Dierbeck)	6/10/85	Letter	Dierbeck	Lawler

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000811- 0812	59		CECo Con- struction (Dierbeck)	6/7/85	Letter	Vahle	Hitzeman
C0000813- 0814	59		CECo Con- struction (Dierbeck)	3/16/85	Letter	Dierbeck	Donaldson
C0000815	59		CECo Con- struction (Dierbeck)	2/4/81	Memo	Lawler	Grant
C0000816	59		CECo Con- struction (Dierbeck)	undated	Handwritten Notes		
C0000818- 0855	59		CECo Con- struction (Dierbeck)	9/11/80	Report		

C0000858	59		CECo Con- struction (Dierbeck)	10/26/83	Memo	Westermeyer	Cosaro
----------	----	--	--------------------------------------	----------	------	-------------	--------

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0000863a- 00863b	59		CECo Con- struction	11/21/83	Letter	Cosaro	Kosik
C0000920	59		CECo Con- struction	03/28/84	Letter	O'Connor	Cosaro
C0000921 00922	59		CECo Con- struction	08/20/83	Speed letter	O'Connor	Groth
C0000923	59		CECo Con- struction (Boone)	03/28/84	Memo	Carlson	Cosaro
C0000924- 00972	59		CECo Con- struction (Boone)	12/05/84	Letter	Carlson	Groth
C0000973- 00985	59		CECo Con- struction (Boone)	02/12/85	Letter	Elias	Lemon
*C0000986- 01060	59		CECo Con- struction (Shamblin)	3/84	Report		
C0001061- 01073	59		CECo Con- struction (Shamblin)	06/20/85	Handwritten Memo	Shamblin Skoza Vahle	Carlson
C0001074	59		CECo Con- struction (Shamblin)	04/30/85	Handwritten Notes		Francoeur
C0001075- 01078	59		CECo Con- struction (Shamblin)	12/17/84	Letter	O'Connor	Shamblin
C0001079	59		CECo Con- struction (Shamblin)	09/10/84	Memo		Shamblin

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001080	59		CECo Construction (Shamblin)	07/26/83	Memo	Meyers	Cosaro
C0001081	59		CECo Construction (Shamblin)	03/28/84	Letter	O'Connor	Cosaro
C0001082	59		CECo Construction (Shamblin)	08/07/84	Letter	O'Connor	Groth
C0001083	59		CECo Construction (Shamblin)	03/28/84	Memo		
C0001146	59		CECo Construction (Boone)		Handwritten notes		
C0001147	59		CECo Construction (Boone)	06/21/85	Handwritten notes		
C0001148-01154	59		CECo Construction (Boone)	05/02/85	PGCo Memo	Murphy	Carlson Boone
C0001155-01156	59		CECo Construction (Boone)	02/13/85	Handwritten notes		
C0001157	59		CECo Construction (Boone)	11/09/84	Handwritten notes		
C0001158-01160	59		CECo Construction (Boone)	04/16/85	NCR		
C0001161-01162	59		CECo Construction (Boone)	08/31/84	Handwritten Notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001166	59		CECo Con- struction (Boone)	08/12/83	Memo	O'Connor	Cosaro
C0001167- 01168	59		CECo Con- struction (Boone)	06/29/83	Memo	Meyers	Cosaro
C0001169	59		CECo Con- struction (Boone)	07/14/83	Memo	Meyers	Cosaro
C0001170	59		CECo Con- struction (Boone)	07/11/83	Memo	Meyers	Cosaro
C0001171	59		CECo Con- struction (Boone)	06/29/83	Memo	Meyers	Cosaro
C0001172	59		CECo Con- struction (Boone)	11/08/83	Memo	Meyers	Cosaro
C0001173	59		CECo Con- struction (Boone)		Memo		
C0001174	59		CECo Con- struction (Boone)	04/21/82	Memo	Marcus	Merwin
C0001175	59		CECo Con- struction (Boone)	09/17/82	Memo	Sommerfield	Cosaro
C0001176	59		CECo Con- struction (Boone)		Memo		
C0001177	59		CECo Con- struction (Boone)	11/08/82	Memo	Meyers	Cosaro

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001178	59		CECo Con- struction (Boone)	09/26/83	Memo	Sommerfield	Cosaro
C0001179	59		CECo Con- struction (Boone)	09/09/82	Memo	Sommerfield	Cosaro
C0001180	59		CECo Con- struction (Boone)	09/07/83	Memo	O'Connor	Cosaro
C0001181	59		CECo Con- struction (Boone)	09/26/83	Memo	Sommerfield	Cosaro
C0001182	59		CECo Con- struction (Boone)	09/12/83	Memo	Sommerfield	Cosaro
C0001184	59		CECo Con- struction (Boone)	04/28/83	Memo	O'Connor	Cosaro
C0001185	59		CECo Con- struction (Boone)	11/24/82	Memo		
C0001186	59		CECo Con- struction (Boone)	05/08/85	Speed Letter	Skoza	Boone
C0001187- 01190	59		CECo Con- struction (Boone)	05/31/85	Memo	Murphy	Haley
C0001191- 01193	59		CECo Con- struction (Boone)	05/16/85	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001194- 01195	59		CECo Con- struction (Shamblin)	07/11/85	Memo	O'Connor	Shamblin
C0001196- 01217	59		CECo Con- struction (Shamblin)	07/08/85	Memo	O'Connor	Groth
C0001218- 01219	59		CECo Con- struction (Shamblin)	09/03/82	Memo	Meyers	Cosaro
C0001220- 01221	59		CECo Con- struction (Shamblin)	09/10/82	Memo	Meyers	Cosaro
C0001222- 01224	59		CECo Con- struction (Shamblin)	09/02/82	Memo	Sommerfield	Cosaro
C0001225- 01239	59		CECo Con- struction (Shamblin)	09/02/82	Memo	Sommerfield	Cosaro
C0001240	59		CECo Con- struction (Shamblin)	01/11/83	Memo	Meyers	Cosaro
C0001274- 01318	59		CECo Con- struction (Groth)		Report		
C0001319- 01325	59		CECo Con- struction (Groth)	1982	Handwritten List		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001326-01327	59		CECo Construction (Groth)	04/08/82	Handwritten notes		Groth
C0001328-01333	59		CECo Construction (Groth)	11/06/82	Handwritten List		
C0001334-01336	59		CECo Construction (Groth)	11/18/82	Handwritten notes		Groth
C0001337-01344	59		CECo Construction (Groth)		Handwritten notes		
C0001345-01349	59		CECo Construction (Groth)		Memo	Cosaro	Wallace
C0001350-01368	59		CECo Construction (Groth)		Handwritten notes		
C0001369-01372	59		CECo Construction (Groth)		Handwritten notes		
C0001373-01376	59		CECo Construction (Groth)				
C0001377-01387	59		CECo Construction (Groth)	07/06/81	Letter	Deress	Lane
C0001388-01389	59		CECo Construction (Groth)	08/15/84	Letter w/ handwriting	Elias	Lane
C0001390	59		CECo Construction (Groth)	1985	Graph		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001391	59		CECo Con- struction (Groth)	05/01/85	Chart		Berglin
C0001392- 01397	59		CECo Con- struction (Groth)		Handwritten notes		
C0001398- 01418	59		CECo Con- struction (Groth)	07/08/85	Computer Printout w/ Handwriting		Berglin
C0001419- 01428	59		CECo Con- struction (Groth)	09/01/82	Handwritten notes		Berglin
C0001429	59		CECo Con- struction (Groth)	07/09/85	Handwritten notes		
C0001430- 01432	59		CECo Con- struction (Groth)		Handwritten notes		Berglin
C0001433- 01434	59		CECo Con- struction (Groth)	09/11/84	Speed Letter	Willoughby	Lotarski
C0001435- 01436	59		CECo Con- struction (Gorski)	03/07/84	Handwritten notes		
C0001437- 01475	59		CECo Con- struction (Gorski)	12/11/84- 01/16/85	Handwritten notes		Gorski

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001476- 01482	59		CECo Con- struction (Gorski)	12/19/84	Report		
C0001483- 1488	59		CECo Con- struction (Gorski)	03/07/85	Handwritten notes		Various
C0001489- 01492	59		CECo Con- struction (MG)	11/02/84	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001493- 01525	59		CECo Con- struction	11/02/84	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001526	59		CECo Con- struction	05/28/85	Letter	Skoza	Gorski
C0001527	59		CECo Con- struction	05/31/85	Letter	Gorski	Erkkson
C0001528	59		CECo Con- struction		File		
C0001532- 01537	59		CECo Con- struction	10/01/84	Letter	Gorski	Carlson
C0001538	59		CECo Con- struction	11/08/81	Letter	Merwin	Paul
C0001582- 01583	59		CECo Con- struction		Handwritten notes		
C0001584- 01593	59		CECo Con- struction	08/20/80	Letter	O'Connor	Gorski
C0001594- 01596	59		CECo Con- struction	08/20/84	Letter	O'Connor	Gorski

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001597- 01598	59		CECo Con- struction	07/25/85	Handwritten Letter	Mike	Olson
C0001599- 01617	59		CECo Con- struction	03/15/85	Letter	Quaka/ Shamblin	Marcus
C0001618- 01620	59		CECo Con- struction		Handwritten notes		
C0001621	59		CECo Con- struction	06/21/84	Letter	Grunthaler	Skoza
C0001622- 01624	59		CECo Con- struction		List		
C0001625	59		CECo Con- struction	05/15/85	Action Plan Summary		
C0001626	59		CECo Con- struction		Report		
C0001627	59		CECo Con- struction		Report w/ Handwritten notes		
C0001628- 01629	59		CECo Con- struction	05/01/85	Action Plan Summary		
C0001630	59		CECo Con- struction		Tally Sheet		
C0001631	59		CECo Con- struction	03/07/85	Handwritten notes		
C0001632- 01636	59		CECo Con- struction	07/03/85	Action Plan Summary		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001637-01639	59		CECo Construction	06/11/85	Handwritten notes		
C0001640	59		CECo Construction	06/04/85	Handwritten notes		
C0001641-01643	59		CECo Construction	05/28/84	Report		
C0001644-01646	59		CECo Construction		Report		
C0001647-01649	59		CECo Construction	05/21/85	Handwritten notes		
C0001650-01651	59		CECo Construction	05/07/85	Handwritten notes		
C0001652-01654	59		CECo Construction	05/07/85	Handwritten notes		
C0001655-01656	59		CECo Construction	03/26/85	Handwritten notes		
C0001657	59		CECo Construction		Handwritten notes		
C0001658-01659	59		CECo Construction		Handwritten notes		
C0001660-01665	59		CECo Construction		Tally Sheet		
C0001666-01669	59		CECo Construction		Tally Sheet		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001670	59		CECo Con- struction	04/11/85	Computer Printout		
C0001671	59		CECo Con- struction		List		
C0001672	59		CECo Con- struction	5/3/85	Letter	Gorski	Knaff
C0001673	59		CECo Con- struction	5/3/85	Letter	Gorski	Knaff
C0001674- 01683	59		CECo Con- struction	06/18/85	Letter	O'Connor	Gorski
C0001684- 01707	59		CECo Con- struction	07/01/85	Letter	Skoza	Gorski
C0001708- 01710	59		CECo Con- struction	03/07/85	Letter	Taylor	Gorski
C0001711- 01712	59		CECo Con- struction	04/29/85	Letter	Mayernik	Gorski

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001713	59		CECo Con- struction	04/10/85	Letter	O'Connor	Gorski
C0001714- 01715	59		CECo Con- struction	06/27/85	Letter	Gorski	Raft
C0001716	59		CECo Con- struction	01/15/85	Letter	Berglin	Byers
C0001717	59		CECo Con- struction	06/25/85	Letter	Skoza	Gorski
C0001718- 01719	59		CECo Con- struction	04/01/85	Letter	Vahle	Jones
C0001720- 01721	59		CECo Con- struction	04/03/85	Letter	O'Connor	Gorski
C0001722- 01725	59		CECo Con- struction (Groth)	Undated	Handwritten notes		
C0001726- 01743	59		CECo Con- struction (Groth)	12/20/83	Report		
C0001744- 01755	59		CECo Con- struction (Groth)	Undated	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001756- 01790	59		CECo Con- struction (Groth)	9/11/80	Report		
C0001791- 01796	59		CECo Con- struction (Groth)		List		
C0001803- 01809	59		CECo Con- struction (Boone)	04/18/84	Memo	Groth	Stewart/ O'Hern
C0001810- 01812	59		CECo Con- struction (Boone)	03/28/84	Letter	Carlson	Hunsader
C0001813	59		CECo Con- struction (Boone)	11/10/83	Letter	Sommerfield/ Cosaro	O'Connor

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001814	59		CECo Con- struction (Boone)	11/10/83	Letter	Stewart	O'Connor
C0001815	59		CECo Con- struction (Boone)	10/10/83	Letter	Stewart	O'Connor
C0001816	58		CECo Con- struction (Boone)	05/02/84	Memo	Carlson	Stewart
C0001816	59		CECo Con- struction (Boone)	05/02/84	Memo	Carlson	Stewart
C0001818	59		CECo Con- struction (Boone)	06/24/83	Letter	Meyers	Groth
C0001819	59		CECo Con- struction (Boone)	06/29/83	Letter	Cosaro/ Groth	Novak
C0001820- 01821	59		CECo Con- struction (Boone)	06/10/83	Letter	Groth	Hunsader
C0001822- 01823	59		CECo Con- struction (Boone)	11/05/82	Letter	Cosaro	Meyers
C0001824- 01825	59		CECo Con- struction (Boone)	08/11/82	Letter	Cosaro	Meyers
C0001826	59		CECo Con- struction (Boone)	05/19/82	Letter	Cosaro	Hunsader
C0001827	59		CECo Con- struction (Boone)	11/10/82	Letter	Cosaro	Meyers

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0001828	59		CECo Construction (Boone)	12/15/83	Letter	Carlson/Green	Kelm
C0001829	59		CECo Construction (Boone)	09/02/82	Letter	Rubino	Hunsader
C0001830	59		CECo Construction (Boone)	10/05/82	Letter	Cosaro	Meyers
C0001831-01835	59		CECo Construction		Handwritten Notes		
C0001836-01841	59		CECo Construction		Handwritten Notes		
C0001842-01857	59		CECo Construction		Report		
C0001858-01859	59		CECo Construction	09/07/82	Revision		
C0001860-01913	59		CECo Construction		Report W/ Handwritten notes		
C0001914-01958	59		CECo Construction		Report W/ Handwritten notes		
C0001959-02003	59		CECo Construction		Report W/ Handwritten notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002004- 02014	59		CECo Con- struction		Index Cards		
C0002015- 02019	59		CECo Con- struction		Handwritten notes		
C0002020- 02075	59		CECo Con- struction		Handwritten notes		
C0002076- 02085	59		CECo Con- struction	12/3/82	Memo		
C0002086- 02092	59		CECo Con- struction		Handwritten notes		
C0002095- 02097	59		CECo Con- struction	09/08/82	Letter	Meyer	Merwin
C0003270- 03278	59		CECo Con- struction	12/10/82	I. E. Bulletin		
C0003279- 03285	59		CECo Con- struction	11/29/76	Purchase Order		
C0003286- 03292	59		CECo Con- struction	3/22/79	Purchase Order		
C0003293- 03312	59		CECo Con- struction	3/10/78	Material Receipt order		
C0003313- 03318	59		CECo Con- struction	12/28/78	Material Receipt order		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0003319- 03350	59		CECo Con- struction	Undated	Material Receipt order		
C0003351- 03354	59		CECo Con- struction	5/16/80	Material Receipt order		
C0003355- 03356	59		CECo Con- struction	9/11/73	CECo System Standard		
C0003357- 03378	59		CECo Con- struction	5/18/84	Audit Report		
C0003379- 03391	59		CECo Con- struction	5/29/84	Project Procedure		
C0003392-	59		CECo Con- struction	5/7/85	Letter	Craven	Hoffman
C0002099- 02104	59		CECo Con- struction (Boone)		Handwritten notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002105- 02118	59		CECo Con- struction (Shamblin)	07/18/85	Letter	Vahle	Shamblin
C0002119	59		CECo Con- struction (Shamblin)	06/25/85	Letter	Shamblin	O'Connor
C0002120- 02123	59		CECo Con- struction (Shamblin)	06/29/85	Letter	Tramm	Cosaro
C0002124- 02129	59		CECo Con- struction (Shamblin)	05/31/84	Handwritten notes		
C0002130- 02135	59		CECo Con- struction (Gorski)	10/23/84	Handwritten notes		
C0002136- 02139	59		CECo Con- struction (Gorski)	09/21/84	Meeting Minutes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002140- 02149	59		CECo Con- struction (Gorski)	08/29/84	Memo	Shamblin	Vahle
C0002150	59		CECo Con- struction (Brylka)	07/01/83	Report		
C0002151- 02152	59		CECo Con- struction (Gorski)	03/15/84	Letter	Wendorf	Gorski
C0002153- 02160	59		CECo Con- struction (Gorski)	11/16/84	NCR		
C0002161- 02172	59		CECo Con- struction	Undated	Report		
C0002173- 02178	59		CECo Con- struction (Shamblin)	04/21/83	Letter	Meyers	Cosaro
C0002179	59		CECo Con- struction	04/31/83	Letter	Meyers	Cosaro

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002180- 02182	59		CECo Con- struction	11/29/84	Letter	O'Connor	Shamblin
C0002190	59		CECo Con- struction	10/19/84	Letter	Various	Shamblin
C0002198- 02202	59		CECo Con- struction (Shamblin)	10/03/84	Letter	O'Connor	Cosaro
C0002203- 02204	59		CECo Con- struction (Shamblin)	10/19/84	Letter	O'Connor	Shamblin
C0002205- 02216	59		CECo Con- struction (Shamblin)	01/24/85	Training Sheet		
C0002217- 02219	59		CECo Con- struction (Shamblin)	09/10/84	Letter	Various	Shamblin
C0002220	59		CECo Con- struction (Shamblin)	08/14/84	Letter	Vahle	Groth
C0002221- 02229	59		CECo Con- struction (Shamblin)	10/07/82	Letter	Wallace	Cosaro
C0002230- 02232	59		CECo Con- struction (Shamblin)	06/11/84	Letter	Various	Shamblin
C0002233- 02235	59		CECo Con- struction (Shamblin)	06/13/84	Letter	Various	Shamblin

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002236 2253	59		CECo Con- struction (Shamblin)	10/23/84	Letter	O'Connor	Shamblin

C0002254- 02272	59		CECo Con- struction (Shamblin)	01/15/85	Memo to File		Shamblin
--------------------	----	--	--------------------------------------	----------	-----------------	--	----------

C0002273	59		CECo Con- struction (Boone)	Undated	Handwritten notes		
----------	----	--	-----------------------------------	---------	----------------------	--	--

C0002274- 02275	59		CECo Con- struction	Undated	Handwritten notes		
--------------------	----	--	------------------------	---------	----------------------	--	--

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002277-02280	59		CECo Construction (Gray)	10/22/84	Memo	GKN	Burns
C0002281-02282	59		CECo Construction (Gray)	09/11/84	Letter	QA	Shamblin
C0002283-02313	59		CECo Construction (Gray)	Undated	Revision		
C0002314	59		CECo Construction (Gray)	1/23/85	Letter	Shamblin	Hoffman
C0002315-02318	59		CECo Construction (Gray)	2/19/85	Memo	GKN	
C0002319	59		CECo Construction (Gray)	01/22/85	Memo	Shamblin	Danica
C0002320-02350	59		CECo Construction (Gray)	01/22/85	Revision		
C0002351-02355	59		CECo Construction (Shamblin)	03/17/85	Memo	Schroeder	Shamblin
C0002356-02357	59		CECo Construction (Shamblin)	04/26/85	Letter	Various	Shamblin

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002383- 02388	59		CECo Con- struction (Shamblin)	01/05/85	Report	Dean Draper	
C0002389- 2390	59		CECo Construction (Gray)		Handwritten Notes		
C0002391	59		CECo Construction (Gray)	06/11/84	Letter	Bruns	Miller
C0002392- 2410	59		CECo Construction (Gray)	05/16/84	Report		
C0002411	59		CECo Construction (Gray)	05/21/84	Letter	Fraser	Bruns
C0002412- 2414	59		CECo Construction (Gray)		List		
C0002415- 2418	59		CECo Construction (Gray)		List		
C0002419- 2421	59		CECo Construction (Gray)		List		
C0002422- 2424	59		CECo Construction (Gray)		List		
C0002425	59		CECo Construction (Gray)	01/19/81	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002426- 2438	59		CECo Construction (Gray)	10/16/80	Report		
C0002439- 2450	59		CECo Construction (Gray)	01/15/81	Report		
C0002451	59		CECo Construction (Gray)	02/05/80	Letter	Buckner	Gray
C0002452	59		CECo Construction (Gray)	06/10/80	Letter	Buckner	Gray
C0002453	59		CECo Construction (Gray)	06/03/80	Letter	Buckner	Gray
C0002454	59		CECo Construction (Gray)	06/13/80	Letter	Segersell	Farr
C0002455	59		CECo Construction (Gray)	06/05/81	Memo		Gray
C0002456	59		CECo Construction (Gray)	09/17/82	Letter	Buckner	Gray
C0002457- 2465	59		CECo Construction (Gray)	08/29/78	Report		
C0002466- 2483	59		CECo Construction (Gray)		Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002484- 2500	59		CECo Construction (Gray)		Report		
C0002501	59		CECo Construction (Gray)	05/12/80	Letter	Buckner	Gray
C0002502	59		CECo Construction (Gray)	08/02/78	Letter	Smetana	Trumbull
C0002503	59		CECo Construction (Gray)	04/05/78	Letter	Gray	Legrer
C0002504- 2507	59		CECo Construction (Gray)	04/24/78	Report		
C0002508	59		CECo Construction (Gray)	08/17/78	Letter	Gray	Cook
C0002509	59		CECo Construction (Gray)	09/18/78	Letter	Salem	Hawkinson
C0002510	59		CECo Construction (Gray)	06/23/78	Letter	Salem	Gray
C0002511	59		CECo Construction (Gray)	06/16/78	Letter	Salem	Gray
C0002512	59		CECo Construction (Gray)	06/05/80	Letter	Westermeier	Netzel

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002513	59		CECo Construction (Gray)	03/02/79	Letter	Midway Indust.	Gray
C0002514	59		CECo Construction (Gray)	03/28/79	Letter	Buckner	Homely
C0002515- 2516	59		CECo Construction (Gray)	04/09/79	Letter	Buckner	Trumbull
C0002517- 2518	59		CECo Construction (Gray)	06/20/79	Letter	Gray	Salem
C0002519- 2520	59		CECo Construction (Gray)	05/14/85	Letter	Quaka	Shamblin
C0002521- 2527	59		CECo Construction (Gray)	10/13/82	Letter	Cosaro	Netzel
C0002528	59		CECo Construction (Gray)		Handwritten Notes		
C0002529	59		CECo Construction (Gray)		Handwritten Notes		
C0002530	59		CECo Construction (Gray)		Handwritten Notes		
C0002531- 2532	59		CECo Construction (Gray)	08/31/78	Handwritten Notes		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002533-2542	59		CECo Construction (Gray)		Handwritten Notes		
C0002543-2544	59		CECo Construction (Gray)		Handwritten Notes		
C0002545	59		CECo Construction (Gray)		Checklist		
C0002546-2547	59		CECo Construction (Gray)		Index Cards		
C0002548-2550	59		CECo Construction (Gray)		Index Cards		
C0002551-2554	59		CECo Construction (Gray)		Handwritten notes		
C0002562-2564	59		CECo Construction (Gray)		Report		
C0002565	59		CECo Construction (Gray)	11/5/76	Memo	Sullivan	Kelly
C0002566	59		CECo Construction (Gray)	3/30/82	Memo	Meyers	Rubino
C0002567	59		CECo Construction (Gray)	4/2/82	Letter	Meyers/ Rubino	Merwin/ Hunsader
C0002568	59		CECo Construction (Gray)	4/15/83	Letter	Engineering Staff	Ken M. (From PFE)

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002569	59		CECo Con- struction (Gray)	4/19/82	Letter	Cosaro/ Merwin	Hunsader
C0002570- 02571	59		CECo Con- struction (Gray)	8/11/83	Letter	Cosaro	Meyers
C0002572 2573	59		CECo Con- struction (Gray)	6/2/82	Handwritten Notes		
C0002574 2775	59		CECo Con- struction (Gray)	5/25/82	Letter	Cosaro/ Merwin	Hunsader
C0002576- 2578	59		CECo Con- struction (Gray)	5/14/82	Letters	Meyers/ Rubino	Cosaro
C0002579	59		CECo Con- struction (Gray)	8/16/82	Letter	Meyers	Schlung
C0002580	59		CECo Con- struction (Gray)	8/17/82	Letter	Meyers	Schlung
C0002581	59		CECo Con- struction (Gray)	8/16/82	Letter	Meyers	Cosaro
C0002582	59		CECo Con- struction (Gray)	9/24/82	Letter	Meyers	Sommerfiel
C0002583	59		CECo Con- struction (Gray)	9/24/82	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002584	59		CECo Con- struction (Gray)	10/21/82	Letter	Rubino	Groth
C0002585	59		CECo Con- struction (Gray)	11/5/82	Letter	Cosaro/ Sommerfield	Meyer
C0002586	59		CECo Con- struction (Gray)	12/9/82	Letter	Gorski	Rubino
C0002587	59		CECo Con- struction (Gray)	1/7/83	Letter	QC Field Inspectors	Rubino
C0002588- 2590	59		CECo Con- struction (Gray)	11/18/82	Handwritten Notes		Groth
C0002591 2592	59		CECo Con- struction (Gray)		Report		
C0002593- 2598	59		CECo Con- struction (Mennecke)	4/11/84	Letter		Quaka
C0002599- 2600	59		CECo Con- struction (Mennecke)	5/10/84	Memo	Mennecke	Nelson
C0002601- 2606	59		CECo Con- struction (Mennecke)	5/11/84	Letter	Cosaro	Quaka
C0002607- 2608	59		CECo Con- struction (Mennecke)	6/11/84	Memo	Mennecke	Nelson

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002613-2516	59		CECo Construction (Netzel)	4/12/84	Letter	Mennecke	Koske
C0002617	59		CECo Construction (Netzel)		Roster		
C0002618	59		CECo Construction (Hoffman)	4/7/84	Letter	Craven	Hoffman
C0002620-2621	59		CECo Construction (Tanouye)	10/2/84	Letter		Riedel
C0002622-2623	59		CECo Construction (Tanouye)	10/2/84	Letter		Riedel
C0002624-02628	59		CECo Construction	10/03/84	Letter	Rolan	Shamblin
C0002629-02633	59		CECo Construction	10/03/84	Letter	Rolan	Shamblin
C0002634-02638	59		CECo Construction	10/03/84	Letter	Rolan	Shamblin
C0002639-2643	59		CECo Construction (Boone)	10/3/84	Letter	O'Connor	Shamblin
C0002644	59		CECo Construction (Boone)		Handwritten Notes		
C0002645	59		CECo Construction (Boone)	3/13/85	Letter	O'Connor	Farr

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002646- 2647	59		CECo Con- struction (Boone)	10/19/84	Letter	Craven	Shamblin
C0002648- 2649	59		CECo Con- struction (Boone)	10/19/84	Letter	O'Connor	Shamblin
C0002650	59		CECo Con- struction (Boone)	10/5/84	Notifica- tion Letter		
C0002651- 02652	59		CECo Con- struction (Boone)	10/19/84	Letter	Rolan	Shamblin
C0002653- 2654	59		CECo Con- struction (Boone)	10/19/84	Letter	Newland	Shamblin
C0002655- 2656	59		CECo Con- struction (Boone)	10/19/84	Letter	Neebaum	Ahamblin
C0002657	59		CECo Con- struction (Boone)	8/22/84	Memo	Farr/ Gorski	Stewart
C0002658- 2660	59		CECo Con- struction (Boone)	10/23/84	Letter	Rolan	Shamblin
C0002661- 02663	59		CECo Con- struction (Boone)	10/19/84	Field Transmittal Form	Gallager/ Fus	Shamblin/ Boone
C0002664- 2670	59		CECo Con- struction (Boone)	10/31/84	Memo	Shamblin	Stewart

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002671 02679	59		CECo Construction (Boone)	10/23/84	Letter	Craven	Shamblin
C0002680	59		CECo Construction (Boone)	10/22/84	Letter	O'Connor	Shamblin
C0002681	59		CECo Construction (Boone)	10/18/84	Memo	Shamblin	Sumrow
C0002682	59		CECo Construction (Boone)	10/12/84	Memo	Shamblin	Sumrow
C0002683- 2696	59		CECo Construction (Boone)	10/30/84	Handwritten Notes		
C0002697 2699	59		CECo Construction (Boone)	7/13/84	Letter Draft	Various	Shamblin
C0002700- 2701	59		CECo Construction (Boone)	10/19/84	Letter	O'Connor	Shamblin
C0002702- 2703	59		CECo Construction (Boone)	01/20/83	Letter Draft	Deress	Green
C0002704	59		CECo Construction (Boone)	11/08/83	Memo	All Personnel	Mennecke
C0002705	59		CECo Construction (Boone)	9/8/83	Memo	All Personnel	Mennecke
C0002706	59		CECo Construction (Boone)	5/10/83	Memo	All Personnel	Hil

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002707- 2711	59		CECo Con- struction (Boone)	4/30/84	Handwritten Earl Letter		Dan
C0002712- 2713	59		CECo Con- struction (Boone)	9/25/84	Letter	Shamblin	Boone
C0002714	59		CECo Con- struction (Boone)	9/25/84	Letter	Shamblin	Boone
C0002715- 2717	59		CECo Con- struction (Boone)		Report		
C0002718- 2721	59		CECo Con- struction (Boone)		Report		
C0002722- 2728	59		CECo Con- struction (Boone)		Report		
C0002729- 2733	59		CECo Con- struction (Boone)		Drawings		
C0002734 2746	59		CECo Con- struction (Boone)	10/8/80	F.C.R.		
C0002747- 02748	59		CECo Con- struction (Boone)	9/25/84	Memo (Phone)	McGregor	Putman
C0002749 2750	59		CECo Con- struction (Boone)	9/25/84	Phone Memo	McGregor	Putman
C0002751	59		CECo Con- struction (Boone)		Handwritten Notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002752	59		CECo Con- struction (Boone)		Handwritten notes		
C0002753- 02754	59		CECo Con- struction (Boone)		Draft memo	Netzel	Putman
C0002755	59		CECo Con- struction (Boone)		FCR		
C0002756- 02758	59		CECo Con- struction (Boone)		ECN		
C0002759- 02761	59		CECo Con- struction	09/28/84	Telecopy form w/ drawings	Hester	
C0002762- 02767	59		CECo Con- struction (Boone)	08/08/84	Memo	Various	
C0002768	59		CECo Con- struction (Boone)		Handwritten notes		
C0002769- 02772	59		CECo Con- struction (Boone)	05/25/84	Phone memo	Putman	MacGregor
C0002773	59		CECo Con- struction (Boone)	08/24/84	Handwritten notes		
C0002774	59		CECo Con- struction (Boone)		Handwritten notes		
C0002775- 02777	59		CECo Con- struction (Boone)		Handwritten notes		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002778	59		CECo Construction (Boone)		Handwritten notes		
C0002779	59		CECo Construction (Boone)	06/18/84	NCR		
C0002780	59		CECo Construction (Boone)		Handwritten Notes		
C0002781-02784	59		CECo Construction (Boone)	04/30/84	NCR		
C0002785	59		CECo Construction (Boone)	07/27/84	Meeting notes handwritten		
C0002786-02791	59		CECo Construction (Boone)	07/06/84	Letter w/ Handwritten Meeting Notes		
C0002792	59		CECo Construction (Boone)	04/19/83	Handwritten LKC, PGCo, PSM Cosaro meeting notes		
C0002793-02794	59		CECo Construction (Boone)		Handwritten notes		
C0002795-02799	59		CECo Construction (Boone)	11/29/82	Memo	Cosaro	Wallace
C0002800-02803	59		CECo Construction (Boone)		Handwritten notes		
C0002804	59		CECo Construction (Shamblin)	10/22/84	Letter	O'Connor	Shamblin

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002805- 02806	59		CECo Con- struction (Shamblin)	10/19/84	Letter	Craven	Shamblin
C0002807- 02808	59		CECo Con- struction (Shamblin)	10/19/84	Letter	Rolan	Shamblin
C0002809- 02810	59		CECo Con- struction (Shamblin)	10/19/84	Letter	Newland	Shamblin
C0002811- 02812	59		CECo Con- struction (Shamblin)	10/19/84	Letter	Neebaum	Shamblin
C0002813 02817	59		CECo Con- struction (Shamblin)	10/3/84	Letter	Rolan	Shamblin
C0002818- 02822	59		CECo Con- struction (Shamblin)	10/3/84	Letter	Neebaum	Shamblin
C0002823- 02827	59		CECo Con- struction (Shamblin)	10/3/84	Letter	Newland	Shamblin
C0002828- 02832	59		CECo Con- struction (Shamblin)	10/3/84	Letter	Craven	Shamblin
C0002833- 02843	59		CECo Con- struction (Gieseke)	02/19/85	Memo	Quaka	Dewald
C0002844	59		CECo Con- struction (Gieseke)	05/31/85	Letter	Craven	Shamblin

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002845	59		CECo Con- struction (Gieseke)	05/31/85	Letter	O'Connor	Shamblin
C0002846	59		CECo Con- struction (Gieseke)	05/31/85	Letter	Lantermo	Shamblin
C0002847	59		CECo Con- struction (Gieseke)	05/31/85	Letter	Niebaum	Shamblin
C0002848	59		CECo Con- struction (Gieseke)	05/31/85	Letter	Donaldson	Shamblin
C0002849	59		CECo Con- struction (Gieseke)	06/04/85	Letter	Forrest	Shamblin
C0002850- 02942	59		CECo Con- struction (Gieseke)	1985	Folder		
C0002947- 02949	59		CECo Con- struction (Gieseke)	03/01/84	Letter	Rolan/Dewald	Mennecke
C0002950	59		CECo Con- struction (Gieseke)	10/09/84	Letter	Rolan/Dewald/ Klena	Gieseke
C0002951	59		CECo Con- struction (Gieseke)	05/22/85	Handwritten notes		
C0002952- 02960	59		CECo Con- struction (Gieseke)		Report w/hand- written notes		
C0002961	59		CECo Con- struction (Gieseke)	10/16/84	Memo	Netzel	Dewald

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0002962- 02965	59		CECo Con- struction (Gieseke)	11/09/84	Memo	Netzel	Paserba
C0002966- 02969	59		CECo Con- struction (Gieseke)	09/15/84	Memo	Netzel/ Gieseke	DeWald
C0002970	59		CECo Con- struction (Gieseke)	08/11/84	Memo	Mennecke	DeWald
C0002971- 02976	59		CECo Con- struction (Gieseke)	05/01/85	Letter	Schroeder	Phelan/Vah
C0002977	59		CECo Con- struction (Gieseke)	09/05/85	Letter	Binder	Elias
C0003028- 3030	59		CECo Construction (Gieseke)	10/23/84	Letter	Rolan	Shamblin
C0003031- 3033	59		CECo Construction (Gieseke)	10/18/84	Letter	Wallace	Vahle
C0003034- 3039	59		CECo Construction (Gieseke)	10/03/84	Letter	Rolan	Shamblin
C0003052- 3054	59		CECo Construction (Gorski)		Handwritten Notes		
C0003055- 3057	59		CECo Construction (Gorski)		Report w/ handwritten notes		
C0003058	59		CECo Construction (Gorski)		Handwritten Notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0003059- 3064	59		" "		Memo	Carlson	Marquardt
C0003065	59		" "		Memo	Carlson	Marquardt
C0003066	59		CECo Construction (Gorski)	03/26/85	Handwritten Notes		
C0003067	59		CECo Construction (Gorski)	03/26/85	Handwritten Notes		
C0003068	59		CECo Construction (Gorski)		Handwritten Notes		
C0003069- 3071	59		CECo Construction (Gorski)	03/21/85	Handwritten Various Memo		Gorski
C0003072	59		CECo Construction (Gorski)		Handwritten Various Memo		Gorski
C0003073- 3076	59		CECo Construction (Gorski)	11/20/84	Letter	Deress	Kortier
C0003076a- 3078	59		CECo Construction (Gorski)		Handwritten Notes		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
C0003116-03117	59		CECo Construction	04/02/85	Letter	Rolan	Shamblin
C0003118-03125	59		CECo Construction	04/02/85	Letter	Keppler	Swartz
C0003174-03178	59		CECo Construction	06/26/84	Procedure		
C0003179-03101	59		CECo Construction	07/01/85	Project Instruction		
C0003192	59		CECo Construction		Clearance Notification Form		
C0003193 3233	59		CECo Construction	03/05/85	Procedure		
C0003234 3269	59		CECo Construction	05/29/85	Procedure		
*C0003105-03111	61		CECo Construction	04/23/82	Memo	Dewald	Rolan
*C0003112-03114	61		CECo Construction	05/18/84	Memo	Mennecke	Dewald

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
D0000012	59		CECo PFE		Graph		
D0000012	59		CECo PFE		Graph		
D0000013- 00025	59		CECo PFE Skoza	06/17/85	Notes		
D0000013- 00025	59		CECo PFE Skoza	06/17/85	Notes		
D0000026- 00053	59		CECo PFE Skoza	05/30/85	Notes		
D0000026- 00053	59		CECo PFE Skoza	05/30/85	Notes		
D0000054- 00063	59		CECo PFE	07/15/85	Draft Letter	Keppler	NLA

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
D0000054- 00063	59		CECo PFE	07/15/85	Draft Letter	Keppler	NLA
D0000064- 00065	59		CECo PFE		Handwritten Notes		
D0000064- 00065	59		CECo PFE		Handwritten Notes		
D0000066- 00068	59		CECo PFE		Typed Notes		
D0000066- 00068	59		CECo PFE		Typed Notes		
D0000069	59		CECo PFE	03/07/84	Memo		Shamblin
D0000070	59		CECo PFE	03/07/84	Memo		Shamblin
D0000071 00072	59		CECo PFE	01/27/84	Memo	Cosaro	Shamblin
D0000073	59		CECo PFE	03/01/85	Memo		Vahle
D0000074- 00075	59		CECo PFE	07/19/83	Letter	Deress	Green

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
D0000076-00077	59		CECo PFE	01/20/83	Letter	Deress	Green
D0000078-00079	59		CECo PFE				
D0000080-00083	59		CECo PFE		Handwritten Report		
D0000084-00086	59		CECo PFE		Memo	PCD Startup Personnel	Shamblin
D0000087-00096	59		CECo PFE		Notes		
D0000097-00100	59		CECo PFE		Handwritten Notes	Wendorf	Shamblin
D0000101-00102	59		CECo PFE (Phalen)	01/31/85	Letter	Shamblin	Berglin
D0000103-00110	59		CECo PFE (Phalen)	07/09/85	Letter	Vahle	Jacques
D0000111-00115	59		CECo PFE (Phalen)	85	Handwritten Notes		
D0000116-00121	59		CECo PFE (Phalen)	04/19/83	Handwritten Notes	LKC/PGCO/PSU	Cosaro
D0000122-00125	59		CECo PFE (Phalen)	04/30/84	Handwritten Notes	Earl	Dan

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
D0000126- 00133	59		CECo PFE (Phalen)		Report		
D0000134- 00137	59		CECo PFE (Phalen)	12/27/84	Letter	Teras	Littlehale
D0000138- 00142	59		CECo PFE (Phalen)	Undated	Letter	Vahle	Kurtz
D0000143- 00144	59		CECo PFE	08/25/84	Letter	Deress	Vahle

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
E0000001- 00011	59		BCAP (Orlov)		Manual		
E0000012- 00014	59		BCAP (Orlov)		Instruction		
E0000015- 00019	59		BCAP (Orlov)		Instruction		
E0000020- 00030	59		BCAP (Orlov)	1985	Surveil- lance Report		
E0000031- 00039	59		BCAP (Orlov)	04/11/85	Checklist	Patterson	Hall
E0000040- 00052	59		BCAP (Orlov)	02/12/84	Surveil- lance Report		
E0000053- 00070	59		BCAP (Orlov)	09/21/84		Wallace/ Quaka	Marcus
E0000071- 00086	59		BCAP (Orlov)	12/12/84	Letter	Rolan	Shamblin
E0000087- 00088	59		BCAP (Orlov)	04/02/85	Letter	Rolan	Shamblin

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
E0000089- 00095	59		BCAP (Orlov)	04/19/85	Memo	Shamblin	Seltmann
E0000096- 00097	59			11/15/82	Memo	Sommerfield	Corcoran
E0000098- 00100	59		BCAP (Orlov)	02/27/85	Record		
E0000101- 00108	59		BCAP (Orlov)	1973	Manual		
E0000109- 00117	59		BCAP (Orlov)	08/11/83	Manual		
E0000118- 00133	59		BCAP (Orlov)	05/10/84	Manual		
E0000134- 00141	59		BCAP (Orlov)	03/19/84	Manual		
E0000142- 00144	59		BCAP (Orlov)		Draft Response		
E0000145- 00149	59		BCAP (Orlov)	01/28/85	Letter	Kaushal	Hansel

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
E0000150- 00153	59		BCAP (Orlov)	03/25/85	BCAP Memo	Various	Kaushal
E0000154- 00156	59		BCAP (Orlov)	12/11/85	BCAP Obser- vation Record		
E0000157- 00158	59		BCAP (Orlov)	12/11/85	BCAP Obser- vation Record		
E0000159- 00161	59		BCAP (Orlov)	12/11/85	BCAP Obser- vation		
E0000162- 00164	59		BCAP (Orlov)	12/11/85	BCAP Obser- vation		
E0000165- 00167	59		BCAP (Orlov)	12/11/85	BCAP Obser- vation		
E0000168- 00170	59		BCAP (Orlov)	12/11/85	BCAP Obser- vation		
E0000171- 00173	59		BCAP (Orlov)	12/11/85	BCAP Obser- vation Record		
E0000174- 00176	59		BCAP (Orlov)	12/11/85	BCAP Obser- vation Record		
E0000177- 00179	59		BCAP (Orlov)	12/11/85	BCAP Obser- vation Record		
E0000180- 00182	59		BCAP (Orlov)	12/11/85	BCAP Obser- vation Record		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
E0000183- 00185	59		BCAP (Orlov)	12/11/85	BCAP Obser- vation Record		
E0000186- 00188	59		BCAP (Orlov)	12/11/85	BCAP Obser- vation Record		
E0000189- 00191	59		BCAP (Orlov)	12/11/85	BCAP Obser- vation Record		
E0000192- 00194	59		BCAP (Orlov)		BCAP Obser- vation Record		
E0000195- 00197	59		BCAP (Orlov)		BCAP Obser- vation Record		
E0000198- 00200	59		BCAP (Orlov)		BCAP Obser- vation Record		
E0000201- 00203	59		BCAP (Orlov)		BCAP Obser- vation Record		
E0000204- 00206	59		BCAP (Orlov)		BCAP Obser- vation Record		
E0000207- 00208	59		BCAP (Orlov)		BCAP Obser- vation Record		
E0000210- 00212	59		BCAP (Orlov)		BCAP Obser- vation Record		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
E0000213- 00215	59		BCAP (Orlov)	12/11/84	BCAP Obser- vation Record		
E0000216- 00218	59		BCAP (Orlov)	12/11/84	BCAP Obser- vation Record		
E0000219- 00221	59		BCAP (Orlov)	12/11/84	BCAP Obser- vation Record		
E0000222- 00224	59		BCAP (Orlov)	12/11/84	BCAP Obser- vation Record		
E0000225- 00227	59		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000228- 00229	59		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000230- 00232	59		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000233- 00235	59		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000236- 00238	59		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000239- 00241	59		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
E0000242- 00244	59		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000245- 00247	59		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000248- 00250	59		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000251 00253	59		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000254 00256	59		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000257 00259	59		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000260 00262	59		BCAP (Orlov)	12/12/84	BCAP Obser- vation Record		
E0000263 00265	59		BCAP (Orlov)	1/14/84	BCAP Obser- vation Record		
E0000266 00270	59		BCAP (Orlov)	1/15/84	Letter	Byers	Hansel
E0000271 00273	59		BCAP (Orlov)	1/15/84	Letter	Kaushal	Shamblin

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
E0000274 00277	59		BCAP (Orlov)	12/4/84	Memo	Patterson	Duss

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
F0000023- 0024	59		CECo Execs (DelGeorge)	10/28/83	Letter	Cosaro	Westermeier
F0000025	59		CECo Execs (DelGeorge)	11/14/83	Letter	Sommerfield	Grant
F0000026- 0028	59		CECo Execs (DelGeorge)	11/15/83	Letter		Smetang
F0000029- 0031	59		CECo Execs (DelGeorge)	11/15/83	Letter	Shewski	Sommerfield
F0000032	59		CECo Execs (DelGeorge)	11/17/83	Letter	Cosaro	Sommerfield
F0000033- 0038	59		CECo Execs (DelGeorge)	11/12/83	Letter	Lawler	Cosaro
F0000039- 0045	59		CECo Execs (DelGeorge)	12/01/83	Letter	Sommerfield	Groth
F0000046- 0056	59		CECo Execs (DelGeorge)	Undated	Draft Report		
F0000057	59		CECo Execs (DelGeorge)	12/02/83	Letter	Shewski	Sommerfield

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
F0000058	59		CECo Execs (DelGeorge)	12/06/83	Letter w/ handwritten notes	Cosaro	Lawler
F0000061	59		CECo Execs (DelGeorge)	12/15/83	Letter	Shewski	Sommerfield
F0000067- 0076	59		CECo Execs (DelGeorge)	02/23/83	Letter	Cosaro	Kosik
F0000077	59		CECo Execs (DelGeorge)	02/21/83	Letter	Lawler	Brown
F0000078	59		CECo Execs (DelGeorge)	02/23/84	Letter	Cosaro	Sommerfield
F0000079- 0080	59		CECo Execs (DelGeorge)	02/28/84	Letter	Cosaro	Lawler
F0000081	59		CECo Execs (DelGeorge)	03/02/84	Letter	Lawler	Cosaro
F0000082	59		CECo Execs (DelGeorge)	03/02/84	Letter	Cosaro	Lawler
F0000083- 0085	59		CECo Execs (DelGeorge)	03/08/84	Letter	Cosaro	Lawler
F0000086	59		CECo Execs (DelGeorge)	04/26/84	Letter	Cosaro	Quaka
F0000087	59		CECo Execs (DelGeorge)	05/09/84	Letter	Cosaro	Quaka

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
F0000088- 0089	59		CECo Execs (DelGeorge)	05/14/84	Letter	Lawler	Shamblin
F0000090	59		CECo Execs (DelGeorge)	05/15/84	Letter	Lawler	Shamblin
F0000091	59		CECo Execs (DelGeorge)	05/21/84	Letter	Shamblin	Quaka
F0000092- 0093	59		CECo Execs (DelGeorge)	05/25/84	Letter	Shamblin	Lawler
F0000097	59		CECo Execs (DelGeorge)	08/25/84	Letter	Shamblin	Lawler
F0000098	59		CECo Execs (DelGeorge)	09/05/84	Letter	Lawler	Shamblin
F0000099 0100	59		CECo Execs (DelGeorge)	02/19/84	Letter	Shamblin	Hitzeman

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
F0000101- 0137	59		CECo Execs (DelGeorge)	01/22/85	Letter	Lawler	Hawkinson
F0000138- 0139	59		CECo Execs (DelGeorge)	04/19/85	Letter	Shamblin	Lawler
F0000140	59		CECo Execs (DelGeorge)	04/26/85	Letter	Shamblin	Lawler
F0000141	59		CECo Execs (DelGeorge)	06/13/85	Letter	Lawler	Dierbeck
F0000142- 0146	59		CECo Execs (DelGeorge)	10/24/83	Meeting notes		Sommerfield
F0000147	59		CECo Execs (DelGeorge)	08/30/83	Letter	Cosaro	Gilliam
F0000148- 0177	59		CECo Execs (DelGeorge)	09/27/83	Letter	Cosaro	Grant

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
F0000181- 0189	59		CECo Execs (Reed)	3/2/84	Outline		
F0000191- 0193	59		CECo Execs (Reed)	1/16/85	Telecopy of List		
F0000194- 0195	59		CECo Execs (Reed)		List		
F0000196- 0197	59		CECo Execs (Reed)		List		
F0000198	59		CECo Execs (DelGeorge)		Diagram		
F0000199- 0231	59		CECo Execs (DelGeorge)	6/25/85	Report		
F0000233- 0326	59		CECo Execs (Del George)	4/25/84	Report		
F0000393- 00395	59		CECo Executive (Thomas)	06/13/85	Hand- Written Notes		
F0000396- 00420	59		CECo Executive (Thomas)	06/08/83			
F0000421- 00430	59		CECo Executives	07/15/85	Draft Letter		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
G0000001-0008	59		CECo Licensing/Downtown (Alexander)	07/11/80	Memo w/IE	Gudac	Shewski
G00000021-0032	59		CECo Licensing/Downtown (Miosi)	10/27/83	Meeting Notes		Tapella
G00000064	59		CECo Licensing/Downtown (Miosi)	10/24/83	1 page from Report		
G00000065-0067	59		Licensing Downtown (Miosi)	10/11/83	Report		Schultz/Yin
G00000068-0069	59		Licensing Downtown (Miosi)	10/24/83	Handwritten notes		
G00000070-0076	59		Licensing Downtown (Miosi)	6/5/85	Letter	Various	Miosi
G00000077-0103	59		Licensing Downtown (Miosi)	4/10/85	Letter	Various	Smith
G00000126-0149	59		Licensing Downtown (Miosi)	02/21/85	Letter	Wallace	Shelton

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
G0000198- 0200	59		CECo/Licens- ing Downtown (Miosi)	02/20/85	Letter	Smith	
G0000201- 0203	59		CECo/Licens- ing Downtown (Miosi)	11/18/83	Letter	Swartz	
G0000204- 0205	59		Licensing/ Downtown (Miosi)	10/04/83	Letter	Swartz	
G0000206- 0207	59		Licensing/ Downtown (Miosi)	08/23/83	Letter	Keppler	Farrar
G0000208- 214	59		CECo/Licens- ing Downtown (Miosi)	11/2/83	Memo	Swartz/ Tramm	Tapella
G0000215- 0220	59		CECo Licens- ing Downtown (Miosi)	8/16/83	Letter	Abraham	Reedy
G0000221- 0222	59		CECo Licens- ing Downtown (Miosi)	8/17/83	Letter	Keppler	Farrar
G0000223- 0225	59		CECo Licens- ing Downtown (Miosi)	11/15/83	Letter	Keppler	Farrar
G0000226	59		CECo Licens- ing Downtown (Miosi)	11/14	Hand- written notes		
G0000227- 0228	59		CECo Licens- ing Downtown (Miosi)	8/23/83	Letter	Keppler	Farrar

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
G0000229	59		CECo Licensing Downtown (Miosi)	8/22/83	Handwritten notes		
G0000230-0231	59		CECo Licensing Downtown (Miosi)	3/17/83	Letter	Keppler	Farrar
G0000232-0235	59		CECo Licensing Downtown (Miosi)	8/16/83	Letter	Keppler	Farrar
G0000236-0238	59		CECo Licensing Downtown (Miosi)	8/23/83	Handwritten memo		
G0000255-	59		CECo Licensing Downtown Miosi	07/12/85	Handwritten Notes		
G0000256-	59		CECo Licensing Downtown Miosi	06/14/85	Handwritten Notes		
G0000257-0274	59		Licensing	07/17/84	Report		Farrar
G0000275-0287	59		Licensing	06/15/84	Report		Farrar
G0000288-0299	59		Licensing	03/16/84	Report		Farrar
G0000300-0311	59		Licensing	01/16/84	Report		Farrar

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
G0000535- 0541	59		Licensing	09/09/82	Memo	Cosaro	Wallace
G0000597- 0623	59		Licensing	04/08/85	Letter	Vahle	Jones
G0000636- 00640	59		CECo Licensing Downtown (Smith)	02/28/84	Memo	Various	Swartz
G0000641- 00645	59		CECo Licensing Downtown (Smith)	02/28/85	Memo	Various	Swartz
G0000646- 00649	59		CECo Licensing Downtown (Smith)	01/18/85	Hand- written Notes		
G0000650- 00663	59		CECo Licensing Downtown (Smith)	03/02/84	Report w/Hand- written Notes		
G0000664- 00715	59		Licensing	12/20/83	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
G0000716- 00718	59		Licensing	10/24/83	Hand- written Notes		
G0000719- 00723	59		Licensing	12/07/83	Hand- written Notes		
G0000724- 00732	59		Licensing	12/20/83	Hand- written Notes		
G0000733- 00735	59		Licensing	12/20/83	Report		
G0000736- 00750	59		Licensing	02/03/84	Hand- written Notes		
G0000751- 00754	59		Licensing	02/22/84	Letter	Shewski	Farrar
G0000755- 00758	59		Licensing	02/28/84	Report		
G0000759- 00761	59		Licensing	03/12/84	Letter	Swartz	Farrar
G0000762- 00767	59		Licensing	10/24/83	Hand- written Notes		
G0000768- 00845	59		Licensing	01/13/84	Report	Reed	Swartz

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
G0000849- 00860	59		CECo Licens- ing/Downtown	03/12/84	Memo	Reed	Farrar
G0000861- 00871	59		CECo Licens- ing/Downtown	11/10/82	Memo	Davis	DelGeorge
G0000872- 00873	59		CECo Licens- ing/Downtown	11/19/82	Handwritten Notes		
G0000874- 00909	59		CECo Licens- ing/Downtown	11/06/84	Letter	Reed	Norelius

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
I0003833- 3853	59		General Office QA	07-13-21/84	Audit		
I0003854- 3887	59		General Office QA	10/22/82	Audit Report		
I0003833- 03853	59		General Office QA	09/13-21/82	Audit		
I0003854- 03887	59		General Office QA	10/22/82	Audit Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0000001- 00014	59		Sargent & Lundy		Report (Jones)		
J0000015- 00021	59		Sargent & Lundy		Report (Jones)		
J0000022- 00023	59		Sargent & Lundy		Report (Jones)		
J0000024	59		Sargent & Lundy	03/26/85	Handwritten Notes		
J0000025	59		Sargent & Lundy	05/22/85	Handwritten Notes		
J0000026	59		Sargent & Lundy	06/19/85	Letter	Jacobs	Taylor
J0000027- 00029	59		Sargent & Lundy	05/21/85	Memo	Vetter	Jones
J0000030- 00031	59		Sargent & Lundy	05/21/85	Memo	Vetter	Jones
J0000032- 00033	59		Sargent & Lundy	04/16/85	Notes		
J0000034- 00035	59		Sargent & Lundy	04/10/85	Memo	Tenwinkel	Hinemann

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0000036-00063	59		Sargent & Lundy	04/05/85	Form		
J0000064-00065	59		Sargent & Lundy	03/25/85	Memo	Amin	Jones
J0000066	59		Sargent & Lundy	11/21/84	Memo	Dermanjian	Calwill
J0000067-00071	59		Sargent & Lundy	11/06/84	Field Transmittal	Vahle	Parduhn
J0000072	59		Sargent & Lundy	10/25/84	Memo	Jones	Fang/Doyle
J0000073-00102	59		Sargent & Lundy	10/18/84	Design Information Transmittal		
J0000103-00106	59		Sargent & Lundy	10/09/84	Memo	Vetter	Amin
J0000107	59		Sargent & Lundy	10/19/84	Memo	Parduhn	Yunus
J0000108-00109	59		Sargent & Lundy	10/01/84	Memo	Dermanjian	Calwill
J0000110-00114	59		Sargent & Lundy	09/14/84	Report		
J0000115-00116	59		Sargent & Lundy	09/13/84	Memo	Kostal	Fang
J0000117-00118	59		Sargent & Lundy		Report (Jones)		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0000119- 00120	59		Sargent & Lundy	05/15/85	Handwritten Notes		
J0000121- 00122	59		Sargent & Lundy	06/19/85	Handwritten Notes		
J0000123- 00124	59		Sargent & Lundy	06/25/85	Handwritten Notes		
J0000125	59		Sargent & Lundy	03/04/85	Memo	Amin	Jones
J0000126- 00128	59		Sargent & Lundy	05/24/85	Memo	Branch- Various	Jones
J0000129- 00133	59		Sargent & Lundy	03/11/85- 03/13/85	Notes		
J0000134- 00136	59		Sargent & Lundy	02/05/85	Memo	Jones	Lim
J0000137	59		Sargent & Lundy	01/07/85	Memo	Jones	Kosik
J0000187- 00239	59		S & L Downtown	01/04/85	Inter- office Memo	Various	Jones
J0000240- 00247	59		S & L Downtown	04/03/85	Letter	Shelton	Netzel

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0000248- 00255	59		S & L Downtown	04/03/85	Letter	Shelton	Netzel
J0000256- 00261	59		S & L Downtown	04/16/85	Memo	Various	Ainger
J0000262- 00268	59		S & L Downtown	04/09/85	Letter	Shelton	Netzel
J0000269- 00275	59		S & L Downtown	04/09/85	Letter	Shelton	Netzel
J0000276- 00282	59		S & L Downtown	04/09/85	Inter- office Memo	Netzel	Hooks
J0000283- 00339	59		S & L Downtown		Memo		
J0000340- 00369	59		S & L Downtown		Memo		
J0000370- 00408	59		S & L Downtown		Memo		
J0000409- 00417	59		S & L Downtown	05/15/85	Inter- office Memo	Various	McNamara
J0000418- 00428	59		S & L Downtown	07/26/85	Inter- office Memo	Wahlert	Kamba/Babic
J0000429- 00433	59		S & L Downtown	09/10/84	Survey		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0000434- 00454	59		S & L Downtown	11/28/84	Memo	Various	
J0000455- 00497	59		S & L Downtown	07/29/85	Letter	Vahle	Hitzeman
J0000498- 00777	59		S & L Downtown	12/12/84	Inter- office Memo	File	Hooks
J0000778- 00833	59		S & L Downtown	12/21/84	Inter- office Memo	File 3.9	Hooks
J0000834- 00836	59		S & L Downtown	01/21/85	Letter	Tramm	Netzel
J0000837- 00838	59		S & L Downtown	01/22/85	Inter- office Memo	Various	Kostal
J0000839- 00871	59		S & L Downtown	02/13/85	Inter- office Memo	File 3.9	Hooks
J0000872- 00896	59		S & L Downtown	11/26/84	Letter	Tramm	Netzel
J0000897- 00909	59		S & L Downtown	01/21/85	Inter- office Memo	Various	Hooks

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0000910- 00921	59		S & L Downtown	12/26/84	Letter	Muffett	Longlais
J0000922- 00923	59		S & L Downtown	12/27/84	Inter- office Memo	File	Longlais
J0000924- 00949	59		S & L Downtown	12/13/84	Memo	Various	
J0000950- 00957	59		S & L	04/02/85	Letter	Shamblin	Hitzeman
J0000958- 00967	59		S & L		Letter	Various	Smith
J0000968- 00969	59		S & L	12/04/84	Memo	Kurtz	Hitzeman
J0000970- 00992	59		S & L	02/27/85	Memo	File	Hitzeman
J0000993- 00994	59		S & L	02/19/85	Letter	Vahle	Hitzeman
J0000995	59		S & L	02/12/85	Memo	Hitzeman	Kamba
J0000996- 00997	59		S & L	01/28/85	Letter	Hitzeman	Farr

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0000998-01006	59		S & L	02/20/85	Memo	Hitzeman, Patel, Kazmi	Agrawal
J0001007-01008	59		S & L	04/18/85	Letter	Vahle	Jacques
J0001009-01016	59		S & L	07/09/85	Letter	Vahle	Jacques
J0001017-01028	59		S & L	07/24/84	Memo	Voigt	McCluer
J0001029-01039	59		S & L	08/20/84	Letter	Elias	McCluer
J0001040-01053	59		S & L	05/01/85	Letter	Various	Smith
J0001054-01058	59		S & L	05/14/85	Memo	Shamblin	Vahle
J0001059-01076	59		S & L	04/24/85	Memo	Agrawal	Both/Lunardini
J0001077	59		S & L	04/01/85	Letter	Vahle	Jacques
J0001078-01088	59		S & L	01/14/85	Memo	Patel	Hitzeman

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0001089- 01101	59		S & L	08/20/84	Letter	Elias	McCluer
J0001102- 01113	59		S & L	07/24/84	Memo	Voigt	McCluer
J0001114- 01115	59		S & L	12/26/84	Memo	Hitzeman	Kurtz
J0001116- 01117	59		S & L	01/25/85	Memo	Agrawal	Kurtz
J0001118- 01119	59		S&L/ Downtown	11/27/84	Notes of Meeting	Various	Kurtz
J0001120- 01129	59		S&L/ Downtown	11/7/84	Letter	Elias	Agrawal
J0001130	59		S&L/ Downtown	8/6/84	Inter- office Memo	Kurtz	Agrawal
J0001131- 01135	59		S&L/ Downtown	6/18/85	Notes of Meeting	Various	McCluer
J0001136- 01137	59		S&L/ Downtown	5/1/84	Inter- office Memo	Kurtz/ Kosik	Netzel/ McCluer
J0001138	59		S&L/ Downtown	6/7/84	Inter- office Memo	McCluer	Kurtz

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0001139- 01145	59		S&L/ Downtown	7/2/85	Inter- office Memo	Agraval	Kurtz
J0001146- 01167	59		S&L/ Downtown	5/21/84	Inter- office Memo	Kosik	McCluer
J0001169- 01176	59		S&L/ Downtown	7/9/85	Letter	Vahle	Jacques
J0001177- 01178	59		S&L/ Downtown	4/18/85	Letter	Vahle	Jacques
J0001179- 01186	59		S&L/ Downtown	4/25/85	Letter	Vahle	Treece
J0001187- 01188	59		S&L/ Downtown	4/11/85	Letter	Vahle	Treece
J0001189-	59		S&L/	2/19/85	Interoffice Memo	Regan	Treece
J0001196- 01207	59		S&L/ Downtown	4/11/85	Letter	Vahle	Treece
J0001208- 01216	59		S&L/ Downtown	3/14/85	Letter	Vahle	Treece

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
J0001264- 01273	59		S & L	06/22/84	Letter	Reed et al	Swartz
J0001274- 01275	59		S & L	01/20/83	Letter	Deress	Green
J0001276- 01277	59		S & L	07/19/83	Letter	Deress	Green
J0001278- 01316	59		S & L	08/9/85	Engineering Change Notice		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo QA/QC	Date of Document 07/03/79	Type of Document NCR	To	From
K0011648- 11649	59						
K0011650- 11664	59		PGCo QA/QC	10/13/81	NCR		
K0011665- 11680	59		PGCo QA/QC	01/18/85	NCR		
K0011683- 11689	59		PGCo QA/QC	12/13/84	NCR		
K0011690- 11708	59		PGCo QA/QC	12/17/84	NCR		
K0011709- 11729	59		PGCo QA/QC	12/18/84	NCR		
K0011730- 11734	59		PGCo QA/QC	12/17/84	NCR		
K0011735- 11751	59		PGCo QA/QC	12/17/84	NCR		
K0011752- 11766	59		PGCo QA/QC	12/19/84	NCR		
K0011767- 11781	59		PGCo QA/QC	12/18/84	NCR		
K0011781- 11793	59		PGCo QA/QC	12/18/84	NCR		
K0011794- 11808	59		PGCo QA/QC	12/19/84	NCR		
K0011809- 11823	59		PGCo QA/QC	12/19/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo QA/QC	Date of Document 12/19/84	Type of Document NCR	To	From
K0011824- 11828	59						
K0011829- 11842	59		PGCo QA/QC	12/20/84	NCR		
K0011843- 11863	59		PGCo QA/QC	12/20/84	NCR		
K0011864- 11875	59		PGCo QA/QC	12/31/84	NCR		
K0011876- 11894	59		PGCo QA/QC	12/21/84	NCR		
K0011895- 11909	59		PGCo QA/QC	12/31/84	NCR		
K0011910- 11927	59		PGCo QA/QC	01/04/85	NCR		
K0011928- 11943	59		PGCo QA/QC	12/18/84	NCR		
K0011944- 11954	59		PGCo QA/QC	12/14/84	NCR		
K0011955- 11965	59		PGCo QA/QC	12/31/84	NCR		
K0011966- 11983	59		PGCo QA/QC	12/31/84	NCR		
K0011984- 11997	59		PGCo QA/QC	01/08/85	NCR		
K0011998	59		PGCo QA/QC	01/10/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo QA/QC	Date of Document 01/12/85	Type of Document NCR	To	From
K0011999- 12009	59						
K0012010- 12025	59		PGCo QA/QC	01/12/85	NCR		
K0012026- 12040	59		PGCo QA/QC	01/12/85	NCR		
K0012041- 12053	59		PGCo QA/QC	01/11/85	NCR		
K0012054- 12070	59		PGCo QA/QC	01/11/85	NCR		
K0012071- 12083	59		PGCo QA/QC	01/09/85	NCR		
K0012084- 12096	59		PGCo QA/QC	01/11/85	NCR		
K0012097- 12103	59		PGCo QA/QC	01/15/85	NCR		
K0012104- 12116	59		PGCo QA/QC	01/17/85	NCR		
K0012117- 12130	59		PGCo QA/QC	01/16/85	NCR		
K0012131- 12140	59		PGCo QA/QC	01/17/85	NCR		
K0012141- 12151	59		PGCo QA/QC	01/17/85	NCR		
K0012152- 12160	59		PGCo QA/QC	01/17/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0012161- 12173	59		PGCo QA/QC	01/17/85	NCR		
K0012174- 12184	59		PGCo QA/QC	01/17/85	NCR		
K0012185- 12197	59		PGCo QA/QC	02/12/85	NCR		
K0012198- 12211	59		PGCo QA/QC	02/12/85	NCR		
K0012212- 12219	59		PGCo QA/QC	undated	NCR		
K0013150- 13162	59		PGCo QA/QC	12/27/83	QA Audit		
K0013163- 13164	59		PGCo QA/QC	10/21/83	Audit Survey		
K0013165- 13166	59		PGCo QA/QC	03/08/84	Audit Survey		
K0013167- 13168	59		PGCo QA/QC	03/08/84	Audit Survey		
K0013169- 13171	59		PGCo QA/QC	03/07/84	Audit Survey		
K0013172- 13173	59		PGCo QA/QC	03/08/84	Audit Survey		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0013174- 13181	59		PGCo QA/QC	03/08/84	Audit Survey		
K0013182- 13199	59		PGCo QA/QC	06/14/84	Audit Survey		
K0013200- 13202	59		PGCo QA/QC	07/13/84	Audit Survey		
K0013203- 13208	59		PGCo QA/QC	11/16/84	Audit Survey		
K0013209- 13219	59		PGCo QA/QC	11/30/82	PGCo Procedure		
K0013220- 13262	59		PGCo QA/QC	05/18/84	NCR		
K0013263- 13271	59		PGCo QA/QC	02/15/85	NCR		
K0013272- 13306	59		PGCo QA/QC	02/25/85	NCR		
K0013307- 13314	59		PGCo QA/QC	04/18/85	NCR		
K0013315- 13324	59		PGCo QA/QC	04/14/85	NCR		
K0013325- 13329	59		PGCo QA/QC	06/21/85	NCR		
K0013330- 13333	59		PGCo QA/QC	06/20/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0013334- 13340	59		PGCo QA/QC	06/25/85	NCR		
K0013341- 13343	59		PGCo QA/QC	06/25/85	NCR		
K0013344- 13346	59		PGCo QA/QC	08/05/85	NCR		
K0013347- 13374	59		PGCo QA/QC	03/12/84	NCR		
K0013375- 13374	59		PGCo QA/QC	03/03/85	NCR		
K0013395- 13401	59		PGCo QA/QC	05/18/84	NCR		
K0013402- 13411	59		PGCo QA/QC	05/18/84	NCR		
K0013412- 13421	59		PGCo QA/QC	05/18/84	NCR		
K0013421- 13427	59		PGCo QA/QC	05/18/84	NCR		
K0013428- 13438	59		PGCo QA/QC	05/18/84	NCR		
K0013439- 13450	59		PGCo QA/QC	07/26/84	NCR		
K0013451- 13465	59		PGCo QA/QC	07/26/84	NCR		
K0013466- 13469	59		PGCo QA/QC	07/27/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0013470- 13478	59		PGCo QA/QC	09/13/84	NCR		
K0013479- 13486	59		PGCo QA/QC	08/21/84	NCR		
K0013487- 13489	59		PGCo QA/QC	03/08/85	NCR		
K0013490- 13492	59		PGCo QA/QC	03/08/85	NCR		
K0013493- 13495	59		PGCo QA/QC	04/27/83	NCR with Supporting Documents		
K0013496- 13541	59		PGCo QA/QC	09/21/84	NCR with Supporting Documents		
K0013542- 13631	59		PGCo QA/QC		NCR with Supporting Documents		
K0013632- 13672	59		PGCo QA/QC		NCR with Supporting Documents		
K0013673- 13692	59		PGCo QA/QC		NCR with Supporting Documents		
K0012220	59		PGCo QA/QC	11/10/83	Memo	Stewart	O'Connor
K0012221	59		PGCo QA/QC	10/11/83	Memo	O'Connor	Cosaro
K0012222	59		PGCo QA/QC	10/10/83	Memo	O'Connor	Stewart

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0012223- 12246	59		PGCo QA/QC	04/16/83	Const. Procedure		
K0012247- 12292	59		PGCo QA/QC	11/08/83	Const. Procedure		
K0012293- 12295	59		PGCo QA/QC	12/21/83	Memo	O'Connor	Cosaro
K0012296	59		PGCo QA/QC	04/30/84	Memo	Various	Grreff
K0012297- 12332	59		PGCo QA/QC	01/20/84	Report		
K0012333- 12337	59		PGCo QA/QC	11/08/83	Letter	Forbes O'Connor	Groth
K0012338- 12395	59		PGCo QA/QC	08/13/84	Report		
K0012396- 12413	59		PGCo QA/QC	03/15/85	NCR with Supporting Documents		
K0012414- 12433	59		PGCo QA/QC	04/02/85	NCR with Supporting Documents		
K0012434- 12438	59		PGCo QA/QC	07/03/85	Memo	Quaka	Marquardt Donaldson
K0012450- 12455	59		PGCo QA/QC	09/23/83	NCR with Supporting Documents		
K0012456- 12509	59		PGCo QA/QC	07/12/85	NCR with Supporting Documents		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0012510- 12587	59		PGCo QA/QC	07/12/85	NCR with Supporting Documents		
K0012588- 12590	59		PGCo QA/QC	09/09/83	NCR with Supporting Documents		
K0012591- 12645	59		PGCo QA/QC	07/19/83	NCR with Supporting Documents		
K0012646- 12708	59		PGCo QA/QC	05/02/84	NCR with Supporting Documents		
K0012709- 12714	59		PGCo QA/QC	02/20/84	NCR with Supporting Documents		
K0012715- 12731	59		PGCo QA/QC	06/17/83	NCR with Supporting Documents		
K0012732- 12735	59		PGCo QA/QC	09/23/83	NCR with Supporting Documents		
K0012736- 12739	59		PGCo QA/QC	04/26/83	NCR with Supporting Documents		
K0012740- 12753	59		PGCo QA/QC	05/23/83	NCR with Supporting Documents		
K0012754- 12764	59		PGCo QA/QC	04/11/84	NCR with Supporting Documents		
K0010874- 10878	59		PGCo QA/QC	06/15/82	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo QA/QC	Date of Document 06/29/82	Type of Document NCR	To	From
K0010879- 10883	59		PGCo QA/QC	06/29/82	NCR		
K0010084- 10888	59		PGCo QA/QC	09/8/82	NCR		
K0010889- 10890	59		PGCo QA/QC	09/21/82	NCR		
K0010891- 10896	59		PGCo QA/QC	09/28/82	NCR		
K0010897- 10900	59		PGCo QA/QC	09/28/82	NCR		
K0010901- 10902	59		PGCo QA/QC	10/06/82	NCR		
K0010903- 10920	59		PGCo QA/QC	10/18/82	NCR		
K0010921- 10926	59		PGCo QA/QC	10/18/82	NCR		
K0013956- 13962	59		PGCo	12/13/84	NCR		
K0013963- 13969	59		PGCo	12/13/84	NCR		
K0013970- 14010	59		PGCo	12/15/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo	Date of Document 12/17/84	Type of Document NCR	To	From
K0014011- 14029	59						
K0014030- 14041	59		PGCo	12/17/84	NCR		
K0014042- 14062	59		PGCo	12/18/84	NCR		
K0014063- 14067	59		PGCo	12/17/84	NCR		
K0014068- 14084	59		PGCo	12/17/84	NCR		
K0014085- 14089	59		PGCo	12/17/84	NCR		
K0014090- 14102	59		PGCo	12/18/84	NCR		
K0014103- 14117	59		PGCo	12/19/84	NCR		
K0014118- 14131	59		PGCo	12/18/84	NCR		
K0014132- 14146	59		PGCo	12/19/84	NCR		
K0014147- 14161	59		PGCo	12/19/84	NCR		
K0014162- 14176	59		PGCo	12/19/84	NCR		
K0014177- 14192	59		PGCo	12/18/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo	Date of Document	Type of Document	To	From
K0014193- 14197	59			12/19/84	NCR		
K0014198- 14211	59		PGCo	12/20/84	NCR		
K0014212- 14223	59		PGCo	12/20/84	NCR		
K0014224- 14224	59		PGCo	12/20/84	NCR		
K0014245- 14264	59		PGCo	01/02/85	NCR		
K0014265- 14276	59		PGCo	12/31/84	NCR		
K0014277- 14295	59		PGCo	12/21/84	NCR		
K0014294- 14305	59		PGCo	12/18/84	NCR		
K0014306- 14315	59		PGCo	12/17/84	NCR		
K0014316- 14330	59		PGCo	12/17/84	NCR		
K0014331- 14348	59		PGCo	01/04/85	NCR		
K0014349- 14364	59		PGCo	12/18/84	NCR		
K0014365- 14375	59		PGCo	12/14/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo	Date of Document 12/31/84	Type of Document NCR	To	From
K0014376- 14386	59						
K0014387- 14400	59		PGCo	12/26/84	NCR		
K0014401- 14414	59		PGCo	01/08/85	NCR		
K0014415- 14421	59		PGCo	12/18/84	NCR		
K0014422	59		PGCo	01/10/85	NCR		
K0014423- 14442	59		PGCo	12/19/84	NCR		
K0014443- 14453	59		PGCo	01/12/85	NCR		
K0014454- 14462	59		PGCo	01/12/85	NCR		
K0014463- 14477	59		PGCo	01/12/85	NCR		
K0014478- 14492	59		PGCo	01/12/85	NCR		
K0014493- 14505	59		PGCo	01/11/85	NCR		
K0014506- 14522	59		PGCo	01/11/85	NCR		
K0014523- 14535	59		PGCo	01/09/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo	Date of Document 01/11/85	Type of Document NCR	To	From
K0014536- 14548	59						
K0014549- 14555	59		PGCo	01/15/85	NCR		
K0014556- 14563	59		PGCo	01/15/85	NCR		
K0014564- 14576	59		PGCo	01/17/85	NCR		
K0014577- 14591	59		PGCo	01/16/85	NCR		
K0014592- 14607	59		PGCo	01/16/85	NCR		
K0014608- 14617	59		PGCo	01/17/85	NCR		
K0014618- 14628	59		PGCo	01/17/85	NCR		
K0014629- 14637	59		PGCo	01/15/85	NCR		
K0014638- 14646	59		PGCo	01/17/85	NCR		
K0014647- 14659	59		PGCo	01/17/85	NCR		
K0014660- 14670	59		PGCo	01/17/85	NCR		
K0014671- 14684	59		PGCo	02/15/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo	Date of Document	Type of Document	To	From
K0014685- 14711	59			02/12/85	NCR		
K0014712- 14719	59		PGCo	Undated	NCR		
K0013948- 13955	59		PGCo	12/01/84	NCR		
K0014720- 14753	59		PGCo	09/09/83	Memo	Hite	Alcantar

K0014754- 14799	59		PGCo	08/04/81	Report		
--------------------	----	--	------	----------	--------	--	--

K0014800- 14824	59		PGCo	06/06/83	Report		
--------------------	----	--	------	----------	--------	--	--

K0014825- 14834	59		PGCo	02/24/84 & 03/01/84	Report		
--------------------	----	--	------	------------------------	--------	--	--

K0010921- 10926	59		PGCo QA/QC	10/18/82	NCR		
--------------------	----	--	---------------	----------	-----	--	--

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo QA/QC	Date of Document 10/06/82	Type of Document NCR	To	From
K0010927- 10928	59		PGCo QA/QC	10/06/82	NCR		
K0010929- 10949	59		PGCo QA/QC	10/22/82	NCR		
K0010950- 10960	59		PGCo QA/QC	10/25/82	NCR		
K0010961- 10964	59		PGCo QA/QC	10/25/82	NCR		
K0010965- 10979	59		PGCo QA/QC	10/26/82	NCR		
K0010980- 10979	59		PGCo QA/QC	11/20/82	NCR		
K0010984- 10985	59		PGCo QA/QC	11/20/82	NCR		
K0010986- 11004	59		PGCo QA/QC	02/11/83	NCR		
K0011005- 11010	59		PGCo QA/QC	02/11/83	NCR		
K0011011- 11014	59		PGCo QA/QC	04/22/83	NCR		
K0011015- 11020	59		PGCo QA/QC	01/17/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo QA/QC	Date of Document 07/24/84	Type of Document NCR	To	From
K0011021- 11031	59		PGCo QA/QC		NCR		
K0011032- 11039	59		PGCo QA/QC		NCR		
K0011040- 11050	59		PGCo QA/QC		Procedure		
K0011051- 11062	59		PGCo QA/QC		NCR		
K0011063- 11087	59		PGCo QA/QC		NCR		
K0011080a	59		PGCo QA/QC	02/16	Handwritten Carlson Notes		
K0011081a	59		PGCo QA/QC	01/13	Handwritten Carlson Notes		
K0011082a	59		PGCo QA/QC	01/11	Handwritten Carlson Notes		
K0011083a	59		PGCo QA/QC	10/05	Handwritten Carlson Notes		
K0011084a	59		PGCo QA/QC	11/21	Handwritten Carlson Notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCO QA/QC	Date of Document 11/09	Type of Document Handwritten Notes	To Carlson	From
K0011085a	59		PGCO QA/QC	11/09	Handwritten Notes	Carlson	
K0011086a	59		PGCO QA/QC	11/07	Handwritten Notes	Carlson	
K0011087a	59		PGCo QA/QC	10/24	Handwritten Notes	Carlson	
K0011088a	59		PGCo QA/QC	05/05	Handwritten Notes	Gorski	Carlson
K0011088a	59		PGCO QA/QC	10/13	Handwritten Notes	Carlson	
K0011089a	59		PGCo QA/QC	09/17	Handwritten Notes	Carlson	
K0011090	59		PGCo QA/QC	09/16	Handwritten Notes	Carlson	
K0011091	59		PGCo QA/QC	08/31	Handwritten Notes	Carlson	
K0011093	59		PGCo QA/QC	08/30	Handwritten Notes	Carlson	
K0011094	59		PGCo QA/QC	07/25	Handwritten Notes	Carlson	

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo QA/QC	Date of Document 07/20	Type of Document Handwritten Notes	To Carlson	From
K0011095	59						
K0011096	59		PGCo QA/QC	06/22	Handwritten Notes	Carlson	
K0011097	59		PGCo QA/QC	06/21	Handwritten Notes	Carlson	
K0011098	59		PGCo QA/QC	06/21	Handwritten Notes	Carlson	
K0011099	59		PGCo QA/QC	06/20	Handwritten Notes	Carlson	
K0011100	59		PGCo QA/QC	06/20	Handwritten Notes	Carlson	
K0011101	59		PGCo QA/QC	06/10	Handwritten Notes	Carlson	
K0011102	59		PGCo QA/QC	06/08	Handwritten Notes	Carlson	
K0011103	59		PGCO QA/QC	05/17	Handwritten Notes		Carlson
K0011104	59		PGCO QA/QC	05/19	Handwritten Notes		Carlson
K0011105	59		PGCO QA/QC	04/25	Handwritten Notes		Carlson

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document Handwritten Notes	To	From
K0011106	59		PGCO QA/QC	05/18			Carlson
K0011107 11115	59		PGCO QA/QC	05/12	Handwritten Notes		Carlson
K0011116	59		PGCo QA/QC	2/3	Handwritten Notes		Carlson
K0011117	59		PGCo QA/QC	1/26	Handwritten Notes		Carlson
K0011118	59		PGCo QA/QC	1/25	Handwritten Notes		Carlson
K0011119	59		PGCo QA/QC	1/24	Handwritten Notes		Carlson
K0011120	59		PGCo QA/QC	1/13	Handwritten Notes		Carlson
K0011121	59		PGCo QA/QC		Handwritten Notes		Carlson
K0011122	59		PGCo QA/QC	1/16	Handwritten Notes		Carlson
K0011123	59		PGCo QA/QC	12/06/83	Handwritten Notes		Carlson

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo QA/QC	Date of Document 12/07	Type of Document Handwritten Notes	To	From Carlson
K0011124	59						
K0011125	59		PGCo QA/QC	12/06	Handwritten Notes		Carlson
K0011126	59		PGCo QA/QC	11/02	Handwritten Notes		Carlson
K0011127	59		PGCo QA/QC	10/20	Handwritten Notes		Carlson
K0011128	59		PGCo QA/QC	09/07	Handwritten Notes		Carlson
K0011129	59		PGCo QA/QC	08/16	Handwritten Notes		Carlson
K0011130	59		PGCo QA/QC	07/20	Handwritten Notes		Carlson
K0011131	59		PGCo QA/QC	07/06	Handwritten Notes		Carlson
K0011132	59		PGCo QA/QC	06/30	Handwritten Notes		Carlson
K0011133	59		PGCo QA/QC	06/22	Handwritten Notes		Carlson
K0011134	59		PGCo QA/QC	05/12	Handwritten Notes		Carlson

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo QA/QC	Date of Document 03/19	Type of Document Handwritten Notes	To	From Carlson
K0011135	59						
K0011137- 11193	59		PGCo QA/QC	12/07/83	NCR		
K0011194- 11202	59		PGCo QA/QC	05/17/84	NCR		
K0011203- 11210	59		PGCo QA/QC	05/17/84	NCR		
K0011211- 11221	59		PGCo QA/QC	05/21/84	NCR		
K0011222- 11284	59		PGCo QA/QC	06/13/84	NCR		
K0011285- 11477	59		PGCo QA/QC	08/30/84	NCR		
K0011478- 11487	59		PGCo QA/QC		NCR		
K0011488- 11499	59		PGCo QA/QC	09/04/84	NCR		
K0011500- 11507	59		PGCo QA/QC		NCR		
K0011508- 11515	59		PGCo QA/QC	09/06/84	NCR		
K0011516- 11524	59		PGCo QA/QC	09/06/84	NCR		
K0011525- 11538	59		PGCo QA/QC	09/06/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0011539- 11572	59		PGCo QA/QC	11/06/84	NCR		
K0011573- 11612	59		PGCo QA/QC	10/18/84	NCR		
K0011613- 11647	59		PGCo QA/QC	10/18/84	NCR		
K0015000 00045	59		PGCo QA/QC	5/30/84	NCR		
K0000057- 00077	59		PGCo QA/QC	12/22/82	NCR		
K0000078- 00097a	59		PGCo QA/QC	06/13/84	NCR		
K0000098- 00102	59		PGCo QA/QC	09/01/84	NCR		
K0000103- 00122	59		PGCo QA/QC	11/05/84	NCR		
K0000123- 00132	59		PGCo QA/QC	11/21/84	NCR		
K0000133- 00138	59		PGCo QA/QC	11/26/84	NCR		
K0000139- 00144	59		PGCo QA/QC	12/08/84	NCR		
K0000145- 00150	59		PGCo QA/QC	12/11/84	NCR		
K0000151- 00156	59		PGCo QA/QC	12/08/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo QA/QC	Date of Document 12/08/84	Type of Document NCR	To	From
K0000157- 00164	59		PGCo QA/QC	12/08/84	NRC		
K0000165- 00171	59		PGCo QA/QC	12/13/84	NRC		
K0000172- 00183	59		PGCo QA/QC	12/17/84	NRC		
K0000184- 00197	59		PGCo QA/QC	12/28/84	NRC		
K0000198- 00217	59		PGCo QA/QC	01/02/85	NRC		
K0000218- 00232	59		PGCo QA/QC	12/26/84	NRC		
K0000233- 00244	59		PGCo QA/QC	12/19/84	NRC		
K0000245- 00254	59		PGCo QA/QC	12/27/84	NRC		
K0000255- 00265	59		PGCo QA/QC	01/05/85	NRC		
K0000266- 00272	59		PGCo QA/QC	01/15/85	NRC		
K0000273- 00282	59		PGCo QA/QC	01/05/85	NRC		
K0000283- 00292	59		PGCo QA/QC	01/19/85	NRC		
K0000293- 00306	59		PGCo QA/QC	01/21/85	NRC		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo QA/QC	Date of Document 01/21/85	Type of Document NRC	To	From
K0000307- 00312	59		PGCo QA/QC	01/21/85	NRC		
K0000313- 00321	59		PGCo QA/QC	01/30/85	NRC		
K0000322- 00326	59		PGCo QA/QC	01/30/85	NRC		
K0000327- 00335	59		PGCo QA/QC	01/24/85	NRC		
K0000336- 00342	59		PGCo QA/QC	02/13/85	NRC		
K0000343- 00355	59		PGCo QA/QC	02/11/85	NRC		
K0000356- 00368	59		PGCo QA/QC	02/28/85	NRC		
K0000369- 00381	59		PGCo QA/QC	02/28/85	NRC		
K0000382- 00388	59		PGCo QA/QC	03/05/85	NRC		
K0000389- 00391	59		PGCo QA/QC	02/25/85	NRC		
K0000392- 00405	59		PGCo QA/QC	02/08/85	NRC		
K0000415- 00417	59		PGCo QA/QC	03/18/85	NRC		
K0000418- 00452	59		PGCo QA/QC	02/25/85	NRC		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document PGCo QA/QC	Date of Document 03/20/85	Type of Document NRC	To	From
K0000453- 00455	59		PGCo QA/QC	03/20/85	NRC		
K0000460- 00468	59		PGCo QA/QC	04/03/85	NRC		
K0000469- 00486	59		PGCo QA/QC	03/20/85	NRC		
K0000487- 00496	59		PGCo QA/QC	04/19/85	NRC		
K0000497- 00499	59		PGCo QA/QC	04/27/85	NRC		
K0000500- 00502	59		PGCo QA/QC	04/27/85	NRC		
K0000503- 00522	59		PGCo QA/QC	05/03/85	NRC		
K0000523- 00529	59		PGCo QA/QC	05/08/85	NRC		
K0000530- 00535	59		PGCo QA/QC	05/09/85	NRC		
K0000536- 00542	59		PGCo QA/QC	05/13/85	NRC		
K0000543- 00548	59		PGCo QA/QC	05/07/85	NRC		
K0000549- 00554	59		PGCo QA/QC	05/07/85	NRC		
K0000555- 00558	59		PGCo QA/QC	06/05/85	NRC		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
K0000559-00562	59		PGCo QA/QC	06/12/85	NRC		
K0000563-00565	59		PGCo QA/QC	06/07/85	NRC		
K0000566-00571	59		PGCo QA/QC	06/26/85	NRC		
K0000572-00573	59		PGCo QA/QC	06/19/85	NRC		
K0000574-00575	59		PGCo QA/QC	06/19/85	NRC		
K0000576-00578	59		PGCo QA/QC	06/25/85	NRC		
K0000579-00580	59		PGCo QA/QC	07/11/85	NRC		
K0000581-00583	59		PGCo QA/QC	07/23/85	NRC		
K0015128-15157	59		PGCo QA	08/06/82	Procedure		
K0015158-15210	59		PGCo QA	01/10/83	Procedure		
K0015211-15262	59		PGCo QA	04/16/83	Procedure		
K0015263-15320	59		PGCo QA	05/02/84	Procedure		
K0015321-15387	59		PGCo QA	03/12/85	Procedure		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document Procedure	To	From
K0015388- 15399	59		PGCo QA	01/24/83	Procedure		
K0015400- 15404	59		PGCo QA	09/06/83	Procedure		
K0015405- 15412	59		PGCo QA/QC		NCR		
K0015413- 15445	59		PGCo QA/QC		NCR		
K0015446- 15478	59		PGCo QA/QC	01/03/85	Procedure		
K0015479- 15500	59		PGCo QA/QC	05/07/84	Procedure		
K0015501- 15512	59		PGCo QA/QC	06/19/85	Procedure		
K0015513- 15523	59		PGCo QA/QC	11/02/84	Procedure		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*L0000447	59		PGCo Other	10/10/83	Letter	O'Connor	
*L0000448- 000471	59		PGCo Other	03/23/81	Construc- tion Procedure		
*L0000472	59		PGCo Other	10/11/83	Letter	O'Connor	Cosaro/ Sommerfield
*L0000473 000517	59		PGCo Other	03/23/81	Construc- tion Pro- cedure		
*L0000518	59		PGCo Other	11/10/83	Letter	Stewart	O'Connor
*L0000519 000532	59		PGCo Other	08/04/81	Report		
*L0000533 000543	59		PGCo Other	12/29/83	Report		
*L0000544 000547	59		PGCo Other	12/30/83	Report		
*L0000548 000549	59		PGCo Other	01/03/84	Report		
*L0000550 000555	59		PGCo Other	11/18-22/ 83	Report		
*L0000556 000561	59		PGCo Other	02/10/84	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*L0000562- 00610	59		PGCo Other	11/03/83	ECN		
*L0000611- 00615	59		PGCo Other	11/18/83	Report		
*L0000616- 00624	59		PGCo Other	08/04/81	Report		
*L0000625- 00627	59		PGCo Other	11/08/83	Letter	Sommerfield	O'Connor
*L0000628- 00630	59		PGCo Other	11/21/83	Letter	Sommerfield	O'Connor
*L0000631- 00644b	59		PGCo Other	08/04/81	Report		
*L0000645- 00680	59		PGCo Other	05/16/83	Report		
*L0000681- 00684	59		PGCo Other	03/07/84	Surveill- ance Report		
*L0000685- 00699	59		PGCo Other	05/04/84	Audit Report		
*L0000700- 00703	59		PGCo Other	07/09/84	Surveill- ance Report		
*L0000704	59		PGCo Other	12/27/84	Surveill- ance Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*L0000705- 000709	59		PGCo Other	07/26/85	Memo		
*L0000710	59		PGCo Other	12/12/83	S&L Field Transmittal Form		
*L0000711	59		PGCo Other	02/09/84	S&L Field Transmittal Form		
*L0000712- 000713	59		PGCo Other	05/29/84	S&L Field Transmittal Form		
*L0000714- 000715	59		PGCo Other	09/13/84	S&L Field Transmittal Form		
*L0000716- 000717	59		PGCo Other	05/12/83	Letter	Sommerfield	Kosik
*L0000718	59		PGCo Other	05/16/83	Letter	Cosaro	Hunsader
*L0000719- 000720	59		PGCo Other	12/02/83	Letter	Sommerfield	Kosik/Reddi
*L0000721	59		PGCo Other	12/08/83	Letter	Cosaro	Hunsader

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*L0000722	59		PGCo Other	12/19/83	Manual page, hand- written		
*L0000723	59		PGCo Other	12/13/83	Letter	O'Connor	Groth
*L0000724 000725	59		PGCo Other	12/19/83	Letter	Wallace	Sommerfield
*L0000726	59		PGCo Other	12/19/83	Memo	O'Connor	Cosaro
*L0000727 000738	59		PGCo Other	06/06/83	Surveill- ance Report		
*L0000739- 000746	59		PGCo Other	07/06/82	Audit Report		
*L0000747 000763	59		PGCo Other	12/09/81	Surveil- lance Report		
*L0000764 000776	59		PGCo Other	09/09/80	Audit Report		
*L0000777 000787	59		PGCo Other	08/04/81	Audit Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*L0000788 000797	59		PGCo Other	06/11/85	Surveil- lance Report		
*L0000798 000809	59		PGCo Other	10/20/83	Memo	Hite	Forbes
*L0000810 000814	59		PGCo Other	09/06/84	QA Surveil- lance		
*L0000815 000821	59		PGCo Other	11/08/84	Memo	Schimmels/ Fus	Knaff/Stewa
*L0000822 000843	59		PGCo Other	10/31/84	Memo	Stewart/ O'Connor	Putz
*L0000844 000848	59		PGCo Other	12/03/84	QA Surveil- lence Checklist		
*L0000849 000853	59		PGCo Other	01/10/85	QA Surveil- lence Checklist		
*L0000854 000858	59		PGCo Other	02/23/85	QA Surveil- lence Checklist		
*L0000859 000863	59		PGCo Other	01/21/85	QA Surveil- lence Checklist		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*L0000864 000866	59		PGCo Other	02/26/85	QA Surveil- lence Checklist		
*L0000867 000871	59		PGCo Other	03/04/85	QA Surveil- lence Checklist		
*L0000872 000876	59		PGCo Other	07/26/85	Memo	O'Connor	Brautigam
*L0000877 000883	59		PGCo	04/01/85	Letter	Reed	National Board of Boiler and Pressure Vessel
*L0000884 000889	59		PGCo	04/25/85	Letter	Shamblin	O'Connor
*L0000890 000911	59		PGCo	05/27/85	Letter	McDonald	Wallace
*L0000912 000913	59		PGCo	07/20/84	Letter	Keppler	Sevorty
*L0000914 000915	59		PGCo	09/18/84	Letter	Keppler	Smith
*L0000916 000918	59		PGCo	11/02/84	Letter	Keppler	Smith
*L0000919 000931	59		PGCo	07/25/84	NCR 633	Westermeyer	Quaka
*L0000932 000941	59		PGCo	10/26/84	NCR 633 Rev. 1	Elias	Quaka

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*L0000942 000946	59		PGCo	11/28/84	Letter	Keppler	Smith
*L0000947 000970	59		PGCo	Undated	Procedure PCD-07		
*L0000971 000980	59		PGCo	08/08/85	Flimsies		
*L0000981 000994	59		PGCo	03/21/84	QC Proce- dure QCP-B4		
*L0000995	59		PGCo	04/08/81	Letter	Merwin	Paul
*L0000996 001000	59		PGCo Other	04/22/81	FCR L1450		
*L0001001	59		PGCo Other	05/01/81	List		
*L0001002	59		PGCo Other	07/06/81	Letter	Enger	Merwin
*L0001003 001007	59		PGCo Other	07/09/81	Shipping Manifest	CECo	
*L0001008 001009	59		PGCo Other	07/09/81	Purchase Order		
*L0001010 001011	59		PGCo Other	06/12/84	Letter	Skoca	Simmons

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*L0001012 001016	59		PGCo Other	08/20/84	Report		
*L0001017 001024	59		PGCo Other	08/30/84	NCR		
*L0001025 001028	59		PGCo Other	11/19/84	Surveil- lance No. 3900		
*L0001029 001053	59		PGCo Other	03/28/85	Revision		
*L0001054 001063	59		PGCo Other	08/04/81	Audit Report		
*L0001064 001069	59		PGCo Other	05/3-31/85	Surveil- lance Report		
*L0001070 001075	59		PGCo Other	05/3-31/85	Surveil- lance Report		
*L0001076 001086	59		PGCo Other	09/21/83	Speed Letter	Carlson	Hunsader

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*L0001087 001128	59		PGCo Other	12/20/84	Surveil- lance Report		
*L0001129	59		PGCo Other	06/21/84	Specific Trouble Report	Ramirez	Schroeder/ Skoza
L0000001- 00002	59		PGCo Other	06/03/85	Letter (O'Connor)	Rolan, Lawler	Shamblin
L0000003- 00023	59		PGCo Other	09/19/84	Letter (O'Connor)	Shamblin	Gorski
L0000024-	59		PGCo Other	01/24/85	Letter (Nicolson)	Gardner	Kelm
L0000025- 00028	59		PGCo Other	05/22/85	Letter (Nicholson)	O'Connor	Groth, Quaka
L0000029-	59		PGCo Other	08/25/84	Memo (Nicholson)	Gorski	Carlson
L0000030-	59		PGCo Other	05/16/85	Memo (Nicholson)	O'Connor	Nicholson
L0000034-	59		PGCo Other	04/22/83	Memo (Nicholson)	Forbes	Meyers

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
L0000035- 00037	59		PGCo Other	03/27/84	Memo (Nicholson)	O'Connor	Stewart
L0000145- 00169	59		PGCo Other	04/18/85	Hand- written Notes (O'Connor)		
L0000070- 00071	59		PGCo Other	04/06/84	Form		
L0000072- 00073	59		PGCo Other	01/28/85	Typed Memo		Murphy
L0000074- 00090	59		PGCo Other		Report		
L0000091- 00140	59		PGCo Other	12/18/84	Memo (O'Connor)	CAT File	Carlson
L0000141- 00144	59		PGCo Other	03/07/85	Hand- written Notes (O'Connor)		
L0000170- 00182	59		PGCo Other	10/07/83	Memo (O'Connor)		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
L0000183- 00200	59		PGCo Other	12/21/83	Letters & Memos (O'Connor)		
L0000201-	59		PGCo Other	08/18/84	Memo (Nicholson)		Murphy
L0000202- 00209	59		PGCo Other	05/24/84	Letter (Nicholson)	Enger	Guyon Alloys, Inc
L0000223-	59		PGCo Other	12/17/84	Inspection Form		
L0000224- 00232	59		PGCo Other	12/21/84	Memo	Stewart	Knaff

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
L0000233- 00238	59		PGCo Other	01/28/85	CAT Summary (O'Connor)		Shue
L0000270- 00274	59		PGCo Other	08/10/83	Hand- written Notes		Butler
L0000275- 00278	59		PGCo Other		Memos & Letters (Stewart)		
L0000279- 00285	59		PGCo Other	04/15/85	Memo (Galloway)		
L0000290-	59		PGCo Other	05/16/85	Memo (O'Connor)		Nicholson
L0000291-	59		PGCo Other		Hand- written Notes (O'Connor)		
L0000292- 00297	59		PGCo Other		Memo	Carlson	Gorski
L0000343- 00350	59		PGCo Other	03/07/85	Memos, Hand- written Notes, Letters, (Stewart)		
L0000351- 00354	59		PGCo Other	02/26/85	Memo		Stewart

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
L0000355-	59		PGCo Other	02/22/85	Memo		Stewart
L0000356- 00357	59		PGCo Other	06/24/85	Form	Farr	Stewart
L0000358- 00363	59		PGCo Other	05/03/85 to 05/31/85	Report		
L0000364-	59		PGCo Other	04/15/85	Memo	Gorski	Galloway
L0000365- 00376	59		PGCo Other	04/10/85	Letter	O'Connor	Gorski
L0000377- 00384	59		PGCo Other	03/20/85	Forms	Farr	Stewart
L0000385- 00399	59		PGCo Other	06/07/85	Typed Notes (Nicholson)		
L0000400- 00403	59		PGCo Other	06/24/85	Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
L0000404- 00407	59		PGCo Other	05/17/85	Report		
L0000409- 00416	59		PGCo Other	03/05/85	Memo	Carlson	Stewart
L0000417- 00418	59		PGCo Other	02/22/84	Report		
L0000419- 00421	59		PGCo Other	03/05/84	Letter	O'Connor	Groth
L0000422- 00427	59		PGCo Other	05/31/85	Letter	Shamblin	Vahle
L0000428- 00429	59		PGCo Other	07/09/85	Report		
L0000430- 00446	59		PGCo Other	12/19/84	Letter	Shamblin	Gorski
L0001130-	59		PGCo Other	04/22/83	Memo	Forbes	Meyers
L0001131- 01152	59		PGCo Other		Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
L0001153- 01169	59		PGCo Other		Report		
L0001170- 01190	59		PGCo Other		Report		
L0001208- 01253	59		PGCo Other	10/07/83	Memo	Forbes	O'Connor
L0001254- 01348	59		PGCO Other	01/24/84	Memo	Carlson/ Stewart	Alcantor
L0001349- 01432	59		PGCo Other	05/08/85	Memo	O'Connor/ Carlson	Forbes
L0001433- 01450	39		PGCo Other	02/27/84	Engineering Policy		
L0001451- 01461	59		PGCo Other	08/15/84	Engineering Policy		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
L0001462-01469	59		PGCo Other	12/26/84	Report		
L0001470-1475	59		PGCO Other	07/26/85	Memo	Gorski/Barnes	Clover/Johnson
L0001191-01197	59		PGCo Other	09/26/83	Procedure		
L0001198-01201	59		PGCo Other	03/02/78	Procedure		
L0001488-01497	59		PGCo Other	01/02/85	Procedure		
L0001498-01519	59		PGCo Other	02/11/85	Procedure		
L0001520-01567	59		PGCo Other	03/07/85	Procedure		
L0001568-01579	59		PGCo Other	06/06/85	Procedure		
L0001580-01605	59		PGCo Other	01/07/85	Procedure		
L0001606-01625	59		PGCo Other	12/12/84	Procedure		
L0001626-01631	59		PGCo Other	04/03/85	Procedure		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
L0001632- 01635	59		PGCo Other	02/06/84	PGCo FCO		
L0001636- 01637	59		PGCo Other	06/29/84	PGCo FCO		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
M0000386- 0455	59		Pullman QA/ QC	7/3/85	Letter	Shamblin	Lawler
M0000574- 0643	59		Pullman/ QA/QC	01/31/84	Memo	Grant	Ewald
M0000644- 0647	59		Pullman/ QA/QC	10/22/83	Letter	Jundt	Waterfield
M0000648- 0650	59		Pullman/ QA/QC	10/18/83	Training Review Sheet		
M0000651	59		Pullman/ QA/QC	09/06/83	Training Review Sheet		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
M0000652- 0656	59		Pullman/ QA/QC	12/07/83	Training Review Sheet		
M0000657- 0677	59		Pullman/ QA/QC	03/23/84	Training Review Sheet		
M0000678- 0699	59		Pullman/ QA/QC	06/11/84	Training Review Sheet		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
M0000700	59		Pullman/ QA/QC	09/20/83	T/R Sheet		
M0000701	59		Pullman/ QA/QC	11/11/83	T/R Sheet		
M0000702	59		Pullman/ QA/QC	09/19/83	T/R Sheet		
M0000703	59		Pullman/ QA/QC	09/19/83	T/R Sheet		
M0000704	59		Pullman/ QA/QC	09/19/83	T/R Sheet		
M0000705- 0737	59		Pullman/ QA/QC	06/07/83	Letter		
M0000738- 00743	59		Pullman QA/QC	05/31/85	NCR		
M0000744- 00753	59		Pullman QA/QC	04/24/84	NCR		
M0000754	59		Pullman QA/QC	07/18/85	NCR		
M0000755- 00769	59		Pullman QA/QC	03/16/85	NCR		
M0000770- 00792	59		Pullman QA/QC	03/14/85	NCR		
M0000793-	59		Pullman QA/QC	06/28/85	NCR		
M0000794- 00797	59	Pullman	06/10/85 QA/QC	NCR			

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
M0000798- 00801	59		Pullman QA/QC	06/20/85	NCR		
M0000802- 00805	59		Pullman QA/QC	06/20/85	NCR		
M0000806- 00809	59		Pullman QA/QC	06/19/85	NCR		
M0000810- 00815	59		Pullman QA/QC	05/22/85	NCR		
M0000816- 00819	59		Pullman QA/QC	04/30/85	NCR		
M0000820- 00822	59		Pullman QA/QC	04/27/85	NCR		
M0000823- 00825	59		Pullman QA/QC	04/27/85	NCR		
M0000826- 00835	59		Pullman QA/QC	04/30/85	NCR		
M0000836- 00839	59		Pullman QA/QC	03/07/85	NCR		
M0000837- 00839	59		Pullman QA/QC	04/10/85	NCR		
M0000840- 00843	59		Pullman QA/QC	04/11/85	NCR		
M0000844- 00846	59		Pullman QA/QC	03/26/85	NCR		
M0000847- 00849	59		Pullman QA/QC	04/22/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
M0000850- 00853	59		Pullman QA/QC	04/26/85	NCR		
M0000854	59		Pullman QA/QC	07/23/84	NCR		
M0000855	59		Pullman QA/QC	07/25/84	NCR		
M0000856	59		Pullman QA/QC	07/25/85	NCR		
M0000857	59		Pullman QA/QC	07/24/85	NCR		
M0000858- 00865	59		Pullman QA/QC	09/27/84	NCR		
M0000866- 00884	59		Pullman QA/QC	09/28/84	NCR		
M0000885- 00892	59		Pullman QA/QC	12/08/84	NCR		
M0000893- 00894	59		Pullman QA/QC	02/26/85	NCR		
M0000895- 00898	59		Pullman QA/QC	06/19/85	NCR		
M0000898	59		Pullman QA/QC	06/29/85	NCR		
M0000900- C0901	59		Pullman QA/QC	07/26/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
M0000902- 00922	59		Pullman QA/QC	05/17/85	NCR		
M0000923	59		Pullman QA/QC	03/07/85	NCR		
M0000924- 00926	59		Pullman QA/QC	12/07/84	NCR		
M0000927- 00931	59		Pullman QA/QC	11/02/84	NCR		
M0000932- 00976	59		Pullman QA/QC	10/30/84	NCR		
M0000977- 01015	59		Pullman QA/QC	01/09/85	NCR		
M0001016- 01018	59		Pullman QA/QC	10/03/84	NCR		
M0001019-	59		Pullman QA/QC	03/07/83	NCR		
M0001020- 01027	59		Pullman QA/QC	09/19/84	NCR		
M0001074- 1080	59		Pullman QA	11/30/82	Procedure		
M0001081- 1088	59		Pullman QA	10/15/80	Procedure		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
N0000000- 0006	59		Pullman Engineering	Various 1983	Handwritten notes		Weiher
N0000007- 0011	59		Pullman Engineering	Undated	Handwritten notes		Weiher
N0000012- 0014	59		Pullman Engineering	Undated	Handwritten notes		Weiher
N0000015- 0023	59		Pullman Engineering	02/19/85	Draft letter		Weiher
N0000024- 0027	59		Pullman Engineering	11/01/84	Handwritten notes		Weiher

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
*00001050- 001059	59		Comstock QA/QC	12/04/83	Procedure		
00000506- 00507	59		Comstock QA/QC	03/25/85	Hand- written Notes		
00000345- 00347	59		Comstock QA (Seltmann)	3/31/84	Memo	Donald	Quaka
00000348- 00347	59		Comstock QA (Seltmann)	6/03/85	Memo	Seese	DeWald
00000350- 00357	59		Comstock QA (Seltmann)	12/18/85	Memo	Giesker	DeWald
00000358- 00359	59		Comstock QA (Seltmann)	07/01/85	Memo	Kelnosky	Sandvick Bradfute
00000360- 00362	59		Comstock QA (Seltmann)	10/04/84	ECN		
00000363- 00365	59		Comstock QA (Seltmann)	06/11/85	Memo	Cordy	Gutman
00000366- 00367	59		Comstock QA (Seltmann)		Handwritten Notes		
00000368- 00371	59		Comstock QA (Seltmann)	05/30/85	Memo	Seltmann	Cartier

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000372-00374	59		Comstock QA/QC	09/17/84	LKC Memo	File	DeWald
00000375-00379	59		Comstock QA/QC	05/12/84	LKC Memo	Mennecke Quaka	DeWald
00000380	59		Comstock QA/QC		Notes		
00000381-00383	59		Comstock QA/QC	09/13/84	Memo	DeWald	Simile
00000384	59		Comstock QA/QC	08/17/84	Memo	Saklak	Puckett
00000385	59		Comstock QA/QC	04/15/84	Memo	Saklak	Puckett
00000386	59		Comstock QA/QC	08/22/84	Memo	DeWald	Puckett
00000387	59		Comstock QA/QC	08/24/84	Speed Letter	DeWald	Puckett
00000388-00389	59		Comstock QA/QC	08/17/84	LKC NCR		
00000390-00392	59		Comstock QA/QC		LKC Speed Letter	Roland	Gieseke
00000393-00397	59		Comstock QA/QC	09/12/84	LKC NCR		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000398	59		Comstock QA/QC	08/24/84	Memo	All Engineers	Bradfute
00000399	59		Comstock QA/QC	08/22/84	Memo		DeWald
00000400-00401	59		Comstock QA/QC	05/03/85	LKC Memo	Simile	Seltman
00000402-00404	59		Comstock QA/QC	05/03/85	Hand-written Notes		
00000405	59		Comstock QA/QC	05/03/85	LKC Memo	DeWald	Seese Simile
00000406	59		Comstock QA/QC	05/31/85	LKC Memo	Tapella	Seltman
00000407-00409	59		Comstock QA/QC		Hand-written Notes		Seltman
00000410	59		Comstock QA/QC	02/08/85	Memo	Rolan	Mennecke
00000411-00414	59		Comstock QA/QC		Speed Letter	Mennecke	Ronkoske
00000415-00416	59		Comstock QA/QC	03/25/85	Hand-written Notes		Seltman
00000417-00422	59		Comstock QA/QC	01/30/85	LKC Memo	DeWald	Seltman
00000423-00494	59		Comstock QA/QC	05/01/85	LKC Memo	Shamblin	Seltman

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000495	59		Comstock QA/QC	08/11/84	LKC Memo	Mennecke	DeWald
00000496	59		Comstock QA/QC	11/01/84	LKC	Nash	Seese
00000497- 00498	59		Comstock QA/QC	10/20/84	Hand- written Note	Seltman	Seese
00000499- 00500	59		Comstock QA/QC	04/02/84	LKC Memo	Paserba	DeWald
00000501	59		Comstock QA/QC		Hand- written Notes		
00000502- 00505	59		Comstock QA/QC		LKC Memo	Seltman	Carter
00000506- 00507	59			03/25/85	Handwritten Notes		
00000508	59		Comstock QA/QC	03/15/85	LKC Memo	Dominique	DeWald Seese
00000509	59		Comstock QA/QC	03/13/85	LKC Memo	Seese	DeWald
00000510	59		Comstock QA/QC	01/14/85	LKC Memo	Shamblin	Seese
00000511- 00514	59		Comstock QA/QC	09/15/84	LKC Memo	Netzel	DeWald
00000536- 00537	59		LKC QA/QC	4/2/84	LKC Memo	Paserba	DeWald

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000538	59		LKC QA/QC	5/7/84	LKC Memo	DeWald	Seese
00000539- 00541	59		LKC QA/QC	8/2/84	LKC Memo	DeWald	Seltson
00000542- 00547	59		LKC QA/QC	1/30/84	LKC Memo	DeWald	Seltson
00000550	59		LKC QA/QC	7/6/84	LKC Memo	Puchett	DeWald
00000551- 00561	59		LKC QA/QC	2/19/85	LKC Memo	Quaka	DeWald
00000655- 00683	59		Comstock QA (Seltmann)	9/12/84	NCR		
00000684- 00686	59		Comstock QA (Seltmann)	9/18/84	NCR		
00000687- 00690	59		Comstock QA (Seltmann)	9/18/84	NCR		
00000691- 00694	59		Comstock QA (Seltmann)	9/18/84	NCR		
00000695- 00700	59		Comstock QA (Seltmann)		NCR		
00000701- 00704	59		Comstock QA (Seltmann)	9/20/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000705- 00710	59		Comstock QA (Seltmann)	9/26/84	NCR		
00000711- 00712	59		Comstock QA (Seltmann)	9/26/84	NCR		
00000713- 00714	59		Comstock QA (Seltmann)	9/27/84	NCR		
00000715- 00717	59		Comstock QA (Seltmann)	9/26/84	NCR		
00000718- 00719	59		Comstock QA (Seltmann)	9/27/84	NCR		
00000720- 00722	59		Comstock QA (Seltmann)	9/28/84	NCR		
00000723- 00725	59		Comstock QA (Seltmann)	9/29/84	NCR		
00000726	59		Comstock QA (Seltmann)	10/1/84	NCR		
00000727- 00729	59		Comstock QA (Seltmann)	10/1/84	NCR		
00000730- 00736	59		Comstock QA (Seltmann)	2/22/85	NCR		
00000737- 00740	59		Comstock QA (Seltmann)	10/1/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000741- 00747	59		Comstock QA (Seltmann)	3/20/85	NCR		
00000748- 00749	59		Comstock QA (Seltmann)	10/1/84	NCR		
00000750- 00752	59		Comstock QA (Seltmann)	10/1/84	NCR		
00000753- 00755	59		Comstock QA (Seltmann)	10/8/84	NCR		
00000756- 00757	59		Comstock QA (Seltmann)	10/4/84	NCR		
00000758- 00759	59		Comstock QA (Seltmann)	10/4/84	NCR		
00000760- 00761	59		Comstock QA (Seltmann)	10/9/84	NCR		
00000762- 00763	59		Comstock QA (Seltmann)	10/3/84	NCR		
00000764- 00766	59		Comstock QA (Seltmann)	10/8/84	NCR		
00000767	59		Comstock QA (Seltmann)	10/15/84	NCR		
00000768- 00770	59		Comstock QA (Seltmann)	10/25/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000771- 00777	59		Comstock QA (Seltmann)	5/24/85	NCR		
00000778- 00779	59		Comstock QA (Seltmann)	10/23/84	NCR		
00000780- 00783	59		Comstock QA (Seltmann)	1/18/85	NCR		
00000784- 00785	59		Comstock QA (Seltmann)	9/27/84	NCR		
00000786- 00787	59		Comstock QA (Seltmann)	10/31/84	NCR		
00000788- 00789	59		Comstock QA (Seltmann)	10/12/84	NCR		
00000790- 00791	59		Comstock QA (Seltmann)	10/31/84	NCR		
00000792- 00800	59		Comstock QA (Seltmann)	3/6/85	NCR		
00000801- 00802	59		Comstock QA (Seltmann)	11/1/84	NCR		
00000803- 00811	59		Comstock QA (Seltmann)	2/4/85	NCR		
00000812- 00813	59		Comstock QA (Seltmann)	11/5/84	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000814- 00815	59		Comstock QA (Seltmann)	11/05/84	NCR		
00000816- 00817	59		Comstock QA (Seltmann)	11/06/84	NCR		
00000818- 00821	59		Comstock QA (Seltmann)	2/27/85	NCR		
00000822- 00827	59		Comstock QA (Seltmann)	1/19/85	NCR		
00000828- 00831	59		Comstock QA (Seltmann)	2/5/85	NCR		
00000832- 00837	59		Comstock QA (Seltmann)	2/14/85	NCR		
00000838- 00839	59		Comstock QA (Seltmann)	5/8/85	NCR		
00000840- 00841	59		Comstock QA (Seltmann)	5/8/85	NCR		
00000842- 00843	59		Comstock QA (Seltmann)	5/8/85	NCR		
00000844- 00845	59		Comstock QA (Seltmann)	5/13/85	NCR		
00000846- 00847	59		Comstock QA (Seltmann)	5/11/85	NCR		

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000848-00849	59		Comstock QA (Seltmann)	5/13/85	NCR		
00000850-00851	59		Comstock QA (Seltmann)	5/13/85	NCR		
00000852-00853	59		Comstock QA (Seltmann)	5/13/85	NCR		
00000854-00855	59		Comstock QA (Seltmann)	5/13/85	NCR		
00000856-00857	59		Comstock QA (Seltmann)	5/14/85	NCR		
00000858-00859	59		Comstock QA (Seltmann)	5/14/85	NCR		
00000860-00861	59		Comstock QA (Seltmann)	5/14/85	NCR		
00000862-00863	59		Comstock QA (Seltmann)	5/14/85	NCR		
00000864-00865	59		Comstock QA (Seltmann)	5/14/85	NCR		
00000866-00867	59		Comstock QA (Seltmann)	5/14/85	NCR		
00000868-00869	59		Comstock QA (Seltmann)	5/16/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000870- 00871	59		Comstock QA (Seltmann)	5/16/85	NCR		
00000872- 00873	59		Comstock QA (Seltmann)	5/17/85	NCR		
00000874	59		Comstock QA (Seltmann)	5/17/84	NCR		
00000875- 00877	59		Comstock QA (Seltmann)	5/17/85	NCR		
00000880- 00881	59		Comstock QA (Seltmann)	5/17/85	NCR		
00000882- 00883	59		Comstock QA (Seltmann)	5/17/85	NCR		
00000884- 00885	59		Comstock QA (Seltmann)	5/17/85	NCR		
00000886- 00887	59		Comstock QA (Seltmann)	5/18/85	NCR		
00000888	59		Comstock QA (Seltmann)	6/21/85	NCR		
00000889- 00891	59		Comstock QA (Seltmann)	6/4/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000892- 00899	59		Comstock QA (Seltmann)	10/17/85	NCR		
00000900- 00906	59		Comstock QA (Seltmann)	10/26/84	NCR		
00000907- 00918	59		Comstock QA/QC	12/07/83	Memo	D.A. Brown	J.A. Hii
00000919- 00930	59		Comstock QA/QC	12/07/83	Memo	D.A. Brown	J.A. Hii
00002582- 2630	59		Comstock QA/QC	8/2/85	Procedure		
00002631- 2647	59		Comstock QA/QC	3/28/85	Procedure		
00002648- 2652	59		Comstock QA/QC	6/19/85	Procedure		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00002653- 2667	59		Comstock QA/QC	6/20/85	Procedure		
00002668- 2697	59		Comstock QA/QC	3/27/85	Procedure		
00002514- 2516a	59		Comstock QA/QC	5/20/85	NCR		
00002505- 2513	59		Comstock QA/QC	1/15/85	NCR		
00002517- 2526a	59		Comstock QA/QC	4/30/85	NCR		
00002527- 2530	59		Comstock QA/QC	2/7/85	Inspection Correction Form		
00002531- 2534	59		Comstock QA/QC	2/7/85	Inspection Correction Form		
00002535- 2545	59		Comstock QA/QC	12/3/84	Procedure		
00002546- 2553	59		Comstock QA/QC	10/8/84	Procedure		
00002554- 2581	59		Comstock QA/QC	10/19/84	Procedure		
*00001067- 001094	61		Comstock QA/QC		Chart		
*00002103- 002107	61		Comstock QA/QC	04/26/84	Meeting Notes		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
00000999- 01014	61		Comstock QA/QC	05/03/85	Letter w/Report	DeWald	Porter

Bates Stamp No.	Interrogatory Code	Privileged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
P0000260-00261	59		Comstock Other	04/26/85	Letter re:	All Site Contractor Proj. Mgrs.	Shamblin
P0000262-00265	59		Comstock Other	04/18/85	Letter re:	Vahle	S&L
P0000266	59		Comstock Other	01/22/85	Speed Letter	Jack Berry	Bruce Berg
P0000267	59		Comstock Other	01/05/85	Report		
P0000268-00269	59		Comstock Other		Hanger Checklist		
P0000270-00271	59		Comstock Other		Hanger Checklist		
P0000272	59		Comstock Other		Handwritten Notes		
P0000273	59		Comstock Other		Page		
P0000001-	NOT RESPONSIVE						
P0000010-	NOT RESPONSIVE						

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
Q0000322- 0337	59		Newberg QA/QC	02/20/85	Procedure		
Q0000338- 0345	59		Newberg QA/QC	05/21/84	Audit		
Q0000346- 0373	59		Newberg QA/QC	04/21/84	Memo	Hairston/ Craven	Replogle
Q0000374-	59		Newberg QA/QC	05/21/84	Audit Concern Report		
Q0000375- 0379	59		Newberg QA/QC	05/16/84	Memo	Hairston/ Craven	Replogle
Q0000380- 0386	59		Newberg QA/QC	10/26/84	Audit Finding Report		
Q0000387- 0389	59		Newberg QA/QC	06/31/84	Audit Concern Report		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
R0000011- 0030	59		Newberg other (Dmytryk)	04/16/84	Exam		
R0000031- 0041	59		Newberg other (Dmytryk)	03/05/85	Exam		
R0000042- 0052	59		Newberg other (Dmytryk)	03/05/85	Exam		
R0000053- 0063	59		Newberg other (Dmytryk)	03/19/85	Exam		
R0000133a- 0154	59		Newberg QC/QA (Dmytryk)	04/23/84	NCR		
R0000064- 00077	59		Newberg Other	05/29/85	Letter	Quaka	Kosik/ Redding

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
S0001308- 01373	59		Misc. (Braidwood Station)		Procedure		
S0000005- 00053	59		PTL (Misc)	01/29/85	NCR		
S0000054- 00056	59		CECo Project Startup (Zimmerman misc.)	03/21/85	Handwritten Report		
S0000057	59		CECo Project Startup (Zimmerman misc.)		Action Plan		
S0000654-	59		PTL (misc)	11/23/77	NCR		
S0000655- 00679	59		Midway (Leigh)	04/17/78	NCR		
S0000680- 00693	59		Midway (Leigh)	04/01/85	NCR		
S0000694- 00697	59		Midway (Leigh)	04/02/85	NCR		

Bates Stamp No.	Interro- gatory Code	Privi- leged AC OR WP	Source of Document	Date of Document	Type of Document	To	From
S0000698- 00701	59		Midway (Leigh)	04/02/85	NCR		
S0000702- 00708	59		Midway (Leigh)	05/28/85	NCR		
S0000709- 00710	59		Midway (Leigh)	06/10/85	NCR		
S0000711- 00717	59		Midway (Leigh)	05/28/85	NCR		
S0000959- 00970	59		Miscellaneous	08/09/85	Memo	Leon et al	S&L Jones
S0001139- 01262	59		Miscellaneous	03/17/83	Report		
S0001263- 01307	59		Miscellaneous		Report		
S0000980- 01138	59		Miscellaneous	06/08/84	Memo	Treece et al	S&L Tenwin

August 28, 1985

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:)
COMMONWEALTH EDISON COMPANY)
) Docket Nos. 50-456
(Braidwood) 50-457
Station, Units 1 and 2)

DOCKETED
USNRC
85 SEP -4 A10:21
OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

CERTIFICATE OF SERVICE

I, Rebecca J. Lauer, one of the attorneys for Commonwealth Edison Company, certify that Applicant's Sixth Partial Response to Rorem's First Set of Quality Assurance Interrogatories and Request to Produce dated August 27, 1985 and indices for documents responsive to Specific Interrogatories 58 and 59 have been served in the above-captioned matter on those persons listed in the attached Service List by United States mail, postage prepaid, this 28th day of August, 1985, except where service has been made as otherwise noted.

Lawrence Brenner, Esq.
Chairman
Administrative Law Judge
Atomic Safety and Licensing
Board
United States Nuclear Regulatory
Commission
Washington, DC 20555

Mr. William L. Clements
Chief, Docketing and Services
United States Nuclear Regulatory
Commission
Office of the Secretary
Washington, DC 20555

Herbert Grossman, Chairman
Administrative Law Judge
Atomic Safety and Licensing Board
U.S. Regulatory Commission
Washington, D.C. 20555

C. Allen Bock, Esq.
P.O. Box 342
Urbana, Il, 61801

Dr. Richard F. Cole
Administrative Law Judge
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. A. Dixon Callihan
Administrative Law Judge
102 Oak Lane
Oak Ridge, TN 37830

Stuart Treby, Esq.
Elaine I. Chan, Esq.
Office of the Executive Legal
Director
United States Nuclear Regulatory
Commission
Washington, DC 20555

Atomic Safety and Licensing
Board Panel
United States Nuclear Regulatory
Commission
Washington, DC 20555

Atomic Safety and Licensing
Appeal Board Panel
United States Nuclear Regulatory
Commission
Washington, DC 20555


*Messenger delivery on August 27, 1985.

Ms. Bridget Little Rorem
117 North Linden Street
P.O. Box 208
Essex, IL 60935

*Robert Guild
Douglass W. Cassel, Jr.
Timothy W. Wright, III
BPI
109 North Dearborn Street
Suite 1300
Chicago, IL 60602

Ms. Lorraine Creek
Route 1
Box 182
Manteno, IL 60950

Charles Jones, Director
Illinois Emergency Services
and Disaster Agency
110 East Adams
Springfield, IL 62705


Rebecca J. Lauer

ISHAM, LINCOLN & BEALE
Three First National Plaza
Suite 5200
Chicago, Illinois 60602
(312) 558-7500

Dated: August 28, 1985

0023H