

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-358/82-13

Docket No. 50-358

License No. CPPR-88

Licensee: Cincinnati Gas and Electric Company
139 East 4th Street
Cincinnati, OH 45201

Facility Name: Wm. H. Zimmer Power Station

Inspection At: Zimmer Site, Moscow, OH

Inspection Conducted: August 10-12, September 7-10, 13-17, October 19, and
November 2-4, 1982

Inspectors: *I. T. Yin*
I. T. Yin
(August 10-12, September 7-10,
15-16, October 19, and
November 2-4, 1982)

4/21/83

P. A. Barrett
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(September 7-10, 13-17
and October 19, 1982)

4/21/83

F. A. Maura
F. A. Maura
(September 7-10, 13-17, 1982)

4/21/83

Approved By: *D. H. Danielson*
D. H. Danielson, Chief
Materials and Processes Section

4/21/83

D. R. Hunter
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Special Cases Section 1, Zimmer

4/21/83

Inspection Summary

Inspection on August 10-12, September 7-10, 13-17, October 19, and November 2-4,
1982 (Report No. 50-358/82-13)

Areas Inspected: Special inspection of licensee measures taken to ensure
adequate control of Catalytic, Inc. (CI) work program activities prior to
lifting Stop Work Order 80-14 and completing the actions stated in the
Region III Immediate Action Letter, dated December 24, 1980. The inspection

areas included review of CI program interface with licensee Construction and QA departments, design control, procedure implementation, observation of drilled base plate holes, evaluation of CI personnel training program, document control system, and licensee audits of CI program and work activities. The inspection involved 178 inspector-hours onsite by three NRC inspectors and a management meeting in Cincinnati involving 48 inspector-hours by nine NRC personnel.

Results: Of the areas inspected nine items of noncompliance were identified concerning CG&E management controls established to ensure that Catalytic, Inc. (CI) activities were accomplished in accordance with requirements. The following noncompliances were identified:

- . CG&E Control of CI program (Section I, Paragraph 1.a);
- . Design Control (Section I, Paragraph 2.b);
- . Procedure Adequacy and Implementation (Section I, Paragraph 3.a and Section II, Paragraphs 1.b, 2.c.(i), and 2.c.(iii));
- . Inspection (Section I, Paragraph 4.b and Section II, Paragraph 5.d);
- . Training (Section I, Paragraph 5.b);
- . Document Control (Section I, Paragraph 6.a and Section II, Paragraphs 2.c.(iv), 5.a, and 5.b);
- . Audits (Section I, Paragraph 7.a and Section II, Paragraph 7.a);
- . Corrective Action (Section I, Paragraph 8 and Section II, Paragraphs 1.b.(v), 3, and 6);
- . Records (Section II, Paragraph 5.c)

One deviation was identified concerning the area of audit preparation in that the detailed audit checklists were provided to the group being audited prior to the conduct of the audit (Section II, Paragraph 6).

Prior to the completion of the inspection a number of corrective actions were initiated by CG&E in the areas of design control, hole drilling operations, document control, miscellaneous work by CI, and finally cessation of all essential work being performed by CI.

DETAILS

1. Persons Contacted

CG&E

*E. A. Borgmann, Senior Vice President
*B. R. Sylvia, Vice President - Nuclear Operation
*H. C. Brinkmann, Manager, Nuclear Engineering
*H. R. Sager, Manager, QA
B. K. Culver, Manager, Generation Construction
J. R. Schott, Manager, Nuclear Production Department
*J. F. Shaffer, Director, QCP
C. W. Vincent, Senior Quality Engineer
J. C. Herman, Structural Engineer
J. C. Buck, Audit Supervisor
B. A. Gott, Structural Engineer
P. E. Bogen, Assistant Civil Engineer
D. J. Schulte, Director, QAE
J. C. Herman, Technical Coordinator
B. L. Thompson, QCP
R. E. Spence, QAD Director

Catalytic Incorporated

*D. R. Hyster, Site Manager
R. D. Bryson, Project Engineer
V. L. Dent, Site QA Manager
R. J. Fisher, Resident Project Manager
M. L. Street, Project Control Supervisor

S&L

*R. J. Pruski, Project Manager
T. J. Daley, Field Project Manager
B. A. Larson, Structural Engineer
*T. A. McKenna, Sr. Structural Project Engineer
A. W. Szechowycz, Mechanical Project Engineer

US NRC - Region III

*J. G. Keppler, Regional Administrator
*R. F. Warnick, Acting Director, Office of Special Cases
*S. H. Lewis, Region III Counsel
*D. R. Hunter, Chief, Section 1, Zimmer
*I. T. Yin, Senior Mechanical Engineer
*P. A. Barrett, Reactor Inspector
*W. F. Christianson, Senior Resident Inspector
*T. P. Gwynn, Resident Inspector

*Denotes some of those management and staff personnel attending the management exit interview and enforcement conference conducted on October 19, 1982. The meeting was open to the public and the news media.

2. Functional or Program Areas Inspected

Areas of inspection and detailed discussions of the inspection findings are documented in Section I and Section II of this report.

3. Licensee QA Program Breakdown

The licensee program provisions and measures, despite repeated NRC enforcement actions, appeared to be with little improvement in terms of personnel understanding, implementation, and effectiveness of the QA Program associated with CG&E and CI. The QA program breakdown was determined to be significant and was one of the major contributors to the issuance of the NRC Order on November 12, 1982.

4. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed further by the inspector, and which will involve some action on the part of the NRC or licensee or both. An open item disclosed during the inspection is discussed in Section II, Paragraph 2.C.(ii).

5. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of non-compliance, or deviations. The unresolved items disclosed during this inspection are discussed in Section I, Paragraphs 9 and 10, and Section II, Paragraphs 4, 5.d, and 5.e.

6. Management Exit Interview

NRC Region III personnel met with licensee representatives onsite on September 17 and in an enforcement meeting held in the Cincinnati area on October 19, 1982, at the conclusion of the initial inspection activity. The inspectors summarized the scope and findings of the inspection. Due to disagreement regarding the information presented during the October 19 meeting, a followup inspection on some of the findings was performed on November 2-4, 1982. The material presented in this report represents final positions after additional NRC Region III reviews and discussions with the various responsible licensee organizations.

SECTION I

Prepared By: I. T. Yin
Reviewed By: D. H. Danielson, Chef
Materials and Processes Section

i. CG&E Control of Catalytic, Inc. (CI) Program

a. The inspector reviewed the following CI work procedures and Control Work Packages (CWPs):

(i) CI Nuclear Maintenance Procedures

- (1) NMP-2, "Preparation of CWP/WP," Revision 1, dated December 19, 1981.
- (2) NMP-5, "Job Completion and Walkdown," Revision 0, dated November 9, 1981.
- (3) NMP-13, "Noncompliance, Corrective Action, and Stop Work Notification," Revision 0, dated November 10, 1981.
- (4) NMP-18, "Preparation of Design Document Changes," Revision 0, dated December 7, 1981.
- (5) NMP-20, "Work Implementation Interface Requirements," Revision 0, dated June 11, 1982.

(ii) CI Quality Assurance Procedures

- (1) QAP 10-2, "Inspection of Weldments," Revision 0, dated January 11, 1982.
- (2) WAP 10-8, "Inspection of Piping Hangers," Revision 0, dated January 11, 1982.
- (3) WAP 172, "Review and Turnover of CWP/WPS," Revision 0, dated December 16, 1981.

(iii) CI Engineering Instruction Welding (not yet reviewed and accepted by CG&E)

- (1) EIW-1, "Fillet Weld Inspection Requirements per AWS D1.1-72 and H-2174, Section 5.2 Supplement 4 for Welds Requiring Visual Inspection Only," Revision 2B, August 4, 1982.
- (2) EIW-3, "Weld Inspection Requirements, Welds per Section III ASME Boiler and Pressure Vessel Code," Revision 2A, July 22, 1982.

- (3) EIW-4, "ANSI B31.1-1972 Edition Welding Requirements," Revision 0, June 11, 1982.
- (4) EIW-5, "Weld Inspection Requirements per AWS D1.1-72 for Welds Requiring Visual Inspection Only," Revision 1C, July 22, 1981.

(iv) CI CWPs Relative to CRD Work

- (1) CWP 82.007.05, "Removal of N₂ Cylinders, North Side."
- (2) CWP 82.007.07, "Removal of N₂ Cylinders, South Side."
- (3) CWP 82.007.14, "Removal of Restraints S-9 and S-10, North and South Sides."
- (4) CWP 82.007.18, "Rebar Probe, Base Plates, South Side."
- (5) CWP 82.007.20, "Rebar Probe, Base Plates, North Side."
- (6) CWP 82.007.21, "S-12, S-13, and S-14, North and South Sides."

(v) Wm. H. Zimmer QA Manual, Sections 1 and 2

(vi) Catalytic Inc. (CI) QA Manual

At the end of the review, the inspector concluded that the CI program was not inclusive relative to the purpose and function of the site safety-related work activities. The portions of the CI QA/QC program that are applicable or effective at any specific time period cannot be determined prior to the issuance of the CWPs.

The CI program, that includes work performed in CRD system piping, structural rework and coating, and maintenance activities was not defined by the licensee. The program work scope, authorities, and responsibilities were not established in the form of a contract or purchase order. There were no documented instructions and charts designating the functions of the organizations to ensure effective work interface. Rather, the CI scope was defined on each of the CWPs, wherein only segments of the work activities were approved by the CG&E responsible staff. The inspector recognized the need of the CWP system, which is essentially a Work Traveler (WT) system commonly seen in other construction projects, with one difference, i.e., the WTs normally reference the program procedure instructions, whereas the CWP generates specific work instructions on each individual package. In order to determine the adequacy of the overall CI program the inspector selected CWP 82.007.18 and 20 for detailed review and observation. The numerous findings documented in the following paragraphs of this Section of this report indicate that the licensee's control of CI and the CI program were both insufficient and ineffective.

The failure to provide documented instructions and charts designating the functions and interfaces of Catalytic Inc. (CI) is contrary to 10 CFR 50, Appendix B, Criterion II requirements. (358/82-13-01)

b. Subsequent to the inspection, a meeting was held at the site on November 2-4, 1982, to further review the findings. The following is a summary of the discussions:

- (i) CI presented to the inspector a copy of their Project Quality Assurance Program (PQAP) which listed responsibilities and authorities of all CI staff, and a flow chart showing proper control of documentation.
- (ii) The punch list had been used to award work to CI rather than using work request forms as called for in the procedures in the past. However, current activities are governed by a new procedure currently being developed which shows that all work assigned to CI will be controlled by one source.
- (iii) CG&E presented to the inspector a collection of letters including CI contract agreements to substantiate that there was some measures provided to control CI work activities in the past, and that program upgrades have been initiated to correct the apparent deficiencies being identified by the inspector. The documents reviewed by the inspector included:
 - (1) CG&E letter to CI, dated August 7, 1981, stating CG&E's intent to enter into contract with CI.
 - (2) CG&E letter (QA-1475) to NRC-Region III, dated August 12, 1981, stating plant maintenance and modification contractor negotiation with CI.
 - (3) CG&E letter (SLF-486) to S&L, dated August 18, 1981, announcing CI's involvement at the Zimmer site.
 - (4) CI Nuclear Maintenance Procedure NMP-20, Revision 0, dated June 11, 1982, where Attachment B showed work process flow chart.
 - (5) CG&E Inter-Department Correspondence from E. A. Borgmann, dated August 12, 1981, where Article VI, "Special Nuclear Considerations," stated some of the CI's assignments.
 - (6) CI Preliminary "Startup Work Requests," no date.
 - (7) CI Project QA Plan, Revision 0, dated January 28, 1982, where Attachment C described "Division of Responsibilities."

- (8) CG&E proposed "CG&E Organization Chart (CI Reporting Scheme)," no date.

Subsequent to the discussion and review, the inspector stated that the licensee's action appeared to be responsive and that the revised program provisions will be reviewed when the final approvals had been completed.

2. Design Control

- a. The inspector reviewed the following S&L Drawings, CG&E DDCs, and the CI CWP:

- (1) S-680, "Reactor Building HCU Support Framing Plans Sections and Details," Revision H, dated July 30, 1982.
- (2) S-686, "Reactor Building HCU Support Base Plate Location Plan EL. 546'-0," Revision F, dated July 30, 1982.
- (3) DDC No. S-4190, Revision 0, dated August 20, 1982.
- (4) DDC No. S-4190, Revision A, dated August 31, 1982.
- (5) CI CWP 82.007.20, Change Notice 1, dated July 13, 1982.

Subsequent to the review, the inspector determined that the licensee design control of installation tolerances was inadequate at the time of hole drilling for the installation of base plates. The core drill hole angularity, and hole diameter deviation acceptance tolerances were not provided by S&L until after almost all the holes were drilled. These requirements were then provided for field construction in DDC No. S-4190. Furthermore, there were no general or specific design provisions or considerations on how to handle those holes drilled that could not meet the DDC No. S-4190 requirements.

- b. The inspector reviewed CWP 82.007.18, "Rebar Probe Base Plate - South Side," where some of the work was signed off in July 1982. The CWP identified that they could not meet the requirements relative to core hole spacings and minimum bolt to plate edge distances. A Request for Clarification/Change (RCC) No. C-098 was issued by CI on June 15, 1982 and disposition was provided by the S&L site resident engineer on June 22, 1982. The generic S&L design requirements as documented in CWP 82.007.18, Paragraph 5.5, Note B states, "Design tolerance for all core drill holes to avoid cutting or nicking rebar is ± 1.5 inches any direction for two inches diameter, and ± 1.75 inches in any direction for $2\frac{1}{2}$ inches diameter." These requirements were revised to "increase tolerance along the plate in NS direction to six inches providing four inches minimum spacing is maintained. If this cannot be achieved, chip concrete six inches wide EW direction to three inches deep" without review and approval from the S&L corporate design engineering departments.

The lack of sufficient S&L design consideration prior to hardware installation, and the alteration of generic S&L design tolerance requirements by the S&L Resident Design Engineer, whose responsibility was restricted to resolution of specific site problems on a case by case basis (Items 2a and 2b), are contrary to 10 CFR 50, Appendix B, Criteria III and Wm. H. Zimmer QA Manual, Section 3.3. (358/82-13-02)

- c. As a result of the inspection findings discussed in Paragraphs 2a and 2b above, the licensee issued the following Stop Work Order and Corrective Action Request:
- (i) Stop Work Order No. 82-01, Revision 2, dated September 10, 1982, to CI. Reason: "The adequacy of S&L's design modifications for the installation of CRD system supports is questioned due to the inability of placing anchor bolt holes in the specified locations."
 - (ii) Corrective Action Request No. 82-63, dated September 10, 1982, to S&L, stating, "The adequacy of the design modifications for the CRD system supports and hangers is indeterminate due to insufficient selection and review of design inputs as documented in the...DDCs...."
- d. Subsequent to the inspection, a meeting was held at the site on November 2-4, 1982, to further review the findings. The licensee's position relative to the inspector's findings documented above, are as follows:
- (i) Relative to the lack of design tolerance specification for the core drilled holes, the licensee stated, "It is CG&E's position that adequate design requirements were specified. The important parameters for installation of the core drilled holes were included in inspection plans by the contractor. Specifically these include hole depth, proper core hole size and location.

An additional inspection point verifies the proper core hole size and angle by installation or inserting of the anchor bolt to the proper embedded depth for the core hole size. If the core hole size and angularity are not drilled properly the bolts will inhibit the installation of the base plate. CG&E agreed to review the present core holes for the HCU base plates and provide verification to the NRC that the original installations are adequate and that the bolts can be installed within the hole tolerances in the HCU base plate. CG&E further agreed that for future installations, the angularity will be calculated and maximum core hole size will be specified as additional requirements. These parameters will be QC inspected immediately upon completion of drilling, prior to moving to the next hole."

The inspector concurs with the licensee's resolutions. However, the bases for the identified violation was the fact that acceptance criteria for bolt hole size and angularity had not been provided at the time of hole drilling operations.

- (ii) Relative to the site resident engineer altering generic design requirements, the licensee stated, "The NRC's concern regards the use of a Request for Clarification Change (RCC) to implement construction requirements in lieu of a design document change or design drawing. It is CG&E's position that this was not a lack of design control, but rather an isolated occurrence of use of an improper document. CG&E further contends that there was proper design control by both the site and home offices of S&L. The RCC was requested by CI in order to provide an additional procedure for locating core holes for anchor bolts under the HCU due to the difficulty in placing the holes between the existing reinforcement grids. Sargent & Lundy reviewed the RCC at the site and conducted additional phone conversations with S&L at Chicago. It was agreed that it would be acceptable for Catalytic to drill in a controlled pattern 6" outside the specified design locations for locating of the cored hole, however, the actual location of the core hole must be submitted on another DDC for final approval by the consulting engineers prior to installation of the anchor bolts. It is therefore not a revision to the existing S&L tolerances, but a procedure for locating core holes prior to installation of the base plates and crowded bolts. It was agreed by CG&E that this was the wrong document and Sargent & Lundy has since reviewed and approved the DDC CS-30 which will specify this procedure on the notes on Drawing S-686. It is therefore CG&E's conclusion that there was adequate design control used on the particular base plate type assembly and that the proper design documents had been revised to indicate the procedure."

The inspector stated that the NRC concern was not for improper document control, but rather for a lack of S&L review/approval and required evidence to show the depth and extent of the reviews that had been conducted by the various responsible design engineering departments within the S&L organization. These evaluations are required to ensure that the alteration of generic installation tolerances will not adversely affect system safety.

3. Procedure Implementation

- a. In conjunction with the CWP 82.007.18, as discussed in Paragraph 2.b above, the CWP Paragraph 5.5, Note E states, "Where the requirements of Notes B and D of this work step cannot be satisfied, the instructions of Enclosure 1.5.12 shall be followed. A DDC shall be prepared and added to this CWP once a suitable location for these core drill holes is found."
- (i) Note B states the bolt spacing requirements.
 - (ii) Note D states that the base plate minimum edge distance shall be 1.75 inches for 1 inch diameter bolts and 1.25 inches for 3/4 inch diameter bolts.
 - (iii) Enclosure 1.5.12 is RCC No. C-098, as stated in Paragraph 2.
 - (iv) DDC stands for Design Document Change.

The inspector determined that the CWP instruction (CWP 82.007.18) had not been followed because a DDC had not been generated and approved once a suitable location was found, prior to the actual drilling of the core holes. This is contrary to 10 CFR 50, Appendix B, Criterion V, and Wm. H. Zimmer QA Manual, Sections 5.1 and 5.2. (358/82-13-03A)

- b. Prior to the conclusion of the inspection, CI issued NCR No. 013, dated August 24, 1982, documenting the above problems.
- c. In discussion with the licensee representatives, the inspector concluded that the cause of the apparent problem of not following the procedure was a lack of clarity in the procedures. The RCC system prescribed in Attachment B of the CI Nuclear Maintenance Procedure (NMP) -2, "Preparation of CWP/WP," Revision 1, dated December 19, 1981, could, as illustrated by CWP 82.007.18, circumvent the DDC requirements. The DDC requires that final design review approval be made by the S&L corporate design organizations, but the RCC does not. Furthermore, the processing of an RCC as stated in NMP-18, "Preparation of DDC," Revision 0, dated December 7, 1981, appears to be an intermixing of the two systems' preparation and review requirements. The procedure does not clearly define the difference and the relationship between the RCC and DDC systems. Subsequent to the inspection, improvements made in these procedures were presented to the inspector during the meeting held at the site on November 2-4, 1982. These improvements will be reviewed during a followup to the above item of noncompliance.

4. Observation of Drilled Base Plate Holes

- a. In observation of the base plate core holes drilled for the N₂ bottles, South Sides per CWP 82.007.18, and North Sides per CWP 82.007.20, the inspector found that hundreds of holes of 2

to 2.5 inch diameter and small exploration holes, had been drilled in random pattern and configuration. Concrete areas were chipped off in various sizes, shapes, and depths apparently without any control measures in effect.

The inspector selected the following 12'-6"x8" long base plates contained in CWP 82.007.18 for observation, and had the following specific findings:

Acceptable Depths: 3" max. for chip-outs
9" min. for 2" diameter drill holes
9 3/4" max. for 2" diameter drill holes

Findings:

<u>C-1 Plate</u>	Chip-Outs: one measured to be 4 3/4" deep, and one measured to be 4 1/2" deep among the two chip-outs.
	Drilled Holes: one measured to be 8 1/2" deep, and one measured to be 8 3/4" deep among the 12 drilled holes.
<u>C-2 Plate</u>	Chip-Outs: one 4", one 6", and one 5" among the three chip-outs.
<u>G-1 Plate</u>	Chip-Outs: one 5", one 3 1/2", and one 8" among the three chip-outs.
	Drilled Holes: one 8 3/4", one 13", and one 7 1/2" among the 12 drilled holes.

- b. The inspector further reviewed CWP 82.007.18 and CWP 82.007.20 relative to installation status and QC surveillance records.
- (i) CWP 82.007.18 included 16 long and regular plates with 3 to 15 core drill hole patterns.
 - (ii) CWP 82.007.20 included 21 long and regular plates with 3 to 17 core drill hole patterns.
 - (iii) Surveillance Report No. 466, dated September 1, 1982, states holes drilled per CWP 82.007.20, work step 5.4, were out of tolerance.
 - (iv) Surveillance Report No. 467, dated September 2, 1982, states that one embedded angle iron and one rebar were damaged in carrying out core drilling per CWP 82.007.18, work step 5.3.

The inspector determined that there was no core bore hole drilling surveillances performed prior to September 1, 1982. Surveillance Reports No. 466 through No. 468 were written subsequent to the

inspector's expressed concern. The lack of a CI QC inspection program to ensure timely identification and resolution of nonconformances concerning safety related activities is contrary to 10 CFR 50, Appendix B, Criterion X, and Wm. H. Zimmer QA Manual, Section 10. (358/82-13-04(A))

- c. Based on the above findings, in disposition of the NCR No. 013 (an administration type NCR, issued on August 24, 1982) on September 13, 1982, the CI project engineer extended the corrective actions to identification and resolution of technical and programmatic problems. Also, a stop work order, contained in CI Corrected Memorandum No. I.O. 82-664, was issued on September 13, 1982. Acknowledgement from the CI construction department was signed on September 14, 1982.

5. CI Personnel Training Program

- a. The inspector reviewed training provisions for the three QC inspectors, Mr. M. Simon, Mr. P. Weaver, and Mr. G. Thompson, who signed work completion status in CWP 82.007.18 and CWP 82.007.20. The review included: (1) CI QAP 1-2, "Indoctrination, Training, Qualification, and Certification of QA/QC Personnel, "Revision 0, dated December 14, 1981; and (2) the general and specific training records.

No items of noncompliance or deviations were identified.

- b. The inspector reviewed hole drilling work signoffs contained in the following CWPs:

CWP 82.007.18

Mr. G. Schneider
Mr. R. Baugh
Mr. J. Britt

CWP 82.007.20

Mr. R. Baugh
Mr. J. Britt
Mr. G. Owens

In review of the CI "Training/Indoctrination Attendance Record," the inspector had the following findings:

Subject 82.007.18 Conducted on May 20, 1982

Only Mr. G. Schneider, among the three, was listed as being in attendance.

Subject 82.007.20 Conducted on June 3, 1982

Only Mr. J. Britt, among the three, was listed as being in attendance.

At the time of the hole drilling activities, these people had been considered qualified and assigned as craft foremen. There were no personnel training records to show that these individuals had been trained to QA/QC, procedural, and technical requirements. In discussion with the CI QA Manager, the inspector was presented a draft training procedure for field construction and purchasing department personnel to be included in CI-QAI-204, "Checklists, ASME Nuclear QA Manual."

The lack of documented CI training programs (work and QA) for the construction personnel and documentation of on-the-job training provided to ensure that suitable proficiency is achieved and maintained are contrary to 10 CFR 50, Appendix B, Criterion II, and Wm. H. Zimmer QA Manual, Section 2.10. (358/82-13-05)

- c. During a meeting held on November 2-4, 1982, at the site, CI management indicated that their personnel were given training via verbal means, acknowledged that the training was not documented, and acknowledged that procedures were being revised or developed to document required training.

6. Document Control

- a. The inspector reviewed the latest S&L approved design drawings that were referenced in CI CWP 82.007.18 and CWP 82.007.20.

- (i) CWP 82.007.18 (Change Notice 4, July 13, 1982)

- (1) Reference 1.4.2, S-686, Revision F, issued July 30, 1982, and received by CI on August 5, 1982.
- (2) Reference 1.4.3, S-687, Revision E, issued July 30, 1982, and received August 5, 1982.
- (3) Reference 1.4.8, S-680, Revision H, issued July 30, 1982, and received August 5, 1982.

- (ii) CWP 82.007.20 (Change Notice 1, July 13, 1982)

- (1) Reference 1.4.2, S-686, Revision F
- (2) Reference 1.4.3, S-687, Revision E

At the time of the inspector's review on September 3, 1982, none of the above up-to-date S&L drawings, including the applicable DDCs, were incorporated in the CWPs.

The lack of licensee document control to ensure that the latest procedures or drawings, listed above, were being applied in the installations is contrary to Criterion VI, and Wm. H. Zimmer QA Manual, Section 6.1. (358/82-13-06(A))

- b. During the discussions held on November 2-4, 1982, at the site, the licensee stated, "At the time of this inspection, it was noted that there were revised S&L drawings and DDC's which were not incorporated in a CWP. The work on the drawings and DDC's was not in progress and was being held up (verbal directions only), therefore resulting in a lack of documentation. In order to provide the proper documentation in the future, a drawing alert system will be developed. This system will notify the cognizant engineer and work group of the change, require an assessment of the applicability of the change to the package, and provide a system for holding work until the applicable change is entered."

This matter will be reviewed during a followup of the above item of noncompliance.

7. CG&E Audit of CI

- a. The inspector reviewed the following subject audit reports:

- (i) No. 338, conducted on March 1-11, 1982, involving audits of CI procurement and storage, procedural training and qualification, and document control.
- (ii) No. 402, a pre-audit meeting was conducted on May 25, 1982. The audit is considered to be "ongoing." The audit was without an approved audit plan and audit checklists. The scope and the purpose of the audit were not defined prior and subsequent to the pre-audit meeting.
- (iii) A scheduled audit beginning on August 2, 1982. Same deficiencies as described in Paragraph 7.a.(ii) above.

CG&E Audit No. 388 was limited in scope and identified no CI program deficiencies. The two other scheduled audits were cancelled without justification. Furthermore, the cancelled audits did not include an audit scope, approved plans, checklists. The failure to adequately audit safety-related contractor activities is contrary to 10 CFR 50, Appendix B, Criterion XVIII, and Wm. H. Zimmer QA Manual, Section 7.10 and Section 18. (358/82-13-07(A))

- b. During the meeting conducted on November 2-4, 1982, the inspector reviewed a CG&E letter (QA-1496) to NRC-R111, dated September 4, 1981, titled, "Audit Surveillance and Inspection Program by CG&E to Support Catalytic Work at Zimmer Station." The letter stated that, "After one month of work by Catalytic at the Zimmer Station, a comprehensive program audit covering all aspects of Catalytic activities will be performed by Cincinnati Gas and Electric. Then

at approximately two month intervals selected activities will be audited to verify specific procedure implementation. This schedule will be generated such that, after one year of activity, approximately all of the program areas in which catalytic is performing work at Zimmer will have been audited."

The inspector concluded that the letter commitments had not been implemented effectively since the Quality Confirmation Program (QCP) rework was initiated in March 1982, and the CI CRD Modification work was initiated in May 1982. The basis for this conclusion is, (1) the inadequate audits performed by CG&E as discussed above, and (2) the CG&E surveillance of CI core hole drilling performed on May 3 and 26 and July 7, 1982, were insufficient in scope and did not identify the deficiencies as discussed in Paragraph 4 above.

During the meeting, the licensee QA management presented to the inspector the following Field Audit Reports, which were conducted during the time period when the NRC inspectors were performing the inspections documented in this report:

- (i) No. 412, conducted on August 21-31, 1982.

The purpose of this audit was to evaluate the adequacy and verify the implementation (as applicable) of the Catalytic, Inc. (1) Instructions, Procedures, and Drawings; (2) Control of Special Processes; (3) Inspection; (4) Nonconforming Materials, Parts, or Components; (5) Corrective Action; and (6) Audits.

- (ii) No. 422, conducted on October 4-7, 1982.

The purpose of this audit was to evaluate the adequacy and verify the implementation (as applicable) of the Catalytic, Inc. (1) Design Control; (2) Identification and Control of Materials, Parts and Components; (3) Quality Assurance Records; and (4) Follow-up of concerns No. 1 and 3 from Quality Audit No. 388.

These audits will be reviewed during a followup of the above item of noncompliance.

8. Repetitive Licensee Program Deficiencies

- a. Many of the findings identified during this inspection were similar to or exactly the same as previously reported in the Region III piping suspension system inspection reports issued from 1980 to the present, as addressed below:

- (i) Paragraph 1, "CG&E Control of CI Program" - Similar findings were discussed in Region III Report No. 50-358/80-25, Paragraph 1.b., where it stated that CG&E audit of Reactor

Controls, Inc. (RCI) was inadequate, in that the RCI QA Manual did not identify and describe organizational interfaces, personnel authorities, and responsibilities.

- (ii) Paragraph 2, "Design Control" - Same findings were discussed in Region III Report No. 50-358/80-05, Paragraphs 4.b.(1) and 4.b.(2), where it stated that the site developed small bore pipe guidance and support design table was not approved by the A-E; the installation was not in accordance with the design table; and the design basis for the installed small bore pipe restraint multiple structural assembly was not provided by the A-E.
 - (iii) Paragraph 3, "Procedure Implementation" - Similar findings relative to the procedures that were lacking in clarification were discussed in Region III Reports No. 50-358/80-16, Paragraphs 3 and 5; No. 50-358/80-22, Paragraph 2; 50-358/80-25, Paragraphs 1.c. and 3.d; and 50-358/81-17, Paragraph 3.e, where the reports stated that the site QC inspection procedure was deficient; there was lack of instructions on how to handle the "Immediate Action Directives;" there had been miscellaneous deficiencies in the site piping support installation and inspection procedure including lack of timely support installation inspections; the RCI procedure for installing CRD suspension system was inadequate; procedures contained conflicting requirements; and lack of licensee timely upgrade of site work procedures.
 - (iv) Paragraph 4, "Observation of Drilled Base Plate Holes," - Similar findings were discussed in Region III Report No. 50-358/80-25, Paragraph 1.d, where it stated that only 50% of the CRD concrete expansion anchor bolts had been checked for proper torquing. The licensee program required 100% inspection of all support installations.
 - (v) Paragraph 7, "CG&E Audit of CI" - Same findings were discussed in Region III Report No. 50-358/80-25, Paragraph 2, where it stated that the licensee audit of RCI was inadequate in the areas of (1) design activities, (2) installation of CRD system, and (3) program audits at the RCI corporate office.
- b. A number of RIII staff and management meetings were also held with the licensee in 1980 and 1981 relative to the piping suspension system problems identified by the Region III inspection staff. These meetings were documented in the following reports:
- (i) Report No. 50-358/80-05, Paragraph 6, relates to a licensee presentation and discussions held at the Region III office on March 7, 1980. Region III maintained the position that the licensee should reinspect 100% of all installed hangers and restraints.

- (ii) Report No. 50-358/80-16, Exit Interview Section, documents the Region III management discussions with CG&E staff at the site on August 15, 1980. The Region III management emphasized the importance of timely QC inspections and the licensee development of a comprehensive QA audit program.
- (iii) Report No. 50-358/81-04 documents the Enforcement Conference conducted by Region III management at Region III on January 28, 1981. The meeting agenda included licensee QA program inadequacies that had resulted in a large number of noncompliances assessed during a Region III inspection of RCI design and installation of the CRD system.
- (iv) Report No. 50-358/81-17, Paragraph 3, relates to the inspector's discussion of continuing problems being identified at the site with CG&E management on June 9, 1981. Items discussed included: (1) voiding of NR's by the HJK QC Manager, (2) voiding of NR's by issuing DDC's, (3) Lack of CG&E audit of RCI, (4) 100% re-inspection of installed supports, and (5) continued inadequate procedure review.

The above findings demonstrate that inadequate corrective actions have been taken as indicated by the continuing problem. Failure to take adequate corrective actions to prevent recurrence is contrary to 10 CFR 50, Appendix B, Criterion XVI, and CG&E QA Manual, Sections 16.1, 16.4.2, and 16.5. (358/82-13-08(A))

9. S&L Design Change Basis

The inspector reviewed the following design document changes, DDCs:

a. S&L Drawing S-686, Revision E, May 19, 1982, Note 2, Relative to the Core Drill Hole Location Tolerance for Grouted Anchor Bolts:

- (i) Note 2: for 2" diameter, $\pm 1.5"$ any direction
for 2½" diameter, $\pm 1.75"$ any direction
- (ii) RCC C-098, dated June 15, 1982 and DDC CS-30, dated August 23, 1982: for both 2" and 2½" diameter, $\pm 6"$ N/S, and min. 4" bolt distance; or chip-out 6" E/W to 3" deep, no restriction on N/S.
- (iii) DDC CS-30, Revision A, dated September 3, 1982:

Continuous Plate: 3/4" bolt (2" hole): N/S $\pm 6"$
E/W $\pm 2 \frac{3}{4}"$

1" bolt (2½" hole): N/S $\pm 3"$
E/W (no requirement)

Minimum bolt distance and chip-out requirements remained the same.

Individual Plate: Ang. hole size, ± 2.25 " any direction

b. S&L Drawing S-680, Revision H, dated July 30, 1982, "HCU and CRD Support Notes," Relative to the Core Drill Hole Location Tolerance for Grouted Anchor Bolts:

- (i) S-680, Revision H., no requirements
- (ii) DDC CS-34, dated September 2, 1982: $\pm 1 \frac{3}{4}$ " in any direction for expansion anchors and $\pm 2 \frac{1}{2}$ " in any direction for grouted anchors.

The above DDCs, in addition to DDC S-4190, Revision 0, and DDC S-4190, Revision A (as discussed in Paragraph 2.a) showed many design tolerance changes that took place in a relatively short period of time. The design basis for these tolerance changes and justifications will be reviewed during a subsequent inspection. This is an unresolved item. (358/82-13-09)

10. Licensee Evaluation Program

In conjunction with deficiencies discussed in Paragraph 3 of Section I, CI issued a Nonconformance Report (NCR) No. 013, on August 24, 1982, stating that, "A DDC shall be prepared and added to this CWP once a suitable location for these core drill holes is found. A suitable location was found per Enclosure 1.5.12 and the anchor bolt core drill was completed. A DDC was not issued at this time. This is in violation of Work Step 5.5, Note E of this CWP."

Since that time, the licensee initiated an evaluation program to determine whether or not the affected concrete floor areas had been weakened by the excessive amount of drilling. The program will include the mapping of all holes drilled and all concrete chipped in accordance with CI CWP 82.007.18, and CWP 82.007.20. The data will then be evaluated by S&L engineers for those affected areas that had dense concentrations of large and small holes, concrete spallings, and change of bolt load distribution configurations. NRC-Region III followup inspection is planned. This is an unresolved item. (358/82-13-10)

SECTION II

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 F. A. Maura
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 Reactor Projects Section 2B

1. CG&E and Catalytic, Inc. (CI) Contract

On September 8, 1982, the inspectors reviewed the purchase contract between CG&E and Catalytic, Inc. (CI). The contract was for services to be supplied by Catalytic which could change on a day-to-day basis. The contract specified that safety-related (essential and nonessential-seismic) activities, performed by CI would comply with the requirements of 10 CFR 50 Appendix B.

- a. During discussions with the site CI management personnel, six different methods were identified for which CG&E was designating the functions (scope of work) of CI. These six methods were:
 - (i) The CG&E punchlist which was addressed in CG&E's Owner's Project Procedure 2.1, Revision 0, dated March 8, 1982.
 - (ii) Letters of assignment from CG&E's Generation Construction Department (GCD), (Often redundant to the punchlist).
 - (iii) Work Requests (WR), issued by CG&E's Nuclear Production Department (NPD), per Procedure EC.SAD.05, Revision 4, dated February 1, 1982.
 - (iv) Catalytic Work Authorizations which were initiated by NPD to assign specific Engineering Change Requests (ECRs), punchlist items, and maintenance items.
 - (v) Quality Confirmation Program (QCP), Work Orders which were addressed in CG&E Procedure 19-QA-13, Revision 0, dated September 16, 1981.
 - (vi) Verbal, CG&E to CI.
- b. The inspectors reviewed the measures established to control the above six methods:
 - (i) Procedure 2.1, Section 1.0, stated that the purposes of the procedure were to establish instructions, to assign responsibilities, and to define the required interfaces...in the generation, compilation, and maintenance of a master "Open Item" punchlist...

Procedure 2.1, Section 2.0, stated that this procedure established a method of reporting these open items,...and for closeout of these items.

This procedure essentially excluded the QA program in that it did not establish QA controls for input, change of status of work assignments (duties), or closure of items in the punchlist.

NOTE: This concern is an NRC open item (358/79-06-02) concerning inadequate updating of the punchlist.

The procedure also did not establish adequate requirements to control the distribution of the punchlist.

The fact the master punchlist was not the controlling document for work assignments, was demonstrated by the fact that CI used two ways of numbering their Controlled Work Packages (CWP). The CWP numbers were based on whether the assignment had a punchlist number or not. As of the time of this inspection, only one of the 16 approved CWPs used the punchlist number for identification.

The licensee also acknowledged that maintenance work, initiated by NPD, was not necessarily being entered in the master punchlist.

- (ii) There were no established procedures to control work assignments issued by letter from GCD.
- (iii) Procedure EC-SAD-05, Revision 4, established controls for the issuance, review, processing, and disposition of work requests at the Zimmer station. Section 2 of the procedure stated that the procedure applied to all work requests (WR) initiated to perform work on and modification to safety-related items, ASME code items, and fire protection items. WRs could also be used on other nonsafety-related items. The licensee was controlling all work performed on systems and components turned over to NPD for preoperational testing through WRs, independent of whether the work is safety-related or not. However, not all work assignments to CI were initiated as WRs. QCP Work Orders to CI, which in addition to not being listed in the punchlist, would bypass the WR system since there was no way for NPD to be aware that such work had been issued or was being performed. An example of this type of item is discussed in Paragraph (v) below.
- (iv) There was no established procedure to control work assignments issued on forms titled, Catalytic Work Authorization. As a result, the following ECRs were

assigned twice to CI because of confusion among CG&E personnel as to whether the ECRs had ever been assigned:

- (1) ECR No. 527 on October 7, 1981 and November 17, 1981
- (2) ECR No. 1137 on October 7, 1981 and November 17, 1981
- (3) ECR No. 1148 on October 7, 1981 and June 20, 1982
- (4) ECR No. 1193 on December 4, 1981 and June 3, 1982

NOTE: In the case of ECR No. 1193, the second letter appeared to be issued because after the initial assignment was made to CI, another subcontractor was found doing work on the equipment.

The Catalytic Work Authorization form was developed by CG&E (NPD) to avoid having to issue WRs to CI prior to the review and approval of CWP/WP by CG&E. The purpose of this form conflicts with CI Procedure NMP-2, Revision 1, as discussed in Subsection 2.b of this report.

- (v) CG&E Procedure 19-QA-13, Work Order Interface, Revision 0, dated September 16, 1981, addressed Work Order Interfaces with the QCP Department and was to be used to authorize work to be performed by CI. The following problems were noted:

- (1) A QCP Work Order (which had no CG&E control number) directed CI to remove fireproofing from structural steel members and to remove paint from welds. The fireproofing and welds were identified on a CG&E Corrective Action Report (CAR, 82-47, Revision 1) as being essential or nonessential seismic, and therefore, required controls in accordance with the QA program.

When the fireproofing and paint were removed, the affected areas were then nonconforming with the design requirements which specified the fireproofing and paint. Therefore, measures were needed to identify and control the nonconforming areas to assure that they were returned to conformance with the design requirements. Procedure 19-QA-13, Revision 0, did not provide measures to identify and control work assignments which directed that a part of the plant be placed into a nonconforming situation.

Note: An uncontrolled memorandum, dated February 16, 1982, had been issued, which established responsibility for replacing fireproofing and paint. A CWP had been prepared to do replacement work.

- (2) 19-QA-13 did not address a method for identifying and controlling the number of Work Orders or the areas and systems affected by all Work Orders. The procedure did not require CG&E control numbers on the Work Orders.
- (3) 19-QA-13 did not establish controls for classifying the QCP Work Orders as essential, nonessential seismic, or nonessential.

The inspector noted that 19-QA-13 had been approved by D. J. Schulte, Director, Quality Engineering. The inspector also noted that Procedure No. SU.PRP.01, Revision 15, had also been approved by D. J. Schulte. The inspector did not review Procedure SU.PRP.01, Revision 15, for technical content. IE Report No. 50-358/82-01 had identified that adequate qualifications had not been established for D. J. Schulte to approve QA procedures. The CG&E response, QA-1917, dated August 4, 1982, stated that two individuals, certified as Level III in accordance with ANSI N45.2.6 and with broad QA experience, were designated to perform technical evaluations of those procedures or activities for which such qualifications were required. On September 17, 1982, the licensee stated that no additional evaluations per the CG&E response had been made of Procedure 19-QA-13, Revision 0.

NOTE: The review of quality procedures by personnel not properly certified is a repeat of an item of noncompliance identified in IE Report 82-01.

The failure to provide adequate and comprehensive corrective actions is contrary to 10 CFR Appendix B, Criterion XVI and the Wm. H. Zimmer QA Manual, Section 16.3. (358/82-13-08(B))

- (vi) There were no established procedures to control work assignments which were issued verbally. The work related to S&L Drawing M-443, hanger modifications to the CRD system, was issued verbally.

Five of the six methods of designating the CI scope of work (Items (i), (ii), (iii), (iv), and (vi) above) were either not documented in procedures and/or the procedures did not include appropriate quantitative or qualitative acceptance criteria for determining that the designated scope of the CI work would be satisfactorily accomplished. The failure to provide adequate procedures is contrary to 10 CFR 50, Appendix B, Criterion V and the Wm. H. Zimmer QA Manual, Section 5. (358/82-13-03(B))

2. Preparation of Control Work Packages and Work Packages

The Region III inspector reviewed CI Procedures NMP-20, Revision 0, dated June 11, 1982, "Work Implementation Interface Requirements" and NMP-2, Revision 1, dated November 6, 1981, "Preparation of CWP/WP."

The Control Work Package (CWP) is used to control and monitor safety-related work activities. The Work Package (WP), is used to control and monitor nonsafety-related work activities. CWPs conform to the respective QA requirements, WPs do not. In general, a CWP or WP will define all of the design, installation, inspection, testing, and/or documentation requirements necessary to complete a specific work assignment.

- a. Procedure NMP-20, Revision 0, required that for work performed under the CI system that (i) the work shall be authorized by CG&E through the use of a Work Request, punchlist ticket, or by other written authorization; (ii) the CI project engineer will classify (safety-related or nonsafety-related) the work and determine whether a CWP or WP will be used to control the work; and (iii) the CWP or WP will be prepared, reviewed, approved and distributed in accordance with the requirements of Procedure NMP-2. NMP-20, Revision 0, Section 7.1.4, also required that CI shall be responsible for identifying the design documents required to implement a work assignment. Section 3.2.2 states that all work assignments received shall be logged in by the Central Distribution Center (CDC).
- b. Procedure NMP-2, Revision 1, defined the administrative requirements established for preparing, making changes to, reviewing, approving, and controlling CWPs and WPs. Sections 2.1 and 4.1 required the receipt of a WR from CG&E prior to the preparation of a CWP/CP. Section 9.0 required that, all CWPs shall be reviewed by a second engineer and quality assurance. The engineer review required verification and that the manner in which work was to be accomplished met the engineering requirements contained in the specifications, procedures, and drawings. The quality assurance review required verification that code/regulation and QA/QC inspection requirements would be controlled and implemented. Appropriate approval signatures and dates were required after the CWP packages were adequately prepared and reviewed. Section 5.7 required that a list of required CWP/WPs shall be prepared and incorporated into a Document Control Log.
- c. The inspectors identified the following inadequacies related to the above procedures:
 - (i) The inspectors reviewed several approved CWPs and WPs against the records being maintained by the Work Request Coordinator, the punchlist, and the records being maintained by the CG&E QE Clerk. The records revealed that at least the following CWPs/WPs had been prepared without an approved WR:

- (1) CWP FC-01-424.00, Remove Existing Fuel Pool Heat Exchangers, was approved June 18, 1982, while WR 82-0770 covering that job was dated June 21, 1982 (three days).
- (2) CWP 82-007.21, Demolition of Existing S-12, S-13, and S-14 Supports to the CRD System was approved July 22, 1982, while WR 82-1028 covering that job was dated July 26, 1982 (four days).
- (3) CWP 82-028, Refurbish Painted Welds and Fireproofing for QCP was approved June 3, 1982, while WR 82-0803 covering that job was dated June 23, 1982 (twenty days).
- (4) The WP was prepared by CI for the removal of fireproofing from structural steel members and to remove paint from welds. No Work Request was generated by CG&E. After the work had started, CG&E identified the work as being essential or nonessential seismic. Had CI prepared the WP after receipt of a WR, the WP may have received the proper classification before actual work had commenced.

The failure to follow NMP-2 Paragraphs 2.1 and 4.1 is considered to be a violation of 10 CFR 50, Appendix B, Criterion V and Wm. H. Zimmer QA Manual, Section 5. (358/82-13-03(C))

NOTE: CI was rewriting NMP-2 to ensure preparation of CWP/WP was properly controlled. The licensee stated the revised procedure would be implemented by October 14, 1982.

- (ii) The inspectors requested to review the log or logs of work assignments and CWPs which were addressed in NMP-2 and NMP-20. The CI Project Engineer presented a log (work status log) which appeared to be comprehensive, except for the exclusion of QCP Work Orders. The CI management personnel indicated that there was no procedure established to control the log (e.g., how entries and deletions would be controlled and distribution of the log).

During a review of the items listed in the log versus WR status being maintained by the work request coordinator, it was determined that punchlist items VT-1-281 and VT-1-282, had been designated in the master punchlist as completed per Work Request No. 82-0202. The review of the work status log indicated that these items were not completed.

On September 17, 1982, the CI management stated that a procedure would be established, to control the work status log, within the next few weeks. This matter is open and will be reviewed during a subsequent inspection.
(358/82-13-16)

(iii) Procedure NMP-20, Revision 0, Section 3.4, required the CI project engineer shall determine the safety classification of the work and the respective control package (CWP vs. WP) to be used. The procedure was considered inadequate. This procedural inadequacy allowed the uncontrolled removal of fireproofing and paint to allow inspection of beam welds. As a result of the misclassification, a CWP was not generated and all QA requirements were bypassed. The failure to provide an adequate procedure to control classification of work is contrary to 10 CFR 50 Appendix B, Criterion V and the Wm. H. Zimmer QA Manual Section 5.1. The CI management indicated that Work Orders classified as nonsafety-related (nonessential) were sampled on a surveillance basis by QA to assure proper classification. The licensee (CG&E) stated that this inadequacy would be resolved by requiring all work authorizations to be classified by CG&E before they are issued to contractors.
(358/82-13-03(D))

(iv) Procedure NMP-20, Revision 0, Section 7.1.4, stated that Catalytic shall be responsible for identifying the design documents required to implement a work assignment. The statement alone did not establish sufficient measures to control the issuance of documents, such as drawings, which prescribe all design activities affecting quality. A specific document control deficiency, which was related to this procedural statement, was identified in CI CWP No. 82.007.20 which did not reference S&L Drawing No. S.680, Revision H, "HCU Support Framing Plan Sections and Details," and the "HCU and CRD Support Notes." The failure to control the issuance of the above drawing is contrary to 10 CFR 50, Appendix B, Criterion VI and the Wm. H. Zimmer QA Manual, Section 6.1. (358/82-13-06(B))

NOTE: The impact of this specific item of noncompliance appeared to have resulted in no adverse effects to the quality of the activities.

3. Corrective Action Report No. 82-47

With respect to CAR 82-47, initiated on June 7, 1982, (see Paragraph 1.b.(v) of this section) no specific or generic actions had been taken as of September 8, 1982, to either stop the related work or to correct the identified deficiencies that resulted from a misclassified safety-related work order (authorization). The deficiencies included the uncontrolled removal of fireproofing and paint to allow inspection

of welds. The failure to take appropriate and timely corrective actions is contrary to 10 CFR 50, Appendix B, Criterion XVI and the Wm. H. Zimmer QA Manual, Section 16. (358/82-13-08(C)) Based on this finding, CI issued a Stop Work Notification (SWN) No. 001 on September 9, 1982, to stop all work, except scaffolding, on all QCP Work Orders issued to CI. The SWN would be in affect until the Work Orders were adequately reviewed for proper classification. Also, CG&E issued Stop Work Order No. 82-02 on September 9, 1982, to stop work on all miscellaneous work requests issued by QCP.

4. Corrective Action Report No. 82-30

During the review of the QCP Work Order concerning removal of fireproofing from structural steel members, the inspector requested the design, installation, and inspection requirements for the fireproofing that had already been installed and for the fireproofing that would have to be replaced. The licensee provided Corrective Action Report (CAR) No. 82-30, dated April 13, 1982. The CAR indicated that the original fireproofing was installed, excluding the QA requirements. The indicated corrective action to be taken stated that the fireproofing was nonessential and therefore did not have to comply with the QA requirements. The indicated corrective action appeared to be made by an individual who was outside the QA program. The classification of this specific CAR as nonessential and the dispositioning by an individual apparently outside the QA program is unresolved pending further review. (358/82-13-12)

5. Control Work Package 82-038

On September 7, 1982, the licensee stated that no safety-related work had been, or could be performed, by CI before a CWP was approved. The inspector requested the list of all CWPs approved to date. CI provided a list of 16 approved CWPs. The 16 CWPs appeared to have specifically defined scopes of work (e.g., demolition of the existing S-7 and S-8 hanger supports).

The inspector selected one (No. 82-038) of the 16 CWPs for review. The scope of CWP 82-038 included the repair work on structural beams, which had been identified as nonconforming. Nonconformance Report (NR) No. Q-QAD-82-2222, Revision 1, was being used to document the beam deficiencies. The pertinent CG&E QCP personnel stated that the beams were being inspected by CG&E QC inspectors in accordance with CG&E Procedure 19-QA-28 as part of the QCP. When deficiencies were identified, they were documented as part of NR Q-QAD-82-2222, Revision 1. The NR was an enclosure to CWP 82-038.

The NR was designated as a "Generic NR" because it identified all of the individual types of deficiencies (e.g., weld slag inclusions, unacceptable re-entrant corners) that the NR would address, prior to the initial inspections. Along with the individual types of deficiencies, the NR defined respective corrective actions which included references to the acceptance criteria (e.g., AWS D1.1-72 and Design Document Change No. SLS-709, Revision A).

- a. The inspector checked the control of two of the DDCs (Nos. SLS-709, Revision A and SLS-689, Revision 0), defined as criteria in the NR and CWP. The site document control center status records indicated that DDC-SLS-689, Revision 0 was current and properly controlled. The control center had no record of Revision A or any subsequent revisions to DDC-SLS-709. The control center's records reflected only Revision 0 to DDC-SLS-709.

DDC-SLS-709 was written against the Sargent and Lundy (S&L) Specification H-2174, Sections 5-2 and 5-3. The inspector questioned the CG&E QCP personnel responsible for NR No. Q-QAD-82-2222, Revision 1, about the proper revision and control of DDC-SLS-709. The QCP personnel provided copies of Revisions A, B, and C to SLS-709, which had been transmitted directly to the QCP personnel from S&L and not through the site document control center. Also provided was a copy of Specification H-2174, Section 5-2, Design Document Change Table 5-2-2, Revision 0, dated May 13, 1982. The table indicated that Revision C to DDC-SLS-709 had been revised by DDC-SLS-711. The QCP personnel also provided DDC-SLS-713 which superseded SLS-711 and DDC-SLS-737 which superseded SLS-713. The failure to control the distribution of the above DDCs and subsequent revisions is contrary to 10 CFR 50, Appendix B, Criterion VI and the Wm. H. Zimmer QA Manual, Section 6.1. (358/82-13-06(C)) The QCP personnel indicated that none of the subsequent revisions to DDC-SLS-709, Revision 0, changed the design requirements relating to NR No. Q-QAD-82-2222, Revision 1. Most of the revisions were for correcting typographical errors. This specific failure to control revisions to DDC-SLS-709 appears to have a very limited impact on the quality of the plant.

- b. The inspector requested to review the control measures which had been established to assure that subsequent revisions to design documents (e.g., DDCs, drawing revisions, specification revisions, procedure revisions, etc.) would be evaluated for impact on CWPs that have been completed or partially completed. The inspector was concerned about the lack of established measures to evaluate the impact of the subsequent revisions to DDC-SLS-709, Revision 0, on the work completed in CWP-038 to prevent the use of incorrect or defective material, parts, and components. The licensee stated that no such measures had been established. Failure to establish control measures is contrary to 10 CFR 50, Appendix B Criterion VI, and the Wm. H. Zimmer QA Manual Section 6 (358/82-13-06(D)). The CG&E QCP personnel responsible for NR No. Q-QAD-82-2222 Revision 1, stated that the personnel had plans to revise (Revision 2) the NR to reflect the latest design documents. The personnel also stated that the plans did not include evaluation of the impact of those latest design documents on the work and inspections already completed. Thus, the potential would exist for the CWP records to incorrectly indicate that the affected plant systems were built to the latest design requirements when in actuality the affected systems were built to superseded design requirements.

- c. The CG&E QCP cognizant personnel stated that all of the deficiencies identified on NR Q-QAD-82-2222, Revision 1, had been corrected and reinspected. The inspector selected and reviewed the inspection records for the following four deficiencies (conditions), identified in CWP 82-038 (NR No. Q-QAP-82-2222, Revision 1):
- (i) Page 10 of the NR, Beam 76, Condition F identified undercut along weld No. 2 between beams 76 and 74.
 - (ii) Page 3 of the NR, Beam 59, Condition E, identified Weld No. 1, which connected beams 59 and 71, as being undersized.
 - (iii) Page 4 of the NR, Beam 60, Condition N, identified unacceptable re-entrant corners at the connection of beams 60 and 66.
 - (iv) Page 2 of the NR, Beam 61, Condition L, identified base metal reduction (overgrinding) on weld No. 3 of beam connection 61-71 and weld No. 6 of beam connection 61-74.

The reinspections, made after the rework/repair had been completed and performed by the CI QC inspectors, were documented on CI forms, titled, "Welding/Brazing Check List for NR Repair/Rework per AWS D1.1-72." The CI form had entries for welder identification (ID), filler metal, and weld procedure specification number. The CI management stated that the actual entries for welder ID and filler metal were made by the craftsman and the weld procedure specification entry was made by the welding engineer prior to commencing the work activity. The form also identified the type of inspections (e.g., visual, radiography, etc.) required to be performed. The form included signatures of both CI and CG&E QC inspectors.

The initial inspections (which identified the deficiencies) and the reinspections performed by the CG&E QC inspectors were documented on CG&E Forms 19-QA-06, Attachment 1 (weld inspection reports). The CG&E forms indicated the location of the deficiency, the QC inspector signature and date, accept or reject, welder ID, and remarks. The CG&E QCP personnel stated that the welder ID was copied from the mark made by the welder on the beam.

None of the above forms (CI or CG&E), used for the four respective deficiencies identified or referenced the inspection (acceptance) criteria. The CI management and inspection personnel stated that the criteria used by the CI inspectors was defined in CI Procedure EIW-1, which was directly referenced in cover pages to CWP 82-038. The inspector verified that the reference to EIW-1 was made. A copy of the EIW-1 inspection criteria was also provided in the CWP.

The CG&E QCP management and inspection personnel stated that the criteria used by the CG&E inspectors was defined in CG&E Procedure 19-QA-28, Revision 0. No documentation was provided to indicate

(or reference) that Procedure 19-QA-28 was the inspection criteria used by the CG&E QC inspectors. The failure to record the inspection procedure which was used as acceptance criteria by the CG&E inspectors is contrary to 10 CFR 50 Appendix B Criterion XVII and the Wm. H. Zimmer QA Manual, Section 17. (358/82-13-13)

NOTE: This item is a repeat of an item of noncompliance identified in IE Report No. 358/81-13-30.

- d. Discussions with the CG&E QCP personnel and CI management personnel, reviews of the QC inspection records of the four deficiencies addressed above, and a review of the EIW-1 and 19-QA-28, Revision 0, inspection criteria revealed that no inprocess inspections (i.e., verification of welder, weld procedure specification, and weld rod) had been required or performed by either CG&E or CI QC inspectors for any of the weld repairs made per CWP 82-038 (NR Q-QAD-82-2222, Revision 1). The failure to establish a program to verify the inprocess weld repair activities addressed in CWP 82-038 is contrary to 10 CFR 50 Appendix B Criterion X, the Wm. H. Zimmer QA Manual Section 10, AWS D1.1-1972 Code, Section 6, and ANSI N45.2.5-1972, Section 5. (358/82-13-04(D))

NOTE: This item is a repeat of an item of noncompliance identified in IE Report No. 358/81-13-13.

The inspector did not compare CG&E procedure 19-QA-28, Revision 0, to CI Procedure EIW-1, but did inquire as to why two different procedures were being used to evaluate the same activity. The management personnel responsible for CWP 82-038 indicated that Procedure 19-QA-28, Revision 0, was less stringent than EIW-1 because S&L had permitted certain deviations from the AWS D1.1-1972 code and those deviations were included in Procedure 19-QA-28. This matter is unresolved pending review of Procedure 19-QA-28, Revision 0. (358/82-13-14)

- e. One of the generic deficiencies (Condition E) covered by NR Q-QAD-82-2222, Revision 1, was undersize welds. The disposition which was also generic, required additional weld metal to be deposited, assuring that the design leg and throat sizes of the weld were met. The disposition also referenced part of the AWS D1.1-1972 code, which required additional weld metal to be deposited. For the specific deficiency identified on page 3 of the NR, beam 59, Condition E, no specific design requirements (i.e., drawing details for the leg and throat sizes) were specified in the CWP including the NR, for the specific weld that was documented as deficient (undersized). This matter is unresolved pending further review to determine if other design controls were established and implemented for the above weld to assure that the design criterion for the above weld size was specified and used during the initial inspection, the weld activity, and the reinspection. (358/82-13-15)

6. CI Audits of CI Activities

The inspector reviewed audit report No. WHZ-1, dated March 31 to April 2, 1982, which was performed by a CI corporate auditor. The indicated purpose of the audit was to evaluate the effectiveness of the site CI QA program. The audit indicated that, since actual work had not started as of the dates of the audit, only cursory reviews were made of activities addressed in 23 site procedures. One deficiency (finding) was identified during the audit. The finding stated that the quality assurance engineer was not receiving the documents required to define the scope of the CI work. As of September 17, 1982, no actions had been taken to correct the deficiency. Furthermore, this deficiency is very closely related to the problem concerning the designation of the CI scope of work, which is addressed in paragraph 1 of this report section. The failure to assure that the above audit finding was promptly corrected is contrary to 10 CFR 50, Appendix B, Criterion XVI and the Wm. H. Zimmer QA Manual, Section 16. (358/83-13-08(D))

No other audits of CI site activities had been performed by any CI management as of September 17, 1982. CI has had approval to perform safety-related work since March 30, 1982 (CWP 82-038). Therefore, since Audit WHZ-1 was only cursory, Catalytic had essentially not performed any audits to determine the effectiveness of the QA programmatic controls of work activities.

Letter No. QAA-CCW-341, dated August 30, 1982, from the CI Supervisor of QA Audits to the site CI management, stated that an audit was scheduled for the week of September 27, 1982, to evaluate the QA program pertaining to ASME work related activities. The letter also stated that the audit checklist, which would be used, would be sent to the site prior to the audit for use by the site QA manager to conduct a self-evaluation. The inspector was shown the checklist at the site on September 17, 1982. The practice of disclosing the (detailed) attributes of an audit, prior to performing that audit, is considered to be a deviation from accepted industry practice and inconsistent with the regulatory requirements of independently determining the effectiveness of the QA program. The Wm. H. Zimmer QA Manual and ANSI N 45.2-1971 address QA audit program requirements and the requirement for the audit program to adequately determine the effectiveness of activities. (358/82-13-16)

7. CG&E Audits of CI Activities

On September 17, 1982, the inspector reviewed CG&E schedule of audits concerning CI activities. The schedule was based on the implementation of the CI procedures, because all of the CI procedures were reviewed and approved by CG&E prior to implementation. The list of approved CI procedures appeared to address all 10 CFR 50 Appendix B Criteria, including interfaces. As of September 17, 1982, only the following two audits (F.A. 388 and 412) had been performed by CG&E of CI procedural implementation:

- a. The inspector reviewed CG&E audit No. F.A. 388, dated March 1-11, 1982, of CI activities. The indicated scope of the audit included procurement, storage, training, qualification, and document control. Audit No. F.A. 388 appeared to be extremely narrow in scope and depth. The CG&E Director of Quality Audits stated that Audit No. F. A. 388 was limited in scope and depth because of the very limited scope of CI work activities at the time of the audit. Audit No. F.A. 388 identified two findings and three "concerns." The licensee stated that procedurally, findings (Audit Finding Reports, AFR) required followup actions, and that "concerns" were those items which do not affect the quality of the plant and do not require followup audits to verify effective corrective action. The two findings appeared to be properly controlled and closed. One of the three concerns (Concern No. 2) appeared to be adequately characterized and controlled. The two concerns (No. 1 and No. 3) appeared to be mischaracterized.

Concern No. 1 stated that the CI site QA manager (SQAM), and QA engineer (QAE) did not have certifications per ANSI N45.2.6. The written response from CI to the concern indicated that the lack of certifications had been resolved. As of September 17, 1982, no followup action had been taken by CG&E to verify the specific concern or the generic implications because concerns procedurally did not require followup. The CG&E auditor stated that the lack of certifications was designated as a "concern" because the SQAM and QAE were not performing any safety-related activities at the time of the audit.

Concern No. 3 stated that controls had not been established to control "Limited Life Materials" (materials such as paint, which has a specified shelf life). The CI written response to the concern stated that a log was set up to identify "shelf life materials" and that the warehouse supervisor would verify that the shelf lives had not expired. As of September 17, 1982, no followup action had been taken by CG&E. On September 17, 1982, the inspector observed approximately 10-gallons of paint (material order No. 1012-00, received December 13, 1981) which was locked in storage. The shelf life of four gallons of the paint had expired on September 13, 1982.

The paint cans were tagged for a specific plant use. The warehouse supervisor stated that the specified use has since been cancelled. CI letter, No. I.O. 82-404, dated April 21, 1982, stated that prior to using any "limited life materials," the warehouse supervisor shall verify that the shelf life had not expired. The letter also stated QC shall verify the shelf life of materials during quarterly inspections. On September 17, 1982, the warehouse supervisor stated that the issuance of safety-related materials was verified by CI QC inspectors, not the warehouse supervisor. No measures were established to require QC inspectors to verify the expiration dates of limited life materials prior to issuance. The following two problems still existed, relative to Concern No. 3:

- (i) An uncontrolled letter (IO 82-404) was used to identify QA procedural requirements.
- (ii) The procedural requirements identified in the letter did not adequately establish controls for the issuance of limited life materials.

NOTE: For Concern No. 3, there appeared to be no specific adverse plant conditions which resulted.

The failure to require followup action of deficient areas addressed in Concerns 1 and 3 is contrary to 10 CFR 50, Appendix B, Criterion XVIII and the Wm. H. Zimmer QA Manual, Section 18. (358/82-13-07(B))

- b. The inspector made a cursory review of CG&E Audit No. 412, dated August 2-31, 1982, of CI activities. The indicated scope of the audit included the implementation of procedures which controlled (1) instructions, procedures, and drawings (2) special processes, (3) inspections, (4) nonconformances, (5) corrective action, and (6) audits. The audit appeared to be comprehensive and objective. The audit findings appeared to be adequately addressed. Some portions of the audit were not completed at the time of the inspection.

Based on the audits activities addressed in Paragraphs 6 and 7 above, there appears to have been insufficient audits performed of Catalytic activities, prior to August 1, 1982. This deficiency is addressed in Section I, Paragraph 7, of this report.