GULF STATES UTILITIES COMPANY
RIVER BEND STATION POST OFFICE BOX 220 ST. FRANCISVILLE, LOUISIANA 70775
AREA CODE 504 635-3237 387-4257

December 5, 1984
RBG- 19652
File Nos. G9.5, G15.4.1

Mr. Robert D. Martin, Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV, Office of Inspection and Enforcement
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

RECEIVED
DEC 10 1984

Dear Mr. Martin:

River Bend Station - Unit 1
Refer to: RIV
Docket No. 50-458/Report 84-23

This letter is in response to items contained in NRC I&E Inspection Report No. 50-458/84-23 as requested by your Reactor Inspector, Mr. W. M. McNeill, during his follow-up inspection the week of November 26, 1984. The report concerns the Construction Appraisal Team (CAT) inspection conducted by the Office of Inspection and Enforcement on July 30-August 10 and August 20-31, 1984, at the River Bend Unit 1 site. The Construction Appraisal Team was composed of members of IE, NRC Region IV, and a number of consultants. The inspection covered construction activities authorized by NRC Construction Permit CPPR-145.

If you have any questions regarding the attached information, please let us know.

Sincerely,

W. J. Cahill, Jr.
Senior Vice President
River Bend Nuclear Group

PJD TCC
WJC/PJD/TCC/cmc

Enclosures: 1.a and 1.b - Response to Potential Enforcement Action (PEA) No. 1
2. Response to PEA No. 2
3. Response to PEA No. 3
4.a and 4.b - Response to PEA No. 4
5. Response to PEA No. 5

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CONSTRUCTION APPRAISAL TEAM
Inspection Report Response

Acronym List

CAT	Construction Appraisal Team
CCCP	Construction Control Completion Program
ECSIS	Electrical Cable Schedule Information System
FQC	Field Quality Assurance
GSU	Gulf States Utilities
IP	Inspection Plan
IPCEA	Insulated Power Cable Engineers Association
N&D	Nonconformance and Disposition Report
QA	Quality Assurance
QCI	Quality Control Instruction
QMIP	Quality Model Inspection Plan
QSD	Quality Systems Division
SWEC	Stone & Webster Engineering Corporation

Item No. 1

Finding

Contrary to 10CFR50, Appendix B, Criterion II, and GSU Nuclear Quality Assurance Manual (NQAM) Quality Assurance Procedure QAP-2, the applicant failed to regularly review the status and adequacy of the Quality Assurance Program in that certain quality trending documents did not receive adequate management review. (Section IX.B.2)

Response 1.a - GSU Action

Cause: In using the available SWEC periodic reports which provided information relating to discrepancies, quality problems and trends; GSU failed to establish a disciplined approach to evaluating the credibility of the information provided.

Corrective Action: GSU has identified seven types of periodic quality reports currently distributed to us by SWEC. We have evaluated the programmed contents of each and requested GSU QA be removed from distribution of CCCP Unsatisfactory Inspection Reports and CCCP N&D Reports as they are statusing documents, not quality reports. QSD in Boston has discontinued issuance of the Process Averages - Field Inspection Report. It will be replaced by a Quarterly Project Trend Report (QSD QCI 1.01. Rev. B). GSU QA has requested to be placed on distribution and will evaluate this new report when received. The current issue of the other four reports have been reviewed by GSU QA and no deficiencies were observed.

Preventive Action: Appropriate management within GSU was informed of the CAT finding by Memorandum GSU-QAE-84-131 and were requested to evaluate the credibility of the data as they review issued reports. Additionally, they have been requested to provide feedback of any anomalies discovered or suspected.

Response 1.b - SWEC Action

Cause: The basic cause of this finding was a communications problem between one of the Field Quality Control Disciplines and the personnel responsible for preparing the monthly report. The Mechanical Equipment Discipline had previously been reporting types of inspections and the number of satisfactory inspections performed. No unsatisfactory inspections were shown on this list. Because the rejection rate for this discipline had been so low in the past, the individuals preparing the monthly report thought that the reason no unsatisfactory inspections were being reported was because

no unsatisfactory inspection reports had been written. Therefore, without questioning the input from the Mechanical Equipment Group, they showed a 100% acceptance rate for this discipline. The NRC inspector questioned this assumption and determined that unsatisfactory inspections had been made. He contended that the situation represented lack of management attention because they had not discovered a problem which was easily discovered by him.

Corrective Action: The discipline involved reconstructed their satisfactory and unsatisfactory inspection history and a new trend chart was prepared. It is important to note that with the new figures, the change in acceptance rate went from 100% to between 95-98% and there were no noticeable negative trends in the acceptance rate.

The Field Quality Control Monthly Report, The Project Quality Test Group Monthly Report, and the CCCP Monthly N&D and Unsatisfactory Inspection Report were reviewed and found not to exhibit this condition (i.e., 100% acceptance).

In accordance with the Construction Appraisal Team's recommendation, the group responsible for distributing the Process Averages Report has been requested to include GSU on all future distribution of that report.

Preventive Action: Stone & Webster senior management was informed of the Inspector's opinion regarding S&W's review of the monthly report and S&W was requested to make a thorough review of that report in the future.

To prevent recurrence, a memorandum has been sent to all disciplines requesting that they look at their monthly report input and determine if it covers all their inspections. The disciplines have also been informed that Monthly Report information will no longer be accepted unless it lists the number of unsatisfactory inspections as well as the number of satisfactory inspections.

Item No. 2

Finding

Contrary to 10CFR50, Appendix B, Criterion III, and GSU NQAM QAP-3, design control has not been maintained as the applicant has:

a. Failed to verify adequacy of design. Load calculations for Reactor Building cable tray supports were based on design information which does not represent as-built configurations. (Section II.B.1)

b. Failed to properly translate FSAR requirements for items such as cable tray fill, cable spacing and control of aluminum permanent plant materials inside of the containment drywell, into specifications, drawings, procedures and instructions. (Sections II.B.1 and II.B.2)

Response

Each of the particular concerns identified in the CAT Inspection Report has been evaluated. The cause, corrective action and preventive action for each of these concerns are enclosed (attachments 1 through 4).

GSU contends that the conditions observed do not represent significant nor symptomatic breakdowns in design control. The following discussion is provided in addition to the individual responses attached:

- The extent of the condition determined for Item 2 did not represent a significant percentage of total hardware installed, indicating that the design information supplied to Construction did not lead to significant hardware deficiencies. The conservatism inherent in the design basis calculation allowed for resolution without hardware modification. The observed condition would not have adversely impacted the safe operation or safe shutdown of River Bend Station had it remained uncorrected.

- The note which allowed Construction to install cable tray supports outside design basis tolerances was isolated to the observed condition.

- The translation of general FSAR commitments into implementing documents often must consider unique circumstances involved. SWEC's implementation of the conditions observed in Item 2b included considerations of:

  i) utilization of a computerized method of identifying cable tray fill conditions,

ii) interpretations of IPCEA recommendations in relation to the practicalities of cable installation, including consideration of the technical basis of the recommendation in the supporting design calculations, and

iii) the significance of the contribution of zinc and aluminum in relation to the specific design of River Bend Station.

Each of the conditions observed, therefore, were consistent with the intent of the specific FSAR commitment.

RIVER BEND CONSTRUCTION APPRAISAL TEAM INSPECTION REPORT

ENGINEERING CONCERN RESOLUTION

DESCRIPTION Horizontal member lengths of cable tray supports not in accordance with design information.

Ref. Report Pages B-1;II-6,8,;VII-8 Ref. SWEC Item No. 111

CAUSE

Electrical drawing EE-340YY-3, Note 6 states "Dimensions shown are recommended. Actual dimensions are to be determined at installation." This note was intended to allow Construction to field cut member lengths of supports to suit actual installation conditions, yet did not recognize that the design basis calculation which qualifies the tabulated member lengths had a +/-6" tolerance. The flexibility inherent in Note 6 caused certain member lengths to vary by more than the tolerance included in the design basis calculation.

EXTENT OF CONDITION

1. A 100% review of all supports in the Reactor Building controlled by drawing EE-340-YY was performed to determine the actual as-built dimensions of horizontal members. Five supports (RB-184A, 185A, 186A, 187AS, and 201A) were found to be outside the +/- 6" tolerance allowed in the design basis calculation.

2. A review was conducted of other electrical support drawings by Project Engineering to ascertain whether similar notes exist which would represent adverse conditions. No additional instances were found where notes on engineering documents could lead to similar occurrances. Therefore, the observed condition represents an isolated case.

ACTION TAKEN TO CORRECT EXISTING CONDITION

1. Calculation 12210-ES-5000 was prepared and issued to qualify the supports which were found to be beyond the +/- 6" allowed in the design basis calculation.

ACTION TAKEN TO PREVENT RECURRENCE

1. E&DCR's C-25,090 and P-21,255G were issued to revise the notes on drawings EE-340YY and EE-340YZ to limit the field allowed tolerances to +/- 6", which will ensure all as-built configurations will be qualified by the design basis calculation.

DATE ACTION SCHEDULED TO BE COMPLETE November 30, 1984

D.P. Barry, Supt. of Engineering	FOR OAB	DEC 03 1984
Responsible Party/Organization	Signature	Date

The following questions must be addressed:

1. Would the condition of concern to the NRC CAT team have been detected if it had not been discovered during the inspection? (If the answer to this question is YES, provide details to support answer.)

   No.

2. When required corrective/preventative action is completed, will a hardware change and/or a change to construction documents be necessary? (If the answer to this question is YES, provide details.)

   No.

Enclosure 2
Attachment 2

RIVER BEND CONSTRUCTION APPRAISAL TEAM INSPECTION REPORT

ENGINEERING CONCERN RESOLUTION

DESCRIPTION FSAR committment for cable tray overfill not translated into implementing documentation.

Ref. Report Pages B-1;II-13;VII-8 Ref. SWEC Item No. 34

CAUSE

Engineering's program for control of tray fill was based on utilization of the ECSIS EC-12 and EC-36 reports, which provide for authorization of overfill conditions on a case by case basis. The ECSIS system is based on weight and volume of installed cable and allows Engineering to authorize an overfill condition based upon the theoretical fill characteristics assumed by ECSIS. However, due to the physical limitations (ie: cable twisting, positioning) which are not reflected in the ECSIS system, cases were observed in (continued on page 3 of 3)

EXTENT OF CONDITION

This condition was found to exist in X, K, and C service cable tray in various areas within the plant.

ACTION TAKEN TO CORRECT EXISTING CONDITION

Field Quality Control has issued Unsat Inspection Reports identifying those cable tray which have cable installed above the height of the tray side rails to facilitate rework of these conditions.

ACTION TAKEN TO PREVENT RECURRENCE

E&DCR C-25,075 was issued to revise Specification 248.000 to prohibit the installation of cable in tray when that cable will exceed the height of the tray side rail. E&DCR C-26,013 was subsequently issued to provide direction for cases where cables do extend above the height of the tray side rails. FSAR Change Notice F8.3-20 was also generated to clarify FSAR requirements in this area.

DATE ACTION SCHEDULED TO BE COMPLETE All necessary documents have been issued, however physical changes for installed conditions will be scheduled in relation to system/building turnover.

T.M.Shea, Electrical (SEG) /D.P. BARRY [signature] 11-21-84

Responsible Party/Organization Signature Date

The following questions must be addressed:

1. Would the condition of concern to the NRC CAT team have been detected if it had not been discovered during the inspection? (If the answer to this question is YES, provide details to support answer.)

   No.

2. When required corrective/preventative action is completed, will a hardware change and/or a change to construction documents be necessary? (If the answer to this question is YES, provide details.)

   Yes. Extended tray covers or an Engineering analysis will be required for all cable tray in QA Category I buildings which were found to have cable installed so that it protrudes above the height of the tray side rail.

CAUSE (Continued)

the field where Engineering approved overfill conditions which resulted in cables protruding above the top plane of the tray side rails. This reliance on the ECSIS system, which assumes cable to be uniformly in place and does not take into consideration the practicality of cable installation, was the cause for the observed condition. This proved to be an ineffective method of implementing the FSAR commitment due to the physical variables associated with cable installation.

RIVER BEND CONSTRUCTION APPRAISAL TEAM INSPECTION REPORT

ENGINEERING CONCERN RESOLUTION

DESCRIPTION Cable spacing requiremet not in accordance with FSAR commitment to IPCEA requirements.

Ref. Report Pages B-1,II-12 Ref. SWEC Item No. 34,255

CAUSE

E&DCR C-23,992, which documented the requirements in question, was considered to be in compliance with IPCEA standards. All cable sizing calculations have taken into account the required derating factor based on grouping and spacing as recommended in the IPCEA publication. Refer to discussion on page 3 of 3 for additional background information.

EXTENT OF CONDITION

These requirements apply to cable in H, J, and L service cable tray.

ACTION TAKEN TO CORRECT EXISTING CONDITION

The interpretation of IPCEA recommendations utilized in E&DCR C-23,992 is under investigation by Project Engineering. This investigation is considering any development or supplement to the existing technical basis, updating of electrical calculations, and development of any FSAR changes which may be required to substantiate the current requirements.

ACTION TAKEN TO PREVENT RECURRENCE

To be determined upon completion of investigation described above.

DATE ACTION SCHEDULED TO BE COMPLETE December 10, 1984

P.K.Guha, Electrical (CHOC) — Responsible Party/Organization

Signature

11/21/83 — Date

The following questions must be addressed:

1. Would the condition of concern to the NRC CAT team have been detected if it had not been discovered during the inspection? (If the answer to this question is YES, provide details to support answer.)

   No.

2. When required corrective/preventative action is completed, will a hardware change and/or a change to construction documents be necessary? (If the answer to this question is YES, provide details.)

   No.

DISCUSSION

E&DCR C-23,992 revised specification 248.000 to require maintained cable spacing at intervals of three feet (maximum) for power cables in J, H and L service cable tray. A review is currently being conducted by Project Engineering to verify compliance to FSAR Section 8.3.1.4.4.2 which states in part that "cables are derated for grouping and spacing in accordance with IPCEA recommendations".

It was felt at the time of E&DCR preparation that the document did not conflict with the FSAR. These power cables have been derated for grouping and spacing in accordance with the IPCEA publication. All cable sizing calculations have taken into account the required derating factor based on grouping and spacing.

It was recognized that it is unrealistic to expect cable to maintain consistent spacing after installation. Temperature changes and rapid changes in current in the cables as well as the natural tendency of triplexed cable to untwist will cause the cables to move between the points at which they are secured to the tray. Testing was therefore conducted to establish what practical cable spacing is required, utilizing IPCEA recommendations, to ensure that the cable temperature does not exceed its design rated value. Such testing was completed and forms the technical justification for E&DCR C-23,992. These tests demonstrate that the temperature of the energized cable will not exceed the design rating of the cable with only intermittant touching. It should be emphasized that the one-quarter cable diameter spacing is still an intended goal at the time of installation as it must be maintained at tie points both during and after installation. It was felt at the time that the above scenario met the intent of the IPCEA recommendations, and therefore the FSAR commitment.

RIVER BEND CONSTRUCTION APPRAISAL TEAM INSPECTION REPORT

ENGINEERING CONCERN RESOLUTION

DESCRIPTION Hydrogen production inside containment

Ref. Report Pages B-1;II-5,8 Ref. SWEC Item No. 204

CAUSE

The original revision of the project instruction (PMM-82) which established the program for hydrogen generation analyses in containment did not address aluminum as a source of hydrogen. In addition, the PMM was not being complied with.

EXTENT OF CONDITION

The problem is limited to the program defined by the referenced PMM due to the unique circumstances as stated above. See discussion on page 3 of 3 for amplifying information.

ACTION TAKEN TO CORRECT EXISTING CONDITION

PMM-82 has been revised to account for aluminum and to require a final confirmation analysis of hydrogen generation rates and quantities prior to fuel load. Calculation ES-138 which calculates hydrogen generation rates and quantities has been revised in accordance with EAP 5.3 to indicate 'confirmation required'.

ACTION TAKEN TO PREVENT RECURRENCE

Regulatory Guide 1.7 "Control of Combustible Gas Concentrations in Containment Following a LOCA" was review by the Lead Nuclear Technology Engineer to assure that the current program is in compliance.

DATE ACTION SCHEDULED TO BE COMPLETE March 1, 1985

T.S.Szabo, Nuclear Technology (CHOC) — Responsible Party/Organization

Signature

11/21/84 — Date

The following questions must be addressed:

1. Would the condition of concern to the NRC CAT team have been detected if it had not been discovered during the inspection? (If the answer to this question is YES, provide details to support answer.)

   Yes. PMM's are periodically reviewed to determine status and applicability. During one of these reviews, it would have been discovered that the PMM was not being complies with and that it did not address all concerns (ie: aluminum).

2. When required corrective/preventative action is completed, will a hardware change and/or a change to construction documents be necessary? (If the answer to this question is YES, provide details.)

   No.

Additional Discussion

Nuclear Technology Calculation ES-138 was done in May 1980. PMM-82 was written in August 1981, commiting to an update of zinc inventory every six months, which has not been done for reasons discussed below. ES-138 was updated in November 1983. One conclusion drawn from the calculation is that the contribution from aluminum and zinc is approximately three percent of the total hydrogen generated.

On that basis, minor or even major quantity changes of aluminum and zinc would have no safety implication, and an every 6 month update is not justified. Calculation ES-138 and Power Calculation PN-222 (quantity takeoffs) have been marked to require confirmation of commodities. PMM-82 has been revised to require a one time quantity update prior to fuel load.

Given that aluminum and zinc are not significant contributors at River Bend, the above constitutes adequate control of these materials in reference to Regulatory Guide 1.7.

Item No. 3

Finding

Contrary to 10CFR 50, Appendix B, Criterion VI, and GSU NQAM QAP-6, measures failed to assure that procedures and drawings, including changes, were used at the location where the prescribed activity is performed in that nine of the 37 inspection reports on anchor and high strength bolting identified the incorrect revision of either the drawing or the procedure. (Sections III.B.3 and V.B.2)

Response

Cause: The causes of this finding are the failure of the FQC Inspector to ensure that the latest drawing revision and inspection plan revision were indicated on the applicable inspection report and the failure of the Inspection Supervisor to identify his problem during his review. Contributing to the out of date inspection plan was the time lag from revision to issuance of the inspector. This problem was identified to have generally occurred during a period from 1980 through 1981.

Corrective Action: Prior to the NRC CAT Audit, this problem was identified during documentation review prior to document turnover to Gulf States Utilities. Several instances were noted on inspection reports to have incorrect information resulting in the issuance of several Type C Inspection Reports, S-460003, S-462011, S-4620075, and S-3620069.

Based on these results, a decision was made to review all inspection reports in the Structural Discipline, and perform a random check on inspection reports within the other FQC disciplines. Type C. Inspection Report S-4620104 provides this verification.

Quality Engineering publishes and issues to each discipline supervisor a Field Quality Control Inspection Plan Index. This index references all applicable inspection plans, and provides the QA category, applicable revision/change, inspection plan title, and a brief description of the plan.

Also, in order to achieve a timely distribution of Inspection Plan Revision/Change, a Memorandum is sent from the Quality Engineering Group to the discipline supervisor to provide notification of forthcoming Revisions and/or Changes.

Preventive Action: On a periodic basis, the Structural Discipline and the "Document Control Group" performs an audit surveillance on Station 63, whic is the Controlled Drawing Station assigned to the Structural Field Quality Control Personnel, to ensure the current revision of drawings are available to the inspector. A memorandum was issued on February 25, 1983 by the Field Quality Control Superintendent to ensure all inspection personnel are knowledgeable of the methods available to maintain copies of the latest revision to an inspection plan.

Quality Control Instructions, FR1-D14.1-03, "Review and Sign-Off of Test Reports and Inspection Reports", and FR1-17.1-030, "Turnover of Final Documentation to GSU Permanent Plant File", have been revised to include a Documentation Review Checklist to ensure personnel reviewing documentation are cognizant of the requirement for technical data recorded to be correct.

A memorandum was issued November 29, 1984, by the Resident Quality Control Manager instructing all discipline supervisors to establish a Document Review Checklist to comply with the requirements of QCI's.

Item No. 4

Finding

Contrary to 10CFR 50, Appendix B, Criterion X, and GSU NQAM QAP-10, applicant failed to provide an adequate inspection program in that:

a. Inspection of some raceways for physical separation had not been accomplished in accordance with the criteria established in the applicable procedures. (section II.B.1)

b. Safety-related ASME class pipe support/restraints have not been constructed and inspected in accordance with design requirements. (Section III.B.2)

Response 4.a

Cause: Gulf States Utilities does not agree with the NRC CAT finding since the work is not complete.

Physical separation must be accomplished in incremental steps with different programs as outlined in the Attachment 1 this enclosure. During the NRC CAT Inspection, the philosophy and programs were explained as noted in the CAT Inspection Report on Page II-3.

The following additional infomration, to satisfy the NRC CAT Inspectors' concern that tray covers and barriers are properly installed to achieve separation, was not presented during the audit. The specification requires that FQC visually check to assure that tray covers and fire barriers are properly installed. This requirement has been in the specification since 1980 and raceway installation did not begin until 1981. The inspection plan for this activity had not been issued at the time of the NRC CAT Inspection since the work was not planned to start until late 1984 or early 1985.

Corrective Action: During the NRC CAT Inspection, the following actions were taken to clarify the separation inspection program.

1. Field Quality Control (FQC) issued Quality Control Instructions FR1-S10.52-010, titled "Electrical Separation" to provide instructions and program requirements to ensure that special separation is accomplished.

2. FQC issued Inspection Plan R1248000F05480000 entitled "Final Separation Inspection". This document provides the inspection attributes necessary to achieve final inspection and acceptance of special separation.

In reference to the QCI and IP generated for separation the CAT Report states on Page II-4: "NRC CAT Inspectors reviewed these documents and noted that they provide a comprehensive basis for future inspection of electrical construction activities relative to the attribute of electrical separation."

In summary, GSU disagrees with the finding because:

1. Acceptance by FQC in the raceway ticket does not constitute acceptance for barriers, covers and wraps that are to be installed later under a different program.

2. Barriers, covers, and wraps have not been installed, therefore some separation problems will exist until these are installed. These are and will continue to be documented on N&D's, Unsat IR's and E&DCR's as applicable. Barriers, covers and wraps were previously identified as generic items on the SWEC Building Release Punchlists as requiring FQC Inspection.

3. All required procedures and plans have been developed prior to the work beginning.

Preventive Action: Implementation of the above described program will ensure separation requirements are met.

Response 4.b

Cause: The cause of this finding may be attributed to the following:

1. Testing on the systems of which the discrepancies were noted, i.e., struts 1° out of tolerance after FQC acceptance and prior to testing.

2. Inspection errors.

3. No provisions established to assure locking devices, once inspected, remained locked.

Corrective Action:

1. Twenty-eight (28) Unsatisfactory Inspection Reports and Nonconformance and Disposition Reports were issued to correct the identified deficiencies.

2. Further training of inspection personnel was conducted.

3. A Type C Iinspection Report P-4660302 was initiated to require reverification of piping and supports in accordance with Inspection Plans R-1228312F0501, R-1228312F0502 and R-7777777F0529. This will eliminate observed conditions such as: strut angles out of tolerance, loose locknuts, missing stiffener, gap in the lateral direction, unspread or missing cotter pins, bolts single nutted and not staked, wrong clamp installed, strut paddle to clamp alignments, snubbers unattached and unprotected left hanging by one end.

Preventive Action:

1. Procedure (FR1-ASME 3-02B) was revised to clearly identify a comparison of completed initial as-built drawing to the final as built drawing by FQC as-built group.

2. Additional education and training of inspection personnel has been performed.

3. Torque seal is being applied to bolted joints.

SEPARATION: Programs In Place From Initial Installation Thru Completion And Acceptance At River Bend

REFERENCE DOCUMENTS:

1. Electrical Installation Specification RB248000
2. Electrical Installation Drawings
3. ECSIS Program Manual 241100
4. Quality Standards
5. Quality Model Inspection Plans
6. Construction Method Procedure
7. Construction Site Instructions
8. Quality Control Instructions
9. Quality Control Inspection Plans

No singular document, or portion of it, can stand alone and be called the Separation Program. It is the intertwining of the above referenced documents which represents the nucleus of the requirements. These documents govern site work for the initial installation thru completion of raceway and cable systems to assure separation is achieved. They also delineate the organizational responsibilities for their implementation.

The specification and drawings delineate the hardware requirements, and the QS's, QMIP's, CMP's, CSI's, QCI's, QCIP's, and ECSIS delineate the program requirements on how to satisfy the hardware requirements. The typical flow of how these activities are accomplished is depicted on the attached Flow Chart. Although the chart depicts work activities, it is not a schedule. Some activities may coincide with others and some may precede others. For example, the cable routing must first be decided then supports and raceways are designed and installed; then cable is pulled.

While cable is being pulled or even sooner covers, barriers and wraps are being designed, but not installed until cabling is complete. After these steps are complete for an area, and only then, can the final separation be checked. In-Process checks are made by Engineering, Construction, and FQC personnel to identify either potential or actual separation problems.

It has been recognized in various programs and procedures that the installation of raceway and raceway covers/barriers are separate. The ECSIS Program Manual page 7-3, lines 94 thru 95 state: "The raceway installation tickets are to be used only to indicate that raceways have been installed and identified in accordance with drawings and/or schedules, for EFI documentation." The EFI being FQC for QA Cat I installations and CCCP for QA Cat II or III installations. Also on page 7-8 line 310 it states: "Tray covers are not required for sign off." Construction Method Procedure, CMP 1.11, entitled Construction Control & Completion Program, paragraph 1.1 states: "Purpose - to verify that completed construction work has been performed in conformance with engineering and contractual requirements." Also paragraph 5.1.1 states in part: "Prior to start of an activity or task, the responsible discipline Construction Supervisor shall prepare a CCCP. Where existing process control

forms are being completed ... preparation of the construction completion checklist may not be required ...." The Electrical Construction Department at River Bend has chosen to use the Raceway Ticket in lieu of the CCCP. This same CMP in paragraph 5.3 requires the Construction Supervisor to verify that when a unit of work is complete that he request FQC inspection on the CCCP, in this case the Raceway Ticket. When the Raceway Ticket is signed by Construction it signifies that the raceway is installed in accordance with the drawings. It does not constitute that tray covers or barriers are installed. The Inspection System Handbook (ISH) contains Quality Model Inspection Plans (QMIP) which are used as guidelines for the development of specific inspection plans based upon specification requirements and work activities by Construction. QMIP E-01 is for Cable Tray installation of cable tray covers. This points out again that raceway and raceway covers, barriers, or wraps are separate programs. Specific inspection plans have been developed for the installation of Cable Tray and Conduit, since these activities are in progress. Construction has not yet developed a CCCP for the installation of covers, barriers, and wraps, but they have not started the work. An inspection plan for the installation of covers, barriers and wraps has been developed based upon existing criteria.

Another program that addresses control of the completion of the work is the System Completion Equipment Release Procedure CSI 1.0.32. Each S&W department is given the responsibility of identifying open items/deficiencies against each system. Already addressed on each equipment release that involves raceway is an item requiring the raceway and supports are to be completed to facilitate cable pulling, although the raceway and supports are part of the building release.

FQC in accordance with their implementing procedure, QCI FRI-S11.1-01B have identified that the following items concerning raceway and separation will be inspected prior to building turnover.

1. Separation - Cable & Raceway
2. Tray
3. Conduit
4. Tray Covers
5. Barriers/Wraps
6. Stiffeners - Tray Supports & Conduit Supports
7. Bracing
8. Load Tracking of Supports
9. Supports

In summation, all required programs to ensure raceway, covers, barriers, and wraps are installed and separation is achieved have been in place. All implementing procedures to these programs have been developed for work that is currently in progress. Those remaining procedures that need to be developed have been identified and will be instituted prior to the beginning of those activities. These incremental steps are just parts of the whole process. When put together step-by-step the sum is equal to the whole.

RLS:jp
8/28/84

Item No. 5

Finding

Contrary to 10CFR50, Appendix B, Criterion XVI, and GSU NQAM QAP-16, the applicant's program has failed to assure that conditions adverse to quality have been promptly identified and corrected in that:

a. An identified problem with non-ASME snubber assemblies was not investigated sufficiently to reveal the same problem on ASME snubber assemblies supplied by the same vendors. (Section III.B.2)

b. A new specification requirement for the use of fire barrier sealant around fire damper to wall joints was not clearly identified to be backfitted to previously installed and accepted hardware. (Section III.B.5)

c. Inadequate corrective action is being taken to preclude repetition of nonconformances. (Section VIII.B.1)

Response:

Each of the individual items identified in this CAT Inspection Report finding has been evaluated. The details of cause, corrective action, and preventive action for each of these items are attached to this enclosure (attachments 1 through 6). All associated action is complete with regard to these items with the following exceptions:

Attachment 1. Continued evaluation and closure of snubber incompatability concerns in accordance with SWEC and GSU's 10CFR50.55(e) evaluation program (reference DR's 238 and 243), and

Attachment 2. Completion of the evaluation to determine the extent of the condition for generic E&DCR's addressing previously installed equipment.

Gulf States Utilities contends that the observed conditions do not represent a programmatic failure to assure conditions adverse to quality have been promptly identified and corrected. Several factors substantiate this conclusion in addition to the individual responses attached:

- The identification and resolution of the snubber incompability problem was recognized as being in process during the NRC CAT Inspection. Although the responsible engineer had elected to perform further research in determining the extent of the condition prior to generation of the N&D, it did not represent negligence nor undue delay in the process.

In addition, test procedures were in place which would provide additional inspections of snubbers for operability prior to fuel load.

- The extensive 10CFR50.55(e) program in place for the River Bend project provides additional substantiation of the extent of conditions. The recognition by the responsible engineer of the potential reportability of the snubber incompatability problem ensures this additional scrutiny.

- Although E&DCR C-12,157 did not specifically address backfit requirements, construction forces had recognized the applicability of this requirement and had begun backfit measures.

- The preliminary results of Engineering's evaluation indicate that the majority of generic changes made to engineering documents are not the type which have an adverse impact on previously installed hardware. The completion of this evaluation will ascertain if the observed condition was an isolated case and substantiate this initial conclusion.

- The majority of specific N&D's cited in Section VIII.B.1 were reviewed, and conclusions drawn, subsequent to the exit of the NRC CAT Inspection team from the site.

RIVER BEND CONSTRUCTION APPRAISAL TEAM INSPECTION REPORT

ENGINEERING CONCERN RESOLUTION

DESCRIPTION Insufficient consideration of N&D 6992 (snubber assembly incompatability).

Ref. Report Pages B-2;III-7,8 Ref. SWEC Item No. 292

CAUSE

(Refer to itemized concerns identified on page III-8)

(a) The initiator of the N&D felt it was appropriate to research all potential applications for the particular snubber size prior to issuance of N&D 6992. Because snubbers are prefabricated by a vendor, this delay had no impact on Construction/FQC.

(b) It was determined that the research involved in determination of the extent of condition for both N&D's 6992 and 6985 should be

(continued on page 3)

EXTENT OF CONDITION

The extent of condition for each snubber size is identified on each applicable N&D.

ACTION TAKEN TO CORRECT EXISTING CONDITION

Each applicable N&D provides the requirements for correction of the existing condition.

ACTION TAKEN TO PREVENT RECURRENCE

Not applicable to this concern.

DATE ACTION SCHEDULED TO BE COMPLETE All engineering documentation associated with the above concerns have been issued.

D.P.Barry, Supt. of Engineering/ N.H.Zink, EMD (SEG)	FOR OAB	NOV 24 1984
Responsible Party/Organization	Signature	Date

The following questions must be addressed:

1. Would the condition of concern to the NRC CAT team have been detected if it had not been discovered during the inspection? (If the answer to this question is YES, provide details to support answer.)

   Yes. The condition would have been detected during the performance of thermal expansion measurement of high energy nuclear piping systems in accordance with Mechanical Test Procedure 1-MXGEN.010.

2. When required corrective/preventative action is completed, will a hardware change and/or a change to construction documents be necessary? (If the answer to this question is YES, provide details.)

   Yes. Corrective action, as delineated on the applicable N&D, is performed by grinding the edge of the clamp/end attachment when required.

CAUSE (continued)

(b) (continued) limited to the particular snubber size in question. Each size/capacity of snubber has unique characteristics, including combination of parts, individual part detailing, design loading considerations, material manufacturers and suppliers, etc. Therefore, it was concluded that the appropriate review would be a 100% evaluation of all applications of the particular snubber size, whose characteristics are unique to the identified defect. Similarly, when a similar problem was identified for a different snubber size, it was addressed as a separate problem with separate documentation and evaluation.

(c) A management decision had been made to include the freedom of motion/clearance verification inspection as part of the overall site program for compliance to clearance criteria as defined in CSI 8.1.1. Therefore, during the course of the CAT inspection, Specification 228.312 was being revised to reflect this decision. This program defines an Engineering evaluation and FQC verification which is conducted subsequent to, and separate from, the installation and as-built processes. This evaluation is conducted on a building/area basis as scheduled in relation to hardware installation completion.

(d) The as-builts in question were completed and transmitted in compliance with procedure and specification requirements. As outlined in (c) above, it is not an inspection attribute for installation or as-built documentation to make this verification. Therefore, no procedural or specification requirement was violated by the transmittal of these as-builts as observed.

RIVER BEND CONSTRUCTION APPRAISAL TEAM INSPECTION REPORT

ENGINEERING CONCERN RESOLUTION

DESCRIPTION E&DCR (C-12,157) did not address applicability to previously installed equipment.

Ref. Report Pages B-2;III-12;VII-8 Ref. SWEC Item No. NA

CAUSE

The engineering representative responsible for issuance of E&DCR C-12,157 intended that the specification change was to be applicable to previously installed equipment. The specification change was not interpreted appropriately when work responsibility was established due to the fact that the E&DCR did not specifically address previously installed hardware. Work responsibility was coded such that no rework was required.

EXTENT OF CONDITION

Although the observed condition is believed to be an isolated occurance, a review is currently being conducted in accordance with Quality Assurance Directive (QAD) 7.11 to substantiate that this is an isolated case. The initial results of this review (of which approximately 50% of the major installation specifications have been reviewed) indicate the observed condition to be an isolated occurrance. Final conclusions will be drawn upon completion of this review for 100% of major installation specifications.

ACTION TAKEN TO CORRECT EXISTING CONDITION

E&DCR C-14330 was issued to clarify that the requirements originally documented on E&DCR C-12,157 are applicable to all previously installed equipment. The need for additional corrective action will be evaluated upon completion of the review outlined above.

ACTION TAKEN TO PREVENT RECURRENCE

Memorandum A-356 was issued September 6, 1984 by the Superintendent of Engineering to provide direction in the indication of applicability of generic changes to engineering documents. Future Engineering Assurance surveillances will be scheduled to verify compliance with this memorandum.

DATE ACTION SCHEDULED TO BE COMPLETE December 10, 1984

D. P. Barry, Supt. of Engineering — Responsible Party/Organization

FOR DEB — Signature

DEC 03 1984 — Date

The following questions must be addressed:

1. Would the condition of concern to the NRC CAT team have been detected if it had not been discovered during the inspection? (If the answer to this question is YES, provide details to support answer.)

   No, however for the E&DCR observed during the CAT inspection Construction had assumed that the change was applicable to previously installed equipment and had started to implement a backfit for this requirement.

2. When required corrective/preventative action is completed, will a hardware change and/or a change to construction documents be necessary? (If the answer to this question is YES, provide details.)

   Yes. See corrective action described on page 1 of 2.

RIVER BEND CONSTRUCTION APPRAISAL TEAM INSPECTION REPORT

ENGINEERING CONCERN RESOLUTION

DESCRIPTION Inadequate review of nonconformances - N&D's 4694, 4920, 4931, 4956, and 5837 (low megger readings on MOV's).

Ref. Report Pages B-2;VIII-2 Ref. SWEC Item No. NA

CAUSE

Meggering of motor operated valves is an ongoing activity which is performed at regular intervals in accordance with the Project's storage and maintenance program. N&D's are generated when a nonconforming condition is identified during this activity. These conditions could arise from a number of problems (ie: testing activities, intrusion of water, etc.) evident during the construction and testing phases. The assignment of work within Engineering is such that these types of problems are dispositioned and reviewed by the same individual(s), thereby

(continued on page 3)

EXTENT OF CONDITION

Not applicable to this concern.

ACTION TAKEN TO CORRECT EXISTING CONDITION

Not applicable to this concern.

ACTION TAKEN TO PREVENT RECURRENCE

Not applicable to this concern.

DATE ACTION SCHEDULED TO BE COMPLETE Not applicable to this concern.

D.P.Barry, Supt. of Engineering
Responsible Party/Organization

D P Barry
Signature

11-26-84
Date

The following questions must be addressed:

1. Would the condition of concern to the NRC CAT team have been detected if it had not been discovered during the inspection? (If the answer to this question is YES, provide details to support answer.)

   Not applicable to this concern.

2. When required corrective/preventative action is completed, will a hardware change and/or a change to construction documents be necessary? (If the answer to this question is YES, provide details.)

   Not applicable to this concern.

CAUSE (continued)

affording consideration of trends resulting from the identification of continued problems. Given the total number of MOV's in River Bend Station's design, the observed conditions do not represent a significant adverse trend.

N&D's 4920 and 4931 were iterations in the resolution of a single condition. N&D 4931 was issued to provide an alternative disposition to facilitate a testing activity which had not been identified at the time of original disposition. N&D's 4694 and 4956 were also iterations in the resolution of another single condition. N&D 4956 was issued to provide a revised disposition.

RIVER BEND CONSTRUCTION APPRAISAL TEAM INSPECTION REPORT

ENGINEERING CONCERN RESOLUTION

DESCRIPTION Inadequate review of nonconformances - N&D's 5130, 6180, and 7359 (clearance violations).

Ref. Report Pages B-1;VIII-2 Ref. SWEC Item No. NA

CAUSE

A management decision had been made to perform inspections for compliance with clearance criteria independent from the installation and as-built programs. This effort, defined in CSI 8.1.1, consists of a series of Engineering walkdowns (with FQC verification) conducted on a schedule based upon overall installation completion, system releases, and building turnovers. All applicable installation specifications had been revised to recognize this program and to reference CSI 8.1.1 for clearance criteria. All clearance conditions are therefore evaluated by Engineering

(continued on page 3)

EXTENT OF CONDITION

Not applicable to this concern.

ACTION TAKEN TO CORRECT EXISTING CONDITION

Not applicable to this concern.

ACTION TAKEN TO PREVENT RECURRENCE

Not applicable to this concern.

DATE ACTION SCHEDULED TO BE COMPLETE Not applicable to this concern.

D.P. Barry, Supt. of Engineering — Responsible Party/Organization

D P Barry — Signature

11-26-84 — Date

The following questions must be addressed:

1. Would the condition of concern to the NRC CAT team have been detected if it had not been discovered during the inspection? (If the answer to this question is YES, provide details to support answer.)

   Not applicable to this concern.

2. When required corrective/preventative action is completed, will a hardware change and/or a change to construction documents be necessary? (If the answer to this question is YES, provide details.)

   Not applicable to this concern.

CAUSE (continued)

on a case-by-case basis during these walkdowns. The following considerations, among others, were included in the decision to develop this methodology:

1. General clearance criteria are developed based on conservative assumptions which attempt to encompass all conditions. This leads to undue conservatism in many areas where reduced clearances are acceptable.

2. The accumulation of the varying tolerances for different installations/commodities cannot be predicted. Therefore, two adjacent components may be within their own tolerances, yet violate the conflicting general clearance criteria. These conditions should be evaluated by Engineering in light of their unique characteristics and requirements.

3. The 'field-run' philosophy employed for certain small bore nonessential commodities is given enhanced flexibility.

4. The consolidation of this effort provided for better administration and tracking of the program as well as a reduction in the volume of documentation required.

This program had been implemented in July 1984. In addition, it is still the perogative of Construction or Engineering to elect to address a given clearance situation in-process. N&D's had been used prior to July 1984 for clearance problem resolution, and would still be utilized (or E&DCR as applicable) as deemed necessary during future installations.

The three N&D's referenced in the CAT Inspection Report had all addressed the same subject. N&D's 6180 and 7359 were subsequent revisions to N&D 5130 (originally issued February 9, 1984) to facilitate administrative/editorial corrections.

RIVER BEND CONSTRUCTION APPRAISAL TEAM INSPECTION REPORT

ENGINEERING CONCERN RESOLUTION

DESCRIPTION Inadequate review of nonconformances - N&D 5482 (Incorrect minimum wall thickness identified).

Ref. Report Pages B-2;VIII-2 Ref. SWEC Item No. NA

CAUSE

The engineer responsible for the disposition of N&D 5482 had inadvertantly indicated a value extracted from ANSI B16.34 as .038" instead of .380".

EXTENT OF CONDITION

A review of similar documents dispositioned by the same responsible engineer confirm this to be an isolated case.

ACTION TAKEN TO CORRECT EXISTING CONDITION

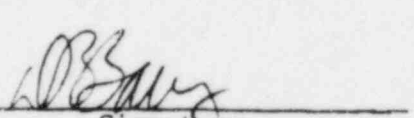
N&D 7926 was issued to correct the error identified on N&D 5482.

ACTION TAKEN TO PREVENT RECURRENCE

Not applicable to this concern.

DATE ACTION SCHEDULED TO BE COMPLETE November 13, 1984

D.P.Barry, Supt. of Engineering
Responsible Party/Organization


Signature

11-26-84
Date

The following questions must be addressed:

1. Would the condition of concern to the NRC CAT team have been detected if it had not been discovered during the inspection? (If the answer to this question is YES, provide details to support answer.)

   No, however this typographical error would have had no impact on the N&D disposition nor safe operation of River Bend Station.

2. When required corrective/preventative action is completed, will a hardware change and/or a change to construction documents be necessary? (If the answer to this question is YES, provide details.)

   No.

RIVER BEND CONSTRUCTION APPRAISAL TEAM INSPECTION REPORT

ENGINEERING CONCERN RESOLUTION

DESCRIPTION Inadequate review of nonconformances - N&D's 4872, 5193, 5225, 5371, and 5551 (incorrect schedule pipe installed).

Ref. Report Pages B-2;VIII-2 Ref. SWEC Item No. NA

CAUSE

Field Quality Control does not perform material traceability inspection for socket weld connections until final weld inspection in accordance with ASME III Manual requirements which do not require 100% fit-up inspection for these welds. For the conditions observed, substitution of heavier or lighter schedule pipe than initially designated does not pose a concern for the increased potential for crud traps in that socket weld connections are inherently crud traps. A slight increase or decrease in pipe wall thickness would not effect this phenomenom. (Reducing inserts commonly used would create a much greater

(continued on page 3)

EXTENT OF CONDITION

Not applicable to this concern. The observed conditions represent a negligable percentage of the 30,000 ASME field weld/material verification population.

ACTION TAKEN TO CORRECT EXISTING CONDITION

Not applicable to this concern.

ACTION TAKEN TO PREVENT RECURRENCE

Three of the above N&D's (4872, 5353, and 5551) had been subjects of the Project's Quality Accountability meetings, cited in Section IX.B.5 of the NRC CAT Inspection Report, to initiate action to preclude recurrance. In addition, the final documentation review associated with N-5 certification will provide an additional assurance of detection of condition of this kind.

DATE ACTION SCHEDULED TO BE COMPLETE Not applicable to this concern.

D. P. Barry, Supt. of Engineering — Responsible Party/Organization

Signature

DEC 03 1984 — Date

The following questions must be addressed:

1. Would the condition of concern to the NRC CAT team have been detected if it had not been discovered during the inspection? (If the answer to this question is YES, provide details to support answer.)

   No.

2. When required corrective/preventative action is completed, will a hardware change and/or a change to construction documents be necessary? (If the answer to this question is YES, provide details.)

   No.

CAUSE (continued)

change in pipe diameter.

ANSI B16.11 allows for a tolerance of .060" in the bore dimension of socket welded fittings during fabrication. This tolerance could accept a difference in diameters much greater than that caused by the substitution of alternate pipe schedules. Therefore, substitution as identified in the observed N&D's is not a cause for concern. In addition, the conditions observed were all vent and drain connections which are dead legs and therefore crud traps themselves regardless of interior wall profile.