

Georgia Power Company
335 Piedmont Avenue
Atlanta, Georgia 30308
Telephone 404-526-7703

Mailing Address
Post Office Box 4545
Atlanta, Georgia 30302



Georgia Power

the southern electric system

D. E. Dutton
Vice President

October 15, 1982

Director of Nuclear Reactor Regulation
Attention: Darrell G. Eisenhut, Director
Division of Project Management
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

NRC DOCKET NUMBERS 50-424 AND 50-425
CONSTRUCTION PERMIT NUMBERS CPPR-108 AND CPPR-109
VOGTLE ELECTRIC GENERATING PLANT
CONTROLS FOR FIELD CHANGE NOTICES

Dear Mr. Eisenhut:

Georgia Power Company (GPC) has evaluated the concerns delineated in the NRC's letter of September 20, 1982, from B.J. Youngblood to D.E. Dutton, concerning the Field Change Notice (FCN) program and its related controls instituted at the Vogtle Electric Generating Plant. The attachment to this letter provides specific responses to the additional information requested in your letter.

As was stated in our letter of October 15, 1981, the Field Change Request (FCR) program is the primary and normal method of handling and dispositioning of field changes. The response to Question 260.4, which summarizes the cumulative use of FCN's versus FCR's, clearly demonstrates our adherence to this primary method of handling field changes. In addition, we have identified in response to Question 260.2, where the FCN method can or cannot be utilized regardless of the need. Based on this, there is no evidence of abuse in the use of the process. This position is further verified by the Construction Quality Control and Quality Assurance organizations, who review and audit respectively, 100% of the FCN's issued by the field.

With respect to the concern that this process could possibly lead to implementation of a marginally acceptable design, we have summarized the number of FCN's rejected by engineering and the reasons for their rejection in response to Question 260.4. This response illustrates that, first, the number of rejections is small; second, the majority of rejected FCN's are due to administrative details rather than the design itself; and finally, none of the rejections resulted in the inability to remedy the situation or the implementation of a marginally acceptable design.

We, from the beginning, have placed a level of approval authority on the use of the FCN program which gives us the highest degree of confidence that these decisions are made at a highly competent level of GPC Field Operations personnel. This is reiterated in our responses to Questions 260.5 and 260.6.

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Therefore, based on our experience and the strict controls we have placed on the use of FCN's, we are confident that your concern with respect to implementing a marginally acceptable design is adequately covered.

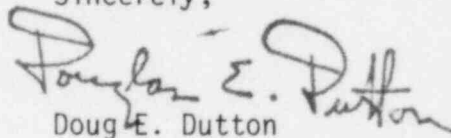
We have evaluated your concern that the use of the FCN program may be contrary to various requirements of 10CFR.50 App. B. Based on this evaluation, we believe that it is not contrary to the requirements of 10CFR.50 App. B and this is further addressed in response to Question 260.1.

We would reemphasize that this program provides an orderly method of documenting and approving limited types of field changes during a seven day per week, twenty-four hour day effort and provides for prompt resolution to minor construction problems.

In summary, GPC believes that the use of the FCN program is desirable to the construction of Vogtle Electric Generating Plant. We also believe that its use has not been and will not be abused. We also do not believe it has resulted nor will it result in a marginally acceptable design. However, we are further formalizing the necessary limitations and controls in the FCN procedure to give an even higher degree of confidence that these objectives will be met.

Please let us know if you have any further questions.

Sincerely,


Doug E. Dutton
Vice President

DED/OB/vhp
Attachment

xc: R.A. Thomas	(Attachment)
D.O. Foster	(Attachment)
O. Batum	(Attachment)
H.H. Gregory, III	(Attachment)
L.T. Gucwa	(Attachment)
J.M. Grant	(Attachment)
B.J. Youngblood	(Attachment)
G.F. Trowbridge	(Attachment)
V. Brownlee	(Attachment)
W.S. Sanders	(Attachment)

ATTACHMENT

260.1 Discuss how GPC's FCN system satisfied the following requirements of Appendix B to 10 CFR Part 50:

- (a) Criterion VI. Document control measures "shall assure that documents, including changes, are reviewed for adequacy and approval for release by authorized personnel and are distributed to and used at the location where the prescribed activity is performed. Changes to documents shall be reviewed and approved by the same organizations that performed the original review and approval unless the applicant designates another responsible organization."
- (b) Criterion V. "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings."
- (c) Criterion III. "Design changes, including field changes, shall be subject to design control measures commensurate with those applied to the original design and approved by the organization that performed the original design unless the applicant designates another responsible organization."

RESPONSE

We fully subscribe to the above criterion and believe that our procedures and practices are in compliance with them. It, then, is not a question as to if the criteria are met, but when they are met, provided that adequate controls and requirements are placed on the timing and that the scope of application of FCN process is limited. To further aid your review of the FCN process, instituted at Vogtle Electric Generating Plant, the procedures we follow are outlined below:

- (a) Existing project controls require that FCNs be reviewed and approved for adequacy by designated GPC Field Operations personnel and must be distributed to appropriate GPC Field Operations and QC contractor personnel prior to execution of work. GPC Construction Quality control must have a controlled copy to allow work in progress to continue. The FCN is used to document minor deviations from drawings and specifications and is approved by the originating design engineering group during or after the work is done. If the FCN is not approved by design engineering, GPC is committed by project policy to take whatever action is required to comply with the engineering approved design, including rework or repair.

These existing procedures require that GPC transmit the FCNs directly to the project design engineering home office. At the design engineering home office the FCNs are subject to the same review process as the original design.

GPC Field Operations is notified of the rejected FCNs by telephone or telecopy within five working days from receipt. Accepted FCNs are returned within five working days of receipt to GPC Field Document Control and Field Operations. Due to the magnitude of work involved in providing the additional documentation along with the recommended corrective actions, the original rejected FCNs are returned by letter to the GPC Assistant Construction Project Manager II - Field Operations within thirty days.

- (b) Existing procedures are in place that control the FCN program to ensure that it is in compliance with Criterion V. These procedures document controls on the program both in the field and the engineering home office.

Quality Assurance audits of Construction in the field and design engineering at the home office were held to verify compliance with procedures. A bi-monthly review in the field by Construction QC ensures that the program is in compliance with the commitment made in our October 15, 1981 letter to the commission.

- (c) If a minor deviation from a specification or drawing is required due to an FCN, the related changes (design change notice or construction specification change notice) are subject to the same review and approval cycle as applied to the original design.

260.2 Describe the criteria established by GPC for restricting the types of design changes that can be approved under the field change notice (FCN) system.

RESPONSE

- (1) Authorized construction personnel below manager level can approve FCNs in their respective disciplines only.
- (2) FCNs can be written against Bechtel and SCS approved for construction drawings and specifications only.
- (3) FCNs cannot be used to violate or deviate from a governing code or standard.
- (4) FCNs cannot be used on vendor supplied equipment (e.g., valves).
- (5) FCNs cannot be used on safety related piping systems (spools, pumps, valves, supports, etc.)
- (6) On electrical systems, FCNs can only be used to resolve field conflicts on cable tray routing and supports and conduit routing and supports.
- (7) FCNs cannot be used in lieu of a deviation report.

260.3 Describe in more detail the criteria for Bechtel notifying GPC of acceptable FCNs and unacceptable FCNs.

RESPONSE

The existing procedures require that Georgia Power Company transmit FCNs directly to the design engineering home office. At the home office the FCNs are subject to the same review process as the original design. Georgia Power Company Field Operations is notified of the rejected FCNs by telephone or telecopy within five working days from receipt. Accepted FCNs are returned within five working days of receipt to GPC Field Document Control and Field Operations. Due to the magnitude of work involved in providing the additional documentation along with the corrective action, the original rejected FCNs are returned by letter to the GPC Assistant Construction Project Manager II - Field Operations within thirty days.

260.4 Provide a detailed summary of the pertinent experience under the field change request (FCR) method and the FCN method of handling field changes since initiating the FCN method.

RESPONSE

The attached table (Page 6) is a summary of the FCNs versus the FCRs written since the beginning of the FCN program. Shown below is a comparison of accepted versus rejected FCNs and the general reason for rejection.

	<u>FCNs</u>	
	<u>Accepted</u>	<u>Rejected</u>
Civil	68	5
Mechanical	8	0
Electrical	<u>42</u>	<u>9</u>
Total	118	14

Reasons for rejected Civil FCNs

- 2 - FCNs rejected for administrative reasons.
- 1 - FCN rejected because of local congestion of rebar in control building wall - Bechtel requested that a new FCN be resubmitted to clarify rebar congestion.
- 1 - FCN rejected - deviation report written - dispositioned "use-as-is" design concurrence given.
- 1 - FCN rejected - NSCW tower - plate locations were required to agree with pipe support drawings.

Reasons for rejected Electrical FCNs

- 5 - FCNs rejected for administrative reasons.
- 2 - FCNs rejected on administrative reasons and (A) wrong, incomplete weld call out - revise & resubmit (B) stiffener plate required due to excessive bending stress - Bechtel made recommendation and attached their sketch to rejected FCN.
- 1 - FCN rejected - excessive span distance between supports (Bechtel was to evaluate and recommend corrective action after receipt of other information from field).

Only 1 rejected Civil FCN required that the initial design be followed, and only 1 rejected Electrical FCN required additional design evaluation and resulted in recommended corrective action. Only 2 out of 132 FCNs written (1-1/2%) were rejected on the basis of "design" requirements.

FCN'S/FCR (OCTOBER 1981 - AUGUST 1982)

	<u>1981</u> OCT.	NOV.	DEC.	<u>1982</u> JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUGUST
<u>CIVIL</u>											
FCR'S	162	177	199	178	270	298	317	267	326	344	338
FCN'S	4	7	5	2	1	3	2	8	25	12	4
<u>ELECTRICAL</u>											
FCR'S	28	46	40	48	70	94	107	71	114	195	147
FCN'S	0	0	0	0	33	17	1	0	0	0	0
<u>MECHANICAL</u>											
FCR'S	41	84	83	52	76	118	124	135	121	184	215
FCN'S	0	2	4	0	2	0	0	0	0	0	0
<u>TOTALS</u>											
FCR'S	231	307	321	278	416	510	546	473	561	723	700
FCN'S	4	9	9	2	36	20	3	8	25	12	4
<u>RATIO</u>											
FCR/FCN	57/1	34/1	35/1	139/1	11/1	25/1	182/1	59/1	22/1	60/1	175/1

5068 FCR's/132 FCN's

38 to 1

260.5 Describe the GPC organizational arrangement at the site including the position, responsibilities, and authority of the individuals authorized to approve FCNs, i.e., Assistant Project Section Supervisor level or above. Describe the extent that these individuals are isolated from the pressures of construction schedules and cost.

RESPONSE

The approval authority of FCNs rest with the following twelve personnel:

- Construction Project Manager (CPM)
- Assistant Construction Manager II (ACPMII) -
Field Operations
- Assistant Construction Manager II (ACPMII) -
"B" and "D" Shift Operations
- Assistant Construction Manager I (ACPMI) -
"A" Shift Operations
- Assistant Construction Manager I (ACPMI) -
"C" Shift Operations
- Project Section Supervisor (PSS) - Mechanical
- Project Section Supervisor (PSS) - Electrical
- Project Section Supervisor (PSS) - Civil
- Assistant Project Section Supervisor (APSS) -
Mechanical
- Assistant Project Section Supervisor (APSS) -
Electrical
- Assistant Project Section Supervisor (APSS) -
Civil (two each)

All of the above twelve supervisory personnel are directly responsible for contractor Cost/Schedule performance and as such are not isolated from construction schedules and cost pressures. Although these people are not isolated from the cost and schedule pressures, they insure that the latest approved drawings, specifications, and procedures are available and being used for construction. They also perform surveillance of work in progress to insure that established procedures are producing quality work.

The Assistant Construction Project Manager II - Administration has the responsibility through the Construction Document Control Section for logging, transmittal, and receipt of FCNs to and from the design engineering home office. This section also distributes acceptable FCNs upon receipt from the design engineering home office.

The Manager of Construction Quality Control (QC) or his assistant directs QC personnel to allow work to proceed on receipt of a field (construction) approved FCNs. The Manager of Construction Quality Control or his assistant conducts a bi-monthly review of all FCNs against the criteria presented to the commission, e.g., abuses, turnaround time, total numbers, clarity, etc. The Assistant Construction Project Manager II - Field Operations or his designee also participates in the Manager of Construction Quality Control's bi-monthly review meetings.

Further, the Quality Assurance (QA) Site Organization continually reviews and periodically conducts 100% audits of all FCNs also against the criteria, e.g., abuses, turn-around time, total numbers, clarity, etc. Both the Construction QC and QA Site Organizations are free from pressures of construction schedules and cost. In addition, the QA Site Organization reports to management outside the site construction project management organization.

The organization chart for the above Construction personnel is attached for your information.

Note:

"A" shift is 4 days 10 hours per day Monday thru Thursday

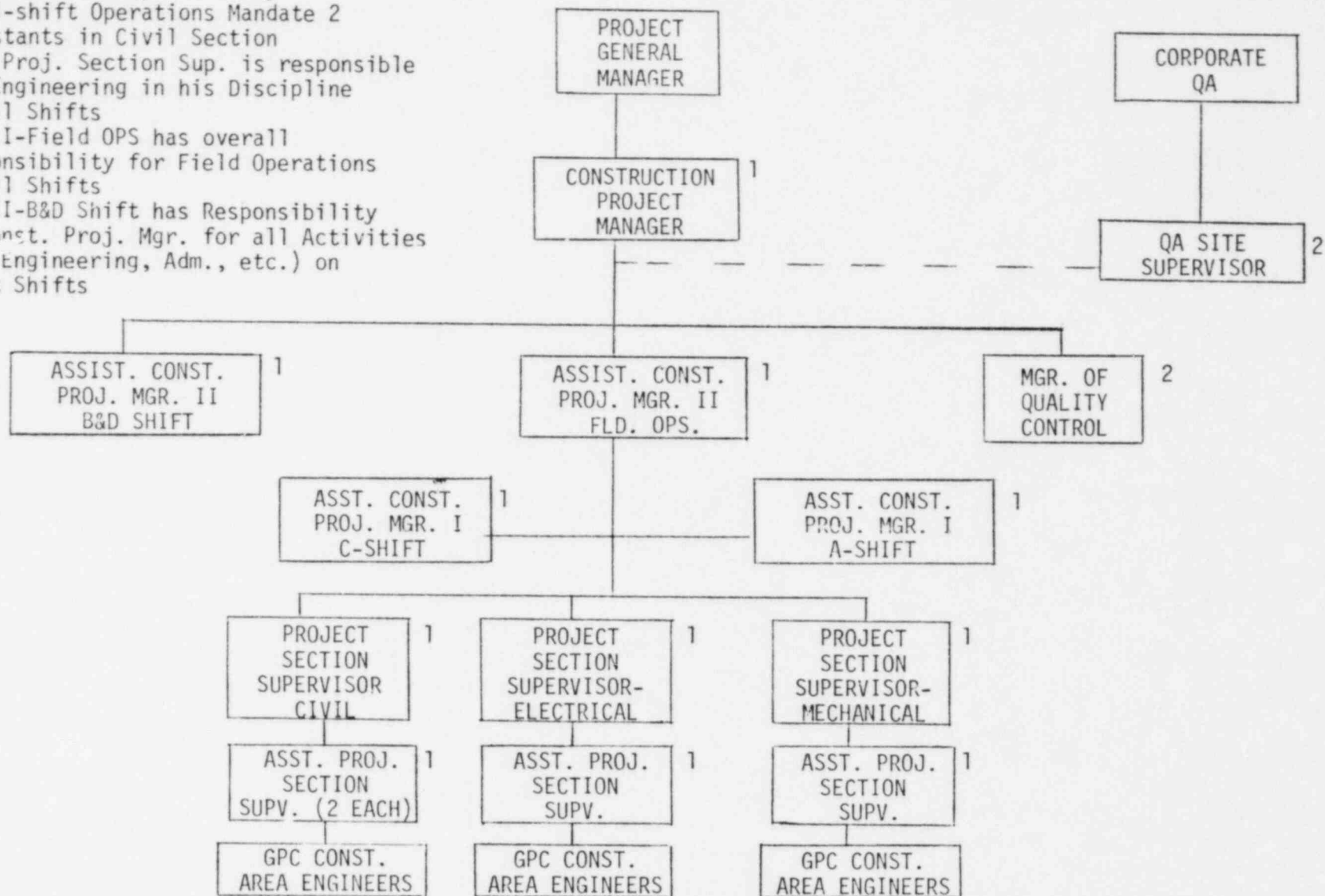
"B" shift is 4 nights 10 hours per night Monday thru Thursday

"C" shift is 3 days 12 hours per day Friday thru Sunday

"D" shift is 3 nights 12 hours per night Friday thru Sunday

NOTES

- 1-FCN Approval Authority
- 2-Review/Audit Responsibility
- 3-Multi-shift Operations Mandate 2
Assistants in Civil Section
- 4-Each Proj. Section Sup. is responsible
for Engineering in his Discipline
on all Shifts
- 5-ACPMII-Field OPS has overall
Responsibility for Field Operations
on all Shifts
- 6-ACPMIII-B&D Shift has Responsibility
to Const. Proj. Mgr. for all Activities
(QC, Engineering, Adm., etc.) on
Night Shifts



260.6 Describe in greater detail the qualifications of the individuals at the Assistant Project Section Supervisor level or above who are authorized to approve FCNs.

RESPONSE

Currently, twelve individuals are authorized to approve FCNs. Three are Project Section Supervisors and four are Assistant Project Section Supervisors. In addition, the Construction project Manager, the Assistant Construction Project Manager II - Field Operations, the Assistant Construction Project manager II - "B" and "D" Shift Operations and Construction Project Managers I - "A" and "C" Shift Operations.

Individual construction experience range from eight to twenty-five years as does length of service with GPC. Nine of the individuals have engineering degrees. Of the non-degreed individuals, two have over 22 years of construction experience and one is retired from the U.S. Navy's Nuclear Service with extensive experience in reactor operations.

In all cases, these individuals have detailed knowledge of construction methods and problem solving techniques within their areas of expertise. Areas of expertise represented by this group include but are not limited to piping, reactor internals, HVAC, insulation, anchor bolting, pipe supports, cable tray, tray supports, concrete, soils and equipment installation and others. All have had extensive interface with design organizations and have a working knowledge of the governing codes and specifications.

- 260.7 Discuss the advisability of GPC individuals authorized to approve FCNs contacting Bechtel Project Engineering in Los Angeles by telephone/telefax to obtain preliminary approval before implementing FCNs, of using Bechtel on site engineering personnel to assist or perform the FCN activities currently performed by GPC, or of Bechtel Project Engineering being represented on-site to the extent that they can accommodate field changes in an expeditious manner.

RESPONSE

This procedure is designed to provide an expedient and controlled method of handling minor field changes considering the time differences (working hours) between the Vogtle site and the Bechtel home office located in Los Angeles, California along with a further acknowledgement of the fact that we may not always have total coverage of all engineering disciplines by the Bechtel on-site project engineering organization (resident engineering organization) of our multishift construction operation, i.e., we are constructing the Vogtle Project essentially twenty-four hour a day, seven days a week.

Considering the above, we designed and implemented this procedure and related controls to allow us to continue construction in an orderly manner during all hours of operation. Understanding that we have exposure in using this procedure as designed, we feel that we have established adequate controls and monitoring processes to insure that this procedure is administered properly and in a controlled manner.

Therefore, we do not feel that it is necessary to have the Bechtel design engineers, either at the home office or in the field verbally assist in the instigation of FCNs. Further, we feel that our record to date demonstrates that we have adequate controls over the use of this procedure as currently designed and implemented.