

APPENDIX A

Gibbs & Hill, Inc.
Docket No. 99900524/82-02

NOTICE OF NONCONFORMANCE

Based on the results of an NRC inspection conducted on June 21-25, 1982, it appears that certain of your activities were not conducted in full compliance with your commitments to NRC as indicated below:

- A. Section 17.1.5 "Instructions, Procedures, and Drawings" of the Gibbs & Hill (G&H) Topical Report states in part that, "Instructions, procedures, drawings, and specifications are used, as applicable, by technical and administrative personnel for various phases of the design and procurement activities of nuclear plants"

Nonconformances with this commitment are as follows:

1. Sections 3.0 and 4.0 of procedure EDP-10 "Control of Development of Computer Programs" state in part that, "The acquisition, development, or modification of any program shall be initiated using request form F-736 (Request for Data Processing Services or Equipment), which shall be submitted to the Department Manager or Department Chief or his designee . . . Approval requirements for form F-736 (Attachment 1) shall be carried out as follows . . . (by the) Department Manager or Department Chief Engineer, or his designee, and the Director, Computer Services"

Contrary to the above, F-736 forms were not initiated, reviewed, approved, and distributed for the development of computer programs DLFPW and PDRDP version 1, nor for the modification of PDRDP from version 1 to version 2.

2. Section 4.0 of procedure EDP-10 states in part that, "Independent program review by a cognizant engineer chosen by the Department Manager, Chief or his designee must be made on program documentation. It is essential that documentation be accurate and complete. A complete documentation must include not only the program verification, but also a program description to show how to prepare all program input data, as well as the methods, assumptions, and equations used to model the physical system.

"The documentation process shall include a final check of program description, and revision if necessary, to ensure that it is an accurate description of the Official Copy of the program that can readily be used by another qualified person."

Contrary to the above, the required "final check" of the program description did not ensure that the program description was an accurate description of the Official Copy of programs CONVERT CISRS, and DLFPW in that:

- a. The independent program review by the cognizant engineer did not assure that the documentation was complete for computer program CONVERT in that the required program description did not exist; and
 - b. The program descriptions for computer programs CISRS and DLFPW did not show the methods, assumptions, and equations used to model the physical system.
3. Section 4.0 of procedure EDP-10 states in part that, "Program verification shall be documented using signoff Form F-887A (Computer Program Verification). The original copy of the form . . . shall be transmitted to the Director, Computer Services. The Director, Computer Services shall verify that all appropriate documentation as indicated on Form F-887A is included . . . and then sign Form-F-887A acknowledging receipt of the program. He is required to maintain this material in a permanent file."

Contrary to the above, computer program verification was not documented, acknowledged, nor maintained in a permanent file as evidenced by the non-existence of Computer Program Verification Forms for the CRRS (No. 6025) and the CREED (No. 3037) programs, both of which are listed in the "G&H (Computer) Program Catalog," dated June 11, 1982, and are included in the "List of Computer Programs used on CPSES," dated December 17, 1982.

- B. Section 17.1.2 (QA Program) of the G&H Topical Report states in part that, "G&H has an established QA Program for the management, engineering and design, procurement and construction phases of its work on nuclear power plant projects . . . designed to comply with the supplementary requirements of the American National Standards Institute (ANSI) N45.2 series standards as well as the NRC Regulatory Guides applicable to quality requirements as referenced in Appendix A of this document."

Appendix A references as item 8.0, NRC Regulatory Guide 1.64 (Revision 2 - June 1976), which endorses ANSI N45.2.11-1974.

ANSI N45.2.11-1974 (Quality Assurance Requirements for the Design of Nuclear Power Plants), states in part that, "Procedures shall be employed to assure that design activities are carried out in a planned, controlled, orderly and correct manner. Program procedures shall cover the following . . . 2.2.4. Document control including review, approval, release, distribution, and revision . . . 2.2.5. Maintenance and retention of design documents . . . 2.2.8. Identifying appropriate design input . . . 2.2.13. Taking corrective action . . . 2.2.14. Making experience reports available to cognizant design personnel . . . 2.2.15. Controlling design changes."

Nonconformances with these commitments are as follows:

Contrary to the above sections of ANSI N45.2.11-1974, procedures did not exist, and therefore were not employed, for:

1. Identifying design inputs in computer code program descriptions;
2. Approving, releasing, distributing, and revising program descriptions;
3. Identifying, maintaining, and retaining program descriptions, source listings, and computer test problem input and output data, with the status of a quality assurance record;
4. Controlling changes to computer codes with respect to assuring that the impact of changes to computer codes is carefully considered and required actions documented, and the change is justified and subjected to design control measures commensurate with those that were, or should have been, applied to the original code, including revalidation/reverification;
5. Taking corrective action when a significant deficiency is detected in a computer code with respect to determining the cause, and instituting appropriate changes in the computer code development and/or validation process to prevent recurrence, and providing for reporting the deficiency and corrective action to appropriate levels of supervision and management to assure followup action; and
6. Making computer code experience reports available to cognizant design personnel.