



Department of Energy

Richland Operations Office
P.O. Box 550
Richland, Washington 99352

87-QSD-281

OCT 20 1987

Mr. A. N. Kugler, Project Manager
KE/PB
P. O. Box 23210
Oakland, California 94673

Dear Mr. Kugler:

DOE RICHLAND (DOE RL), QUALITY SYSTEMS DIVISION (QSD), VERIFICATION OF KE/PB
RESPONSE TO AUDIT 8702

The results of DOE/RL QSD verification of KE/PB response to the Audit No. 8702 are provided. Verification was performed by the audit team leader, T. K. Subramanian in consultation with D. Becker, the technical advisor for the Audit No. 8702, during September 21 - 22, 1987, at the Oakland, California offices of KE/PB.

Concern QC 8702-A:

This concern identified that some sheets in Calc X-0001 R/1 are missing one or the other of the required initials, dates or signatures (of designer/checkers).

Your response stated that the pages not signed off were computer output pages. Your rationale is that the checker did not sign off computer output pages as the computer program used is a verified program. In addition, the revised procedure 6.2 Engineering Calculations, Revision 5, has deleted the earlier Revision 4 signature requirement on each page.

This concern is closed based on the following:

1. Few pages (e.g., 16, 18 and 20 of the Calc X-0001) which lacked checker's signoff, were confirmed as computer program CLIMSIM Version 2.0 output pages. (Computer input pages 15, 17 and 19 have designer's and checker's sign off.)
2. The document #BWIP 18070B, titled CLIMSIM Verification report, attests to the fact that the climatic simulation program (CLIMSIM) version 2.0 is a verified program.
3. Current Revision 5 of the procedure 6.2 Engineering Calculations, Section 3.1.2, states in part that "computer print out pages . . . may be authenticated by responsible engineer . . . on the lead page only . . .". (Earlier Revision 4 of the procedure 6.2, Section 3.2.2 called for checker's signature on all pages.)

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Concern QC 8702-B:

The concern identified calculations 684-9 R/1 and 684-6 R/0 containing a note "Not revision controlled" conflicts with the procedure 6.2 requirement that ". . . any revisions . . . shall be revision controlled."

Your response stated that these calculations are to be "VOID" as these were not used in the Rod Consolidation Study.

This concern is closed based on the verification that these two calculations have been VOIDED (by W. Dodson on 7/28/87), and that KE/PB Master Calculation List dated 8/28/87, identifies these calculations as VOID.

Concern QC 8702-C:

This concern identified that four DCNs were not paginated. Your response called for pagination and signature for revisions for the four DCNs and training of technical managers on the revised procedure No. 6.7 which calls for DCN pagination. This concern is closed based on the following:

- DCNs 87-001, 002, 003 and 007 have been paginated.
- Verified that PCN No. 6.7-0-1 (dated 4/24/87) training session was attended by William Stockdale, Chief Engineer; Ota Spacek, Mining Responsible Technical Manager (RTM); and Wally Dodson, Mechanical RTM. PCN identified the need for pagination of DCNs. However, Jim Mahoney, Civil RTM did not attend the training based on the attendance sheets. During interview, he stated that pagination of DCNs are now proceduralized (i.e., PCN 6.7-0-1) and he is aware of the requirement.

Concern QC 8702-D:

Based on Revision 4 of procedure 6.2, paragraph 3.1.2, page 7 of 14, which called for computer program verification, (i.e., "to show that it produces correct solutions"), KE/PB was required to provide verification documentation for the computer program 'SHAKE' used by their consultant, Dr. Bedrosian.

The concern is closed based on the following:

1. Memorandum from Dr. Bedrosian to J. B. Mahoney, dated 7/9/87 (W.O. 4180), states that results obtained from the analysis of a soil column using SHAKE computer program (a code providing the analytical solution to the wave equation) and the LUSH computer program (a finite element code) show good agreement. Such agreement is the basis for Dr. Bedrosian's approval and verification of the SHAKE code.
2. KE/PB internal memo from J. B. Mahoney to W. Stockdale, dated July 23, 1987, identifies additional rationale for concluding that the computer program SHAKE is verified, in accordance with BWIP Project Procedure 6.6, Control of Computer Programs.

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Concern QC 8702-E:

This concern identified that calculation numbers S0011 and S0012 were not logged in the Calc Control Log and the Calc S0011 was not reviewed by the checker. An explanation as to why the engineer responsible for work was also the checker was also required.

The concern is closed based on the following verifications:

1. Calc Listing print out dated 5/1/87, includes Calc No. S0011.
2. This printout also identifies that Calc S0012 is not required per Study 11 BDD.
3. Calc S0011 is termed "alternate" calculation performed by J. Mahoney, in support of and in agreement with DeHart and Bedrosian and hence was not required to have a review by a checker. However, the required approval was provided by Stockdale, the chief engineer.
4. Even though J. B. Mahoney was responsible for acceptance of the work of consultants Bedrosian and DeHart, he was the only available engineer with the requisite knowledge and experience and therefore was allowed to perform the "alternate" calculation in support of DeHart and Bedrosian. This justification provided in the KE/PB internal memo dated July 28, 1987, is deemed acceptable.
5. During the interview, J. Mahoney confirmed that he will obtain necessary prior approvals before performing such "alternate" calculations in support of consultants work for which he is responsible.

Concern QC 8702-F:

This concern called for evidence of DOE/RL approval for Revision 9 to KE/PB QA Plan.

This concern is closed based on the review of DOE letter, 87-QSD-175, dated 6/18/87, which provided DOE approval to KE/PB QA Plan Revision 9. Westinghouse letter 8753167, dated August 10, 1987, transmitted to KE/PB the DOE approval.

Observation 8702-1:

This observation identified repetitive calculation related discrepancies cited by KE/PB's own surveillances and audits and called for necessary revision to procedure 6.2, Engineering Calculations, and training for appropriate managers.

Your response stated, among other things, that:

1. Procedures 6.1 and 6.2 are being revised to remove conflicting requirements and complex detail requirements. The revised procedure 6.2 will clarify that the Technical Manager is responsible for the completeness of calculations; and that

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2. KE/PB will provide training to assure compliance with procedural details.

Verification indicates that:

1. The procedure 6.1 was not revised but 6.2 was revised and Revision 5 of the procedure 6.2, Section 3.3.3 does call for the technical manager to review the completed calculations, sign off, and concur with the calculation status as Preliminary or Final.
2. KE/PB training on the procedure 6.2 Engineering calculations was attended by Technical Managers for Civil, Electrical and Mechanical disciplines but the Mining Engineering manager was yet to receive the training, during September 22nd verification.
3. Enclosures 1 & 2 of KE/PB response dated September 29, 1987, confirm that J. B. Mahoney and Ota Spacek, Mining Engineer, have completed the required training on procedures 6.7 and 6.2 respectively.

This observation 8702-1 is closed.

Please contact T. K. Subramanian of OSD at (509) 376-3175 for any details on this verification.

Sincerely,



Jerri J. Adams, Contract Specialist
Procurement Division

OSD:TKS

cc: D. C. Gibbs, WHC
D. Stewart-Smith, Oregon State DOE
B. Burke, Confederated Tribes of the Umatilla Indian Reservation
R. Halfmoon, Nez Perce Indian Tribe
R. Jim, Yakima Indian Nation
A. Alkezweeny, On-Site Tribal Representative
J. P. Knight, DOE-HQ
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