

R. Codell



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JUL 12 1983

50-344

MEMORANDUM FOR: Richard H. Vollmer, Director
Division of Engineering

THRU: William V. Johnston, Assistant ~~Director~~
Materials, Chemical & Environmental Technology
Division of Engineering

FROM: Ronald L. Ballard, Chief
Environmental & Hydrologic Engineering Branch
Division of Engineering

SUBJECT: "ANALYSIS OF POTENTIAL FLOOD LEVELS AT THE TROJAN
NUCLEAR POWER PLANT - PHASE II"

The attached memorandum, prepared for your signature, authorizes the USGS to commence Phase II of their analysis of potential flooding at the Trojan site as a result of the Spirit Lake debris dam failure.

Mike Fliegel, Dick Codell, and I have reviewed the USGS's written report (Attachment 2) and conversed with the authors by telephone. Based on their initial assumptions, the USGS Phase I effort concluded that:

1. A "clear water" flood alone would not flood the site.
 - Taking the physical properties of the mud into account, however, the dam break could cause a flood in excess of 45 feet mean sea level at the site if it occurred coincident with a major Columbia River flood (e.g., 50 year recurrence).
2. A Spirit Lake dam failure during low water flow on the Columbia River could deposit large quantities of mud at the mouth of the Cowlitz River. Large winter floods have been known to follow low flow periods by only a few days. This scenario could cause a flood above plant grade even for a relatively frequent (2 year) Columbia River flood.

Phase II of this study would investigate refined models for the deposition of sediment in the Toutle and Cowlitz Rivers, which would be expected to reduce the predicted load to the Columbia River. The study would also investigate the slope of mudflow deposition in the Columbia River.

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Richard H. Vollmer

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JUL 12 1983

The licensee, PGE, transmitted to NRC an independent assessment, dated July 1, 1983, of potential mudflows and resulting effects at the Trojan site (Attachment 3). Their assessment, using somewhat different assumptions, concluded that flooding at Trojan is not credible (maximum water level of 39 feet). As the report is deficient of supporting documentation, we are preparing questions to elicit the needed information for our review. However, as we do not have the required skills to authoritatively review their analysis, we would almost certainly require outside assistance; probably the USGS.

Taking all matters into consideration, including the proposed Trojan start-up of mid-July and projected August request for spent fuel pool expansion, it appears to be in NRC's best interest to proceed with the Phase II study. At the same time, they will have the opportunity to review the licensee's analysis. Thus, we recommend that you approve the conduct of Phase II by means of the attached memorandum.

Original signed by Ronald L. Ballard

Ronald L. Ballard, Chief
Environmental & Hydrologic
Engineering Branch
Division of Engineering

Attachments:
As stated

DISTRIBUTION:
Central Files
EHEB Rdg
WVJohnston
RLBallard
MFliegel
RCode11

RC

OFFICE	DE:EHEB	DE:EHEB	DE:EHEB	DE:ADMDET			
SURNAME	RCode11:ws	MFliegel	RBallard	WVJohnston			
DATE	7/11/83	7/11/83	7/12/83	7/12/83			

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

MEMORANDUM FOR: Edward L. Halman, Director
Division of Contracts, ADM

FROM: Richard H. Vollmer, Director
Division of Engineering, NRR

SUBJECT: REQUEST FOR PROCESSING OF AN NRR PROCUREMENT
ACTION; RFPA NO.: NRR-83-109

Title: Analysis of Potential Flood Levels at the
Trojan Nuclear Power Plant - Phase II

FIN No.: B8649

The attached request for Procurement Action (RFPA), NRC Form 400, Parts 1 and 2, is forwarded for your action. This RFPA requests that incremental funds be provided to complete Phase II of the project. The initial request for Phase I was forwarded to you in my memorandum of May 27, 1983.

If you have any questions concerning acceptance and processing of this request, please contact Mr. E. Pentecost, extension 27067.

Richard H. Vollmer, Director
Division of Engineering
Office of Nuclear Reactor Regulation

Attachments:
As stated

NRR-83-109

REQUEST FOR PROCUREMENT ACTION (RFPA)

INSTRUCTIONS: This form is to be used for various types of procurement requests, including sole source actions, competitive solicitations and modifications.

Inapplicable items or those for which information has not been developed, should be left blank. In such cases, the project officer should contact the Division of Contracts for specific guidance.

Submit the completed form to: Director
Division of Contracts
Office of Administration

3. TYPE OF ACTION REQUESTED (Check and complete as appropriate)

☐ ADMINISTRATIVE ACTION INITIATED BY DIVISION OF CONTRACTS☐ ISSUE A COMPETITIVE SOLICITATION☐ AWARD A CONTRACT ON THE BASIS OF AN UNSOLICITED PROPOSAL (Give contractor's name)☐ EXECUTE A MODIFICATION TO A CONTRACT

CONTRACT NUMBER

CONTRACTOR

☒ AWARD A NONCOMPETITIVE CONTRACT (Give contractor's name)☐ EMPLOY A BASIC ORDERING AGREEMENT (BOA)

BOA NUMBER

TITLE OF BOA

☐ ISSUE AN INTERAGENCY AGREEMENT (Give agency's name)

4a. PERIOD OF PERFORMANCE

FROM

TO

See SOW

See SOW

See SOW

b. DELIVERY SCHEDULE

5. SECURITY/CLASSIFIED INFORMATION ANTICIPATED

☐ YES (Attach NRC Form 187)☒ NO

6. PREPROPOSAL CONFERENCE CONTEMPLATED

☐ YES☒ NO

7. DECISION UNIT TITLE

Operating Reactors - Generic Assessment

8. TITLE OF PROJECT AND BRIEF DESCRIPTION OF WORK (50 word summary)

Analysis of Potential Flood Levels at the Trojan Nuclear Power Plant - Phase II.

To determine the potential flood levels at the Trojan Nuclear Power Plant site based upon hypothetical failure of the Spirit Lake Blockage.

9. PROGRAM OFFICE RECOMMENDATION REGARDING SOCIO-ECONOMIC SET-ASIDES (Complete where action requested in 3. above is for a competitive solicitation, a basic ordering agreement, or a noncompetitive contract.)

100% SET-ASIDE FOR SMALL BUSINESS

PARTIAL SET-ASIDE FOR SMALL BUSINESS

JOINT SMALL BUSINESS—LABOR SURPLUS AREA SET-ASIDE

100% LABOR SURPLUS AREA SET-ASIDE

NONCOMPETITIVE CONTRACT PROCESSED UNDER THE PROCEDURES OF SECTION 8(a) OF THE SMALL BUSINESS ACT FOR AWARD TO A SMALL DISADVANTAGED BUSINESS

☒

UNRESTRICTED ACTION

10. MANAGEMENT DIRECTIVES APPLICABILITY

DESCRIPTION

APPLICABLE

INAPPLICABLE

EXEMPTION NUMBER

OMB CIRCULAR A-76 (See NRC Bulletin 5105-1)

AUTOMATIC DATA PROCESSING COORDINATION (See NRCM 0904 and NRC Bulletin 2101-15)

APPROVAL FOR ACQUISITION OF CONSULTANT SERVICES (See NRCM 4129)

REQUEST FOR PROCUREMENT ACTION (RFPA)

11. DUPLICATION OF EFFORT (Check as appropriate)

☐ I certify, based on inquiries made with other NRC offices, that no unnecessary duplication of effort will result from the conduct of the subject work. (For actions less than \$100,000)☐ Attached are certifications executed by each member of the Contract Review Board (Actions in excess of \$100,000)☐ Contract Review Board Certification requests have been forwarded to Board Members for concurrence/comment. Completed certifications will be forwarded. (For urgent actions only, with prior approval of the Division of Contracts)

12. LIST OF ATTACHMENTS

NUMBER	DESCRIPTION
1	STATEMENT OF WORK
	EVALUATION CRITERIA WITH NUMERICAL WEIGHTS ASSIGNED
	LIST OF FIRMS TO BE SOLICITED, IN ADDITION TO THE GENERAL PUBLIC
	UNSOLICITED PROPOSAL JUSTIFICATION
	JUSTIFICATION FOR NONCOMPETITIVE PROCUREMENT
	DESIGNATION OF MEMBERS TO SOURCE EVALUATION PANEL
	JUSTIFICATION FOR ACQUISITION OF CONSULTANT SERVICES, NRC FORM 400A
	SPECIAL REQUIREMENTS (See NRC Appendix 5101, Exhibit 1, Page 5)
	CONTROLLER'S APPROVAL OF A-76 DETERMINATION

13. ESTIMATED COST (Attach cost estimate breakdown)

CURRENT	FISCAL YEAR	SECOND	THIRD	TOTAL
FY 83 \$60,000				\$60,000

14. FUNDING: This certifies that funds in the amount cited below are available in the current budget for the work described above.

AMOUNT: \$20,000 NAME OF CERTIFYING OFFICIAL (Typed and Signed): Bernard L. Grenier, Technical Assistance Program Manager, NRR DATE:

NUMBER(S)	B & R	AMOUNT(S)	NUMBER(S)	FIN	AMOUNT(S)	APPN NUMBER(S)
20-19-10-12-2		\$40,000	B8649		\$40,000	31X0200,203

15. PROJECT OFFICER'S NAME

Richard Codell

MAIL STOP

P-314

TELEPHONE NUMBER

492-8117

16. APPROVAL OF DIRECTOR OR DESIGNEE (Type name on line, and have signature placed above typewriting)

Richard H. Vollmer, Director

ORGANIZATION

Division of Engineering

17. REMARKS

This RFPA provides incremental funds for authorization of work in accordance with the enclosed SOW.

The staff exercises its option to perform Phase II of this project, and authorizes the balance of the \$60,000 allocated for FY 83 (\$40,000). The staff's decision to commence Phase II is based on the results of the Phase I study contained in the USGS letter report on Phase I (Laird to Ballard, June 20, 1983), and telephone discussion with the USGS staff.

FOR DIVISION OF CONTRACT'S USE ONLY (Do not write below this line)

INITIAL ENTRY MADE INTO THE CIS-FPDS SYSTEM

INPUTER'S NAME

DATE ENTERED

STATEMENT OF WORK

Title: Analysis of Potential Flood Levels at the Trojan Nuclear Power Plant

FIN No.: B8649

B&R No.: 20-19-10-12-2

Project Officer: Richard Code11 (FTS 492-8117)

BACKGROUND

The U. S. Geological Survey (USGS) has recently released a draft report describing the postulated down stream effects of a hypothetical failure of the debris dam (blockage) impounding Spirit Lake. This 1983 report (Water-Resources Investigations 82-4125) prepared in cooperation with the Federal Emergency Management Agency, is entitled "Mudflow hazards along the Toutle and Cowlitz Rivers from a hypothetical failure of Spirit Lake blockage." The scope of the above report was limited to the confluence of the Cowlitz and Columbia Rivers and does not consider the effect on the Columbia itself. The effects of the hypothetical mudflow at the location of the Trojan Nuclear Power Plant, some 5 miles upstream on the Columbia River from that confluence was not addressed in the USGS report. Considering the potential flood hazard posed by the hypothetical failure of the Spirit Lake blockage, the U. S. Nuclear Regulatory Commission must determine the potential flood levels at the Trojan Nuclear Power Plant due to the mudflow described in the early 1983 USGS Spirit Lake blockage report.

OBJECTIVE

The objective of this report is to determine the potential flood levels at the Trojan Nuclear Power Plant based upon the hypothetical failure of the Spirit Lake blockage.

WORK REQUIREMENTS

Work under this project will be performed in two phases where phase II will be performed as an option, dependent on the results obtained in phase I.

<u>Phase I</u>	<u>Estimated Completion from Initiation of Phase</u>
Using the results of the USGS Water-Resources Investigations Report 82-4125 on mudflows entering the Columbia River from the Cowlitz River, determine the maximum flood elevation at the location of the Trojan Nuclear Power Plant using appropriate conservative USGS hydrological modeling techniques and assumptions.	2 weeks

Estimated Completion from
Initiation of Phase

Phase II (Option)

If the results of Phase I show that flood elevations at Trojan are above 45 ft. msl, perform additional hydrological analysis but using progressively more realistic model assumptions based upon USGS engineering judgements concerning the tributary and Columbia River routined models.

3 weeks

LEVEL OF EFFORT AND PERIOD OF PERFORMANCE

The level of effort is estimated at 0.5 professional staff years over a 2 month period; 0.15 psy for Phase I and 0.35 psy for Phase II.

REPORTING REQUIREMENTS

1. One week after completion of Phase I, a letter report is to be submitted to the Project Officer that contains an estimate of the flood level at the Trojan site including a summary of the analyses performed and assumptions used.
2. One week after completion of Phase II, a letter report is to be submitted to the Project Officer that contains a summary of the analyses performed, the assumptions used and the results obtained concerning the flood levels at the Trojan site.
3. A business letter report is to be submitted at the completion of the project to the Project Officer with copies provided to the Contracting Officer, DC, the Director, Division of Engineering, ATTN: E. Pentecost, to R. Ballard, DE, and to B. L. Grenier, NRR that contains a brief summary of the work performed, problems encountered, if any; the amount of professional staff years expended; and the amount of funds expended in the accounting categories used by the USGS. The report will identify the Interagency Number, the FIN No., the Principal Investigator and the period of performance.

MEETINGS AND TRAVEL

One two person trip to Bethesda, MD to discuss the results of the analyses.

Travel to Bay St. Louis, Mississippi is anticipated to perform the analyses and should be described as part of the USGS proposal.

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Initiation of Phase

Phase II (Option)

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NRC FURNISHED MATERIALS

None.