Department of Interior
United States Geological Survey
Water Resources Division
12ul Pacific, Suite 600
ATTN: Mr. Pat Bauer
Tacoma, WA 98402

Gentlemen:

Subject: Interagency Agreement No. NRC-03-83-109 Entitled "Analysis of Potential Flood Levels at the Trojan Nuclear Power Plant

In accordance with the teleconference on May 27, 1983, between Mr. David McDermott of my staff and Mr. Chuck Swift, Mr. Bill Meyer, and Mr. Pat Bauer, U.S.G.S., we certify that funds are authorized for, and hereby request that U.S.G.S. begin work immediately on, Phase I of the subject Interagency Agreement.

The work requirement for Phase I is as follows:

> "Using the results of U.S.G.S. Water Resources Investigations Report 82-4125 on mudflows entering the Columbia River from the Coulitz River, U.S.G.S. shall determine the maximum flood elevation at the location of the Trojan Nuclear Power Plant using appropriate conservative U.S.G.S. hydrological modeling techniques and assumptions."

We estimate that Phase I should be completed within two (2) weeks after initiation of the work. Results obtained during Phase I shall be used to determine whether Phase II will be performed as an option.

The subject Interagency Agreement is now being developed and will be sent to you for review and execution as soon as possible. Once again, we request that you start work on Phase I immediately so that the potential flood hazard impact on the Trojan Nuclear Power Plant can be analyzed while it is down for refueling, pending a July 20, 1983 start-up.

If you have any questions regarding this matter, please contact Mr. David McDermott on (301) 492-4281.

Sincerely,

Original Signed by
Raymond P. Gustave

Kellogg V. Morton, Chief
Technical Contracts Branch
Division of Contracts
Office of Administration

bcc: B. Grenier, NRR
R. Codell, NRR

A/25

6/8/83

Chuck Swift FTS 390-6510
Dave Kresh Tony Lemmon

2 cases

A. Mudflow enters Columbia R 2 yr flood

B. Mudflow occurs at low flow
subsequently followed by 2 yr flood

250,000 CFS	low flow
430,000	2 yr
640,000	10
720,000	50

% of sediment entering Columbia,
30 % upstream 70 % down
60 % is sediment
70 % sand grain - would deposit
30 % fines - would remain suspended

~~Width~~ Width from dunes at Hobe
2 1/2 feet per mile of river
½ grade of river
assume same gradient for present case

50 feet of deposit at velocity completely across Columbia R (assumed)

A-70

phase 1 assumption that all sed + water flows to Columbia R

May be storage which would reduce flow on maybe worst case (weather constant, liquifaction)

Looking at how erosion and dredging would affect height of sediment dam in assumed 1 month period before 2 year flood hit.

6/10/93

Chuck Streeter called. Having meeting with all involved parties on Tuesday. Says that Ron Ballard says that staff is not interested in riven floods subsequent to initial mud deposition. I said I would check and return his call.

6/18/83

Clearwater flood
back at 20 feet at low
28 ft at 100 yr flood

Wekiva flood

31 at low
44 10 yr
48 100 yr

Sediment deposit at low flow

Large deposit at Cowlitz R
at high flow - much less deposit
at low flow channel -
observable backwater effect followed
high flow

Have been high winter floods in past
Dec 1964 160 CFS (?)
45 ft 7 yr flood
49 ft 10 yr flood
52 ft 50 yr flood

Want to look at sediment cores transported down
Cowlitz.
Probably will lose much sediment

Slope of sediment used may be too low
(but not in Columbia R)
If you increase slope, height of
sediment would increase

Would dam on Columbia fail?
May be quite stable. May deposits haven't eroded much
1964 Dec flood - ref low flow
~~4~~ to high flow in about 5 days

Feel need for further study