

JOHN SPELLMAN
Governor



DONALD W. MOOS
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WM DOCKET CONTROL CENTER STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

'85 ^{Mail Stop PY 11:47} JAN 28 AM 11:47 Olympia, Washington 98504 • (206) 459-6000

January 23, 1985

Dr. Robert Wright
Division of Waste Management
U.S. Nuclear Regulatory Commission
Washington D.C. 20555

Dear Bob:

Attached are directions to Shannon & Wilson, our Seattle consultant. The meeting is scheduled for 1330 on Thursday, January 31, with the next morning reserved for spillover business.

If you and/or Kristin can make even just the Thursday session I believe it would be extremely useful in getting our geology and tectonics programs moving. I do not relish the idea of sitting for a couple of days in Richland listening to the same boring BWIP piffle we have gotten in the past. At this meeting we set the agenda and we introduce the evidence. Rockwell will have to react to it, one way or another. Your presence will ensure that the next geology workshop grapples with real issues and real data needs.

Also, I believe it will be time well spent in relation to your own EA reviews. The relevant sections of the EA do not accurately reflect the present state of knowledge. They are not so much wrong as they are timid in discussing the known and reasonably inferred information about deep structure.

The other attachment to this letter lists questions from the EA on these topics. Time was too short to ask them on January 17, so these are what I will lead off with on the 31st. As you can see, there is a direct connection of this meeting to EA review.

I hope you will be able to make it.

Sincerely
Bill
W.A. Brewer

WM Record File
1013

WM Project 10
Docket No. _____
PDR
LPDR

2 att.

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PDR WASTE
WM-10 PDR

1/31/85 @ 1330

DIRECTIONS TO SHANNON & WILSON, SEATTLE

Location: North Seattle, W of the University

Address: 1105 N. 38th St.

Phone: (206) 632-8020 (Dan Clayton is contact)

Directions: North on I-5 through downtown, across the high bridge over Lake Union

Exit at N. 45th St./ U of W

Left (W) on 45th for about a mile to Stone Way

Left (S) on Stone Way to N. 38th

Right 2 - 3 blocks to Shannon & Wilson - park on street

Meeting in the library

QUESTIONS FOR USDOE/ROCKWELL ON THE DRAFT EA JANUARY 17, 1985

NUCLEAR WASTE BOARD STAFF

1. On p. 2-67 it is stated that "available evidence does not support a finding that the reference repository is disqualified" because of the expectation that groundwater travel times are less than 1,000 years. QUESTION: What constitutes the "available" evidence? Does it include any evidence obtained prior to late 1982 which was included in the SCR and then challenged by USGS or our contractor (Golder) and which was acknowledged by USDOE to be incorrect or unsubstantiated or inadequately documented? How did USDOE/Rockwell purge their files?

2. The Cold Creek hydrologic "barrier" is called (p. 3-90) "a bedrock structural discontinuity". Why not call it a fault? What else do you think it could be? Do you believe it could be a basement fault which has been active in post-basalt time? Why is it drawn due N-S? Could it strike N 20° W? Could it strike N 45° E? How do you correlate it with the faulting Emerald Exploration Consultants interpreted on reflection seismic profiles in December, 1983? How do you correlate it with aeromagnetic linears in the 1978 Weston survey for WPPSS 2? Are you going to drill it? On p. 3-45 you say most of the faulting in the Pasco Basin is associated with anticlines - what other association do you know of?

3. On p. 3-54 you describe a NE-SW locus of earthquake activity between 6.2 and 9 miles N of the RRL, mostly at less than 1.2 miles depth, with magnitudes recorded at up to 3.8, with 67 events recorded since instrumentation was deployed in 1969. QUESTION: Are you aware of or do you contest the existence of an aeromagnetic linear striking NE-SW (N 35° E) through this area, which extends SW to the western part of the RRL? What is your expectation of the greatest magnitude earthquake that could occur on the NE-SW trend in the next 100 years? 1000 years? Ever? Could your maximum anticipated event provide a bypass to the surface for heated groundwater? Could ice loading in

the next continental glacial period activate movement on inactive faults at or very near (within 6.2 miles) of the RRL? How would all this affect your current best estimate (p. 6-65) of 81,000 years for travel time to the same radius? Why has USDOE/Rockwell been reluctant to interpret deep faulting from regional aeromagnetic surveys and reflection seismic profiling - isn't it logical that geophysical trends which are found to be identical to or consistent with surface-mapped faults outside the basalt areas would also be indicators of faulting in or beneath the basalts? And is it not conceivable that the Holocene faulting of even trivial displacement which your field work keeps turning up, e.g. Gable Mountain, could be an expression of progressively greater rock fracturing with age of the rocks beneath - that in the Grande Ronde and Wanapum basalts there could be faulting/shearing/shattering on the same planes?

4. On p. 16 it is stated that methane has been found in sediments below the basalts, and that these deposits are thought to be associated with anticlinal traps - that because the RRL is located in a syncline the future exploration potential is low. How do you know that stratigraphic or structural traps with even 1985 exploration potential cannot exist below a syncline in the basalts? Do you believe that Shell is drilling for deep gas on the basis of anticlinal traps in the basalts or because of other evidence suggesting traps in the underlying sediments?

5. At Wooded Island in the Columbia River aeromagnetic linears form a triple junction which is exactly coincident with a continuing (through late 1984) swarm of microearthquakes. As noted in 3. above, there are other places where there is an apparent fit between microseismicity and inferred structure from geophysics and linear features such as river alignments and photolineaments. In the past you have proposed that microseismicity is a random process around the Pasco Basin, not capable of being correlated with deep structure, and in the EA you say very little about seismicity, and nothing about correlations. What is your current thinking, and what specific investigations are planned?