

NUCLEAR WASTE CONSULTANTS INC.

8341 So. Sangre de Cristo Rd., Suite 14
Littleton, Colorado 80127
(303) 973-7495

D-21 PDR-1
LPDR- WM-10 (2)
WM-11 (2)
WM-16 (2)

July 22, 1987

009/PM/NWC.015
RS-NMS-85-009
Communication No. 186

U.S. Nuclear Regulatory Commission
Division of Waste Management
Geotechnical Branch
MS-623-SS
Washington, DC 20555

Attention: Mr. Jeff Pohle, Project Officer
Technical Assistance in Hydrogeology - Project B (RS-NMS-85-009)

Re: Re-transmittal of Letter from D.B. Stephens to NWC, re: Analysis of
Uncertainty in Prediction of Travel Path and Travel Time

Dear Mr. Pohle:

Per my discussions with Dr. Richard Codell of HLWM/TRB, this cover letter transmits to the NRC staff an additional copy of a letter proposal from Drs. Daniel B. Stephens and Jim Yeh (Daniel B. Stephens and Associates) to NWC, entitled "Analysis of Uncertainty in Prediction of Travel Path and Travel Time." Our records indicate that this material was originally transmitted to the Staff as an attachment to the trip report for the November, 1986 meeting on uncertainty (NWC Communication No. 111), and the subject matter was described by Dr. Stephens in that meeting. At the July meeting on GWTT, Dr. Codell indicated that he had not actually seen the Stephens-Yeh paper and asked that NWC forward another copy. NWC transmits this material for the information of the Staff. As indicated by the "Draft - Preliminary, subject to revision" stamp on each page, both DBS and NWC consider that this material would require substantial discussion before it were initiated, whether by DBS or by NRC in-house staff. Please note that NWC considers (and has so informed DBS) that the proposed work is outside the level of funding available for the scope of the current contract; no work on this topic has been pursued by DBS to date.

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WM Record File
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NWC1

WM Project 10, 11, 16
Docket No. _____
PDR
X LPDR (B. N. S.)

Distribution:
Pohle
_____ (to WM, 623-SS)

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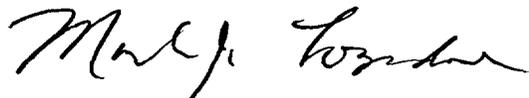
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July 22, 1987

If you have any questions concerning this letter or the attached material from Drs. Stephens and Yeh, please contact me immediately.

Respectfully submitted,
NUCLEAR WASTE CONSULTANTS, INC.



Mark J. Logsdon, Project Manager

Att: Letter from D.B. Stephens to NWC, re: Analysis of Uncertainty in Prediction of Travel Path and Travel Time

cc: US NRC - Director, NMSS (ATTN: PSB) - w/o attachment
HLWM (ATTN: Division Director) - 2 - w/o attachment
Mary Little, Contract Administrator - w/o attachment
HLWM/TRB (ATTN: Branch Chief) - w/o attachment
D. Chery, HLWM/TRB - w/o attachment
R. Codeil, HLWM/TRB

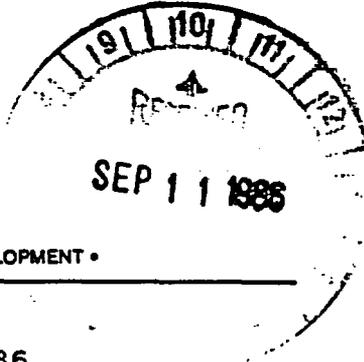
bc: M. Galloway, TTI
J. Minier, DBS
L. Davis, WWL

Nuclear Waste Consultants

G-86/09 N v r - 1816



DANIEL B. STEPHENS & ASSOCIATES, INC.
CONSULTANTS IN GROUND-WATER HYDROLOGY



• GROUND-WATER CONTAMINATION • UNSATURATED ZONE INVESTIGATIONS • WATER SUPPLY DEVELOPMENT •

September 9, 1986

Mr. Mark Logsdon
Nuclear Waste Consultants, Inc.
8341 S. Sangre de Cristo Road
#14
Littleton, CO 80127

Dear Mark:

Enclosed is a copy of a work plan which we believe may be useful to address uncertainty in travel time and radionuclide flux. The concepts were developed principally by Jim Yeh. As you know Jim has an excellent background in both numerical modeling and stochastic analysis. In fact, he teaches courses in stochastic methods and ground water hydraulics at Arizona, and he also has research in these areas supported by the NSF. I regard Jim as one of only a small group of hydrologists who has an excellent working-knowledge of uncertainty as it relates to hydrogeologic variability. If the proposal work is requested by you and the NRC, Jim would be the lead man on our team providing the theoretical guidance to our staff, whereas I would be responsible for the overall technical direction and provide the hydrogeological perspective.

I believe an NRC workshop on this subject would be an excellent idea. It would be critical to the success of such a workshop to bring in people who work directly in this field such as Lynn Gelhar, Al Gutjahr, Les Smith, Shlomo Neuman, Al Freeze, Chris Duffy, and Jim Yeh, etc.

Please give us your comments to this proposal when convenient.

Yours truly,

D B Stephens
Daniel B. Stephens, Ph.D.
President

DBS/cmc

Enclosure