

April 19, 1995

K. Mike Thompson  
Team Leader, Environmental Restoration  
DOE/ROO  
MS H4-83  
P.O. Box 550  
Richland, WA 99352

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Subject: Nomination for CRCIA Technical Review

Dear Mr. Thompson,

This letter is in response to the March 8, 1995 DOE announcement soliciting nominees for the Columbia River Comprehensive Impact Assessment (CRICA) Technical Review. I would very much appreciate being considered as an individual nominee. I believe that I have a number of unique qualifications that could be of significant benefit to both the quality of the assessment program and its timely completion. A brief list of some of my qualifications are: 409165

1. Moved to Hanford in 1944 and subsequently Richland in the summer of 1945. Worked on construction for a number of the Richland flood control facilities that were built in 1948. Worked on construction dismantling the Hanford construction camp in 1949. Maintained a residence with my parents from 1950-1957 while in the service and attending UofW.
2. Worked as a Hanford Production Reactor Operations Shift Manager (1962-66) at B, D, DR, KE, KW, and F Reactors. Was AEC Certified as a Class I Reactor Operator. Also worked as a Water Treatment Plant Supervisor at D-DR (1962). Have extensive first hand knowledge regarding operational procedures that resulted in the vast majority of the radionuclides discharged to the Columbia River.
3. Senior Research Scientist, Battelle NW (1967-1973). Participated in a number of the early geologic and hydrologic studies focused on characterizing the extent of the

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radionuclide contamination problem both in the 100 Areas, 200 Areas and 600 Area. Supervised the groundwater monitoring program (1967-1971). Was part of a multidiscipline team that put together a proposal for the Ben Franklin Dam near Ringold. Was directly involved with the siting and geologic qualification of the FFTF Reactor. Worked as a consultant to WPPSS on the original WNP-1 site characterization at 100-N area and preparation of the Preliminary Safety Analysis Report license application.

4. Siting Studies Specialist to Principal Consultant Geologist for Washington Public Power Supply System (WPPSS) (1973-1981). Directed the site location, site characterization, and preparation of the geologic and hydrologic portions of the Safety Analysis Reports for WNP-2, WNP-1, and WNP-4. Participated in the site characterization and PSAR preparation for the proposed PSP&L Skagit/Hanford nuclear site near FFTF. Directed the siting studies for identifying possible future thermal power plant sites throughout the BPA region including several at Hanford.

5. Was the ad hoc chairman of the first BWIP technical advisory committee (1978-1979). Subsequently participated in the finalization of the BWIP Site Characterization Plan as part of a 32 member licensing assurance review group (1987).

6. Have maintained a respectable level of knowledge of the ongoing Hanford clean up programs by providing volunteer comments on those parts of the program where I felt that I could contribute. Most recently reviewed the 100-N Area expedited response plan.

7. I have an extensive collection of the geologic, hydrologic, and environmental literature that covers the Hanford Reservation and the surrounding vicinity. Some of this literature is one-of-a-kind dating back to the mid 1800's. I have a fairly good grasp of the Native American History for the area along the Columbia that I was able to develop as part of my research on the 1872 North Cascades earthquake and in the process of supervising the archeological evaluations required for PSAR preparation.

8. Since 1988, I have provided geological licensing support service to the State of Nevada's Nuclear Waste Project Office on the proposed Yucca Mountain High Level

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Waste Repository. This consulting work has provided me the opportunity to maintain a reasonably good knowledge of contemporary environmental laws and licensing regulations dealing with radioactive waste. This consulting work requires me to maintain a very broad range of interdisciplinary skills due to the State of Nevada's limited financial resources and the magnitude of the DOE/NV/YMP program.

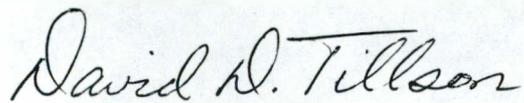
9. Having written a significant number of professional reports, study plans, operating procedures, and major portions of 9 PSAR's and FSAR's, I think that I possess reasonably good communication skills. At least no one has led me to believe otherwise. During the last eight years, as part of the work for the State of Nevada, I have also had the pleasure of participating in the review and providing comments on a significant number of study plans, procedures and reports that have been written by the DOE/NV/YMP and their contractors. I feel that this effort has heightened my awareness of what doesn't constitute good communication skills.

10. I have been actively involved for over 20 years in doing both deterministic and probabilistic hazards analysis and risk assessment. Presently I am representing the Nevada Nuclear Waste Project Office in oversight of the ongoing DOE/NV/YMP Probabilistic Volcanic and Seismic Hazards Analysis.

11. Although I still have family and personal ties to the Tri-Cities, I don't feel that I have any conflict of interest. I did work indirectly for the DOE through EG&G at INEL from 1990 to 1992 but I have not worked as a paid consultant on any programs at Hanford for over five years.

I hope that the above discourse provides the information necessary for a favorable decision. If not, I have attached a copy of my resume for your additional consideration.

Sincerely,



DAVID D. TILLSON  
GEOLOGIC CONSULTANT

## RESUME

DAVID DWIGHT TILLSON

## EDUCATION:

B.S., University of Washington, 1957, in Geology.  
B.A., University of Washington, 1973, in Mathematics.  
Management Program, General Electric, Richland, WA 1963  
to 1965.  
Continuing Studies, University of Washington Joint Center for  
Graduate Study, 1963 to 1973, in nuclear engineering, civil  
engineering, electrical engineering, advanced mathematics,  
computer sciences, and business administration.  
Continuing Studies, University of Utah, 1986 to 1989, in Geology.  
Continuing Studies, Salt Lake College, 1994 to present in Math.

## PROFESSIONAL LICENSES:

Licensed Geologist/Engineering Geologist (#E371), State of  
Oregon.  
Certificate (license equivalent) Class I-Nuclear Reactor Control  
Operator, U.S. Atomic Energy Commission.

## PROFESSIONAL AFFILIATIONS:

American Association for the Advancement of Science (AAAS)  
Association of Engineering Geologists (AEG)  
American Geophysical Union (AGU)  
Association of Ground Water Scientists and Engineers (AGWSE)  
Computer Oriented Geological Society (COGS)  
Geological Society of America (GSA)  
International Association of Mathematical Geologists (IAMG)  
International Association of Engineering Geologists (IAEG)  
International Association of Rock Mechanics (IARM)  
Northwest Scientific Association (NSA)  
Seismological Society of America (SSA)  
Utah Geological Association (UGA)

## EXPERIENCE:

Consultant Engineering Geologist, 1981 to present, specializing  
in geotechnical aspects of critical facility siting;  
environmental audits and in applied decision analysis for  
all phases of site identification, program planning,  
scheduling, program management, quality control and quality

assurance in earth sciences. Recent work includes or has included nuclear power plants, radioactive waste handling and disposal facilities, hazardous waste disposal systems, earthfill dams, transmission lines, and pipelines. Recent clients include or have included the State of Nevada; EG&G/INEL; Washington Public Power Supply System; Los Alamos National Labs; Westinghouse Hanford; Edison Electric Institute; Rockwell Hanford; International Atomic Energy Agency; Republic of Indonesia; Battelle Memorial Institute; and private industry.

Geotechnical Licensing Advisor, State of Nevada, Nuclear Waste Project Office, March 1988 to present, proposed Yucca Mountain high-level radioactive waste repository program.

Principal, Strategic Regulatory Services, a partnership which, through its principals and expert affiliates, provided a broad range of multi-disciplinary services in the areas of regulatory strategy, compliance and technical oversight. January 1990 to December 1992.

Geotechnical Consultant, DOE Basalt Waste Isolation Project Licensing Assurance Review Group, Richland, Washington, 1987.

Geotechnical Advisor, Edison Electric Institute, Utility Nuclear Waste Management Group (UNWGM), Washington, D.C., 1983 to 1987.

Member, Utah State Geologic Task Force on Siting Radioactive Waste Disposal Facilities, 1979 to 1984.

Siting Mission Expert for Nuclear Power Plants and Low-Level Radioactive Waste to Republic of Indonesia, sponsored by International Atomic Energy Agency (IAEA), 1982 to 1983.

Principal Consultant Geologist and Siting Studies Specialist, Washington Public Power Supply System (WPPSS), 1973 to 1981. Responsible for developing all geologic and seismic data necessary to site, license, and construct five nuclear power plants in State of Washington; planning/coordinating all technical efforts in identifying/developing sites for future thermal (nuclear and coal) power plant systems throughout Pacific Northwest; evaluating geothermal energy potential in Pacific Northwest and parts of Canada.

Member (and Chairman for two years), Electric Power Research Institute Advanced Energy Systems Task Force for Fusion, Solar, and Geothermal Energy, 1976 to 1981.

Chairman, DOE Technical Advisory Panel on the Radioactive Waste Isolation Program for Basalt (BWIP), 1978 to 1979.

Member, National Academy of Science/National Research Council  
Panel on Siting Critical Facilities, 1977 to 1979.

Senior Research Scientist, Battelle Northwest Laboratories,  
Richland, Washington, 1966 to 1973. Principal  
Investigator/Project Manager responsible for geotechnical  
considerations in various studies supporting high and  
low-level radioactive waste disposal, hazardous waste  
disposal, seismic safety of nuclear facilities, nuclear and  
other critical facility siting, environmental monitoring,  
and geothermal energy research programs. 1967 to 1973,  
responsible for managing Hanford ground-water monitoring  
program.

Nuclear Reactor Operations Shift Manager, Nuclear Reactor  
Maintenance Supervisor, and Water Treatment Facilities  
Supervisor, General Electric Company and successor Douglas  
United Nuclear Company, Hanford, 1962 to 1966.

Exploration geophysicist/geologist, Standard Oil Company of New  
Jersey (Carter Oil Co.) subsidiary, 1957 to 1962. Oil, gas,  
coal, and other energy minerals exploration.

SELECTED PUBLICATIONS, PRESENTATIONS, AND LECTURES:

Tillson, D.D., 1989, Geology and Seismic Considerations of the  
Hanford Nuclear Site; Washington State Division of Geology  
and Earth Resources, Bulletin 78, Vol. 1, Engineering  
Geology in Washington.

Tillson, D.D. and J.V. Gardner, 1988, Microcomputer Analysis of  
the Dunning Cove Syncline Area of South-Central Pennsylvania  
for Waste Disposal siting (ABST); Association of Engineering  
Geologists Annual Meeting.

Tillson, D.D., 1988, Computer Graphical Analysis of Remote  
Sensing Data and Some Aspects of the Geometry of the Juan de  
Fuca Subducting Plate, Western Washington and Oregon (ABST);  
Association of Engineering Geologists Annual Meeting.

Glass, C.E. and D.D. Tillson, 1985, High Resolution Geotechnical  
Investigations Using Wave Diffusion Geotomography (ABST);  
Association of Engineering Geologists Annual Meeting.

Tillson, D.D., C.E. Glass, and W.E. Kiel, 1985, Use of Synthetic  
Relief Images for Engineering Geological Interpretation of  
Geophysical Data (ABST); Association of Engineering  
Geologists Annual Meeting.

Tillson, D.D., 1983, Report on Mission of Assistance to Evaluate  
Indonesian Nuclear Facilities Siting Programs; IAEA Publ.

Tillson, D.D., 1982, International Atomic Energy Agency Course in Nuclear Power Plant Siting, Argone NL Publ. Lectures (with notes): Seismic Aspects in Nuclear Power Plant Siting - Site Survey Methodology; Contractual and Technical Specifications for Seismic Studies in Nuclear Power Plant Siting and Licensing; Quality Assurance Requirements of seismic Studies in Nuclear Power Plant Siting and Licensing; Organization of Seismic Studies for Nuclear Power Plant Siting and Licensing; Geological Study Requirements During Construction at a Nuclear Power Plant Site.

Simmons, G. and D.D. Tillson, 1979, On the Correlation of Steep Gravity Gradients, Stress, and Earthquakes in the Pacific Northwest (ABST); Seismological Society of America Annual Meeting.

Tillson, D.D., 1979, Seismic Exposure and Selection of Ground Motion for Wells Dam Project, Douglas County, Washington; Washington Public Power Supply System report prepared for Douglas County PUD.

Tillson, D.D. and W.E. Kiel, 1979, Geotechnical Analysis of the Copper Creek Dam Project, Skagit County, Washington; Washington Public Power Supply System report prepared for Seattle City Light.

Tillson, D.D., 1979, Seismic Exposure and Selection of Ground Motion for the Mt. Tollman Area, Ferry County, Washington; AMAX Exploration, Inc. and the Colville Confederated Tribe.

Patwardhan, A.S., D.D. Tillson, and R.L. Nowack, 1978, Zonation for Critical Facilities Based on Two-Level Earthquakes; Second International Conference on Microzonation Proceedings, Vol. 1, pp. 485 to 496.

Slemmons, D.B., C.E. Glass, G.A. Carver, D.T. Trexler; and D.D. Tillson, 1978, Remote Sensing Analysis of Fault Activity and Lineament Pattern of the Epicentral Region of the 1872 Pacific Northwest Earthquake; 3rd International Conference on Basement Tectonics.

Simmons, G., D.D. Tillson, and V. Murphy, 1978, Gravity, Stress, and Earthquakes in Washington State and Surrounding Areas; 3rd International Conference on Basement Tectonics.

Glass, C.E., D.B. Slemmons, C.O. Sanders, and D.D. Tillson, 1978, Influence of Regional Tectonics on the Geologic Structure of the Columbia Plateau; 3rd International Conference on Basement Tectonics.

Tillson, D.D., T. Turcotte, and W. Foxall, 1978, The Pacific Earthquake of December 14, 1872 (ABST); Seismological Society of America Annual Meeting.

- Coombs, H.A., G.A. Davis, D. Tocher, and D.D. Tillson, 1977, New Geological and Geophysical Information about the December 14, 1872 Earthquake Source Area and the Columbia Plateau; Washington Public Power Supply System Nuclear Document.
- Tillson, D.D., 1976, Geotechnical Evaluations of Regions for Siting Nuclear Power Plants (ABST); Association of Engineering Geologists Annual Meeting.
- Tillson, D.D., Utility Program to Identify Future Thermal Generation Sites in the Pacific Northwest; Washington State University, Thermal Power Conference Proceedings.
- Tillson, D.D. (study leader and co-author), 1974, High-Level Radioactive Waste Management - Seabed Disposal: in: Schneider, K.J. and A.M. Platt (eds.), High-Level Radioactive Waste Management Alternatives (BNWL-1900), Vol. 4, Sec. 6, Battelle Northwest Laboratory.
- Tillson, D.D. (study leader and co-author), 1974, High-Level Radioactive Waste Management - Ice Sheet Disposal: in: Schneider, K.J. and A.M. Platt (eds.), High-Level Radioactive Waste Management Alternatives (BNWL-1900), Vol. 3, Sec. 5, Battelle Northwest Laboratory.
- Tillson, D.D. (study leader and co-author), 1974, High-Level Radioactive Waste Management - Geologic Disposal: in: Schneider, K.J. and A.M. Platt (eds.), High-Level Radioactive Waste Management Alternatives (BNWL-1900), Vol. 2, Sec. 4, Battelle Northwest Laboratory.
- Tillson, D.D. (Geology and Soils chapter author and Hydrology chapter co-author), 1973, General Environmental Siting Guides for Nuclear Power Plants - Topics and Basis; Battelle Memorial Institute report prepared for U.S. Atomic Energy Commission.
- Tillson, D.D. (Siting of Hazardous Waste Processing and Disposal chapter author), 1973, Program for the Management of Hazardous Wastes; Battelle Northwest Report prepared for Environmental Protection Agency.
- Tillson, D.D. (Geology and Seismology section author), 1973, Environmental Assessment of West Coast Deepwater Ports; Battelle report prepared for U.S. Army Corps of Engineers.
- Tillson, D.D., 1971, Hanford Geophysical Temperature Logging System (BNWL-B-173); Battelle Northwest.
- Tillson, D.D. and J.B. Edgar, 1971, CCTL Mark II Subassembly Shipping Procedure and Vibration Analysis (HEDL-TME-71-114); AEC-Westinghouse.
- Tillson, D.D., 1971, Capability of the United States of Detect,

Locate, and Identify Clandestine Nuclear Explosions by Seismic Methods; Battelle Northwest Document (071-298).

Tillson, D.D., 1971, Contemporary Crustal Changes in the Columbia Plateau (BNWL-SA-3716) (ABST); Northwest Scientific Association Annual Meeting.

Tillson, D.D., 1970, Analysis of Crustal Changes in the Columbia Plateau Area from Contemporary Triangulation and Leveling Measurements; Battelle Northwest Document (BNWL-CC-2174).

Tillson, D.D., 1969, Analysis of I-131 Travel Times in Soil, 1301-N Crib to Columbia River; Battelle Northwest Document (BNWL-CC-2326).

Tillson, D.D., 1969, Changes in Scintillation Probe Results 1963-1968, 200 Area Waste Disposal Sites; Battelle Northwest Document (BNWL-CC-2255).

Tillson, D.D. and J.R. Eliason, 1969, Identification and Discrimination of Volcanic Ash Using Thermoluminescence; Northwest Scientific Association Annual Meeting.

Tillson, D.D., 1969, Basalt Stratigraphy of the Columbia Plateau as Inferred from the Rattlesnake Hills #1 Well, Benton County, Washington; Northwest Scientific Association Annual Meeting.

Tillson, D. D. and Raymond, J.R., 1969, Groundwater Exchange with a Fluctuating River; American Society of Civil Engineers Annual Meeting.

Raymond, J.R. and D.D. Tillson, 1968, Evaluation of a Thick Basalt Sequence, Rattlesnake Hills #1 Well, Benton County, Washington; Battelle Northwest Document (BNWL-776).