

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED
USNRC

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

In the Matter of)
)
THE CLEVELAND ELECTRIC) Docket Nos. 50-440
ILLUMINATING COMPANY) 50-441
)
(Perry Nuclear Power Plant,)
Units 1 and 2))

AFFIDAVIT OF SCOTT T. McCANDLESS
ON CONTENTION A

County of Middlesex)
) ss.
Commonwealth of Massachusetts)

SCOTT T. McCANDLESS, being duly sworn, deposes and says:

1. I am a co-founder, principal, and Vice President of HMM Associates, Inc. My responsibilities at HMM Associates include the management and supervision of evacuation time estimate studies. I have participated in a number of the more than 20 evacuation time estimate analyses conducted by HMM Associates in connection with emergency planning for nuclear power plants,^{1/} and have served as Principal-in-Charge of eight, including the evacuation time estimate study prepared by HMM Associates for the Perry Nuclear Power Plant plume exposure

^{1/} Most of the more than 20 evacuation time estimate analyses prepared by HMM Associates already have been found acceptable by the NRC; the remaining analyses are currently under review.

pathway Emergency Planning Zone ("EPZ"). That study is entitled "Evacuation Time Estimates For Areas Near The Perry Nuclear Power Plant" ("the ETE"). A current statement of my professional qualifications and experience is attached hereto. My business address is 336 Baker Avenue, Concord, Massachusetts 01742. I have personal knowledge of the matters stated herein and believe them to be true and correct. I make this affidavit in support of Applicants' Motion for Summary Disposition of Contention A.

2. The Perry ETE was developed utilizing a state-of-the-art computer simulation that has been used at nuclear sites throughout the country, and that has been previously approved by the NRC. The purpose of this affidavit is to explain the involvement of state and local officials in the development of the evacuation time estimates for the Perry EPZ, and to explain the consideration of adverse weather conditions in the ETE.

I. Involvement of State and Local Officials
In Development of ETE

3. Offsite emergency planning/response officials have played an important role in the development of the ETE for the Perry EPZ. Indeed, their participation in the process is acknowledged on page 2-2 of the ETE:

Officials from the Ashtabula, Lake and Geauga County Disaster Services Agencies and Sheriff's Departments have participated in the compilation and selection of these preparation and mobilization times.

Further, page 2-2 of the ETE notes, in relevant part:

Vehicle occupancy rates for the various population segments were based upon * * * discussions with county emergency preparedness officials * * *.

Thus, the participation of these officials went far beyond a mere "review" of the ETE, and -- in fact -- even beyond the determination of preparation and mobilization times and vehicle occupancy rates (expressly acknowledged in the ETE).

4. Before beginning work on the Perry ETE, on October 3 and 4, 1983, HMM personnel met individually with representatives of each of the three counties, (including the DSA Directors for Geauga, Ashtabula, and Lake Counties), to present the basic methodology of the ETE and to discuss the general input data and assumptions for the computer simulation model to be used in developing the ETE. The model output (i.e., evacuation

time estimates, average travel speeds, queue lengths, etc.) was also described. In addition, the time/weather condition scenarios to be modeled were discussed. All meeting participants were in agreement with the information presented, and future meetings with the officials were scheduled for their review of the validity of the area-specific input data and assumptions for the Perry EPZ.

5. On October 17 and 18, 1983, HMM personnel again met with the officials (including the DSA Directors) of the three counties, to review the area-specific data and assumptions for use in the ETE. The data and assumptions discussed included matters such as evacuation area boundaries, evacuation routes, and adverse weather conditions to be modeled. All those in attendance at the meetings concurred in the results to date, as well as the proposed plans and procedures for continued work on the ETE.

6. On March 9, 1984, copies of the March 1984 draft of the ETE were provided to the DSA Directors of each of the three counties, and to the Ohio Disaster Services Agency in Columbus, for review and comment. The agencies' comments will be reflected in the next revision of the ETE. The comments will be submitted to the NRC with the next revision of the ETE.

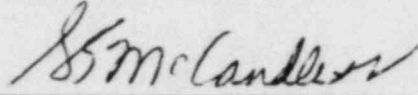
II. Consideration of Adverse Weather In The ETE

7. The ETE for the Perry EPZ includes evacuation time estimates for several temporal, seasonal, and weather conditions. As indicated on page 2-3 of the ETE, HMM considered not one, but two adverse weather scenarios in the preparation of the evacuation time estimates. First, HMM considered capacity and travel speed reductions of 20%, to represent sudden summer thunderstorm conditions. Secondly, HMM considered capacity and travel speed reductions of 30%, to represent winter snowstorm conditions.^{2/}

8. As discussed above, the adverse weather scenario assumptions for the Perry ETE were selected based upon discussions with local officials (including the three County DSA Directors). These assumptions are consistent with those used in


^{2/} These reductions are extrapolated from data presented in "The Environmental Influence of Rain on Freeway Capacity," E. Roy Jones and Merrell E. Goolsby, Highway Research Record No. 321, Highway Research Board, 1970; and "Headway Approach To Intersection Capacity," Donald S. Berry and P.D. Gandhi, Highway Research Record No. 453, Highway Research Board, 1973.

NRC-approved analyses conducted by HMM for other sites with comparable meteorology.



Scott T. McCandless

Subscribed and sworn to before me this 31st day of January, 1985.



Notary Public

My Commission expires:

SCOTT T. McCANDLESS
Vice President
HMM Associates, Inc.

Education

B.S. Civil Engineering, Worcester Polytechnic Institute
M.U.A. Urban Affairs, Boston University
Environmental Planning, W.P.I., 1975
Adjunct Assistant Professor

Summary of Experience

Mr. McCandleless has extensive experience in environmental planning and management. He has served as project manager or principal investigator for a wide variety of nuclear safety studies, environmental studies and training programs. He has been directly involved in studies for nuclear facilities, urban mixed use developments, transportation projects, and energy development projects. He has appeared as an expert witness on emergency planning before an NRC Atomic Safety and Licensing Board. He has assisted with presentations on the same subject before the Advisory Committee on Reactor Safeguards. He has made technical presentations of the use of the NETVAC model for use in evacuation time estimates before the Transportation Research Board.

Professional Experience

1978 - Present HMM Associates; co-founder, principal and project manager. He has served as principal-in-charge for comprehensive off-site emergency planning assignments in New Hampshire and Indiana. In each location, the work he supervised included compilation of State and local radiological emergency plans. In New Hampshire the assignment included coordination of drafting procedures for 12 state agencies and for the Governor and his staff. During this effort he coordinated training sessions for the Civil Defense Agency, the Department of Public Health, the State Police, the National Guard and all other emergency response agencies. In addition, he coordinated table-top exercises, prepared the State scenario materials, and served as the observer/controller at the State EOC.

Other recent emergency planning projects have included supervision of the development of evacuation time estimate reports compiled for submission to NRC. In total, he has been principal-in-charge of studies for eight sites; he has participated in evacuation time estimates at several more sites.

Clients have included TVA, Arkansas Power & Light, Florida Power & Light, Boston Edison and others. He has also been involved in the development of HMM's state-of-the-art computer models for simulating evacuations after nuclear accidents.

Other projects have included management of state EIRs and federal EISs for several urban developments in Boston, including the first to be performed under comprehensive new regulations, Massachusetts Environmental Policy Act and the two largest urban commercial developments ever proposed for New England. Mr. McCandless has also directed projects with emphasis on noise, air quality and transportation considerations.

- 1972-1978 Environmental Research & Technology, Inc. (ERT). In his most recent position he served as manager of the Environmental Planning Division. In this position, he served as both a senior project manager and as administrative head of a multidisciplinary division of environmental professionals including specialists in acoustics, air quality, archaeology, economics, geology, landscape architecture, planning, socioeconomics and transportation planning. During his tenure at ERT, Mr. McCandless was project manager for more than twenty different environmental studies. Among them were the EIS for the SHERCO coal-fired power plant in Minnesota, the EIA for POD 3 of the New Town at Battery Park City in Manhattan, an Environmental Assessment for the Columbia Green Springs SNG plant feedstock allocation, Air Quality Studies for several Washington METRO System EIS efforts, and an Environmental Reconnaissance for an ethylene plant site for the Mobil Chemical Company.
- 1971-1972 Needles, Tammen & Bergendoff, Staff Planner. Prepared the Route 2 EIS and the Land Use Plan for the Manchester, NH Airport Master Plan.
- 1969-1971 Robinson & Fox, Staff Planner. Prepared tenant selection and Management Plans for proposed MHFA funded housing development in Worcester, MA.

Professional Affiliations

Member, American Society of Planning Officials

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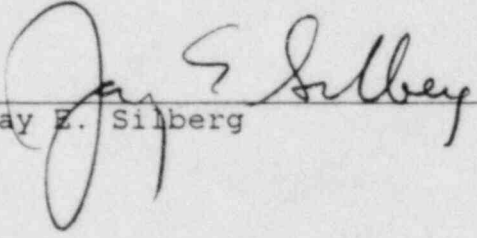
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Docket Nos. 50-440)
50-441CH)
OFFICE OF SECRETARY)
OF SERVICE)

CERTIFICATE OF SERVICE

I hereby certify that copies of "Applicants' Motion For Summary Disposition of Contention A," "Applicants' Statement of Material Facts As To Which There Is No Genuine Issue To Be Heard on Contention A," and "Affidavit of Scott T. McCandless on Contention A" were served this 1st day of February, 1985, by deposit in the U.S. mail, first class, postage prepaid, upon the parties listed on the attached Service List, except for those parties identified by asterisk who were served by express mail.


Jay E. Silberg

Dated: February 1, 1985

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