

Awarded Contracts for External Experts to Support the NIST World Trade Center (WTC) Disaster Investigation

Contract No.	Awarded to	Date Awarded
SB1341-03-W-0173	Mr. Harold Nelson	12/23/2002

FIRE SAFETY ENGINEERING EXPERTISE

Under solicitation number SB 1341-03-Q-Q0084, a firm fixed-price purchase order has been awarded to Mr. Harold Nelson:

Mr. Harold E. Nelson, formerly a Senior Research Engineer with Hughes Associates, Inc. A graduate of Illinois Institute of Technology, Mr. Nelson has more than 50 years of fire protection engineering expertise, specializing in risk and hazard analysis. He was lead fire protection engineer for the U.S. General Services Administration, and led the team developing new technology for fire safety engineering at the National Bureau of Standards. Mr. Nelson was a participant in the Federal Emergency Management Agency's BPAT study of the World Trade Center disaster.

Mr. Nelson is uniquely qualified to provide the required fire safety engineering expertise for this project. Mr. Nelson's qualifications are listed below.

- Mr. Nelson has a proven ability in fire investigations, including multi-floor fires in high rise buildings with experience in such buildings as One Meridien Plaza Bank.
- Mr. Nelson participated in the FEMA BPAT study of the Trade Center disaster.
- Mr. Nelson has over 50 years of fire protection engineering expertise, specializing in risk and hazard analysis.
- Mr. Nelson has demonstrated experience in the development of practical fire safety for high-rise buildings.
- Mr. Nelson has specialized experience in human behavior in fires, including egress and fire safety for handicapped persons.
- Mr. Nelson has demonstrated knowledge and experience in the building design, construction, operations and maintenance, and inspection procedures, with particular emphasis in egress. He also has demonstrated knowledge and experience with U.S. building and fire codes, standards, and regulatory system.

The specific tasks to be performed by The Contractor and the specific methodologies to be used include:

- Identification of sources of information about the interiors of the three buildings (WTC 1, 2, and 7), the types of fuels present, and the compartmentation.
- Providing insights into the analyses developed during the FEMA World Trade Center Building Performance Study.
- Assistance in formulating hypotheses regarding the dynamics of the fires in the interiors of the buildings;
Assistance in identifying key aspects of egress and human behavior during the fires;
- Guidance in conceptualizing the floor-to-floor and cross-floor fire spread, and documenting renditions of the concepts.

- Contributing to the selection of pre-fire conditions for modeling the thermal environment using Fire Dynamics Simulator (FDS) and documenting bases for his positions.
- Participation in understanding the relationships between the model predictions and the accumulated photographic evidence and renditions of insights developed.
- Assistance in the design of physical and computational tests to document the accuracy of the modeling predictions.
- Providing documentation of his contributions, which will serve as input to the Final Report. Providing a non-binding technical review of the Project 5 report. We don't have dates on any of the other tasks. Contractor deliverables may include summaries of the tasks. The Contractor will not generate conclusions of the Investigation. Contractor deliverables may include summaries of the tasks.