

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

Contract No.	Awarded to	Date Awarded
SB1341-04-W-0035	Rolf Jensen & Associates, Inc. (RJA)	10/21/2003

ANALYSIS OF ACTIVE FIRE ALARM SYSTEMS, WTC 1, 2, AND 7

Under solicitation number SB1341-03-Q-0721, a firm fixed price purchase order has been awarded to Rolf Jensen & Associates, Inc. (RJA).

Founded in 1969, RJA is a leader in life safety and fire protection engineering providing consulting services to a wide range of government and private clients. RJA has extensive experience in the development of comprehensive fire protection design and analysis of fire detection and alarm systems for complex and unique facilities. RJA provides fire protection and life safety consulting services for many high-rise buildings in New York City. Engineers at RJA are actively involved in the building and fire code development process at the national level, including principal membership on the technical committees responsible for NFPA 72, The National Fire Alarm Code. RJA was heavily involved in the postfire investigation and analysis of the Meridian Plaza high-rise building fire in Philadelphia, Pennsylvania.

Specific tasks related to WTC 1, 2, and 7 that the RJA team will perform include:

- 1) Document the design and installation of the fire alarm systems and compare designs to applicable code and standards requirements.
- 2) Document the normal expected operation and effect of the fully functional active fire alarm systems, including provisions for redundancy.
- 3) Document modifications made to fire alarm systems in WTC 1 and 2 after the 1993 bombing.
- 4) Document the probable performance of the active fire alarm systems on September 11, 2001.

RJA's project team includes licensed engineers and supporting staff with a strong working knowledge of fire alarm and emergency communications systems and related design, systems analysis, construction, operations, and maintenance requirements. Principal members of the team are located in the Washington, D.C., and New York City areas.

Selected experience of the key personnel assigned to this effort is summarized below:

Mr. Raymond A. Grill, P.E. FSFPE, Principal Investigator, is the Senior Vice President for the Northeast offices of RJA, responsible for RJA operations in Boston, New York and Washington, D.C. He has practiced fire protection engineering for over 20 years. He served on the International Fire Code Performance Drafting Committee and as Chair of the Fundamentals of Fire Alarm Systems technical committee of NFPA 72, National Fire Alarm Code. Mr. Grill was a co-Chairperson of the New York City Fire Alarm Code Revision Committee responsible for converting the committee's work into code language. He has extensive experience in the development of comprehensive fire protection programs for major structures and the development of equivalencies to building and fire code requirements. He has published in a wide variety of fire protection publications including editing the Detection and Alarm Section of the 19th edition of the NFPA Fire Protection Handbook and a chapter of the recently published

Handbook to the 2002 Edition of the National Fire Alarm Code. Mr. Grill is a registered Fire Protection Engineer and Mechanical Engineer. He is licensed in New York and in other states. He is a Fellow and member of the Board of Directors of the Society of Fire Protection Engineers.

Mr. Joseph Razza, P.E., is a Senior Consultant and Project Manager in the New York offices of RJA. He provides technical expertise in the area of New York City Code requirements for fire alarm systems and related operational issues. Mr. Razza has an extensive background in analysis of New York City, New York State, and International Building and Fire Codes, combined with fire protection inspection experience working as an inspector with the New York City Fire Department. Mr. Razza is an instructor in the School of Continuing and Professional Studies at New York University and an adjunct professor at John Jay College of Criminal Justice in New York City.

Mr. Ralph Transue, P.E., is Senior Vice President of RJA and an expert in fire alarm technologies extending from the 1960s to the present. He has been engaged in fire alarm system product development, application engineering, installation, inspection, maintenance, training, and the development of related codes and standards. He is an expert in fire detection, including that for special hazards, and operational interfaces with other systems. He has analyzed existing systems in New York City high-rise buildings. Mr. Transue was involved in the analysis of the conditions and performance of the fire alarm system based on the documentation reviewed and the artifacts collected. During the Meridian Plaza high-rise fire investigation, Mr. Transue was involved in the analysis of the conditions and performance of the fire alarm system based on the documentation reviewed and the artifacts collected. He is a principal member of the National Fire Alarm Code, NFPA 72, Technical Committee on Protected Premises, and was formally a principal member of the Technical Committee on (Fire) Detection Devices.

Mr. Thomas Brown, P.E., is a Senior Vice President with responsibility for the Fairfax, Virginia, Office of RJA. He has extensive experience in the design of fire alarm systems for buildings and in-depth construction management experience in coordinating the installation of fire alarm, life safety, emergency communication and fire alarm interfaces for smoke management, and fire suppression systems. Mr. Brown was heavily involved in the onsite investigation of the Meridian Plaza high-rise building fire that involved tracing of all fire alarm system conduits and devices to document system conditions prior to the fire and reviewing all documents relative to design and construction of the fire alarm system over the lifetime of the building.