



INSTITUTE FOR PRODUCTS, ENGINEERING & CONSTRUCTION

EXPERT DIRECTORY

RESUMES OF SELECTED CONSULTANTS

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IPEC's origin and roots are in the construction industry. Every aspect of construction, from design, means & methods and contract compliance to costs, delays & defects and commercial/industrial landlord-tenant negotiations, is within the expertise of IPEC members. Myriad other related disciplines touch on construction and product liability, OSHA, safety issues in every venue, and incidents involving all manner of vehicles and equipment.

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Credentials**Professional Engineer**

New Jersey License #10073

New York License #041956-1

Pennsylvania License #011436-E

Maryland License #5258

South Carolina License #15167

Education**Master of Science in Management Engineering**

Newark College of Engineering - 1956

Bachelor of Science in Electrical Engineering

Newark College of Engineering - 1949

Continuing education programs such as: Liability in Construction; Contracting for Architect/Engineer Services with Federal Government; Computer Programming; Electrical Industrial Power Systems Coordination; Electrical Protective Relaying; Lightning Protection Design.

Professional Service Positions

NJ State Department of Education Code - Advisory Committee

NJ State Division of Building and Construction Committee - to develop standardized contractual Procedures for Architects and Engineers.

Public Service Positions

Councilman, Borough of Metuchen, NJ

Past president and honorary member, Woodbridge Rotary Club

Zoning Board - Borough of Metuchen, NJ

Planning Board - Township of Woodbridge, NJ

Planning Board - Borough of Metuchen, NJ

Industrial Council - Township of Woodbridge, NJ

Seminars and Publications

"Energy Conservation in Buildings" NJ Society of Architects' Convention.

"Energy Conservation" Symposium of NJ Department of Energy

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PROFESSIONAL ENGINEER

Areas of Concentration

Project Management	Construction Contractual
Construction Documentation	Relationships
Building Electrical Systems	Contractor Performance
Site Electrical Distribution Systems	Electrical Power Defects
Fire Detection and Alarm Systems	Electrical Control Defects
Smoke Detection and Alarm Systems	Electrical Product Defects
Security Systems	Electrocution & Shock
Lighting Design & Evaluation	Lightning Protection
Illumination Measurement	Electrical Safety
Standard Construction Practices	Electrical Fires
Construction Cost Estimate	Electrical Contracting
	Codes & Standards

Specific Experience & Interest

Condominium and Residential Developments
 Commercial Construction
 Ferry Docking Facilities
 Hospitals and Institutions
 Correctional Institutions - Jails, Prisons and Police Stations
 Recreational Facilities - Parks, Tennis Courts, Golf Courses and Driving Ranges
 Schools - Elementary, Secondary and College Facilities
 Gambling Casinos
 Industrial Projects
 Sports Lighting - Football, Baseball, Softball, Tennis, Track, Horse Racing

Professional Associations

Illuminating Engineering Society
 National Society of Professional Engineers
 American Society of Heating, Refrigeration and Air Conditioning Engineers
 Building Officials and Code Administrative International, Inc.
 Institute of Electrical and Electronic Engineers
 Association of Energy Engineers

Relevant Information

Instructor at Newark College of Engineering in Electrical Contract Estimating and Lighting Design

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Professional Experience**Institute for Products, Engineering and Construction** **1992-Present**

Consulting engineering services for electrical and mechanical projects. Analysis of defects in electrical systems, components and products. Consultation in fields of construction and product safety; construction means, methods and relationships; electrical accidents and electrocution.

Consulting Engineer **1984-Present**

Consulting engineering services for electrical and mechanical construction projects. Analysis of on-site technical problems during and after construction. Review of the contractual relationships relating to the standards of the industry. Analysis of construction cost claims.

Participation in various administrative, arbitration and legal processes involved in dispute resolution.

Barnickel Engineering Corporation **1960 - 1992**

President. Administered and supervised the design, specifications and field administrative functions for mechanical and electrical engineering services for over one thousand diverse projects. Projects have included master planning, design of site utilities for multiple building complexes, as well as, commercial, industrial, educational, institutional and multi-family residential construction.

Developed microcomputer programs to enhance productivity and accuracy of mechanical and electrical engineers.

A.L. Davis Company, Inc. **1949 - 1960**

Vice President. Provided construction and electrical design/build services for projects in the commercial, industrial and institutional categories. Provided cost estimating, electrical design and specifications, as well as, field supervision and administration of construction activities.

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Credentials

Professional Engineer
 Pennsylvania # PE-045457-E

Education

Bachelor of Science in Electrical Engineering
 Lehigh University, 1966

Continuing & Professional Education

- SAE Motor Vehicle Accident Reconstruction, Brake Systems & Lighting courses
- Arkansas State University Commercial Vehicle Accident Investigation and Reconstruction
- Drexel University Graduate Course: Mechanics of Biological Tissues
- Maintenance Council seminars in Hydraulic Brake Failure and Tire Failure Analysis
- Illumination Engineering Society courses in Fundamentals of Building Lighting, Retail Lighting Design, Residential Lighting and Lighting Education
- National Safety Council course: Safety in Play
- National Fire Protection Association: Life Safety Code/Means of Egress
- ASME courses: Introduction to Elevators and Escalators, Inspection Techniques for Elevators & Escalators
- BOCA National Building Code Update
- National Association of Elevator Safety Authorities Regional Workshops
- University of Michigan course in Human Factors Engineering
- ASTM International Symposium on Slip Resistance: The Interaction of Man, Footwear and Walking Surfaces.

Public Service Positions

Zoning Hearing Board of East Allen, PA

Professional Service Positions

Society of Automotive Engineers, Truck & Bus Electrical Committee

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Harold Brink, BSEE, PE

PROFESSIONAL ENGINEER

Professional Associations

National Society of Professional Engineers - NSPE
 Institute of Electrical and Electronics Engineers - IEEE
 Society of Automotive Engineers - SAE
 American Society for Testing and Materials - ASTM
 National Safety Council
 Truck Writers of North America

Areas of Concentration

Electrical Engineering	Accident Investigation & Reconstruction
Mechanical Engineering	Product Liability
Code Compliance	Motor Vehicle Design
Building Systems & Safety	Fire Cause & Origin
Biomechanics	Human Factors
Safety	

Specific Experience & Interest

Trucks	Elevators & Escalators
Automobiles	Slips, Trips & Falls
Buses	Lighting
FMVSS Federal Motor Vehicle Safety Standards	Building Codes
Seatbelts	Stairs
Airbags	Scissor Lifts
Vehicle Accident Reconstruction	Warning, Guarding & Labels
Antilock Brakes	Shock & Electrocution
Steering Systems	Grounding
Tire Failures	BOCA Codes
Consumer Products	Life Safety Codes
Playground Accidents	Pennsylvania Building Codes
	Vehicle Electrical Systems
	Tractor Trailers

INSTITUTE FOR PRODUCTS, ENGINEERING & CONSTRUCTION

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Administrative office:
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Engineering offices:
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Professional Experience

Institute for Products, Engineering & Construction **2001 to Present**

Consulting and forensic engineering services for attorneys and insurance companies. Projects involve the disciplines of mechanical and electrical engineering. Issues include design, defects and safety of automobiles, trucks and other vehicles, product liability of mechanical and electrical equipment, and building systems and safety management including elevators, escalators and fall hazards.

Consulting Engineer **2000 to Present**

Automotive, product and safety consultation.

Smith, Stephens, Phillips & Deegan, Inc. **1991-2000**

Electro-Mechanical, Forensic and Safety Engineering consultation, fire investigation and accident reconstruction. Matters involved premises accidents, product liability and standard of care. Vehicles and products included automobiles, trucks, buses, elevators, escalators, scissor lifts and fire apparatus.

Mack Trucks, Inc. **1967-1991**

Served in various advancing capacities including Electro-Mechanical Test Engineer, Senior Electrical Project Engineer, Supervisor of Customer Special Electrical Engineering, Supervisor of Vehicle Electrical Engineering Design and Mechanical Cab Grooming and Corporate Electrical Engineer. Responsibilities included testing and analysis of major mechanical and structural systems, design and testing of vehicle electrical systems and components including comprehensive safety systems such as antilock brakes, exterior and interior illumination, backup alarms and seat belts, as well as functional and reliability systems such as emergency engine shutdown controls, low coolant sensors, instrumentation and air conditioning.

Ford Motor Company **1966-1967**

Test Engineer. Safety test engineering responsibilities relating to crashworthiness and occupant protection including seatbelts, breakaway levers and shock absorbing steering columns. Laboratory testing of mechanical components and road testing of vehicles.

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Douglas Brooks, BSME, PE

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**

Georgia License #20150

Wisconsin License #8931

Certifications & Ratings

Federal Rating: Journeyman Automotive Mechanic

Civil Service Rating: Journeyman Automotive Mechanic

Journeyman Standing: International Association of Machinists & Aerospace

Workers

Vocational Certificate: Automotive Mechanic

Education**Bachelor of Science in Mechanical Engineering**

University of Wisconsin - Madison, 1979

Continuing education through programs offered by:

Eastern Michigan University

University of Wisconsin - Milwaukee

Oshkosh Truck Corporation

Fox Valley Technical College

Peat Marwick

Professional Service Positions

Society of Automotive Engineers - Restraint System Standards Committee

Society of Automotive Engineers - Inflation Restraint Standards Committee (airbags)

Mechanical Engineering Curriculum Committee at the University of Wisconsin

Professional Associations

Society of Automotive Engineers

American Society of Mechanical Engineers

Seminars and Publications

Public demonstration and testing of the International Harvester 4070A FMVSS 121 anti-skid brake system.

Public demonstration of automobile crash testing, using high speed cameras and radar speed measuring devices.

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Douglas Brooks, BSME, PE

PROFESSIONAL ENGINEER

Areas of Concentration

Mechanical Engineering	Truck Systems & Equipment
Vehicle Accidents and Failures	Product Defects/safety
Vehicle Design Defects	Automobile Systems & Equipment
Vehicle Manufacturing Means & Methods	DOT Regulations
Vehicle Maintenance Procedures & Techniques	Safety Code Compliance
Engineering Safety Codes & Standards	Industry Standard Practices
FMVSS Regulations	Mechanical Equipment
Truck Design	Hydraulic Equipment
Fire Safety & Prevention Codes	Pneumatic Equipment
Federal Motor Carrier Safety Regulations	Project Documentation
Specification Compliance	ASME Engineering Standards
ANSI Engineering Standards	Military-specs and Standards
	DOD Specs and Standards
	SAE Engineering Standards and Guidelines
	NFPA Safety Design Codes

Specific Experience & Interest

Air Bag Protective Systems	Automobiles
Repair Shop Practices	Large Off-road Trucks
Vehicle Repair Techniques & Practices	Ancillary Automobile Equipment
Seat Belts & Passive Restraints	Construction Equipment
Vehicle Crash Testing	Recreational Vehicles
Vehicle Maintenance	Heavy Equipment
Over-the-road Semi-tractor & Trailers	Golf Carts
Accident Reconstruction	Ancillary Truck Equipment
Wheels & Tires	Engines - Gas, Diesel, & Propane
Steering Systems - Manual & Power	Pneumatic Systems
Induction & Exhaust Systems	Cooling Systems
Electrical Systems	Hydraulic Systems
Fuel Systems	Brakes - Air, Electric, Hydraulic
Electronic Controls	Frames and Suspensions

Relevant Information

Advanced photographer, skilled in photomicrography
 Automobile racing, design, construction, past chief mechanic on SCCA race team
 Guest lecturer at Fox Valley area colleges on computer usage and techniques

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Professional Experience

Institute for Products, Engineering and Construction **1993-Present**

Consulting engineering services for automotive related mechanical projects. Analysis of defects in mechanical, electrical, hydraulic systems components and products. Consultation in fields of truck, car, utility, off-road vehicle and heavy equipment defect and accident investigation.

Consulting Engineer **1991-Present**

Consult in the technical field of automotive related mechanical engineering. Specialize in the area of truck, car, utility, off-road vehicle and heavy equipment defect and accident investigation. Analyze accident data, maintenance logs, and repair records. Inspect accident vehicles and survey accident sites. Using computer aided techniques, perform accident reconstruction and analysis. Research engineering standards, DOT regulations, state of the art design practices, and NHTSA documents. Inspect, disassemble and analyze vehicles, components, or equipment for possible engineering, manufacturing, component or material defects. Develop engineering opinion reports regarding accident investigation, reconstruction, defect inspection, repair procedures, and vehicle repair shop practices.

Utilimaster Corporation **1989 - 1990**

Engineering Manager. Manage engineering department developing a multitude of specialty Walk-In truck and utility body vehicles. Manage, analyze, and coordinate the efforts of the engineering department CAD/CAM design computer system. Train design staff in computer aided drafting and data development techniques. Review, organize, simplify, and update the engineering department techniques for document control and handling. Teach the walk-in design engineering staff the effective use of ANSI, NFPA, SAE, ASME and other engineering standards for motor vehicle design. Institute modular and design for manufacturability techniques.

E-Z-GO Division of Textron, Inc. **1988 - 1989**

Chief Engineer. Manage and supervise the design efforts of department managers, design engineers, draftsmen and detailers. The position was responsible for total golf car and utility car vehicle designs as well as department organization and management. Review, organize, simplify, and update the engineering department techniques for document control and engineering design. Develop engineering budget data for design engineering department requirements. Coordinate and guide engineering designs through management and design engineering staff. Interview, evaluate and hire design engineering staff.

Oshkosh Truck Corporation **1980 - 1988**

Chief Engineer. Manage design engineers, draftsmen and detailers with respect to

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the initial concepts, prototype design, and product systems design of large, specialized, off-road trucks and related equipment. Operate and develop techniques and methods for using the IBM CAD/CAM Design Computer in the electrical, pneumatic and hydraulic systems design and management areas. Integrate microcomputers into the vehicle systems. Develop vehicle component control functions using microcomputer techniques and technology. Develop and institute design calculation methods using microcomputers for wire sizing, fluid flow analysis and other engineering related functions.

Chrysler Proving Grounds**1979 - 1980**

Test & Development Engineer. Research accident and crash testing data as well as FMVSS rules and regulations to assure accurate and complete testing of automotive safety systems using impact simulation methods. Design and develop equipment and methods for varied automotive safety systems including passive air bag restraints, passive and non-passive seat restraints, automotive and truck seating equipment, windshield systems, fuel systems, and other related items. Use a Cybers System Computer for impact test setup verification and after test analysis of data. Operate a Hy-Gee impact simulation machine for impact testing up to 100G impact levels, supervise and control the operation of mechanics and engineering technicians throughout impact testing techniques.

Safety Engineering Associates, Inc.**1977 - 1979**

Engineering Assistant. Review accident data, inspect accident vehicles and survey accident sites. Using advanced laboratory scientific methods, disassemble and analyze vehicles or equipment for possible engineering or manufacturing defects. Photograph suspect failures using standard, close-up, and photomicrographic methods. When necessary, use the photographic darkroom functions as an analysis tool. Research engineering standards, D.O.T. rules and regulations, and NHTSA literature. Write opinions of accident situations.

University of Wisconsin**1976 - 1977**

Madison - Design Engineer. Computer modeling for a DOT research grant for study of fuel economy in passenger cars using an analog/digital mainframe computer. Using the analysis and information derived from the computer modeling I was heavily involved as a lead engineer in design, construction and testing of a prototype hybrid gasoline/flywheel automobile developed at the University of Wisconsin for the United States Department of Transportation - design work including gearing, hydrostatic transmission and chassis.

University of Wisconsin - Madison**1976**

Engineering Research Assistant. Conducted engine dynamometer reliability testing for a major automobile manufacturer.

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University of Wisconsin - Madison**1976**

Instruction/Laboratory Assistant. Assist in the preparation, presentation and teaching of the motor vehicle performance testing and accident reconstruction course.

International Harvester Company**1970 - 1974**

Foreman, Truck Mechanic. Performed removal, replacement, preventative maintenance, overhaul, and repair of all types of four, six, eight and twelve cylinder diesel and gasoline car and truck engines. Removed, replaced, overhauled and repaired all types of manual and automatic truck and automobile transmissions up to and including Fuller Roadranger fifteen speed transmissions, and multiple gear transfer cases. Removed, replaced and repaired all types of truck and automobile clutches and torque converters. Performed complete electrical system repairs on all types of heavy equipment, over the road trucks, and automobiles including starters, generators, alternators, ignition, lighting and ancillary electrical systems. Performed complete steering, drive axle, steering/drive axle repairs, replacements, and modifications to change wheelbase, add multiple axle configurations, as well as repair multiple steering/drive axle configurations. Perform complete air and hydraulic brake and ancillary system assembly and repair on all types of bull dozers, cranes, hydrocranes, trucks, over the road trucks, and automobiles.

Manage and operate a 45 man truck shop. Train apprentice mechanics, mechanic helpers, and truck drivers in the repair and maintenance of heavy duty vehicles, over the road vehicles, and automobiles.

City of Milwaukee, Truck Garage**1964 - 1968**

Journeyman Truck Mechanic. Performed removal, replacement, preventative maintenance, overhaul, and repair of all types of four, six, and eight cylinder diesel and gasoline car and truck engines. Removed, replaced, overhauled and repaired all types of manual and automatic truck and automobile transmissions, and multiple gear transfer cases. Removed, replaced and repaired all types of truck and automobile clutches and torque converters. Performed complete electrical system repairs on all types of heavy equipment, garbage trucks, and automobiles including starters, generators, alternators, ignition, lighting and ancillary electrical systems. Performed complete steering, drive axle, steering/drive axle repairs and replacements. Perform complete air and hydraulic brake and ancillary system assembly and repair on all types of bull dozers, cranes, hydrocranes, trucks, garbage trucks and packers, as well as automobiles.

Occasionally manage and operate a 19 man truck shop, evening shift when the foreman was absent. Train apprentice mechanics, and mechanic helpers in the repair and maintenance of all types of truck and automotive related vehicles and devices, including asphalt pavers, cranes, garbage packers, all types of construction, snow plowing equipment, fork lifts, and automobiles.

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Credentials

Professional Engineer

New York	Virginia	Washington, DC
New Jersey	North Carolina	West Virginia
Pennsylvania	South Carolina	Ohio
Maryland	Georgia	Florida
Delaware		

Education

Bachelor of Science in Architectural Engineering

University of Miami, 1966

Continuing Education programs offered by:

American Society of Civil Engineers (ASCE)
 American Plywood Association (APA)
 Virginia Polytechnic Institute

Professional Service Positions

American Society of Civil Engineers - Fellow, Chairman of Committee on Wood Buildings, Wood Technical Administrative Committee
 Truss Plate Institute - Technical advisory committee, Chairman of Committee on deflection; Truss analogs committee, Bracing committee
 National Institute of building Sciences - Technology Management Board
 American Society for Testing and Materials - ASTM D-6, Building Construction, E-73 Testing of truss assemblies, D-7 Committee on wood

Publications

Author - Wood Truss Handbook

Lectures & Speaking Engagements

Maryland Building Officials Association
 North Carolina Insurance Commission
 Fire and Seismic Loads Seminar - American Society of Civil Engineers
 Design of Wood Frame Structures Seminar - American Society of Civil Engineers
 John Hopkins University Civil Engineering Department
 American Wood Preservers Annual Meeting Wash., D.C.
 Fire Resistant Treated plywood seminar - Baltimore, MD

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Areas of Concentration

Civil Engineering	Concrete Structures
Structural Engineering	Light Gauge Metal Structures
Construction Site Safety	Precast Concrete Structures
General Contracting	Steel Structures
Building Design	Timber Structures
Building Product Testing	Contractor Performance
Wood Treatments	Construction Management
Strength of Materials	Utilities/Underground Construction
Contract Administration	Heavy Construction
Foundation Systems	Temporary Construction Facilities
Design-Build	Highway Construction
Formwork Design - Bridge Erection	Construction Means & Methods
General construction	Site Development & Improvements
Bridge Rehabilitation	Industry Standards
Estimating & Cost Control	Temporary Bridges
Warranty Negotiations	

Specific Experience & Interest

Manufactured Homes	Residential Real Estate Development
Commercial & Industrial Buildings	Renovations
Code Compliance Reviews	Schools: Elementary, Secondary &
Criminal Justice Buildings	College Buildings
Contract Compliance Review	Wood Trusses
Health Care Facilities	Engineered Wood Products
Litigation Support	Construction Fasteners
Multi-family Residential Building	Ladders and Scaffolds
Technical Reports	Construction Management
Municipal Complexes	OSHA
New Construction	Crane Operation
Office Buildings	Heavy Construction Equipment
Retrofit Construction	Steel Erection
Parking Structures	Waste to Energy Plants
Trenching & Shoring	Pilings, Cofferdams and Wells
Jacking Systems	Resource Recovery
Road & Highway Networks	Temporary Retaining Structures for
Commercial Real Estate Development	Underground Construction
Utility Contract Negotiations	

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Professional Experience

Institute for Products, Engineering & Construction **1996 to Present**

Consulting forensic engineering services for attorneys and insurance companies in the fields of structural and civil engineering. Emphasis placed on jobsite safety & accident prevention, structural integrity of buildings & components, suitability & testing of construction materials, and design analysis.

Consulting Engineer **1974 to Present**

President and Principal Engineer since 1974. Engaged in the analysis, design and investigation of structures, including bridges, buildings foundations and special structures. Since formation of the company, has served as principle and project engineer on most of the firm's major projects involving structural engineering, architectural engineering, inspection, design and evaluation of existing as well as new structures and investigation and condition assessment of distressed and collapsed structures including failure analysis. Conducted structural surveys for buildings, marina structures, parking garages, parking decks, and pole type structures.. Conducted quality assurance testing and inspection of construction materials. Experienced in the use of non-destructive test equipment such as the nuclear moisture meter detector, James V meter, Swiss hammer, Windsor probe, mad standard universal testing machine laboratory equipment for conducting tension and compression tests of material samples and data acquisition devices to record performance and loading of full scale test assemblies.

Supervised the testing of trusses and beams on Callahan Associates' hydraulic testing rack. Supervised the preparation and non destructive testing of heavy timber and glue laminated beam structures with Metro guard stress wave meter. Laboratory tested construction such as steel truss connector and joist hangers. Personally participated in and served as project engineer on projects involving condition assessment of decay and insect damaged structures.

Building product acceptance testing Expert witness testimony. In-place testing of fire retardant plywood and lumber. Wood roof and floor truss design and testing, wood fastener connector testing. Testing of engineered wood products such as laminated veneer lumber, oriented strand board (OSB) and wood I-beams. Failure investigation of wood ladders and stairs. Manufactured Buildings -Prefabricated steel modules, commercial modular complexes, communication industry modules, modular housing, panelized school classrooms, modular lifting frame designs.

Ronel Corporation, Div. of Truswal Systems Inc., Miami, FL **1973 to 1974**

Vice President and Chief engineer - Responsible for administration of an engineering office which produced computer generated engineering for trusses and beams. Responsible for obtaining nationwide building code approvals for manufacturers

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steel connector product line.

National Homes Corporation, Lafayette, IN

1971 to 1973

Structural Engineer - responsible for structural engineering and research and development of plant manufactured schools, homes and mobile and modular structures. Assigned the responsibility of working with newly formed State of Indiana industrialized building division to develop a state program for the acceptance of manufactured schools, housing mobile homes and recreational vehicles. Responsible for the development of creating plant quality assurance and quality control programs for third party inspection of manufactured structures. Developed QC manuals, erection procedures, designed loading equipment for National Homes product line "Trend Homes ". Designed and supervised conversion and construction of steel building manufacturing plants. Designed special modular transporting units.

In cooperation with Purdue University (Lafayette, IND) research staff, assisted in the development of a full scale test program to subject modular building units to simulated roof, floor and wall design loads. Coordinated construction and design of homes with three national architectural firms under contract, Edward Durell Stone, Architects, New York, Richard Haun, California, Frank Lloyd Wright foundation, Taliesin West. Coordinated product approvals with National and State building code agencies. Cooperated with Purdue University staff in the development of a new approach in determining the adequacy of trusses based on statistics versus deflection and factory of safety limits. Assisted in the development of an in-plant test program on a manufactured building with a steel deck diaphragm to determine actual loads transmitted to the end walls and racking walls.

National Association of Building Manufacturers Washington, DC 1970 - 1971

Vice President Operations - Responsible for manufactured building state housing law rules and regulations status, state legislation as they affect manufactured buildings, National Conference of States liaison, codes and standards committee activities. Acted as reviewer of national Consensus Standards. Worked with state groups on drafts of rules and regulations governing manufactured buildings. Worked with HUD Operation Breakthrough Group on building sites and building systems proposed and selected of concrete, steel, plastic and wood

Truss Plate Institute - Washington, DC

1966-1971

Managing Director - Responsible for administration of institute's headquarters office, meetings, newsletters, standards coordination, and planning of annual meetings, quarterly meetings, schedules and agenda of Truss Plate Institute Technical Advisory Committee. Represented membership at American Society for Testing Material (ASTM) meetings, Building Code Advisory Group meetings, Building Industry association (BIAR.) meetings, Model Building Code meetings. Developed manuals, booklets and publications. Developed nation-wide program for

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Edward E. Callahan, BSAE, PE, FASCE

PROFESSIONAL ENGINEER

in-plant inspection and quality control Performed periodic unannounced inspections of truss manufacturers quality control program. Developed up-dated standards on the design of metal plate connected wood roof trusses. Developed uniform building code (UBC) standards for design and quality control of metal plate connected wood trusses. Member of ICBO wood sub-committee and Fire and Life Safety Committee. Coordinated test data, design standards and research with International groups. Participated in the development of full scale field test of 2x4 wood studs spaced at 24 inches on center for wood bearing walls in cooperation with Testing Engineers Inc., Oakland, CA, Associated Home Builders of Greater East Bay Inc., Berkeley, CA, NAHB and WHPA.. Coordinated test development program to determine loss of strength characteristics of metal plate joints using fire retardant wood with the University of Illinois and Purdue University wood research staff and later published in the Forest Products Journal

Dignum Associates Consulting Engineers

1966

Design Engineer- Structural section - drafting, site surveys, topography studies. run loads, design steel and reinforced concrete beams, columns and slabs for multi-story commercial buildings. Prepared fallout shelter design with project engineer using highway bridge in Tampa, Fl.

Automated Building Components

1963 - 1965

Section Chief- International division- Responsible for steel building product designs and designs of wood trusses in subsidiary operations in the United Kingdom, South Africa, Australia, France and Canada. Performed destructive and non-destructive laboratory tests on completed fastener joint assemblies.

Empire Homes

1962-1963

Director of Engineering - Responsible for the designing, planning and field erection of manufactured buildings and homes and timber structures.

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Credentials

**Certified Safety Professional
Construction Health & Safety Technician**

Education

Master of Science in Occupational Safety & Health
Marshall University, 1992

Bachelor of Science in Business Administration
Ohio University, 1988

Continuing Education courses given by Insurance Institute of America

Professional Associations

Board of Certified Safety Professionals
American Society of Safety Engineers
Kentucky Safety and Health Network
National Safety Council

Professional Service Positions

Kentucky Safety & Health Network Board of Directors
American Society of Safety Engineers, West Virginia Chapter Vice President
National Safety Council Committee on Education

Seminars Presented

Safety Success - Timken Corp.
Safety Programs - American Iron and Steel Institute
Construction Safety - Construction Safety & health Conference

University Courses Taught

Organization, Administration and Supervision of Safety and Health programs
Safety Auditing
Safety Systems Analysis and Control
OSHA 1910 and 1926 Standards
Construction Safety
Occupational Safety and Health Programs.

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Paul Dillow, MS, CSP, CHST**CERTIFIED SAFETY PROFESSIONAL**Areas of Concentration

Accident Investigation and Analysis
Occupational Safety & Health
Hazard Identification & Analysis
Construction Codes & Standards
Fire Codes & Standards
Steel Manufacturing
Safety Management
Environmental Compliance

Construction Site Safety
Industrial Safety
Safety Engineering
Employee Training
Machine Safety
Chemical Safety
Process Safety
Electrical Safety
Human Factors

Specific Experience & Interest

Ladders, Scaffolds & Cranes
Slips, Trips & Falls
Falling Objects
Gas Explosions & Fires
Steel Plants
OSHA
Churches
Signage & Signals
Office Buildings
Industrial Facilities
Fire Prevention
Conveyors
Commercial Buildings
Apartment Buildings

Trenching & Shoring
Lockouts
Industrial Furnaces
Carbon Monoxide Leaks
Warehouse Safety
Material Handling
Machine Guarding
Warnings and Labels
Water Treatment
Heavy Construction
Hand Tools
Construction Equipment
Arc Furnaces & Blast Furnaces
Air Cleaning Systems & Equipment

Public Service Positions

Gateway Baptist Church Pastor
Solida Baptist Church Pastor
Ashland Chamber of Commerce

Publications

Safety Systems, 1997

INSTITUTE FOR PRODUCTS, ENGINEERING & CONSTRUCTION**Tel: 888-212-1155****Fax: 888-414-1155**


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Tel: 908-233-2973

1429 G St., NW, # 415
Washington, DC 20005
Tel: 202-822-9660

850 S. Rancho Rd, #4287
Las Vegas, NV 89106
Tel: 702-222-2481

Professional Experience

Institute for Products, Engineering & Construction **2001 to Present**

Accident investigation and analysis for attorneys and insurance companies. Areas addressed include Construction and Industrial safety, Fire and Explosion Investigation and accidents involving stationary machines, portable power tools and construction equipment.

Marshall University **1998 to Present**

Assistant professor. Responsible to teach courses in the Safety Technology Department, including syllabus, curriculum and new course design and student advising.

AK Steel Corporation **1986 - 1998**

Safety and Health Manager. Responsible for injury prevention, OSHA program compliance, developing and implementing safety programs and policies, safety training, accident investigation, facility inspection, industrial hygiene and safety committees. Authorized to teach OSHA 500 and 501 courses. Programs implemented reduced accident frequency to the best level in the U.S. steel industry.

Environmental/Operating Manager. Responsible for environmental control, safety program enforcement, quality control and production of a metallurgical coke producing facility. Active in the process safety management program. Served as the department emergency coordinator. Operated coke ovens within Federal Clean Air Act guidelines.

Allied Signal Corporation **1967 - 1986**

Various management positions including project management, chemical process control, line management, finance and budget control, grievance handling, interpretation and enforcement of OSHA and EPA regulations and training of operating and maintenance department personnel.

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William C. Gardner, BSEE, PE

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**

California License # E8032

Education**Bachelor of Science in Electrical Engineering**

West Coast University, 1970

Continuing Education Programs

Executive Forum, Pacific Missile Test Center, 1982

Systems Acquisition Management, Anacostia Naval Station, 1980

Ocean Acoustics, Catholic University, 1975

Navy Logistics Planning and Management, 1975

Aircraft control systems, Telemetry, Computer data processing, North American Rockwell, 1972

Digital Acceptance Checkout Equipment, North American Rockwell, 1965

Professional Associations

Association of Old Crows - Past Member

The Undersea Group Range Commanders Council - Past Member

Seminars & Publications

An Electromagnetic Connector, NASA Technology Brief, 1973

Capacitance measurement Technique, NASA Technology Brief, 1972

Relevant Information

Navy Unit Commendation Award, 1977

Pacific Missile Test Center Technical Directors Award, 1980

FCC Amateur Radio License, Advanced Class

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William C. Gardner, BSEE, PE

PROFESSIONAL ENGINEER

Areas of Concentration

Electrical Engineering
 Mechanical Engineering
 Industrial Engineering

Marine Engineering
 Fire Investigation
 Product Liability

Specific Experience & Interest

Product Design and Development
 Underwater Construction
 Transformers
 Vibrations
 Voltage Regulation
 Uninterruptible Power Supplies
 Three Phase Power
 Short Circuits
 Small Appliances
 Recreational Vehicles
 Power Distribution

Repair Shop Practices
 Manufacturing Facilities
 Emergency Power
 EMF Shielding
 Controls
 Capacitors
 Bidding Procedures
 Avionics
 Analytical Testing
 Alternators

Professional Experience

Institute for Products, Engineering & Construction **2001 to Present**
 Forensic investigation and consulting to attorneys and insurance companies. Projects involve the disciplines of Electrical, Mechanical, Industrial and Marine Engineering. Issues addressed include Fire Investigation, Electrical Hazards and Product Design Defects.

Consulting Engineer **1993 to Present**
 Perform forensic investigation and reporting on electrical and mechanical issues.

Department of Defense/U.S. Navy **1974 - 1993**
 As Directorate manager in Naval Warfare Analysis Center, had overall responsibility for 300 person department involved in performance assessment of Naval systems, including engineering, fiscal, procurement and coordination activities. As Logistics Branch manager, managed logistics functions involving spare parts, documentation and training for Navy ranges. As Project Engineer in Pacific Missile Test Center, performed development engineering of computerized electronic threat simulators, which mimic radar emissions of enemy aircraft. As Project Engineering Manager in Pacific Missile Test Center, had program management responsibility for development of airborne jamming and electronic countermeasures devices. As Associate Program manager in Naval Air Systems Command, overall responsibility for acquisition management of Navy weapons ranges. As Supervisory General

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William C. Gardner, BSEE, PE

PROFESSIONAL ENGINEER

Engineer in the Ocean Engineering and Construction Project Office, supervised design, specification, planning, acquisition, installation and testing of ocean acoustic tracking, underwater communications systems and underwater construction tools. Acted as Engineer in Charge of upgrade to St. Croix underwater weapons range.

Rockwell International Corporation**1962 - 1974**

As Senior Engineer in Marine Systems Division, designed and developed electromechanical systems for classified applications requiring knowledge of instrumentation sensors, automated control systems, electrical energy sources, propulsion systems, power conditioning and marine design techniques. As Member of Technical Staff in Space Division, performed electronic test systems engineering. Responsibilities included development of test plans and procedures for validation of Apollo command/service modules and test equipment. Performed failure modes and effects analysis on the B-1 bomber multiplex control system. Performed design engineering on P72-2 unmanned satellite including electrical power and instrumentation and checkout support. As Senior Design Engineer in Ocean Systems Operations, performed analysis and design of electrical power distribution, power sources, control systems and power conditioning devices for Beaver submarine. Designed power and controls systems for Rockwell Swimmer Sled. Generated test requirements and checkout procedures for installed systems. As Senior Test Engineer in Space Division, performed test engineering of Apollo test stations, coordinated requirements and procedures with spacecraft design groups, Performed systems troubleshooting and recommended modifications to equipment. Performed electrical power system engineering and flight control systems engineering for Apollo spacecraft testing.

Leach Corporation**1953 - 1962**

Project Engineer. Began as installation and test technician for generating and automatic standby equipment; received promotion to foreman of electrical assembly and test department. Transferred to engineering department as designer of iron core components, rotary and electronic systems; received promotion to project engineer with overall project responsibility for design, testing and acceptance of custom designed power supplies and power conditioning equipment.

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Al Gienger, BSME, PE

PROFESSIONAL ENGINEER

Credentials

Professional Engineer
Texas License # 63297

Education

Bachelor of Science in Mechanical Engineering
University of Tennessee, 1978

Graduate Studies toward MBA at University of Texas, 1979 - 1980

Continuing Education seminars and programs including: Project Management and Control; Computer Aided Design and Engineering; Configuration Management; The use of Finite element methods for analysis; Computer Aided Design and Manufacturing; Use of Geometric dimensioning and Tolerancing; Aircraft thin sheet structural analysis

Professional Associations

American Society of Mechanical Engineers - ASME
Institute of Electrical and Electronics Engineers

Professional Service Positions

American Society of Mechanical Engineers, Professional Society Liaison Committee representative to Dallas Area Rapid Transit Agency
American Society of Mechanical Engineers, North Texas Electronics Packaging Division Board Member

Patents

Digital blood pressure monitor, U.S. Patent # 323712

Seminars & Publications

"High-performance Mount for the SOAR telescope project", Proceedings of the SPIE, Volume 4004, March 2000.

"Exploiting advanced composite materials for lightweight shipboard SHF SATCOM antennas", IEEE MilCom Conference, October 1994.

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Al Gienger, BSME, PE

PROFESSIONAL ENGINEER

Areas of Concentration

Mechanical Engineering
 Marine Engineering
 Civil Engineering
 Environmental Engineering
 Accident Analysis

Materials Engineering
 Manufacturing Engineering
 Structural Engineering
 Aeronautical Engineering
 Machine Design

Specific Experience and Interest

Strength of Materials
 Acoustics
 Aerial Devices
 Aeronautical Accidents
 Aerospace Welding
 Air Conditioning Systems &
 Equipment
 Airframes
 ANSI Standards
 Appliances
 Arc Welding
 Automatic Temperature Controls
 Automobile Component
 Manufacturing
 Avionics
 Biomechanics
 Capacitors
 Cargo
 Castings
 Cherry Pickers
 Computer Applications
 Microwave Towers
 Optics
 Packaging
 Piping Design
 Pneumatic Systems
 Site Assessments
 Wire Rope

Plastics Design & Defects
 Electrical Devices & Equipment
 Exercise Equipment
 Consumer Products
 Construction Fasteners
 Cooling Towers
 Docks & Wharves
 Ductwork
 Electric Doors
 Electric Motors
 Ergonomics & Human Factors
 Fabrication
 Fans
 Fiberglass Insulation
 Flame Resistance
 Foundries
 Glass Containers
 Golf Carts
 Heaters
 HVAC
 Hydraulic Systems & Equipment
 Industrial Machines
 Forklifts
 Machine Guarding
 Pressure Vessels
 Radar
 Printed Circuit Boards
 Semiconductors

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 Professional Experience

Institute for Products, Engineering & Construction **2001 to Present**
 Forensic Engineering and Expert Witness Consulting to attorneys and insurance companies. Projects involve the disciplines of mechanical, electrical and electronic engineering and address design defects and safety aspects of manufactured products.

Consulting Engineer **1998 to Present**
 Systems integration and new product development for industry. Projects include development of structures, mounts and drive systems for state of the art optical telescope; design and development of upgraded drive system for existing optical telescope; optimization of structural design for trailer-mounted telecommunications antenna; development of cooling system for electronic equipment.

Cybox Technologies **1996-1998**
 Management of multi-disciplinary teams to develop and build equipment for high accuracy semiconductor assembly. Projects included development of a die bonder for fiberoptic communications, resulting in the first highly flexible, fully automated assembly machine for the telecommunications industry; development of an automated inspection machine for laser die applications; development of a system of modular components to allow the construction of custom machines using standard subassemblies.

Electrospace Systems **1988 - 1996**
 Guided mechanical engineering effort for development of transportable 20 foot diameter satellite communications Antenna

Timeback Systems **1983 - 1988**
 Developed concepts and designed and analyzed new sensor products for industrial and consumer products, including first cuff-mounted digital blood pressure monitor.

Varo, Inc. **1979 - 1983**
 Performed structural analysis and thermal design for defense contractor on tank and missile launcher projects..

Rockwell International **1978 - 1979**
 Engineering and design for advance military communications system including design of electronic enclosures and electromagnetic shielding and thermal analysis of enclosures and printed circuit boards.

Lockheed Aircraft **1974 - 1977**
 Work in various departments including wind tunnel testing of airfoil sections, aerodynamic and stress analysis.

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Paul Gogulski, BSCE, PE

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**

New Hampshire License #2319

OSHA 500 Construction Safety Instructor

Hazardous Waste Sara Title III

New York City Certified Asbestos Supervisor

Education**Bachelor of Science in Civil Engineering**

University of Michigan - 1960

Continuing Education

Financial Controls - Wayne State University

Real Estate Development - American Institute of Real Estate

Hazardous Waste - New York City Transit

Asbestos Handling - New York City Transit

Safety Training - DuPont Safety Training Program

Organizational Development - WED Enterprises (Disney)

Management Development - General Electric Co.

Computer Applications - Rutgers University

Professional Associations

National Society of Professional Engineers

American Society of Civil Engineers

Massachusetts High Technology Council - Speaker

American Arbitration Association

Industrial Development Research Council - Seminar Leader

Facilities Development Corporation of the State of New York - Chairperson

Professional Service Positions

Chairperson - New York State Facilities Development Corporation

Patents

Mobil Automated Shopping System, U.S. Patent #4,071,740

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Paul Gogulski, BSCE, PE

PROFESSIONAL ENGINEER

Seminars and Publications

“Interstate Highway System” - American Society of Civil Engineers 1999 Certificate of Appreciation & \$1,000 award for Millennium Project contribution
 Featured Speaker - "Facilities Planning" to Massachusetts High Technology Council
 Seminar Leader - "High Tech Facilities" to Industrial Development Research Council
 "Guaranteed Maximum Contracts" published by: Real Estate Executive, October, 1993
 "Pavement Testing at Willow Run Airport" published by: Michigan Technic, 1958

Areas of Concentration

OSHA	Roads and Parking Lots
Construction Management	Capital Program Management
General Contracting	Real Estate Development
Architect/Engineer Coordination	Slips and Falls
Claims Preparation	Government Agency Liaison
Litigation Support	Partnering
Facilities Planning	Property Management
Environmental Remediation	Hazardous Waste Management
Code Compliance	FAR Regulations
ISO 9000 Compliance	Quality Control/Quality Assurance
Subcontract Administration	Financial Controls/Reporting
Safety Management	Computer Applications
Policy and Procedures Controls	Cost Controls

Specific Experience & Interest

Contract Administration	Manufacturing Facilities
Complex Litigation	Landmark Restorations
High Tech Facilities	Shopping Centers
Class "A" Office Buildings	Ladders, Scaffolds & Cranes
Hotels	Highway Accidents
Schools	Raw Land Development
Urban Development	Waterfront Facilities
Large Scale Residential Development	Public Works Construction
Overseas Construction	Golf Course Construction
Corporate R&D Facilities	Policy and Procedures Manuals
Claim Analysis/Negotiations	Technical Reports
Transit Facilities	Insurance Investigations

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Professional Experience

Institute for Products, Engineering & Construction **1997 to Present**

Consulting and forensic engineering services for attorneys and insurance companies. Projects utilize the discipline of civil engineering, including construction management and general contracting. Focus is on accident prevention, workplace safety, proper execution of contractor responsibilities and evaluation of existing construction for quality and contract compliance.

Engineering Consultant **1999 to Present**

Provide consulting services in all areas of construction and construction site safety. Direct Nevada operations of Roel Construction Co. Litigation Support Group in the defense of a major subcontractor in 1.6 billion dollar Venetian Casino Resort.

New York City School Construction Authority **1997 to 1999**

Project Officer. Responsible for 22 school renovation programs. Supervise engineers, construction managers and contractors, achieving overall objectives for quality, time and budget. Projects involve facility upgrades and improvements including elevator repairs, climate controls, HVAC improvements, boiler replacements, roof replacements, exterior masonry, door and window renovations.

New York City Transit **1994 to 1997**

Project Manager. Supervise team of engineers, oversee contract administration, change orders, progress reporting, engineering liaison, and customer satisfaction for major projects. Projects included: Two mile subway tunnel rehabilitation including elimination of water leaks by chemical grout injection; Column and roof replacement over an active subway station, including widening the street above, relocating utilities, and repairing concrete; Construction of a new underground fan chamber adjacent to an existing facility, replacing existing equipment with four 78,000 CFM fans, installing electrical distribution equipment and communication equipment, and relocating utilities in the street.

Gogulski & Co., Princeton, NJ **1991 - 1994**

Principal of consulting engineering firm specializing in civil, forensic and management engineering. Prepare technical reports, prepare claims against government agencies, serve as expert witness on a diverse range of issues. Major projects include: Supervision of Contract Administration for landmark restoration of Alexander Hamilton U.S. Customs House in New York City; Preparation of Requests for Proposal for \$14 million museum renovation for the Smithsonian Institution.

NICO Construction Co. **1988 -1991**

Project Manager. Overall supervision responsibility for Class A office building

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Paul Gogulski, BSCE, PE

PROFESSIONAL ENGINEER

renovations in New York City including four floors at Rockefeller Center. Duties involved estimating, bidding, permitting, subcontracting and field supervision.

Drexel Properties, Dallas, TX**1983- 1986**

Vice President. Served as CEO of Drexcon Construction. Profit and loss responsibility for four-state general contracting business. Hired and trained staff of 150 Project Managers, Estimators, Superintendents and Craft Foremen. Completed large scale residential projects, including site development, consisting of 3000 units and valued at \$60 million.

George A. Fuller Co., Boston, MA**1982 - 1983**

Project Manager. Assume control of landmark ten-story office building renovation following failed efforts by multiple previous contractors. Completed project on schedule and within budget.

Teradyne Inc., Boston, MA**1979 - 1983**

Director of Facilities. Reporting directly to corporate CEO of Fortune 500 company, assumed responsibility for rehabilitating 75 person department. Responsibilities included maintenance, leasing, construction, plant operations, security, transportation and telecommunications. Responsible for design and construction of new manufacturing facilities throughout country, including new 12-story corporate headquarters.

Kaiser Engineers, Boston, MA**1977 - 1979**

Director of Development. Development Manager on Metropolitan Boston Transit Authority's largest project, the \$750 million Southeast Corridor. Included are: seven subway stations, two Amtrak and four transit lines, five miles of park land, 36 bridge renovations, and five miles of roads. This project won the President's award by the National Endowment of Arts, and was listed as Outstanding Engineering Achievement of the Year in 1988 by the American Society of Civil Engineers. Played a key role in overall budget and supervision of architectural teams.

Lanning Corporation, Boston, MA**1972 - 1977**

Director of Construction. Responsible for development of K-Mart Shopping Centers.

WED Enterprises (Disney), Orlando, FL**1969 - 1972**

Owner's Representative. Oversee design and construction of \$100 million Contemporary Hotel.

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Lewis S. Goodfriend, BSME, MEE, PE

ACOUSTICAL ENGINEER

Credentials**Professional Engineer**New Jersey
License #9966New York
License #29660California
License #E7653Michigan
License #19530Wisconsin
License #E12586Education**Master of Electrical Engineering**

Polytechnic Institute of Brooklyn, 1952

Bachelor of Science in Mechanical Engineering

Stevens Institute of Technology, 1947

Professional Associations

Acoustical Society of America, Fellow
 Audio Engineering Society, Fellow
 Institute of Electrical and Electronics Engineers, Senior Member
 American Society of Heating, Refrigeration and Air Conditioning Engineers
 American Industrial Hygiene Association
 American Society for Testing and Materials
 American Consulting Engineers Council
 Institute of Noise Control Engineering

Public and Professional Service Positions

Board of Trustees. Stevens Institute of Technology
 Board of Trustees, Stevens institute of Technology
 President, Institute of Noise Control Engineering
 Executive Vice President, Institute of Noise Control Engineering
 Board of Directors, Institute of Noise Control Engineering
 Vice President, Communications, Institute of Noise Control Engineering
 President, New Jersey Section, American Industrial Hygiene Association
 Mayor's Task Force on Noise, New York City
 Editor, Journal of the Audio Engineering Society

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Professional Experience**Institute for Products, Engineering & Construction** **1995 to Present**

Consulting and forensic engineering services for attorneys and insurance companies in the field of acoustics. Typical projects address safety as a function of audibility and noise attenuation as well as noise with respect to construction and public nuisance issues. Related Projects address electronics and audiotape analysis.

Consulting Engineer **1953 to Present**

Consulting Engineers in the areas of environmental noise evaluation and control, architectural acoustics, airport and community noise surveys, traffic noise measurement and evaluation, industrial noise and vibration control, air conditioning noise control, sound system design, product noise evaluation and control, acoustical product development.

Goodfriend-Ostergaard Associates **1965-1971**

President. Consulting Engineers in Acoustics.

Zurn Industries, Inc. **1969-1971**

Vice President for Noise Quality Management, Zurn Environmental Engineers.

SOUND AND VIBRATION Magazine Editor. **1967-1971****NOISE CONTROL** **1954-1958**

Editor of bimonthly publication of the Acoustical Society of America.

Audio Instrument Company **1952-1953**

Chief Electrical Engineer. Design and development of electro-acoustic measuring systems and tape recording electronic components.

Audio Facilities Corporation **1949-1950**

Chief Engineer. Supervised design and development of public address systems; designed and developed electronic sound control and test apparatus.

Rangertone, Inc. **1949**

Development Engineer. Design and testing of military audio frequency telemetering and tape recording equipment.

Stevens Theater Research Project **1947-1949**

Research Engineer. Design and development of new theater sound control apparatus; recording and magnetic tape recording, and reproducing systems, research in psycho-physical responses to aesthetic stimuli and applications to sound reproduction.

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William C. Haneberg, PhD

PROFESSIONAL GEOLOGIST

Credentials

Professional Geologist
Wisconsin License #356

Certification and Ratings

Certified Professional Geologist
American Institute of Professional Geologists

Education

Doctor of Philosophy in Geology
(Specializing in Geomechanics, Hydrogeology and Engineering Geology)
University of Cincinnati, 1989

Master of Science in Geology
(Specializing in Structural Geology and Tectonics)
University of Cincinnati, 1985

Bachelor of Science in Geology
Bowling Green State University, 1982

Professional Service Positions

Rio Grande Utility Corporation - Member of the Board of Directors
Environmental & Engineering Geoscience - Associate Editor
Landslide Committee, Association of Engineering Geologists
New Mexico State Engineer Mid-Rio Grande Technical Advisory Board
New Mexico Interstate Stream Commission Regional Water Planning Work Group
Geological Society of America - Seminar Convener
Association of Engineering Geologists - Seminar Convener
Western States Seismic Policy council - Delegate

Professional Associations

Geological Society of America, Fellow
American Geophysical Union
American Rock Mechanics Association
Association of Engineering Geologists
Northwest Geological Society

INSTITUTE FOR PRODUCTS, ENGINEERING & CONSTRUCTION

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Tel: 202-822-9660

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Las Vegas, NV 89106
Tel: 702-222-2481

Awards

Certificate of Distinction from the New Mexico State Engineer in recognition of contributions made as a member of the Costilla Dam Independent Review Team, which resulted in the State's recovery of nearly \$5 million in construction cost overruns associated with the reactivation of a dormant landslide.

Outstanding Teaching Assistant, Department of Geology, University of Cincinnati, 1985.

Publications

Publications list available on request

University Courses Taught

Mechanics of Earth Surface processes
Hydrogeology
Brittle Deformation (Earthquake Mechanics)
Mechanics of Geological processes
Numerical methods in Geotechnical Engineering
Geologic Hazards
Site Investigation

Areas of Concentration

Engineering Geology
Hydrogeology
Geomechanics
Structural Geology
Geologic Hazard Assessment
Mathematical Modeling

Specific Experience & Interest

Earthquake Preparedness
Geologic Mapping
Slope Failure
Groundwater
Soil Deformation
Land Subsidence

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William C. Haneberg, PhD

PROFESSIONAL GEOLOGIST

Professional Experience**Institute for Products, Engineering & Construction** **2000 to Present**

Consulting and forensic engineering services for attorneys and insurance companies. Projects involve the disciplines of Geology and Geotechnology and address seismic issues, analysis of design and failure of soil structures, and effects of moving groundwater on geologic formations.

Consulting Geologist **1999 to Present****New Mexico Institute of Mining and Technology** **1989 to Present**

Serve currently as Faculty Adjunct. Previous posts include Senior Engineering Geologist and Assistant Director of New Mexico Bureau of Mines and Mineral Resources.

Manitou Exploration Company **1985 to 1986**
Petroleum Geologist**University of Cincinnati** **1982 to 1988**

Serve as Graduate Teaching and Research Assistant and as Hydrogeologist at the Groundwater Research Center.

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William Kee, BSCE, MSCE, PE

PROFESSIONAL ENGINEER

Credentials

Professional Engineer

New Jersey
Reg #GE21244

Pennsylvania
Reg #020514-E

New York
Reg #046167

Certification and Ratings

Pennsylvania Sewage Treatment Plant & Waterworks Operators
Certificate #S3336 to operate AO STP
Certificate # W2273 to operate AO WTP

Education

Master of Science in Civil Engineering
West Virginia University, 1964

Bachelor of Science in Civil Engineering
West Virginia University, 1963

Professional Associations

American Society of Civil Engineers
American Water Works Association
Water Environmental Federation

Public Service Positions

Quakertown Rotary Club - Past President
Quakertown YMCA - Past President

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William Kee, BSCE, MSCE, PE

PROFESSIONAL ENGINEER

Areas of Concentration

Civil Engineering
Water Supply
Wastewater Treatment

Municipal Engineering
Environmental Engineering

Specific Experience & Interest

Water Treatment & Supply
Sewage Treatment Plants
Storage Facilities
Process Systems & Equipment
Piping, Fittings & Related Products
Pumps & Valves
Flow, Pressure and Level Measuring
Equipment and Accessories
SCADA
Supervisory Control & Data
Acquisition

Sampling & Analyzing Equipment
Water Treatment Plant Design
Water Treatment Plant Construction
Water Treatment Plant Operation
Sewage Treatment Plant Design
Sewage Treatment Plant Construction
Sewage Treatment Plant Operation
Water Facilities
Wastewater Facilities
On-Lot Sewage Disposal

Professional Experience**Institute for Products, Engineering & Construction** **2000 to Present**

Consulting and forensic engineering services for attorneys and insurance companies. Projects involve the disciplines of civil and structural engineering. Issues addressed span all aspects of land development, construction design, management and safety as well as federal and local regulatory concerns. Related safety issues address accidents on construction sites and within buildings, as well as all aspects of water supply, treatment and disposal.

Consulting Engineer **1973 to Present**

President of broad-based engineering firm. Disciplines include the fields of Civil, Structural, Environmental, Land Development, Municipal and Building Engineering. Services include Surveying, Landscape Architecture and Construction management.

Morrell Vrooman Engineers **1966 - 1973**

Project Engineer in environmental design firm serving municipal clients in construction of water and wastewater facilities.

U.S. Public Health Service **1964 - 1966**

Serve as Commissioned Officer in U.S. Public Health Service.

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Geoffrey Kempter, BS

CERTIFIED ARBORIST

Credentials

Certified Arborist #WC-0755
International Society of Arboriculture

Education

Bachelor of Science in Natural Resources
University of Michigan, 1981

Graduate work in Management
Aquinas College

Continuing Education seminars in the vegetation management industry

Professional Service Positions

ANSI A300 Tree Care Standards Committee
Municipal Tree Restoration Project Steering Committee
International Society of Arboriculture Research Trust, Director

Professional Associations

International Society of Arboriculture
Municipal Tree Restoration Project
Pennsylvania Urban Forest Council
Utility Arborist Association
Michigan Forestry and Parks Association

Specific Experience & Interest

Arboricultural Standards and Practices
Urban Forestry
Utility Arboriculture
Right of Way Management
Plant Health Assessment
Storm Restoration Recommendations
Appraisals / Evaluations
Expert Witness Testimony
Environmental Compliance
Wildlife Management

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Professional Experience**Institute for Products, Engineering & Construction****1998 to Present**

Consulting services for attorneys and insurance companies in the field of arboriculture.

Asplundh Tree Expert Co.**1989 - Present**

Manager of Technical Services. Provide assistance to customers and company personnel in arboricultural standards, research and development, environmental issues, methods and training, public relations, and generally represent the company professionally to the industry. Write position papers and articles of interest for industry publications. Represent Asplundh at industry functions and events. Make presentations and conduct workshops at industry seminars. Develop and conduct training programs to ensure compliance with industry standards. Work closely with Asplundh Corporate Communications to develop promotional materials. Assist field management and customers with environmental compliance issues. Serve as expert witness or consultant for risk management and court cases. Encourage the development of new cost-effective tools, equipment and methods. Promote research projects of interest to Asplundh and its customers. Serve as Alternate Storm Coordinator. Asplundh Home Page "Webmaster"

Served as Western Regional Supervisor for Asplund's Municipal Urban Forestry Division. Work closely with Asplundh division managers in marketing Asplundh services to governmental tree care agencies throughout the western United States. Provide assistance to governmental agencies interested in developing or improving tree maintenance programs and contract specifications. Develop and maintain database of new customers in nontraditional Asplundh markets. Assist field supervision with bidding and interpreting specifications. Train field personnel in specialized arboricultural techniques. Represent Asplundh at professional meetings and industry events. Provide additional technical assistance to field personnel as necessary.

Wickes Lumber Company**1987-1989**

Sales Representative. Maintain and expand Customer base of building contractors, providing them with information and assistance with selection of building materials. Provide assistance to other retail customers as necessary. Keep current with new building materials and methods, and make appropriate recommendations

U.K, Services, Inc**1982 - 1988**

Owner/Partner. Overall responsibility for remodeling/home improvement company; specializing in custom quality work.

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Additional Experience and Projects

- Worked extensively with Asplundh area managers to open new markets for Asplundh services.
- Worked with numerous government tree care agencies in designing, modifying, and upgrading tree maintenance plans.
- Developed the Asplundh "Arboricultural Training Series," an educational program designed to teach the fundamentals of arboriculture and tree physiology to field employees.
- Conducted numerous training workshops for field personnel.
- Developed the Asplundh "Wildlife Awareness Training Program," to enhance employee knowledge of wildlife, habitat protection, and to prevent employees from accidentally disturbing wildlife and violating federal statutes.
- Worked closely with Asplundh field personnel in developing a variety of innovative wood waste handling methods,
- Worked closely with sponsors and field personnel in designing, writing and presenting presentations and proposals.
- Developed environmental compliance guidelines for various Asplundh field divisions.
- Managed Asplundh operations in England, 1993-1994.
- Served on the Technical Advisory Committee for the Sacramento Tree Foundation, a nonprofit organization promoting tree planting and preservation, 1991-1993.
- Participated in the first and sixth "Tour des Trees" fund raising bicycle rides for the ISA Research Trust, 1992, 1997.
- Qualified as expert witness in Maryland court case involving utility arboriculture, testified at trial, October, 1995.
- Delegate to the "Rights-of-Way Environmental Management" workshop, sponsored by the Electric Power Research Institute, October, 1997.
- Coordinated Asplundh Storm Response for "Ice Storm 1998," the largest single response ever mounted by Asplundh.

Publications

Extensive publications in industry periodicals. Complete list available on request.

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Uno Kula, BSCE, ME, CE, SE, PE

PROFESSIONAL ENGINEER

Credentials

Civil Engineer	Structural Engineer
Arizona	Arizona
California	Illinois
Professional Engineer	
New York	

Education

Master of Engineering
New York University, 1962

Bachelor of Science in Civil Engineering
Mississippi State University, 1953

Professional Associations

American Society of Civil Engineers - ASCE
Structural Engineers Association of Arizona
Building Seismic Safety Council

Professional Service Positions

Subcommittee on Seismic Loads, American National Standards Institute & American Society of Civil Engineers
Standard 7 Committee, Minimum Design Loads for Buildings and Other Structures, American Society of Civil Engineers
Seismology Committee, International Conference of Building Officials
Representative of Structural Engineers Association of Arizona to Building Seismic Safety Council
Technical Subcommittee2, Structural Analysis and Design, Building Seismic Safety Council
Code Advisory Committee Chair, Central Chapter, Structural Engineers Association of Arizona
Seismology Committee Co-Chair, Structural Engineers Association of Arizona

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Special Qualifications

Over 20 years experience in thorough review of structural engineering designs
Structural design of buildings to withstand seismic and aeolian forces

Areas of Concentration

Civil Engineering
Structural Engineering
Geotechnical Engineering
Construction Codes & Standards
Building Design
Flood-Resistant Design of Buildings

Plan Review & Permitting
Concrete Structures
Strength of Materials
Foundation Defects
General Construction
Industry Standards

Specific Experience & Interest

Arizona Building Codes
Uniform Building Codes
Manufactured Buildings
Commercial & Industrial Buildings
Code Compliance Reviews
Contract Compliance Review
Multi-family Residential Buildings
Technical Reports
Municipal Complexes
Office Buildings
Warehouses
Framing
Seismic Design
Wind Force Design

City of Phoenix Codes
Schools: Elementary, Secondary &
College Buildings
Wood Trusses
Construction Fasteners
Parking Structures
Mid-Rise Buildings
High-Rise Buildings
Aircraft Hangars
Precast Concrete Structures
Steel Structures
Timber Structures
Foundation Underpinning

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Professional Experience**Institute for Products, Engineering & Construction** **2001 to Present**

Consulting and forensic engineering services for attorneys and insurance companies in the fields of structural and civil engineering. Emphasis placed on structural integrity of buildings & components, suitability & testing of construction materials, and design analysis.

Consulting Engineer **1992 to Present**

Perform structural review of plans submitted to Arizona municipalities in conjunction with building permitting process.

City of Phoenix **1971-1992**

Structural Plans (Review) Engineer, later Senior Structural Plans Engineer for Building Safety Department (later Development Services Department) of City of Phoenix, Responsibility included review of submitted plans for conformance to structural, architectural, life-safety and handicapped provisions of City of Phoenix Construction Code (later 1988 and subsequent editions of UBC). For phased construction project the responsibility included overall coordination of review process. Major projects included Hyatt-Regency Hotel downtown Phoenix (post-tensioned approximate 20-story structure, two 20-story towers of Renaissance Square, 20-story office tower at Arizona Center, parking structure and adjacent shops, and Terminal 4 at Sky Harbor Airport.

Thompson and Clark **1967-1971**

Structural Engineer. Work involved structural design of variety of commercial buildings from one-story to five-stories, a church with half-dome roof and basement below water table (hydrostatic uplift pressures) and related structural inspections. Materials used included structural steel, reinforced concrete, masonry and wood

I.M. Pei and Partners **1966-1967**

Resident Engineer at State University of New York, Fredonia campus. The project involved nine-story administration building, three-story fine arts building containing a concert hall, a full performance theater, various smaller assembly rooms with stages, classrooms, a three-story science building and a power plant. Responsibility included direction and supervision of structural inspection as well as supervision and interpretation of extensive soils testing dictated by very difficult foundation conditions.

F.P. Widerson Associates Architects **1964-1966**

Head of Structural Department. Structural design and supervision of engineers, designers and draftsmen for firm engaged mainly in school design. Responsibilities included establishment of soils exploration programs, monitoring of borings and tests

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Uno Kula, BSCE, ME, CE, SE, PE

PROFESSIONAL ENGINEER

and establishment of foundation design criteria. One of the more significant assignments was design of auditorium for Half Hollow Hills High School with roof girder spanning 100'+ and full production stage (with fly loft).

Wayman C. Wing**1962-1964**

Project Engineer with freedom of design in practically all aspects except area of client relations and fees. Projects included foreign hotel project with reinforced concrete shell roof; two ten-story hotels of flat plate, shear wall construction in earthquake zone (West Coast) prestressed liftslab alternate for same; pavilion for New York World's Fair, steel rigid frame construction: a minor Pair project, timber construction; ballroom roof supporting two lane circular drive and considerable landscaping of a major hotel. Last project involved design of very heavy welded steel plate girders in composite action with reinforced concrete, also economic comparison with prestressed concrete alternate (Washington, DG Hilton).

Farkas & Barron**1959-1962**

Structural Designer to ,job captain. Work included: design of portions of steel frame and foundations of an institutional building; typical floor and foundation of ten-story steel deck; steel frame state office building; lobby, basement floors, columns and foundations for 32-story steel frame office building; work on 45-story reinforced concrete hotel; complete design of superstructure under general direction of an associate of a 2.5-story reinforced concrete apartment building (concrete joists, bearing and shear walls); preparing preliminary studies; designing cost-wise critical elements; directing and coordinating design of portions of building by other engineers; developing efficient office procedures for use of ultimate design theory in design of 23-story grid flat slat office building. Last job also had extensive underpinning problems with adjacent buildings. Project was later used extensively for promotional purposes by the firm (One Charles Center, Baltimore, MD - Mies Van de Hohe, Architect).

Praeger-Kavanagh**1959**

Designer on highway structures. Work included geometric computations of more than ordinary complexity; checking of bridge shop drawings (truss, plate girder, pre-stressed concrete and composite girder types); design and layout of viaduct structure – composite beams, reinforced concrete bents and pile foundations; adopted a. chart for convenient spacing of shear connectors, checked design computations of sheet piling for marina project

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Education**Postgraduate Studies in Advanced Structural Analysis**

Columbia University, 1968

Master of Engineering (Mechanical)

City College of the City University of New York, 1966

Bachelor of Science in Mechanical Engineering

City College of the City University of New York, 1962

Continuing Education programs in Management, Cooling of Electronic Equipment, Nonlinear Vibration, Signal Processing, Tribology, Fracture Mechanics, Vibration Theory and Applications, Bearing & Lubricant Contamination & Filtration, Pump Theory & Applications and Gas Turbine Fundamentals

Professional Associations

American Society of Mechanical Engineers
 American Society of Safety Engineers
 National Fire Protection Association

Areas of Concentration

Mechanical Engineering	Machine Design
Marine Engineering	Product Testing
Hydraulics & Pneumatics	Fire Causation
Heating, Ventilation & Air Conditioning	Structural Design
	Dynamic Analysis (vibration & shock)

Specific Experience and Interest

Machinery Accidents	Fires and Explosions
Product Testing	Fire Alarm & Protection Systems
Power Plant Design & Operation	Fire Extinguishing Systems
Lubrication Systems	Electrical Systems
Cooling Systems	Subway Cars
Hydraulic Systems	Turbines
Winches & Gear Drives	Diesel Engines

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Publications

“U.S. Navy MK 105 Minesweeping System Upgrade Program – Installation of Pratt & Whitney Canada ST6L-813 Turbine”, ASME Paper # 95

Professional Experience

Institute for Products, Engineering & Construction **2001 to Present**

Consulting and forensic engineering services for attorneys and insurance companies. Projects involve the disciplines of mechanical, electrical and structural engineering and address machine design and defects, investigation of fires and explosions, and safety concerns in buildings and mechanical/electrical equipment.

EDO Corporation **1966 to Present**

Senior Staff Engineer. Responsibilities include senior level project tasks such as system conceptualization and follow through from design phases to manufacturing, test and delivery to the customer. Also provided direction to engineers, designers, technicians and mechanics. Performed extensive component and system testing and failure analyses, including vibration monitoring utilizing FFT spectrum analyzers. Projects include turbine and diesel power plants, motor operated winches, underwater towed minesweeping devices, installation of equipment on New York City Subway cars.

Center Engineering **1994 to Present**

Mechanical Engineer. Perform consulting services in the forensic analysis of machinery, diesel and turbine power plants.

Alstom Engineering **1998 to Present**

Perform consulting services related to installation of equipment on New York City subway cars.

Instrument Systems Corporation **1965 - 1966**

Design Engineer. Participated in design and development of pneumatic and hydraulic devices such as a winch hydraulic control system. Supervised technicians in building hydraulic test equipment.

New York Naval Shipyard **1962 - 1965**

Design Engineer. Design of heat transfer and fluid power components and systems. Included were liquid cooling systems, heat exchangers and pneumatic supply systems. Performed thermal and fluid power analyses. Appointed as an alternate instructor in the shipyard Mechanical Drafting Trainee Program. Taught basic engineering principles of fluid systems.

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Arthur L. Lewis, BSEE, CSP, CHCM ENGINEER AND SAFETY PROFESSIONAL

Credentials

**Certified Safety Professional
Certified Hazard Control Manager**

Education

Bachelor of Science in Electrical Engineering
Newark College of Engineering, Newark, New Jersey, 1947

Continuing education through programs offered by:
Newark College of Engineering
New York University'
Public Service Electric & Gas Co.
Edison Electric Institute - Safety & Industrial Health Committee
American Society of Safety Engineers

Professional Service Positions

American Society for Testing and Materials
Committee F 1 9 - Electrical Protective Equipment for Workers
International Electro-technical Commission
Technical Committee TC78 - Live Working
Somerset County Construction Board of Appeals

Professional Associations

American Society of Safety Engineers
National Fire Protection Association
American Board of Forensic Examiners
Institute of Electrical and Electronic Engineers
Veterans of Safety

Public Service Positions

New Jersey State Industrial Safety Committee

Relevant Information

Residential/Commercial Electrical Contractor, 1950 to 1960

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Arthur L. Lewis, BSEE, CSP, CHCM ENGINEER AND SAFETY PROFESSIONALProfessional Experience

Institute for Products, Engineering & Construction **1995 to Present**
 Consulting and forensic engineering services for attorneys and insurance companies in the field of electrical and utility company safety.

Safety Consultant **1980-Present**
 Full range of safety consultation services for industry. Compliance with safety and health regulations. Development and implementation of safety training programs, Investigation and reconstruction of accidents, including expert witness services. Product liability suit consultation, OSHA citation and compliance action. Safety management seminars. Auditing of electrical testing laboratories as part of Laboratory Accreditation Program of National Association of Independent Laboratories for Protective Equipment Testing. Providing training seminars on Test and Inspection of Electrical Protective Equipment.

Public Service Electric &-Gas Co. **1947-1980**
 Manager Safety & Security. Coordinated and directed the activities of corporate office covering loss prevention activities throughout company. Promulgated a continuing program emphasizing worker health and safety based on the injury and industrial illness experience of the company and in response to applicable federal, state and industry regulations and standards. Assisted company departments in the investigation of injuries and industrial illnesses and made recommendations for their prevention. Conducted periodic audits of work groups to determine compliance with recommended standards, and government regulations. Assured the purchase and proper use of safety equipment and nonhazardous chemical agents. Sponsored safety-related training programs. Acted as liaison with governmental agencies on safety and industrial health matters.

Safety Engineer for Electric Department. Manager of department having same safety and industrial health responsibilities as listed above but limited to the electric side of the Company. Department was consolidated with similar Gas Department office in 1974 into corporate office.

Joined company in 1947 and was assigned to Electric Transmission and Distribution Department after completion of management training program. Worked as a supervisor in increasingly responsible positions in field division until 1964. Transferred to corporate office as a Senior Engineer directing group designing and approving tools, hardware and equipment and preparing safety rules and work practices for overhead distribution work.

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Arnold Lustiger, PhD

MATERIALS SCIENTIST

Education**Doctor of Philosophy in Materials Engineering**

Drexel University, 1985

Master of Science in Materials Engineering

Drexel University, 1979

Bachelor of Science in Materials Engineering

Drexel University, 1976

Professional Associations

American Chemical Society
 American Physical Society
 Society of Plastics Engineers

Specialized Expertise

Materials Engineering
 Chemistry
 Plastic Pipe and Conduit
 Plastic Cable
 Molded Plastic Parts

Patents

A. Lustiger, C.N. Marzinsky and Y. Devorest, "Polypropylene/Fiber Composites",
 Patent 5,627,226, Issued May 6, 1997

A. Lustiger, "Semicrystalline Polymer Blend Compositions with Enhanced
 Interspherulitic and Interlamellar Strength", European Patent 0550214, Issued
 January 10, 1997

L. Monette, A. Lustiger, M.P. Anderson, J. P. Dismukes, H. D. Wagner, C. N.
 Marzinsky and R. R. Mueller, "Composites with Interphases and Methods of Making
 Same" , Patent 5,288,555, Issued February 22, 1994

Publications

Extensive publications, list available on request

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 Professional Experience

Institute for Products, Engineering & Construction **2001 to Present**
 Consulting and forensic engineering services for attorneys and insurance companies. Projects involve the discipline of materials engineering and address the failure of plastic pipe, conduit, cable and molded parts.

Exxon Research and Engineering Company **1990 to Present**
 Senior Research Scientist. Perform research on morphology-property relationships in metallocene-based polyethylene and polypropylene resins and composites. Projects include improving environmental stress crack resistance and toughness in high density rotational and injection molding resins, improving tear strength and transparency in low density polyethylene film, and improving toughness in glass-polypropylene composites. Also involved in micromechanical and analytical characterization of glass- epoxy composite interfaces after environmental exposure.

AT&T Bell Laboratories **1986 - 1990**
 Member of Technical Staff. Performed basic and applied research in morphology of polyethylene, failure analysis and prediction in polyethylene cable, and morphology-failure relationships in thermoplastic composites. Also performed failure analysis of microelectronic components using acoustic microscopy.

Battelle Columbus Laboratories **1979 - 1986**
 Principal Research Scientist. Primarily involved in various programs for the natural gas industry involving polyethylene pipe for fuel gas distribution. Research areas included developing structure-property relationships, failure analysis, butt fusion joining, environmental stress crack test development and evaluation. Edited Plastic Pipe Line, a quarterly newsletter on polyethylene pipe research, and was primary author of Field Failure Reference Catalog for Polyethylene Gas Piping, both published by the Gas Research Institute. Other research areas included aging of polyethylene dielectric cable insulation, evaluating the effect of processing on the morphology and mechanical properties of thermoplastic composites, and development of transparent elastomers.

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George H. Meinschein, BSME, P.E.

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**

Connecticut License # 21183

Certification and Ratings**Certified Master Automobile Technician**

Automotive Service Excellence (ASE)

(Also certified by ASE in Auto Advanced Level Engine Performance)

Certified by Mechanics Education Association in:

GM Port Fuel Injection & Distributorless Ignition Systems

GM Computerized Carburetor Controls & Throttle Body Fuel injection Systems

R-12 Refrigerant Recovery and Recycling

Ford Electronic Engine Control Systems

Chrysler Computerized Engine Controls

Education**Bachelor of Science in Mechanical Engineering**

Stevens Institute of Technology, 1978

Continuing Education through programs offered by Mechanics Education Association and Superior Court of New Jersey. Also:

Symposium on Metrology of Pedestrian Locomotion and Slip Resistance - American Society for Testing and Materials (ASTM)

Professional Service Positions

Technical Hotline Advisor - Mechanics Education Association. Serve as online troubleshooter to members for assistance in diagnosing customer vehicles.

ASTM Committee F13: Safety and Traction for Footwear

Public Service Positions

Mediator for Superior Court Complementary Dispute Resolution program

Relevant Information

Team Engineer and Technical Advisor for stock car racing team.

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George H. Meinschein, BSME, P.E.

PROFESSIONAL ENGINEER

Areas of Concentration

Mechanical Engineering
 Automotive Accidents
 Mechanical Failure Analysis
 Automotive Codes & Standards
 Automotive Repair Shop Practices
 Automotive Trade Practices
 Vehicle Design/Defects
 Vehicle Dynamics

Building Codes & Standards
 Product Defects/Liability
 Heating Equipment
 Building Mechanical Systems
 Air Conditioning Equipment
 Construction Equipment
 Lawn & Garden Equipment
 Portable Power Tools

Specific Experience & Interests

Seatbelts
 Airbags
 Low-speed Impacts
 Speed Analysis/Determination
 Tow Trucks
 Fuel Systems
 Antilock Brake Systems
 Engine Failures
 Automotive Electronics
 Mopeds
 Offroad Vehicles
 All-Terrain Vehicles
 Motorcycles
 Sudden Acceleration
 Staged/Fraudulent Claims
 Towing Procedures
 NHTSA Recalls
 Cooling Systems
 Ignition Systems
 Four-Wheel Drive Vehicles
 Fuel Systems
 Forklifts
 Hydraulic Jacks

Warning, Guarding & Labels
 Pipe & Plumbing Leaks
 Oil Burners - Puffbacks
 Furnaces
 Gas-fired Equipment
 Refrigeration Equipment
 Residential HVAC Systems
 Commercial HVAC Systems
 Residential Construction
 Chimneys
 Slips, Trips & Falls
 Carnival and Amusement Rides
 Tractors
 Lawn Mowers
 Loaders & Backhoes
 Power Saws
 Mixers
 DOT Regulations
 FMVSS Regulations
 Steering Systems
 Vehicle Fires & Explosions
 Wheels & Tires
 Axles

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Professional Experience

Institute for Products, Engineering & Construction **2000 to Present**
 Consulting and forensic engineering services for attorneys and insurance companies. Projects involve the discipline of mechanical engineering and address automotive design, defects and safety, vehicular accident analysis, vehicle repair shop practices and trade practices concerning automotive sales, service and repair.

Consulting Engineer **1998 to Present**
 Automotive systems failure analysis, product failure/liability and defect analysis, vehicle examinations, improper repair procedures, seat belt/air bag/ABS brake failures.

L & P Custom Builders **1994 - 1995**
 Direct and manage General Contracting firm engaging in custom homebuilding, renovations and additions. Responsibilities included preparation of proposals and plans, coordinating subcontractors and building inspections.

B&G Auto Service **1982 - 1998**
 Manage an automotive fueling, service and repair facility providing repairs and scheduled service to customer-owned vehicles. Supervise technicians and attendants, schedule service procedures, establish continuing education for technicians, coordinate acquisition of real estate and development of property, towing and recovery service for local police department.

Omega Engineering **1978 - 1982**
 Senior Application Engineer. Serve as specialist in temperature measurement and control devices for firm engaging in product engineering and prototype fabrication.

Seminars and Publications

“Semiconductor Materials in Automotive Applications” - class prepared and taught for Mechanics Education Association members

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Tylman (Tim) Moon, AIA

REGISTERED ARCHITECT

Credentials**Registered Architect**

New Jersey License AI 04595

New York License 10595

Pennsylvania License RA-005513-B

Virginia License 0401002987

Maine License AN 10001756

National Council of Architectural Registration Boards 103 18**Professional Planner**

New Jersey License 00889

Education**Bachelor of Architecture**

University of Virginia, 1958

Continuing Education programs:

Commercial Roofing Systems

Fire Safety

Library Design

Professional Liability in Construction

ADA Accessibility Requirements

Limestone Sink Holes

Professional Service Positions

New Jersey Society of Architects, President

NJ State Public Procurement Commission

NJ Institute of Technology School of Architecture Advisory Committee

Professional Affiliations

American Institute of Architects

New Jersey Society of Architects

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Tylman (Tim) Moon, AIA

REGISTERED ARCHITECT

Areas of Concentration

Architectural Design and Construction
 Project Drawings and Specifications
 Code Compliance
 Contract Administration Procedures
 Interior Design
 Bidding procedures
 Contractor Performance
 Thermal and Water Protection
 Life Safety Codes

Stair Design and Safety
 Accident Analysis
 Architectural Systems and Elements
 Fire Rated Construction
 Construction Cost Analysis
 Walls, Windows & Doors
 Roofing Systems
 Construction Delays
 Flooring and Finishes

Specific Experience & Interest

Code Compliance
 BOCA Codes
 NJ Uniform Construction Code
 Commercial and Residential Buildings
 New Construction
 Architectural Renovation

Americans with Disabilities Act
 Historic Preservation and Restoration
 One and Two Family Dwelling Code
 Alternative Use Studies
 Custom Residential Projects
 Sidewalks

Professional Experience

Institute for Products, Engineering & Construction **1994 -present**
 Consulting Services for Architectural and Interior Design Projects relative to Code Compliance, ADA Architectural Guidelines, Life Safety Issues and System Defects.

Consulting Architect **1990-Present**
 President and CEO of Architectural and Interior Design Firm. Administers and Supervises the design, construction documentation and field administrative functions for a variety of building types and interior work for Public and Private Clients.

The Moon and Massimo Partnership **1978-1990**
 President and Design Partner for an Architectural Firm with a general practice including Senior Citizen Housing and Community Centers, Federal, State, Municipal and Private Clients.

Tylman R. Moon, Architect **1968-1978**
 Sole Proprietor of Architectural Firm providing complete Architectural Services for Public and Private Clients including County Library, Municipal Buildings and Multi-family housing.

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Ron Murrell, PE

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**

Texas # 37041

Education**Master of Science in Civil & Mechanical Engineering**

University of Texas, 1977

Bachelor of Science in Aerospace & Mechanical Engineering

University of Texas, 1967

Graduate Courses in Business Administration**Military Officers Courses** in Artillery, Armor, Transportation; Command & General Staff CollegeProfessional Associations

Texas Society of Professional Engineers, TSPE
 American Society for Metals, ASM
 American Society of Mechanical Engineers, ASME
 American Society of Civil Engineers, ASCE
 American Society for Quality Control, ASQC
 American Concrete Institute, ACI
 Association of the United States Army, AUSA
 National Guard Association of Texas, NGAT

Publications

A Twenty Year Master Building Plan for Chrysler Technologies, 1990
 Chrysler Technologies Antenna Range Capabilities - 1994 and Beyond, 1993

Relevant Information

Top Secret/Crypto/BI Clearance, active to 1989
 Secret Clearance, active to 2000

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Ron Murrell, PE

PROFESSIONAL ENGINEER

Areas of Concentration

Construction Management
 Facilities Management
 Mechanical Engineering
 Civil Engineering
 Aeronautical Engineering
 Geotechnical Engineering
 Traffic Engineering
 Petroleum Drilling & Equipment
 Site Development
 Safety Management

Construction Job Site Safety
 Construction Relationships
 Construction Standard Practices
 Building Codes & Standards
 Heating, Ventilating & Air
 Conditioning (HVAC)
 Fleet Management
 Safety Management
 Accident Analysis
 Quality Control

Specific Experience & Interest

Foundations
 Concrete Construction
 General Construction
 Manufacturing Facilities
 Maintenance Procedures
 Alarm Systems
 Barracks
 Concrete & Asphalt Paving
 Security Lighting
 Sidewalks
 Subdivisions
 Surveying
 Temporary Construction
 Personal Protective Equipment
 Landlord & Tenant Issues & Disputes
 Research & Development Facilities
 Restaurants
 Retaining Walls
 School Construction
 Weapons
 Light Poles
 Blast Hole Drills

Fast-Track Construction
 Roads & Highways
 Building Inspection
 Building Materials
 Building Security
 Construction Fasteners
 Dormitories
 Driver Training
 Drilling
 Environmental Compliance
 Equipment Maintenance
 Facilities Plans & Audits
 Fiber Optic Cable
 Fire Sprinkler Systems
 Foundation Defects
 Heavy Equipment
 Drill Bits
 Tunnel Boring Machines
 Oilfield Equipment
 Mining Equipment
 Fairgrounds

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Professional Experience

Institute for Products, Engineering & Construction **2000 to Present**
 Consulting and forensic engineering services for attorneys and insurance companies. Projects span a range of engineering and management disciplines in the fields of Construction, Manufacturing and Safety.

Consulting Engineer **2000 to present**
 Project Manager for Engineering, Contracting and Construction Management firm. Responsible for project administration, coordination and management including budgeting, purchasing and field production for construction projects, including civil and mechanical engineering support.

Daimler Chrysler Technologies/Raytheon/Electrospace Systems **1987 - 2000**
 Manager of Facilities for Defense Contractor. Responsible for civil and mechanical engineering, planning, construction, budgeting, maintenance, administration, safety compliance and training, telecommunication support and fixed assets of 17 facilities in Texas, Virginia and California. Responsible for risk management, accident investigation, HAZCOM and program facility support at corporate headquarters.

Texas Army National Guard, Adjutant General's Department **1986 - 1987**
 Assistant Director. Advise general staff on training, facilities and manpower requirements to fully automate reserve forces in Texas. Researched and wrote training publication and coordinated training, budgetary controls and equipment fielding.

Rone Engineers **1985 - 1986**
 Manager and Senior Civil Engineer for Geotechnical engineering firm. Managed all phases of construction testing and monitoring in soils, concrete, asphalt, steel and roofing. Supervised 58 employees including engineers, technicians, drillers and mechanics.

Western Company of North America **1978 - 1985**
 Manager for Quality Assurance, Facilities, Safety and Training and New Products for oilfield drilling industry manufacturer and service provider. Developed, staffed and managed four groups of 36 professionals within the engineering and manufacturing division to support operations in 12 states. Projects include construction of new facilities and design of new manufactured products.

American Manufacturers Company **1977 - 1978**
 Mechanical engineering supervisor. Designed and developed mechanical/structural components for oilfield pumping units. Developed new metallurgy and casting standards for pipe, pumping units and military ordnance.

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Ron Murrell, PE**PROFESSIONAL ENGINEER****Dresser Industries****1969 - 1977**

Patents and Special Products Design Engineer. Performed mechanical and engineering design for oilfield and mining drilling bits and tunnel boring machines. Designed more than 80 different oilfield, mining and tunnel boring tools for worldwide use. Provide mechanical and civil engineering support on Alaska pipeline drilled pier project.

U.S. Army, Army Reserve and National Guard**1967 - 1989****INSTITUTE FOR PRODUCTS, ENGINEERING & CONSTRUCTION****Tel: 888-212-1155****Fax: 888-414-1155**


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Allan R. Powers, BSEE, MEEE, PE

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**

Iowa License #7248 PE

Nebraska License #E8363

City of Des Moines Electrical Contractor

Education**Master of Electrical and Electronic Engineering**

Iowa State University, 1986

Bachelor of Science in Electrical Engineering

Iowa State, University, 1969

Professional Associations

Institute of Electrical and Electronics Engineers

Section Chairman, 1993 - 1994

Section Vice Chairman, 1992 - 1993, 1990 - 1991

Section Secretary/Treasurer, 1991- 1992

Iowa Engineering Society

Scholarship Committee, 1996

Continuing Education Committee, 1997

National Society of Professional Engineers

Areas of Concentration

Electrical Engineering

Utility System Design

Industrial Systems

Balloon Safety

Electronic Engineering

Electric Power Distribution

Underground Utilities

Overhead Power Lines

Specific Experience & Interest

Substations

Relays

Controls

Electric Power Grid Design

Transformers

Power Quality

Voltage Control

EMF Shielding

Communication Systems

Apartment Buildings

Magnetic Fields

Ground Fault Detection

Grounding

Overcurrent Protection

Blackouts & Brownouts

Storm Restoration

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Professional Experience

Institute for Products, Engineering & Construction **1997 to Present**
 Consulting forensic engineering services in the field of electrical engineering. Emphasis on workplace safety and accident prevention, industry standards, product and premises liability, electrical construction and design analysis.

Consulting Engineer **1995 to Present**
 Consulting Engineers in the field of utility system design, including analysis and design of distribution systems, substations, relay and control, and industrial systems.

MidWest Power **1967 - 1995**
 Formerly Iowa Power, now Mid-American Energy Co. Served in various capacities ranging from Student Engineer through Engineering Manager.

Manager, Distribution System Design **1992 - 1995**
 Responsible for engineering activities relating to the Des Moines area distribution system, including new commercial and industrial services, residential plat designs, system extensions, rebuilds and upgrades, system analysis, budgeting, and storm restoration.

Manager, Substation Engineering **1988 - 1992**
 Responsible for all engineering activities relating to Iowa Power substations, relaying and control, and the downtown Des Moines underground system.

Supervisor, Substation Engineering **1983 - 1988**
 Responsible for all engineering activities relating to Iowa Power substations, relaying and control, and the downtown Des Moines underground system.

Supervisor, Planning and Standards **1982 - 1983**
 Responsible for all engineering activities relating to the downtown Des Moines underground system, distribution standards, and long range transmission and distribution planning.

Supervisor, System Engineering **1979 - 1982**
 Responsible for all engineering activities relating to the downtown Des Moines underground system, the Des Moines area distribution system, and large customers in the Des Moines area.

Senior Engineer **1974 - 1979**
 Responsible for engineering projects as assigned in the areas of the downtown Des Moines underground system and the Des Moines area distribution system.

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Selected Major Projects and Accomplishments

- 1996 Completed engineering for the conversion of the town of Tipton, Iowa from 2.4 kV to 12.47 kV.
- 1992 - 1993 Supervised the design of revisions to two downtown transformer vaults to reduce magnetic fields In adjacent office space.
- 1991 - 1992 Supervised the preliminary design of two new 345 kV switching stations and one new 345 - 161 kV substation.
- 1990 Supervised the design and construction of the distribution system for serving the 45 floor Principal Financial Building in downtown Des Moines.

Educational and Teaching Activities

- Industrial Electrical Maintenance Seminar 1996
A one day short course presented for the Eaton Corporation in Red Oak, Iowa.
- Basic Electricity and Wiring 1995
A series of six 2-hour sessions presented to traffic control technicians and other employees the West Des Moines Department of Public Works.
- Distribution System Planning and Design 1995
A presentation for an Iowa State University short course.
- Distribution Engineering 1994
A one semester graduate level course that was developed and presented in conjunction with John Lamont, Ph.D. at Iowa State University.
- Balloon Safety and Power Lines 1987 - 1993
A 1 -hour program that has been p meeting of the Central Iowa Hot Air Balloon Association a total of three times.
- Design and Construction of Substations 1989 - 1991
A presentation on all aspects of substation design and operations for an Iowa State University short course, presented at three different times.

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C. David Rogers, BSEE, PE

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**
PennsylvaniaEducation**Bachelor of Science in Electrical Engineering**
Gannon University**Graduate Studies in Control Engineering**
Case Western ReserveProfessional AssociationsInstitute of Electrical and Electronic Engineers (IEEE)
Pennsylvania Society of Professional Engineers
National Institute of Standards & Technology (NIST)
Association of Iron & Steel Engineers (AISE)
American National Standards Institute (ANSI)Patents4 Patents in Electric Vehicle and Automated Drilling Computer Control System
Technology.Relevant InformationReceived Recognition of Achievement from United States Steel Research
Received the 1987 IR-100 Award from Research & Development MagazinePublic Service Positions

Service Corps of Retired Executives, Chapter 193, Co-chairman

Teaching ExperienceInstructor in electrical and electronic engineering courses at Pennsylvania State
University.**INSTITUTE FOR PRODUCTS, ENGINEERING & CONSTRUCTION**

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Las Vegas, NV 89106
Tel: 702-222-2481

C. David Rogers, BSEE, PE

PROFESSIONAL ENGINEER

Areas of Concentration

Electrical Engineering
 Electronic Engineering
 Mechanical Engineering
 Chemical Engineering
 Process Engineering
 Computer Engineering
 Project Management

Analytical Testing
 Steel Manufacturing
 Plastics Manufacturing
 Non-Destructive Testing
 Coal Mining
 Computer Programming
 Training

Specific Experience & Interest

Temperature Control
 U.S. Postal Facilities
 Voltage Regulation
 Batteries
 Circuit Breakers
 CPM Scheduling
 Drilling Equipment
 Electric Motors
 Electric Vehicles
 Electrical Devices & Equipment
 Electrocutation and Shock
 Fire Causation

Grounding
 Integrated Steel Plants
 Material Analysis & Testing
 EMF Shielding
 Mining Equipment
 Metal Cleaning
 Electric Arc Furnaces
 Sensors
 Computer Workstations
 Ultrasonic Testing
 Security Systems

Papers and Presentations

"Multipurpose Self-guided Robot for Surface Cleaning and Surface/NDI Quality Inspection for Use on Ships and Storage Equipment," American Society of Naval Engineers Technical Innovation Symposium.

"Advanced Process Control For Electric Arc Furnaces - Research For The Nineties," ABB International Summit on Process Automation.

"Advanced Sensors - Future Opportunities," Instrument Society of America.

"The Application of Advanced Workstations for Process Control Systems," The Control Engineering Conference.

"In-Line Detection of Primary Pipe and Gross Porosity in Hot Slabs, Blooms and Billets", American Society of Metals MI, also to American Iron and Steel Institute.

"Development of Quality Control Information Through Use of an Off-line Computer-Based Ultrasonic System," Society of Non-Destructive Testing.

"Microcomputer-Based Control for Drilling Roof Support Holes in Coal Mines," International Federation of Automation Control.

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Professional Experience

Institute for Products, Engineering & Construction **2000 to Present**

Provide forensic consulting and expert witness services to attorneys and insurance companies. Services involve the disciplines of electrical, mechanical, chemical and process engineering. Projects address electrical and electronic design, telecommunications, controls and instrumentation as well as safety and accident prevention.

Consulting Engineer **1995 to Present**

Founder and Principal Consultant with Pennsylvania State University - Erie Electrical Design Center. Teach courses in electrical and electronic engineering and telecommunications at Pennsylvania State University. Provide consulting engineering services to government and corporations for projects dealing with communications, computer software systems, operator training, metal processing and facilities management.

Carnegie Mellon Research Institute **1988 - 1995**

Senior Fellow. Lead research engineers and scientists in the development of process, controls, computer and business systems for federal government agencies, the steel industry and other businesses.

United States Steel **1964 - 1988**

Senior Systems Engineer. Responsible for the design, implementation and training of computer, instrumentation, process and controls systems used in iron and coal mining and steel production. Served as Program Manager for the American Iron and Steel Institute (AISI) Sensor Development Programs at the National Institute of Standards and Technology (NIST) for four years. Chairman of AISI Collaborative Technology Unit involving NIST and Argonne National Laboratory.

Republic Steel Corp. - Electromechanical Research Laboratory **1960 - 1964**

Systems Engineer - Measurement and Process Control. Conducted integrated system design for a hot steel strip rolling facilities. Derived, programmed and implemented results from digital simulations of mill equipment. Also conducted laboratory studies of the use of microwaves for non-contact measurement of hot steel product dimensions.

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Owen Rothberg, PE

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**Maryland
License #14938Virginia
License #21539Education**Bachelor of Civil Engineering**

University of Florida, 1961

Graduate Courses in Naval Architecture, Engineering Mathematics, Strength of Materials

University of California, 1962 - 1964

Continuing Education courses in Shock Design of Naval Equipment, Thermodynamics, Dynamics of Ocean Structures and numerous computer programming languages.Publications

NUREG-1296, Thermal Overload Protection for Electric Motors on Safety-Related Motor-Operated Valves - Generic Issue II.E.6.1, USNRC, June 1988.

Principal Author and Project Engineer for Generic Letter 89-10 to all nuclear power plant licensees, "Safety-Related Motor-Operated Valve Testing and Surveillance", June 28, 1989.

Paper "In Situ Testing of Motor-Operated Valves in Nuclear Power Plants", 17th Water Reactor Safety Meeting, October 1989.

NUREG/BR-0112, Volume 3, Number 1, "In Situ Testing of Motor-Operated Valves in Nuclear Power Plants", USNRC, January, 1990.

Principal Author and Project Engineer for Draft Regulatory Guide DG-1020 and Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants", (Implementation of the Maintenance Rule", 10 CFR 50.65)", USNRC, June 1993.

DOE Report, "Independent Oversight Review of the DOE QA Program for Suspect/Counterfeit Parts, Revision 1, USDOE, May 1996.

NUREG/CR-6654 (INEEL/EXT-98-00383), "A Study of Air-Operated Valves in U.S. Nuclear Power Plants, USNRC, February 2000.

ICONE-8380, Summary of a Study of Air-Operated Valves in U.S. Nuclear Power Plants for the 8th International Conference on Nuclear Engineering, Baltimore, MD, April 2-6, 2000.**INSTITUTE FOR PRODUCTS, ENGINEERING & CONSTRUCTION**

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Owen Rothberg, PE

PROFESSIONAL ENGINEER

Areas of Concentration

Structural Engineering
 Civil Engineering
 Naval Architecture
 Building Construction
 Shipbuilding

Construction Codes & Standards
 Building Design & Defects
 Building Inspection
 Building Materials

Specific Experience & Interest

Crane Design & Failure
 Rigging
 Apartment Buildings/Complexes
 Cargo Ships
 Commercial Buildings
 Concrete Construction
 Concrete Failure
 Concrete Repair
 Construction Fasteners
 Guardrails
 Handrails
 Ladders
 Marine Corrosion
 Metal Corrosion
 Metal Structures
 Municipal Buildings
 NRC Regulations
 Nuclear Power Plants
 Office Buildings
 Parking Garage Construction

Parking Structures
 Precast Concrete Structures
 Retaining Walls
 Roof Failures
 Roof Leaks
 Scaffolds
 School Construction
 Ship Components
 Stairways
 Steel Design/Defects
 Steel Erection
 Steel Structures
 Structural Failure
 Structural Inspection
 Truss Erection
 Truss Failures
 Wind Forces
 Wood Structures
 Wood Trusses

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Professional Experience

Institute for Products, Engineering & Construction **2000 to Present**

Consulting and forensic engineering services for attorneys and insurance companies. Projects involve the disciplines of structural and civil engineering and naval architecture. Issues addressed include Rigging and crane operation and safety, construction site safety, product liability involving structural or material failure, construction of buildings and other structures, and shipbuilding.

Idaho National Engineering and Environmental Laboratory Nuclear Operations Support Programs Department **1993 to Present**

Consulting Engineer. Wrote and produced a report for the Nuclear Regulatory Commission (2.5 year project) on operability issues of air-operated valves in U.S. commercial nuclear power plants (NUREG/CR-6654). Wrote and produced the program plan for identification of Suspect/Counterfeit Parts for the Department of Energy. Participated as a team member in updating the Standard Review Plan for the Nuclear Regulatory Commission. Wrote portions of the Department of Energy Generic Issues Program and the Department of Energy Defense Program Operations Manual. Participated in the audit of the CE System 80+ Technical Specifications for the Nuclear Regulatory Commission. Thoroughly familiar with NRDC regulations and guidance documents.

U.S. Nuclear Regulatory Commission **1980 - 1993**

Senior Task Manager for the Generic Issues Branch in the Office of Research. Major projects included writing and producing the original Generic Letter 89-10 for motor-operated valve operability improvements, and producing Regulatory Guide 1.160 for implementation of the Maintenance Rule, 10 CFR 50.65. Coordinated several issues between the Maintenance Rule, license renewal, and diesel generator reliability and resolved technical conflicts. Sponsored, monitored and participated in research on the operability of motor-operated valves in nuclear plants.

Task Manager and Mechanical Engineer for the Mechanical Engineering Branch of the Office of Nuclear Reactor Regulation. Major assignments included review of nuclear power plant in-service valve testing programs, particularly with respect to pressure-isolation valves at the reactor-coolant pressure boundary, as well as research on operability of motor-operated valves, review and analysis of LERs and other licensee documentation, and preparation of SERs.

Structural Engineer for the Structural Engineering Branch of the Office of Nuclear Reactor Regulation. Major assignments included revision of the applicable portions of the Standard Review Plan, investigation and root-cause analyses of anchorages to concrete structures, investigations of designs of masonry wall in nuclear power plants, and reviews of spent fuel pool re-racking proposals from licensees.

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Owen Rothberg, PE

PROFESSIONAL ENGINEER

United States Navy 1961 - 1980

Civilian Employee. Design Section Supervisor, Project Manager and Naval Architect at Hunters Point Naval Shipyard, Mare Island Naval Shipyard and Naval Sea Systems Command. Major assignments included design of large portions of the structures and equipment supports for the USS Midway Conversion, baseline design of the hull structure for the FFG-7 class of patrol-frigates, arresting gear support design, catapult support design, nuclear submarine pipe support design and sound isolation, and nuclear submarine equipment support design. Designed rigging, slings and strongbacks and conducted rigging tests for heavy lifts as well as Navy boats.

Allison, McCormac and Nickolaus, Structural Engineers 1978 - 1990

Structural Engineer. Performed design and analyses of conventional building structures including office building, warehouses, schools and hotels throughout the Washington metropolitan area. Participated in the restoration and addition of floors to the Mayflower Hotel and renovation of the Pennsylvania Building. Wrote several structural engineering programs in Fortran and Basic.

Dewberry & Davis, Civil Engineers 1990 - 1994

Structural Engineer. Designed water and sewage treatment structures, performed analyses of building structures and designed modifications for building structures at Bolling Air Force Base. Performed root-cause analyses for several as-built structural defects and conditions.

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Mark Rothstein, BSChE, MchE, PE

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**

Pennsylvania License # 20700-E

Education**Master of Chemical Engineering**

Villanova University, 1970

Bachelor of Science in Chemical Engineering

Tau Beta Pi Engineering Honor Society

University of Massachusetts, 1964

Continuing Education through programs provided by:

Instrument Society of America

American Institute of Chemical Engineers

Professional Service Positions

Storage Tank Advisory Committee, Commonwealth of Pennsylvania Department of Environmental Protection - Alternate Professional Member

Professional Associations

American institute of Chemical Engineers

Publications

Automatic Control and Process Dynamics

Notes on the Design of Automatic Process Controls for the Chemical and Power Industry

Patents

Feedforward Control System for a Jet Plate Hydrogenator to Minimize the Venting of Hydrogen.

Underground Antenna for Locating Plastic Natural Gas Piping.

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Mark Rothstein, BSChE, MchE, PE

PROFESSIONAL ENGINEER

Teaching Experience

Advanced Applications of Process Control and Process Control II as Associate Professor of Chemical Engineering, 1980.
 Practical Engineering of Process Control Loops, Instrument Society of America, Philadelphia Section, 1978 and 1980.

Areas of Concentration

Chemical Engineering
 Process Engineering
 Computer Dynamic Modeling
 Photomicroscopy
 Thermodynamics
 Analytical Testing
 Warnings

Environmental Protection
 Petrochemical Handling & Safety
 Chemical Product Liability
 Chemical Safety
 Computer Science & Programming
 Temperature Controls
 Explosion Investigation

Specific Experience & Interest

Chemical Contamination
 Chemical Reactivity
 Chemical Explosions
 Dynamic Process Analysis
 Smoke Damage
 Friction Measurement
 Oil Spills
 Water Contamination
 Environmental Site Assessments
 Boilers
 Fuel Gases
 Chemical Flammability
 Dyes

Electrostatic Precipitators & Filters
 Ethanol & Methanol
 Fuel Oil Tanks
 Industrial Furnaces
 Gas Furnaces
 Fuel Oil
 Ground Water Remediation
 Fuel & Gas Leaks
 Mixing Equipment
 Pumps
 Thermal insulation
 Toxic Chemicals

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Professional Experience

Institute for Products, Engineering & Construction **1999 to Present**

Consulting and forensic engineering services for attorneys and insurance companies. Services involve the disciplines of chemical, process and environmental engineering. Projects address the analysis of industrial process design, systems and components, defects and accidents; as well as the chemical, thermal, physical and cumbustive properties of solids, liquids and gases.

PECO Energy Company **1986 to present**

Chemical Engineer in the Environmental Department, specializing in storage tanks and oil spill cleanup. Served as Chemical Engineer in the Energy Engineering Department, working with filtering processes, sulphur dioxide scrubbers and pumping systems. Served as Research Engineer, responsible for using mathematical modeling and other advanced techniques to design and analyze process control problems in the power industry.

United Engineers & Constructors, INC. **1972 - 1986**

Senior Consulting Engineer. Responsible for Modeling Simulation, and for Control System Design and Analysis for the chemical, power and steel industries.

E.I. DuPont **1965 - 1972**

Engineer in the departments of Process, Engineering Instrumentation, Control Engineering and Instrument Maintenance.

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Durward Rutledge, BSME, PE

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**
State of TexasEducation**Doctor of Philosophy in Safety Engineering (in progress)**
Kennedy Western University**Bachelor of Science in Mechanical Engineering**
University of Texas at Arlington, 1976**Bachelor of Science in Mathematics**
University of Texas at Arlington, 1971**Bachelor of Arts**
University of Texas at Arlington, 1967**Continuing Education**, including:
Crash Survival Investigator's School, Arizona State University, 1978
Statistical Process Control, Southern Methodist University, 1992
Engineer as Leader and Manager, Texas Tech University, 1993Professional Service Positions

Advisory Board Member, American Automation, Inc.

Professional AssociationsAmerican Society of Mechanical Engineers (ASME), Electronics and Electronic
Packaging Division (EPPD)
Society of Reliability Engineers (SRE)
Semiconductor Equipment and Materials International (SEMI) Standards Program
Association of Proposal Management Professionals (APMP)Relevant InformationSecurity Clearance: Secret/COMSEC (active)
Holder of 3 patents, 2 pending**INSTITUTE FOR PRODUCTS, ENGINEERING & CONSTRUCTION**

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Durward Rutledge, BSME, PE

PROFESSIONAL ENGINEER

Areas of Concentration

Mechanical Engineering
 Electrical Engineering
 Materials Engineering
 Industrial Engineering
 Process Engineering
 Aeronautical Engineering
 Avionics
 Electromagnetics
 Fire Prevention
 Hydraulics
 Metallurgy
 Surveying

Product Development & Testing
 Construction & Workplace Safety
 Safety Engineering
 Warning, Guarding & Labels
 Machine Design
 Human Factors
 Aircraft Safety & Crash Investigation
 Biomechanics
 Ergonomics
 OSHA
 Railroad Safety
 Telecommunications

Specific Experience & Interest

Consumer products
 Portable Power Tools
 Electrical Hazards & Safety
 Flammability
 Americans with Disabilities Act
 Air Conditioning Systems &
 Equipment
 Airworthiness
 Aircraft Crashworthiness
 Jails
 Crash Testing
 Exercise Equipment
 Automatic Door Openers
 Golf Course Accidents
 Grinders
 Medical Equipment
 Models
 Packaging Equipment & Products
 Recreational Accidents
 Plastics Design & Defects
 Saws

Industrial Accidents
 Electrocutation & Shock
 Hazardous Materials
 Automatic Doors
 Appliances
 Lawn Mowers & Equipment
 Lighting Design & Equipment
 Batteries
 Bicycles
 Bridges
 Building design & defects
 Communications Systems
 Concrete Construction
 Roads & Highways
 Grounding
 Helicopters
 Roads & Highways
 Ignition Systems
 Stairways
 Wheels & Tires

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Professional Experience**Institute for Products, Engineering & Construction** **1999 to Present**

Consulting and forensic engineering services for attorneys and insurance companies. Projects involve a spectrum of engineering disciplines and focus on safety issues relating to consumer, commercial and industrial products, construction jobsites and industrial workplaces, recreational products and activities, and automotive and aircraft transportation.

Consulting Engineer **1996 to Present**

Overall responsibility for engineering firm specializing in industrial design, new product design, development and testing, and systems engineering and integration. Services include design assessments, preparation of user, installation and technical manuals.

Typical projects include:

- Retail point of sale interactive kiosk design, prototype build, and production
- Relocation of manufacturing facility
- Development of consumer product utilizing interactive television
- Construction equipment design assessment, redesign and prototyping
- PC based Jail Inmate Management System upgrade.
- Mechanical short course for power plant on-site personnel
- Helicopter cockpit and avionics upgrade

Electrospace Systems, Inc. **1978-1996**

Department Manager. Managed Specialty Engineering Department with responsibility for product support, test and evaluation engineering. Directed development, construction, and subsequent operation of corporate environmental and electromagnetic effects test laboratories; planned acoustic test facility. Participated in development of Engineering, Specialty Engineering, Test, Systems Engineering (System Design and Analysis), Components, Standards, Configuration Management Processes; conducted training classes. Managed several test programs for corporate programs and outside customers, and supported over 100 other programs, including ground fixed, ground mobile, airborne (rotary and fixed wing), and marine (shipboard) platforms. Provided technical and cost input to more than 400 proposals, including oversight of complete technical volumes. Authored more than 300 technical documents. Initiated several corporate and departmental policies, procedures, processes, and practices, including ISO 9000 series and European Union (EU/CE) criteria compliance.

Bell Helicopter **1966-1978**

Reliability/Maintainability/System Safety Engineer. Supported special projects, research programs, and new development efforts. Implemented and managed successful XV-15 Tilt Rotor Aircraft System Safety and Reliability program through design and test phases. Served as Field Test Engineer at U.S. Army Aviation Test Board during OH-58A R&M demonstration flight test program. Helped establish System Safety/Flight Safety Group, developed hazard analysis and data analysis, created Safety Data Analysis Center, provided technical safety support to legal department, performed aircraft accident analyses, provided management functions as Assistant Group Head.

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Howard Sarrett, MS, PE

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**
State of New JerseyEducation**Master of Science in Engineering Science**
Rensselaer Polytechnic Institute - 1964**Bachelor of Science in Mechanical Engineering**
City College of New York - 1960
(Elected to Pi Tau Sigma Mechanical Engineering Fraternity)**Continuing Education**Human Factors in Engineering and Design - N.J. Institute of Technology
Forensic Burn Training Program - National Burn Victims Foundation
International Symposium on Slip Resistance: The Interaction of Man, Footwear, and Walking Surfaces - American Society for Testing and Materials (ASTM)
Symposium on Metrology of Pedestrian Locomotion and Slip Resistance - American Society for Testing and Materials (ASTM)
Short Course in Elevators and Escalators - American Society of Mechanical Engineers (ASME)Professional Service Positions

ASTM Committee F13: Safety and Traction for Footwear

Professional AssociationsAmerican Society of Mechanical Engineers (ASME)
Building Officials and Code Administrators International (BOCA)
American Society for Testing and Materials (ASTM)Public Service PositionsLower Connecticut Valley Association for Retarded Children - Founder
Middlesex Association for Retarded Citizens - Member, Board of Trustees
N. J. Cerebral Palsy Parents' Association - Founder
National Burn Victim Foundation - Vice President, Executive Board, Trustee**INSTITUTE FOR PRODUCTS, ENGINEERING & CONSTRUCTION**

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Howard Sarrett, MS, PE

PROFESSIONAL ENGINEER

Areas of Concentration

Product Liability
 Machine Design
 Mechanical Engineering
 Control Systems
 Construction Sites
 Industrial Equipment
 Consumer Products
 Facilities Design
 Building Systems
 Electrical Design
 Dynamic Analysis
 Burn Hazards
 Fire Protection
 Aerospace Contracting

Premises Liability
 Safety
 Warning & Guarding
 OSHA Compliance
 Materials
 Thermodynamics
 Hydraulics
 Metallurgy
 Structures
 Aerodynamics
 Codes & Standards
 Flammable Liquids
 Explosive Substances

Specific Experience & Interest

Slips, trips and falls
 Consumer Products
 Construction Equipment
 Garden Equipment
 Industrial Machinery
 Industrial Furnaces
 Commercial Ovens
 Failure to Warn
 Guarding
 Safety Devices
 Food Processing Equipment
 Construction Site Safety
 High voltage equipment
 Gas-fired Equipment
 Carnivals and Amusement Parks
 Vehicle Accident Reconstruction
 Elevators and escalators
 Workplace accidents
 New Jersey Building Codes
 New York Building Codes
 Contract Administration

Ladders
 Scaffolds
 Sidewalks
 Driveways
 Parking Lots
 Power Saws
 Portable Saws
 Stationary Saws
 Chainsaws
 Snowblowers
 Lawn Mowers
 Bicycles
 Fasteners
 Falling Objects
 Food Preparation
 Play Grounds
 Forklifts
 Jacks
 Electrocutation
 Explosions
 Fires

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 Tel: 908-233-2973

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 Tel: 202-822-9660

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 Las Vegas, NV 89106
 Tel: 702-222-2481

Professional Experience

Institute for Products, Engineering & Construction **1995 - Present**

Consulting forensic engineering services for attorneys and insurance companies. Services span the fields of product liability, premises liability and construction. Primary disciplines include mechanical engineering, engineering science, machine design, workplace safety and accident prevention.

Consulting Engineer **1990- Present**

Operation of a consulting practice in management and engineering. This work has involved extensive safety investigations in product liability, premises liability and forensic analysis.

Electro-Nucleonics, Inc. **1978-1988**

Manager, Government Operations. Supervised a group providing engineering development and manufacturing for a wide range of mechanical, electro mechanical and electronic products including a high speed drive motor (DC), acceptance test equipment using optical, vacuum and microprocessor technologies, a range of peripheral equipment supporting high speed centrifuge operations for uranium enrichment and a microprocessor- based demand monitor product line, established a design department with standards and configuration control for a new division, upgraded an ultracentrifuge used to make viral preparations for both research and production purposes (i.e. vaccines). Proposed modifications to the equipment and processes used to manufacture AIDS diagnostic materials which improved product quality by 50%, initiated development of an automated processor for the screening of blood for HIV exposure. Responsible for plant management and security in a factory setting encompassing machine shop, light electronic manufacturing, engineering design and development as well as management operations.

Ammann & Whitney, Consulting Engineers **1969-1978**

Senior Mechanical Engineer. Provided design services and program management for major construction projects ranging from airports to munitions plants. Created and managed an inter-disciplinary group conducting studies and special projects such as waste heat recovery, life cycle cost analysis and contaminated waste disposal. Conducted studies and analyses such as intractable safety problems at US. Army munitions plants, resulting in significant increase in the safety of munitions manufacture at various plants around the country, availability, reliability & maintainability analyses for facilities supporting radar and missile launch installations. Designed mechanical systems such as HVAC, plumbing, piping and fire protection systems for major installations including aircraft maintenance hangars, airport terminals, factories and special purpose facilities. Responsibilities included participation in the dynamic analysis of structures subject to earthquake and aeolian (wind) loads.

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Gourdine Systems**1967-1969**

Project Engineer. Involved in engineering design and development in the direct conversion of gas flow energy to high voltage electric power, air pollution control and coatings processes and the management of an R & D facility. Developed a power supply for use as a high voltage DC switch using compressed air as an energy source and contributed to the development of an electrostatic spray gun and was responsible for the management of office, model shop and laboratory facilities. Facilities management included the design, construction, installation and maintenance of interior and exterior facilities and building services.

Curtiss-Wright**1966-1967**

Senior Engineer. Design, research and development on gas turbine engines intended for use in both aircraft and ground vehicles. Projects involved mechanical design, aerodynamics, vibration analysis and control & test operations.

Pratt & Whitney Aircraft Corporation**1960-1966**

Senior Engineer. Involved in the design and development of a nuclear powered aircraft engine, including development of liquid metal lubricated journal & thrust bearings, turbo pumps handling liquid metals and design of nuclear reactors.

Publications

Author or Co-author of more than 200 Reports and Documents *exclusive* of those produced in support of litigation, in the fields of:

Safety
Machine Design
Facility Design
Site Design

Pump Design & Development
Energy Conservation
Power Generation
Dynamic Analysis

Anthony Scalese, BSE, MA, PE

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**

Massachusetts License #33470-HV

Education**Master of Arts in Personnel Management**

George Washington University, 1963

Bachelor of Science in Engineering

United States Naval Academy, 1952

Continuing Education

Marine Engineering programs through Naval Boiler and Turbine Laboratories.

Energy Conservation and Management programs through American Society of Heating, Refrigeration and Air Conditioning Engineers and Association of Energy Engineers.

Professional Service PositionsConstruction Contract Litigation Support for City of Belmont, Massachusetts
Technical Recruitment Consultant for Applied Resources, Inc.Public Service Positions

Technical Advisor to Public Works Committee - City of Newton, Massachusetts

Professional Associations

Association of Energy Engineers (AEE)

American Society of Heating, Refrigeration & Air Conditioning Engineers
(ASHRAE)

National Fire Protection Association (NFPA)

American Correctional Association (ACA)

Teaching Experience

Instructor in Seamanship and Navigation at U.S. Naval Academy . Courses included Spherical Trigonometry, Nautical Astronomy and Celestial Navigation, Piloting and Coastal Navigation, General Operations and Tactics.

Supervisor of training team responsible for developing training program for petrochemical plant boiler operators.

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Anthony Scalse, BSE, MA, PE

PROFESSIONAL ENGINEER

Areas of Concentration

Mechanical Engineering
 Marine Engineering
 Project Management
 Building Codes & Standards
 Training
 Heating, Ventilating & Air
 Conditioning
 Document Analysis & Review
 Thermodynamics
 Product Defects
 NFPA Codes & Standards
 OSHA
 Americans with Disabilities Act
 BOCA Codes

Industrial Plant Engineering
 Construction Management
 Life Safety Codes
 Construction Site Safety
 Marine Safety
 Maintenance Procedures
 Project Inspection
 Regulatory Agencies
 Shipbuilding & Repair
 Wastewater Management
 Air Pollution
 Construction Claims & Disputes
 Construction Contract Administration
 Energy Conservation
 Environmental Compliance

Specific Experience & Interest

Boilers
 Pressure Vessels
 Correctional Facilities
 Restaurants
 Ships
 Prisons
 Shipyards
 Steam Turbines
 Steel Manufacturing
 Facility Audits
 Ductwork
 Steam heating Systems
 Pharmaceutical Facilities
 Alternate Fuels
 Prefabricated Modular Construction
 Boat Accidents
 Cargo Handling
 Petroleum Handling & Safety
 Marine Fueling Procedures

Boiler Operation
 Power Plant Construction
 Power Plant Operation
 Manufacturing Facilities
 Petroleum Storage
 Ship Components & Systems
 Ladders, Scaffolds & Cranes
 Fall Protection
 Smoke Detection Systems
 Storage Tanks
 Ventilation Systems
 Industrial Facilities
 Institutional Buildings
 Refrigeration
 Plumbing
 Air Conditioning Systems &
 Equipment
 Thermal Insulation
 Oil & Gas Spills

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Professional Experience**Institute for Products, Engineering & Construction** **1999 to Present**

Consulting and forensic engineering services for attorneys and insurance companies. Services involve the disciplines of mechanical, marine and industrial plant engineering as well as construction and project management. Projects address the design, installation and maintenance of heating, ventilating and air conditioning systems and equipment; marine procedures and safety; and construction site and workplace safety.

Massachusetts Department of Corrections **1988 - 2000**

Director of Engineering and Construction Services. Direction of architectural and engineering staff with overall responsibility for all construction, repair, maintenance projects and regulatory compliance for 21 state and 13 county correctional facilities. Serve as consultant and technical advisor for agency facilities.

Ganteaume & McMullin **1987 - 1988**

Senior Mechanical Engineer. Investigation, design and construction management of Heating, Ventilation and Air Conditioning projects. Responsibility for compliance with applicable codes and standards as well as interaction with regulatory agencies.. Observation and documentation of construction for compliance with contract documents.

Howard Johnson Corporation **1984 - 1987**

Construction Manager. Responsible for hotel, lodge and restaurant new construction, conversions and repairs. Conducted bid solicitation process as well as selection and supervision of contractors.

Stone & Webster Engineering Corp. **1980 - 1984**

Project Manager and Engineer for Plant Management Services Group. Responsible for maintenance management, energy conservation, training and engineering projects in the Middle East, Latin America, Africa and throughout the United States. Primary emphasis of services was on boiler, petrochemical and HVAC installations.

Ayerst Laboratories **1978 - 1980**

Plant Engineer. Direct maintenance and plant engineering activities for pharmaceutical complex in a multi-facility environment. Supervision of over one hundred professional and technical personnel in support of laboratory research, high speed packaging and other manufacturing processes.

Shipyard Consultant **1975 - 1978**

Responsible for Marine Engineering and supervision of electronic, electrical and diesel specialists at Iranian Government shipyards. Serve as senior advisor to Imperial Iranian navy Director of Engineering for Shipbuilding and Repair. Develop computerized systems for planning, estimating, scheduling and performance monitoring.

Container Manufacturing Corporation **1973 - 1975****INSTITUTE FOR PRODUCTS, ENGINEERING & CONSTRUCTION**

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Anthony Scalese, BSE, MA, PE

PROFESSIONAL ENGINEER

General Manager and Plant Manager for a steel construction and fabrication plant involved in producing marine shipping containers. Supervision of 125 employees in day-to-day operations. Responsible for Quality Control, business development, marketing and profit and loss.

Building Sciences, Inc.**1972 - 1973**

Construction Manager and Owner's Representative for the construction of a high rise, reinforced concrete resort hotel complex, the Virginia Beach Sheraton.

United States Navy**1948 - 1972**

Commander. Serve in progressive duties in ship departments including Chief Engineer of Destroyer and Transport ships. Captain of Tanker, Amphibious Transport and Minesweeper. Serve on U.S. Navy staffs to NATO and other international agencies. Command Naval Group at Venezuelan government shipyards, serving as Senior advisor to Venezuelan Director of Shipbuilding and Repair, with responsibility for Marine Engineering and supervision of electronic, electrical and diesel specialists. Instructor at United States Naval Academy in Seamanship and Navigation courses, including organization and training of teaching squadron..

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Dennis J. Seal, Ph.D., P.E.**HUMAN FACTORS PSYCHOLOGIST
PROFESSIONAL ENGINEER**Credentials**Professional Engineer**
Texas #P.E. 79090Education**Doctor of Philosophy in Industrial Engineering/Human Factors and Industrial Ergonomics**
Texas A&M University. 1980**Master of Science in Experimental Psychology/Information Processing & Learning**
Texas A&M University, 1974**Bachelor of Arts in Psychology**
University of Cincinnati, 1972Professional AssociationsHuman Factors and Ergonomics Society
Ergonomics/Occupational Safety and Health
American National Standards Institute (ANSI)
Consumer Product Safety Commission (CSPC)
Electronic Industries Association (EIA G-45)Professional Service PositionsAmerican National Standards Institute (ANSI Z35) Committee to establish industrial standards based on human perception, detection and comprehension of displayed information for warnings, symbols and visual displays.
American National Standards Institute (ANSI Z535) Committee for Application of Symbology and Linguistical Content to product Safety Signs and Warning Labels.Relevant Information

Active Secret and COMSEC Security Clearance

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Dennis J. Seal, Ph.D., P.E.**HUMAN FACTORS PSYCHOLOGIST
PROFESSIONAL ENGINEER**Areas of Concentration

Human Factors
Ergonomics
Industrial Psychology
Hazard Control Management
Product Safety
Facilities Management
Employee Training

Industrial Engineering
Product Testing
Transportation Safety
Lighting
Acoustics
Behavioral Analysis

Specific Experience & Interest

Industrial Accidents
Slips, Trips and Falls
Intersection Accidents
Stop Signs
OSHA
Workstation Design
EPA Regulations
Americans with Disabilities Act
Compliance
Bicycle Accidents
Operator Controls
Repetitive Stress Injuries
Aircraft Accidents
Human Error
Portable Power Tools

Construction Site Safety
Vehicle Accidents
Traffic Signals
Roadway Signage
Warnings, Guarding and Labels
Visual Displays
Computer Workstations
Aviation Systems
Technical Manuals
DOT Regulations
Driver Perception
Hazardous Materials
Site Surveys
Pedestrian Accidents
Heavy Equipment Operation

Major Reports, Publications and Presentations

- “Safety Assessment Report: White Sands Missile Range Frequency Surveillance System (WSMR-FSS) prepared for Naval Air Warfare Center Training Systems Division, Contract No. N61339-97-C-0030, June, 1999, author
- “Human Engineering, Ergonomic and Safety Report,” Special Operation Forces Intelligence Vehicle (SOF-IV), U.S. Special Operations Command, Contract No. MDA 911-95-D-003, May 1995, author
- “Acoustical Noise Levels - Test Procedure and Safety Analysis,” Quickfix and Advanced Quickfix EH-60L Helicopter, Contract No 96-086-NAS001, January 1995, author
- “Industrial Truck Safety Symbols: Conspicuity and Operator Response Times,” Design Application and Graphical Format, Baker-Material Handling Corporation, August 1982, consultant/author
- “Corporate Standardization of Safety Signs for Industrial and Agricultural Machinery,” Corporate Standards developed for John Deere and Company, Moline, Illinois September 1981, coordinator of research/author
- “The Human Factor in Farm and Industrial Equipment Design,” presented to American Society of Agricultural Engineers (ASAE); Distinguished Lecture Series, John Deere and Company, Moline, Illinois, December, 1980 co-author

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Dennis J. Seal, Ph.D., P.E.

HUMAN FACTORS PSYCHOLOGIST
PROFESSIONAL ENGINEERProfessional Experience

Institute for Products, Engineering & Construction **1999 to Present**
Investigation and expert witness consulting of all manner of accidents and injuries from a Human Factors and Industrial Engineering perspective.

Raytheon Systems Company **1985 - Present**
Lead Human Factors and Product Safety Engineer

- Manage Human Factors and Safety requirements for all Corporate Programs
- Conduct research to support program efforts in product development and subsystem design and integration.
- Apply Human Factors and Behavioral principles in the design of visual displays and control panels, software menus, workstation layouts, aviation systems, technical user manuals, and operator/maintainer environments.
- Establish program plans, test procedures, and analyze test data and report results in technical documentation and/or at scheduled Customer Design Reviews.
- Prepare budget and technical documentation for contract proposals.
- Establish Corporate Hazard Communication Program (OSHA 1910) for employee training in safety and health including workstation evaluation for control of Repetitive Stress Injuries (RSI).
- Integrate HFE/Ergonomic and Safety criteria with mechanical and electrical engineers, software programmers, environmental test, quality control, and manufacturing departments during each appropriate design phase.

Texas Instruments, Inc **1983 - 1985**
Manager, Human Factors/Ergonomics - Consumer Products

- Supervised Human Factors Department for budget, personnel staffing, administration, product development activities, and test laboratory.
- Organized sample populations, methodology and research efforts for prototyped product tests (e.g. joystick controls), analyzed results and articulated production recommendations to the design staff.
- Established Corporate Ergonomic product design criteria for U.S. and Japan Product Centers.
- Integrated Human Factors design criteria with Industrial Design, Graphics, Software, Marketing, Packaging and Manufacturing staffs.

Henry Dreyfuss Associates **1979-1983**
Senior Human Factors Engineer - Industrial Design/Consumer Products

- Project activities included implementing human factors/ergonomic requirements for consumer product designs. Also conduct research and pilot studies, as well as evaluate scaled mock-ups and prototypes in support of new product development.
- Worked closely with clients (e.g. AT&T, Bell Laboratories, John Deere and Company, CITICORP, AMF, Polaroid and American Airlines) during all phases of product design to ensure human factors, safety and ergonomic requirements were implemented in final production.
- Served as a committee member of American National Standards Institute

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Dennis J. Seal, Ph.D., P.E.**HUMAN FACTORS PSYCHOLOGIST
PROFESSIONAL ENGINEER**

(ANSI Z35) for the purpose of establishing industrial standards based on human perception, detection and comprehension of displayed information for warnings, symbols and visual displays. Standards were adopted in 1987 for industry-wide use on commercial and industrial products.

Southern Methodist University, Dallas, Texas 1985-1986

Adjunct Professor of Human Factors and Industrial Ergonomics in the Operations Research and Engineering Management Department

- Taught Human Factors/Ergonomics courses to undergraduate and graduate level students.

Texas A&M University 1977-1979

Visiting Instructor, Department of Psychology

- Taught courses in Introductory, Industrial and Developmental Psychology to undergraduate and graduate level students.

Texas Department of Transportation 1977-1979

Project Coordinator; Governor's Office of Traffic Safety

- Program Manager for D.O.T project evaluating interactive effects of vehicular design, vibration/noise levels, highway design, perceived rates of speed, and comfortable driving speeds.
- Responsibilities included proposal preparation, contract and budget coordination, supervising research assistants, data analysis, organizing progress reports, and presenting the findings to the Department of Traffic Safety.

Texas Transportation Institute 1975-1977

Research Assistant, Texas A&M University

- Conducted studies to aid in the design and implementation of real-time information displays that were used on urban freeways and parallel alternative routes.
- Display designs were based on information processing theory, visual recognition, and reaction times of drivers during simulated highway driving maneuvers.
- Results of study were used to publish the Texas Manual on Uniform Traffic Control Devices (for streets and highway application).

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William F. Selders, PE

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**

New Jersey License #GE 16738

New York License #047506-1

Pennsylvania License #053843-E

Education**Master of Science in Civil Engineering**

New York University, 1972

Bachelor of Science in Civil Engineering

Rutgers, the State University of New Jersey

Continuing education programs such as: Liability in Construction, Urban Hydrology Modeling, US Army Post Engineering, Title V Air Permitting and electronic filings, Freshwater Wetlands Delineation, Septic system design, Advanced wastewater treatment plant design, computer systems, critical path method scheduling.

Professional Associations

American Society of Civil Engineers

American Water Works Association

Water Environment Federation

Professional Service Positions

Membership Committee New Jersey Society of Professional Engineers

"Descriptive Geometry" Adjunct Faculty Bergen Community College

Public Service Positions

Vice Chairman Ridgewood, NJ Keep Our Water Pure Committee

Sponsor and Applicant for Federal Sole Source Aquifer Petition Ridgewood, NJ

Seminars and Publications

"Wastewater Pump Station Rehabilitation" NJ Water Environment Federation

"Infiltration/Inflow Case Study Cape May New Jersey" National Water Environment Federation

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William F. Selders, PE

PROFESSIONAL ENGINEER

Areas of Concentration

Project Management	Construction Plans and Specifications
Construction Oversight	Construction Cost Estimates
Environmental Assessments	Title V Air Permits
Soil Remediation	Groundwater Remediation
Wastewater Planning	Water Supply Planning
Surface Water Disposal of Treated Waste	Subsurface Disposal of Treated Waste
Wastewater System Design	Water System Design
Brownfields Redevelopment	Solid Waste Management
Air Pollution Control	Storm Drainage Analysis and Design
Environmental Permits	Regulatory Permitting Process

Specific Experience & Interest

Correctional Institutions - Prisons and Jails
 Wastewater Treatment Plants - Publicly Owned and Privately Owned
 Industrial Wastewater Treatment Plants - Pretreatment and Final Treatment
 Wastewater Conveyance Facilities - Sewers, Pumping Stations and Force Mains
 Wastewater Pumping Facilities
 Water Distribution Facilities - Towers, Ground Storage, Pumping Stations
 Water Treatment Plants
 Water Supply - Groundwater and Surface Water
 Solid Waste Facilities - Landfills, Transfer Stations and Transport
 Stormwater Management Facilities - Retention/detention Facilities, Channels and Piping

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Professional Experience

Institute for Products, Engineering & Construction **2000 to Present**
Provide consulting and forensic engineering services to attorneys and insurance companies. Projects address all aspects of civil, municipal and environmental engineering and construction management.

Consulting Engineer **1987 to Present**
Chief executive officer for consulting engineering firm offering civil engineering services in New York, New Jersey, Pennsylvania and surrounding states. A representative list of projects undertaken includes the following:

- 50 gallon per minute groundwater extraction and groundwater treatment systems design for a superfund site in Chester County, Pennsylvania
- Title V and Subchapter 8 air permitting for an institutional site in Cumberland County, New Jersey
- Engineering services during construction for an 80,000 gallons per domestic wastewater treatment plant in Montgomery Township, New Jersey
- Design of a 50,000 gallons per day industrial wastewater treatment plant for a liquid natural gas processor in the Hackensack Meadowlands of New Jersey
- Hydrogeological design of a 10,000 gallons per day domestic wastewater subsurface disposal of wastewater groundwater injection system in Passaic County, New Jersey
- Freshwater Wetlands Delineation Report for an institution in Hunterdon County, New Jersey
- Hydrogeological soils and groundwater site remediation investigation for an industrial site in Bergen County, New Jersey
- Potable groundwater diversion studies for a 500 gallons per minute well in Hunterdon County, New Jersey
- Public Employees Occupational Safety and Health Air Studies, Methane Lower Explosive Limit Studies and Contaminated Soil Studies for an institutional facility in Essex County, New Jersey
- Environmental Site Assessment Study using ASTM procedures for an industrial site in Moonachie, New Jersey
- National Pollution Discharge Elimination System Permit modifications for an institutional sanitary wastewater treatment facility on Staten Island, New York
- Stormwater runoff calculations using SCS-TR55 methods for a "Brownfield" site in East Rutherford, New Jersey

Morris Respond Group **1987**
Associate, Director of Land Development, Engineering Department. The two primary functions included the direction of a nine person Department and the direct project management of Morris Respond Group land development projects. As Department Director, responsible for new business development, cost and manpower budget control, staffing and office management.

Kupper Associates **1982 – 1986**
Associate. The two primary functions included the direct project management of several major accounts and the supervision of a staff of five project managers and

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thirty other design professionals.

Lockwood, Kessler and Bartlett, Inc. **1981 – 1982**
Engineering Design Department Manager. As Department Manager reported directly to President and was responsible for the development and continued growth of a 35 man department along the lines of a matrix organization.

Pandullo Quirk Associates **1973 – 1980**
Project Manager. Division Director of the Engineering Reports and Studies Division. Project Management included the Totowa-West Paterson Sewerage Authority, the City of Paterson, the Borough of Wanaque. Responsible for proposal development, engineering design criteria, manpower and financial budgets.

Clinton Bogert Associates **1971 – 1972**
Project Engineer. Responsible for technical direction and review of sanitary and storm drainage design by utilizing computer-aided design. Lead engineer for the City of Cleveland, Ohio stormwater management model and the Sea Cliff - Roslyn Harbor area in Nassau County, New York computer-aided sewer system design.

Azzolina Engineering Company **1970**
Project Engineer. Responsible for planning, design and construction of sanitary sewer collection systems. Municipal engineering and planning board engineering for Haworth, NJ, Elmwood Park, NJ and Washington Township, NJ.

Malcolm Pirnie Engineers **1967 – 1969**
Sanitary Engineer. Worked on a comprehensive solid waste for Herkimer and Oneida Counties in New York State. Sanitary sewer system design. Resident inspection of a wastewater pumping station.

Bethlehem Steel Corporation **1963 – 1967**
Management Trainee. Assistant Plant Engineer assignment in the Railway and Industrial Car Division where responsibilities were devoted to mechanical, electrical and shop maintenance.

United States Army Corps of Engineers **1964 – 1967**
Captain. Commissioned through the Reserve Officer Training Corps program at Rutgers University, served as an Assistant Post Engineer while in Germany and as a Company Commander for the Nuclear Power Group while in Virginia.

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666 Fifth Ave., # 122
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231 North Ave. W, #134
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Tel: 908-233-2973

1429 G St., NW, # 415
Washington, DC 20005
Tel: 202-822-9660

850 S. Rancho Rd, #4287
Las Vegas, NV 89106
Tel: 702-222-2481

Austin G. Skromme Jr., BSME, PE

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**

Wisconsin
License A E-14341
(Mechanical)

Florida
License 40034562
(Mechanical & Civil)

Certification and Ratings

Master Technician (Master Mechanic), Heavy Trucks & Automobiles, by
Automotive Service Excellence (ASE)

Certified Advanced Metrication Specialist (CAMS), U.S. Metric Association

Education**Bachelor of Science in Mechanical Engineering**

Iowa State University, 1948

Professional Service Positions

National Standards Board, American National Standards Institute (ANSI)
General Standards Council, Chairman, Society of Automotive Engineers (SAE)
Task Team for Development of Metric Drafting Standard (SAE)

Professional Associations

Society of Automotive Engineers (SAE)
American Society of Agricultural Engineers (ASAE)
American Society of Civil Engineers (ASCE)
American Society for Testing and Materials (ASTM)
National Society of Professional Engineers (NSPE)
Florida Engineering Society (FES)

INSTITUTE FOR PRODUCTS, ENGINEERING & CONSTRUCTION

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Austin G. Skromme Jr., BSME, PE

PROFESSIONAL ENGINEER

Areas of Concentration

Construction Equipment Maintenance
 Construction Equipment Design
 Agricultural Equipment Maintenance
 Agricultural Equipment Design
 Product Defects/Safety
 Industry Standard Practices
 Hydraulics
 Pneumatics
 Guarding
 Rollover Protection (ROPS)
 Alternative Fuels (Methanol)

Heavy Truck Maintenance & Defects
 Automotive Maintenance & Defects
 Roadway Construction Safety
 Metric Conversion
 Truck Systems and Equipment
 Automobile Systems and Equipment
 ASME Engineering Standards
 ANSI Engineering Standards
 SAE Engineering Standards and
 Guidelines

Specific Experience & Interest

Heavy Trucks
 Cranes
 Bulldozers
 Excavators
 Backhoes
 Wheel Loaders
 Logging Equipment
 Ancillary Automobile Equipment
 Engines - Gas, Diesel & Propane
 Cooling Systems
 Steering Systems - Manual & Power
 Electrical Systems
 Fuel Systems
 Frames & Suspensions
 Wheels & Tires
 Buses

Automobiles
 Repair Shop Practices
 Vehicle Maintenance
 Construction Equipment
 Tractors
 Farm Equipment
 Exhaust Systems
 J.I. Case Brand Equipment
 Caterpillar Brand Equipment
 Massey Ferguson Brand Equipment
 John Deere Brand Equipment
 Koehring Brand Equipment
 Bantam Brand Equipment
 Lorain Brand Equipment
 P & H Brand Equipment
 Farm Equipment
 Well-drilling Equipment

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Professional Experience

Institute for Products, Engineering & Construction **1996 to Present**
 Consulting and forensic engineering services for attorneys and insurance companies. Projects involve the disciplines of mechanical and civil engineering and address motor vehicle design, maintenance and safety.

Consulting Engineer **1994 to Present**
 Provide consulting services on a wide range of topics related to motor vehicle, construction equipment and roadway design, maintenance and safety.

Florida DOT **1982 - 1994**
 Assistant State Specifications Engineer. Signed and sealed a majority of Florida Department of Transportation road and bridge construction specification packages. Project manager of program to convert Florida Department of Transportation buses to run on methanol (wood alcohol). Fleet Maintenance Engineer responsible for all maintenance of Department cars, trucks and heavy equipment. Wrote specifications for purchase of cars, trucks and construction equipment for all Florida state agencies.

Big Bend Equipment Co. **1979 - 1982**
 President. Responsible for management of all aspects of dealership for J.I. Case brand construction, farm and logging equipment.

ITT Thompson **1978 - 1979**
 Director of Research and Development for Automotive Group, Metals Division.

Massey Ferguson Ltd. **1974 - 1978**
 Corporate Director of R & D. Responsible for design of all industrial and construction equipment, worldwide. Managed a line organization of over 500 engineers in Germany, Italy, England and Detroit. Designed over 30 models of crawler tractors, wheel loaders and backhoes.

Koehring Co. **1970 - 1974**
 Corporate Vice President of Engineering. Responsible for operations in Germany, Japan and Brazil. Managed the design of excavators, cranes, trenchers, well-drilling equipment, farm machinery, plastics machinery and hydraulic components. Helped defend numerous lawsuits on cranes and other equipment.

Caterpillar, Inc. **1948 - 1970**
 Assistant Chief Engineer. Responsible for corporate engineering standards and specifications worldwide. Held various design and management positions including Chief Engineer in Scotland for seven years.

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Gary T. Smullin, BSEE, PE

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**

Commonwealth of Pennsylvania License No. 21529 - E

Education**Bachelor of Science in Electrical Engineering**

Lehigh University, 1970

Continuing Education Programs on :

Power System Analysis

National Electrical Code

Specifying Electrical Equipment

Specialized Electrical Engineering topics including: Grounding, Substations, Protective Relays, Motors, Generators & Transformers

Professional Service Positions

Pennsylvania Society of Professional Engineers, Lehigh Valley Chapter; President
Power Engineering Society, Chapter Chairman, Institute of Electrical and Electronics Engineers

Power Engineering Society, Educational Committee Instructor for Lehigh Valley Chapter, Institute of Electrical and Electronics Engineers

Delegate to Institute of Electrical and Electronics Engineers ANSI Accredited Standards Committee C84

Power System Analysis & Design Subcommittees & working groups, Institute of Electrical and Electronics Engineers

Professional Associations

Institute of Electrical and Electronics Engineers(IEEE)

National Society of Professional Engineers

Pennsylvania Society of Professional Engineers

International Electrical Testing Association

International Association of Electrical Inspectors

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Publications

Institute of Electrical and Electronics Engineers Recommended Practice for Electric Power Distribution for Industrial Plants (“Red Book”) - Chapter 3 chairman: Voltage Considerations

Institute of Electrical and Electronics Engineers Recommended Practice for Electric Power Systems in Commercial Buildings (“Gray Book”) - Chapter 3 chairman: Voltage Considerations

Institute of Electrical and Electronics Engineers Working Group for new “Violet” Book, Short Circuit Calculations

Institute of Electrical and Electronics Engineers Working Group for new “Yellow” Book, Guide for Maintenance, Operation and Safety of Industrial and Commercial Power Systems.

Courses & Seminars Taught

“Power System Design and Analysis” – ANSI/IEEE Standards, Equipment and System Voltages, System Loading, Efficiency, Power Factor Issues, Protective Device Time-Current Coordination, Fuses and Circuit Breakers. Short course for IEEE - Lehigh Valley Section.

“Specifying Electrical Power Equipment” -- Transformers, Efficiency, Switchgear, Circuit Breakers, Protective Relays and Controls, Switches, Pole-mounted Equipment, Electrical Clearances.. Short course for IEEE Lehigh Valley Section

Seminars utilizing The Electrification Council Course Materials for Power Distribution System Design, Load Estimating, Transformers, Switchgear, Power Factor and Efficiency. Presented for Metropolitan Edison, General Public Utilities.

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Gary T. Smullin, BSEE, PE

PROFESSIONAL ENGINEER

Areas of Concentration

Electrical Engineering
 High & Low Voltage Power Systems
 Failure Analysis
 Field Testing
 Electric Power Distribution
 Electric Power Protection Systems
 Electrical Utility Services
 Overhead & Underground Systems
 Construction and Maintenance
 Technical Assistance
 Reliability Assessment
 Loss Prevention
 Grounding Systems
 25 Hertz Electrical Systems

Electrical Safety
 Power System Analysis
 Short Circuit Analysis
 Protective Device Coordination
 Voltage Regulation
 Motor Starting
 Electrical Power Defects
 Electrical Control Defects
 Construction Cost Estimates
 Codes, Standards & Industry Practice
 Building Electrical Systems
 Emergency Power Systems
 Troubleshooting/Startup of Equipment
 & Facilities

Specific Experience & Interest

Industrial Facilities
 Commercial Facilities
 Steel Mills/Integrated Steel Plants
 Blast Furnaces
 Foundries
 Electric Furnaces & Ovens
 Sintering Plants
 Rolling Mills
 Forges
 Electric Cranes
 Machining and Grinding
 Electrostatic Precipitators
 Water Treatment Plants
 Magnetic Oxide Plants

Substations
 Electric Motors
 Transformers
 Switchgear
 Circuit Breakers
 Relays
 Fuses
 Lightning (surge) Arresters
 Paper Industry
 Ceramic Tile Manufacturing
 Bakeries
 Air Separation Plants
 Cement Plants
 Battery Plants

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Professional Experience**Institute for Products, Engineering & Construction** **1998 to Present**

Consulting forensic engineering services for attorneys and insurance companies. Services encompass the field of electrical engineering and focus on workplace safety and accident prevention, product liability and analysis of electrical design, manufacture and construction.

Consulting Engineer **1996 to Present**

Consulting, field testing, commissioning and forensic services for industrial, commercial and residential electrical systems. Services are provided to process industries, manufacturers, commercial facilities, contractors and insurance companies.

BOC Process Plants (Airco) **1993 to 1996**

Lead Electrical Engineer. Senior level design and commissioning of air separation facilities (international) for electrical power supply, power distribution, major equipment up to 14,000 horsepower, control systems, safety systems and failure analysis.

Crowder Engineering, Inc. **1985 to 1993**

Senior Engineer. Senior level consulting, design and field testing for most industrial and commercial facilities in the Greater Lehigh Valley, PA area. Concentration on failure analysis of systems and equipment such as misoperation of protective systems, unexplained failures and electrical fires.

Bethlehem Steel Corp. **1970-1985**

Project Engineer. Progressive electrical engineering and project management positions for the Bethlehem, PA plant, a fully integrated steel plant, involving all aspects of power distribution and controls for ironmaking, steelmaking, blast furnaces, basic oxygen furnaces, casting, molding, rolling, forging, machining, grinding and water treatment processes and related utilities such as electric, steam, water, gases and compressed air systems.

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Andrew P. Sterner**BLASTING / EXPLOSIVES CONSULTANT**Credentials**Blaster**
Pennsylvania**Professional Engineer (pending)**
Pennsylvania Arizona**Engineer in Training**
Pennsylvania**Contractor**
ArizonaEducationExplosive Ordnance Disposal, U.S. Marine Corps
Advanced Explosives & Atomic Demolition Training, U.S. Army
Structural/Mining Engineering, Pennsylvania State University
Civil/Explosives Engineering, University of VirginiaProfessional AssociationsPennsylvania Society of Professional Engineers
American Subcontractors Association of Central Pennsylvania
Lehigh Valley Engineers Council
Lehigh Valley Associated Builders & Contractors
Pennsylvania Groundwater Association
American Subcontractors Association of Phoenix, Arizona
Arizona Society of professional Engineers
Bethlehem, Pennsylvania Chamber of Commerce
Phoenix, Arizona Chamber of CommerceAreas of ConcentrationBlasting Design, Procedures & Safety
Building Inspection
Construction
DemolitionStructural Inspections
Seismographic Monitoring
Wellwater Testing
Noise Measurement**INSTITUTE FOR PRODUCTS, ENGINEERING & CONSTRUCTION****Tel: 888-212-1155****Fax: 888-414-1155**
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Professional Experience

Institute for Products, Engineering & Construction **2000 to Present**
Forensic Consulting services for attorneys and insurance companies in the field of blasting for construction and explosive demolition, with a focus on safety and the avoidance of negative impact on the environment and surrounding property.

Blasting Consultant **1992 to Present**
Perform services on a variety of construction projects for various clients. Duties include blasting consulting, pre and post blasting inspection, seismographic services and water testing.

Blaster **1988 - 1992**
Served as blaster and blasting consultant with mauer & Scott Sales, D & L Contractors and A-1 Drilling & Blasting. Projects involved blasting in diverse circumstances, including under high voltage power lines, adjacent to gas lines, for mining and construction of site improvements, basements and underground utilities.

Hooper Homes **1982 - 1988**
Building and Construction inspector for 14 counties, local municipalities, state and federal agencies including Veterans Administration, Federal Housing Administration and various lending institutions.

United States Marine Corps & United States Army **1977 - 1982**
Served in Explosive Ordnance Disposal with 22nd Force Recon Battalion of 2nd Marine Division. Served on construction projects with Navy Construction Battalion, Marine 2nd and 3rd Divisions and Army 275th Engineering Battalion.

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Tel: 702-222-2481

James F. Stone, BSEE, PE

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**

Pennsylvania License # PE-029795-E

Education**Graduate Work in Power Systems Analysis**

Drexel University

Bachelor of Science in Electrical Engineering

Pennsylvania State University, 1975

Continuing education programs offered by General Electric, Westinghouse, McGraw Edison, Bucyrus Erie and others on:

- Harmonic Analysis & Power Factor
- System Overcurrent Protection
- System Overvoltage Protection
- Power System Harmonics
- Industrial & Commercial Power Distribution
- Applied Protective Relaying
- Industrial Power Systems Coordination
- Diesel Electric Equipment Maintenance
- Electric Power Shovel and Dragline Maintenance
- Mechanoanalysis Vibration Fundamentals
- Public Utility Operation and Management
- Power System Relaying

Professional Service Positions

Craft Advisory Committee, Berks County Vocational - Technical School

Professional Associations

Institute of Electrical and Electronic Engineers (IEEE)

Teaching Experience

Pennsylvania State University, Instructor
 Large motor maintenance and Diagnostic Center, Instructor
 Electric power Research Institute (EPRI), Instructor

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James F. Stone, BSEE, PE

PROFESSIONAL ENGINEER

Areas of Concentration

Electrical Engineering
 Industrial Plant Engineering
 Design Analysis
 NFPA Codes & Standards
 Electric Power Transmission
 Electrical Systems
 Electrical Wiring
 Industrial machines
 Insulation

Electric Company Standard Practice
 Maintenance Procedures
 Electric Usage
 Electrical Construction
 Electrical Devices/Equipment
 Grounding
 High Voltage
 Mining Equipment

Specific Experience & Interest

Alternators
 Amusement Parks
 Brownouts
 Cement Plants
 Circuit Breakers
 Cogeneration Plants
 Electric Motors
 Electric Poles
 Electric Power Distribution Systems
 Electric Power Plant Construction
 Electrical Lockouts
 Electrical Protective Devices
 Emergency Generators
 Dairy Farms
 Substations
 Capacitors
 PCB's

Emergency Power
 Equipment Maintenance
 Electric Excavators
 Electric Power Shovels
 Electric Draglines
 Electric Blast Hole Drills
 Generators
 Oil & Gas Pipelines
 Petrochemicals Plants
 Power Lines
 Switchgear
 Transformers
 Transmission Lines
 Underground Power Lines
 Utility Poles
 Pumping Stations

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Professional Experience

Institute for Products, Engineering & Construction **1999 to Present**
 Consulting and forensic engineering services for attorneys and insurance companies. Analysis of defects in electrical systems, components and products. Consultation in fields of power generation and transmission, utility company practices, construction and product safety; construction means, methods and relationships, electrical accidents and electrocution.

Consulting Engineer **1990 to Present**
 Overall responsibility for Consulting Engineering Firm specializing in medium voltage engineering analysis, electrical testing and evaluation, forensic engineering, training and technical manpower requirements. Practice provides service to investor and municipal utilities, oil companies, coal mining operations and computer manufacturing.

Atlantic Pipeline Corporation **1986 to 1989**
 Corporate Electrical Engineer. Develop corporate electrical engineering, construction, and maintenance functions for a new company. Direct consultants and constructors in large pumping station electrical projects. Evaluation of variable frequency drives, electrical facilities upgrade, specifications for equipment and installation.

Metropolitan Edison Company **1984 to 1986**
 Supervisor of Engineering Technical Group. Distribution system project evaluation including line conversions, equipment selection, and protection. Technical support for construction, maintenance, relay, and industrial customers. Supervise, staff, and train engineering technical group. Specialized studies in power system operation and maintenance.

Bethlehem Steel Corporation **1975 to 1984**
 Held various positions in the Electrical and Engineering Departments including Project, Maintenance, and Electrical Supervisor. Application, design, and maintenance of substations, electrical distribution and plant electrical facilities, 69KV and below. Power system layout for electric power shovels and compliance with federal and state mine regulations. Electrical department staffing, training, and project control. Total project responsibility from initial planning to design and installation.

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Presentations and Seminars Conducted

LeBarr Electric 1989 & 1993
Developed and conducted a ten hour training program on medium voltage safety, medium voltage cable terminations and applications with hands on work for electricians in various industries. Developed ten modules of eight hour electric power and safety training programs for plant construction and electrical engineers.

Bethlehem Mines Corporation 1988 through 1991
Developed and conducted Department of Labor mandated yearly electrical safety training program for mine electricians and lineman.

Pennsylvania State University 1988 & 1989
Prepared and conducted 45 hour training program on industrial electricity and industrial electrical maintenance for area industry. Participants included plant and facility engineers, industrial electricians and designers.

Regional Lineman Training Course 1988 & 1989
Prepared and conducted eight hour courses on hot line maintenance, construction standards, bucket truck safety, underground primary safety, fusing practices and safety and secondary design consideration. Course was presented for linemen from various municipal utilities.

PCB Problems and Practices 1990
Developed and taught 6 hour course related to PCB's for Wellsboro Electric on investor owned utility.

Pennsylvania Power and Light Company 1988 & 1989
Provided three hours of instruction on solidly grounded, ungrounded and resistance grounding at a P.P.& L. course on power distribution.

Ferroresonance on a 34.5KV System 1986
Conducted seminar for Metropolitan Edison personnel dealing with the sources and solutions for ferroresonance.

High Resistance Grounding for Pipeline Motors 1988
Presented at Institute of Electrical and Electronic Engineers Summer Power Conference.

Electric Power System Harmonic Workshop 1994
Develop and conduct a program on power system harmonics for major industrial customers in Lehigh Valley.

Supervisory Electrical Technician Safety Seminar 1995
Develop an electrical safety training program for technical supervisors in support of Sun Pipe Line Company safety program.

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Credentials**Professional Engineer**

New Jersey Reg # 24108	Pennsylvania Reg # 024573-E	Delaware Reg # 6182	Maryland Reg # 12571
Virginia Reg # 13486	South Carolina Reg # 9949	Massachusetts Reg # 33219	North Carolina Reg # 11731

Professional Land Surveyor

Pennsylvania
Reg # SU-988-A

Education**Diplom Ingenieur in Sciences**

Technical University of Vienna, 1972

Continuing Education through programs offered by Penn State University, Lehigh University, Engineers Club of Philadelphia, American Society of Civil Engineers, American Society for Testing and Materials, American Institute of Steel Construction, American Concrete Institute

Professional Service Positions

American Society for Testing and Materials (ASTM) Committee F13 on Safety and Traction for Footwear
 Pennsylvania Society of Professional Engineers Ethics Committee 1996
 Pennsylvania Society of Professional Engineers Title Pursuit Task Force Committee
 Pennsylvania Society of Professional Engineers Lehigh Valley Chapter Board of Directors 1998 to Present

Professional Associations

National Society of Professional Engineers (NSPE)
 American Society of Civil Engineers (ASCE)
 Pennsylvania Society of Professional Engineers
 American Institute of Steel Construction (AISC)
 American Concrete Institute (ACI)
 Building Officials & Code Administrators International (BOCA)

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Johann Szautner, DIPL ING, PE, PLS**PROFESSIONAL ENGINEER**Areas of Concentration

Civil Engineering
 Structural Engineering
 Soils Engineering
 Foundation Engineering
 Architectural Engineering
 Surveying
 Land Development
 Construction Documentation

Construction Management
 Construction Economics
 Construction Site Safety
 Building Codes and Standards
 Municipal Engineering
 Environmental Engineering
 Building Design & Defects
 Ergonomics and Human Factors

Specific Experience & Interest

Rough and Finish Grading
 Excavation, Trenching and Shoring
 Ladders, Scaffolds and Cranes
 Trips and Falls
 Water Treatment and Supply
 Stormwater Drainage
 Sewage Treatment Plants
 Foundations and Footings
 Roads and Highways
 Subdivisions
 Bridges and Culverts
 Traffic Protection and Maintenance
 Timber Framing
 Billboards
 Concrete Structures and Paving
 Asphalt Paving
 Roof Failures
 Masonry Cracking
 Environmental Site Assessments
 Landfills

Automotive Accidents
 Building Acoustics and Noise Control
 Construction Materials and Systems
 Curbs and Sidewalks
 Demolition and Blasting
 Floors and Finishes
 Friction Testing
 Swimming Pools
 Wood Trusses, Erection and Failure
 Waterproofing
 Wood Ladders
 Warnings and Labels
 Walking Surfaces
 Underground Utilities
 Septic Tanks
 Sinkholes
 Stairways
 Bicycle Accidents
 Building Inspections
 ADA Compliance and Accessibility

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Public Service Positions

Eastern Pennsylvania health Systems Council, Advisory Board 1980 - 1984
 Junior Achievement of Lehigh Valley - Guest Teacher Economics 1996 to Present

Publications

“Some New Approaches to Substructure Design, Using precast Concrete Components” presented as paper (BC-84-16) at the International Bridge Conference, Pittsburgh, PA 1984

Relevant Information

Selected for inclusion in International Who’s Who of Professionals

Professional Experience

Institute for Products, Engineering & Construction **1999 to Present**
 Consulting and forensic engineering services for attorneys and insurance companies. Projects involve the disciplines of civil and structural engineering. Issues addressed span all aspects of land development, construction design, management and safety as well as federal and local regulatory concerns. Related safety issues address accidents on construction sites and within buildings, as well as pedestrian and vehicle accidents involving interaction with the constructed environment.

Consulting Engineer **1973 to Present**
 Executive Vice President of broad-based engineering firm offering services in the fields of Civil, Structural, Environmental, Land Development, Municipal and Building Engineering, as well as Surveying, Landscape Architecture and Construction Management

Served as consultant to international real estate syndicator, resulting in significant cost savings overall. Performed troubleshooting for investors with respect to projects in distress, suffering from unfeasible designs, excessive overhead and construction costs. Instituted quality control procedures and zero-defect program to turn around and work out affected projects. Established in-house design capabilities and quality control protocols. Decentralized operations by establishing multiple satellite offices, including hiring and training of professional staff and writing procedures manuals and standard documents.

Donald Farkas Civil Engineers

1972 - 1973

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 Tel: 702-222-2481

Keith Vallencourt, BS, PE

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**
Maine License #8347Education**Bachelor of Science in Naval Architecture and Marine Engineering**
Webb Institute, 1984

Graduate Studies and Continuing Education courses in Mechanical Engineering, Manufacturing Engineering, Fluid Power Systems, Operations Research, Engineering Management, Project Management, Business Administration, Structured Systems Analysis, Computer Programming & Algorithms, Production and Inventory Control

Professional AssociationsAmerican Society of Mechanical Engineers
National Society of Professional Engineers
Fluid Power SocietyProfessional Service Positions

Fluid-Power Curricula Industrial Advisory Panel, University of Maine at Orono

Teaching ExperienceUnited States Navy Nuclear Power Training Program, Instructor
Bath Iron Works Course in Basic Statistics, Instructor
Quantitative Methods for Business - Private Tutor for MBA Students
Maine School Admin. District #11, Instructor in Physics
Maine School Admin. District #5, Instructor in General Science and Mathematics**INSTITUTE FOR PRODUCTS, ENGINEERING & CONSTRUCTION**

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Tel: 702-222-2481

Keith Vallencourt, BS, PE

PROFESSIONAL ENGINEER

Areas of Concentration

Mechanical Engineering
 Manufacturing Engineering
 Naval Architecture

Marine Engineering
 Fluid-Power Engineering
 Electromechanical/Hydraulic Controls

Specific Experience & Interest

Product Development
 System Modeling
 Hydraulic/Pneumatic Systems
 Marine Auxiliary Systems
 Snow and Ice Control Equipment
 Crane Design/Failure
 Ladders & Scaffolds
 Carnival & Amusement Rides
 Forklifts
 Golf Carts
 Chain Hoists
 Cherry Pickers
 Machine Guarding
 Meat Grinders
 Plastics Design/Defects
 Water Heaters

Failure Analysis
 Product Testing
 Boiler and Gas Turbine Exhaust
 Systems
 Ship Structures
 Chillers
 Saws
 Conveyors
 Elevators
 FMVSS Regulations
 Heavy Equipment
 Industrial Machines
 Lawn Mowers & Equipment
 Warnings & Labels
 Trips and Falls
 Workplace Injuries

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Professional Experience

Institute for Products, Engineering & Construction **2001 to Present**
 Consulting and forensic engineering services for attorneys and insurance companies. Projects involve the disciplines of mechanical and marine engineering and naval architecture and address design, defects and safety issues with respect to manufactured products and erected projects.

Consulting Engineer **1997 to Present**
 Provide consulting services in the fields of mechanical engineering and naval architecture, as well as forensic consulting for product liability matters.

Riley Medical **2001**
 Engineering Manager. Manage engineering department for manufacturer of custom-designed molded and vacuum-formed plastic containers for medical equipment

Bachmann Industries **2000 - 2001**
 Senior Design Engineer. Responsible for design and development of control systems, as well as design and analysis of mechanical and structural systems for international developer of exhaust dampers for boilers and gas turbines.

Hussey Seating **1999 - 2000**
 Coordinator of Telescopic Platforms Group. Responsible for engineering of custom designed power bleacher and seating systems for institutional facilities.

Fisher Engineering **1993 - 1999**
 Engineering Group Leader & Project Engineer. Responsible for development of attachments, electrical, hydraulic and control systems for manufacturer of snowplows and related equipment, as well as design of production equipment and fixtures for the manufacturing process. Developed structural and related systems for attachment of products to host vehicles. Investigated manufacturing problems, customer complaints and product-related accidents.

Bath Iron Works **1984 - 1986 & 1987 - 1993**
 Mechanical Engineer, Systems Engineer & Business/Process/ Systems Analyst. Served as engineer for components and shipboard systems, then later served in MIS department to support software, engineering and development functions.

David Taylor Naval Ship Research & Development Center **1986 - 1987**
 Served as Naval Architect and Marine Engineer.

United States Navy **1972 - 1980**
 Nuclear Power Systems Supervisor/Operator/Instructor. Operated and maintained nuclear propulsion and auxiliary systems aboard U.S. Navy nuclear submarine. Also served as Instructor at U.S. Navy Nuclear Power Training Facility, Ballston Spa, NY.

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Martin Van Dyke, Jr., BSME**CRANE AND RIGGING CONSULTANT**Education**Bachelor of Science in Mechanical Engineering**

General Motors Institute, 1964

Continuing Education courses in Engineering Management, Crane Safety, Non-Destructive Testing, OSHA/Environment Regulations, Product Liability and Human Factors in Design.

Professional Associations

American Society of Mechanical Engineers (ASME) Member and Executive Officer
American Society of Nuclear Technologists (ASNT) Member and Board Officer

Areas of Concentration

Mechanical Engineering
Accident Analysis
Industrial Safety
Construction Site Safety
OSHA

Crane Safety
Rigging
Non-Destructive Testing
Safety Training

Specific Experience & Interest

Crane Operations
Crane Design
Crane Supervision
Crane Planning and layout
Heavy Lift Study
Lift Plan Analysis and-Verification
On-Site Support and Training
Lifting Frames & Fixtures
Cherry pickers
Air Compressors
Blast Hole Drills

Special Rigging Design
Crane User Safety Program
Tipovers/Rollovers
Winches
Chain
Hoists
Wire Rope
Cables
Forklifts
Ramps
Tilt-up Construction

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Professional Experience

Institute for Products, Engineering & Construction **2000 to Present**
 Consulting and forensic engineering services for attorneys and insurance companies. Projects address safety, training and accident investigation involving crane, lifting and rigging activities.

Los Alamos National Laboratories **1983 to Present**
 Engineering Team Leader. Supervise Engineering staff responsible for all construction activities at the site. Engineer responsible for nuclear safety, equipment design and equipment operation while handling critical high value loads with large capacity mobile cranes. Developed and implemented single point failure program for mobile cranes and rigging. Developed and implemented a structural material Fracture Safety Program for all critical crane handling applications. Designed user friendly crane safety programs and special rigging hardware for nuclear safety.

Performed fault tree evaluation of critical mobile crane components, crane operations and rigging hardware. Implemented corrective changes and actions based on risk assessments of the fault tree analysis. Additional duties consisted of total field management during critical crane operations and specialized drilling programs.

Reynolds Electrical and Engineering Co. **1970 - 1983**
 Equipment Engineer responsible for design and performance analysis of construction equipment, forklifts, drill rigs, compressors and mobile cranes. Responsible for developing performance specifications for procurement of unique construction and lifting equipment. Developed specialized Non Destructive Testing (NDT) program for forklifts, drill rigs and mobile cranes to assure safe performance. Developed equipment certification program for forklifts, drill rigs, overhead hoist and all types of mobile cranes. Additional assignments consisted of accident investigations and evaluations on mobile drill rigs, forklifts and mobile cranes. Designed special "deadman systems" and redundant structures for mobile cranes that prevent load loss. As an Engineering Section Chief, planned and directed the activities of seven mechanical/structural engineers and support staff

Oldsmobile Division of General Motors Corporation **1964 to 1970**
 Project Test and Design Engineer responsible for design, development and testing of various automotive components in chassis and engine-driveline area. Responsible for customer evaluation, mass production quality, reliability testing and warranty claim analysis on automatic transmissions. Performed design analysis and customer evaluation on 350 and 425 series transmission, driveline components, and shift linkages.

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Robert F. Waite, BS, PE

METALLURGIST / PROFESSIONAL ENGINEER

Credentials**Professional Engineer**

New York #075998-1

Ohio #E-662489

Certified Welding Inspector

American Welding Society #78112581

Certified Engineering Technician

NICET #026615

Provisional Assessor

Institute of Quality Assurance #A002518

Education**Bachelor of Science in Metallurgy**

Polytechnic University, Brooklyn, NY

Professional Service Positions

Metallurgical Consultant to the National Aerospace and Defense Contractors Accreditation Program (NADCAP)
 Vice Chairman of the AWS Committee on Mechanical Testing of Welds
 Advisor AWS Committee on Aerospace Fusion Welding

Public Service Positions

Volunteer Fire Department Captain, Honorary Chief. Member since 1958

Seminars

Approximately 10 Seminars on Welding Inspection presented on behalf of: the American Welding Society, the American Bureau of Shipping, and Hellier Associates

Publications

With I. L. Stern, M. Wheatcroft, D. Y. Ku, W. Hanzalek, Evaluation of High Strength Steels Produced by Advanced Metallurgical Processes, NSRP No. 02623, Maritime Administration, September 1987
 With I. L. Stern, M. Wheatcroft, D. Y. Ku and W. Hanzalek, High Strength Steels Produced by Advanced Metallurgical Processes, Journal of Ship Production, Vol. 4, No. 3.

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Robert F. Waite, BS, PE**METALLURGIST / PROFESSIONAL ENGINEER**Professional Associations

American Welding Society
 Metallurgical Society
 American Society of Professional Engineers
 Society of Manufacturing Engineers
 Society of Naval Architects and Marine Engineers

Areas of Concentration

Mechanical Engineering	Machine Design
Metallurgy	Construction
Machine Shop Practices	Mining
Welding	Shipbuilding
Heavy Fabrication	Railroad
Quality Control	Aerospace
Safety	Concrete Industry
Failure Analysis	Productivity

Specific Experience & Interest

Ladders & Scaffolds	Welding Metallurgy
Cranes & Hoists	Machining Means & Methods
Chain & Cable	Forensic Laboratory Analysis
Warnings, Guarding & Labels	New York City Codes
Industrial Machines	New York City Construction
Construction Equipment	Permitting
Portable Power Tools	Machine Shop Supervision
Grinders & Abrasives	Laboratory Supervision
Metal Bending & Shaping	Nondestructive Testing
Corrosion & Cracking	Industrial Practices & Standards
Fasteners	Aerospace & Marine Welding
Castings & Forgings	Welded Structures
Fire Prevention & Protection	Welding fumes & gases
Fire Cause & Origin	Welding Safety
OSHA	Railroad & Automotive Welding
Boilers	Welding of Aluminum, Titanium & Stainless
Hammers & Striking Implements	Welding Processes & Personnel Qualification
Underwater Welding	

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Professional Experience

35 years of experience covering a broad spectrum of engineering and management. Fabrication experience includes research as well as practical application. Industries included in experience are mining, aerospace, railroad equipment (locomotives), concrete (batch plants and machinery), building and bridge construction, and shipbuilding.

Institute for Products, Engineering and Construction **1995-Present**
 Consulting forensic engineering services for attorneys and insurance companies. Services span the fields of construction, product liability and workplace liability. Specific focus on the disciplines of welding, metallurgy, mechanical engineering, machine design, workplace safety and industrial practices.

Consulting Metallurgist **1993 - Present**
 Consultant in the field of welding metallurgy in a wide variety of environments. A partial list of clients includes:

Able Welding Co.	Materials Testing Laboratory
ABS Worldwide Technical Services	May Ship Repair
Accutech Services	Moran Towing
American Bureau of Shipping	New York Shipyard
American Welding Society	Performance Review Institute
Boston Ship Repair	Steimling and Son
Godfrey Propeller	Storex
Hellier Associates	Super Steel (Through Craft America)
Honeybee Robotics	

New York City Technical College **1991-1994**
 Instructor. Adjunct Instructor in Mechanical Technology

New York Shipyard **1991-1993**
 Welding Engineer. Welding Engineer in charge of all welding in the shipyard.

American Bureau of Shipping **1977-1991**
 Senior engineer in charge of Special Projects Section, Materials and Manufacturing Processes Department. Engineer in Charge of the Materials Laboratory (1977-1989).

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John Whitehead, BSME, PE

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**New Jersey
License #GE-27460New York
License #063525-1Pennsylvania
License #PE-039737-
REducation**Bachelor of Science in Mechanical Engineering** cum laude
Newark College of Engineering, 1971**Continuing education** through programs offered by:
National Fire Protection AssociationProfessional AssociationsNational Fire Protection Association
American Society of Heating, Refrigeration and Air Conditioning Engineers
(ASHRAE)
Building Officials and Code Administrators International (BOCA)Areas of ConcentrationMechanical Engineering
Electrical Engineering
Process Engineering
Facilities Design
Thermodynamics
Process Piping
Power Generation Equipment
Environmental AuditingFire Causation
Fire Protection
Plumbing
Lighting
Air Conditioning Engineering
Refrigeration Engineering
Ventilation Systems
Uninterruptible Power SuppliesSpecific Experience & InterestPollution Controls
Large-scale chillers
Employee Facilities
Office Renovations
HVAC Controls
Laboratories
Temperature and Humidity Controls
Bio-Hazard LaboratoriesBoilers
Furnaces
Steam Systems
Gas-Fired Equipment
Electrical Equipment
Piping Failures
Alarm Systems
Research Facilities**INSTITUTE FOR PRODUCTS, ENGINEERING & CONSTRUCTION**

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Professional Experience

Institute for Products, Engineering & Construction **1999 - Present**
 Consulting engineering services for mechanical, electrical and process projects. Analysis of defects in mechanical and electrical systems, components and products. Investigation of accidents and defects involving industrial and process applications.

Consulting Engineer **1987 - Present**
 Principal of full service engineering firm providing mechanical, electrical and process engineering service for renovation and new construction of industrial facilities. Direct responsibility of design for new and existing facilities. Develop design drawings for issuance of permits to meet current Building Code Requirements.

Maitra Associates **1985 - 1987**
 Chief Engineer for Mechanical / Electrical engineering design firm. Primary responsibility for all mechanical and electrical engineering in the development of construction drawings for process and facilities.

Research Cottrell, Inc **1980 - 1985**
 Mechanical Engineering Supervisor. Oversaw the design and specification development for air pollution control of power generation boiler system.

Ortho Diagnostics, Inc. **1974 - 1980**
 Technical Services Supervisor and Maintenance Supervisor. As maintenance supervisor, oversaw department of 34 skilled laborers performing maintenance and repairs in medical product manufacturing facility. As Technical Services Supervisor, oversaw department of 10 mechanical, electrical and process engineers. Responsibility for all renovation and new construction in medical product manufacturing facility.

General Electric, Co. **1971 - 1974**
 Field Service Engineer. Provide service and technical direction for overhaul and repair of power generation and cogeneration equipment.

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Education**Doctor of Philosophy in Mechanical Engineering**

University of Michigan, 1992

Master of Science in Engineering

Southern Methodist University, 1987

Master of Science in Mechanical Engineering

University of Wisconsin, 1983

Bachelor of Science in Mechanical Engineering

University of Wisconsin, 1980

Professional Service Positions

American Society of Mechanical Engineers - Chair, Dynamic Systems and Control Division, Modeling and Identification Technical Panel

American Society of mechanical Engineers - Chair, Dynamic Systems and Control Division, Publicity Panel

American Society of mechanical Engineers - Chair, Dynamic Systems and Control Division, numerous technical conference sessions relating to dynamic system modeling

Professional Associations

American Society of Mechanical Engineers

Institute of Electrical and Electronic Engineers

American Society of Engineering Educators

Relevant Information

Fluent in Spanish - worked as interpreter in Cuban refugee resettlement camp; lived and worked in Latin America.

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Bruce Wilson, BSME, MSME, MSE, PhD

PROFESSOR OF ENGINEERING

Areas of Concentration

Mechanical Engineering
Electromechanics
Materials Testing & Analysis
Vibrations
Controls
Modeling
Controls
Renewable Energy
Biomimicry

Mechanical Design
Analytical Testing
Hydraulics
Pneumatics
Virtual Reality
Computer Aided Engineering
Computer Animation
Mechanical Simulation

Specialized Investigation

Machine Accidents
Amusement Park Rides / Safety
Crane Design / Failure
Logging Equipment
Active and Semi-active Suspensions
Analysis of Stabilized Platforms
Playground Equipment
Exercise Equipment

Consumer Products
Fasteners
Friction Testing
Garden Equipment
Hand Tools
Portable Power Tools
Toys

Professional Experience

Institute for Products, Engineering & Construction **1999 to Present**
Consulting and forensic engineering services for attorneys and insurance companies. Projects involve the discipline of mechanical engineering and address the design and safety aspects of industrial, commercial and consumer products.

Northeastern University **1992 to Present**
Assistant Professor. Department of Mechanical Engineering. Research areas include modeling, analysis and control of uncertain systems, vibration isolation, and active and semiactive suspensions.

University of Michigan **1989 - 1992**
Research Assistant. Department of Mechanical Engineering and Applied Mechanics.

Texas Instruments, Inc., Control systems Technology Center **1984 - 1988**
System Design Engineer. Responsibilities included configuring, designing, modeling, analyzing and testing control systems for precision electro-optical systems.

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Publications

Refereed Journal Articles

- Bruce H. Wilson and Jeffrey L. Stein. An algorithm for obtaining minimum-order models of distributed and discrete systems. *Journal of Dynamic Systems, Measurement, and Control* 117(4), pp. 534--540, 1995.
- B. H. Wilson, Shafai, B. and Eryilmaz, B. Improving control design for parametric uncertainty, *International Journal of Control*, 66(6):863--883, April 1997.
- A. Messac and B. H. Wilson. Computational control design of a benchmark problem using physical programming. *AIAA Journal*, 36(2):219--226, February, 1998.
- B. H. Wilson and J. H. Taylor. A frequency domain model-order-deduction algorithm for linear systems. *Journal of Dynamic Systems, Measurement, and Control*, 120(2):185--192, June,
- B. H. Wilson, R. Mourant, M. Li, and W. Xu. A virtual environment for training overhead crane operators: real-time implementation. *IIE Transactions Special Issue on Virtual Manufacturing*, 30(7):589--596, July, 1998.
- B. H. Wilson and B. Eryilmaz. Using bond graphs to synthesize tree-structured transfer functions: Improved frequency-domain analysis of uncertain systems. *Journal of The Franklin Institute*, 335(8):1443--1465, 1998.
- C. Erin, B. H. Wilson, and J. Zapfe. An improved model of a pneumatic vibration isolator: theory and experiment. *Journal of Sound and Vibration*. 218(1):81--101, 1998.
- B. H. Wilson, B. Eryilmaz, and B. Shafai. An adaptive angular sweep algorithm for value set construction. *IEEE Transactions on Automatic Control*, 44(3), March, 1999.
- B. H. Wilson and C. Erin and A. Messac. Optimal Design of a Vibration Isolation Mount using Physical Programming. *Journal of Dynamic Systems, Measurement, and Control*, June, 1999.
- Bora Eryilmaz and Bruce H. Wilson. Improved control of hydraulic systems using singular perturbation theory. *Journal of Dynamic Systems, Measurement, and Control*. In review.

Book chapters

- Bruce H. Wilson. Virtual reality in material handling and facilities layout. In *McGraw-Hill 2000 Yearbook of Science & Technology*, McGraw-Hill.

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Edna Zdenek, BSME, PE

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**New Jersey
License #19649New York
License #52140Pennsylvania
License #22066-EEducation**Bachelor of Science in Mechanical Engineering**

Newark College of Engineering, 1965

Continuing education through programs offered by:

National Society of Professional Engineers

Newark College of Engineering

American Society of Civil Engineers

NJ Society of Architects

American Bar Association

American Society of Heating, Refrigeration and Air Conditioning Engineers

Professional Associations

National Society of Professional Engineers

NJ Society of Architects, American Institute of Architects

American Society of Heating, Refrigeration & Air Conditioning Engineers

American Society of Civil Engineers

National Fire Protection Association

International Conference of Building Officials

Southern Building Codes Congress International

American Society for Testing and Materials

Carnival and Amusement Parks

Professional Member of NJ State Advisory Board of Carnival and Amusement Park Safety. Board member duties included investigation of amusement ride accidents and revision of applicable regulations as warranted.

Member of ASTM Committee F24 - Amusement Rides & Devices

Member of National Association of Amusement Ride Safety Officials

Member of International Association of Amusement Parks and Attractions

Professional Service Positions

NJ State Board of Professional Planners; Professional Member

Westfield Board of Construction Appeals; Professional Member

NJ Society of Architects; Chapter Board of Directors

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Tel: 202-822-9660

850 S. Rancho Rd, #4287
Las Vegas, NV 89106
Tel: 702-222-2481

Edna Zdenek, BSME, PE

PROFESSIONAL ENGINEER

Public Service Positions

National Society of Professional Engineers - Accreditation Board for Engineering & Technology in U.S. universities and colleges
 NJ Society of Professional Engineers; Committee for Engineering Education
 Newark College of Engineering Alumni Association; Board of Trustees

Seminars and Publications

"Defining & Clarifying the Technical Issues of a Case" - presented at the National Forensic Center Annual Conference
 "Insulation - Enough is Enough" Technical session presented on behalf of the United States Department of Energy
 "Fire Safety, Sprinkler Systems and Recommended Code Modifications" - Chaired study committee, prepared & presented position paper for N.J. Society of Architects

Dispute Resolution

Superior Court of NJ - Community Dispute Resolution Program - Mediator

Relevant Information

Who's Who in Engineering - Selected for inclusion by the Joint Engineering Council Approved by the Department of Energy as a Technical Assistance Analyst
 Union College, Math, Science and Engineering Dept. - Former Instructor
 Secret clearance (expired) for U.S. Department of Defense
 Who's Who in Professional Design Practice
 Who's Who in Finance & Industry
 Who's Who in the East

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Edna Zdenek, BSME, PE

PROFESSIONAL ENGINEER

Areas of Concentration

Mechanical Engineering
 Accident Analysis
 Project Management
 Complex Construction Litigation
 Heating Equipment Safety
 Construction Industry Standards and Practices

Heating, Ventilation and Air Conditioning
 Fire Protection
 Lessor/Lessee Relationships
 Homeowner Associations
 Condominium Associations
 Carnival and Amusement Park Safety

Specialized Expertise

Carbon Monoxide Poisoning
 Heating Systems & Equipment
 Ventilating Systems & Equipment
 Condominiums & Residential Developments
 Train Stations & Terminals
 Code Compliance Reviews
 U.S. Postal Facilities
 Contract Compliance Review
 Municipal Swimming Pools
 Motor Vehicle Repair Facilities
 Energy Use, Cost & Conservation
 Commercial Buildings
 University - Buildings, Facilities and Inflatable Rides
 Roller Coasters
 Log Flumes
 Spinning Rides
 Carousels

HVAC Design & Defects
 Construction Relationships
 Campuses Construction Means & Methods
 Mechanical Systems & Equipment
 Contract Administration
 Air Conditioning Systems & Equipment
 Industrial Facilities
 Mechanical Equipment
 Construction Defects & Delays
 Project Documentation
 Construction Code Compliance
 Piping & Duct Systems
 Industry Standard Practices
 Sprinkler Systems
 Safety Code Compliance
 Product Defects/safety

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Professional Experience

Institute for Products, Engineering and Construction **1991-Present**
 Consulting engineering services for mechanical projects. Analysis of claims relating to the design, installation and maintenance of Heating, Ventilation and Air Conditioning equipment and systems in residential, commercial, industrial and institutional construction. Analysis of construction and maintenance issues arising from the Lessor/Lessee relationship involving commercial and industrial properties. Analysis of claims involving the design, manufacture, installation and maintenance of fire protection components, equipment and systems. Analysis of accidents involving the design, manufacture, installation, maintenance and operation of Amusement Rides and Attractions.

Professional Engineers & Planners - Principal **1971-Present**
 General management of the firm and technical supervision of all projects undertaken by the company. Services as prime consultant normally include planning, cost estimates, preparation of contract documents, production of project drawings and specifications, scheduling, construction observation and documentation. Projects include educational, institutional, commercial, residential and industrial facilities and complexes. Mechanical consulting services to the construction industry include responsibility for heating, ventilating, air conditioning, plumbing and sprinkler systems and equipment with respect to project requirements, design, safety, installation and operation. General consulting services involve the research, investigation and preparation of technical reports concerning contract compliance, building and safety code compliance, equipment performance, systems evaluation and construction defects.

Uniplan - Project Manager **1969 - 1971**
 Responsible for field investigation, design, production of project drawings, specifications and equipment selection for heating, ventilating and air conditioning systems. Responsible for coordinating the mechanical, electrical, plumbing, fire alarm, sprinkler and architectural components of the project into an integrated building design.

Worthington Pump Corp. - Application Engineer **1966 - 1968**
 Responsible for the application of specialized pumps for use on warships and submarines. Coordinated requirements of the government with the capability and production facilities of the company, provided cost estimates, obtained necessary approvals and followed up through installation and testing.

Picatiny Arsenal - Engineer **1965 - 1966**
 Supervised the loading and testing of solid rocket propellants. Assisted in analyzing the trajectory and test data from the arsenal and from White Sands Proving Ground.

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Robert B. Zederbaum, PE, PP, CME

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**

New Jersey #24710

Pennsylvania #30337-E

Professional Planner

New Jersey #2183

Certified Municipal Engineer

New Jersey #0312

Public Water Treatment Plant Operator

Classification T-4, License #0096 - Registry #54896

Industrial Systems Operator

Classification N-N, License #0103 - Registry #54896

Certified Environmental SpecialistEducation**Bachelor of Science in Civil Engineering**

Newark College of Engineering, 1971

Professional Associations

Water Pollution Control Federation
 American Society of Civil Engineers
 New Jersey Society of Municipal Engineers

Professional Experience

Institute for Products, Engineering & Construction	1998 to Present
Consulting Engineer	1996 to Present
Bloomsbury Borough - Municipal Engineer	1982 to 1999
Clinton Township - Municipal Engineer	1992-1996
Heritage Consulting Engineers - Vice President	1981-1996
Alpha Borough - Municipal Engineer	1982-1992
Robert C. Bogart & Associates	1979-1981
Elson T. Killam Associates, Inc. - Project Engineer	1971-1979

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Robert B. Zederbaum, PE, PP, CME

PROFESSIONAL ENGINEER

Areas of Concentration

Civil Engineering
 Municipal Engineering
 Hydrology
 Development and Planning
 Industrial Systems
 Estimating and Cost Control
 Computer-aided Design
 Land Development
 Waterproofing
 Flood Control
 Water Treatment
 Zoning

Construction Management
 Site Safety
 Paving
 Construction Means & Methods
 Site Development and Improvement
 Contractor Performance
 Industry Standards
 Contract Administration
 Land Surveying
 Surface Water Runoff
 Planning

Specific Experience & Interest

Roads and Highways
 Parking Lots
 Subdivisions
 Residential Developments
 Commercial Developments
 Stormwater Drainage Systems
 Construction Jobsite Safety
 Slips, Trips & Falls
 Excavation Accidents
 Road Surface & Design
 Ingress & Egress

Parks and Playgrounds
 Soil Testing
 Septic Systems
 Excavations
 Trenching and Shoring
 Underground Utility Construction
 Road Reconstruction
 Obstructions & Work Areas
 Municipal Planning Boards
 Parking Requirements

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George W. Zuurbier, BSCE, MSCE, PE, FASCE

PROFESSIONAL ENGINEER

Credentials**Professional Engineer**New Jersey
License #GE 31896Pennsylvania
License #PE-037865-RIllinois
License #062-020735Education**Doctor of Philosophy in Civil Engineering (Partial Completion)**

Lehigh University, 1961

Master of Science in Civil Engineering (Soils Major)

University of Illinois, 1958

Bachelor of Science in Civil Engineering (Structural Major)

University of Illinois, 1953

Continuing education through programs offered by: George Washington University, New York University, Wharton School of Business, Alexander Hamilton Institute, Lehigh University, and local seminars by professional and private groups.

Professional Associations

American Society of Civil Engineers
American Iron and Steel Institute
Association of Iron and Steel Engineers
Tau Beta Pi and Chi Epsilon Societies
American Society of Highway Engineers
Pennsylvania Society of Professional Engineers
American Railway Engineering Association
American Institute of Steel Construction

Professional Service Positions

American Society of Civil Engineers, Lehigh Valley Section - President 1992-1993
American Railway Engineering Association - Committee 15 for development of specifications for movable and fixed railway bridges
Pennsylvania Society of Professional Engineers, Lehigh Valley Chapter - Vice president

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Publications

“Lessons from Structural Failures”, Best Paper of the Year, AISE, 1980
 “Structural Design of Industrial Buildings”(lecture), University of Wisconsin, 1976
 “Inspection of Steel Bridges for Fatigue”, ASCE Structural Journal, 1971
 “Testing of a Steel Deck Bridge”, Transportation Research Board Record, 1968
 “Commentary on Welded Coverplated Beams”, ASCE Structural Journal, 1967
 “Bracing of Bridges” (Lecture), University of Wisconsin, 1970
 “Economics of Simple Span Highway Bridges”, PENNDOT, 1967

Areas of Concentration

Structural Engineering	Construction Relationships
Civil Engineering	Contractor Responsibilities
Railway Engineering	Construction Means & Methods
Strength of Materials	Failure Analysis
Vibration Analysis	Product Liability
Soil Mechanics	Storm Damage
Fracture Mechanics	Fire Damage
Bridge Inspection	Foundations
Steel Erection	Trenching
Excavation	Foundation Problems

Specific Experience & Interest

Buildings	Roof Collapses
Highway and Railroad Bridges	Carnival & Amusement Rides
Temporary Bridges	Timber Structures
Docks and Wharves	Masonry Structures
Parking Structures	Concrete Structures
Warehouses	Construction Site Safety
Trucking Docks	Retaining Walls
Shipping Facilities	Soil Stabilization
Metal Fatigue	Steel Fabrication
Brittle Fracture	Footings & Foundations
Culverts	Tunnel Liners
Construction Products	Pilings
Cofferdams	Sheeting
Welding & Riveting	Towers
Pre-engineered Steel Buildings	Guiderrails

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Professional Experience**Institute for Products, Engineering and Construction** **1998 to Present**

Consulting forensic engineering services for attorneys and insurance companies. Investigations encompass the fields of civil and structural engineering, with an emphasis on accident prevention, construction means and methods, structural failures, soil stabilization and contractor responsibilities.

Barry Isett and Associates **1993 to 1997**

Senior Structural Engineer. Senior Structural Engineer with responsibilities for design and construction supervision on a variety of structural, civil and industrial engineering projects. Major projects included strengthening and eliminating vibration on the Hercules roller coaster at Dorney Park, PA; raising of the Chestnut Ridge Railroad bridge in Palmerton, PA for increased vertical clearance; resolution of insurance claims for structural collapse and distress as expert witness; fire damage evaluation and remediation; industrial bridge design and structures of timber, masonry and concrete.

McTish, Kunkle and Associates **1988 to 1993**

Vice President. Vice President of consulting engineering firm in the field of structural engineering. Projects consisted of the design, construction and rehabilitation of all types of highway and railroad bridges throughout the state of Pennsylvania. Significant projects included a four span, continuous curved steel girder bridge in Allentown, PA, which won the 1991 AISC Prize for bridges in the short span category.

Gannett, Fleming Transportation Engineers **1987 to 1988**

Project Manager. Projects included the \$17 million completion of New Jersey Route 18, including seven grade separation structures, landfill stabilization and utilities relocation, as well as upgrading a three mile stretch of the New Jersey Turnpike, including widening and rehabilitation of existing bridges.

Bethlehem Steel Corporation **1961 to 1986**

Manager, Technical Services. Responsible for Research and development and failure analysis of steel products. Projects included conversion of over 100 bridges from concrete to steel; development of bridge and highway-related construction products; studies of bridge fatigue, fracture, corrosion and economics; creation of computer programs for bridge design and specification.

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Capsule CV's of Additional IPEC Members with Unique Specialties

Please Contact the IPEC Administrative Office for full resumes of the experts described below.

Travel Origin

Boston, MA	<p>Specialist in Architectural Millwork Expert in the manufacture, marketing, fabrication, finishing and installation of architectural millwork and cabinetry. Addresses all issues related to millwork contracting, cost and estimating, quality of products and workmanship issues.</p>
NYC (Midtown)	<p>Audiologist Ph.D. in Hearing and Speech Sciences. Licensed Audiologist, Speech Pathologist and hearing Clinician. Forensic audiologist dealing with differential auditory diagnosis, occupational hearing conservation, environmental noise, auditory disorders, electrophysiological measures of hearing and balance and applied psychoacoustics.</p>
Chicago, IL	<p>Specialist in Remanufactured Automotive Components Electrical Engineer in the automotive field. Addresses all issues related to automotive components, with a specialization in both new and remanufactured electrical components.</p>
Baltimore, MD Washington, DC	<p>Entomologist/Toxicologist Registered Professional Entomologist with Ph.D. in entomology, toxicology and statistics, and Master's and Bachelor's degrees in entomology and horticulture. Former officer with the U.S. Department of Agriculture. Expert in termite biology and control, insect-borne pathogens, pesticide use, regulation and economics.</p>
Westfield, NJ	<p>Specialist in Pressure Regulators and Natural Gas Utility Company Practices Engineer with experience in the distribution and operations aspects of the natural gas utility industry, as well controls for natural gas distribution and gas-fired equipment.</p>

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