

Curriculum Vitae and Personal Resume of:

Gerald Roy Spencer, P.E.

President & 100% Owner of:

Spencer Engineers, Inc.

4635 Southwest Freeway, Suite 900

Houston, Texas 77027-7139

Home Address: 3759 Drake; Houston, Texas 77005-1117

Graduated Texas A&M Jan 1961 - BSME

Registered Mechanical Engineer and a Registered Electrical Engineer

NCEES national certification file #4774 (1978) and NCEES ID 16-872-67 (2017) in the mechanical and also in the electrical engineering design disciplines.

TX 24180 - 1965 MECH & ELECT	AL 15780 - 1986	AR 6481 - 1986
LA 11318 - MECH - 1968	AZ 23920 - ELEC - 1990	MS 9851 - 1986
LA 25040 - ELECT - 1992	AZ 19762 - MECH - 1986	OK 11823 - 1980
CA M-020309 - 1986	CO 24725 - 1987	DC 8692 - 1986
FL 28295 - 1979	GA 16452 - 1987	ILL 062038130 - 1980
IN PE60017556 - 1978	MD 14881 - 1986	MI 26925 - 1979
MO 19220 - 1980	NC 13271 - 1986	NE E-6176 - 1986
NM 9881 - 1986	NY 06301-1 - 1986	OR 13158 - 1986
SC 11100 - 1986	TN 018520 - 1986	VA 16505 - 1986
WA 23272 - 1986	WI E-13745 - 1973	CNMI 287 - 1996 – ELECT

Most of the above licenses are now no longer current, but I can usually be easily re-licensed or temporarily permitted if required since I have a NCEES national certification.

Gerald Spencer is the Engineer of Record responsible to the Authority Having Jurisdiction for certifying that design and construction of Mechanical Electrical Plumbing (MEP) building systems as proposed are in code compliance and provides protection of the life, safety, health and property of the general public in accordance with State laws. This includes the design, permitting, construction contract administration, inspection, final approval (or rejection) of the construction, progress payment approval, and code compliance certification of the MEP systems for more than 1300 MEP construction projects during the past 50 years. MEP systems include the HVAC, Fire Protection, Plumbing, Lighting, Electrical Power, Chilled water, Steam, Fire Alarm, Audio Visual, Clean Room, Surgical Operating Room, Infection Control, Instrumentation & Controls, Space Simulation, Cryogenic Systems, SCIF security, RFI-EMC, TELECOM, Reliability Calculations, and other MEP systems that are parts of building construction projects.

Gerald Spencer started his private practice in Jan 1968 as Spencer & Associates, to MEP consulting engineering design and construction contract administration services to architects. Gerald Spencer incorporated his business as Spencer Engineers, Inc. in 1971. This totals 49 years of private practice plus 6 additional years as an employee with other Architect and Engineering firms. Gerald Spencer has specialized in the field of acquiring, managing, and completing Federal Government AE design contracts for use in the construction of Publicly Funded Construction Projects.

Gerald Spencer has extensive experience as a multi-discipline design AE project manager for more than 1800 construction projects including 150 federal construction projects in the last 45 years. Gerald Spencer is also the MEP Engineer of Record for most of these projects. This includes remodeling projects and new construction projects. The ACASS summary (Department of Defense AE contract performance summary maintained by the Corps of Engineers) printout on 30SEP96 for Gerald Spencer (SEI) indicates 21 completed projects with one excellent performance rating, one above average rating, and the remaining 19 projects with an average performance rating. ACASS summary printout 08MAY00 reveals 11 projects with one above average rating and 10 projects with an average rating. The complete ACASS report indicates that

all but two of these 32 DoD projects were completed without contract modifications due to design deficiency. These two project modification amounts for design deficiency totaled less than \$10,000.00. The construction value amounted to more than \$100,000,000.00. This report indicates that all of the projects had the low bid within the funds available, and that all projects were awarded construction contracts without re-design.

Gerald Spencer has solicited, applied for, been awarded, managed and completed multiple U.S. Federal design contracts with the National Space & Administration Agency (70 projects), the US Army (30 projects), US General Services Administration (8 projects), US Air Force (4 projects), US Department of State (8 foreign projects), US Postal Service (34 projects) and the National Imagery & Mapping Agency (NIMA is now NGA - 4 projects). Gerald Spencer has had additional AE indefinite delivery contracts with the City of Houston Police Department, the Port of Houston, the City of Houston Aviation Department (Now Houston Air Services), and the State of Texas GSA.

Gerald Spencer is the Foreign Country Engineer of Record for 3 projects in Saudi Arabia; 1 project in Bahrain; 6 projects in India; 1 project in Denmark; 1 Project in Nassau, Bahamas; 1 project in Chile, and 1 project in Barbados.

Gerald Spencer was appointed to City of Houston Plumbing Review Board by Mayor Louie Welch in 1970 and has served continuously. This body wrote and modified the City of Houston Plumbing code in 1970 before the city adopted the Uniform Plumbing code. This is engineering work and the city requires that this position be filled by a Registered Professional Engineer.

Gerald Spencer has been a multidiscipline project manager for the past 45 years. Gerald Spencer is also the Mechanical and Electrical designer and MEP Engineer of Record for most all of these projects. These projects include health care facilities, medical & chemical research laboratories, computer equipment rooms, high rise buildings up to 19 floors, office buildings, hotels, educational facilities, aircraft control towers, army ammunition plants, food service facilities, warehouses, hazardous waste processing facilities, radioactive nuclear materials laboratory production facilities, dormitories, barracks, foreign country embassies and consulates, military facilities, munitions manufacturing facilities, auxiliary power generation facilities, telecommunications facilities, food refrigeration facilities, space simulation systems, cryogenic systems, seismic event resistance design for MEP equipment, plants for ground water removal of contaminants, hazardous waste storage facilities, underground storage tank certifications for hazardous waste, and military family housing projects.

Gerald Spencer is the Mechanical and Electrical Engineer of Record for more than 1300 MEP construction projects during the past 45 years. This includes HVAC systems as large as 8000 tons, and as small as 3-ton residences. This includes plumbing systems to 19 floors in height, various types of facility fire suppression systems. This also includes interior and exterior lighting systems, interior and exterior power distribution systems, un-interruptible power systems, single and parallel diesel and gas turbine driven generator installations, computer power conditioning systems, primary overhead and primary underground distribution systems 15KV and 35KV class, specialized data processing power systems & grounding systems, (shuttle) flight critical power and grounding systems, computer rooms, x-ray machines, and radio frequency shielded design for U S Army missile maintenance facilities.

Gerald Spencer has construction contract management experience and general contractor experience when EXXON requested that Gerald Spencer act as the General Contractor to rush construction of the New \$1.4M (1978) Paleontology Laboratory and then other smaller projects.

Gerald Spencer holds certificates from the U S Army (EMCS) energy management control systems course, the U S Army Environmental Engineering course, and the U S Army M-CACES (Computer Aided Cost Estimating System) course.

Gerald Spencer has been using PC computers for Engineering calculations and word processing since 1979.

Gerald Spencer has completed many more than 100 life cycle economic cost and life cycle energy economic analysis with formal reports for several different US Government Agencies over the past 40 years.

Gerald Spencer has performed trouble shooting to solve HVAC, Humidity Control, Data Processing Power supply quality, Electrical current circulating and Electrical grounding problems for various DoD agencies, EXXON, USA and NASA during the past 35 years.

HEATING AND COOLING PLANT HVAC DESIGN: Gerald Spencer is the Engineer of Record for many central heating and cooling plants as follows:

NASA-JSC, Building 48, replace one 850-ton chiller, 1997.

NASA-JSC, Building 48, convert one 800-ton chiller to R-134a, 1997.

Lackland AFB, Area "B," plant renovations, 750 tons, 1996.

U. S. Postal Service MPO, Houston, TX, renovate 2200-ton chilled water plant, 1996.

M D Anderson, Smith Research Building, 350-ton addition, 1994.

Shell Oil Co., Deer Park, TX, 300-ton steam fired process chiller, 1992.

NASA-JSC, Preliminary Engineering Report (PER) for the addition of a 2,000-ton chiller and a 400,000-lbs/hr steam boiler to the central plant, 1991.

L'Hotel Sofitel, Houston, two 325-ton chillers

Holiday Inn Park 10, Houston, two 350-ton chillers

Exxon Production Research, 750-ton addition to chilled water plant for 4,500 tons total

U. S. Army, Ft. Hood, TX, 1,800-ton central cooling plant for barracks in the 10000 block Battalion Ave.

MEDICAL FACILITY MEP DESIGN EXPERIENCE: I am the MEP Engineer of Record for:

The Methodist Hospital - Third Floor Brown building - Dr. Michael DeBakey - 25 open heart surgical Operating suite Remodeling;

Joseph A. Jachimczyk Forensic Center 3 floor Addition

CAT System, Ben Taub

The Methodist Hospital - CAT Scan Unit - Third Floor

The Methodist Hospital - 2nd Floor X-Ray; The Methodist Hospital - Ophthalmology Lab 5th Floor

The Methodist Hospital - 2nd Floor X-Ray

The Methodist Hospital - Remodel ICU

The Methodist Hospital - RM. 248 Install X-Ray Unit

The Methodist Hospital - UPS System

The Methodist Hospital - Scurlock Tower Level 5 ST5 Mammography

The Methodist Hospital - TV System.

M D Anderson Cancer Center - Surgical Research Laboratory

M D Anderson Cancer Center - SRB Central Utilities Plant

Chilean Naval Hospital

Medico Center Professional Building "B"; Medico Building "C"

Pasadena-Bayshore Psychiatric; Eastwood Professional Bldg

TSU Pharmacy Building Remodel

Riverside General Hospital Relighting

Grimes County Hospital Remodel

Ben Taub Hospital X-Ray Area;

LABORATORY AND RESEARCH FACILITIES HVAC DESIGN: Gerald Spencer is the MEP Engineer of Record the design and construction of medical, biological, chemical and hazardous materials research laboratories that comply with the latest OSHA and Texas State Hospital Accreditation Guidelines. He is the AE of Record for specialized HVAC systems for Exxon, Schenectady Chemical, Dow-Badische Chemical, DuPont Chemical, Celanese, the M D Anderson Surgical Research Laboratory, NASA Lunar Receiving Laboratory, The Methodist Hematology Research Laboratory, The Methodist Hospital Immunology Research Laboratory, Fort Sam Houston Institute of Surgical Research, and The Methodist Hospital Brown Building.

Gerald Spencer is a Beta Site contributor and an expert operator of Elite® Mechanical Programs: CHVAC, RHVAC, MHVAC (Metric), EZDOE, Energy Analysis, EC Earth Coupled Heat Pump, REFRIG, Kypipe -

Water multiple loop flow analysis, Sansys – Civilsystems® - Gravity Water Flow Analysis for sanitary sewer and storm water flow analysis.

Gerald Spencer is a Beta Site contributor and an expert operator of Elite® Electrical Programs: VD Voltage Drop, ECOORD Protective Device Coordination, SHORT - (Electrical Short Circuit Analysis), LIGHT (Lighting Level Calculations), OUTPOINT point by point vertical and horizontal lighting levels for outdoor lighting, INPOINT point by point vertical and horizontal lighting levels for indoor lighting, Harmonic Circulating Current Analysis – Dranetz & RPM, Constructor - Constructs and tests ladder diagrams and imports them into AutoCAD drawings, Quicksize – Sizes Engine Generators, and Gen Size 96 – Sizes Engine Generators.

Gerald Spencer is an expert operator of AutoCAD 2010, a fair Intergraph Microstation operator, Elite® EZ-LCCID Life Cycle Cost Analysis.

Gerald Spencer is a fair AutoCAD Lisp Programmer, an acceptable Dbase III & IV programmer, and an acceptable Fortran programmer.

Gerald Spencer is an expert operator/user of Microsoft® Word, Microsoft®Excel, Microsoft®Office, Pagemaker®, Photoshop® and other Desktop Publishing programs.

Gerald Spencer has extensive Federal Government Project Hard Metric Design Experience, foreign project metric design experience, and foreign country design experience where they use a combination of systems since 1980.

Gerald Spencer is familiar with the European Construction Standards.

Gerald Spencer is also familiar with the British Electrical and British Plumbing Codes that have been superseded by European Union Standards.

Gerald Spencer is the specification writer for Architectural, Civil, Structural, Mechanical and Electrical Project Contract Specifications on more than 75 Federal Government projects. This includes Federal Government Bid Forms, Contract Forms, General Conditions, Special Conditions and other "01" sections. These projects are for "Invitation For Bid" (IFB - Plan & Spec) and "Request for Proposal" (RFP) construction contract acquisitions conforming to the applicable Federal Government FARs and DFARs.

Gerald Spencer is the Engineer of Record for Industrial control & instrumentation systems including many DCS, SCADA, UCS, EMCS, PLC, CPU, PID, and Distributed Control & Data Acquisition systems, including the 32,000 point DCS at NASA-JSC for operating and data acquisition for Space Simulation Chambers "A" and "B":

Gerald Spencer is the Project Manager and MEP Engineer of Record for Seismic Risk Reduction design for projects in St. Louis, California, Chile, India and Bahrain. I am familiar with FEMA seismic design requirements.

Gerald Spencer has had active DoD Personnel & Facility Security Clearances until 2003. Gerald Spencer is the Engineer & the AE of Record for SCIF, Mecca, Tempest, Building Ground Carrier Path Attenuation and other U. S. Federal Government classified secure communications facilities and systems around the world. Facilities where Gerald Spencer is the AE of Record also includes facilities for controlled access, blast resistance, intrusion detection systems, controlled access, RF shielded construction, forced entry rated, and safe areas.

Gerald Spencer is the previous holder of an AMA Motorcycle Racing License (Sportsman), a SCCA Race Driving License (National - single seat open wheel formula V), and an Airplane Private Pilot License (SEL). Refer to www.spencerae.com for additional experience and qualifications.