

# **LESTER B. ENGEL, JR., P.E.**

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## **SUMMARY**

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Metallurgical engineer with more than 38 years of experience in materials application, failure analysis, R &D program management, materials and process specifications, engineering standards and procedures, laboratory design and operation, data analysis, and personnel and budget management.

## **EXPERIENCE**

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METALLURGICAL ENGINEER, OWNER MAY, 1983 TO PRESENT  
*Engel Metallurgical Ltd.* *St. Cloud, MN*

Provide metallurgical and materials joining consulting services to a wide variety of clients in the manufacturing, legal, and insurance industries.

Perform failure analyses of products manufactured from various materials, including metals, cermets, and plastics.

Render expert opinions, give depositions and testimony for litigation support.

Assist manufacturing clients with materials and process selection and problem solving, and prepare material and process specifications.

Develop and review product design, materials, and process specifications.

Oversight and development of on-site metallurgical testing laboratory that provides: scanning electron microscopy (SEM) and energy dispersive spectroscopy (EDS); metallographic preparation and examination; and mechanical property testing.

CHIEF METALLURGIST, MGR. ENGINEERING SERVICES MAY, 1974 TO MAY, 1983  
*Brown Boveri Turbomachinery (Turbodyne Corporation)* *St. Cloud, MN*

Conducted and supervised detailed failure analyses on industrial gas and steam turbine power plant components.

Designed and managed materials laboratory, and indirectly managed up to 90 engineers, drafters, and technicians.

Responsible for material selections and material conversions from European DIN standards for industrial gas turbines, steam turbines, and generator components.

Developed engineering standards system including raw material and standard part identification, material process specifications, and operating procedures.

Developed Materials Properties Design Handbook.

METALLURGICAL ENGINEER  
*General Electric Company, Aircraft Engine Group*

DECEMBER, 1969 TO MAY, 1974  
*Evendale, OH*

Responsible for material selections and metallurgical support for hot aircraft and marine gas turbine components.

Conducted detailed failure analyses on aircraft and marine gas turbine components.

Developed and managed test program which obtained desired mechanical property data at over 50% cost savings.

Prepared detailed material and process specifications, and material properties design limits.

METALLURGICAL ENGINEER  
*General Electric Company, Nuclear Systems Programs*

JUNE, 1963 TO DECEMBER, 1969  
*Evendale, OH*

Executed complete R & D programs in metallurgy of refractory metals, selected superalloys, cermets, and ceramics.

Principal investigator on three NASA contractual programs.

Designed and operated complete metallographic and X-ray diffraction service laboratory.

Developed a pressure transducer for measuring alkali metal pressures at 2200°F within a vacuum of  $1 \times 10^{-8}$  Torr.

## EDUCATION

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MASTER OF SCIENCE, METALLURGICAL ENGINEERING 1969  
*University of Cincinnati Cincinnati, OH*

BACHELOR OF SCIENCE, METALLURGICAL ENGINEERING 1963  
*University of Cincinnati Cincinnati, OH*

## PROFESSIONAL

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Registered Professional Engineer (P.E.) in the state of Minnesota

Listed with the Minnesota Trial Lawyers Association as an expert in the field of metallurgy

Member of ASM International, The Metallurgical Society of AIME, American Welding Society, American Society of Testing and Materials, Society of Automotive Engineers, American Society of Nondestructive Testing, National Association of Corrosion Engineers

Member Industry Advisory Board for the Composite Materials Engineering Program at Winona State University and Manufacturing Engineering Program at St. Cloud State University