



TIM R. JOHNSON, P.E., CFEI
SENIOR CONSULTANT

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Tim Johnson is a Senior Consultant at ESi, with experience in electrical system failure analysis, electrical system testing and design, and electrical safety.

Prior to joining ESi, Mr. Johnson was a Senior Engineer at IIT Research Institute (IITRI). His career includes 15 years with IITRI, two years with McDonnell Douglas, and two years with Magnavox.

While employed at IITRI, Mr. Johnson specialized in electromagnetic pulse (EMP) failure analysis, electromagnetic field health effects research, and training simulator development. At McDonnell Douglas, he was responsible for operating and maintaining test stand electrical systems. At Magnavox, he worked in a communication systems development group.

Areas of Specialization

- Failure analysis of electrical and electronic equipment
- Electrical safety
- Fire/explosion investigation
- Product design
- Safety aspects of design

Education

- M.S., Electrical Engineering, Illinois Institute of Technology, 1989
- B.S., Electrical Engineering, Purdue University, 1984

Licensed Professional Engineer (P.E.)

- State of IllinoisLicense No. 062-055348
- State of Indiana.....License No. PE11300428

Certified Fire & Explosion Investigator (CFEI)

- National Association of Fire Investigators
- Membership No.14288-7489

January 2025

Positions Held

Engineering Systems Inc., Aurora, Illinois

Senior Consultant, 2014 to present
Senior Staff Consultant, 2001 to 2013

IIT Research Institute, Chicago, Illinois

Senior Engineer, Transport Technology, 2000 – 2001
Senior Engineer, Tactical Systems, 1993 – 2000
Research Engineer, Electromagnetics, 1986 – 1993

McDonnell Douglas, Kennedy Space Center, Florida

Associate Engineer, Cargo Integration Testing, 1984 – 1986

Magnavox Government Systems, Fort Wayne, Indiana

Co-op Engineer, Communication Systems, 1980 – 1983

Professional Development

Photovoltaic Systems Safety

PDHonline, November 2021

OSHA 3075

PDHonline, September 2021

Wind Energy

PDHonline, April 2021

Solar Energy

PDHonline, March 2021

Software Defined Radio for Forensic Investigation

ESi, May 2020

Arc Flash Hazard Awareness

ESi, April 2020

Li-Ion Failures

ESi, February 2020

The Scientific Method for Fire and Explosion Investigation

CFI Trainer.net, May 2019

Motor Vehicle Systems,

CFI Trainer.net, April 2019

Explosion Dynamics,

CFI Trainer.net, February 2019

DC Generators and Motors,
PDHonline, February 2019

Engineering Ethics,
PDHonline, May 2016

Investigating Motor Vehicle Fires,
CFI Trainer.net, November 2015

NFPA 921 and 1033 Revisions,
CFI Trainer.net, November 2015

Fire Dynamics and Modeling
CFI Trainer.net, September 2014

Digital Power Metering and Industrial Data Communication for Meter Systems,
PDHonline, August 2013

Boiler Control Systems,
PDHonline, June 2013

Wind Energy Technology
PDHonline, June 2013

Battery Technology
PDHonline, January 2013

Uninterruptive Power Systems,
PDHonline, January 2013

Energy Storage Technology,
PDHonline, September 2011

OSHA 3075 Electrical Hazards,
PDHonline, June 2011

Programmable Logic Controllers,
PDHonline, March 2011

Fire Investigation Training Conference
IAAI, September 2006

Stallcup's 2005 NEC Changes
NFPA, February 2005

ISPE Annual Conference
July 2004

National Electric Code Course
PDHcenter.com, June 2004

Fire Investigation Training Conference
Illinois Chapter IAAI, June 2007

Lightning Effects and Detection
Global Atmospheric, Inc., March 2002

Wireless Communication Systems Graduate Short Course
IIT, June 1998

Simulation HLA
Distributed Simulation Technology, Inc., December 1997

Object-Oriented C++
American Research Group, Inc., April 1996

Electrical Safety
National Technology Transfer, Inc., May 1994

National Fire, Arson, & Explosion Investigation Training Program
Denver, Colorado, The National Association of Fire Investigators Co-Sponsored by the
National Fire Protection Association, March 2009

Publications/Presentations

“Exposure to 60 Hz Magnetic Fields and Risk of Lymphoma in PIM Transgenic and TSG, p53 (p53 Knockout) Mice”, D. McCormick, B. Ryan, J. Findlay, J. Gauger, **T. R. Johnson**, R. Morrissey, G. Boorman, *Carcinogenesis*, Vol. 19, no. 9, pp. 1649-1653, 1998.

“Design, Construction, and Operation of a Dedicated Magnetic Field Animal Exposure Facility”, J. Gauger, **T.R. Johnson**, D. McCormick, J. Harder, *Proceedings of the Second World Congress for Electricity and Magnetism in Biology and Medicine*, 1997.

“Two-Year Toxicity/Oncogenicity Studies of 60 Hz Magnetic Fields in F344 Rats and B6C3F1 Mice”, Seminar presented as part of Canadian National Advanced Fire, Arson & Explosion, D. McCormick, J. Findlay, B. Ryan, J. Gauger, **T.R. Johnson**, R. Morrissey, G. Boorman, *Proceedings of the Second World Congress for Electricity and Magnetism in Biology and Medicine*, 1997.

“A Developmental Toxicity Study of 60 Hz (Power Frequency)”, Ryan, E. Mallett, **T.R. Johnson**, J. Gauger, D. McCormick, *Magnetic Fields in Rats, Teratology*, 1996.

“Immune Function and Host Defense in Rodents Exposed to 60 Hz Magnetic Fields”, R. House, H. Ratajczak, J. Gauger, **T.R. Johnson**, P. Thomas, D. McCormick, *Fundamental and Applied Toxicology*, Vol. 34, pp. 228-239, 1996.

“A Cooperative Analysis for Siting a Proposed Urban 345 kV Transmission Line”, J. Stangel, **T.R. Johnson**, M. Hart, M. Lewandowski, *Proceedings of the American Power Conference, Chicago, Illinois*, 1992.