

AT A GLANCE



Electric and Magnetic Fields and Radio-Frequency Health Assessment and Safety

Program 60

Research Value

- Address high-priority EMF and RF exposure concerns like childhood leukemia, HVDC, and 5G
- Enhance safety for utility workers and the public
- Inform safety programs and policies with high-quality scientific data
- Optimize exposure management programs with advanced tools and technologies

Member Benefits

- Data to inform stakeholder communications
- Optimize project costs while addressing public concern
- Avoid costly project delays, reroutes, or undergrounding
- Access to 40+ years of archival and comprehensive EMF knowledge base and industry experiences

Electric utilities frequently seek to provide workers and the public with credible, meaningful, consistent, and timely information regarding EMF exposures and potential health impacts. Participation in P60 helps in achieving these goals by providing crucial, science-based information and management tools to keep everyone safe.

Environmental health and safety issues related to electric and magnetic field (EMF) and radiofrequency (RF) exposure are evolving. This program focuses on the potential impacts of these fields associated with the electric power system on workers and the public, including:

- Rapid evolution and expansion of the electric grid to meet increasing demands for low-carbon electrification and grid resiliency
- Increasing use of flexible ac transmission system (FACTS) and high-voltage direct-current (HVDC) technologies, including application of new transmission approaches, such as hybrid (HVAC/HVDC) lines
- Increased installation of smart grid and distributed energy resources, including smart meters, electric vehicle chargers, photovoltaic installations, and new energy storage options
- New work practices and workforce to support the modern grid
- The loss of EMF expertise and knowledge as utility subject matter experts (SMEs) retire

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Research Highlights

60A – Health Studies and Risk Communication: This project set focuses on addressing potential health concerns of EMF and RF exposure on humans and non-human biota. This includes conducting novel research to help resolve key uncertainties related to residential EMF exposure and health outcomes, such as childhood leukemia and neurodegenerative diseases. Research is also conducted on emerging health and environmental concerns from application of technologies such as HVDC and hybrid lines and from subsea electrical infrastructure needed to support offshore wind applications. Research summaries are developed to facilitate member risk communication with the public and workers.



Alternative Causes and Risk Factors for Childhood Leukemia

Identifies factors that may be influencing the risk for childhood leukemia in populations living near powerlines.



Impacts of ELF EMF on Wildlife

Provides an updated, state-of-the-science understanding of how EMF from overhead and underground powerlines may impact wildlife such as small animals, avian species, and wild game.



FAQ Information Briefs

Answers to the most commonly asked questions on key topics of concern (e.g., microshocks) to inform utility risk communication plans.



Good Practices in EMF Risk Communication

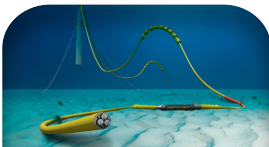
An updated resource to facilitate effective communication of health risks associated with EMF.



EMF Exposure Database of Residential Homes

Database of utility collected EMF measurement data from residential dwellings for trending and analysis.

60B – Exposure Characterization and Management: This project set provides the tools and resources needed to characterize and manage EMF and RF exposures for a wide variety of traditional and emerging work environments (e.g., grid level battery storage, large scale EV charging, etc). This includes the development of source measurement methods, calculational tools, industry exposure databases, and investigations of mitigation options.



EMF Characterization of Submarine Power Cables

Includes a proposal for an EMF evaluation criteria and calculation methodology for assessing EMF from HVDC and HVAC submarine cables.



EMF Impacts from Battery Energy Storage

Assesses EMF exposures to workers and the nearby public from grid-level battery energy storage systems.



Considerations for Establishing Public Use of Transmission Line Easements

Provides information and approaches to address environmental and technical issues that may result from public recreational uses of transmission line easements.



EMF Exposure Database of Residential Homes

Database of utility collected EMF measurement data from residential dwellings for trending and analysis.



Handbook of EMF Calculations

Detailed step-by-step calculation procedures for power frequency EMF problems commonly encountered by engineers and technicians.

Supplemental Projects

- [3002025837](#) – *Assessment of Electric and Magnetic Fields (EMF)/Radio Frequency (RF) Impacts on Local Wildlife*
- [3002025752](#) – *EMFast v1.5.1 and Software Training*
- [3002022516](#) – *EMF Characterization and Assessment*
- [3003033445](#) – *EMF-RF Training and Knowledge Transfer*
- *Radio Frequency Safety Program Assessment*
- *Evaluation of Consumer Grade ELF EMF Meters*

For more information, contact:

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