

EMF Characterization and Assessment



Background

Power frequency EMF measurements and evaluations are usually the first steps in an EMF assessment program. Often measurements are needed to address concerns from members of the public, workers who may be near areas of elevated electric or magnetic fields or individuals who have concerns regarding interference with implanted medical devices.

As electric companies are challenged with a high loss of staffing and institutional knowledge regarding EMF assessment, some companies may no longer have the resources, equipment, or expertise to conduct these measurements.

Objectives

This project will include the development of a characterization/measurement protocol for power-frequency EMF sources that can be used by the utility. The EPRI Team will use the measurement protocol to conduct measurements that characterize EMF sources at selected locations for the utility. Utility staff are encouraged to join the EPRI Team in conducting these measurements to have hands-on training for their employees to learn how to take and evaluate the measurement results.

New Learnings

Measurements captured by the survey may be integrated into an EPRI-wide EMF database that can be used to inform other EPRI projects and applications with its utility members.

- Support facility characterization of power frequency EMF environments
- Data can be used to support return-to-work evaluations for workers with implanted medical devices
- Benefits:
 - Expert measurement and data analysis by professionals who are proficient in technical area
 - Address stakeholder concerns and inform return-to-work policies for employees with implanted medical devices
 - Hands-on-learning opportunity for utility staff

Benefits

This project will assist funders to address EMF issues and questions using results from the EPRI research program, EPRI expertise, and practical experience. The measurement protocol and subsequent survey results can be used to inform public and employee communication efforts and support return-to-work evaluations that are implemented as part of an implanted medical device policy for utility employees.

Participants in this project may wish to deploy utility staff to join the EPRI Team in conducting the measurements as an opportunity for hands-on learning.

Steps in the Process

Preparations for the Study

Project participants will work with the EPRI Team to identify the facilities of interest to be surveyed and to provide necessary technical descriptions of those facilities.

EMF Measurements

Power-frequency electric and magnetic field measurements will be performed for EMF sources as walk-through survey of each facility identified for the study. Measurement locations for this project will be identified during the scoping process with project participants. Equipment and locations which exceed a pre-established threshold for electric field and magnetic field will be identified and characterized as a function of field intensity versus distance away from the equipment.

Example facilities for field measurements include:

1. Machine shops
2. Generating stations
3. Transmission substations
4. Distribution substations
5. Switching stations
6. Electric vehicle charging stations

Project Deliverables

- A site-specific report will be prepared which describes the study and measurement results. The report will include the EMF measurement equipment used for the survey, a listing of facilities and equipment measured, and the measurement results.
- A technology transfer session and presentation of the results will be provided to the participating utility or facility owner.

Project Cost

Project cost is dependent on the facilities to be surveyed and will be determined during the scoping session with EPRI project managers. Please contact EPRI for more details. This project is eligible for Self-Directed Funds or co-funding.

Project Status and Schedule

The project schedule will be determined during the scoping sessions with EPRI project managers. Depending on facility size and amount of equipment at the site, measurements may take up to a week to complete for each facility location.

Who Should Join

Any utilities or facility owners needing assistance with measuring and assessing the EMF environment at specific work locations.

Contact Information

For more information, contact the EPRI Customer Assistance Center at 800.313.3774 (askepri@epri.com).

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Contact Information

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