There is a growing concern among electric utilities workers regarding possible health hazards due to the exposure to power frequency electromagnetic field (EMF). Failure to comply with the safety assessment standards may lead to possible health hazard on electric utility workers. The aim of this paper is to assess and evaluate the existing scientific effort which aims to improve safety levels for electric utility workers and to discuss possible mitigation techniques which can be utilized in order to help electrical utilities complying with the existing international standards and guidelines. A case study will be presented which demonstrate the necessary steps and actions which should be taken by the utility in order to comply with ELF-EMF international standards.