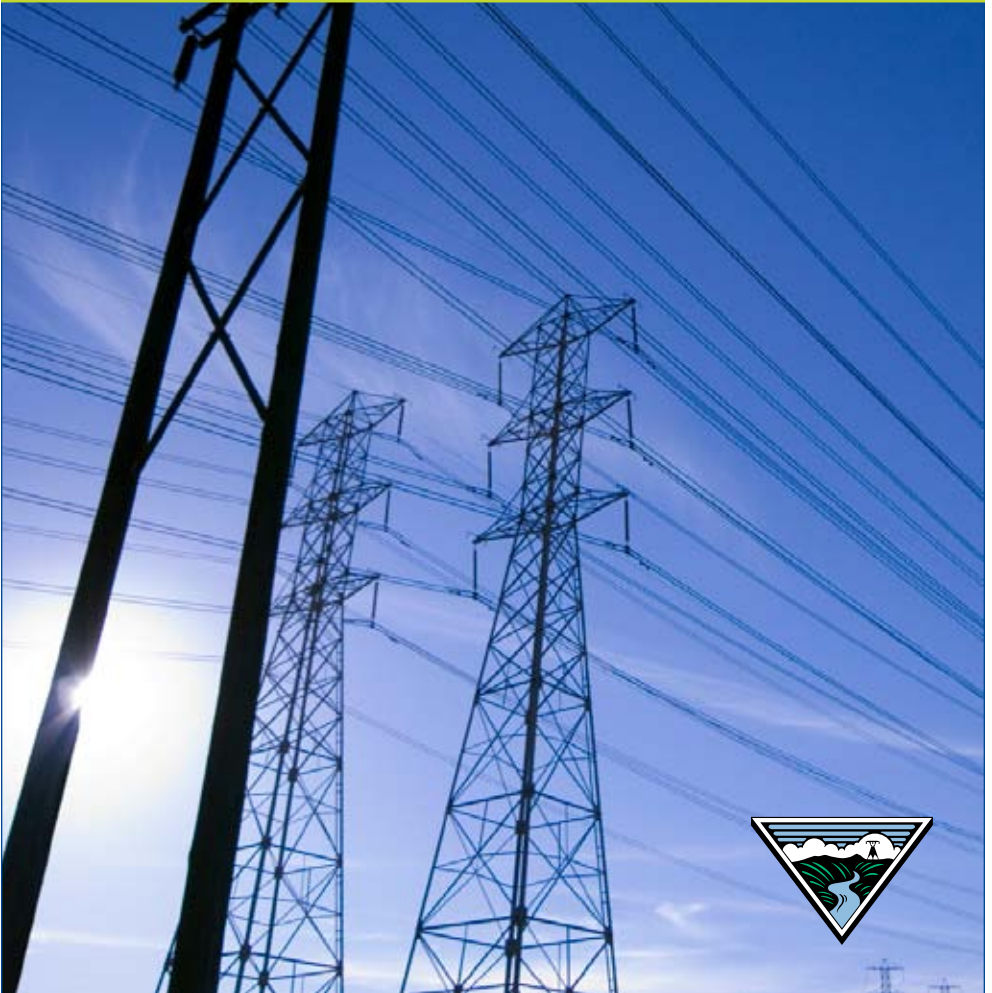



# How BPA addresses EMF





Safety is the Bonneville Power Administration's top priority. Many BPA employees work around electric transmission lines. Many people live near our lines. So we took seriously concerns that emerged in the 1980s and 1990s about possible health effects of electric and magnetic fields, or EMF, around power lines. We led the industry in studying EMF. We also committed to openly and honestly address questions and concerns about them. That commitment continues today.

Here's what BPA does about EMF:

- **RESEARCH:** BPA has long encouraged and funded independent research to better understand EMF and keep employees and the public safe and informed.
- **MINIMIZE EMF EXPOSURE:** BPA routinely configures and operates its power lines to help reduce EMF levels and exposures.
- **EXAMINE THE ISSUE:** BPA weighs EMF exposure as one of many important factors in deciding where to route new transmission lines.

## Research

We all need to understand EMF, not only because they surround transmission lines, but because they also surround all home electrical wiring and appliances, from lights to computers. A few decades ago we knew little about them. At one time in the early 1990s, BPA received more than 20 phone calls a week from people living near power lines asking about the possible health effects of electric and magnetic fields.

With so many questions, we took precautions. We temporarily prohibited new uses of our rights-of-way underneath power lines in the early 1990s to avoid unnecessary exposure. BPA also advocated and sponsored some of the earliest and most comprehensive research examining EMF and human health. We wanted answers as much as anyone.

Today we know much more. The top public health organizations in the country and the world have objectively reviewed hundreds of studies from the last 30 years. In short, extensive research has found no causal link between EMF and health problems such as cancer. EMF cannot be ruled entirely safe because of weak evidence that exposure may pose a small leukemia risk to children. But no amount of science can guarantee that anything is entirely safe or eliminate any chance of risk. For instance, like EMF, coffee is classified as a “possible carcinogen,” because even after extensive research some small uncertainty about its possible effects remains. We support continued research to reduce any remaining uncertainty about EMF. We now allow shared use of land under high-voltage power lines as parks, trails and playing fields frequented by Northwest families.

EMF are all around us. Household appliances such as vacuum cleaners, hair dryers and microwave ovens can produce stronger nearby magnetic fields than you would experience near major transmission lines. Magnetic fields diminish rapidly with distance. The magnetic field on the edge of a power line right-of-way drops by more than 90 percent compared to what a lineman experiences working on a line.

## Minimizing exposure

As long as any uncertainty remains, some people will remain concerned. We understand that, which is why we design new power lines wherever practicable to help further minimize EMF exposure:

- **DELTA CONFIGURATION:** BPA was one of the first utilities to arrange the three wires of a transmission line circuit in a triangular, or delta, shape with one wire higher than the others. EMF levels decline more rapidly with this design.
- **PHASE OPTIMIZATION:** Where two transmission lines use the same series of towers, BPA considers arranging the cables that make up each line in a way that limits or reduces magnetic fields through techniques known as field cancellation.

Although research reviews concluded that authorities need not regulate EMF and there are no national EMF standards, some public health organizations have adopted guidelines for limiting EMF exposure. BPA designs transmission lines so any fields fall well below those limits at the edge of the power line corridors.

# Examining the issue

BPA views EMF as one of many important factors in deciding where and how to locate and design new power lines. We have an obligation to fully consider the science and public concern. We take this obligation seriously.

BPA will conduct an objective and thorough assessment of EMF exposure for all potential power line routes and will share the results in detail. We will also hire independent specialists to examine the latest research on EMF and will also provide that for public review and comment. We want to fully understand the issues surrounding any new transmission line and we want the public to do the same. We cannot eliminate the EMF that accompanies the electricity we all use every day. But we can and we will research, reduce and fully evaluate them in the interest of safety.

Further detail about BPA's work on EMF and other background and research can be found at [WWW.BPA.GOV/GO/EMF](http://WWW.BPA.GOV/GO/EMF)

[www.bpa.gov](http://www.bpa.gov)