The problem of the destructive impact of a high-altitude electromagnetic pulse at nuclear explosion (HEMP or EMP) on electrical and electronic equipment has been known for many decades, and yet, as Professor George H. Baker correctly points out, “the current state of EMP protection is random, disoriented, and uncoordinated.” But why? Aren’t there dozens of scientific reports on this topic? Aren’t there standards? Isn’t there protection equipment available on the market? No, all of this exists, but critical civil infrastructure around the world has remained unprotected for all these decades. And there must be some reason for this. According to the author, there are two main reasons for this. First, there’s a lot of uncertainty and vagueness around the issue of EMP protection. Secondly, these are recommendations to use military protective equipment already available on the market, in the civilian sector, given out for many years by politicians and experts, who don’t have specific practical experience with civilian infrastructure. Readers will learn about all of this, as well as the author's own developments specifically designed to protect civilian infrastructure, from this book.

Dr. Vladimir Gurevich worked for 25 years with Israel Electric Corporation. He personally designed many electrical and electronic devices and systems, including EMP protection. Now he is the founder and CEO of a private company “Industrial EMP Solutions”. Dr. V. Gurevich has written 17 books, 121 patents and 251 scientific and technical articles.

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Issues of EMP Protection

Vladimir Gurevich

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Issues of EMP Protection

Practical Implementation for Critical Civilian Facilities

LAP LAMBERT Academic Publishing

"The current state of EMP protection is random, disoriented and uncoordinated"

George H. Baker
Dr., Professor

ANNOTATION

V. Gurevich

Issues of EMP Protection. Practical Implementation for Critical Civilian Facilities - Lambert Academic Publishing, 2026, 304 p.

For decades, the state of EMP protection was *"random, disoriented, and uncoordinated"*. In this book, the author tried to analyze the reasons for such state of affairs and give practical recommendations on how to fix this situation.
The book has the following structure: first, the author presents the reader with a general overview of the problem and possible ways to solve it, then provides an in-depth technical analysis of the most important issues, and finally (in the Annex) gives a description of HEMP protection measures developed by the author specifically for civilian infrastructure, taking into account the problems discussed earlier.

PREFACE

The problem of the destructive impact of a high-altitude electromagnetic pulse at nuclear explosion (HEMP) on electrical and electronic equipment became known immediately after the first test nuclear explosion in 1945. Almost 60 years ago, this topic was declassified, after which it became the subject of research by dozens of government organizations and private companies. The market is filled with numerous and diverse HEMP protection solutions, produced to suit any taste by dozens of companies. In other words, everything in this field is going well, even just great! So then, why did the author choose a quote from Professor George H. Baker as the epigraph for this book:

"The current state of EMP protection is random, disoriented and uncoordinated"

It turns out that over the past decades, instead of developing a clear and understandable protection strategy, instead of creating standards suitable for practical use in the civilian sector, instead of building a market for accessible and easy-to-use protective tools for the civilian sector, a huge, vague information cloud has formed, which includes:

- a complete lack of any clear and understandable strategy for protecting civilian critical infrastructure, and the sets of recommendations issued for energy systems under the guise of such a strategy are either extremely vague and nonspecific, or contain advice that is completely impractical to use;
- the mistaken claim by politicians that all technologies and protective measures against HEMP have long been developed and widely used in

military equipment, so there's no need to “invent” anything, and we just need to take these protective measures and use them in the civilian sector;
- problematic requirements in standards;
- distorted and unreliable information about the resilience of electronics to HEMP (in particular, microprocessor-based protection relays for energy systems), produced by some companies;
- often incorrect information about the suitability of certain components for HEMP protection;
- unreliable information from some manufacturers of protective equipment about their products meeting standard requirements;
- advertising campaigns launched by some large research centers about their new protective components, which supposedly could revolutionize equipment protection against HEMP, but in reality, do not outperform existing components;
- claims from many government agencies about the need for additional research, demanding extra millions of dollars from the state budget to carry out these studies;
- a whole sea of popular brochures and books for impressionable housewives on the topic of HEMP, describing the horrors that await the world;
- panties and caps available on the market made of electrically conductive fabric, protecting important organs from HEMP exposure.

And so on, and the like… All this informational noise in no way helps to solve the problem, but only creates additional obstacles.

So, it turns out that Professor George H. Baker is absolutely right: *the current state of EMP protection is random, disoriented, and uncoordinated.*
The result of such a situation is a complete lack of any minimal progress in

the world when it comes to protecting critical civilian infrastructure from HEMP after 60 years of "studying" and "researching" the problem. The technical staff of power systems just doesn't understand where they should start, what exactly they should do, and how they can use the HEMP protection tools available on the market in their equipment. And also: where to get huge amounts of money to buy military-grade protection gear (because there really aren't any other options suitable for HEMP protection). Numerous articles and books by the author have been dedicated to analyzing the situation and ways to solve the problem.

In this book, the author tried to give the reader:

- a complete general "overview" of the current complex and confusing situation, accompanied by statements and quotes from well-known experts and politicians;
- a new perspective on the problem and the basis for a new strategy;
- a detailed analysis of standards and products available on the market, testing methods used by manufacturers, confirming the existence of serious issues and the need to switch to a new strategy;
- and finally, a description of the technical means of protecting equipment against HEMP, developed by the author, based on the proposed strategy and analysis, and specifically designed for the civilian sector. The author's many years of practical experience in the electric power industry have made it possible to develop protective devices and systems suitable for practical use at substations and power plants.

The author would appreciate any feedback on this book, which can be sent to the following email:

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