

**ABOUT UNSOLVED 50-YEAR-
OLD PROBLEM:
WHO IS TO BLAME AND WHAT
NEEDS TO BE DONE?**

ANSWER INSIDE

Two-part book:

- I – for politicians, executives, managers
- II – for scientists and engineers

**NEW PROTECTION STRATEGY, METHODS AND
PROTECTIVE MEANS FOR CIVILIAN CRITICAL
INFRASTRUCTURE ARE PRESENTED**

The book was written by Israel's leading specialist in the field of protecting civilian critical electrical equipment against the effects of an electromagnetic pulse from a high-altitude nuclear explosion (HEMP or EMP).

Have you ever wondered why, with so many scientific reports and a large market for EMP protective means, critical civilian infrastructure has been left unprotected for more than 50 years?

Why are there no problems with the protection of military equipment against EMP, but there are problems with the protection of civilian equipment?

This book can be an important tool to take a fresh look at the unsolved fifty-years-old problem and successfully solve it.

what's inside:

- * EMP protection: the problems
- * EMP protection: bad trends
- * Dangerous vector of the “technological advantage”
- * EMP protection: military vs. civilian
- * Problems with testing civilian equipment
- * Problems with standards
- * EMP and cyber protection: what do they have in common?
- * Costly fakes from leading companies
- * New protection strategy and method specifically for civilian infrastructure
- * New EMP protective means

To buy the book search online: Gurevich V. EMP Protection of Critical Civilian Infrastructure: Problems and Solutions.
- Lambert Academic Publishing, 2024. ISBN 978-620-2-78735-2

Links to book: [Amazon](#); [More Books](#), etc.

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Periculum in mora!

HEMP Protection System for High Power Transformer



Geomagnetically induced current (GIC) arising from a high-altitude nuclear explosion (component E3 of the HEMP). This is a quasi-direct current, ranging in size from several tens to several hundred Amperes, which leads to saturation of the transformer core, a sharp decrease in its impedance and unacceptable overheating. In addition, there are a bulk of harmonics in the network. This system is designed to protect power transformers with grounded neutral of all power and voltage classes.

Tester for Checking the Operability of the HEMP Protection System of Power Transformers



In order to be sure of the serviceability of the protection system of the power transformer, it is necessary to systematically (once a year or once every two years) check it. For simple and convenient performance of such a test, special testers are designed that are connected via a small connector to the sensor of the transformer protection system.

Set of Special HEMP Filters Intended for Control Cabinets with Digital Relay Protection



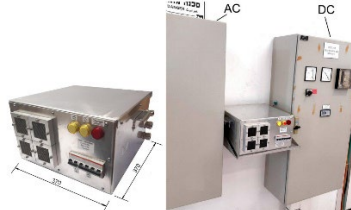
Military electromagnetic filters designed to protect against HEMP are not suitable for use in civilian cabinets with microprocessor-based relay protection for a number of reasons. Therefore, new filters have been developed specifically for civilian critical infrastructure. These filters intended for installation in current and voltage circuits of microprocessor-based protection relays, in control circuits, in auxiliary power supply circuit, and also in grounding circuit (without violating safety requirements).

Backup Power Supply for DC Main Simulation



After exposure to HEMP, there is a need to check the serviceability of electronic equipment before actuating. To do this, we need a power supply that simulates a conventional auxiliary DC power system. This compact backup power supply protected from HEMP and is capable of supply up to 25A at 237V. Among other things, such a power supply is very convenient to use when checking, repairing and adjusting the equipment of stations and substations. Such a source is needed in every laboratory, in every substation.

Automatic HEMP Protected Reserve Charger for Auxiliary DC Power Supply System



A battery charger for DC auxiliary power supply system of substations and power plants is the most important type of equipment, without which any electronic equipment cannot function normally. To increase the survivability of the DC auxiliary power supply system, an automatic reserve charger protected against HEMP is designed, which starts working when the main standard charger fails and the voltage in this DC network drops below a predetermined threshold. For example, when the voltage drops below 227 V in a DC network with a normal voltage of 237 V.

HEMP Protection Module for Telecommunications



Telecommunications are widely used in relay protection systems and other important systems at substations, power plants, and water supply systems. As a rule, it is based on 10 Base-T and 10/100 Base-TX Ethernet (IEEE 802.2). Complex equipment that provides transmission and premium data in such a system contains microprocessors and other electronic chips operating at very low voltages, that is, it is very sensitive to electrical influences. This is the most vulnerable part of the infrastructure, which requires special high-effective HEMP protection. Moreover, such protection should not affect the work of telecommunication. This is just such a module.

Special Means for Backup High Power Diesel Generator Protection



The problem of diesel generator (DG) protection from HEMP becomes particularly relevant. First of all, DGs act as backup power sources and are designed to power up critical loads in emergency situations. Consequently, they need to be ready for use even after the HEMP. Secondly, DGs are often stored outdoors (outside of the buildings that can partially mitigate the HEMP impact). Medium-capacity industrial DGs (from dozens to hundreds of kilowatts) are large and heavy devices that are intended for transportation. As a rule, they are confined in a casing with many sensors and microprocessor-based controllers that control the DG's operation

And much more...