

To Chairman of Protective Relay Conference at Texas A&M University

Prof. B. Don Russell
bdrussell@tamu.edu

Dear Prof. Russell,

In your Protective Relay Conference, Texas A&M, 2019 was introduced Report named "Control House and Relay Design Considerations for EMP Resiliency" described parameters of nuclear electromagnetic pulse – NEMP (in particular electric field strength for E1 component - 50 kV/m) and test results for Intelligent Electronic Devices (IED) – digital protective relays.

According to the Report: *"In order to perform these tests, a large Faraday Cage (80'L x 40'W x 20'H in size) was used to contain E1 pulse"*. On figures, named "Test Chamber with Test Generator and Control House" and "Direct EMP Signal Radiation" presented test equipment (see attachment, please).

I should note, that the equipment described in the Report is not intended and not capable in principle for creating an electric field of such intensity (50 kV/m)! For testing E1 resilience, completely different equipment is used!

Author's assertion that using the equipment shown in the Report allows to create field strength of 50 kV/m, is the fake! And author's assertion that *"IEDs have Passed the Radiated 50 kV/m EMP test with NO HW failures and NO Lockup"* – is the fake!

I don't understand for what purpose authors of the Report trying to deceive specialists in the field of relay protection.

I ask you to publish my review on your Conferences website.

Regards,

Dr. Vladimir Gurevich
Honorable Professor
vladimir.gurevich@gmx.net

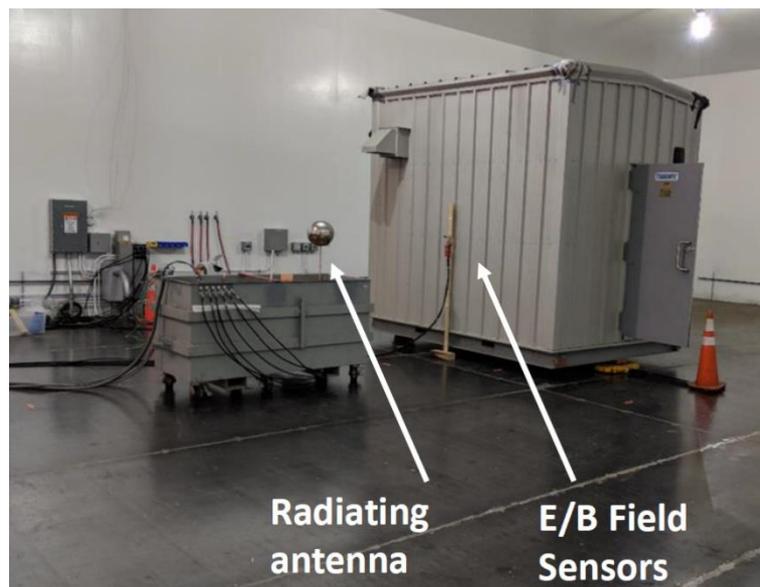
Attachment ↓

Control House and Relay Design Considerations for EMP Resiliency

Roy Mao, Harsh Vardhan – GE Grid Solutions
Aaron Ingham, Barry Howe, Sarah Pink – Trachte
Curtis Birnbach – Advanced Fusion Systems LLC
Mark Adamiak – Adamiak Consulting LLC



IEDs have Passed the Radiated 50kV/m EMP Test
with NO HW failures and NO Lockup



Organizations produced a fake news:

General Electric:

Director Advanced Technologies Mr. Mark Adamiak:

gemultilin@ge.com; training.multilin@ge.com; feedback.team@ge.com;

Consulting Engineer Mr. Roy Mao

roy.mao@ge.com

Trachte:

Aaron Ingham aingham@trachteusa.com;

Barry Howe bhowe@trachteusa.com

Advanced Fusion Systems LLC:

Curtis Birnbach cbirnbach@advfusion.com ; hudres@optonline.net

Adamiak Consulting LLC

Mark Adamiak adamiakconsulting@aol.com

**For ethical reasons, I cannot publish the here answers,
that I received in response to my appeal, but I can cite my
answers (see below)**

August 01, 2019

Mr. Mao Roy,

Thank you for your replay.

I have not discussed about "*GE Protection Relay and Control products have been tested and passed for 50kV/m E1 High-Altitude Electromagnetic Pulse following specification from the MIL-STD-461G/RS105 standard...*". May be... I have not any information about such test results, used method and test equipment.

I wrote about your specific paper with photos of small high frequency antenna and your assertion that with such equipment you have electric field strength 50 kV/m. This is a fake and I have not any desire to talk about this because I well know equipment that can be used for testing electronic devices resilience to HEMP at electric field strength 50 kV/m. And this is a completely different equipment than what is described in your article.

Can you confirm that described in your article equipment with small antenna can produce electric field strength 50 kV/m? If not, what should we talk about?

Sincerely,

Vladimir Gurevich

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August 02, 2019

Mr. Mao Roy,

Thank you for your addition replay, from which I have understand that the data approved to public release and presented in your (with colleagues) paper, do not really reflect reality, because the real tests method and test equipment are classified.

In essence, I can only answer that:

1. My conclusion that the data published in your (with colleagues) paper that available to thousands of specialists do not correspond to reality - is completely true.
2. For your information: the data of HEMP parameters, test methods and test equipment are not classified for almost 50 years during which 22 unclassified standards of International Electrotechnical Commission and unclassified military standards MIL-STD-461, MIL-STD-188-125 and other were published.
3. For your information: testing of a stand-alone relay for resilience to radiated electromagnetic interferences is not relevant, since in reality, the relay inputs/outputs are connected to long cables that act as antennas that absorb electromagnetic energy and supply it directly to internal electronic circuits. In this real situation, the stability of a separate relay without external connected cables to radiated electromagnetic interferences on a test

bench has no value. Therefore, publication of such unjustifiably optimistic information about the stability of the protection relay for thousands of specialists who cannot realistically assess the accuracy of this information is unacceptable in my opinion, because it leads to the erroneous conclusion that nothing needs to be done, everything is good and all the protective relays are ready to work at the HEMP impact.

Mr. Curtis Birnbach,

The meaning of my letter was that the photos with inscriptions published in your (with colleagues) paper are in fact irrelevant to reality. The equipment (in particular a small signal antennas) presented on your photos is unsuitable for produce electric field strength of 50 kV/m as follows from the captions to these photos and therefore I wrote that this is a deception of specialists.

In response, I received from you an actual admission of my rightness, accompanied by sharp attacks on me and veiled threats. I will leave all this on your conscience...

I can answer on your claim regarding of Israel Electric Corp., that I did not indicate my affiliation with the Israel Electric Corp. in my writing to you. The fact that you found my affiliation to the Israel Electric Corp. on the Internet does not forbid me to express my personal opinion as an expert in the field of HEMP. In addition, if you do not like my E-mail address, then I can go to another E-mail address. As to the substance of the question, I have already answered essentially to Mr. Mao Roy (see above).

In my opinion, you and your colleagues would have to admit your mistakes and apologize instead of threatening me.

Sincerely,
Dr. Vladimir Gurevich

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August 09, 2019

Mr. C. Birnbach,

First, I ask you to stop using my corporative Email address for our private discuss.

Second, I can to agree with you regarding of standards. I was a member of some working group with IEC and I well know the problem of standardization from the inside. However, all your reasoning about standards (correct in essence) is of a general theoretical nature and has nothing to do with the problem in your paper (report).

For correct introduction of the test method and test results in your paper (report) there is no need to invoke a classified standard. Dozens of unclassified standards are more than enough to correctly describe your (with colleagues) experiment and test results. That's why I wrote that your references to the secrecy of the topic (EMP) are not relevant and that can't be an excuse for the incorrect data presented in your work.

Moreover, I no longer touch on the much deeper problems associated with the testing of civilian electronic equipment (as digital protective relays) on real military test stands designed for real-world tests of resilience to EMP. These problems have not yet been solved and I am sure that they have not been solved in your trials. Therefore, overly optimistic reports on the sustainability of such equipment to EMP are very dangerous, as they lead experts to the conclusion that everything is very good and nothing should be done to protect such equipment. As a rule, some companies order such reports to show that their products are resistant to EMP (without any real reason for such conclusion). Such publications cause a sharp reaction among specialists who are well versed in the topic.

Dr. Vladimir Gurevich