



पावर ग्रिड कोर्पोरेशन ऑफ इंडिया लिमिटेड
Power Grid Corporation of India Limited
सूचना का अधिकार अभिनियम 2005 के अंतर्गत केन्द्रीय लोक सूचना अधिकारी
Central Public Information Officer under the RTI Act, 2005
केन्द्रीय कार्यालय, 'सादामिनी', प्लॉट नं.2, सेक्टर-29, गुडगांव, हरियाणा-122007
Corporate Centre, 'Saudamini', Plot No. 2, Sector-29, Gurgaon, Haryana-122007



PGCIL/R/2019/50217
Dated : 28 May, 2019

Sathish Kumar S,
91-C, KuttaiKadu Thottam,, Elachipalayam, Karumathampatti(po),, Coimbatore, TamilNadu.,
Pin:641659,

Sub: Information under Right to Information Act, 2005.

Sir/Madam,

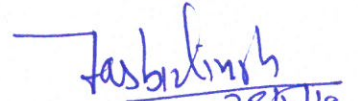
This has reference to your RTI request dated 23 May, 2019 for providing information under RTI Act, 2005.

The desired information is attached at Annexure-I.

First Appeal, if any, against the reply of CPIO may be made to the first appellate Authority within 30 days of the receipt of the reply of CPIO. Details of Appellate Authority at Corporate Centre, Gurgaon, under RTI Act, 2005 is as below:

Shri Sanjeev Singh,
Executive Director (CMG) & Appellate Authority
Corporate Centre, Power Grid Corporation of India Limited
"Saudamini", Plot No. 2, Sector-29, Gurgaon – 122007, Haryana.
Email ID: sanjeev@powergridindia.com
Phone No. 0124-2571962

Thanking you,

भवदीय,

(जसबीर सिंह) 28/5/19

वरिष्ठ महाप्रबंधक (के. आ.) एवं के.लो.सू.अधिकारी

Email ID: cpio.cc@powergrid.co.in

Reply to RTI Query of Sh Sathish Kumar S is as given below:

Query:

In IEER report for AC system strengthening at Pugalur End, prepared by PGCIL on August 2016, in page no:-53, You have mentioned that Magnetic Field Exposure Limit prescribed by ICNIRP is 100 uT MicroTesla.

The above exposure limit mentioned by you is Short-Term Effects prescribed by ICNIRP (WHO).

The Long-Term Exposure Limit for Magnetic field prescribed by ICNIRP is 0.3-0.4 uT MicroTesla.

Why PGCIL didnt considered about The Long-Term Exposure Limit for Magnetic field prescribed by ICNIRP, in your IEER Report.

Please click the below link for,
Magnetic Fields Short-Term and Long-Term Exposure Limit mentioned by WHO (ICNIRP):-
<https://www.who.int/peh-emf/publications/facts/fs322/en/>

I request you to kindly provide the above Information sought in English Language, as I am here from the State of Tamil Nadu. And I also request you to kindly provide me with the certified copy of the above details.

Reply:

The International Commission on Non-Ionizing Radiation Protection (ICNIRP) prescribes limit for EMF exposures level under two categories viz. General Public and Occupational. As per ICNIRP guidelines, exposure limit of electric and magnetic field for general public is 5 kV/m and 200 uT and for occupational exposure is 10 kV/m and 1000 uT respectively.

There is no specific limit as such for long term exposure of magnetic field prescribed by ICNIRP. However, while prescribing exposure limits ICNIRP has considered effects of both short term and long term exposure of EMF as illustrated in their guidelines issued in 2010. Further, there have been many studies on effects of EMF exposure by organization of international level such as ICNIRP, WHO, IARC etc. but none of these studies have found any significant evidence of association between magnetic field and possible health impacts.

It may be noted that the WHO report referred in the RTI has clearly stated following with respect to potential long term effects of magnetic field exposure:

Quote

"A number of other adverse health effects have been studied for possible association with ELF magnetic field exposure. These include other childhood cancers, cancers in adults, depression, suicide, cardiovascular disorders, reproductive dysfunction, developmental disorders, immunological modifications, neurobehavioral effects and neurodegenerative disease. The WHO task Group concluded that scientific evidence supporting an association between ELF magnetic field exposure and all these health effects in much weaker than for childhood leukemia. In some

instances (i.e. for cardiovascular disease or breast cancer) the evidence suggests that these fields do not cause them.”

Unquote

POWERGRID, being a responsible corporate citizen, is following the approved international standards and design, which are absolutely safe. POWERGRID has also carried out studies on the safety of EHV lines in reference to EMF affect with the help of PTI, USA and CPRI, Bangalore. The studies inferred that the POWERGRID's designs are safe and follow the required international standards (refer **Annex-7** in the said IEER).

Since many links and studies have been mentioned in your query, we would like to enlighten with more relevant information that came out during many such studies. The details of such studies along with major findings are delineated below for ready reference:

Name of Study/ Report	Major Findings
“Environmental, Health and Safety Guidelines for Electric Power Transmission and Distribution” issued in April’2007 by World Bank	<i>Although there is public and scientific concern over the potential health effects with exposure to EMF (not only high voltage power lines and substations, but also from everyday household uses of electricity), there is no empirical data demonstrating adverse health effects from exposure to typical EMF levels from power transmission lines and equipment.</i>
Electromagnetic fields and public health: extremely low frequency fields and cancer issued by WHO as Fact sheet N 263, Oct.’2001	<ul style="list-style-type: none"> ➤ <i>There is no consistent evidence that exposure to ELF fields experienced in our living environment causes direct damage to biological molecules, including DNA. Since it seems unlikely that ELF fields could initiate cancer, a large number of investigations have been conducted to determine if ELF exposure can influence cancer promotion or co-promotion. Results from animal studies conducted so far suggest that ELF fields do not initiate or promote cancer.</i> ➤ <i>While the classification of ELF magnetic fields as possibly carcinogenic to humans has been made, it remains possible that there are other explanations for the observed association between exposure to ELF magnetic fields and childhood leukaemia.</i>
Electric & Magnetic Fields by Public Service Commission of Wisconsin	<ul style="list-style-type: none"> ➤ <i>In the cases of electric and magnetic fields, the studies have found only weak association, or no association, between exposure and the incidence of some cancers. In addition, study outcomes are not consistent. A large number of studies show no association between transmission lines and cancers.</i> ➤ <i>Overall, most scientists are convinced that the evidence that power line fields cause or contribute to cancer is weak to nonexistent. The biological studies conducted to-date has not been able to establish a cause-and-effect relationship</i>

	<p>between exposure to magnetic fields and human disease. Scientists have been unable to identify any plausible biological mechanism by which EMF exposure might cause human disease. There is a general consensus within the scientific community that exposure to EMF is not responsible for human disease.</p>
<p>ICNIRP Guidelines for Limiting Exposure to Time varying Electric and Magnetic Fields (1 Hz – 100 kHz)</p> <p>Published in: Health Physics 99(6):818-836; 2010</p>	<p>a causal relationship between magnetic fields and childhood leukemia has not been established nor have any other long term effects been established. The absence of established causality means that this effect cannot be addressed in the basic restrictions.</p>
<p>"Health Effects from exposure to power line frequency Electric & magnetic Field", report by National Institute of Environmental health sciences/National institute of health, USA, NIHS Publication No 99-4493'1999</p>	<p>The scientific evidence suggesting that ELF-EMF exposures pose any health risk is weak.</p> <p>The mechanistic studies and the animal toxicology literature fail to demonstrate any consistent pattern across studies although sporadic findings of biological effects (including increased cancers in animals) have been reported. No indication of increased leukemias in experimental animals has been observed.</p> <p>Epidemiological studies have serious limitations in their ability to demonstrate a cause and effect relationship whereas laboratory studies, by design, can clearly show that cause and effect are possible. Virtually all of the laboratory evidence in animals and humans and most of the mechanistic work done in cells fail to support a causal relationship between exposure to ELF-EMF at environmental levels and changes in biological function or disease status.</p>
<p>Study on the Extremely Low Frequency (ELF) Electromagnetic Field (EMF) emission from overhead High Voltage Transmission Lines by Shamesh Raj Parthasarathy, Roha Tukimin, Wan Saffiey Wan Abdullah, Zulkifli Yusof, Mohd Azizi bin Mohd Jali</p>	<p>Most of the researches and studies performed, established that no relationship exists between chronic diseases and the electromagnetic field emitted from the transmission lines.</p> <p>A study conducted by National Institute of Environmental Health Sciences (NIEHS) stated that through experiments in laboratories, the probability of the exposure to the electromagnetic field (EMF) from transmission lines causing health hazard is currently small.</p> <p>An experiment performed in Canada showed the uncertainty of having a causal relationship between the magnetic fields developed by the transmission lines as well as that around the homes and the risk of having leukemia.</p> <p>Overall, most scientists are convinced that the evidence of ELF EMF emanated from the transmission</p>

line to cause or contribute to chronic diseases or health hazards is weak to nonexistent.

The overall results indicates that the electric and magnetic field strengths were very much lower than the maximum permissible exposure limit recommended by International Committee on Non-ionizing Radiation (ICNIRP) and WHO, hence will not lead to any significant exposure received by members of the public.

With the increase in distance, the magnetic and electric field strength is reduced. At most cases in this study, the field strength value decreased proportionally with the increase in distance.

Above all we would also like to inform that we are exposed to much higher EMF during our daily routine. Some of examples are provided below*:

	Magnetic field 6 inches from appliance (mG)	Magnetic field 2 feet away (mG)
Electric Shaver	100	-
Vacuum Cleaner	300	10
Dishwasher	20	4
Microwave Oven	200	10
Hair Dryer	300	-
Computers	14	2
Fluorescent Lights	40	2
Copy Machines	90	7
Garbage disposals	80	2

* http://bssetransmissionline.com/files/7313/6180/8945/EMF_Factsheet.pdf