

12 January 2023

Director General  
Department of Employment and Labour  
Private Bag X117  
PRETORIA  
0001

Attention: Warren Mallon

**Comments: Draft Physical Agents Regulations 2022**

Enoch Godongwana Minister of Finance 23 February 2022 in the budget speech [Microsoft Word - 2022 Budget Speech\\_FINAL \(treasury.gov.za\)](#) said “Madam Speaker, we have had more than a decade of economic stagnation. Only through sustained economic growth can South Africa create enough jobs to reduce poverty and inequality; enabling us to reach our goal of a better life for all. The Economic Reconstruction and Recovery Programme remains essential to growth”. The budget speech serves as the foundation document in approach towards economic recovery where all state departments need to align with the principals of the Economic Reconstruction and Recovery Programme.

Before any regulations are promulgated it is a 2015 Government of South Africa requirement that a Socio-Economic Impact Assessment System (SEIAS) be conducted. This requirement is detailed on the South African Government website [Home \(dpme.gov.za\)](#). This website says the following:

*“In South Africa, Cabinet decided on the need for a consistent assessment of the socio-economic impact of policy initiatives, legislation and regulations in February 2007. The approval followed a study commissioned by the Presidency and the National Treasury in response to concerns about the failure in some cases to understand the full costs of regulations and especially the impact on the economy. To implement the Cabinet decision, from 1 October 2015 Cabinet Memoranda seeking approval for draft policies, Bills or regulations must include an impact assessment that has been signed off by the SEIAS Unit”.*

The SEIAS remains on the agenda of the government, where the [Presidency Briefing on Socio-Economic Impact Assessment System \(SEIAS\) | PMG](#) dated 28 September 2022 says:

*“The current administration, under the leadership of President Ramaphosa, has emphasised fast-tracking the implementation of regulations. The current administration's emphasis was on:*

- *The removal of policy impediments and improving the ease of doing business.*
- *Public policies being evidence-based and effectively coordinated”.*

SaioSh request a copy of the SEIAS (assessment) including rand cost of implementation, economic impact on South Africa and risk justification. This is requested to promote the voluntary disclosure of information and to facilitate greater access to this information. Section 15 of PAIA requires all public bodies to publish a list, known as the ‘Section 15 notice’ or ‘voluntary disclosure notice’, containing all the information that pertains to that body and this is available to anyone automatically.

- Moving for Cold Stress from cold 6 degrees centigrade to 10 degrees centigrade;
- Changing from the illuminations levels provided in the schedule to the Environmental Regulations for Workplaces to the SANS 10114 values;
- Treating safety based illumination levels as a hazard requiring medical surveillance;
- Regulating all hazards within non-ionising radiation, where the health impacts of non-ionising radiation need to be justified in relation to the cost of implementing these regulations. Basis for this justification is that the Department of Employment and Labour under the COIDA Schedule 3 only recognise “diseases caused by

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ultraviolet radiation” as being entitled to compensation, where the underlying assumption (burden of proof) is that there is an established exposure and disease. In contrast, where a disease occurs in the workplace is not listed in Schedule 3 but it can be proven that it was acquired in the workplace, liability must be accepted. However, the burden of proof is on the employer to show that the disease is work related as it is not assumed that there is an exposure – disease relationship. Given the uncertainty of aetiology related to other diseases caused by non-ionising radiation how can legislation (placing significant burden on the employer) be promulgated for risks that are not recognised by the Compensation Commissioner within the same Department of Employment and Labour? To this end we request:

- Number of cases of disease that have been submitted and approved in terms of COIDA (for all time) being caused by non-ionising radiation (other than diseases caused by ultraviolet radiation)?

## 1.2 Diseases caused by physical agents

### 1.2.1. Hearing impairment caused by noise

### 1.2.2. Diseases caused by vibration (disorders of muscles, tendons, bones, joints, peripheral blood vessels or peripheral nerves)

### 1.2.3. Diseases caused by work in compressed air / abnormal atmospheric or water pressure

### 1.2.4. Diseases caused by ionizing radiations

### 1.2.5. Diseases caused by extreme temperatures (cold and hot)

### 1.2.6. Diseases caused by ultraviolet radiation

- Note that a regulation on Ultraviolet Radiation is supported, where assessment and medical surveillance is needed, but not monitoring. Further on electromagnetic fields the Because of this it does not meet the scope within the definition of “reasonably practicable” and therefore is outside of the scope of the OHS Act and risks being declared ultra vires:

**Reasonably practicable principle:** Means “practicable” having regard to:

- The severity and scope of the hazard and risk concerned – *The scientific method looks to well established bodies to review all of the individual studies, literature reviews, meta-data analyses and similar to establish positions on a cause effect relationship. With EMF perhaps the most significant health effect of concern is cancer. The body to which the international scientific community looks to is the International Agency for Research on Cancer (IARC). IARC’s current position is that based on limited evidence of carcinogenicity in humans and in animals, RF EMF were classified as **possibly carcinogenic to humans** (Group 2B) [Effects of radiofrequency electromagnetic fields \(RF EMF\) on cancer in laboratory animal studies: A protocol for a systematic review - ScienceDirect](#). EU notes that “This Directive does not address suggested long-term effects of exposure to electromagnetic fields, since there is **currently no well-established scientific evidence of a causal relationship**” [Directive 2013/35/EU of the European Parliament and of the Council of 26 June 2013 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents \(electromagnetic fields\) \(20th individual Directive within the meaning of Article 16\(1\) of Directive 89/391/EEC\) and repealing Directive 2004/40/EC \(europa.eu\)](#). The EU directive is **non-binding** on EU member states. The Environmental Protection Agency say: “Scientific studies have not clearly shown whether exposure to EMF increases cancer risk. A few studies have connected EMF and health effects, but they have not been able to be repeated. This means that they are inconclusive. Scientists continue to conduct research on the issue” [Electric and Magnetic Fields from Power Lines | US EPA](#). The World Health Organisation have initiated a project to evaluate effects “the WHO established the [International EMF Project](#) in 1996 to assess the scientific evidence of possible health effects of EMF in the frequency*

range from 0 to 300 GHz [Non-ionizing Radiation, Part 1: Static and Extremely Low-frequency \(ELF\) Electric and Magnetic Fields \(who.int\)](#).

**Summary:** There is concern over the potential health effects of EMF, but as far as we are aware the international bodies that are usually looked to for guidance all indicate that the causal relationship between EMF and cancer / other health effects have not been established to the threshold where they can make establish definitive positions. Accordingly, the severity and scope of the hazard and risk of EMF is uncertain.

- The state of knowledge reasonably available concerning the hazard and risk and of any means of removing or mitigating that hazard or risk – **See comment above. Means of removing and mitigating EMF are known**
- The availability and suitability of means to remove or mitigate that hazard or risk - **Known**
- The cost of removing or mitigating that hazard or risk in relation to the benefits deriving there from – **The cost of monitoring equipment is high. The cost of engineering controls needed would be very high**

It is not “reasonably practicable” due to the severity of the hazard and scope being uncertain, the state of knowledge is uncertain, and the cost of control is high. It follows that it is definitively not “reasonably practicable” to regulate this hazard, where there is no lack of clarity on this. The South African judiciary has established case law in this area. In Pikitup (SOC) Limited v South African Municipal Workers' Union obo members and others [2014] (LAC), the Labour Appeal Court (LAC) – which is of similar judicial status to the Supreme Court of Appeal (SCA) – stated that sections 8 and 9 place a duty on the employer to act proactively to avoid any harm or injury to its employees and others. There is no standard as to what is reasonably practicable. Each case will have to be determined on its own facts and circumstances. As can be seen from the definition of reasonably practicable it involves weighing different considerations from risk evaluation, means of removing or avoiding the risk, resource availability and a cost-benefit analysis. The LAC further endorsed Lord Justice Asquith’s ruling in Edwards v National Coal Board that: "Reasonably practicable as traditionally interpreted, is a narrower term than 'physically possible' and implies that a computation must be made in which the quantum of risk is placed in one scale and the sacrifice, whether in money, time or trouble involved in the measure necessary to avert the risk is placed in the other; and that, if it is shown that there is a gross disproportion between them, the risk being insignificant in relation to the sacrifice, the person upon who the duty is laid discharges the burden of proving that compliance was not reasonably practicable."

Closely aligned to the concept of reasonably practicable is the common law principle of *lex non cogit ad impossibilia* which was endorsed by a majority decision in the Constitutional Court in Van Zyl N.O v Road Accident Fund [2021] (CC). The law does not require anyone to do the impossible. The Constitutional is, *inter alia*, tasked with rejecting, amending or endorsing the common law since all common principles must align with the Constitution. The principle of *lex non cogit ad impossibilia* must therefore always prevail when legislation is drafted.

**Summary:** The non-ionising radiation regulation should be reduced in scope to ultraviolet radiation. This regulation should focus on controls related to UV and should not require monitoring.

- The reasons for using Occupational exposure limits for hand arm vibration / whole body vibration / electromagnetic fields based on guidance ACGIH TLV’s, where other regulations such as RHCA established a legal precedent by using OEL’s based on 2xTLV.
- The speed at which Artificial Intelligence (AI) is advancing cannot be overstated. The routine approach taken in these regulations of “*assess / monitor/ medical surveillance*” is outdated and not sufficiently flexible for regulations in the age of rapidly advancing occupational hygiene (the regulations as written entirely eliminate these methods as valid). The application of AI to datasets either from the same environments or similar work environments has allowed application in modelling to the work environment. This modelling is increasingly used as a valid proxy for workplace monitoring. Realising these cost efficiencies is critically important to an economy that is in crisis, where many employers of all sizes are failing or in the process of failing. Use of a traditional approach of “*assess / monitor/ medical surveillance*” will not result in reduced risk mitigation, but rather achieve similar risk mitigation that could be achieved with modelling / AI at substantially higher cost (the existing approach fails the reasonably practicable method). It is recommended that a revised modelling approach needs to be adopted, aligning to the principals of the Economic Reconstruction

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and Recovery Programme. This comment should trigger a review of the “*assess / monitor/ medical surveillance*” approach e.g.

[Modeling the relation of hand-arm vibration exposure and occupation characteristics using occupational health and safety administrative data \(usask.ca\)](#), [Researchers propose new framework to measure noise exposure | Canadian Occupational Safety \(thesafetymag.com\)](#),

[MONITORING AND MODELING OF INDOOR AIR POLLUTION - Indoor Pollutants - NCBI Bookshelf \(nih.gov\)](#),

[IJERPH | Free Full-Text | Use of Thermoregulatory Models to Evaluate Heat Stress in Industrial Environments \(mdpi.com\)](#),

[\(PDF\) Modeling and simulation of the electromagnetic field generated by electro-energetic facilities \(researchgate.net\)](#),

[Computer Simulation of High-Frequency Electromagnetic Fields | IntechOpen](#),

[Electromagnetic Field Simulation Software - SIMULIA by Dassault Systèmes® \(3ds.com\)](#).

EMF is well suited to modelling.

**SUMMARY:**

The fundamental issue with the PAR is that they are written aligned to leading international best practice guidelines. In contrast, regulations are by mandate written as minimum legal standards. This makes it not possible for even the leading corporates in South Africa to comply to these PAR. There is no possibility of South African SMME's achieving compliance. The principal of *Lex non cogit ad impossibilia*, meaning the law does expect a person to do the impossible, was recently endorsed in the constitutional court (Van Zyl vs RAF 2021) as acceptable and in line with the constitution. In a Saioosh 2021 webinar the former Chief Inspector Tibor Szana stressed the state of non-compliance of employers in South African industry. By making compliance practically impossible non-compliance will increase. Is this the intent of the Department of Employment and Labour?

Kind regards,

Neels Nortjé  
**Chief Executive Officer**