

SUBMISSION FOR THE PEO AGM (20th April 2024)

1. Title of Submission

Do No Harm to Humans and the Human Condition

2. Please briefly describe the issue, problem, risk or gap that this submission addresses.

The PEO's current Code of Ethics is either vague or uncommitted to public health, waste management, protection of the environment, and the role of its engineers in the research, design, development, sales, and distribution of weapon systems specifically directed at killing human beings and malevolent cyber technology. The proposed changes to the Code of Ethics will remove any ambiguity in terms of the above-mentioned issues.

Once the above issues are clarified, the nature of engineering work for which licensed engineers can use their engineering seal will be clearer. It's important to note that if the proposed modification of the Code of Ethics is approved, the responsible licensed engineer may still choose to sign-off on the project. However, the Code of Ethics will only prevent him/her from using his/her engineering seal, thereby ensuring a clear distinction between personal and professional responsibilities.

The ramifications of the proposed changes will nevertheless allow the licenced engineer to continue in his employment undeterred, but the absence of the engineering seal will distance the PEO from a project's outcomes and protect its reputation as a professional organization. It will demonstrate that the PEO does not condone harm to human life and the human condition.

3. Please summarize the action that you are requesting from Council and how it will address the issue, problem, risk or gap stated above.

Proposed Motion at the 2024 PEO AGM

Preamble

This submission proposes two changes to the Regulation 941 (or any subsequent but relevant amendments)

a) Article 77 Code of Ethics

Do No Harm to Humans and the Human Condition

PEO needs to implement its version of the Hippocratic Oath, which implies that engineering practitioners must anticipate the results of their actions to ensure that these actions do no harm to humans and the human condition. These actions could:

- i) result in the design, manufacture, and distribution of weapon systems that are specifically designed to kill humans
- ii) result in research into, marketing and sales of weapon systems that are designed to kill humans
- iii) result in the development of cyber warfare instruments that could incapacitate or destroy essential information technology infrastructure used by humans.
- iv) result in the malevolent or irresponsible use of Artificial Intelligence (AI).

v) result in meaningful damage to the natural environment or result in waste, including greenhouse gases, that could significantly damage the natural environment, whether this damage is irreversible or not.

b) Article 53

If the Code of Ethics is changed as proposed above, to include the "Do No Harm to Humans and the Human Condition" appendage, a subclause "d)" needs to be added to Article 53, which reads, It is of utmost importance that engineering practitioners understand the gravity of their role. If the Code of Ethics is changed as proposed above, including the "Do No Harm to Humans or the Human Condition" appendage, a subclause" d) " Must be added to Article 53. This subclause states that engineering practitioners are forbidden to apply their Engineering Seal to any document related to professional engineering under their purview if, in their considered opinion, the engineering entity described in or related to this document results in violating the "Do no Harm to Human or the Human condition" ethics bylaw, in any of the five ways described therein.

Motion

Proposed by: Prakash Bansod P. Eng.

Seconded by: Zeljko Sikic P. Eng.

"Be it resolved,

that the newly elected council strike a committee of registered PEO engineers to study the proposed changes to the Code of Ethics of the PEO about the proposed "Do no harm to humans and the human condition" clause as described in the preamble. This committee should report back within nine months. The Code of Ethics Committee should consist of at least 41% (50% is equity, 40% is aspirational, and 41% is a step in the right direction!) of professional women engineers. This committee should consider the following:

- 1) The justification for the required changes to the Code of Ethics in terms of current concerns of the defence-related industries and global conflict, global warming, mounting waste management issues, blatant local and international threats to information technology infrastructure, and malevolent or irresponsible use of AI.
- 2) Communicate with membership/practising engineers regarding the proposed changes to the Code of Ethics. This could be achieved by posting surveys on the PEO website. As an incentive, accept two hours of professional development towards the member's annual professional development requirements for a completed survey.
- 3) Seek legal advice on the ramifications of enforcing the proposed Code of Ethics bylaw."

4. Please cite and briefly summarize any research that supports the proposed action.

The National Society of Professional Engineers (USA) under the Auspices of "Engineering Creed" does encourage the use of a Hippocratic Oath.

The Code of Ethics, of several provincial associations were examined including Engineers and Geoscientists of British Columbia. Their Bylaws state, "Hold paramount the safety, health, and welfare of the public, including the protection of the environment and the promotion of health and safety in the workplace."

The above statement is typical of the written commitment to human safety, trust and welfare found in other Canadian Provincial professional engineering associations. These codes of ethics gloss over the real issues that threaten mankind and that occur in industry sectors where professional engineers are employed in large numbers.

The proposed changes to the Code of Ethics will likely make PEO's Code of Ethics different from those of other engineering associations in that they leave nothing to the imagination by specifying engineering employment sectors where humans and the human condition are being threatened.

The Manhattan Project, resulted in the creation of two atomic bombs that were eventually dropped on Japan in the August of 1945, killing 200,000 citizens. Based on Albert Einstein's letter to President Roosevelt, in late 1939, it is evident that the "science" behind the fissile nature of Uranium 235 and Plutonium 239 was well established. From this point the major work in creating the weapons was mostly engineering endeavours by an army of engineers at Los Alamos and elsewhere. These efforts were directed toward firstly producing enough Uranium and Plutonium, and secondly designing two bombs. One based on Uranium and the other on Plutonium. The engineering design of these two bombs were fundamentally different and could only have been accomplished by highly skilled and experienced professional engineers. According to Malcolm Gladwell's book, "Bomber Mafia," which researched the post World - War II, documents released under the Freedom of Information Act, Washington had enough information prior to Hiroshima and Nagasaki bombings, to conclude that if they had withheld the bombings by a mere two months, Japan was ready to surrender, and that needless massacre could have been avoided. The Manhattan Project is a classic example in which professional engineers were duped into doing the bidding of scientist and resource rich politicians and bureaucrats, with no ethical compass to guide them.

5. As applicable please describe how the proposed action will contribute to serving and protecting the public interest as it pertains to the regulation of professional engineering and the engineering profession.

The proposed code of ethics is not just a set of rules but a powerful tool that will equip future engineers with a clear roadmap to navigate the complex world of engineering. This code will not only serve the public interest but also address the pressing global issues of our time, including global conflict, climate change, cyber security, and the responsible use of AI.

The comparative small size of Canada's arms and munitions industry (less than \$3 billion in exports) may not justify the concerns addressed in items, i) and ii) in section 3 above (preamble.) Nevertheless, these items will likely discourage the growth of Ontario's arms and munitions industry. This will allow Canada to play a significant role in peace negotiations in the future since it is unlikely to be a supplier of arms and ammunition to either side of a conflict. This issue prevents many countries with significantly larger economies from participating credibly in peace negotiations. Peace negotiations expose participating negotiating countries, potentially Canada, to job opportunities in infrastructure rebuilding, which are more likely to be in civil, mechanical and electrical engineering.

6. Please identify any legal considerations (e.g., the need for changes to the statute, regulation, by-laws etc.) that may affect Council's ability to implement the proposed action.

The proposed changes to the code of ethics bylaw may cause conflict at an engineer's employment if an engineer refuses to work on a project not aligned with his engineering code of ethics. An employer may consider dismissal with cause. However, the law will rule in favour of the engineer since he/she is protected By Ontario's Engineering Act, which includes the Code of Ethics. This is all the more reason why the Code of Ethics must be expanded as proposed to give clarity in regulation to a presiding judge and clear direction to the Professional Engineer.

7. Please identify any considerations that are relevant to the timing (or urgency) of the proposed action.

Changes to the code of ethics that address a vastly changed working environment for engineers are long overdue. The proposed changes to the code of ethics urgently need to address the rise in global conflict, global warming and climate change, waste management, cyber threats and the malevolent use of AI.

The underlying spirit of these proposed amendments lays much but indeed not all responsibility for the development of environmentally detrimental products and services, the rise of the arms and munitions industry, cyber espionage, including its nefarious attempts to control the course of democracy, and the illegal use of AI, squarely on the engineers responsible. We can no longer plead innocence under the guise of "just doing my job."

It is crucial that engineers are empowered to say 'No!' to projects that go against their ethical principles. Ontario's Engineering Act should support this right, enabling us to make responsible decisions for the betterment of society and the environment.

Former US Vice President Al Gore's book, "An Inconvenient Truth," summed up the need to act 18 years ago, based on volumes of scientific data. This book addresses the need to act on global warming issues.

A recent article, Jan. 2024, published by the BBC (UK) entitled, "We inhale a credit card worth of plastic each week," draws attention to the ubiquitous existence of micro-plastics in the developed world. It turns out that microplastics are now found in the breast milk of lactating mothers in the Great Lakes region. Plastics appear in the manufacturing process and end products of many commonly used products in Ontario. The current state of the environment behoves engineers to curate the life cycle of harmful compounds like plastics linked to their products and services.

8. Please provide any other information that you feel will assist members of the AGM and Council in understanding your submission, in particular your proposed action.

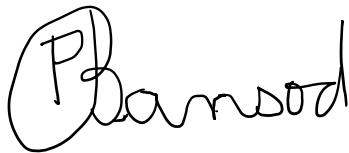
Talking and writing about global warming's repercussions on our natural environment is less meaningful and easier than experiencing it firsthand. In February of 2023, I visited Australia for the first time. I travelled up the North-East coast to Cairns. This was the best place to see one of the world's wonders: the Great Barrier Reef. A boat packed with eager tourists and scuba and snorkelling gear took us on an hour-long boat ride East into the Pacific Ocean. We stopped for one hour at two vantage points, one shallower than the other. At both locations, I was taken aback by the salinity of the water. I have swum in oceans before, but this was uncomfortably salty and noticeably warmer. There was an immense variety of coral reefs in size and shape. Some were only a few feet below the surface. However, I soon realized that there was a lack of colour. Apart from the occasional patches of purple and deep red, the reefs were mostly '50 shades of grey'. I soon figured that what I was seeing was primarily dead coral. The part of the Great Barrier Reef I witnessed was only a shell of its former glory. This appeared to be like a marine version of Rachel Carson's "Silent Spring."

On the ride back to Cairns, I compared notes with fellow tourists, who were equally disappointed, but we hid this from our Australian hosts.

The journey back gave me time to reflect on what I had observed. I soon realized that I was part of the problem. As a professional aerospace engineer, I had worked on developing aircraft and later aircraft engines in the UK, Quebec and Ontario, with scant regard to the environmental impact that my work had or what the products related to my work had on global warming. I never had a code of ethics or any regulation that held my feet to the fire and controlled this aspect of my work. In this submission, rather late in the day, I have tried to remedy this by focusing on an achievable goal of updating PEO's Code of Ethics in order to hold engineers accountable for our actions.

9. Please list any attachments to this document.

None Attached



Member #1 (name/signature):
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Member #2 (name/signature):
Zeljko Sikic
Date: 5th April 2024