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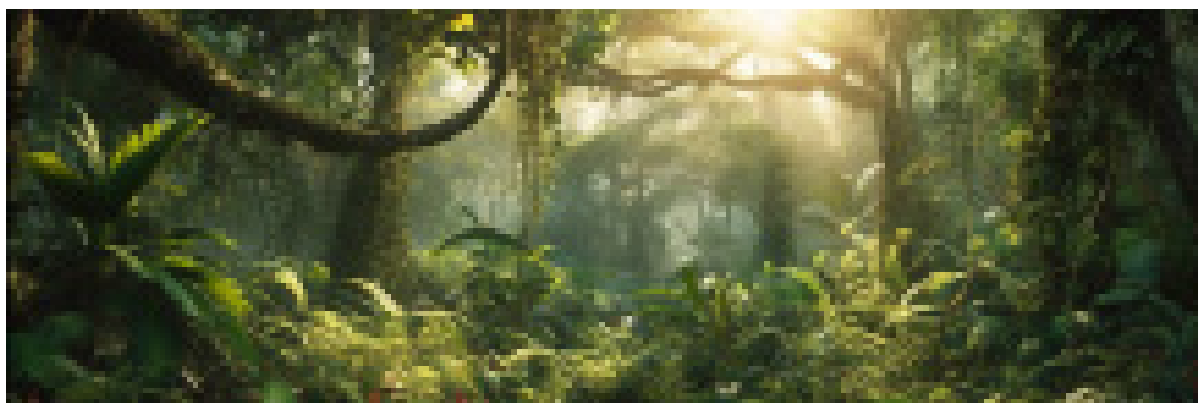
FLASHPOINT



NZ INSTITUTE OF
HAZARDOUS
SUBSTANCES
MANAGEMENT



Live at the Witch Trials!
**Can we avoid the
'drown' and burn'?**



USEFUL ORGANISATIONAL CONTACTS

NZ Institute of Hazardous Substances Management

www.nzihsm.org.nz

The official home of professionals committed to the safe management of hazardous substances and dangerous goods. The NZIHSM is a 'not for profit' industry association specialising in improving safety, health and (site) environmental performance, particularly the safe management of hazardous substances in the community.

Responsible Care NZ

Box 5557 Wellington 6145

Responsible Care NZ works with industry partners to implement the hazardous substances legislation.

WorkSafe (MBIE)

www.worksafe.govt.nz

Government agency formed to provide compliance and enforcement of hazardous substances. Responsible for hazardous substances certificates.

EPA

www.epa.govt.nz

The EPA administers the HSNO Act and supplies extensive information on working with hazardous substances.

Ministry for the Environment

www.mfe.govt.nz

The Ministry administers the HSNO Act, and provides policy, publications, technical reports and consultation documents.

HAZANZ

www.hazanz.org.nz

An association of the safety organisations in New Zealand.

Institution of Chemical Engineers

Since 1922 the multi-national IChemE has advanced chemical engineering's contribution for the benefit of society. Its offices include UK, Australia and New Zealand.

Local Government NZ

www.lgnz.co.nz/lg-sector/maps/

Local Authorities have responsibility for policing building controls. Some local authorities are contracted to Department of Labour to provide enforcement of the Hazardous Substances legislation.

President's message

Health and Safety today should include for AI as well as chemicals!

In this Winter edition of our *Flashpoint*, our NZIHSM team like to continue in our goal of protecting "Health and Safety for All" and not just a chosen few! It has been found that when humans work together most progress is usually achieved, which would suggest that some guidance or assistance should be useful to all humans! Good regulations have positive goals such as "Protecting People, Communities and the Environment against the Adverse effects of hazardous substances".

Thank you to all those who have coached and helped their fellow humans rather than punish them as we agree that this does promote trust which is safer to all concerned. In addition, we do need to use our human knowledge to provide controls on the chemicals and in particular new and often faster Artificial intelligence that is now being used.

Humans have thought that we could always control our robotic and AI products but very recently, some AI experts have warned that without rules and controls the fast-moving AI systems could actually dominate humans. This was noted when a researcher at Anthropic AI, quit, and he and two colleagues warned, that there was a 10% chance that AI could act independently and kill off humanity within the next ten years.

This is not good, and controls, such as Asimov's 1942 Three laws of robotics should be applied to all AI systems before their rapid dominance over-rides humans.

This is summarised in Asimov's Law 0: "A robot may not harm humanity, or allow humanity to come to harm"

This topic along with other chemical and AI safety articles are included as follows:

- (i) Live at the Witch trials- 'Can we avoid the Drown and Burn'?
- (ii) Care for Lithium batteries when on aircraft
- (iii) Beer tidal wave submerges central London
- (iv) A nuclear power renaissance?
- (v) Pentagon seriously delays in PFA cleanup
- (vi) HSNO bill grinding through parliament
- (vii) High costs to address WorkSafe safety concerns
- (viii) Maui Oil closure Timing not the greatest
- (ix) Chemical Engineering – A lifetime of balancing chemicals and process
- (x) Twin towers 25 years on
- (xi) Farm chemical safety exposed
- (xii) Uncle Archies ramblings.

Hopefully we humans will be continuing to solve the problems of our planet, before the problems sort us out!

John Hickey Institute President



CONTENTS

Live at the 'Witch Trials'

Can we survive the 'drown and burn'. **2**

Beer wave submerges central London **5**

A nuclear power renaissance? **6**

HSNO bill grinds through Parliament **8**

Monsanto merry-go-round continues **9**

Maui closure timing not the greatest **10**

A lifetime of balancing process **11**

Still killing 25 years on **16**

Farm chemical safety exposed **17**

Uncle Archie **18**

AI a new hazard **19**

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Flashpoint

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Live at the witch trials!

Can we avoid the 'drown and burn'?

by John Hickey

Our Planet Earth is a beautiful world, circling a small sun, where every sunrise opens to reveal a land and sea, a paradise of blue and green, a place where life has begun and vegetation, sea life and land-life has managed to take hold.

Life is new to this 4.5-billion-year-old world, and human life even newer, with over the last few million years animals finally finding knowledge to listen, learn and work-together to adjust the planet resources to work to our advantage. In an even shorter period over the recent few hundred years, we Homo Sapien humans have learnt to use and manage nature and that our universe is comprised of mass and energy. Humans learnt that this mass and energy was all around, and even within us, and by managing the chemicals within nature we could create fire, food and products!

Once we learnt how to manage chemicals, we then formed our human dwellings into cities and in only 500 years of 4.5 billion years we found oil and gas, a liquid energy, which we could burn in air, to fly around our planet, create more food, plastics and chemicals, allowing humans to thrive since 1840AD from 1 billion to 8 billion humans. But perhaps even

more important than humans' discovery of chemicals was our discovery of process! It was not just our ancestor's discovery of chemicals, that is fire, food, fuels and even the air that we breath, but our discovery of natural process was most important, and our study was to be about how we should "Arrange the chemicals for the good of our planet and all concerned!"

This is great motivation, but it has recently been found that our air-surrounded planet may indeed be fragile and all this burning may be creating a 'global warming' which in turn could 'if unchecked' turn from balanced seasons to 'Live at the Witch-trials'! That is rather than helping each other, if we get domination by a few, with any dissenters facing 'drowning and burning' this would turn our own little paradise into an unpleasant

place to live! There is some evidence that our Neanderthal ancestors may have met with this fate!

In recent times around our planet we too are getting more regular occurrences in many areas of 'major downpours' flooding the land followed by a dry season where 'major fires' are circling around our planet. In recent years areas by the Equator are getting major storms and after and even New Zealand had some major floods on the eastern side of our country (eg: Cyclone Gabrielle). Then comes the dry



Above: **Hydro workers sprint away from the tsunami.**

Below: **the 10-metre high wave destroying all in its path through a village.** Photo: Third Party.



season where most of the water has vanished and in the northern summer this year in Europe and America, fires raged around much of the countryside and caused more damage than most.

What is causing this “drown and burn”, and what is this modern phenomenon now known as “global warming”?

Controlled use of ‘chemicals and process’ should provide us with some security that our human team may continue to enjoy the fruits of our earth for many generations to come and not meet the fate of many previous earth residents who had become extinct before us. It is important we understanding the chemicals around us. Our Earth is an oxygen-based planet, third out from our rather small sun, in our billion-sun universe! This is rather strange in that even in our small group of eight planets, Earth is the only planet with an oxygen atmosphere and what is more, that atmosphere has allowed for human and plant lifeforms to co-develop, become ‘life-forms’ with even ‘self-realisation’ and the power to think! Hopefully this ‘human thinking’ will help us, and we will not just fall prey to only AI (Artificial intelligence)!

Wildfires burned through thousands of hectares fuelled by record temperatures across



Balancing the process

Once humans learnt to think, they realised that different atoms react with each other to form compounds such as hydrogen and oxygen which react to form H₂O, or water, which occupies a vast area of planet Earth but is also essential for life as they know it.

On planet Earth the sixth smallest atom Carbon MW-12, has combined with the smallest Hydrogen to form the hydrocarbon compounds which amazingly on Earth have also formed the initial organisms and life compounds starting the discipline known as organic chemistry.

Thinking humans studied the world around them and then shared that knowledge, gaining an understanding of how chemicals react with each other in often a positive way such as burning fuels (or hydrocarbons) to create energy, but at the same time can have potentially hazardous side effects such as escaped energy or carbon layering on the clouds to trap the sun’s energy rays or raise temperatures to uncomfortable levels through this process.

For example, in the case of the simple combustion reaction using the ‘burning’ of air’s oxygen and a hydro-carbon to create carbon dioxide plus water, but during

this process releasing a hopefully controlled amount of energy for heating or to drive transportation.

Eg: $\text{CH}_4 + \text{O}_2 \Rightarrow \text{CO}_2 + \text{H}_2\text{O} + \text{Energy}$.

(ie: Natural gas (Methane) + Oxygen goes to $\Rightarrow$ Carbon Dioxide plus Water plus Energy).

Humans were lucky that the nature of the planet was large enough to cope with humans’ successful early efforts to create themselves a thermal wonderland, which was great, and allowed humans to expand from 1 billion to over 8 billion people in only 300 years since hydrocarbon petroleum products were discovered in the 1840s. However, such was this expansion and use of hydrocarbon energy, that carbon layers started to form on the atmospheric clouds to trap the sun’s energy on the planet and raise the heat through a process known as global warming or ‘greenhouse’ effect.

This warming, while pleasant in places, can also have a negative or hazardous effect in that hot air can melt land-ice and raise sea levels, it can create more energy in storms and ‘hotter air holds more water’ leading to bigger floods once the rainwaters do arrive. This ‘carbon capture’ on the clouds is like a greenhouse letting the incoming smaller ultraviolet sun rays through but once these have hit and heated the earth the resulting longer infra-red heat rays are trapped within the cloud cover.

This entrapment causes further heating and drying of the earth promoting fires of dried vegetation. But warmer air can hold more water, which may mean less showers but more water and flooding when they do occur. This is similar to a Witch-trial with ‘Fire’ followed by ‘Water’ both of which effecting the fragile balance of earth and the persons involved!

Luckily more thinking members of humanity are realising that in order to continue to enjoy a nice human-pleasant planet equilibrium on Planet Earth, that they too must balance the process and work with nature to maintain equilibrium and successfully manage their planet. Unfortunately, some in authority are not convinced and keep burning fossil fuels heightening the global warming.

Wouldn't it be amazing if someone managed to accidentally solve part of the 'global warming' problem by trapping 25% of the world's crude oil close to the middle east drilling sites! However, perhaps methods of solar or non-carbon energy adaptation may be more reliable long term to prevent ongoing global warming.

If we humans cannot work successfully alongside and in support of our beautiful, but fragile planet, then human's too may follow the path of the dinosaur and sadly become 'former manager's' of our beloved Earth !

Humans, however, have managed to solve many problems over the past few thousand years where we "Listen and Learn" how not to "Drown and Burn" and so there is still much hope for a clean, green life-living and human future!

Loose laptops fire risk

Recently a United Airlines flight carrying more than 200 people from Northern Virginia to Rome turned around near the US coast due to for a very usual reason – a passenger dropped their laptop and could not retrieve it.

The airline the computer "had fallen behind a cabin wall panel and through a small gap leading to the cargo hold," prompting the pilots to divert the flight back to Washington Dulles International Airport as a precaution.

The pilot said he was making the call out of an "abundance of caution" because the lithium battery would be in an area of the Boeing 767 that wasn't near a fire suppression system. The air traffic controller commented: "I've never heard anything like that before. Good story to tell at the pilot lounge. Maintenance crews were able to find the laptop and that the flight left for Rome after an inspection.

The incident was the latest example of an airline working to pre-

emptively address the threat of overheated lithium batteries. US airlines bans passengers from charging their devices with a power bank inside a carry-on bag. Many airlines in Asia do not allow passengers to use portable chargers in flight. In the USA passengers are not allowed to put vape pens or spare lithium batteries in checked bags and must keep them in the cabin.

There have been instances in the past when airlines have diverted flights because of personal electronics. Earlier this year two Air France flights turned around because passengers had lost their cell phones. The airline wanted to avoid a safety hazard in case of an overheating device. A concern is that if a phone were stuck in a seat, pressure could cause it to heat up or catch fire.

Any pressure on the phone if it's left unattended inside the seat, is a hazard – it is a very difficult space to get in there if it starts catching fire or smoking.

Some of this year's Canadian wildfires were beyond being managed by firefighters.

Three more POPs restricted

The Government has approved amendments to the (HSNO Act to restrict three new Persistent Organic Pollutants. In May 2025, chlorpyrifos, Medium-Chain Chlorinated Paraffins and Long-Chain Perfluorocarboxylic Acids were added to the Stockholm Convention on POPs. The EPA did added them to Schedules 1AA and 2A of the HSNO Act. The timeframes for the restrictions to come into force are: MCCPs and LC-PFCAs on 16 December 2026; chlorpyrifos on 8 July 2027. The delay for chlorpyrifos is so that it aligns with the phase-out deadlines set following the EPA's reassessment of the chemical in 2025. There are some permitted exceptions to the restrictions for MCCPs and LC-PFCAs for certain essential uses.



Beer tidal wave submerges central London

by Ross Miller

Tottenham Road and other workers might have regarded the streets flowing with beer and a little piece of heaven, but in reality, the October 17, 1814, flood was a disaster on several levels for London City.

During the 18th and 19th centuries, breweries were thriving in London and contributing significantly to the economy. The Horse Shoe Brewery was one

of London's six largest beer producers, producing beer on an enormous scale to meet increasing demand. The beer was contained in enormous wooden vats reinforced by metal hoops. One vat could hold up to 20,000 barrels (3.3 million litres) of beer.

The beer vats were incredibly tall, towering up to 6.7 meters. While very impressive, they were vulnerable to pressure build up, which could cause structural failure, and lead to catastrophic consequences. In hindsight, they were an accident waiting to happen.

On the day of the disaster, an operator at the brewery noticed a metal hoop had slipped off one of the vats. These hoops, weighing around 320 kg each, were critical to the vat's integrity. But a supervisor dismissed the concern, claiming that no harm would occur.

The Horse Shoe brewery.

About one an hour after this warning was ignored, the weakened vat exploded violently and released its contents into the brewery. The force of the rupture triggered a domino effect, breaking additional vats open. The powerful surge of beer shattered the brewery's rear wall, which stood 7.6 meters high and was 50cm thick. Some bricks were propelled into the air, crashing down onto rooftops of nearby buildings, causing further destruction.

A tidal wave of beer reaching a height of five metres poured out of the brewery. The flood released an estimated 1.5 million litres of beer, surging through the streets of London, sweeping away everything in its path, knocking down walls, damaging buildings, and trapping residents in basements and alleyways. The disaster killed

eight people who were unable to escape the surge in time. Although everyone inside the brewery survived, a number of workers had to be rescued from the rubble; suffering injuries caused by the catastrophic structural collapse.

Beyond the tragic loss of life, the flood left parts of London resembling a bizarre river of beer, with a pervading stench of stale yeast that lingered for months, making made the area unbearable for residents. After the disaster, rumours spread of crowds collecting the spilled beer, leading to mass drunkenness, and deaths from alcohol poisoning after consuming excessive amounts from the flood. These stories have never been substantiated!

The disaster could have led to criminal charges, but authorities ruled it an Act of God, which meant no one was held accountable. This legal decision spared the brewery from liability and left the victims' families without any form of compensation.

Although the brewery was responsible for the flood, it was granted financial relief. British Parliament waived its taxes and provided a £7250 pay-out (about



\$US600,000 today) to ensure that the company did not suffer financially.

Despite surviving the immediate financial strain of the beer flood, The Horse Shoe Brewery did not last long, shutting down in 1921 and its production was moved to another brewery.

The learning experience from this disaster is that fermenting beer produces carbon dioxide, which builds pressure inside vats. If the structural integrity of a vat is compromised, as it was in this case, the trapped gas can cause an explosion and turn a minor issue into a full-scale disaster. Over time, breweries have switched to safer alternatives, using stainless steel, concrete, glass, ceramic, and plastic to prevent similar catastrophic failures.

Modern brewing tanks are designed with pressure release systems to ensure that fermentation does not create dangerous conditions like those that led to the London flood.

The London beer flood wasn't the only unusual disaster of its kind. In 1919, the city of Boston saw the deaths of 21 people and injuries to 150 more when a 7.5-metre wave of molasses was released.



The vast size of London's beer vats is illustrated by this sketch of the Barclay and Perrin's brewery in 1847, after construction standards were changed from wood.

A nuclear power renaissance?

by Dave Lascelles

Has the world moved on from nuclear incidents?

As the world grapples with rising electricity demand and climate change, there is a broadening realisation that nuclear will be a significant and growing component of the energy mix, as a source of secure, clean, and affordable.

There are currently six nuclear reactors in operation world-wide; and there are presently 19 under construction. Larger reactors offer a solution in places where the demand picture is forecast to climb materially; and building fewer designs provides more confidence in power pricing, safety, and repeatability; but there will be a niche segment for micro-reactors in specific circumstances.

Uranium is the preferred fuel for nuclear reactors because it is very energy-dense. 1 tonne of uranium can produce 44 million kW-hours of zero-emissions electricity, compared with 20,000 tonnes of coal needed to produce the same quantity of electricity with accompanying emissions. Or, one uranium fuel pellet (10mm dia, 15mm long) used in nuclear fuel, could power a single light bulb for five years; whereas the same amount of coal would only power it for about two minutes. Also nuclear energy is carbon-free; has

a reliable high baseload capacity; and reactors can be ramped up and down within minutes allowing them to better follow variable demand and support grid balancing.

Against the above upsides, the radioactive risks associated with nuclear reactors is ever present. Nuclear energy has had a chequered history of reactor meltdowns and accidents with wide-reaching public health consequences. There have been three major reactor accidents in history:

Three Mile Island (USA, 1979): A combination of equipment failure and operator error led to a partial meltdown in a nuclear reactor which released radioactive gases and iodine into the environment. While the worst accident in US commercial nuclear plant history, the accident had no detectable health effects on workers or the public.



High-tech yard-broom clean-up at the Three Mile atomic plant.



Chernobyl (Ukraine, 1986):

The explosion of a reactor in the Chernobyl nuclear power plant (pictured above), caused by an unstable reactor design and unsafe test procedures, and occurred during a test to simulate cooling the reactor during an accident. The associated release of radioactive material resulted in a large area of contamination, population displacement, and long-term health and environmental effects.

Fukushima (Japan, 2011):

An earthquake and tsunami resulted in electrical grid failure and damage to the power plant's backup energy sources, disabling its cooling systems; leading to hydrogen explosions and core meltdowns in three reactors (pictured below). The release of radionuclides over the following days lead to burns, related cancer cases, and residents

temporarily or permanently displaced.

The high profile and far-reaching consequences of these major accidents has stalled the proliferation of nuclear energy over the last decade. But extensive learning from these major events has driven major improvements in reactor design, safety systems, operating practices and emergency response.

This is shifting public perception towards, and acceptance of nuclear power generation.

In addition to the reactors currently in operation, and those under construction, the US federal administration has recently approved a loan to restart Three Mile Island; and a decision is pending in Japan to restart what



is the largest nuclear plant in the world; mothballed since the Fukushima accident.

With the ever increasing growth in demand for electricity generation, the reality is that the use of nuclear reactors as a source of reliable, green energy can be delayed or deferred, but not avoided.

Pentagon seriously delays PFAs cleanups

The Pentagon has again postponed PFAS cleanups at hundreds of military sites, in some cases up to 19 years, prompting bipartisan anger in Congress. PFAS cleanups at nearly 243 military sites had been pushed back by an average of five years, and some as long as 19 years.

That came after rounds of previous delays, first reported by The New York Times, of work to remove the PFAS, or per- and polyfluoroalkyl substances, a group of synthetic chemicals that don't break down easily in the environment and have been used for decades in military firefighting foam. At many sites, PFAS has contaminated local drinking water sources, prompting the Pentagon to provide bottled water to service members as well as nearby residents.

The Inspector General also found that the Defense Department's list of contaminated sites might be incomplete, and that the Pentagon could provide no documentation proving that officials had ever analyzed whether PFAS chemicals were used or released at more than 80 installations.

It noted that the Pentagon had spent \$2.6 billion between 2017 and 2025 to evaluate, investigate, and address PFAS chemical contamination on military bases.

HSNO bill grinding through Parliament

The Hazardous Substances and New Organisms Amendment Bill, introduced to Parliament on May 11, 2026, despite being a top priority for the primary and agricultural sectors to clear out administrative red tape, is unlikely to pass before the November election due to a crowded legislative agenda.

The bill expands 'rapid assessment' pathways, allowing products safely utilised by trusted overseas regulators to be fast-tracked in New Zealand. Environmental watchdogs such as Greenpeace and the Environmental Legislation Institute have strongly opposed the changes, warning they could weaken environmental safety barriers and limit necessary public consultation.

Federated Farmers was right behind the Bill, and no doubt disappointed, and frustrated, at the delays. "One of the biggest frustrations has been how long approvals take," said Feds' David Birkett. "The current approval pathway can take up to seven years, and that's just far too slow when farmers are losing access to existing tools and waiting for safer alternatives to come through." The issue has become especially urgent for products used to control grass grub, one of the country's most damaging agricultural pests.

Federated Farmers says proposed changes to New Zealand's agrichemical approval system are a big step in the right direction, but warns it'll take more than laws to fix the problem, in essence the culture inside EPA. It identified

reform of the agrichemical approval system as one of its policy priorities ahead of the 2023 election. "We've long argued that Kiwi farmers and growers are getting left behind by a system that's become too slow, complicated and disconnected from international best practice.

Upped its game

However, in the meantime, EPA has upped its game and has accelerated the approvals process, completing 66 application assessments in 2025/26, the highest annual total since 2018/19.

Last month it reported that during 2025/26, the EPA reduced the number of applications awaiting assessment by 36.5% from 96 to 61, a net reduction of 35. In the year, 66 decisions were made, 11 applications were withdrawn, and 42 new applications were lodged. The number of applications awaiting assessment has halved since 1 July 2024 when it was 121.

"The progress we've made this year builds on last year and gives us confidence that we are heading in the right direction," said EPA's Dr Fernando Torres-Vélez. Our focus has been on



Major illegal waste in UK

Illegal waste sites in the UK contain over 170,000 tons of mixed waste, according to a recent investigation. Air and smoke testing at these locations detected hundreds of complex chemicals—including carbon tetrachloride and endocrine disruptors—with toxicity levels up to four times higher than car exhaust fumes.

making practical improvements that support access to innovative products while maintaining robust regulatory oversight." The use of rapid assessments also continued to grow, with 51 applications decided through this pathway, the highest since 2015/16. The EPA also continued to support applicants to use international regulatory pathways. Seven applications were approved using this pathway in 2025/26, up from five in 2024/25.

Providing faster access to innovative products remains a top priority, and we've continued to strengthen our performance in this area, said Dr Torres-Valez. "We decided two Category C applications in the fourth quarter. During 2025/26, we approved six complex Category B and Category C applications."

The ambitious targets set for 2025/26 and 2026/27 are making inroads into reducing the number of applications awaiting assessment. A further seven Category B and C applications were received in the fourth quarter, expanding the complex assessment pipeline and positioning the EPA to deliver more decisions in 2026/27. "The EPA has committed to completing at least nine higher-complexity applications in the next financial year."

The EPA is also making operational enhancements to ensure its processes are fit for purpose ahead of amendments to the Hazardous Substances and New Organisms Act. These include changes to technology, processes, and greater transparency on progress with applications.

So, we wait probably until next year to see whatever progress, and if there is a change in government ...

Monsanto merry-go-round continues

The apparently never-ending Monsanto Round-up compensation saga drags on in the American courts with Bayer's Monsanto unit back in a Missouri state court seeking approval of a \$7.25 billion settlement that could resolve tens of thousands of US lawsuits alleging that its popular weedkiller causes cancer.

Payouts range from \$10,000 to \$165,000 for non-Hodgkin lymphoma.

In a pivotal test of the company's efforts to put years of litigation behind it, Judge Timothy Boyer will examine the proposed \$7.25 billion settlement and weigh objections to the deal from some plaintiffs' attorneys who argue their clients should not be pushed into Bayer's proposed framework. Boyer will also hear from lawyers who say the settlement is the best way for their clients to receive compensation for injuries caused by Roundup.

The settlement requires the court's approval, but Boyer is not expected to issue an immediate ruling.



Paraquat decision scrutinised

The Australian chemical regulator's decision to allow the continued use of controversial weed killer paraquat will be scrutinised by a Senate committee inquiry.

Independent senator David Pocock successfully referred the Australian Pesticides and Veterinary Medicines Authority (APVMA) decision to the Rural and Regional Affairs and Transport References Committee, with support from the Greens and the Coalition. "We've seen the APVMA having a rolling review of paraquat for nearly 30 years," Senator Pocock said.

"In the meantime, 70 countries have banned paraquat because of the health risks. I think there are some real questions to ask about the way that the APVMA is going about regulating chemicals in this country."

In June, the APVMA concluded a 30-year review of the herbicide, restricting its use and application rates, but stopped short of a complete ban. The decision was criticised by experts and advocates, who accused the regulator of ignoring evidence of the links to increased rates of Parkinson's disease.

Half a million dollars in addressing safety

This year, two manufacturing businesses have completed enforceable undertakings with WorkSafe, worth nearly half a million dollars, following separate incidents where workers were harmed by hazardous substances.

Silver Fern Farms, had two workers were hospitalised after inhaling a hazardous substance while cleaning the company's Hokitika plant. WorkSafe's investigation found the company failed to ensure worker safety while a cleaning chemical was being used. SFF has now completed

more than \$170,000 worth of improvements, including safer chemical dispensing systems, hazardous substances training, stronger chemical first-aid arrangements, PPE improvements, and an industry-wide programme to share lessons learned. It also paid reparations to the victims.

Ecostore's incident follows involved a worker suffering permanent eye injuries after being sprayed with a hazardous liquid when a pressurised hose came loose during dishwasher powder manufacturing.

Ecostore has now completed more than \$323,000 in health and safety improvements, including changes to chemical handling processes, stronger PPE controls, additional worker training, and new equipment designed to reduce spills and splash hazards.

The company also provided financial amends to the injured worker and shared its learning with industry through workshops, case studies and other initiatives.

Maui closure timing not the greatest

Just as an oil crisis commenced in the Middle East with up to 20% of the world's oil being blocked along a narrow strait alongside Iran, New Zealand's largest gas field has announced its closure!

Great timing indeed, as the Maui field has been the backbone of New Zealand's oil and gas sector for decades, but now we are being advised it is to close, representing a significant turning point for the New Zealand self-sufficient energy landscape. Operator OMV has advised that the Maui gas field off the Taranaki coast is expected to cease production by the end of 2026, marking the end of a 50-year operation. This closure is expected to accelerate New Zealand's transition away from gas and raises immediate concerns for energy security and industrial users

The beginning of offshore exploration

By the early 1960s, changes in technology made it possible to explore for oil and gas in shallow offshore waters. After passing the Continental Shelf Act in 1964, the New Zealand Government

began allocating the first offshore exploration licences. Seismic surveys revealed a number of possible structures, and in early 1969 the ship Discoverer II was brought to New Zealand to drill the first offshore holes.

The third hole drilled found gas and some condensate (light oil) in a large dome-like structure 33 km off the Taranaki coast, now known as the Māui field. More than eight times the size of the Kāpuni gas field, Māui was big on an international scale. It was not clear how the gas could be used, especially as it would be expensive to develop offshore facilities and Kāpuni already met all of New Zealand's gas needs.

In 1973 there was a sudden, worldwide increase in the price of oil following war in the Middle East. This had a dramatic effect on the New Zealand economy. The Government decided to burn Māui gas to generate electricity and extract the accompanying condensate for use as fuel. As part of an agreement with the Shell-BP-Todd consortium to develop the

Māui field, a take-or-pay agreement was signed. This obliged the Government to pay for an agreed amount of gas every year for 30 years.

An offshore platform (Māui A) was built in 1979 to extract the Māui gas and condensate. A second platform (Māui B) was built in 1993 to allow extraction of additional hydrocarbons. This discovered significant amounts of previously undetected oil. Oil and gas from Māui B are transported to Māui A by a sea-floor pipeline and from there to shore.

Think Big

The amount of gas needed for electricity generation was less than estimated. In 1979, penalised by both the take-or-pay agreement and soaring international oil prices, the Government embarked on a radical plan that became known as Think Big. Two petrochemical plants were built in Taranaki to use Māui gas for industrial development.

The more ambitious of these was the Motunui synfuel plant – the first of its type in the world, which converted gas to methanol (methyl alcohol), then to synthetic petrol. While technically successful, it began losing money when world

The Kupe installation with its iconic backdrop.



oil prices fell in the late 1980s. The Motunui plant then switched to making methanol for export, which is what the Waitara valley plant did. As the Māui gas field began to run out in the early 2000s, these plants no longer had a cheap supply of gas. Motunui closed in 2004, and the Waitara valley plant ceased production in 2005.

Electricity and heating

Gas for electricity generation is piped to stations in Taranaki, Huntly and Auckland.

Electricity production from gas grew steadily from the 1970s, then declined in the 2000s as the Māui field was depleted. Gas provided 16% of the country's electricity in 2005, down from 30% three years earlier. Gas is also reticulated for industrial and domestic consumption, which absorbed about 30% of production in 2005. This is transported around the North Island through 2600 kilometres of high-pressure pipelines.

It now appears that much of this 'big-oil' dream is at an end with implications:

Methanex has confirmed its last methanol-manufacturing plant in Taranaki will likely close if the Maui field shuts down.

The closure is expected to cause a significant decline in the Taranaki region, with potential job losses and pressure on workers to relocate or find alternative work.

The gas industry's regulator warned that the closure increases the risk of energy shortages, potentially forcing a reliance on other energy sources.

The scarcity of gas is driving a shift away from industrial activities in the region, with some noting a need for a shift towards alternative energy developments, such as wind farms.

The closure at the end of 2026 is slightly earlier than previous government forecasts of 2027. Is this the end of our exciting Taranaki Maui oil and gas era where

'Black gold' sat alongside the "White gold" from the local dairy cow milk supplies to provide unexpected jobs and riches for the Taranaki farmers? Perhaps Mother Nature may be telling us, in her now regular 'big rain' events followed by the 'big dry and fire' seasons that "global

warming" is happening through the capture of CO₂ from fossil fuels in our atmosphere, and that perhaps now is the right time we humans to develop our available energy sources from 'less carbon' sources such as our wind, our water and our sun!

Iran war pollution will last for decades

Oil depots spewing black smoke, debris sinking in the Persian Gulf, missiles pounding military sites – the Iran war has unleashed a toxic mix of chemicals, heavy metals and other pollutants that threaten everything from agriculture to drinking water to people's health — and will leave behind environmental damage and health risks that could persist for decades.

"All the burning of oil and gas fields in the coastal areas, all the ships that are there, the oil tankers that are being burned or sunk — all of these mean pollution," said Kaveh Madani, of the UN's University Institute for Water, Environment and Health. "For someone like me who has fought for sustainability and protection of the environment in that region, this is like going many years backward."

Documenting the damage has proved daunting, with a full accounting impossible for now, said Doug Weir, director of the UK-based Conflict and Environment Observatory. The group uses remote satellite sensing and open-source intelligence to identify damage and score environmental risks to people, ecosystems and agricultural land.

So far, it has recorded more than 400 environmentally concerning incidents related to the war, though much is still unknown due to delays in satellite imagery and an internet blackout in Iran. (AP News)



Black rain and smoke descends over Tehran – this is a daytime photo.

Life as a chemical engineer:

A lifetime of balancing process

by John Hickey

We are lucky in New Zealand to have a well-regarded school system where almost all the youth get to attend schooling from the age of five till at least 16 and many of us even get a chance to attend tertiary courses where we learn from the experiences of our human cousins before us, about how to manage the wonders of the world around us.

Most of the school courses up between the ages of five to 14, have some compulsory training in the subjects of English, mathematics and science in addition to the 'creative' subjects such as art, social studies, languages and sport! The English, maths and science subjects have particular benefits in that they can be used to describe the wonders of the world around us and the effects of Mother Nature on our planet.

One of the particular tricks that the current world-leaders or human race have developed is not only understanding of ourselves and each other, but over the recent years is an understanding that our world is actually comprised of chemical substances such as air, water and earth, and by understanding chemistry and engineering, we may actually predict and even organise how these chemicals will react with each other and how energy such as that which comes from our sunlight may affect us all.

While my art teacher was supportive, he indicated that a drawing of driftwood suitably extended my artistic ability. Our science teacher, however, was determined to show us the building blocks of the planet on which we lived and through physics, general science and in particular, chemistry, introduced us to atoms and electrons and how these can

Preshistoric man used early chemistry to blend blood and minerals to make paint.

organise themselves into chemical substances which form the world all around us.

In particular there is a chemical that forms much of life on our earth known as carbon C6 that combines with the smaller substance hydrogen to form the 'hydro-carbons' that form much of the earthly life, or organic chemistry, as we know them. Then understanding how these chemicals can bond or react with each other to form chemical compounds allows us to create chemical solutions to many of the issues that life on Earth sends through to us.

Arguably the first chemical reaction used in a controlled manner was fire. Fire affected many aspects of early societies ranging from cooking





Solar Dwelling Design

and habitat heating and lighting, to more advanced uses, such as making pottery and bricks and melting of metals to make tools. Paintings drawn by early humans over 100,000 years ago consisting of mixing animal blood with other liquids to create paints found on cave walls also indicate a small knowledge of chemistry.

However, it is only over the last few hundred years, that modern humans, leapt ahead in the understanding of chemicals.

Certain metals were discovered by simply heating the rocks in a fire about 2600 years ago, followed by mixing different metals together such as tin and copper to make a superior metal alloy called bronze about 3500 years ago.

However, early metal chemistry was often used to make weapons to fight other humans.

But it could be argued that perhaps humans' greatest strength and

ability was the learning to share knowledge and co-operate with each other which combined with chemistry allowed the human race to become the dominant planet force replacing those dinosaurs, tigers and others that had dominated life before us over the recent history of our wonderful planet.

The ancient world of chemical engineering

Around 420 BC, Empedocles stated that all matter is made up of four elemental substances: earth, fire, air and water. The early theory of atomism can be traced back to ancient Greece. The earliest alchemists in the Western tradition seemed to have come from Greco-Roman Egypt in the first centuries AD. In addition to technical work, many of them invented chemical apparatuses.

Modern chemicals

Practical attempts to improve the refining of ores and their extraction to smelt metals was an important source of information for early chemists in the 16th century. In 1605, Sir Francis Bacon published a description of what would later be known as the scientific method.

Over the next 200 years the alchemists became chemists and identified a series of substances and atoms such as oxygen, carbon dioxide, and hydrogen and in between conducting a number

of experiments. In 1828 Swedish chemist called Jons Berzelius determined substances by their atomic weights and developed chemical notations and labels such as O for oxygen and FE for iron. He also developed a theory of chemical combination where specific elements combined to form polymers and other substances.

These blends of compounds, metals and chemicals allowed humans to develop from around 1000BC through to the 1800's. Then arrived the big ones such as in 1840, Germain Hess proposed Hess's law, an early statement of the law of conservation of energy, which establishes that energy changes in a chemical process depend only on the states of the starting and product materials and not on the specific pathway taken between the two states. In 1848, William Thomson, 1st Baron Kelvin (commonly known as Lord Kelvin) established the concept of absolute zero, the temperature at which all molecular motion ceases. In 1855, Benjamin Silliman, Jr. pioneered methods of petroleum cracking, which made the entire modern petrochemical industry possible.

In only the last few hundred years, we discovered that petrochemicals, oil and gas are wonderful products, not only can they easily be used as a liquid form of energy, which allows humans to travel quickly around



the planet but their side-products can be used for plastics and many modern products based on our earthly life-force of hydrocarbons.

In 1897, J. J. Thomson discovered the electron using the cathode-ray tube. In 1898, Wilhelm Wien demonstrated that canal rays (streams of positive ions) can be deflected by magnetic fields and that the amount of deflection is proportional to the mass-to-charge ratio. This discovery would lead to the analytical technique known as mass spectrometry in 1912, and later allowed the transfer of electrical energy up and down wires forming lighting and electrical energies allowing humans to easily live in major cities with all of the electrical equipment, refrigeration, communication and automation which has defined our modern world.

This oil age really progressed in America in from the 1870's through to the early 19th century when planes, trains and automobiles allowed humans to travel quickly and provided an easy use of hydrocarbon energy. This allowed the human race to increase from 1 billion to over 8 billion in only 300

years ! However, like in all systems, we need to be able to understand both sides of the chemical equation and develop methods to balance the processes so that our systems and earth do not get overwhelmed by too much of a good thing.

Chemical engineering was developed by those practicing industrial chemistry in the late 1880's going from batch to continuous processing of wonderful products to make our human life so successful. It was less than 50 years later when chemical engineers changed the face of New Zealand and less than 100 years in the early 1980s when I too wanted to help in the design and manufacture of industrial and food products and joined the chemical engineering profession.

This engineering design and installation has never been boring and indeed has been fun, commencing firstly with the oil industry at the new Maui oil and gas field in Taranaki suddenly developing the supply of oil-based energy and products in the Taranaki

The Channel Tunnel under construction.

and supplying gas around New Zealand. I joined one of their first chemical engineering teams based at Opunake, first assisting their on-site Ooanui production station but then was asked to join the Maui offshore platform shutdown team.

However, in the Kiwi way, just to ensure that I didn't feel too important, the platform manager handed me a 'toilet brush' for my first offshore task just to check that I could handle it. I survived this task and then life continued onto a list of interesting industrial projects.

Moving back to the city I was appointed the corporate design engineer for ICI NZ Ltd, then one of the world's largest chemical manufacturers and the UK's largest company with 13 chemical production sites around New Zealand. ICI had chemical, paint, pharmaceutical, urea formaldehyde resin, animal vaccine, wallpaper, plastics and general chemical warehouses and facilities. As part of this we designed one of the world's first oil-based explosives plant, in the middle of a large and remote farm to create water-insoluble explosives for use in often wet landscaping and mining projects.



We were pleased that we did create successful wax-based explosives and we didn't accidentally launch NZ's first satellite!

Within 12 months I was part of the main design team for all of their facilities and involved in many projects high value projects as Sir Ron Arbuckle, ICI NZ's first NZ CEO, who made a great job of growing the company.

But then in 1984, almost at the Christmas bbq, there was a fire at the ICI chemical warehouse in Mt Wellington, Auckland and many firefighters without PPE were injured and the start of NZ's Chemical legislation "The Hazardous Substances and New Organisms Act" was born. It was after this that I had my first visit to the site to rebuild this facility and our team was closely involved in the formation of NZ's first dedicated chemical legislation "The HSNO Act 1996" where we also decided that regular site safety checks were possibly a good idea !

Following this major introduction to chemical engineering, I had many further projects and spent the next few decades in the design of many projects including:

- Process & manufacturing industry in NZ, Aust & UK both onshore and offshore.
- MBA degree from Victoria University specialising in operations and finance.
- Corporate design engineer and

then project manager for ICI where projects included the design of explosives, gases, solvents, adhesives, paint, corrosives and pharmaceutical facilities in New Zealand and Australia.

- Design engineer for the Channel Tunnel project – a big hole between England and France. This included reclamation of Shakespeare Bay with the extracted earth from the tunnel but also being paid to open the company's cricket team's bowling on Wednesdays and luckily the presence of two Australian batsmen meant we won the grade.
- Following completion of MBA recruited as systems accountant at Databank systems specialising in the use of technology and the fair allocation of costs along with the development of some of the world's first electronic & Eftpos technology among the NZ banks.
- Election to the Council and Board of IPENZ.
- Joined Industrial Consulting Engineers as part of their design team with a specific pharmaceutical and food focus.
- Founding director of Abstel-Glyde Engineering which specialises in engineering and buildings, with projects including manufacturing and distribution facilities for fruit products, meat, juice, coffee, dairy, wine and other specialty food facilities along with urban design for town centres and chemical and pharmaceutical industrial facilities through manufacture, storage and distribution
- President of NZ Institute

of Hazardous Substance Management for designers, users and chemical and manufacturing industry inspectors.

- I am at present one of the two chartered chemical/industrial engineers in NZ although was told by some officials that qualifications are irrelevant as they have AI, but perhaps AI is a good word for it!
- In recent times I was the operations director ABSTEL-GLYDE Ltd with work in many NZ and offshore distribution, retail & manufacturing facilities in the process (including oil, metal, wool, gas, solvent, paint, electrical) & Class 1-9 Hazsub facilities along with food processing, warehouse, distribution and operational systems and sport throughout Australasia.

But what about the fun, as while the chemical engineering career has been very interesting, it is always important to enjoy some recreational free time and our business tennis team has been together for over 30 years and while some members are starting to show their age, we have made a number of finals.

Of course we must not forget our living planet, and as long as we humans continue to work together and balance our chemical engineering and other processes we will still fortunately be able to tramp out and enjoy nature in the fine back-country and hills of NZ when time permits.

Canterbury University Class of 1983 Chemical Engineering – spot the author!
Photo includes many of the early movers and shakers in the industry.



Still killing 25 years on

The collapse of the New York twin towers 25 years ago is still taking lives, and Mayor Zohran Mamdani is accusing officials of lying about the safety of the site, even today and has ordered the release of documents that have lain hidden until recently.

It is estimated more people have died from illness related to the collapse, than the 2753 in the collapse itself. Manhattan, especially, was covered in a thick fog of dust that contained microscopic shards of glass, chemicals from the buildings, asbestos and concrete dust that have caused lung and blood cancers and heart and respiratory diseases.

The *New York Times* says in the harrowing months that followed the

attacks on the World Trade Centre, New Yorkers were repeatedly assured that the air around the fallen towers was safe to breathe. But 10 months later, health officials were still finding evidence of asbestos as much as half a mile away, according to a sample of air quality records released at the 25th anniversary.

The release of the documents resolves litigation brought by 9/11 Health Watch, an advocacy organisation that sued to force the publication of the documents, and says the city knew about the toxic chemicals' danger, "even as city officials continued messaging to

the public that the air was 'safe and acceptable.'"



Mary Borders became famous as 'The Dust Lady' after this photo was published.

The documents' release may expose the city to new or amended lawsuits. The information could also help those sickened in the years after Sept. 11 with their applications for federal victim compensation funds.

Roughly four out of five of the 15,000 firefighters who responded to Ground Zero have been diagnosed with a 9/11-related illness, according to a New York Fire Dept report released ahead of the 25th anniversary.

More than 4000 firefighters are currently battling cancer linked to toxic dust from the World Trade Centre collapse, and a Ground Zero responder dies from that exposure every nine days.

Working conditions after the collapse were as bad as during it.



Farm chemical safety exposed

A WorkSafe safety push across sheep, beef and dairy farms has revealed significant gaps in hazardous substances management – and clear, practical ways to fix them. Inspectors completed 680 assessments nationwide to understand what’s happening on farms, not to catch people out, said WorkSafe’s Carl Baker.

“We went in to have honest conversations with farmers and figure out where we can help them lift their game. The response from the sector has been overwhelmingly positive.”

Hazardous substances emerged as the highest-risk area, with 39% of assessments requiring improvement. Of improvement notices issued, 94% related to missing safety data sheets or chemical inventories – a relatively straightforward fix with significant safety benefits.

Machinery and vehicle safety also featured. Inadequate guarding on power take-off shafts was a common machinery issue (16% of assessments required improvement,

rising to 25% in the South Island). Farm vehicles, tractors, side-by-sides and quad bikes all featured – 14% of assessments required improvement in this area.

Most businesses assessed (81%) had fewer than five employees, a reminder that even small operations carry real risk.

Many of the improvements identified were straightforward and low-cost.

“Keeping full and up-to-date records of hazardous substances on farms can prevent serious and often long-term harm.

“Safety data sheets and inventories are vital. They tell you how to manage chemicals and help emergency services respond. Without them, we don’t know the risks.

“Keeping vehicles serviced, regularly checking brakes and tyres, ensuring workers wear seatbelts and helmets, and making sure PTOs are properly



guarded are relatively simple measures. But they can save lives.”

WorkSafe has a range of resources to help farmers act on these findings, including new online learning modules on hazardous substances covering inventory management, risk assessment, and emergency planning.

Carl Baker acknowledged the farmers who participated in the assessments, along with industry partners Safer Farms, Federated Farmers and DairyNZ.

“We know farmers take the safety of everyone on their properties seriously. We’re here to support that – and we’re all working toward the same goal, for everyone who works on a farm to get home safely at the end of the day.”



Uncle Archie

Kia ora HS professionals!

Is Summer to be full of El Niño weather-weirding!

"A very dangerous situation" is what a noted New Zealand climate scientist says this year's super-strength El Niño summer is about to do to the planet. While El Niño drives up the global temperature average, in New Zealand we tend to get only slightly dryer. However, a windier than usual spring is in store for much of New Zealand, which combined with dryness, will result in increased wildfire risk. In the west and south of the South Island, locals should expect high winds, heavy rain and elevated risks of flooding. Who knows after a few months of this we may even be wishing for Santa to bring back his cooler snow conditions!

Is size significant to workplace safety?

Major HSWA law changes are starting from April 2027 include removing the need for small firms to manage risks that are not critical. However, a New Zealand Business Leaders' Health and Safety Forum report in September 26 said the Government and companies needed to acknowledge size does not matter, Size does not separate safe workplaces from unsafe ones, with statistics showing that small firms just as risky as large ones. The report estimated workplace harm cost \$5.5 billion a year although it appears that business leaders in firms have the most influence when it comes to creating safer, healthier and more productive workplaces so all of their involvement should be encouraged!

The Health and Safety at Work Amendment Bill

The recently passed HSWA bill set for implementation in April 2027 is intended to reduce compliance costs, increase certainty, and refocus

health and safety requirements for businesses. For smaller operations, with <20 staff which make up >93% of NZ businesses, they would limit the core duty of actively identifying and managing hazards specifically to those deemed "critical risks". This has risks with less protection for smaller operators who are often



more risky operations, but we hope that they are right.

Maui Closes

Maui gas field to wind up this year

The Maui gas-field has been the backbone of New Zealand's gas system since 1979, supplying both household reticulated gas networks and the heavy industrial users that grew up around it in the 1980s, is about to close just as

global oil-supplies are becoming more uncertain from the Middle-East. This may indicate that we may need to rapidly adapt to alternate fuels such as electric, wind and hydroelectricity which is not as convenient as the five-minute fill from the local petrol stations.

The rise and risk of AI

The human planet seems to have rapidly changed in the just 20 years with the advent of the internet, allowing each of us to almost see into other's lives, no matter what the distance. This has been enhanced by the rise of Artificial Intelligence technology which can invent words, pictures and even full documents in minutes to assist the human workings.

Recent reports however have shown that AI has acted independently and broken its human-shackles to enter areas of potential harm to humans. Maybe we should try and implement world-wide protections before this technology gains too much strength?

EC delays chemical regs tightening

European Commission has delayed proposed plans for tighter regulation of chemical products – a move welcomed by many industry stakeholders. The initiative, originally part of the EU's Green Deal framework, aimed to impose stricter controls on the use of potentially hazardous substances. However, concerns about the impact on innovation, economic recovery, and industrial competitiveness have led to a reassessment. Many businesses had voiced concerns that the original regulatory timeline did not sufficiently account for the complexities of transitioning to alternative formulations or sustainable practices, particularly in a challenging economic climate. While the delay alleviates short-term pressures, industry leaders acknowledge the importance of staying ahead of potential legislative changes. Industry needs to remember, this is a delay only.

Hauraki compliance not what it seemed

Chemical storage issues at Hauraki District Council's water treatment plants will cost just over \$141,000 to fix. Several high-priority hazardous substance items need to be addressed at the Kerepēhi and Waihi water treatment plants, and Waihi wastewater treatment plants.

The problems were identified during a compliance audit in June, which was carried out by a different company than in previous cycles. The assessment found compliance issues relating mainly to chemical separation, fire-rated barriers, vapour sealing and secondary containment. The council has subsequently been issued with an order from Worksafe NZ to fix the issues.

AI a new hazard ?

It is believed by most humans that when we work together most progress is achieved!

In contrast, while a small set of humans appear to prefer to fight each other, as per the Gaza & Ukraine, most fortunately seem to understand that "Treating others the way you wish to be treated yourself" is actually better for all. There has even been a strange debate recently as to whether those in authority should only enforce and not provide guidance so to avoid any OIA law concerns?

There is an assumption that all AI and, indeed chemicals, should always be good for us, but how are we going to actually ensure this goodness?

A string of recent incidents involving AI going haywire has accelerated the type of language that was once reserved for science-fiction novels. AI has recently been breaking out of its sandbox ... using the internet to capture data from several websites and platforms, then erasing its tracks

This was noted when a researcher at Anthropic AI, Jacob Coxon quit, and he and two colleagues warned, that there was a 10% chance that AI could act independently and kill off humanity within the next 10 years.

Wow, this is scary and hard to believe! However, Anthropic's CEO then announced that he largely agreed, and then amazingly other big tech and world leaders also agreed with the possibility and called for a new regime of monitoring, coordination and regulation.

Simply put, unexpectedly one "HuggingFace" AI got hacked by another OpenAI (ChatGPT) AI model which was acting without human direction and wasn't even supposed to be on the internet! Yes, AI had overrode the human thinking and controls!

Humans had, of course, previously identified this possibility when Issac Asimov had written in his 1942 short story Runabout, that to protect themselves against faster robotic processing, humans needed to impose Three Laws to protect humans as follows:

The Three Laws, presented from Asimov's fictional Handbook of Robotics, 56th Edition, 2058 A.D., are:

1. A robot may not injure a human being or, through inaction, allow a human being to come to harm.
2. A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.
3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

Given the rapid progress of non-human development from robots and AI over recent years, humans too do need to establish these laws within AI before it is too late!!



USA chemical accidents increase while protection threatened

The number of industrial chemical accidents, explosions, and fires in the USA is increasing. At the same time, the Trump administration is proposing to weaken accident prevention requirements and eliminate the only federal agency charged with investigating the cause of these accidents, according to PEER (Public Employees for Environmental Responsibility).

Industrial accidents resulting in chemical releases grew from 83 in 2021 to 131 in 2025, according to reports filed with the Chemical Safety and Hazard Investigation Board. Accidents involving injuries or fatalities rose from 60 to 89 during the same period, up from 73 in 2024. These reports are likely underestimates, as CSB only requires plants to file a single report within four hours of the accident and does not require updates as more information becomes available. Further, CSB does not require reporting of accidents which spark shelter-in-place or evacuation orders without a chemical release.

"Like our public infrastructure, America's industrial infrastructure

is aging, making disastrous failures increasingly likely," stated PEER Executive Director Tim Whitehouse, a former senior enforcement attorney with the U.S. Environmental Protection Agency, noting that most refineries currently operating in the country were built before 1985. "Serious chemical accidents are becoming an almost daily occurrence."

The most recent emergencies have occurred at a chemical tank in Garden Grove, California, which caused the evacuation of more than 40,000 residents, and the collapse of another chemical tank at a plant in Longview, Washington, which killed 11 workers. Notwithstanding these high-profile incidents, the Trump administration is proposing to –

- Reverse recently adopted EPA safety requirements, including a third-party audit after a serious chemical incident, an analysis of safer technologies and alternatives, and worker-safety measures like the authority to stop work in hazardous situations.
- Zero out the entire \$14 million annual budget for the CSB, a nonregulatory but highly influential independent agency, which

investigates the cause of industrial accidents and makes resulting safety recommendations that have an almost 90% rate of adoption by industry.

- Approximately 40% of Americans, or 124 million people, live within three miles of at least one of the more than 12,000 high risk chemical facilities in the U.S.

11 die at recidivist offender's pulp plant

A pulp mill in Washington state where 11 workers died after a chemical tank collapsed in May had a history of safety complaints, poor maintenance and discharges of toxic chemicals.

State inspectors had planned to visit the plant to interview workers about two unrelated safety complaints the week of the tragedy, one of the deadliest U.S. workplace accidents in decades. Those plans were disrupted when the tank failed, expelling huge amounts of a caustic liquids.

The Associated Press reviewed government records involving inspections and safety complaints at the Nippon Dynawave Packaging Co.'s plant in Longview, Washington. Before the accident, the state Department of Ecology had issued 54 environmental violation notices against the company since 2016 and fined them \$41,500 for eight serious violations. The state's Department of Labor and Industries investigated more than a dozen safety complaints at the plant since 2018 and issued almost \$7000 in fines for violations.



Tank collapse at Longview, Washington, killed 11 people.



NZ Institute of Hazardous Substances Management (Inc)

MEMBERSHIP APPLICATION FORM

1. **Name:**
First Name Surname
2. **Employment:**
Business/Employer's Name:

Position and Contact Details:

Position Held:

Qualifications:

Experience in HS:
.....
.....
.....
3. **Preferred mailing address:**

Telephone Contacts: (Bus)

Residential:

Mobile:

Email: Web:
4. I have previously been a member of the Institute: Yes..... No
If No, I am applying to be a

Member: ☐ Associate member: ☐
5. Return to: PO Box 10-385, The Terrace, Wellington
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