

Safety



Safety is the foundation for everything we do at BP, which is why it continues to be our top priority.

Q How do you learn from incidents?

A It's easy to think that human error causes incidents. However, when we dig deeper we find that actions and decisions are influenced by the conditions in which people work – including the equipment, systems, processes and environment. We can fix those issues to reduce the likelihood of mistakes. It can be as simple as making it clear which button to press. Or it could be more complex, like asking where there are opportunities for misunderstanding in a procedure. Behind every metric or statistic is a real person. That's why, for us, safety is about taking care of each other by fixing these issues.

Diane Chadwick-Jones, human performance director, BP

Preventing incidents

Our goal is no accidents, no harm to people and no damage to the environment. To deliver this, we carefully plan our operations, with the aim of identifying potential hazards and managing risks at every stage.

We design our facilities in line with process safety – the application of good design and engineering principles. If we can't eliminate a hazard, we take steps to reduce or manage it. For example, as part of our downstream corrosion management programme, which proactively identifies integrity risks, the team at our Kwinana refinery in Australia discovered a condensation corrosion risk, which we inspected and repaired to avoid a potential incident.

Human performance in safety

People, and how they interact with equipment, processes and each other, underpin any safe working environment. We have trained more than 5,000 people on human performance and provided techniques that help teams to analyse and redesign specific tasks to reduce the chance of mistakes occurring.

We are integrating these human performance techniques into our existing practices, such as incident investigation, risk assessment and the way we design

facilities and equipment, to help prevent errors. As an example, we asked operators with different levels of experience in our UK fuels business to assess the way in which fuel storage tanks are typically drained. They discovered that the risk of opening an incorrect valve – and potentially causing a fuel spill – could be greatly reduced with clearer labelling and new valve locks, so we put these in place at the site.

We have developed training on human performance and are working with the Energy Institute and Chartered Institute of Ergonomics and Human Factors to share what we have learned externally.

Culture and leadership

Creating an environment where people feel empowered to speak up when something does not look right is fundamental to advancing safety performance. We provide training to leaders on issue resolution skills.



It is only by walking through a job, talking and working with the people who do it that you are more likely to spot problems before they become incidents. A culture of care means getting out into the field and encouraging everyone to speak up when they see something that creates a barrier to safe working.



Bernhard Niemeyer-Pilgrim, Lingen refinery manager, BP



We engage with our partners around the world on safety, including at assets where we are not the operator. For example, we work together with our Rosneft partners in Russia on many areas, with a specific focus on safety leadership and culture.

Systematic learning

To strengthen our safety performance, we investigate incidents and near misses, take corrective action, apply what we have learned and focus on continually improving how we work. Our systematic approach to learning is also informed by good practices from other industries, such as aviation and nuclear.

Collaboration

We share what we have learned with our contractors. They carry out more than half the hours worked for BP, so their skills and performance are vital to our ability to carry out our work safely. By collaborating with contractors, other upstream operators and the industry Dropped Objects Prevention Scheme (DROPS), we now have a common upstream standard for preventing dropped objects – a major safety concern as they can cause serious injury or death of personnel below. This is a significant achievement given that a year ago each company had its own requirements; a common standard improves clarity and efficiency. Since beginning this initiative with our contractors and learning from each other, we've seen a significant reduction in the number of incidents involving dropped objects in our wells operations.

Our standard model contracts include health, safety and security requirements. We also use documents to define how our safety management system co-exists with those of our contractors to manage risk on a site. For our contractors working on more hazardous tasks, we conduct quality, technical, health, safety and security audits before awarding contracts. Once they start work, we continue to monitor their safety performance and work together to resolve issues.

Response preparation

While accident prevention is our priority, we also prepare our teams to respond in the unlikely event that a significant incident occurs. In October 2018 we conducted a two-day oil spill response drill in the UK North Sea, involving more than 200 people, including regulators. This was designed to test plans as part of our annual crisis and continuity management programme. We also held a number of large-scale exercises in the US.

We are working with IPIECA, our industry association for environmental and social issues, on new oil spill response guidelines. This will include shoreline clean-up and assessment techniques, based on lessons learned from previous incidents and exercises.

Keeping people safe

We focus on keeping employees and contractors safe and alert to potential hazards in their work.

Tragically we suffered one fatality in 2018. In our lubricants business a heavy goods driver working for one of our contractors in the US was struck by a passing vehicle while checking a tyre. We are deeply saddened by this loss and are working closely with our contractors to continue to improve safety and to seek to prevent injuries in our work together.

One of the ways we are doing this is by working with our peers on consistent standards. For example, through the International Association of Oil & Gas Producers we have encouraged other members to use new cars with an internationally recognized five-star safety rating from January 2019.



Security

As a global business, BP monitors hostile actions that could harm our people or disrupt our operations. We focus on operating areas affected by political and social unrest, terrorism, armed conflict or criminal activity.

Our 24-hour response information centre in the UK monitors global events and related developments, which means we can assess the safety of our people and provide timely advice if there is an emergency. This meant that in 2018 we were aware of events such as the earthquake in Mexico almost immediately. Our team was quickly able to confirm the safety of employees in the area and provide advice.

Cyber threats

Cyber attacks are on the rise and our industry is subject to evolving risks from hacktivists, cyber criminals, terrorists and insiders. We have experienced threats to the security of our digital infrastructure, but none of these had a significant impact on our business in 2018.

To respond to the ever-growing cyber risk we also carry out crisis exercises to prepare employees at all levels of the organization in the event of an attack.

To encourage vigilance among our employees, our cyber security training programme covers topics such as email phishing and the correct classification and handling of our information.

We also collaborate closely with governments, law enforcement and industry peers to understand and respond to new and emerging threats.

Using technology to improve efficiency

Our Brazilian biofuels business is spread across a number of geographically remote locations, which means that every day across our sites our team makes around 800 trips, covering 45,000 kilometres. This often takes place in remote locations with poor network and communications coverage, making it difficult to stay in touch.

Our SmartLog programme is helping to overcome some of these challenges and improve performance across our three sites by driving efficiencies and reducing costs. Using a combination of mobile satellite technology, sensors and radio, we can connect our people and their vehicles to a central control room. Here we receive 24-hour, real-time information about what's happening in the field to help manage activities remotely, as well as monitor and analyse behaviour and give advice or intervene on safety and efficiency.

Since introducing SmartLog in 2018, we've reduced the equipment needed by 20% and our remote monitoring is helping to reinforce our safety culture in the field.

We also use in-vehicle monitoring systems and cameras to improve transportation safety and further understand driving behaviour.

Our safety response in Brazil

Our crisis management response was put to the test in May when approximately 400,000 truck drivers blocked roads in protest at Brazil's rising fuel prices, causing widespread disruption. During this time, we safely stopped operations at our biofuels plants and advised most of our employees to work from home, with only those essential to security and emergency services on duty. The 10-day strike also affected our Castrol and Air BP businesses, although all supply routes and services returned to normal by early June.





Wearing a vest to signal heat stress

We work in some of the hottest places on the planet including the Omani desert, where temperatures can reach 55°C.

We manage heat exposure in a number of ways and the Omani government mandates breaks and shorter working hours during the hottest months. However, it is not always clear that an individual is suffering from heat stress.

So, we piloted a new wearable technology at one of our rigs. Following a health examination, the special vests are tailored to the wearer and send data on heart rate, respiratory rate and skin temperature to their smartphone. If the data exceeds the individual's parameters, a text message and email alert is sent to the rig medic and health and safety lead so that they can intervene.

We've learned a number of valuable lessons from this pilot and are now looking at additional uses in our wider operations.

Health and wellbeing

One in four people are affected by mental health issues at some point in their life. We signed the UK Time to Change employer pledge in 2018 to change the way we think and act about mental health at work. We also ran a series of employee events on World Mental Health Day and offered resilience training to around 500 people across the group. And our employee networks provide year-round opportunities to discuss mental health.



Our mental health fluctuates from day to day. As with physical health, at times we are ill and may need treatment. We can help by changing the way we view and talk about mental health.



Richard Heron, vice president health and chief medical officer, BP

Our global employee assistance programme now covers more countries. It offers guidance and support on any issue – from everyday matters to more serious problems. It is free, confidential and available 24 hours a day in a range of languages.

100+

events held around the world during cyber week to raise awareness of the risks and actions to take.



Our safety performance

We track our safety performance using industry metrics and work to continuously improve personal and process safety across BP.

In 2018 we saw a reduction in the number of tier 1 and tier 2 process safety events. We also saw an overall decrease in our recordable injury frequency and day away from work case frequency.

However, our goals stay the same – to have no accidents, no harm to people and no damage to the environment. There is always more we can do and we remain focused on achieving better results today and in the future. We do that by:

- Training our staff and giving them the tools they need to do their job
- Promoting a working environment that encourages everyone to speak up and care
- Focusing on the systematic and disciplined application of our processes.

See bp.com/hsechartingtool for safety data.

Our Cherry Point refinery in the US marked a historic milestone in April 2018, when its employees and contractors – representing more than 80 local companies – passed 25 million hours and more than five years worked without a single day away from work case.



Safety is our first priority – on every job, every day. Our values determine how we work, and no value is more important than safety. We want all our people to go home in the same way that they came to work, or even better.



Bob Allendorfer, Cherry Point refinery manager, BP

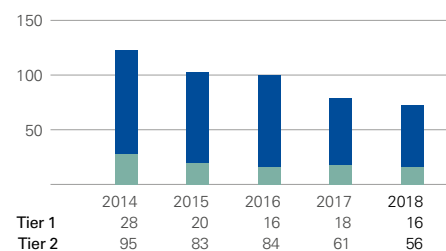
^a Tier 1 process safety events are losses of primary containment of greater consequence, such as causing harm to a member of the workforce, costly damage to equipment, or exceeding defined quantities. Tier 2 events are those of lesser consequence.

^b API and IOGP 2018 data reports are not available until May 2019.

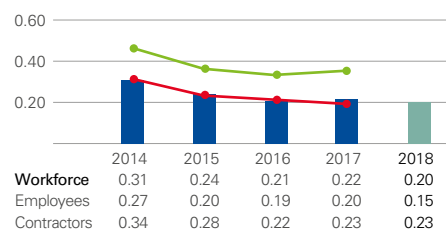
^c The number of reported work-related incidents that result in a fatality or injury.

^d The number of incidents that resulted in an injury where a person is unable to work for a day (or shift) or more.

Process safety events^a
(number of incidents)

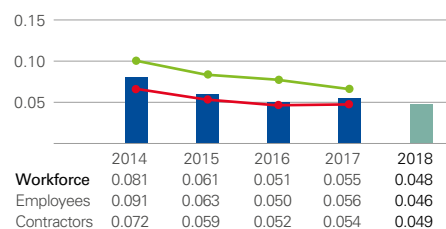


Recordable injury frequency^{b,c}
– workforce (per 200,000 hours worked)



— American Petroleum Institute US benchmark
— International Association of Oil & Gas Producers benchmark

Day away from work case frequency^{b,d}
– workforce (per 200,000 hours worked)



— American Petroleum Institute US benchmark
— International Association of Oil & Gas Producers benchmark