



- Providing contractor occupational health measures, such as preparing work areas, procedures, prevention equipment, and knowledge
- Conducting medical emergency drills between Bangchak and hospitals' support teams. The contracted hospitals have participated in the drills to ensure that their staff are familiar with the process which increase communication and response effectiveness
- Hiring occupational health experts to assess and improve employee general and occupational risk-based health check programs

Bangchak requires all contractors to undergo risk-based health check. This includes health examination, analysis, follow-up and consultation. Those whose results are found to be abnormal are required to have regular consultations with doctors. Reports of all health checkups are submitted to Bangchak supervisor and safety representative.

## Participation, Consultation and Communication on Occupational Health and Safety (Disclosure 403-4)

Bangchak has appointed the Safety and Occupational Health Committee as the official working group in accordance with the regulation to facilitate the collaboration between management and employee representatives on safety, occupational health and work environment operations and to ensure continuous improvements in the areas. At least 50% of the committee members must come from representatives of operations staff where each function elects their own representative so that all functions are represented. The committee holds a monthly meeting where representatives share information from their functions,

updates on progress or operations, present future plans, and review safety performance and report results to management. In 2021, Bangchak established measures to protect workers from the spread of COVID-19 by providing medical masks to all employees and continually improve the safety and occupational health in work areas.

In addition, Bangchak facilitates activities that promote safety both inside and outside the work area, known as Safety 24 hours. The Safety 24 hours programs encourages employees in all levels, including contractors to increase safety awareness and knowledge on safety practices and develop personal accountability (OGSS: Emergency Preparedness).

- SHEE Excellence Day activity which includes a multimedia exhibit and games to promote safety practices
- Awareness raising through various channels such as email (Outlook), flyers, and Safety Radio Channel. Safety information are provided in the forms of news, tidbits, and warning signs such as a reminder to wear protective equipment.
- Life-Saving Rules Promotion activity is a brainstorming session of employee representatives from the safety committee that communicated the IOGP's life saving rules through a representative of the Safety Committee in in a format that is easier to understand. In addition, quizzes were conducted and employees who participated can win prizes during the event as well. The activity was conducted via online communication to adapt to COVID-19 pandemic.





## Occupational Health and Safety Training

(Disclosure 403–5)

Bangchak provides safety and occupational health training for all employees and contractors prior to starting work. In addition, there are guidelines to determine required trainings in occupational health and safety, prevention and fire prevention based on the employees’ and contractors’ job position. With the objective to develop knowledge, ability and behavior on safety practices, the company includes these in the training plan which covers delivery, evaluation of the results and documentation of training records. Part of the agenda is the prevention and management of hazards in the workplace to ensure that employees and contractors work safely. Bangchak has developed a system for training and issuing access cards to contractors to be more convenient and modern through the Express Safety Pass system, a system designed to make access card issuing process more efficient and faster. This is to record the contractor’s information entering the area in the electronic system including sending documents and viewing safety videos online.

## Promoting employees’ health (Disclosure 403–6)

Bangchak also provides health services and access medical services outside of work-related activities.

- Provide primary care to employees and contractors who get sick. Medical staff are available during working hours. There is a full time nurse available during the work week and part time doctors visiting on a regular basis. This service is free of charge.
- Providing annual health check-up and flu vaccine for employees.

Bangchak organized a project to promote employee health with the aim of preventing the development of non-communicable diseases (NCDs), which are mostly behavioral diseases. The activities are divided into 3 aspects of care as follows:

- Exercise: Create monthly mission to help employees move by focusing on activities that everyone does on a regular basis but enhance it with additional challenges such as accumulating steps from walking and graduate to running and simple cardio exercise. Bangchak also provides access to fitness centers at the Bangchak refinery office building and M Tower headquarters building.
- Food: Set up weekly challenge to consume foods that contain vitamins that were advertise for the week such as vitamin D and switching from consuming sweets to vegetables to reduce sugar consumption.
- Maintaining sustainable healthy habit by creating missions to change daily behaviors such as earn scores for walking across a bridge, keep hydrating, and “Thai people aren’t addicted to sweets” policy.

Because Bangchak believes that promoting better health cannot happen only by taking care of one specific area, the company has tried to incorporate healthy behaviors in all of the employees’ daily activities.



## Performance

Bangchak monitors the following safety indicators for employees’ and contractors’ safety performance: Injury Frequency Rate (IFR), Injury Severity Rate (ISR), Total Recordable Injury Rate (TRIR) and High-consequence work-related injuries rate of employees and contractors. The results showed that:

- Sickness due to occupational disease for all personnel = 0
- Total employee injury rate = zero
- Contractor’s total injury rate

Bangchak’s performance with regards to the contractor

Zero Occupational Illness Frequency Rate (OIFR) of employees and contractors	2019		2020		2021	
	Male	Female	Male	Female	Male	Female
Lost Time Injury Frequency Rate (LTIFR) Employees	0	0	0	0	0	0
Injury Severity Rate (ISR) Employees	0	0	0	0	0	0
Total Recordable Injury Rate (TRIR) Employees	0	0	0.60	0	0	0
High-consequence work-related injuries rate* Employees	0	0	0	0	0	0

\* High-consequence work-related injuries rate – severe injuries from work-related activities that result in recovery period of greater than 6 months after the incident

safety management was achieved through indicators which include declining Loss-time Injury Frequency. However, due to the drastically reduced work hours for both contractors and employee during COVID-19 outbreaks, the Loss-time Injury Frequency Rate (LTIFR) for employees and contractors increase compared to 2020. The company has investigated the incidents and implemented lessons learned to improve operations and control work process to prevent reoccurrence, established short-term and long-term corrective action plan, and ensure monitoring of the plan and communication of results to relevant parties along with the implementation of personal safety activities to create a sustainable safety culture.

Zero Occupational Illness Frequency Rate (OIFR) of employees and contractors	2019		2020		2021	
	Male	Female	Male	Female	Male	Female
Lost Time Injury Frequency Rate (LTIFR) Employees	0.42	0	0.34	0	0.45	0
Injury Severity Rate (ISR) Employees	1.27	0	1.34	0	2.30	0
Total Recordable Injury Rate (TRIR) Employees	1.06	0	0.34	0.54	1.79	0
High-consequence work-related injuries rate* Employees	0	0	0	0	0	0

\*High-consequence work-related injuries rate – severe injuries from work-related activities that result in recovery period of greater than 6 months after the incident

## Process Safety Management

Bangchak has operated safety management in accordance with the Process Safety Management (PSM) system and has established the PSM Governance Committee (PSM GC) with continuous work plans since 2015. In addition, safety values 3E were set.





#### On-going Projects since 2015

- Felt Leadership (FL) program, presence and acting as a safety leader
- Field Risk Assessment (FRA) program to raise awareness and understanding of workers about potential hazards to prevent potential incidents
- Establishment of safety standards including LOTO (Lock Out Tag Out), LB (Line Break), and HW (Hot Work) standards
- Development of Process Safety Information (PSI), a collection of basic knowledge and necessary information for hazard identification in the production process
- Implementation of Process Hazard Analysis (PHA) tool to analyze hazards that exist in the production process which also helps in finding solutions and preventions
- Implementation of Incident Investigation (II), a procedure to analyze the root cause of an incident. Information gain from II is used to set up protection systems
- Implementation of Management of Change Technology-Facilities (MOC-T, F) which is a process to ensure effective change management process by evaluating the potential impacts and risks from proposed changes. Expert reviews are conducted for all relevant functions and communication process is in place to reduce risks from changes
- Use of Pre-Startup Safety Review (PSSR) to review equipment and operations related to the production process to ensure safe conditions prior to restarting the production process, after shutdown and major turnaround. The PSSR process helps to reduce potential risks of a restart process

- Emergency Planning & Response (EP&R)
- Management of Change Personnel (MOC-P) in production process
- Training and Performance (T&P)
- Contractor Safety Management (CSM)

In 2021, Bangchak initiated 2 new projects under the Process Safety Management (PSM) system and provided training for all involved to set up the system and continue to operate, including

- Mechanical Integrity (MI) to verify that equipment is working effectively, and controls are in place to prevent any hazards that may occur throughout the life of the equipment. In addition, equipment maintenance, tools to measure designed objective and ready availability of equipment for use.
- Quality Assurance (QA) to verify that the equipment, various machines in the production process have been installed according to the design and are ready for use.

2022 plans to complete all 14 elements of PSM include:

- Start the development of Mechanical Integrity (MI) and Quality Assurance (QA) systems.
- Continuously develop safety systems in the production process.

#### 2021 Performance

Bangchak achieved all process safety targets. The leak of flammable substances from the container or production process with serious impacts (Tier 1 and 2) in accordance with the requirements of API 754 was reported to be zero.