

Muhammad Naeem Ullah

Muhammad Naeem Ullah studied Chemical Engineering at the University of Engineering & Technology, Lahore graduating in 2007. He currently works for the HSE as a Process Safety Specialist and is studying for an MSc in Management Practice at Manchester University. He is a chartered member of the Institution.



Naeem, what are your main responsibilities in the HSE?

As a HM Inspector of Health & Safety my role is to regulate Process Safety on oil platforms operating in the UK Continental Shelf, so quite literally 'Process Safety is my job!'

The main element of my job is assessing Process Safety in the design, operation and maintenance of oil platforms as outlined in the Safety Cases prepared by the operators. In addition, I inspect onshore and offshore facilities to evaluate the effectiveness of the systems outlined in the Safety cases as well as investigating accidents and hydrocarbon releases to identify root causes and potential regulatory breaches. The HSE also drives improvement in Process Safety by preparing guidance and sharing industry performance data.

What aspects of Process Safety do you apply in your work?

My job covers very many aspects of Process Safety. For example, while assessing Safety Cases, I evaluate the robustness of the process plant design, the hazard identification and Process Safety Management systems.

The topics covered when conducting inspections can range from process safety leadership and KPI's to shift handover, from operational integrity and safe isolation to the management of change.

Can you describe a typical week?

The work varies a lot from week to week. When inspecting an offshore installation, a typical week would involve reviewing the Safety Cases, preparation for the inspection and follow-ups with the operators as well as internal discussions about inspections and investigations. Sometimes I'm also involved in influencing the industry to improve process safety performance.

The job involves interaction with many different groups. In a typical week I may be involved in discussing Process Safety Leadership issues with senior management on Monday, on Tuesday discussing Operational Integrity with the frontline workforce of a different organization to understand how the arrangements are implemented, on Thursday discussion of a modification with engineers, consultants and frontline operators and, on Friday, involved in a close-out meeting with engineers and management teams from contractors, the duty-holder and an oil company.

What do you find most interesting in your job?

The most interesting part of the job for me is inspection of the offshore platforms and the investigation of accidents. I enjoy interactions with a wide variety of stakeholders, from operators and technicians on a platform to the senior management of organisations. These interactions help me to understand

perspectives and practices from different angles. I also get to see a wide variety of process safety practices across the industry while inspecting platforms operated by Supermajor oil companies as well as those of those new to UKCS.

Is there an achievement in Process Safety that has given you satisfaction?

During my time with HSE, I have been able to drive significant process safety changes across a range of different companies and have been able to change the way they approach Process Safety leadership, operational integrity, and risk management. I feel satisfied in playing my part in making UK's offshore industry a safe place for the workforce involved.

Can you outline the skills and experience that you have found most useful?

Prior to working for HSE, I worked with several international oil companies for more than 11 years in operations support and project engineering roles which provided me with required technical knowledge and experience of process safety management in the oil industry. However, when you are working with oil companies to improve their process safety performance, technical skills are not enough to secure sustainable improvement. Soft skills, such as building collaborative relationships across the industry, effective use of influencing skills, seeing the bigger picture, ability to understand perspectives of stakeholders as well as sound decision-making, are indispensable in achieving process safety improvements across the industry.

How does your role contribute to solving society's grand challenges?

One of the grand challenges faced by the society is Climate Change, Chemical engineers will play a pivotal role in supporting the energy transition from fossil fuels to Net Zero technologies. As part of my MSc in Management Practice I am undertaking a workplace project related to regulatory management of Carbon Capture and Storage, and Offshore Hydrogen production. The project is aimed at evaluating the nature of the risks created by these technologies, evaluating the expertise needed to deliver these changes safely and identify a resourcing strategy for regulatory management of future offshore projects. My project will help oil industry's drive towards Net Zero by providing robust regulatory support to enable the development and implementation of new technologies.

What skills will be needed as we move towards 'Net Zero'?

UKCS is a mature basin, some of the offshore installations have been around for more than 40 years! Asset Integrity, high costs of maintenance, declining production and entry of less experienced oil companies are some of the challenges which may ultimately affect process safety management practices in the UKCS.

UK's oil industry is strongly committed to supporting the Energy Transition to Net Zero. In the UK, projects are being developed to capture carbon dioxide (CO₂) from major industrial clusters with the captured CO₂ being injected in the depleted offshore reservoirs.

Attributes of CO₂ such as its fluid flow behaviour, its dispersion profile if released, its corrosivity and compatibility with materials, pose significant process safety challenges. These will need to be addressed before Carbon Capture and Storage (CCS) can be widely adopted. Design studies completed in the UK for CCS facilities indicate that knowledge of chemical engineering principles, experience of application and a robust understanding of specific challenges associated with CO₂ will be required to address these challenges.

Why did you decide to study Chemical Engineering?

I became interested in Chemical engineering due to the broad set of roles undertaken by Chemical engineers and the wide range of organizations where Chemical engineers are needed. Another factor that convinced me was the relatively future-proof nature of this engineering discipline which will remain indispensable to our lives irrespective of the anticipated technological revolution.

What would you say to a chemical engineer who wants to work in Process Safety?

As an early career chemical engineer consider diversifying your skill set; don't work in one role for too long. When your learning curve flattens in a role or in an organization, consider doing a different type of role. For example, after working in a design consider moving to an operational role to expose yourself to a different set of challenges. In short, always challenge yourself, find ways to enhance and widen your skillset, and never settle on one kind of job for too long.

How has the Institution helped in your career?

Membership of IChemE and being a regular reader of TCE has helped me to stay in touch with the latest developments in oil and gas sector, and Net Zero technologies. Being a member of the Institution has helped to continually develop myself as a Process Safety Professional.