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PROCESS SAFETY INITIATIVE OF NIGERIA (PSIN)

NEWSLETTER

A STITCH IN TIME: PRIORITISING EARLY PROCESS SAFETY INTERVENTIONS

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In this edition

A STITCH IN TIME: PRIORITISING EARLY SAFETY INTERVENTIONS

We examined the crucial importance of proactive process safety, provided examples from industry, and offered practical strategies for integrating early interventions into corporate culture and operational workflows.
A stitch in time, indeed, saves more than nine—it can save lives.

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Plus

National Stakeholders Converge in Abuja to Tackle Surge in Tanker Explosions

In a bold move to curb the rising tide of deadly tanker explosions in Nigeria, safety and process engineers, regulators, and industry leaders gathered in Abuja for a groundbreaking workshop, sparking urgent dialogue, sharing global best practices, and setting the stage for sweeping reforms in policy, infrastructure, and enforcement.

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PSIN's Impact Recognised at the 6th CCPS-DNV African Process Safety Webinar

In a powerful display of leadership and collaboration, the Process Safety Initiative of Nigeria (PSIN) took centre stage at the 6th CCPS-DNV Process Safety in Africa Webinar held on June 24, 2025. As an institutional partner, PSIN played a pivotal role in the event's success—delivering impactful presentations, driving record participation from Nigeria, and earning high praise from organizers.

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A Stitch in Time: Prioritising Early Safety Interventions

The age-old proverb “a stitch in time saves nine” is particularly resonant when applied to process safety in high-risk industries such as oil & gas, petrochemicals, power generation, and manufacturing. Too often, process safety measures are reactive, triggered by near misses, audits, or, worst of all, accidents. However, prioritising early process safety interventions—those taken at the design, conceptualisation, or early operations stage—can significantly reduce risks, save costs, and enhance operational integrity.

This article examines the crucial importance of proactive process safety, provides examples from industry, and offers practical strategies for integrating early interventions into corporate culture and operational workflows

WHY EARLY INTERVENTION MATTERS

1. Cost Avoidance and Risk Mitigation

Studies consistently show that the cost of modifying a process plant increases exponentially as the project moves from design to operation [1]. According to the UK’s Health and Safety Executive, rectifying design errors post-commissioning can cost 10 to 100 times more than correcting them during the design phase [2]. Furthermore, early hazard identifications, such as through Hazard Identification (HAZID) or Process Hazard Analysis (PHA) [3]—can mitigate catastrophic failures and unplanned downtime.

2. Protecting People, Assets, and the Environment

Process safety incidents can have severe consequences, from loss of life and injury to environmental pollution and community impact. Early interventions ensure the incorporation of inherently safer design principles [4], which reduce dependency on complex engineering controls and reactive mitigation.

3. Regulatory and Reputational Benefits

Regulators are increasingly demanding demonstration of proactive safety planning. Projects that exhibit early-stage hazard analysis and safety design integration [5] are more likely to pass scrutiny. Additionally, public and investor trust is enhanced when safety is visibly embedded from the start.

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A Stitch in Time: Prioritising Early Safety Interventions

KEY ELEMENTS OF EARLY PROCESS SAFETY INTERVENTION

1. Inherently Safer Design
Designing out hazards is far more effective than controlling them [6]. Early design decisions—such as substituting hazardous substances, simplifying process steps, or minimising inventory—can eliminate or significantly reduce the severity of potential incidents.

2. Process Hazard Analysis from Day One
While HAZOPs are often standard at the detailed design stage, earlier screening using tools like HAZID, LOPA (Layers of Protection Analysis), or What-If analysis [7] at the feasibility and conceptual phases can flag critical concerns before they're baked into costly decisions.

3. Involvement of Safety Professionals Early
Too often, safety specialists are brought in only after the process is designed. Embedding safety experts in the early project team ensures their input influences key process, layout, and control decisions.

4. Use of Digital Twins and Simulation
Modern digital tools enable the modelling of process behaviour under various scenarios. Simulations can reveal stress points, flow imbalances, or pressure risks long before equipment is ordered.

CASE STUDY SNAPSHOT: LESSONS FROM INDUSTRY

In 2005, the BP Texas City Refinery explosion [8] tragically highlighted the consequences of delayed safety interventions. A key investigation finding was the long-standing neglect of warning signs and underinvestment in early-stage risk assessment. Conversely, several firms have credited early interventions—such as pre-FEED HAZID and ergonomic layout review—for preventing costly design errors and improving construction safety metrics.

OVERCOMING BARRIERS TO EARLY ACTION

Despite the benefits, early process safety interventions often face resistance:

- **Short-term cost pressures:** Safety reviews are sometimes viewed as optional or deferrable.
- **Project delivery silos:** A disconnect between engineering, operations, and HSE functions delays integration.
- L**ack of awareness:** Teams may not be trained to identify design-stage safety opportunities.

Solutions include making early safety reviews mandatory in stage-gate project processes, cross-functional safety integration workshops, and incentivising project leads on safety KPIs, not just schedule and cost.

CONCLUSION

Prioritising early process safety interventions is not just good practice—it is essential. A minor investment in early hazard identification or design improvement can prevent major financial losses, regulatory action, and most importantly, loss of life.
By embedding safety as a proactive, not reactive, function [4]—organisations signal their commitment to excellence and sustainability. The future of process safety lies in anticipating risks, not merely responding to them.
A stitch in time, indeed, saves more than nine—it can save lives.

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The "CCPS-DNV Process Safety in Africa" Webinar, organised by the Centre for Chemical Process Safety (CCPS) & DNV, with Process Safety Initiative of Nigeria (PSIN) as the institutional partner, brings together leading domain experts, companies and authorities to share knowledge and support the advancement of process safety management practices in Africa. It was the 6th Edition, held on June 24, 2025. The webinar received a very good response.

The webinar also provided an opportunity for knowledge exchange and collaboration, promoting the sharing of best practices and innovative strategies specifically suited to the African region.
PSIN is a valuable "Institutional Partner" for the webinar series, this one being the 6th. The ongoing commitment to process safety excellence in Nigeria brings valuable perspectives and significantly enriched the discussions during the event.

The high level of engagement and interest from the attendees reflects the relevance and importance of the speakers' addresses. Additionally, many delegates have requested access to the presentation materials.

The Meeting Performance Report

- Total registrations received: 735
- Total number of attendees during Live Webinar: 326 (about half from Nigeria)
- Total number of Papers Presented: 7 (3 from Nigeria, 3 papers from other African countries and one from UAE)
- Total number of questions during Live Webinar: 84

Real Impact

Three solid papers from PSIN

1. Learning from Incidences and Near Misses by Dr. Mustapha Lamorde.

2. Risk-Based Process Safety (RBPS) by Engr. Mrs. Cynthia Idadokima.

3. Inherent Risk in the Oil and Gas Industry by Engr. Daniel Abia.

PSIN: Advancing a Safer Tomorrow
Through sustained partnerships like this, PSIN continues to drive excellence in Nigeria's process safety culture. The overwhelming request for access to PSIN's presentations highlights the high value of the insights shared. The engagement also lays the groundwork for future webinars, workshops, and growing national membership in the global CCPS community.

Let's build a safer industrial future — together.
Join PSIN today.

JOIN PSIN TODAY

In rapidly industrialising Nigeria, safety can no longer be an afterthought. The Process Safety Initiative of Nigeria (PSIN) is a dynamic, non-profit platform dedicated to safeguarding lives, assets, and the environment through the advancement of top-tier knowledge and practices in process safety across the oil & gas, mining and agricultural value addition, manufacturing, chemicals/pharmaceuticals, and other process industries.
PSIN was born from the urgent need to address process safety gaps in Nigeria, drawing inspiration from global best practices. The initiative receives direct professional leadership from the Nigerian Society of Chemical Engineers (NSChE) and aligns with the American Institute of Chemical Engineers (AIChE). A formal MOU between NSChE and AIChE led to strong collaboration with the Centre for Chemical Process Safety (CCPS). PSIN has become your gateway to joining a forward-thinking, globally aligned process safety movement.

Why PSIN Matters Now More Than Ever!
Following global tragedies like the Bhopal disaster, world leaders in chemical engineering founded CCPS to revolutionise safety protocols. Yet, Africa remains largely outside this vital conversation. PSIN bridges that gap —starting in Nigeria—with a mission to extend CCPS's influence and standards across the continent and develop safety protocols that align with and address Africa's peculiar challenges. With strategic partnerships already in motion and registration as a not-for-profit incorporated trustee with the Corporate Affairs Commission, PSIN is poised to become the authoritative voice for process safety in Africa.

What We Offer!
By joining PSIN, you will gain the following benefits:

- A national platform to champion process safety excellence
- Access to global best practices through CCPS collaboration
- A voice in shaping safety policies and regulations
- Specialized training programs and workshops
- Curriculum integration for universities and technical institutions
- Networking opportunities with global and local leaders in process safety

CURRENT PSIN MEMBERS

- NLNG
- NNPCL Group
- MATRIX Energy
- FLOUR MILLS Nigeria
- ARDOVA Petroleum
- VITAFOAM Group
- PINNACLE Oil
- BUA Cement
- NOTORE
- SHELL
- MATRIX Petro-Chem

Our Core Objectives
PSIN's mission is practical, targeted, and transformative:

- Drive nationwide awareness and commitment to a culture of safety.
- Promote the sharing of best practices across industry sectors.
- Close critical process safety gaps through training and education.
- Support and influence regulatory adherence and policy development.
- Equip lecturers and engineers with cutting-edge knowledge and skills.
- Embed process safety deeply into academic curricula and industry operations.
- Provide a robust interface for global collaboration and capacity building.

Who Should Join?
Membership is open only to organisations. Therefore, if your organisation operates in the process engineering, operations, or management fields within either the private or public sector, then PSIN is suitable for you! This includes regulators, relevant government agencies, operators, manufacturers, consultants, and capacity development agencies.

- PSIN is your platform to contribute meaningfully to a safer Nigeria and Africa.
- Be Part of the Safety Vanguard

- **Call Engr. Tony Ogheneovo today +234 802 351 3532**

- **PSIN isn't just a professional milestone — it's a commitment to protecting lives, building industry excellence, and driving Nigeria's process safety future.**