

Johan Taljaard

PSM Profile



*CEO and Founder
Istec Safety
since 1994*



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Overview

Johan Taljaard is an esteemed international consultant, trainer, and auditor specializing in Process Safety Management (PSM) and risk-based management systems.

With over 42 years of industrial experience in the oil, gas, refinery, Liquid to Gas (LTG), and petrochemical sectors, Johan has cultivated unparalleled expertise in managing complex industrial processes.

His career spans more than 30 countries, focusing on process safety, risk management, operational excellence, and the integration of technical and human factors in industrial safety systems.

Core Expertise:

- **PSM Compliance and Implementation:** Expert in OSHA 29 CFR 1910.119 and the U.S. Environmental Protection Agency (EPA), UK HSE's COMAH, and Canada's CCPS- 20 Elements.
- **Risk Management:** Specializes in hazard identification, risk assessment, operational control reviews, and catastrophic incident prevention.
- **Incident Investigations:** Conducted investigations for over 300 fatalities and 10 catastrophic process safety incidents, utilizing techniques such as Root Cause Analysis (RCA), TapRoot, ICAM, and Johan's proprietary Hazard-Barrier-Target Analysis method.
- **Process Safety Training:** Designed and delivered training on all elements of process safety management, including Process Hazard Analysis (PHA), Management of Change (MOC), Pre-Startup Safety Review (PSSR), Fundamentals in Process Safety, Risk-Based Process Safety, and Catastrophic Incident Investigation.

Direct PSM Experience:

Sasol Secunda Complex:

- Audited and inspected units producing propylene, polypropylene, and ethylene, ensuring compliance with safety standards and insurance requirements.

Rectisol Gas Purification:

- Led operations and safety reviews for gas purification processes, ensuring efficient removal of impurities such as H₂S and CO₂.

Coal-to-Liquids Production:

- Developed operational and process safety protocols for coal gasification and syngas production systems.

Top Skills

Process Incident Investigations

PSM Auditing

Integrated Safety Systems

Leadership in Risk Management

Industry

Oil & Gas Industry
Petrochemical Industry
Chemical Manufacturing
Pharmaceuticals and Biotechnology
Energy Generation
Mining and Metallurgy
Food & Beverage Manufacturing
Pulp & Paper Industry
Plastics and Polymers Industry
Fertilizer Industry
Paints, Coatings, and Adhesives Industry
Water and Wastewater Treatment
Textiles and Dyeing Industry
Aerospace and Defense Manufacturing



Career Highlights

Founder and Consultant at ISTECH

- Established ISTECH, a consultancy specializing in Process Safety Management (PSM), auditing, and training.
- Developed PSM standards and operational safety guidelines for petrochemical, mining, and chemical industries.

Clients: Global training programs and projects

- Conducted high-impact training sessions on PSM, catastrophic incident investigations, hazardous materials handling, process safety auditing, and site inspections for clients such as SABIC, ARAMCO, Abu Dhabi National Oil Company (ADNOC), Emirates National Oil Company (ENOC), Kuwait Petroleum Corporation (KPC) and the subsidiaries E.g. Kuwait Oil Company (KOC), Kuwait National Petroleum Company (KNPC), Petrochemicals Industries Company (PIC), Kuwait Oil Tanker Company (KOTC), Petroleum Development Oman (PDO), Cristal Global, KJO Rasgas, Sasol, Engen, Shell, Tharisa minerals, Kumba, Astron Energy, PetroSA (The Petroleum, Oil and Gas Corporation of South Africa previously known as Mossgas, BP, ORYX GTL

Major Incident Investigations (Recent)

- Astron Energy, 2021: Led an investigation into catastrophic plant damage in Cape Town.
- Engen Refinery, 2022: Headed a catastrophic explosion and fire investigation in Durban, South Africa.
- Egoli Gas, 2023: Investigated a significant loss-of-containment event in Johannesburg.
- Energy Power Plant, 2024: Conducted an independent inquiry into a steam containment failure.

Auditing Expertise

- Performed comprehensive PSM audits for Coal-to-Liquid (CTL) Plant, including compliance reviews for petrochemical companies.

Operational and Production Leadership

- Served as Production Superintendent on gas purification (Rectisol) units, specializing in startups, shutdowns, and operational excellence.
- Oversaw safety, production, and maintenance at Sasol's Secunda Complex, which produces syngas and downstream chemical products.

PSM Training Facilitation

- Designed, developed, and presented over 25 process safety courses with no customer complaints. Recognized as a practical and hands-on tutor and facilitator.
- Worked as an independent resource for Haward in the Middle East, delivering a comprehensive range of process safety training courses.

List of Process Safety Training Courses Delivered in the Middle East

- Process Safety Fundamentals for Operations
- Risk Assessment Techniques for PSM (ISO 31010)
- Bow Tie Analysis
- Risk Management and Risk Assessment for Process Safety
- Integrated Management Systems based on International Management Systems
- Emergency Management - Emergency Preparedness and Response
- Hazard Identification Techniques and PHA
- Perfecting Process Safety Management
- Risk Based Process Safety
- Leading and Lagging Indicators
- Auditors Training Process Safety - Auditors Guideline ISO 19011, OSHA PSM and EPA'S Risk Management (RMP)
- Best Practices in Process Safety Management
- Human Factors in Process Safety
- Job Safety Analysis and Planned Task Observations JSA and PTO
- Process Hazard Analysis Team Member Training – HAZOP and What If Techniques
- Risk Assessment within Production Operations- Techniques and Methods
- Root Cause Analysis (RCA)
- Layer of Protection Analysis and Emergency Preparedness (LOPA)
- Accident and Incident Investigation (RCA) – Awareness ICAM
- Hazard Barrier Target Analysis HBTA
- Hazard Identification Risk Assessment and Determining Controls (HIRAC)
- HAZOP Studies / Team Leaders Facilitators
- Security Risk Assessment Methodology for Petroleum & Petrochemical Industries
- Certified RCA Leader - Advanced Root Cause Analysis (RCA) Methods & Leadership
- Chemical Spills : Safety & Response Action
- Safety Management Specialist (SMS): BCSP-SMS Exam Preparation Training
- Certified Internal Lead Auditor in Safety
- Risk Assessment in the Oil & Gas Industry
- Handling of Harmful Chemical Intermediate

Key Competencies

Process Incident Investigations:

- Expertise in analyzing root causes of incidents to provide actionable recommendations, with a focus on human error and systemic failures.

PSM Auditing:

- Conducted PSM audits globally, including projects in Peru, Indonesia, Malaysia, Nigeria, the UK, Australia, and Hong Kong.

Integrated Safety Systems:

- Designed and implemented IMS/PSM SHEQ/HSE systems, integrating risk management, environmental standards, and quality assurance.

Leadership in Risk Management:

- Supervised production and process safety teams for 15 years, achieving significant improvements in operational safety and efficiency.

Operational Procedure Audits:

- Audited and verified the effectiveness of operating procedures and critical controls for PSM using Bowtie Analysis.

Evaluation of PSM Systems:

- Evaluated process safety systems, including reviewing diagrams, MSDS, PHA reports, MOC records, incident investigations, and employee training logs. Identified gaps to improve safety, regulatory compliance, and foster continuous improvement.

Global Impact

Johan's contributions to Process Safety Management have mitigated risks, prevented catastrophic events, and ensured compliance with global safety standards.

His technical acumen and leadership in investigations and audits make him a sought-after expert in the field of process safety and risk management.



CONTACT

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ISTEC

The logo consists of a stylized globe icon with an arrow pointing upwards and to the right, positioned to the left of the word "ISTEC" in a large, bold, white sans-serif font. The background of the logo area is a dark blue gradient with a faint, semi-transparent image of the oil rig.