



j5 Control of Work

Is your company still using paper, spreadsheets or word processor documents to manage and record safety-critical control of work information?



j5 Control of Work



The Problem

According to the **Health and Safety Executive (HSE)**, when using permit to work systems to safely control work, major hazards could arise from the following:

Wrong type of work permit used

Wrong information about work required in the work permit

Failure to recognize the hazards where work is carried out - e.g. flammable substances

Introduction of an ignition source in a controlled flameproof area – e.g. welding, non-sparkproof tools, non-intrinsically safe equipment used in intrinsically safe zones

Terms of work permit not adhered to – e.g. failure to isolate plant and / or drain lines of hazardous substances

Failure to hand-over plant in a safe condition on completion of work / canceling of work permit

Unauthorized staff performing work permit functions

Poor management of the work permit system

Insufficient monitoring of the work permit system

The Solution

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Right type of work permit is used

The digital j5 Control of Work solution has been developed to reduce operational risk and help ensure that:

Using strict approvals and workflows **Standardizing data entry** Drop-down menus, checklists and conditional selections make for a more consistent understanding of work and risk **Hazards are recognized where work is carried out** Comprehensive advice and information is accessible on a mobile device at each workflow step

Enforcement of company policy and procedures using software rules

Integration of the isolation management and permit workflow Ensure work can start and finish with the isolation in the right state and isolations cannot be removed if work is ongoing

Staff performing work permit functions are authorized

Enforces a process of worker identification and required signatures before and after each work function

Effective Management and Monitoring of Safe work

To ensure real-time monitoring at various levels of the organization, the j5 Control of Work provides quick transparent views of the planning and execution of work, as well as having the ability to perform desktop audits for compliance, and has enhanced reporting capabilities.



	Isolation Certificate - Isolated							
	ISOLATION AUTHORITY	Nick Hurley	ISOLATION OPERATOR	Nick Hurley	AREA AUTHORITY	Nick Hurley		
solation D	etails							
				Isolation	Certificate			Isolation # Permit # Work Order #
1. Descrip Isolation Dis Equipment t Area Reason for	tion of the Isolation cipline o be Isolated Isolation	Mechanical Crude Oil Distillation unit Separator 2						Date Isolation Require Tue 14, 00:30 Expected Removal Da Aug 01, 00:30
Associated	Documents:						, < ↑ ≡ T	0
2. Isolatio	n Plan						Permit Details Submitted	
# 1	Isolation Point V2323 V234	2 3 D	Description 3 Phase Inlet Demister Outlet Valve				07/13/2020 00:19 - Nick Hurley	
4	V676 V22	0	il Outlet Valve later Outlet line			Blind in Place Blind in Place	Permit Number	CW2
3. Risks, H Risk Assess	lazards and Controls ment Required?		Yes No		Risk Analysis Document (if applied	cable):	Work Order #	WO 4327
							Description of the V	Vork

j5 Control of Work is specifically designed for both Desktop and Mobile User Experiences

In their 2010 "Seven Key Lessons to Prevent Worker Deaths During Hot Work In and Around Tanks" Safety Bulletin, the **U.S. Chemical Safety and Hazard Investigation Board (CSB)** highlighted how inadequate permit to work procedures have contributed to numerous accidents where a flammable vapor came in contact with an ignition source.

One of the key lessons from those tragic incidents was that companies should use written permits and:

Ensure that qualified personnel familiar with the specific site hazards review and authorize all hot work and issue permits specifically identifying the work to be conducted and the required precautions."

Seven Key Lessons to Prevent Worker Deaths During Hot Work In and Around Tanks U.S. Chemical Safety and Hazard Investigation Board (CSB)

The American Petroleum Institute (API) and National Fire Protection Association (NFPA) also highlight the importance of Control of Work procedures in:

API RP 2009: Safe Welding, Cutting, and Hot Work Practices in the Petroleum and Petrochemical Industries

NFPA 51B: Standard for Fire Prevention During Welding, Cutting, and Other Hot Work

NFPA 326: Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair



The idea of 'production vs. safety' must give way to the vision of 'safe production.'"

Terry Mathis CEO, ProAct Safety

Key Business Drivers for Digital Control of Work

Security & Data Integrity Management & Compliance Image: Complex Compl

Productivity Gains

- Reduction in permitting time
- Enhancements to simultaneous operations and maintenance planning

Risk Reduction

- Last best example of work practices
- Building lessons learned process into a routine continuous improvement capability
- Enhanced Simultaneous Operations (SIMOPs) Management and work conflict management
- Qualifications management built into workflow

Management and Compliance

- Company policy and regulations can be enforced by software rules
- Audits and compliance processes can be applied at every step of the permit process

- Real-time operational twin allows for real-time interventions for correction and for improvement
- Corrective Action Preventive Action (CAPA) management can be applied and tracked

Security and Data Integrity

- Individual user transaction level auditability
- Workflow management with role specific access and control
- Can provide enhanced electronic signature capability (eIDAS definition)

Integration with Systems of Record

- Integration with Hexagon ecosystem of solutions
- Can be integrated with PAS PlantState Integrity™
- Preconfigured interfaces with most major industrial systems of record e.g. Historians, CMMS /EAM

Control of Work Value Drivers of Digitalization

Quantitive Benefits



support during work execution



j5 Operations Management Solutions offers the advantage of having a proven industrial solution whilst having the option to provide any complementary module that you would need for a specific requirement."

Laurent Hardy Operations Manager, European Synchrotron Radiation Foundation (ESRF)

Job Safety - Is this still an issue?

International Association of Oil & Gas Producers (IOGP) member companies that participated in the study reported a total of **540** Lost work day cases in 2020 and Overall participating companies reported **15,631** Days of work lost through injuries in 2020. Apart from Assault and Violent Acts, all of these incidents would be impacted by or reduced by digital Control of Work.

Lost Work Day Cases by Cause (2020)



Lost Work Day Cases by Activity (2020)



Can Control of Work help?

With the majority of safety incidents in one of most mature industries falling within Control of Work practices, it is likely to be more problematic in other industries. As the IOGP 2020 Safety Survey data shows, over 70% of LTIs and Fatalities are related to Control of work and would be better managed by an Enterprise level digital solution.

Ratio of Fatalities to Lost Time Injuries by Cause (2020)

Cause	LTIs (fatalities + LWDCs)	Fatalities	Ratio (LTI: Fatality)
Water related, drowning	5	4	1:1
Exposure electrical	6	2	3:1
Explosion	12	3	4:1
Struck by (not dropped object)	94	3	31:1
Dropped objects	31	1	31:1
Caught in, under or between (excl. dropped objects)	100	1	100:1
Slips and trips (at same height)	99	0	n/a
Falls from height	67	0	n/a
Unspecified - Other	43	0	n/a
Overexertion, strain	40	0	n/a
Cut, puncture, scrape	27	0	n/a
Exposure noise, chemical, biological, vibration, extreme temperature	17	0	n/a
Pressure release	10	0	n/a
Assault or violent act	2	0	n/a
Confined space	1	0	n/a





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Our technologies are shaping production and people-related ecosystems to become increasingly connected and autonomous – ensuring a scalable, sustainable future.

Hexagon's Asset Lifecycle Intelligence division helps clients design, construct, and operate more profitable, safe, and sustainable industrial facilities. We empower customers to unlock data, accelerate industrial project modernization and digital maturity, increase productivity, and move the sustainability needle.

Our technologies help produce actionable insights that enable better decision-making and intelligence across the asset lifecycle of industrial projects, leading to improvements in safety, quality, efficiency, and productivity, which contribute to Economic and Environmental Sustainability.

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