

## Case Study

# IntelliPERMIT™ lifts South African chemicals manufacturer to new levels in safety management

SA Bioproducts, a leading manufacturer of amino acids for the global nutrition and healthcare markets, has reached a new benchmark in plant safety management with the implementation of IntelliPERMIT™ - an electronic permit-to-work system designed to improve the permit-issue process in hazardous operating environments.

Working closely together with operations staff and management at SA Bioproducts, the system was designed and implemented by ApplyIT, the South African software solution provider to the process manufacturing industry. IntelliPERMIT™ controls the process by which permits-to-work (or clearances) in an operating plant are prepared, authorised, issued and subsequently managed.

IntelliPERMIT™ replaced a paper-based permit-to-work system that was used to record equipment isolations and communicate hazards and precautions to maintenance personnel.



**SABioproducts Lysine Manufacturing Plant  
Umbogintwini, Kwa-Zulu Natal coast, South Africa**

The following problems were encountered in managing the paper-based system:

- ▶ Management of paper permits was difficult and often unreliable, with ambiguous or incomplete information being provided.
- ▶ The paper-based system was not transparent as permits could only be seen by those in the control room.
- ▶ The logistics of managing manual forms was inefficient, paper copies of permits could easily go missing and modifications made to authorised permits could not be easily traced.
- ▶ Incorrect classification of hazardous work resulted in maintenance personnel performing work without full authorisation.

Management at SA Bioproducts believed that in order to maintain high levels of safety on their plant and prevent incidents, they needed a system that would provide them with tighter control over the permit-to-work process.

### Paper Processes

- ▶ Poor handwriting
- ▶ Permits filled in 'by rote' without proper consideration
- ▶ Inefficient, bottlenecks in the control room
- ▶ Difficult to audit



### Lack of Control

- ▶ Gap between procedures and practice
- ▶ No active controls to ensure appropriate PPE & precautions
- ▶ Poor control over authorisations
- ▶ Difficulty managing work done by contractors



### Lack of Visibility

- ▶ Status of outstanding work is 'hidden' in various permit books
- ▶ Contractors leave site without signing permits
- ▶ Permits seldom cross referenced correctly



### Common permit-to-work problems

The implementation of IntelliPERMIT™ at the SABioproducts site required a multi-faceted approach that addressed issues relating to people, procedures and technology.

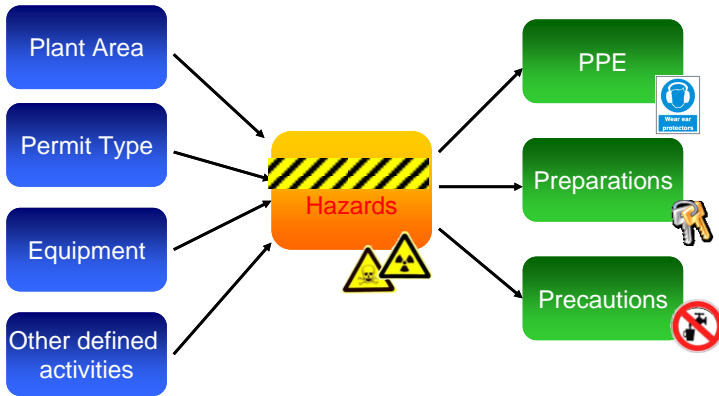
To ensure the system was adopted by staff and contractors, use of the system needed to be straightforward and user-friendly, catering for a wide range of users of varied skills levels.

Training on the principles and operation of the IntelliPERMIT™ system is an integral part of the induction process at SA Bioproducts.

The way users interact with the software was carefully considered and screens were designed to ensure users take time to consider all aspects of the task to be performed, potential hazards, appropriate personal protective equipment (PPE), precautions and preparations required for safe work.

All system users, including contractors, are issued with electronic signatures used to perform authorisations in the system. The ability to perform certain transactions is limited to certain users, ensuring that only authorised personnel can issue permits.

SA Bioproducts was able to build rules into IntelliPERMIT™ according to their defined procedures. These rules ensure hazards are correctly indicated on the permit and the necessary safety precautions are adhered to. This ensures information recorded on a permit is of a high integrity and all permits are managed in accordance with defined procedures.



**Predictive Hazard Identification in IntelliPERMIT™**

IntelliPERMIT™ provides complete visibility of the status of current permits via a display monitor in the control room, providing plant operators with a view of activities on the plant at a glance.

Manufacturing managers can review the status of permits from their desks.

"Should an incident occur that relates to the way a piece of equipment was locked out, isolated or

prepared for work, IntelliPERMIT™ provides an accurate electronic record of events for investigation purposes," says Gary Clancy, operations manager at SA Bioproducts.

"The system enables detailed auditing by management – at any time authorised staff can enter the system to see the precise time a permit was issued or signed off and by whom." Clancy believes constant monitoring puts pressure on employees to approach permits-to-work strictly according to set procedures.

The integrity of the system data is maintained through automated auditing of all transactions. The system also provides a mechanism for dealing with exceptions – conditions in which circumstances require a controlled deviation from existing protocols.

Clancy says the system serves two main purposes: it ensures personnel adhere to safety rules, and it reminds and coaches people of the right protocols to ensure compliance.

"Management control of safety is one of the most critical aspects of plant operations. The IntelliPERMIT™ system provides management with a real-time view of exactly what's happening on the plant. Permits can be audited from a PC, and because compliance is enforced, safety standards are automatically raised," says Clancy.

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**Gary Clancy**

**Operations Manager**

**SABioproducts**

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