

Major Hazard Facilities Laverton Chloralkali Site



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LAVERTON CHLORALKALI SCHEDULE 1 MATERIALS

Main Schedule 1 Materials

- Chlorine (680 tonnes max c.f. 25 ton threshold)
- Hydrogen Chloride
- Hydrogen
- Ammonia (Anhydrous)
- Natural Gas

Other Schedule 1 Materials

- LP Gas
- Acetylene
- Oxygen
- Solvents
- Paints
- C35 Boiler Water Treatment

ORICA

SAFETY MANAGEMENT SYSTEM

- The Safety Management System (SMS) describes how we operate in a safe manner.
- The SMS is based on the 116 Orica Model Procedures with local work instructions describing how the key procedures are implemented on site.
- 30 of the model procedures have been identified as MHF critical and these are audited annually.
- The CMMS system is an important element of the SMS managing maintenance, clearances and modifications.

LAVERTON CHLORALKALI SAFETY CASE

- The Safety Case documents how we operate the facility in a safe manner. **It is not a separate system.**
- The Safety Case includes information on the:
 - possible major incidents that could occur.
 - controls that prevent incidents occurring or reduce the effects of an incident.
 - Safety Management System which ensures the safe operation of the plant.
 - Emergency Response Plan which describes the response to a major incident.
- The Safety Case demonstrates the adequacy of the safety systems.
- All employees involved with the Safety Case
 - reviewing, training of employees, contractors and visitors, testing, maintenance,

SAFETY ASSESSMENT

- Major incident scenarios were generated from the hazards identified.
- The scenarios were reviewed in the Safety Assessment Sessions to document the following about each possible major incident:
 - causes.
 - severity.
 - prevention controls.
 - mitigation controls.
 - other controls that could be considered.
 - estimate of likelihood.

MAJOR INCIDENTS

- A total of 98 major incidents have been identified for the Laverton ChlorAlkali Facility. These can be summarised as:

CHLORINE AND HYDROGEN CHLORIDE

- Release of chlorine or hydrogen chloride due to the failure of piping, equipment or process control, failure of scrubbing system, overfilling tanker, drum or cylinder

OTHER SCHEDULE 1 MATERIALS

- Release of ammonia from the refrigeration equipment.
- Ammonia fire or explosion in the refrigeration equipment.
- Hydrogen fire or explosion in process equipment.
- Natural gas fire or explosion in boiler.

CRITICAL CONTROLS

- Critical controls are the most reliable and important controls.
- Target is two critical prevention controls and two critical mitigation controls for each scenario.
- More than 200 critical controls. The critical controls must be working effectively to prevent a major incident.
- Each critical control is tested or audited on a regular basis to ensure it is still effective.
- This has a direct impact on Maintenance resource requirements

REVIEW OF MHF IMPACT

- Orica's Model Procedures cover
 - Critical Machines
 - Contractor management
 - Pressure Vessels
 - Electrical safety
- All required under existing legislation
- MHF has added
 - External auditing of critical Model Procedures
 - Critical controls (additional to CIPS)
 - Dossier collecting all of the above into one document

FEEDBACK FROM RELIABILITY TEAM

- The MHF Regulations have driven an additional level of control testing into an already well developed PM system
- The MHF Regulations have
 - provided more support for routine testing
 - encouraged greater participation of workgroups in understanding of process and risks
 - required streamlined testing programs to ensure completion in limited shutdown timeframes
 - greater confidence in control systems
 - added increased risk (?) due to more “tampering” with safety systems / placing overrides in place, etc
 - ensured more traceability of PM’s - prove “you did it and did all of it”