Major Hazard Installation Risk Assessments and Reporting

MHI RISK ENGINEERS (PTY) LTD K2012067890

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- Mr Terrence Moothusamy
- Pr Eng Director and Founder
- B.Sc. Engineering (Chemical)
- Approved Inspection Authority MHI
- Profession Engineer
- Associate Process Safety Member IChemE

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About MHI Risk Engineers

Training and coaching

Quantitative Risk Assessments SANS 1461

MHI RISK ENGINEERS (PTY) LTD K2012067890

Process Safety Specialists

HAZOP Facilitation/ RAM/FMEA LOPA/SIL/SIS

Emergency preparedness planning SANS 1514

Audits
SANS codes ammonia, LPG, petroleum Products , Process safety management systems

Our Accreditation

ECSA

sanas
South African National Accreditation System

employment & labour
Department:
Employment and Labour
REPUBLIC OF SOUTH AFRICA

IChemE

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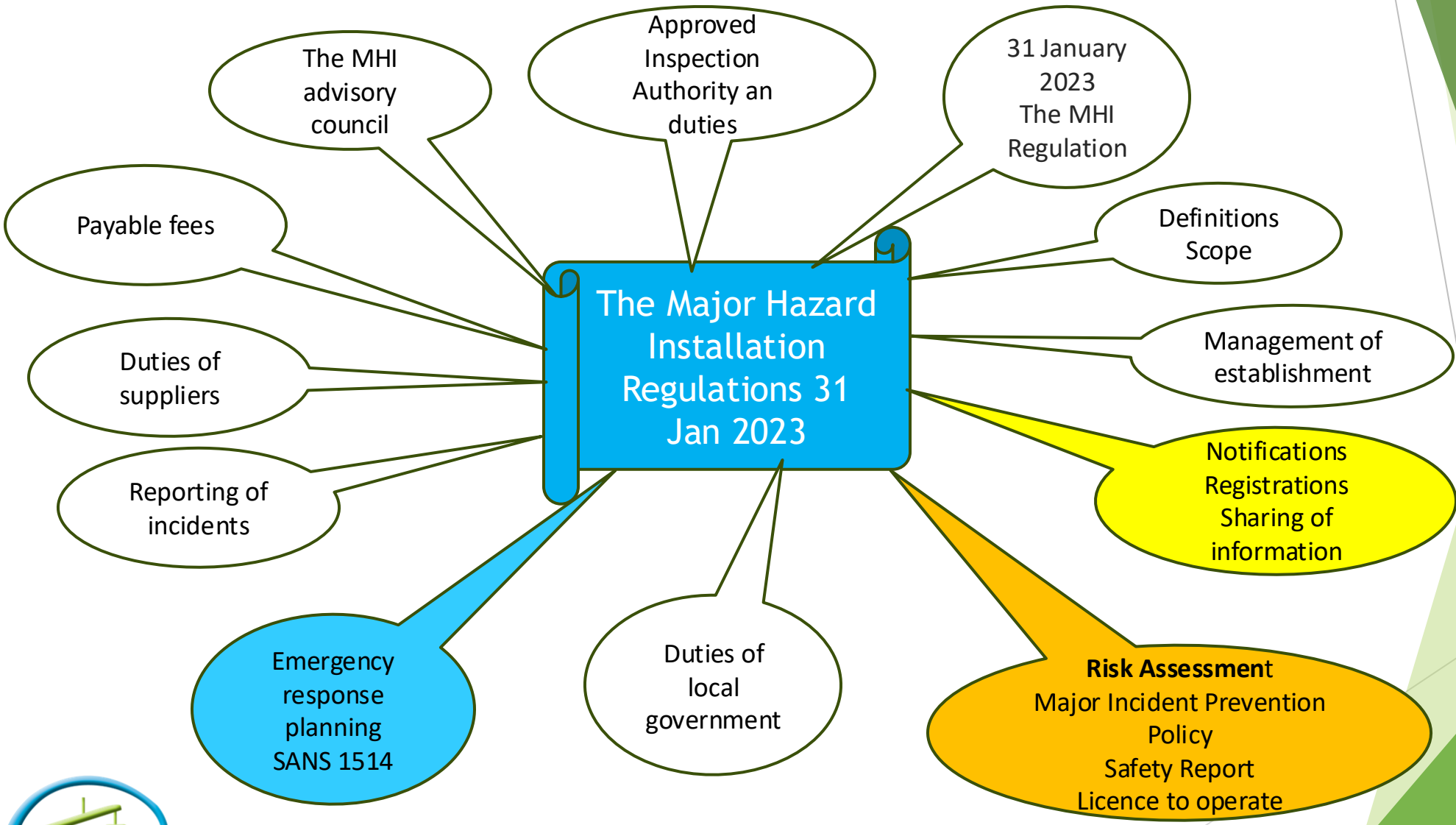
Our Clients

motherson
FLINT GROUP
KARAN BEEF
South African Mint
Sims gas
Coca-Cola Beverages South Africa
JWAYELANI
ETHEKWINI MUNICIPALITY
BEVCO THE BEVERAGE COMPANY
VARUN BEVERAGES
AECI
AFRICAN GAS INSTALLATIONS
Clover
Klamflex PIPE COUPLINGS (PTY) LTD
WANE ENVIRONMENTAL
exxaro
Petredec
SENZ HOLDING
aspen PHARMACARE
WOOLWORTHS
LABOH GAS
taste Frey's
PE CHEMICALS
MINTEK
ayoba cold storage
GRANOR PASSI
GPS PROFESSIONAL GAS PIPING SERVICES
GASTREK
TWINSAVER GROUP
EASIGAS LIFE MADE EASI
SunChemical
VEOLIA WATER
sappi
AXXELLO
AFRICA SUNOIL
KHOLD
CLAYVILLE NUTRITIONALS
TECHNI PAINT
OILco
Ceres FRUIT GROWERS
Nampak packaging excellence
Heineken
Dairymaid
PIONEER FOODS

Why Risk Assessment ?

- Beirut blast video
- How often would you expect this to occur?
- (1 /per year; 1 in 10 years/ 1 in 100 years / 1 in million years?)
- What were the consequences ? (onsite /offsite)
- How many people were impacted ? (1 / 10 /100/1000/10000)
- What would be the estimate cost of damage (Property, Environment, People)
- https://www.youtube.com/watch?v=LNDhIGR-83w

MHI Regulations 2023



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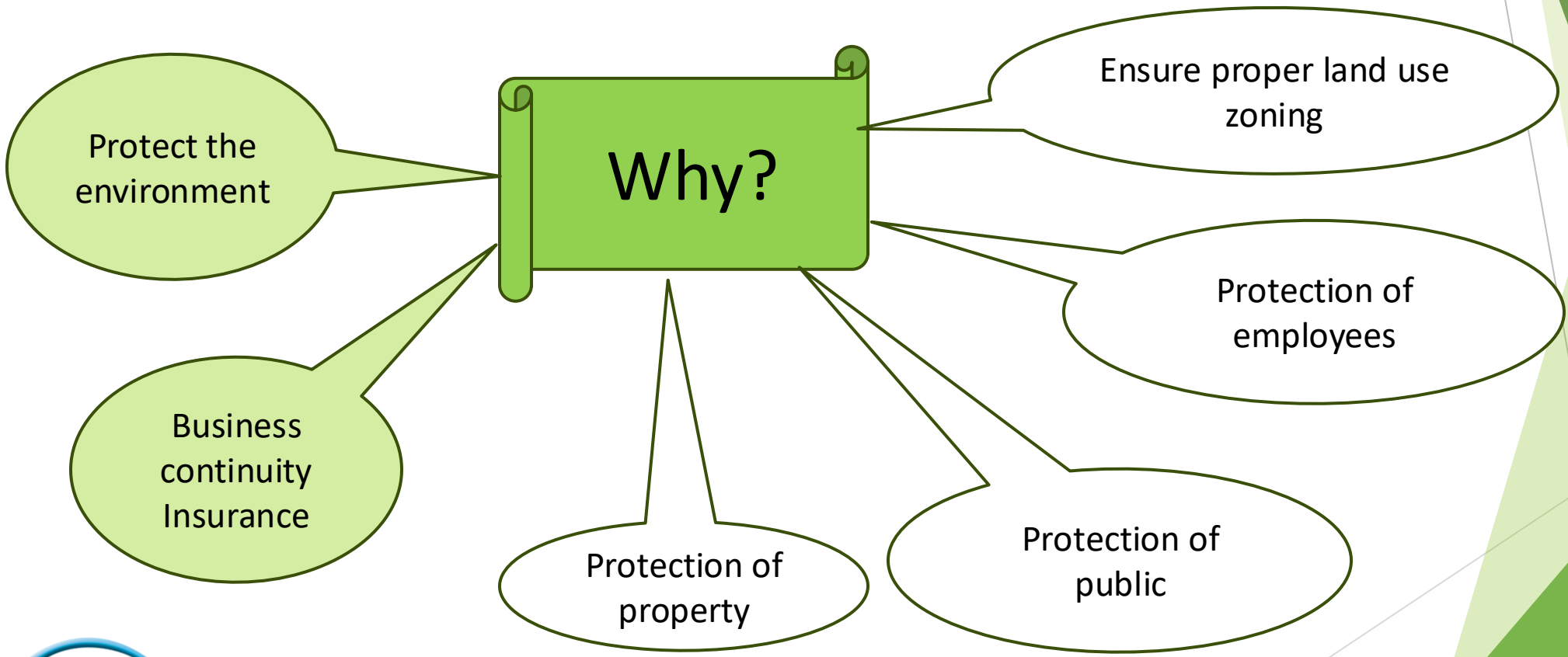
The MHI Regulations



Risk Assessment

Risk Assessment

What can go wrong and Why?

What are the consequences

What is the probability of occurrence

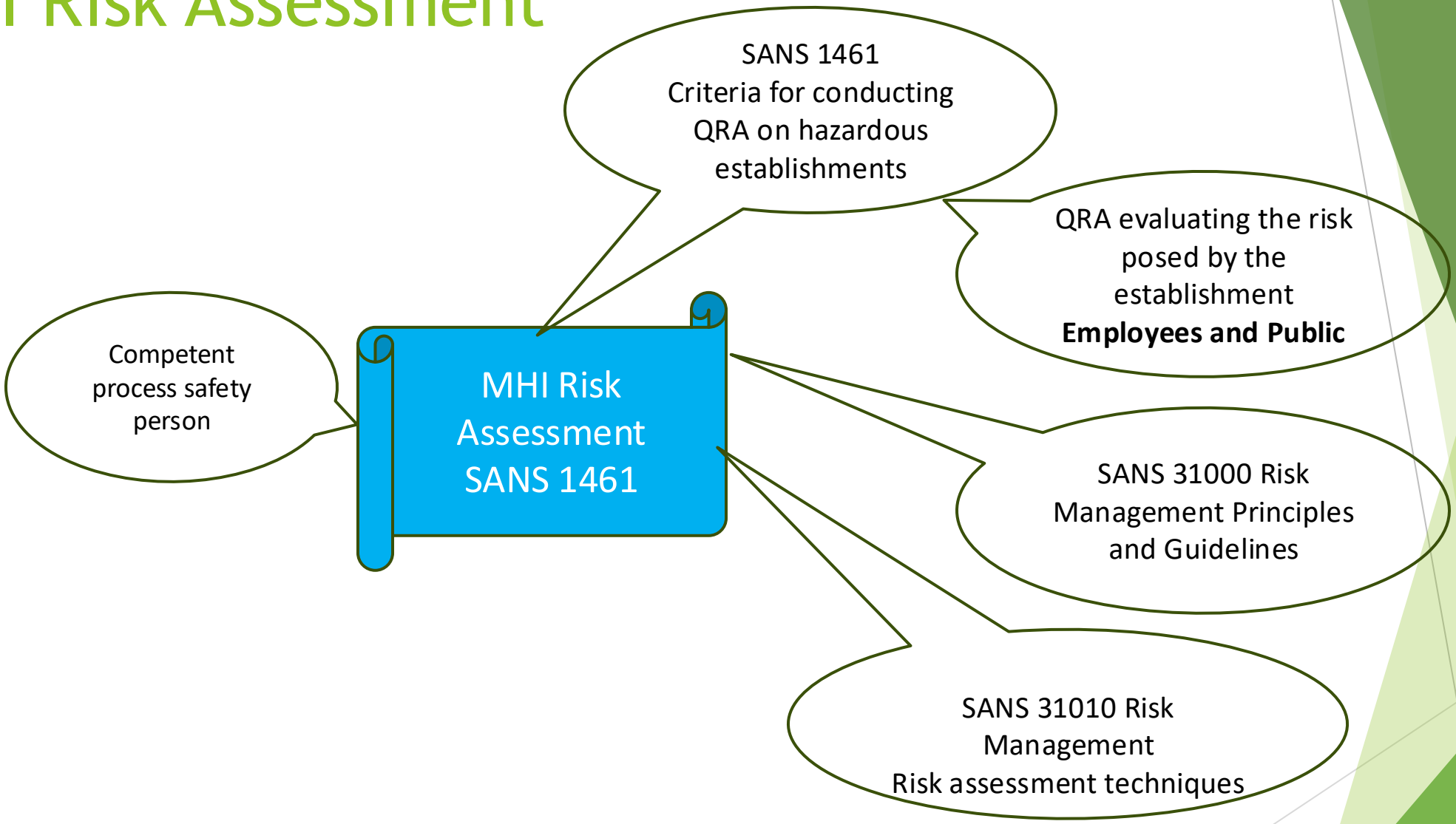
What are preventative measures in place

What other measures can be implemented

Competent specialist Person

Can the wrong leg be amputated?

MHI Risk Assessment



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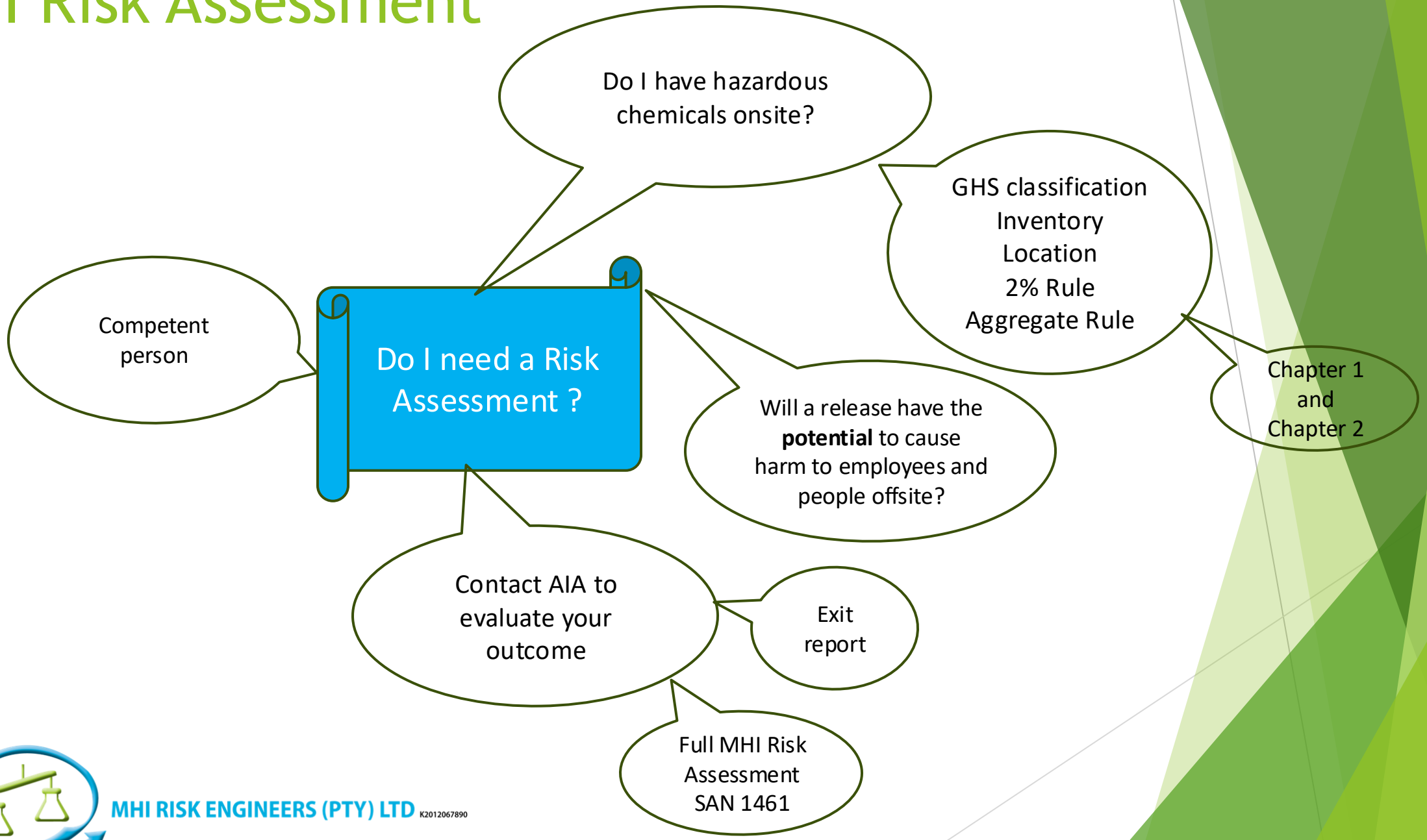
MHI Risk Assessment



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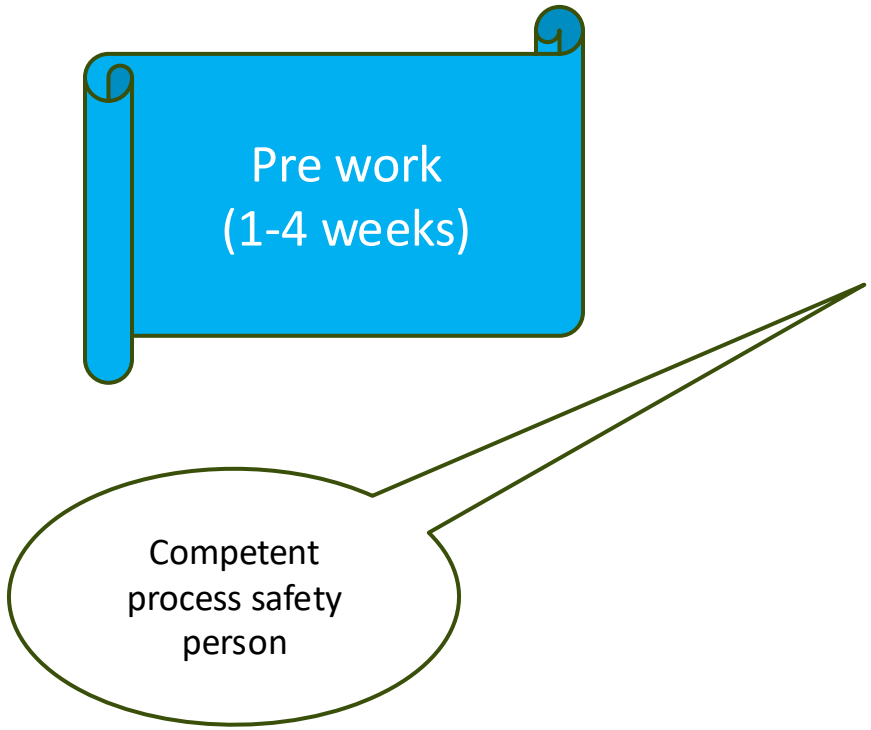
MHI Risk Assessment



Description	
Procurement process	
Submission of inventories	
Site layout (address, area, description)	
Process flow diagrams(P&IDS)	
Usage of each chemical per month	
Process parameters **(temperature , pressure, line length , line size)**	
Safety systems (alarms, interlocks, SOPs, PRVs, Firefighting systems)	
Process Safety Management systems	
Occupied buildings on a site map	
Neighbouring populations description and map	
Site populations and shift patterns	
Weather data – 5 years	
Environmental parameters (temp, pressure, humidity etc)	
Emergency plan	
Site visit	

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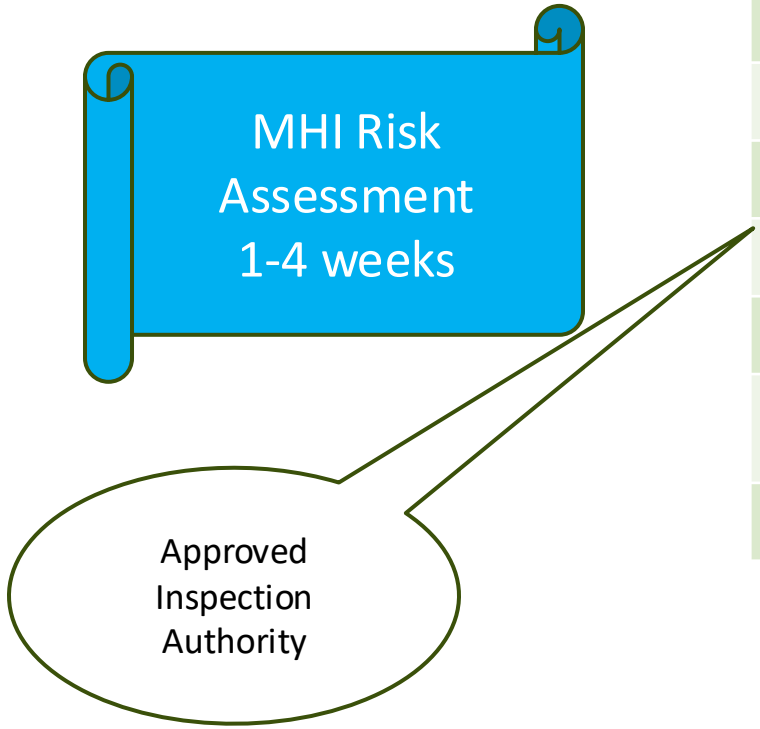
MHI Risk Assessment



Description	
Hazard analysis (LOPC)	
Consequence analysis (impact zones)	
Frequency calculations (faulty tree)	
Risk calculations	
Risk ranking	
Land use planning analysis (inner zone, middle zone, outer zone)	
Recommendations for risk reduction or ALARP	

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MHI Risk Assessment

MHI Risk Assessment
1-4 weeks

Description	
Hazard analysis (LOPC)	
Consequence analysis (impact zones)	
Frequency calculations (faulty tree)	
Risk calculations	
Risk ranking	
Land use planning analysis (inner zone, middle zone, outer zone)	
Recommendations for risk reduction or ALARP	
Review of site emergency preparedness plan	

DRAFT ISSUED

Minor changes

Major Changes
Inventories Process Data
= start from scratch

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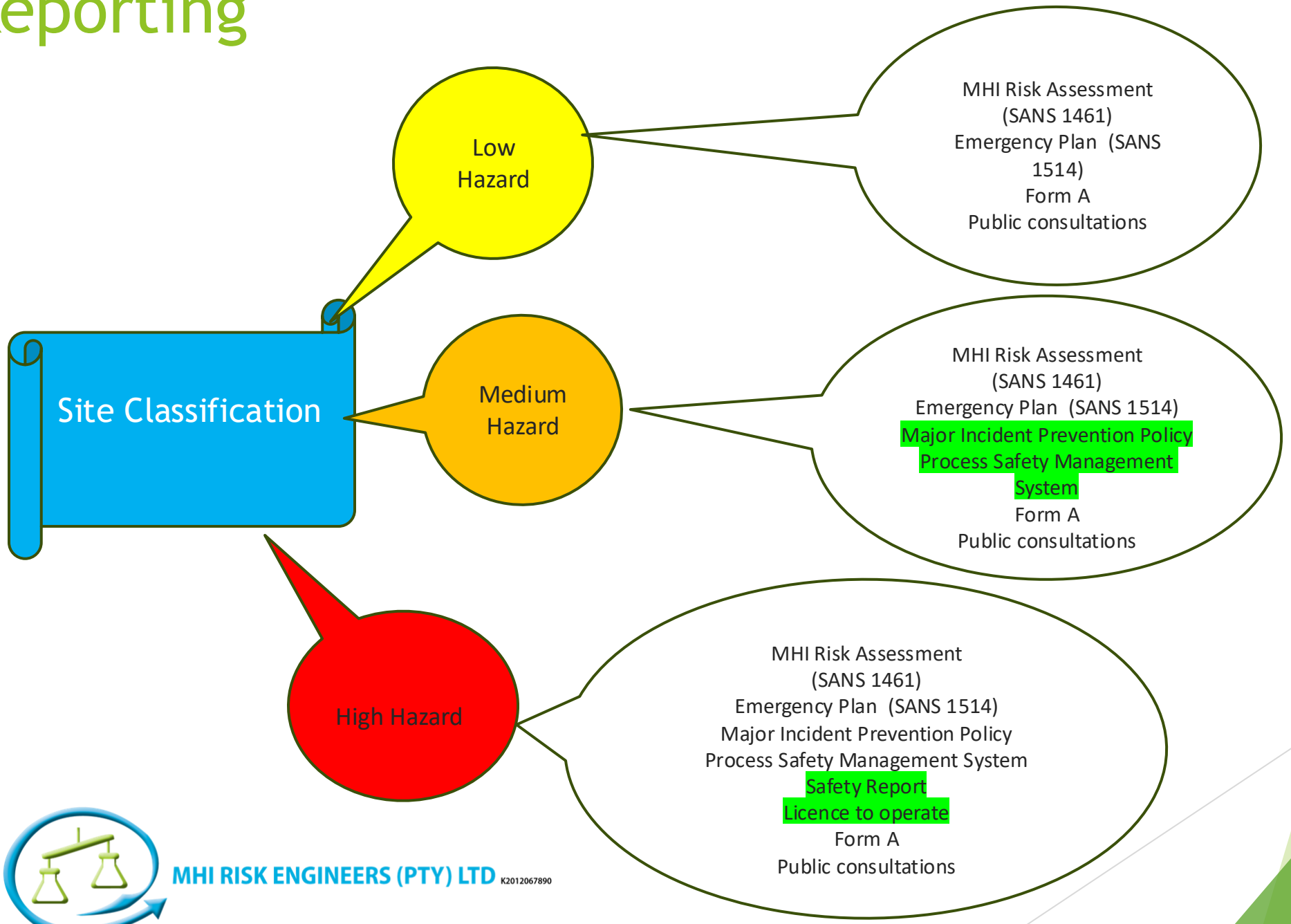
Reporting



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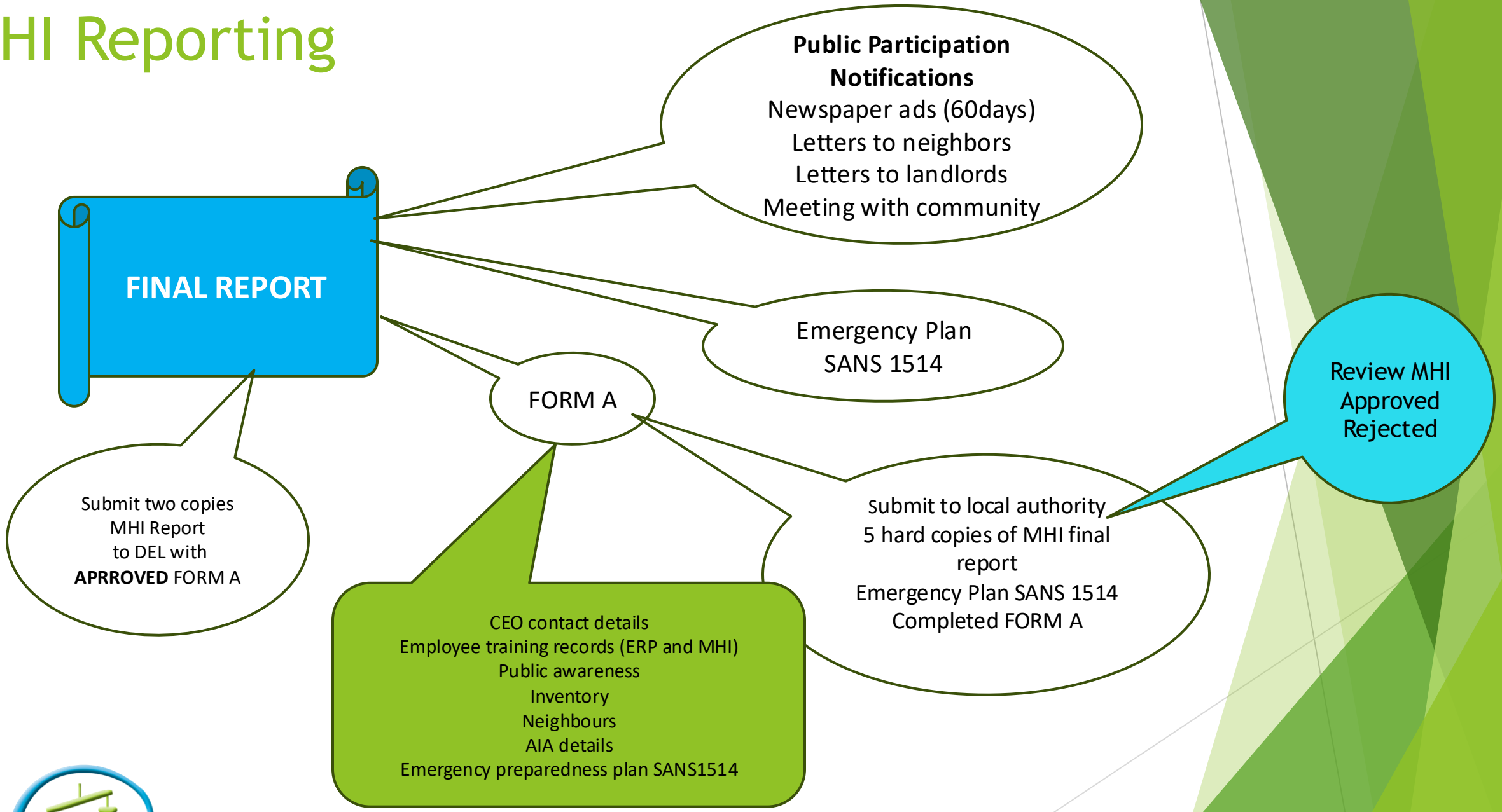
MHI Reporting



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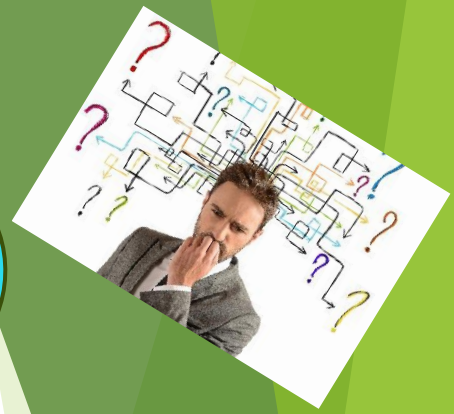
Thank You

Questions?



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