

Global EHS audit system

Nov 16, 2017

KRCC 연례 워크샵, 제주

Agenda

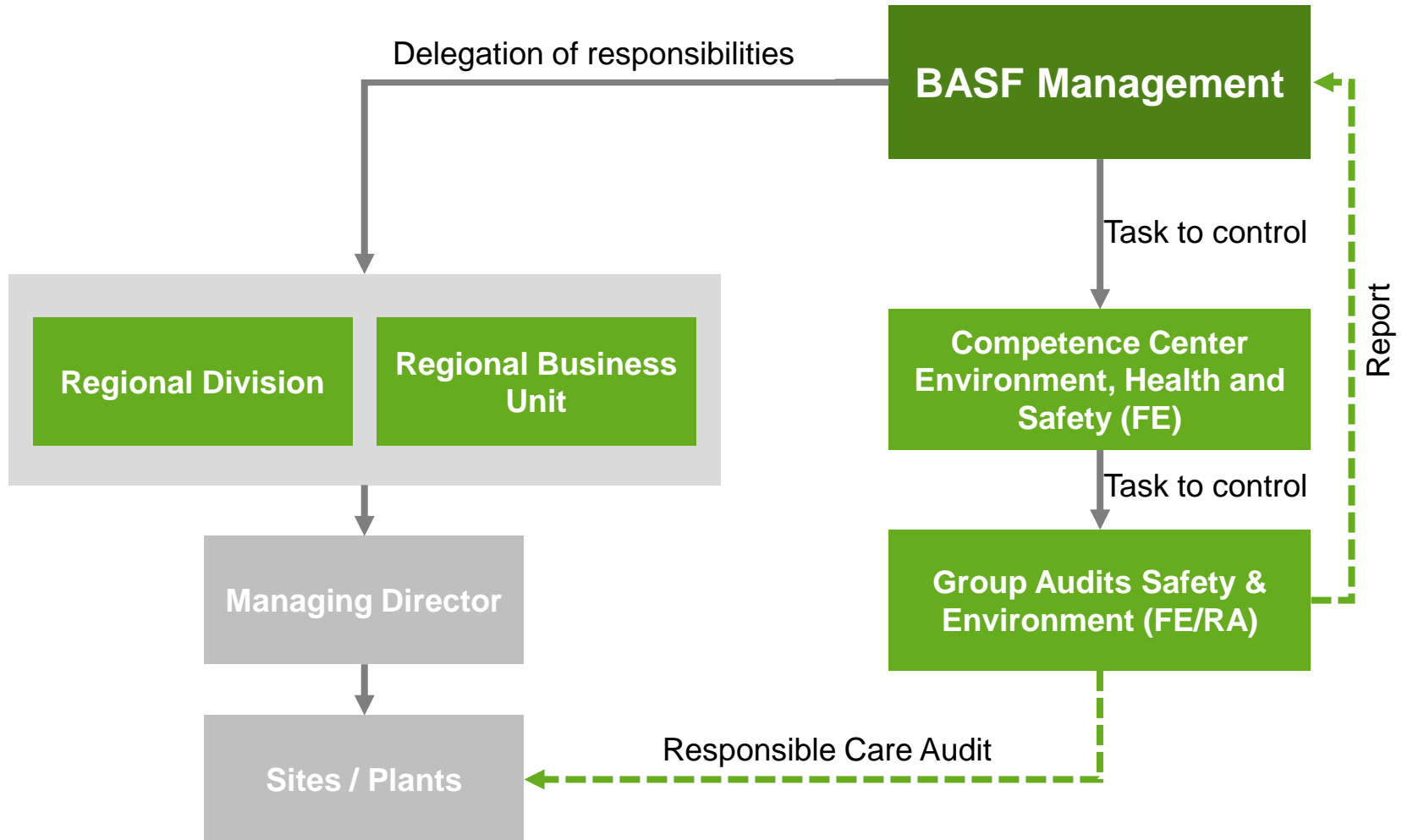
1 | Concept and Process

2 | Legal Framework / RC Audits

3 | Potential Hazard, SE Performance, Risk

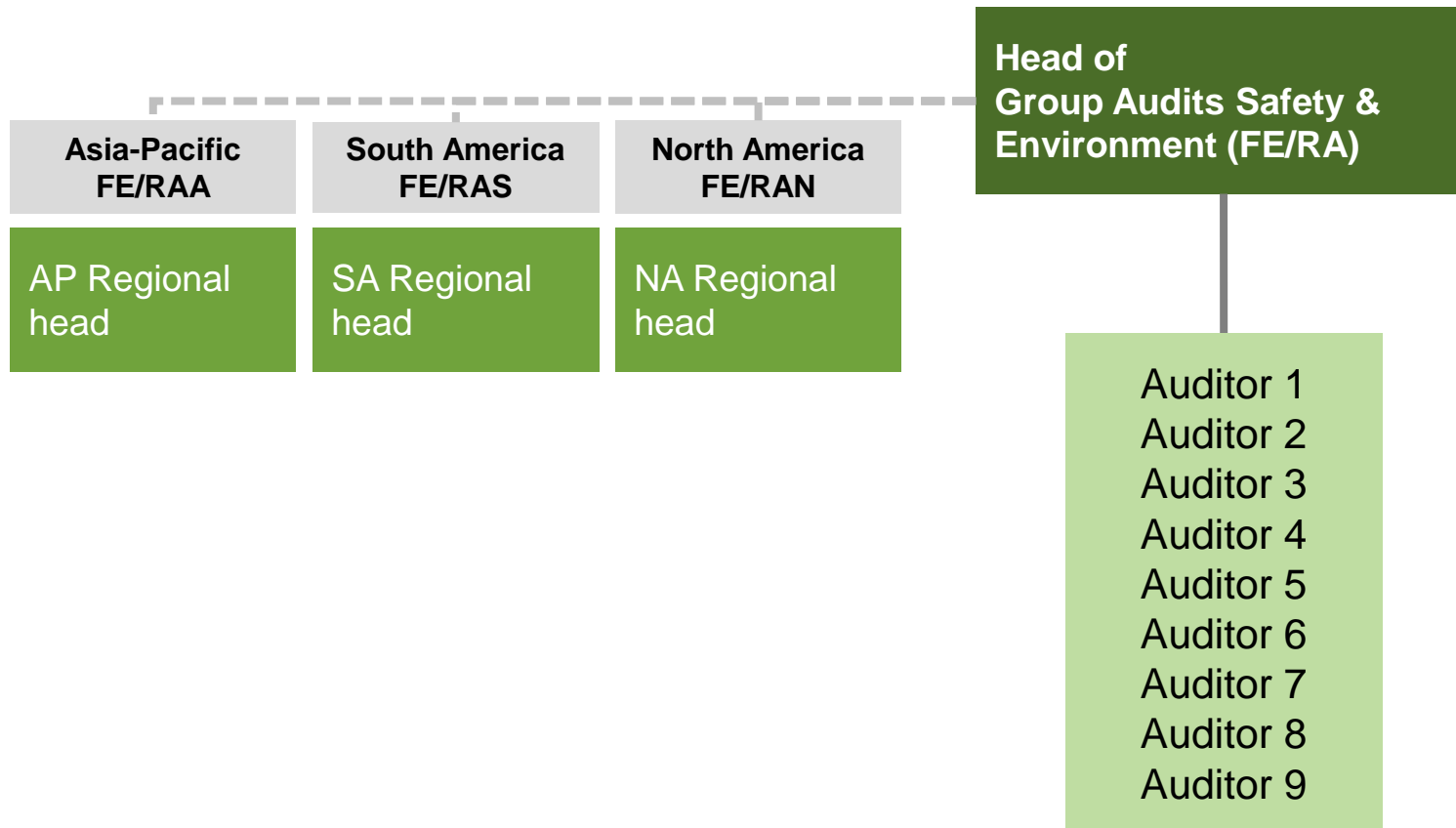
4 | Documentation and Follow up

Concept and Process Management Control



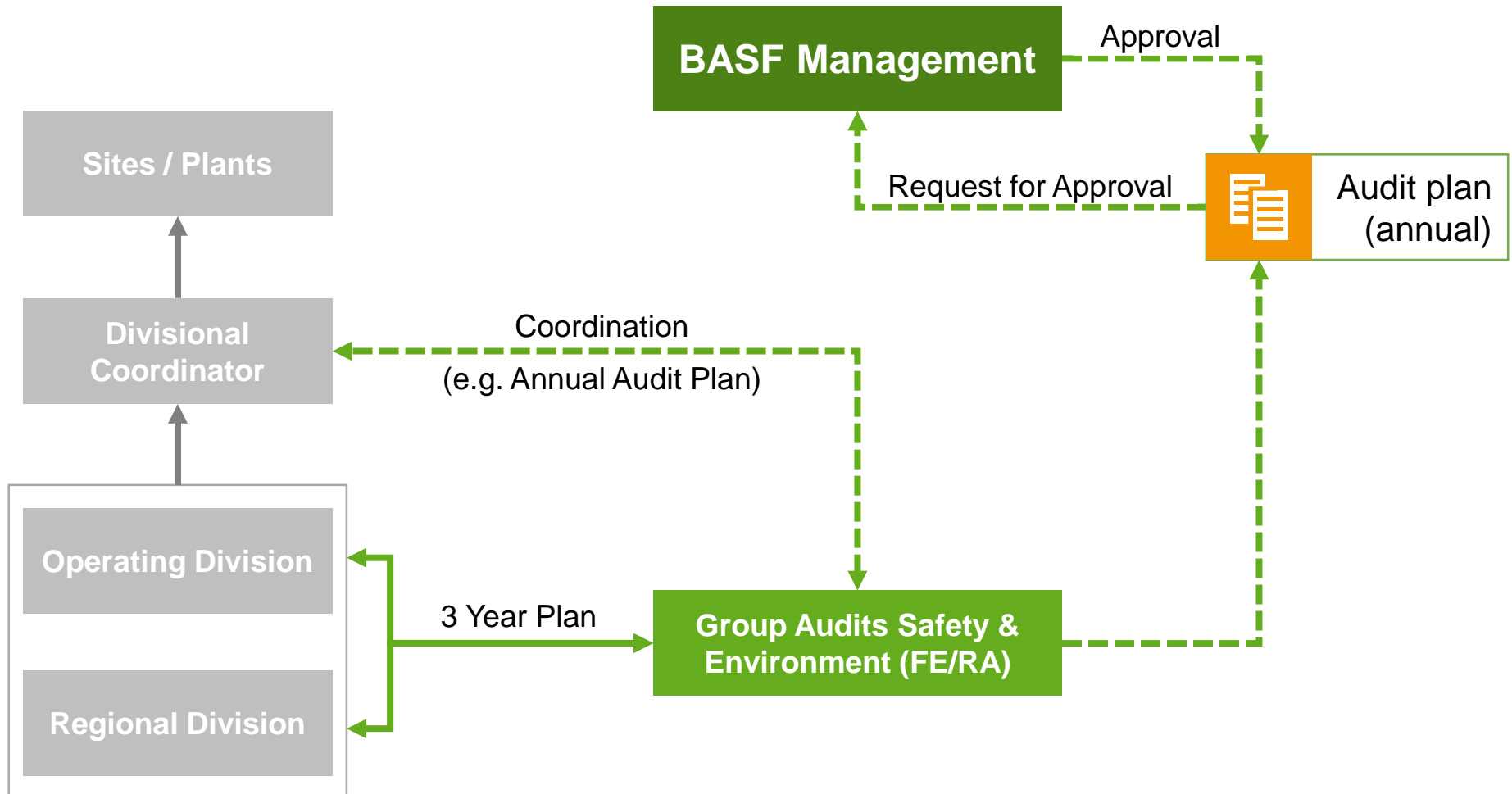
Concept and Process

Global Audit Team

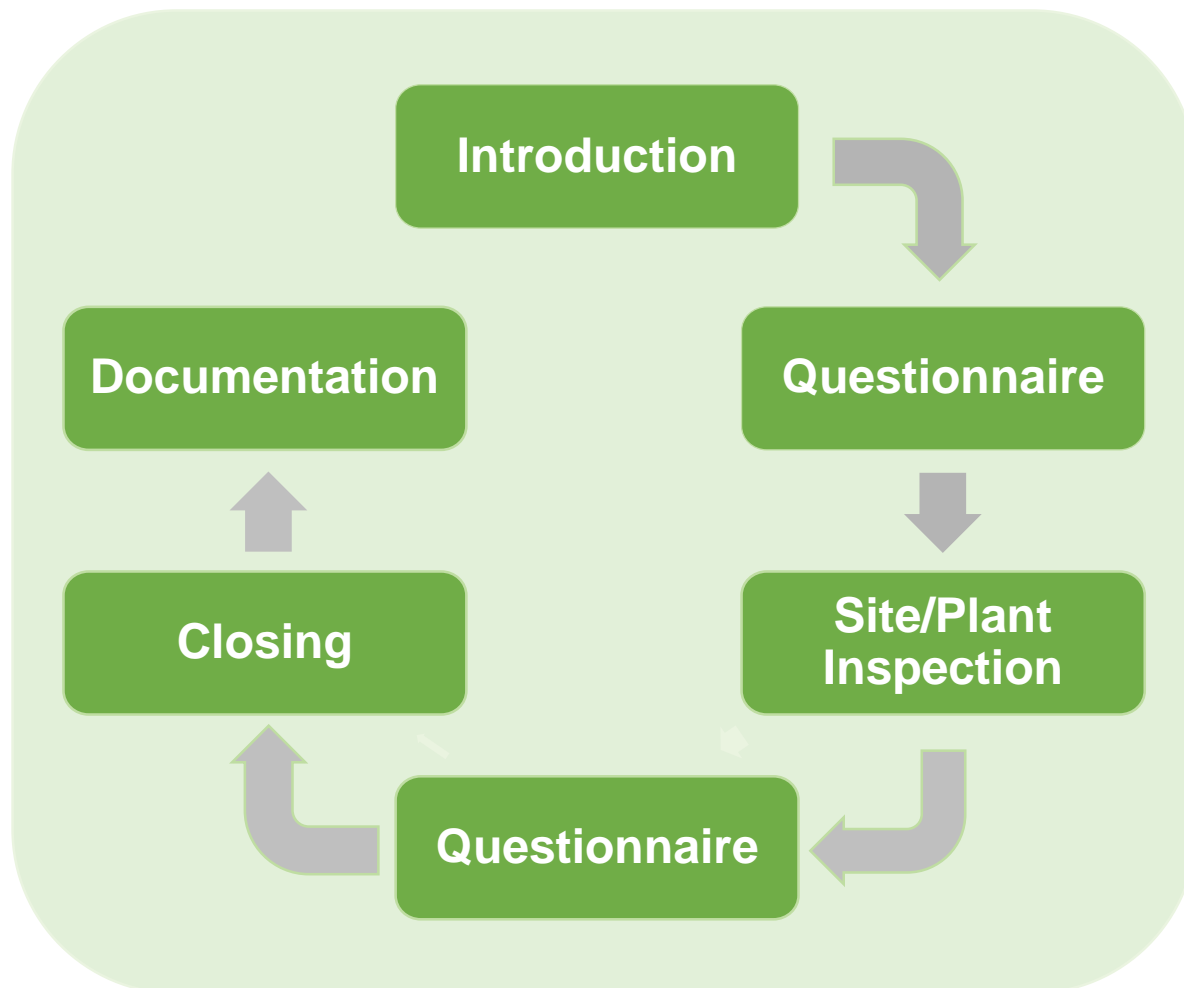


Concept and Process

Audit Planning



Course of an Audit



Concept and Process Questionnaire

RC-Audit Checklist Safety and Environment

Plant Audit

Version 14 of 01.01.2017



0 Organization

0.1	SE Directives
0.2	Responsibilities
0.3	Objectives
0.4	Permits
0.5	Training
0.6	Plant inspections, SE-committees
0.7	Incidents
0.8	Contractors

RC-Code: 0	Organization
RC-Code: 1	Product Stewardship
RC-Code: 2	Transport Safety
RC-Code: 3	Occupational Safety
RC-Code: 4	Occupational Health (not considered here)
RC-Code: 5	Process Safety
RC-Code: 6	Environment
RC-Code: 7	Emergency Response
RC-Code: 8	Communication
RC-Code: 9	Security (not considered here)
RC-Code: 10	Energy

0.1 SE Directives

0.1.2 Management Review

		Yes	No	NA	Comment
101	Does the existing filing system for procedures guarantee that all documents can be retrieved quickly (e.g. according to RC code structure)?				
103	Are all procedures approved by the responsible site or plant manager or has this task been delegated in writing?				
104	Are procedures easily accessible to all employees?				
105	Is there an overview of the last revision dates of all procedures to ensure a periodic review?				
106	Are formal Management Reviews performed annually to assess compliance with all legal, BASF, site and plant regulations including documentation about the results of all RC codes?				
107	Does the site or department manager participate in the Management Review or did he receive the results?				
108	Is there an effective documentation system in place to ensure that defined action items from all different sources are tracked through to completion (e.g. TDS review, plant inspection, accident investigation, authority inspections):				
109	# corrective actions?				
110	# responsibilities?				
111	# due dates?				
112	# completion?				
113	If a corrective action cannot be implemented immediately or an extension of a due date is needed, is a risk assessment performed				

Around 400 questionnaire
(mainly in Code 5, 3, 0*)

* Code 5 : 130, Code 3 : 90, Code 0 : 80, Code 6 : 40, Code 7 : 20

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Purpose of RC Audits





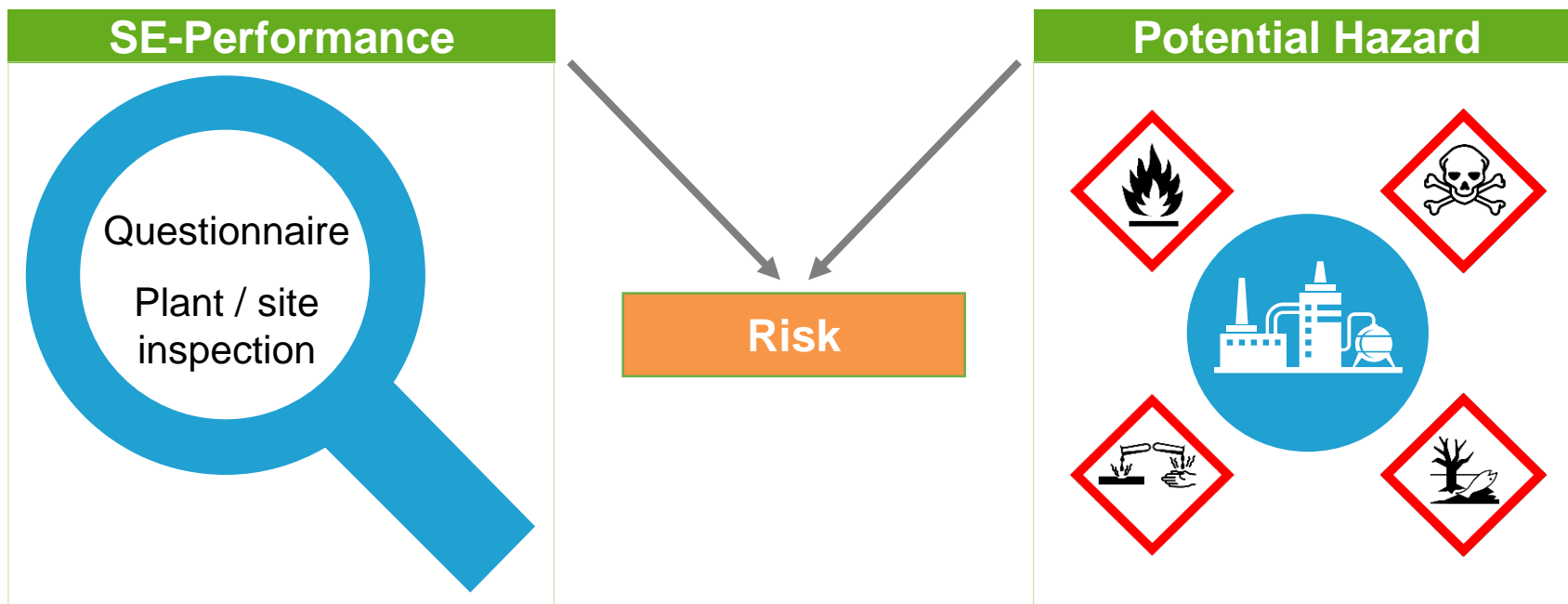
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Potential Hazard, SE Performance, Risk Overview



The SE-performance has to *keep* the potential hazard *under control*

Potential Hazard, SE Performance, Risk

Potential Hazard

Evaluation of potential hazard					
	very high	high	medium	low	very low
Individual criteria					
Fire, explosion					
Health damage					
Environmental Damage					
Substances					
Reactions (exothermal)					
Workplace (chemical)					
Workplace (physical et al.)					
Processes					
Residential areas					
Neighbour plants					
Threat potential					
Associated fields					
Potential hazard					

- **3 Main criteria**
- **9 Single criteria** (* threat potential not considered for plant audits)
- **Assessment of the criteria in five grades**
- **Overall evaluation**
- **No averages**

Potential Hazard, SE Performance, Risk

SE Performance

Evaluation of SE-Performance

	very weak	weak	medium	good	very good
Individual criteria					
SE Directives					
Responsibilities					
Objectives					
Permits					
Training					
Plant inspections, SE-committees					
Incidents					
Contractors					
Organization					
Product Stewardship					
Product Stewardship					
Transport Safety					
Transport Safety					
Hazard identification					
Hazardous substances					
PPE					
Procedures					
Permit System					
Occupational Safety					
Standard documents					
Safety reviews					
Safety devices					
Plant condition					
Plant maintenance					
Management of change					
Process Safety					
Air Emissions					
Wastewater					
Fence line noise					
Waste					
Polluted Areas					
Environment					

	very weak	weak	medium	good	very good
Individual criteria					
Damage limitation					
Emergency response plan					
Practical exercises					
Emergency Response					
Communication					
Communication					
Security					
Security					
Energy					
Energy					
SE-Performance					

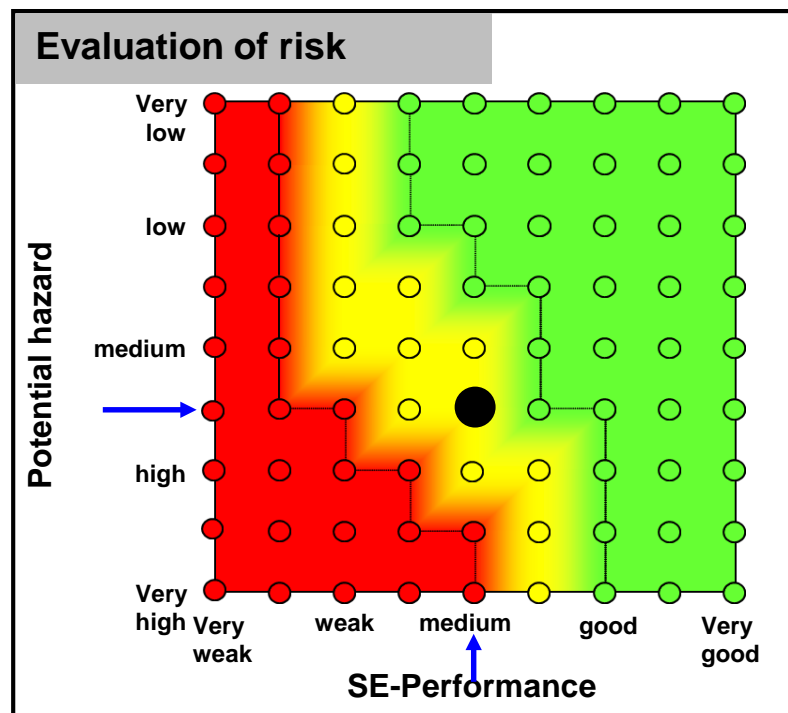
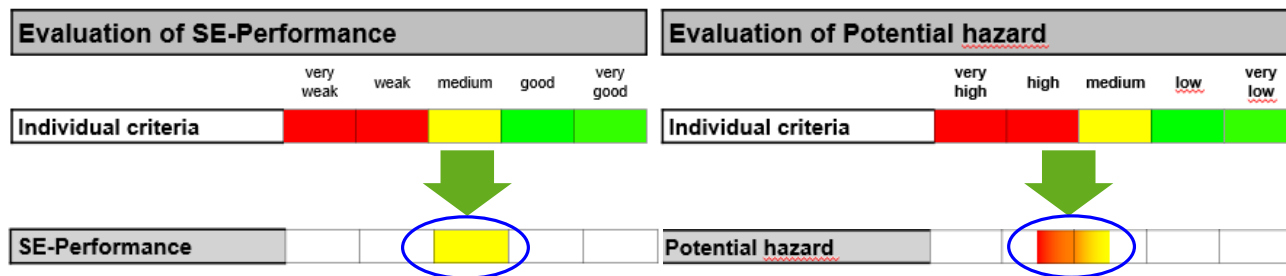
- **10 Main criteria** (Security only for site audits)
- **32 Single criteria**
- **Assessment of the criteria in five grades**
- **Overall evaluation**
- **No averages**

SE Performance

	Rating	Description	Annotation
1	Very good	outstanding, excellent	Without exception, no deficiencies found. Exemplary performance considering the challenges.
2	Good	appropriate, suitable	All requirements are substantially met. Only minor adjustments needed.
3	Medium	acceptable, adequate	All important requirements are met, but improvement is necessary.
4	Weak	insufficient, inadequate	Non-compliance with important requirements. Substantial gaps identified.
5	Very weak	risky, irresponsible	No implementation of standards. Major programmatic and systemic gaps.

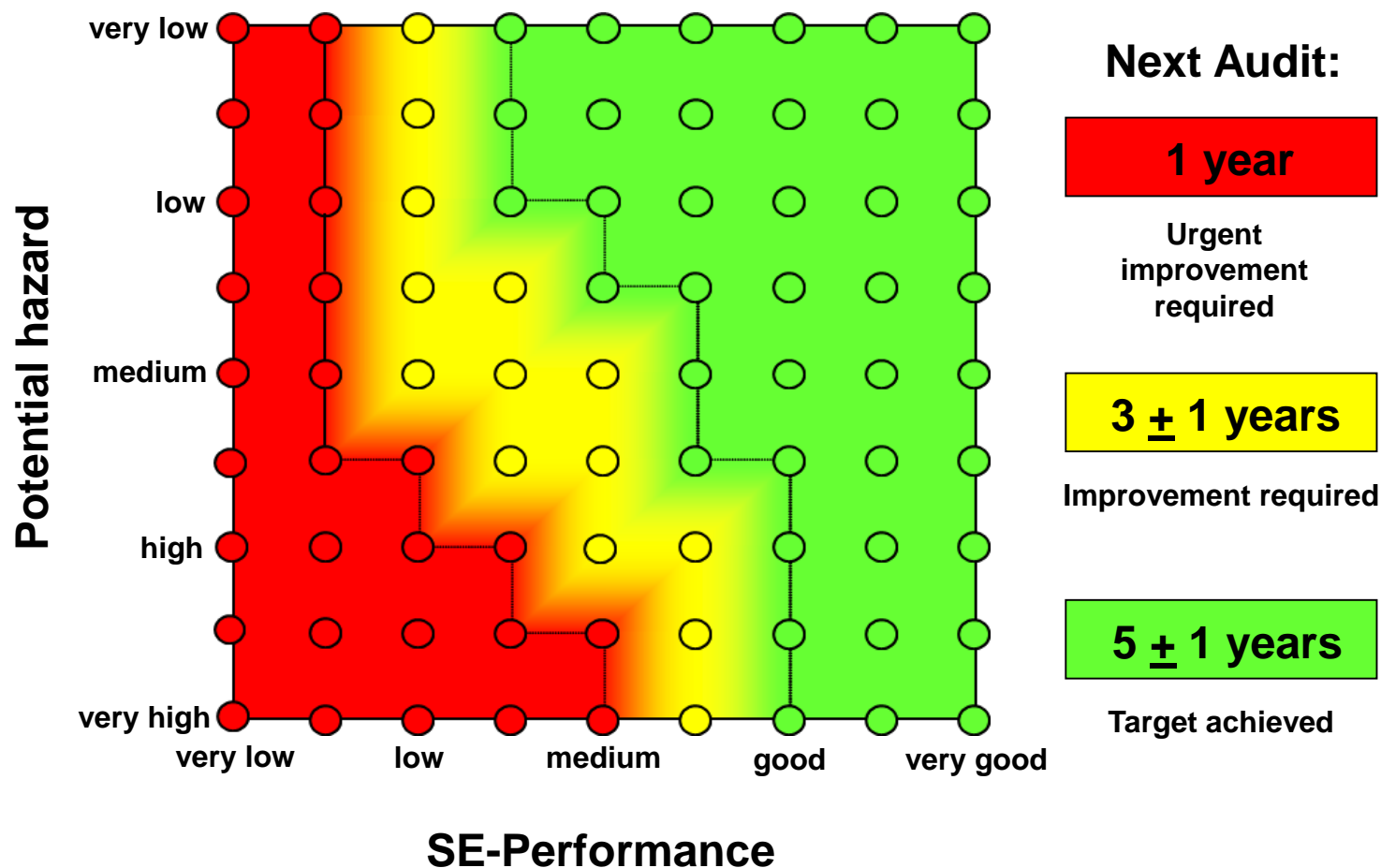
Potential Hazard, SE Performance, Risk

Risk Portfolio



Potential Hazard, SE Performance, Risk

Risk Matrix



Potential Hazard, SE Performance, Risk

Action Level Classification

	Explanation
Action Level 1: Minor action / opportunity for improvement	Small deviation or proposal of the auditors
Action Level 2: Required action	Normal necessary action
Action Level 3: Significant action	High priority action, always leads to downgrading of the SE performance of the sub-chapter
Action Level 4: Critical action	Action of highest priority, e.g. violation of legal obligations

Potential Hazard, SE Performance, Risk

Spot-Check-Audit (S-C-A)

- RC Audits rate the SE performance after a long period of preparation
- Good SE performance is expected without preparation as well
- Announcement of the S-C-A ***two working day in advance***
- Approx. 5-7 hours in the site / plant
 - Site / plant tour
 - Examination of selected subjects / documents
 - Check on implementation of prior RC audit actions
- Result can influence the future frequency of RC audits for the unit

Potential Hazard, SE Performance, Risk

Spot-Check-Audit (S-C-A)

Evaluation of SE-Performance

	very weak	weak	medium	good	very good
Individual criteria					

SE Directives					
Responsibilities					
Objectives					
Permits					
Training					
Inspections, audits					
Incidents					
Contractors					
Organization					

Product Stewardship					
Product Stewardship					

Transport Safety					
Transport Safety					

Hazard identification					
Hazardous substances					
PPE					
Procedures					
Permit System					
Occupational Safety					

Standard documents					
Safety reviews					
Safety devices					
Plant condition					
Plant maintenance					
Management of change					
Process Safety					

	very weak	weak	medium	good	very good
Individual criteria					

Waste gas					
Wastewater					
Fence line noise					
Waste					
Polluted Areas					
Environment					

Damage limitation					
Emergency response plan					
Practical exercises					
Emergency Response					

Communication					
Communication					

Energy					
Energy					

Asap Unchanged Later

Next RC-Audit

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Documentation and Follow up

Global Audit Database

■ Audit Report

- Executive summary
- Short description of the most important audit results
- Diagram of potential hazard, SE-performance and remaining risk
- List of all actions as a basis for the corrective action plan including due dates

■ Follow up of implementation of corrective actions

- Responsibility with audited unit
- Due date follow up by the database
- Support by EHS platforms and expert groups

RC Audit Distribution List





We create chemistry