



25th world gas conference
"Gas: Sustaining Future Global Growth"

Health, Safety and Environmental Management in Natural Gas Distribution

An HSE Management Implementation Case

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Date: Wednesday, 6 June

Venue: Convention Centre



Patron



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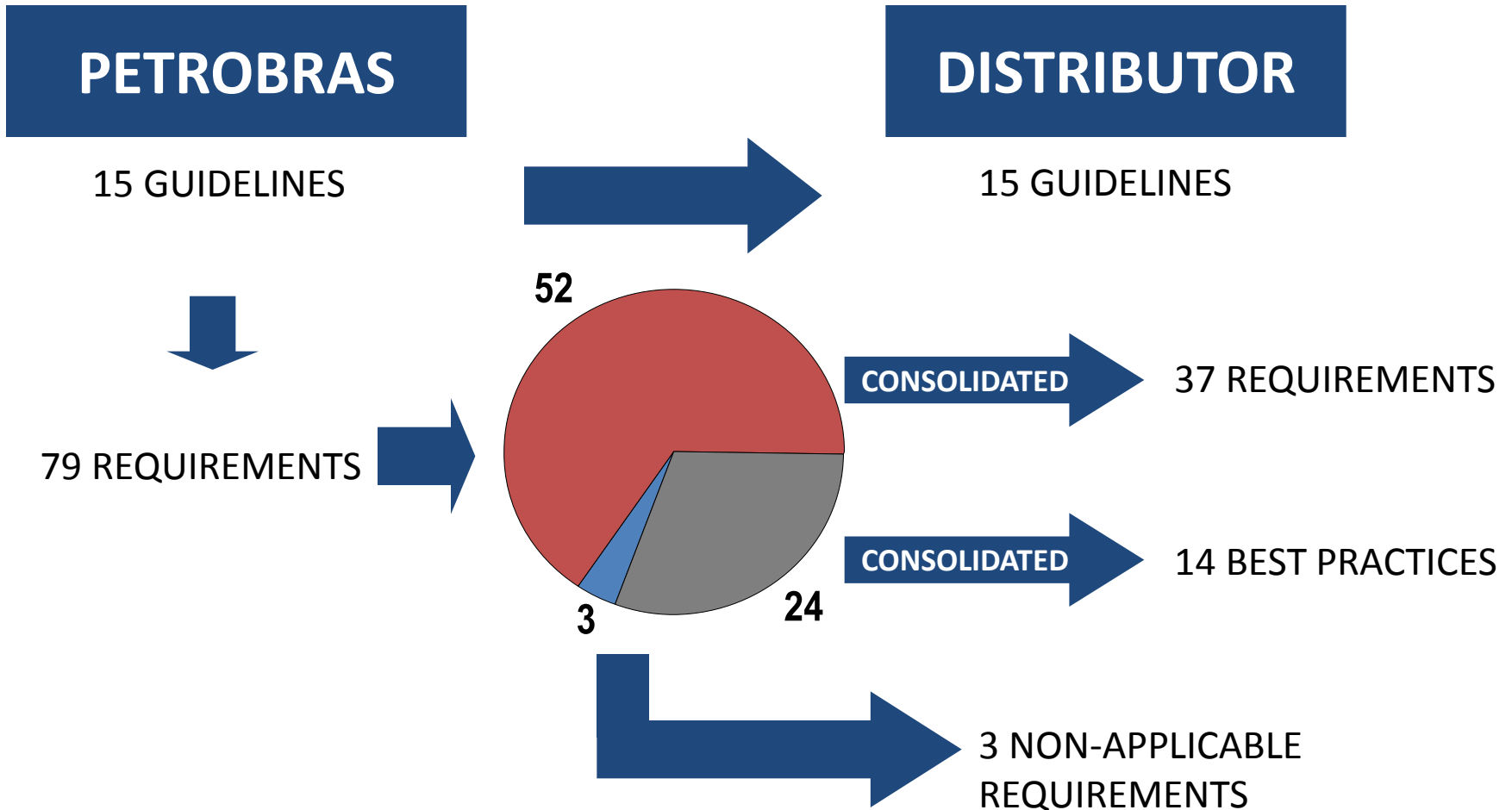


Natural Gas Distribution Companies in Brasil

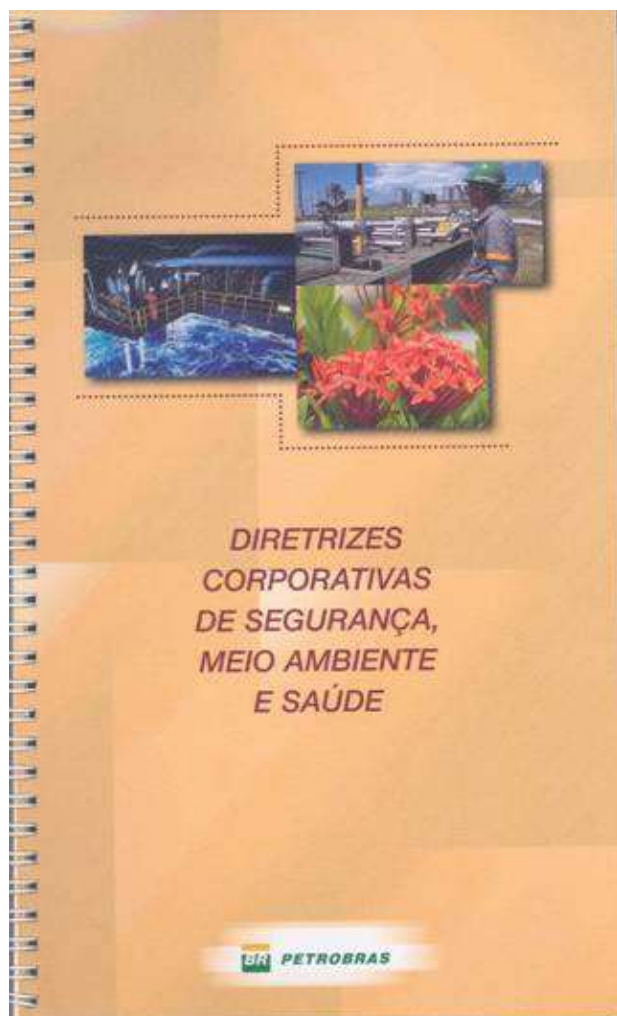
- Petrobras has a stake in the 20 local natural gas distribution companies shown in the map;
- The distance between the states of Rio Grande do Sul and Amapá is 2.142 miles or 3.448 kilometers;
- In 2009, 12 of these natural distribution companies were fully operational;
- Most of these companies have a typical ownership structure composed of three partners:
 - the local state government – the majority shareholder ,
 - a private sector company, and
 - the Brazilian state-owned oil and gas company - Petrobras.
- Projects, programs and plans, including the **HSE Management System Model**, must be approved by the board of directors.



The HSE Management System Model



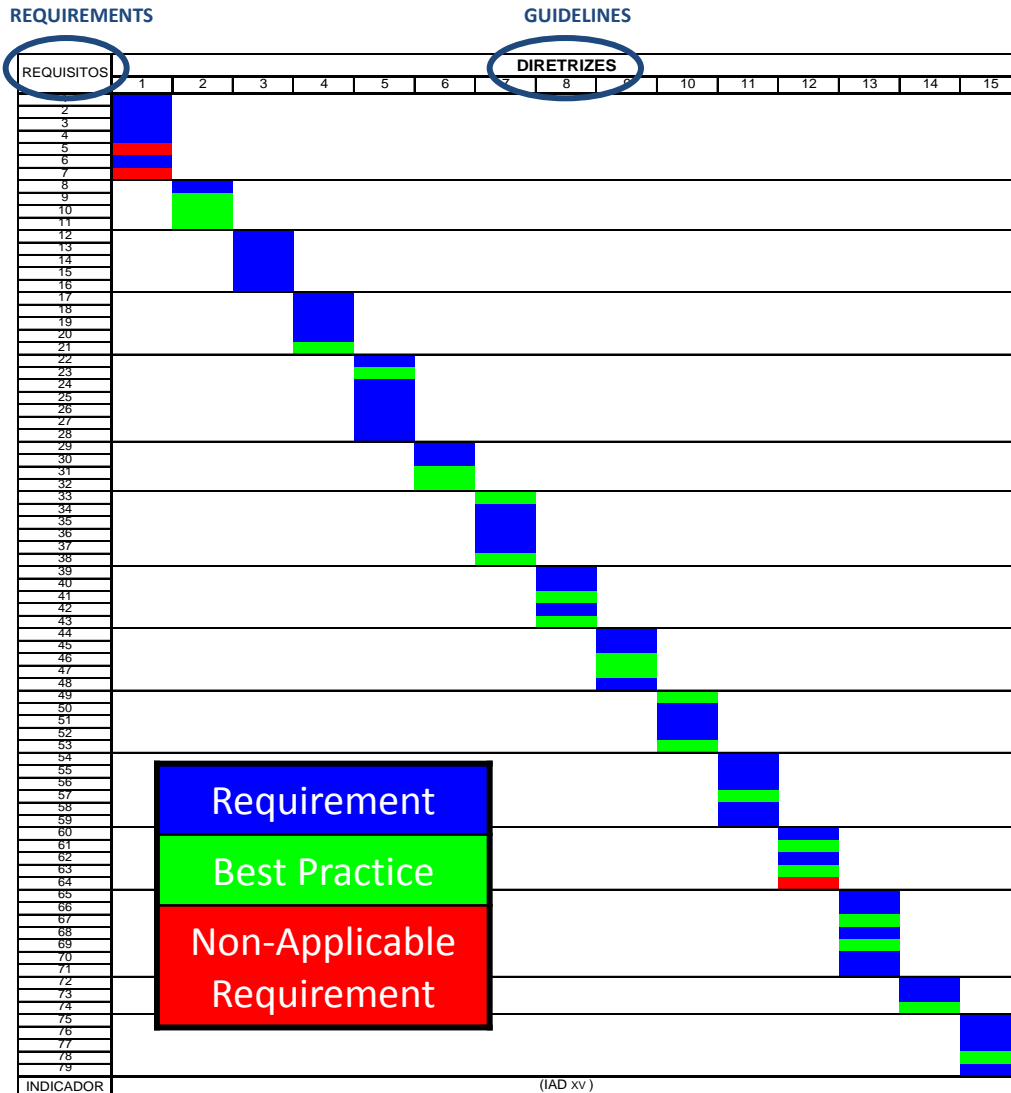
The 15 Petrobras HSE Corporate Guidelines



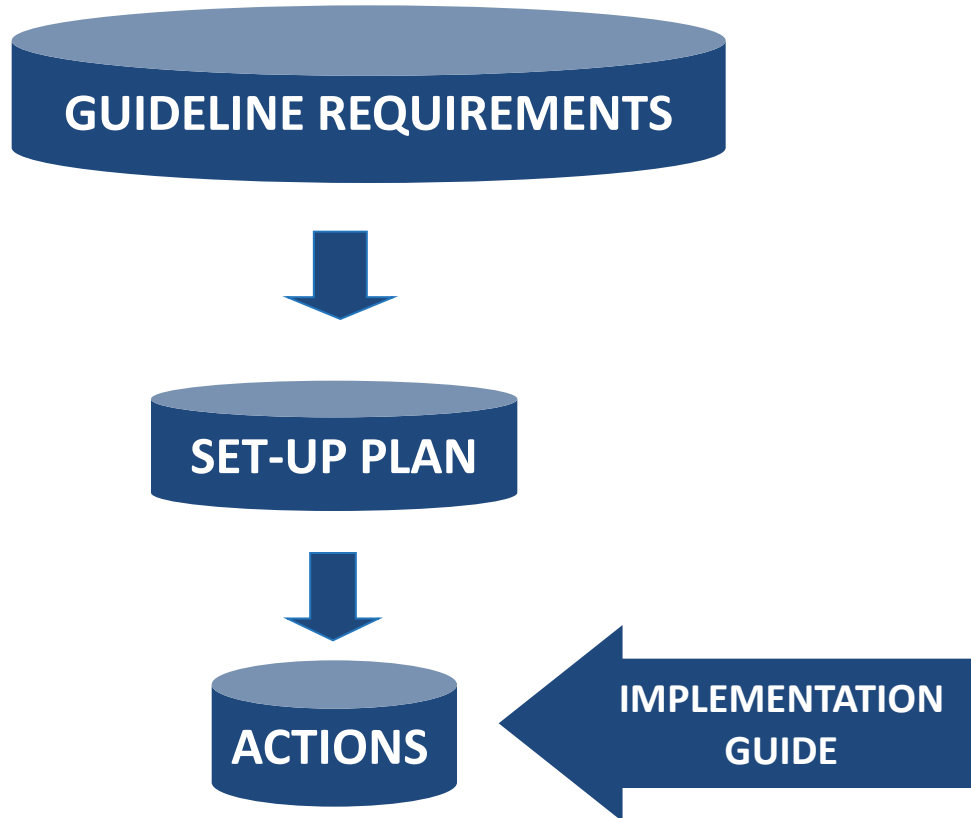
The booklet made in 2003

- 1 - Leadership and Responsibility**
- 2 - Legal Compliance**
- 3 - Risk Assessment and Management**
- 4 - New Projects**
- 5 - Operation and Maintenance**
- 6 - Change Management**
- 7 - Procurement of Goods and Services**
- 8 - Training, Education and Awareness Development**
- 9 - Information Management**
- 10 - Communication**
- 11 - Contingency Planning**
- 12 - Community Relations**
- 13 - Analysis of Accidents and Incidents**
- 14 - Product Management**
- 15 - Continuous Process Improvement**

Processes Identified in LDCs



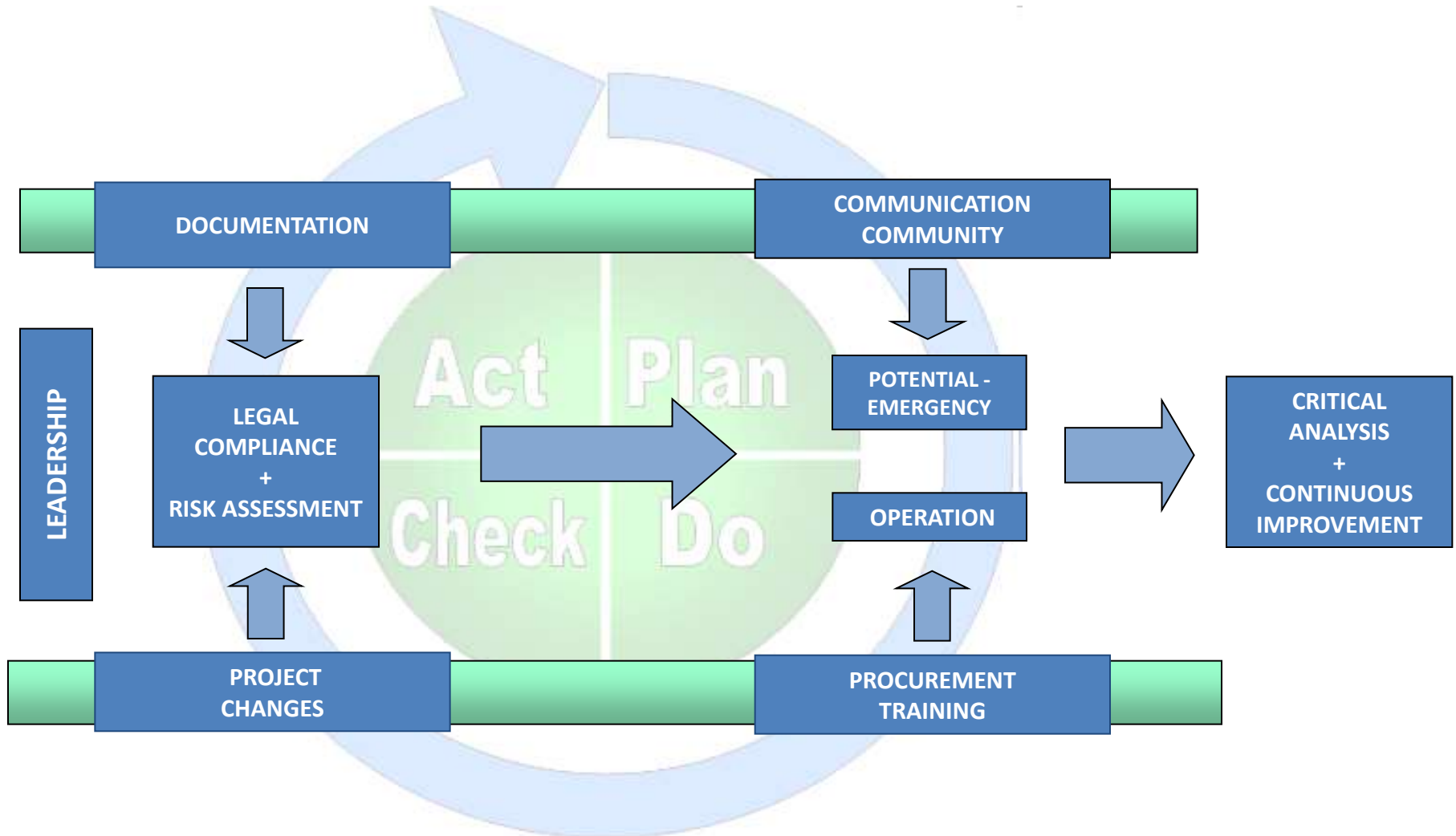
1. Commercialization
2. Communication
3. Engineering
4. Legal Compliance
5. Leadership
6. Marketing
7. Operation and Maintenance
8. Human Resources
9. Health, Safety and the Environment
10. Procurement



Management System Elements

- Policy
- Structure and Responsibility
- Legislation
- Aspects and Impacts of the Set-Up Process
- Documentation
- Document Control
- Record Control
- Programmes
- Training
- Communication
- Emergency Plan
- Anomaly Processing
- Internal Auditing
- Operational Control
- Maintenance
- Objectives and Goals
- Monitoring and Measurement
- Critical Analysis

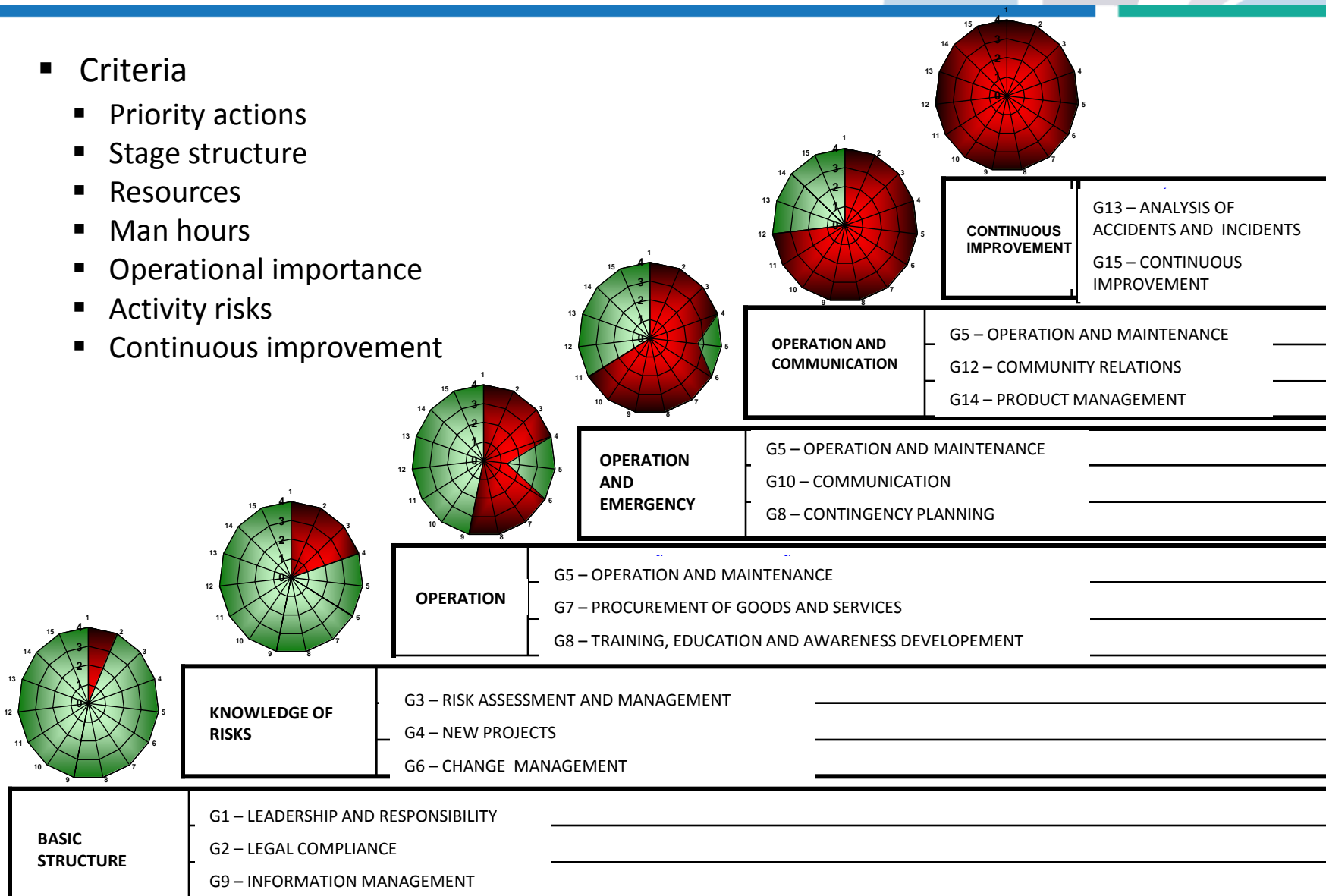
Set-Up Plan Development



Set-Up Plan Stages

Criteria

- Priority actions
- Stage structure
- Resources
- Man hours
- Operational importance
- Activity risks
- Continuous improvement



Structured Questionnaire

- The questionnaire constitutes a powerful evaluation tool;
- Was initially developed to perform diagnoses in LDCs;
- Is also able to identify each company's level of HSE system development.

GUIDELINE		LEADERSHIP AND RESPONSIBILITY				SCORE	EVIDENCE/COMMENT
Diretriz		INSUFFICIENT	GOOD	REGULAR	EXCELLENT	SCORE	EVIDENCE/COMMENT
1 - Liderança e Responsabilidade		1 - Insuficiente	2 - Regular	3 - Bom	4 - Excelente	Avaliação	Evidência / Comentário
<p>Requisito</p> <p>1 Difusão e promoção, em todos os níveis, da política corporativa de SMS, seus valores e metas.</p> <p>Item de avaliação</p> <p>1.1. A Companhia inclui em seu Sistema de Gestão de SMS todas as suas atividades, produtos e serviços inclusive até os seus limites de influência junto a fornecedores, clientes e partes interessadas?</p>		<p>1 - Insuficiente</p> <p>Não possui sistema de gestão para SMS</p>	<p>2 - Regular</p> <p>Possui sistema de gestão de SMS informal</p>	<p>3 - Bom</p> <p>Possui sistema de gestão de SMS formal não abrangendo todas as áreas da companhia</p>	<p>4 - Excelente</p> <p>Possui sistema de gestão de SMS formal abrangendo todas as áreas da companhia</p>		
<p>Referência legal</p> <p>Item de avaliação</p> <p>1.2. A Alta Administração deve definir a política de SMS da organização e assegurar que, dentro do escopo definido de seu Sistema de Gestão de SMS, a política:</p> <p>a) seja apropriada ao processo de distribuição de gás natural e suas escala dos impactos e dos riscos de SMS de suas atividades, produtos e serviços;</p> <p>b) inclua um comprometimento com a melhoria contínua da gestão de SMS, incluindo a prevenção de lesões e doenças e com a prevenção da poluição;</p> <p>c) inclua um comprometimento em atender aos requisitos legais aplicáveis e outros requisitos subscritos pela organização que se relacionem aos seus aspectos e riscos de SMS incluindo os requisitos contratuais;</p> <p>d) seja comunicada a todos que trabalham na organização ou que atuem em seu nome com o intuito de que elas tenham ciência de suas obrigações individuais em relação à SMS.</p>		<p>1 - Insuficiente</p> <p>Não possui política de gestão para SMS</p>	<p>2 - Regular</p> <p>Possui política de gestão para SMS formal que não atende os requisitos do modelo de gestão</p>	<p>3 - Bom</p> <p>Possui política de gestão para SMS formal que atende os requisitos do modelo de gestão, mas não disseminada entre a força de trabalho</p>	<p>4 - Excelente</p> <p>Possui política de gestão para SMS formal que atende os requisitos do modelo de gestão e está disseminada entre a força de trabalho</p>		

The Performance Indicators

- **Health and safety indicators**
 - Lost Work Case Injuries
 - Restricted Work Day Cases
 - Medical Treatment Only Case
 - First Aid Case
 - Severity of Work Losses
 - Periodic Medical Examinations
 - Maintenance Performed

- **Environmental indicators**
 - Number of Leaks
 - Emergency Service Readiness
 - Natural Resource Consumption

- **General indicators**
 - HSE Training
 - Customer Satisfaction



On-site Assessment Results 2009 - 2011

Results and Conclusion

- Average adherence to the management system model increased from 55% to 75%;
- 10 of the 12 LDCs in 2011 achieved very positive results in relation to their 2009 assessments;
- The negative results observed in 2 of the companies were mostly due to changes in leadership, organizational structure, processes and strategic aims;
- 1 of the LDC completed its management system implementation in January 2011;
- 6 of the companies will complete management system implementation during the first half of 2012.
- The others must complete the process by December 2012;
- Another evaluation cycle will take place in 2013;
- The 'HSE Management Model' was implemented in 12 natural gas distribution companies;
- The integrated health, safety and environmental management system will be set up in 2012 in the other 8 companies.

Company	2009 (%)	2011 (%)
A	38	39
B	33	52
C	43	59
D	39	94
E	38	78
F	86	100
G	48	82
H	81	70
I	80	65
J	79	83
K	42	87
L	53	87
Average	55 %	75 %