

ENCONTRO DE TROCA DE EXPERIÊNCIAS EM SEGURANÇA DE PROCESSO - CCPS

16 de maio de 2024

MANTENHA SEU MICROFONE MUDO



Obrigado à nossa anfitriã

ENCONTRO DE TROCA DE EXPERIÊNCIAS EM SEGURANÇA DE PROCESSO - CCPS

O que é necessário?

1- Anfitrião (plataforma e envio convites)

2- Quem queira compartilhar suas experiências

3- Quem queira ouvir as experiências dos outros e discutir temas de SEPRO

- 1985 => Bhopal e outros acidentes
- Instituto Americano de Engenheiros Químicos (American Institute of Chemical Engineers - AIChE), sede em Nova Iorque
- > 270 empresas membros
 - química, farmacêutica, óleo&gas, petroquímicas, manufatura diversa, engenharia, energia, mineração, agro, cosméticos, etc
 - agências do governo americano, associações e prestadores de serviços
- Entidade técnica sem fins lucrativos
- Líder Global em Segurança de Processo



“The Global Community Committed to Process Safety”

Visão



“Um mundo sem acidentes de
Segurança de Processo”

LIVE

RESILIÊNCIA SOLIDÁRIA

@POLOPALESTRANTES @DMTPALESTRAS E @RESILIENCIA_HUMANA

UNIDAS EM UMA INICIATIVA PARA APOIAR
AS VÍTIMAS DO RIO GRANDE DO SUL.

16MAIO • 18H

PRA QUE ESSA LIVE?

CADA UM AJUDA COM AQUILO QUE TEM DE MELHOR E NÓS ACREDITAMOS QUE UMA **MENSAGEM DE RESILIÊNCIA** PARA ACALMAR O CORAÇÃO É **ESSENCIAL NESSE MOMENTO!**

POR ISSO, O **@RESILIENCIA_HUMANA**, A **POLO PALESTRANTES** E A **DMT PALESTRAS** SE UNIRAM PARA CONVIDAR OS MAIORES PALESTRANTES DO PAÍS, PARA TRAZEREM UMA PALAVRA DE FORÇA E CONFORTO PARA TODOS AQUELES QUE ESTÃO PRECISANDO, **NA LIVE RESILIÊNCIA SOLIDARIA.**

QUINTA-FEIRA

16MAIO•18H

LIVE

15 MINUTOS DE INSPIRAÇÃO E ESPERANÇA DE CADA PALESTRANTE ABORDANDO O TEMA RESILIÊNCIA E SUPERAÇÃO EM TEMPOS DE CRISE COM O OBJETIVO DE **UNIR FORÇAS PARA TRAZER CONFORTO** E SUPORTE PRÁTICO ATRAVÉS DE **DOAÇÕES**, QUE SERÃO FACILITADAS POR UM **QR CODE** DURANTE O EVENTO.

LIVE



@ALLANDIASCASTRO



@RAFINHAACUSTICO



@DANISUZUKI



@MAYANANEIVA



@MARIAFLAVIABASTOS



@RAZOESPARAACREDITAR



@BIA.MARRTINS



@RHAMUCHE



@PROFESSORGUSTAVOREIS



@JULIANAVASILIAN



@JULIANABLEY.OFICIAL



@NANDOGARCIAPSI

PALESTRANTES

Você também vai poder contribuir! Ao longo de todo o evento, disponibilizaremos um QR Code para doações financeiras.

Anota aí!



17 Data: 16 de Maio



Horário: 18h



Palestrantes inspiradores



Como participar: acessar a live pelo perfil

@resiliencia_humana

compartilharão mensagens de força e resiliência



Todas as doações serão direcionadas à ONG Olhar de Bia.

Missão



CCPS está empenhado em alcançar um mundo sem incidentes de Segurança de Processo, através de:

Servir como um recurso mundial de primeira linha para conhecimento e compreensão de Segurança de Processos

Avançar na cultura de Segurança de Processos, conceitos técnicos e práticas de gestão

Aprimorar a competência individual e organizacional em Segurança de Processos

Fomentar a colaboração dentro e entre organizações, em todos os níveis

Promover a Segurança de Processos como um valor social fundamental e base para uma operação responsável e sustentável

<https://www.aiche.org/ccps>

The image shows the top portion of the CCPS website. The header is white with a green 'MENU' button on the left. The CCPS logo is in the center, followed by navigation links: 'Education+', 'Events+', 'Membership+', 'Projects+', 'Tools+', and 'Publications+'. On the right, there is a search icon, an 'AICHE' logo, and a 'SIGN IN' button. The main content area has a dark blue background with the text 'Center for Chemical Process Safety' and the tagline 'A World without Process Safety Incidents™'. Below the tagline are two links: 'ABOUT CCPS' and 'BECOME A MEMBER'. A yellow arrow points to the 'SIGN IN' button. A black text box on the right contains the text: 'Crie sua conta no site do CCPS e usufrua de todo conhecimento disponibilizado à empresas membro'.

MENU

CPS
Center for Chemical Process Safety

Education+ Events+ Membership+ Projects+ Tools+ Publications+

↑ AIChE

SIGN IN

Center for Chemical Process Safety

A World without Process Safety Incidents™

→ Member-only Content

ABOUT CCPS BECOME A MEMBER

Crie sua conta no site do CCPS e usufrua de todo conhecimento disponibilizado à empresas membro

Crie sua conta no site do CCPS e usufrua de todo conhecimento disponibilizado à empresas membro



Center for Chemical
Process Safety

An AIChE Technological Community

Login

Username

[Forgot your username?](#)

Password

[Forgot your password?](#)

Show Password ⓘ

LOGIN ▶

Keep me signed in

Don't have an account?

CCPS offers many benefits but the true value of membership lies in the extraordinary interaction and learning opportunities. The vast pool of knowledge and experience that is available to members is priceless. Members help each other, providing technical guidance and offering safety strategy suggestions. [Join CCPS.](#)

If you do not already have a login account please [create an account](#) here.

<https://www.aiche.org/ccps/ccps-member-companies-0>



MENU  Education + Events + Membership + Projects + Tools + Publications +   Alexandre ...

Become a Member | Membership Inquiry

... Mas não sei se minha empresa é associada....



AC&S INCORPORATED



ADAMA

ADVANSIX

ADvisian



Albemarle



CCPS Latin America



Carmen Osorio, Ph.D.

Latin America Manager

carmo@aiche.org



Latin America Activities and Projects (2024)



Reuniões Regionais Presenciais

- Brazil 2024 - 4 de junho (português)
 - ✓ Anfitrião: TRANSPETRO 4 e 5 junho 2024
- Argentina 2024 (español)
 - ✓ Detalhes serão fornecidos no futuro

- ⑩ Disponibilidade limitada.
- ⑩ Foco em empresas membro do CCPS
- ⑩ 1-2 dias

Reuniões Regionais Virtuais

- Compartilhamento de Conhecimento em PSM (16 de abril, 16 de maio, 6 de Agosto, 8 de Outubro)
- CCPS Reunion Regional (Español)
 - ✓ Maio 22, 2024
- Mining Minerals and Metals – Webinar
 - ✓ Junho 13, 2024
 - ✓ English

- ⑩ Aberto a todos
- ⑩ 2-3 horas

Publicações do CCPS em Português



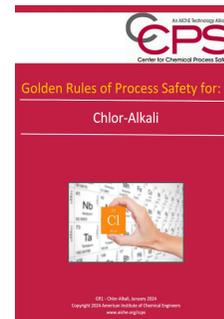
Online publications available at aiche.ccps.org



INDICADORES DE SEGURIDAD DE PROCESOS



REGLAS DE ORO DE POLVOS COMBUSTIBLES



GOLDEN RULES FOR CHLOR-ALKALI IN-PROGRESS

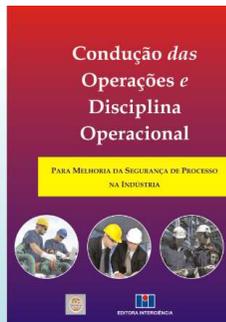
Interested in sponsor a CCPS book translation?

ccps@aiche.org

Books available at: editorainterciencia.com.br



DIRETRIZES PARA SEGURANÇA DE PROCESSO BASEADA EM RISCO



CONDUÇÃO DAS OPERAÇÕES E DISCIPLINA OPERACIONAL



DIRETRIZES PARA DEFINIÇÃO DE REQUISITOS DE COMPETÊNCIA EM SEGURANÇA DE PROCESSO



ANÁLISE DE CAMADA DE PROTEÇÃO



DIRETRIZES PARA GERENCIAMENTO DE MUDANÇA PARA SEGURANÇA DE PROCESSO



DIRETRIZES PARA ELABORAR PROCEDIMENTOS EFICAZES DE OPERAÇÃO E MANUTENÇÃO



DIRETRIZES PARA ELABORAR PROCEDIMENTOS PARA AVALIAÇÃO DE PERIGOS

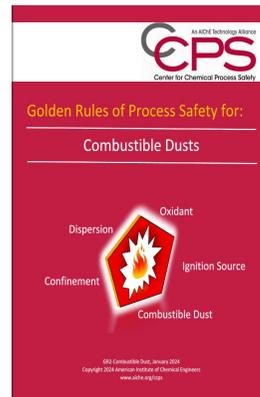
Publicaciones del CCPS en Español



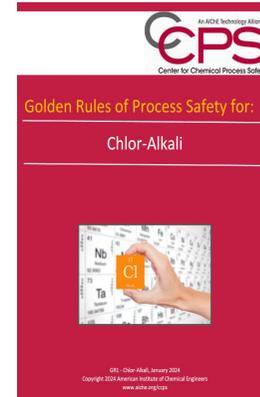
Online publications available at aiche.ccps.org



INDICADORES DE SEGURANÇA DE PROCESSO



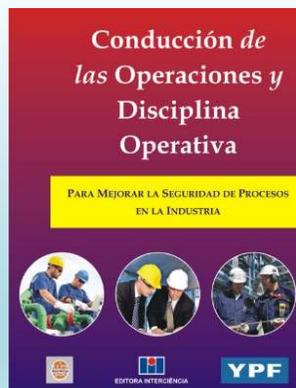
GOLDEN RULES FOR COMBUSTIBLE DUST



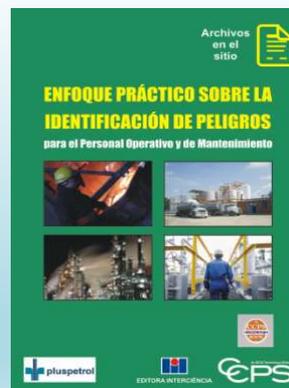
GOLDEN RULES FOR CHLOR-ALKALI IN-PROGRESS

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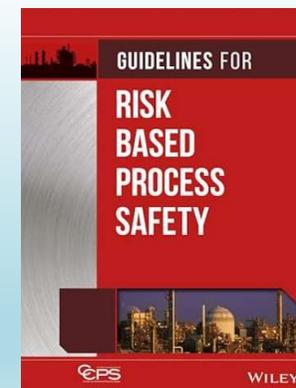
Books available at: editorainterciencia.com.br



CONDUCCIÓN DE LAS OPERACIONES Y DISCIPLINA OPERATIVA

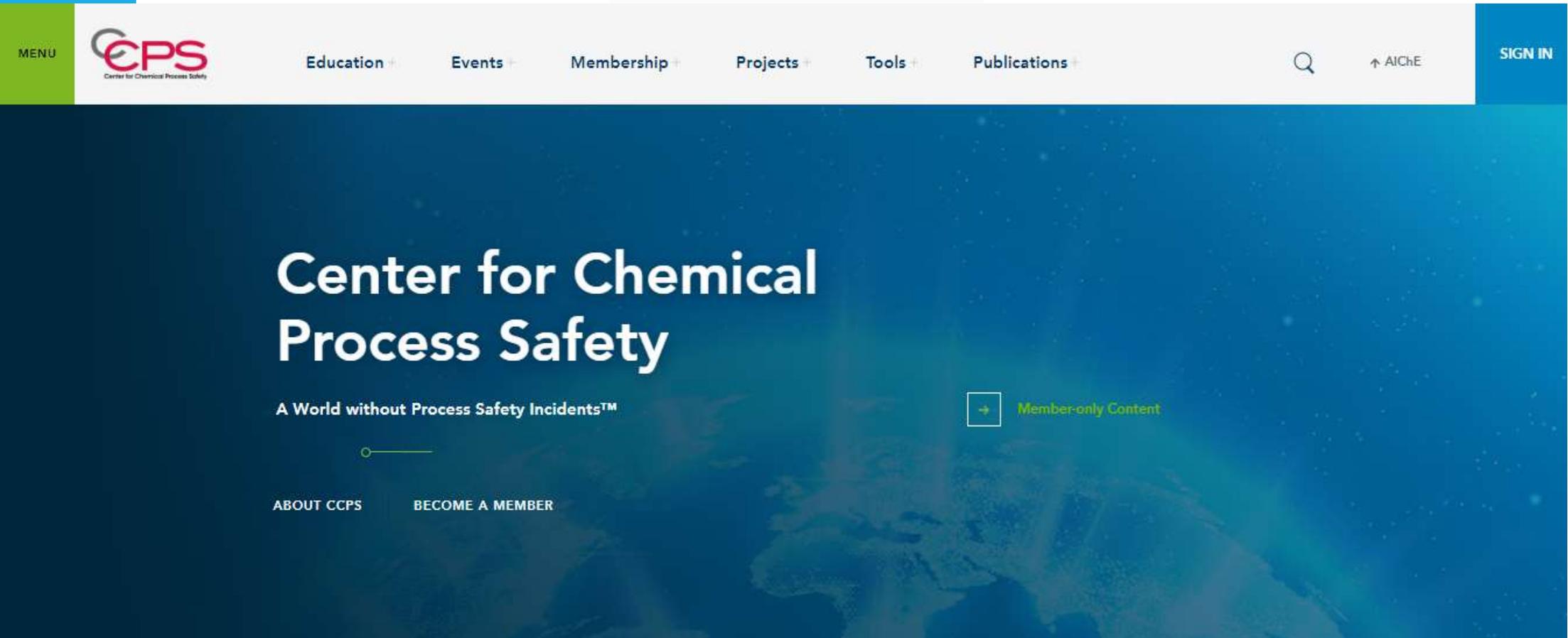


ENFOQUE PRÁCTICO SOBRE LA IDENTIFICACIÓN DE PELIGROS PARA EL PERSONAL OPERATIVO Y DE MANTENIMIENTO



GUIDELINES FOR RISK BASED PROCESS SAFETY

<https://www.aiche.org/ccps>



MENU



Education +

Events +

Membership +

Projects +

Tools +

Publications +



↑ AIChE

SIGN IN

Center for Chemical Process Safety

A World without Process Safety Incidents™



Member-only Content

ABOUT CCPS

BECOME A MEMBER

20° Congresso Global de Segurança de Processo

2024 Spring Meeting and 20th Global Congress on Process Safety
March 24-28, 2024 | New Orleans Ernest N. Morial Convention Center, New Orleans, LA

[Accommodations](#)

[Sponsor & Exhibit](#)

[Technical Program](#)

[REGISTER](#)

2024 Spring Meeting and 20th Global Congress on Process Safety

March 24, 2024 to March 28, 2024

New Orleans Ernest N. Morial Convention Center, New Orleans, LA



[Register](#)

[SPONSOR & EXHIBIT](#)

[TECHNICAL PROGRAM](#)

[ADDITIONAL](#)

Encontro CCPS VIRTUAL

16 de maio de 2024

14 às 17:30h

Anfitriã: IPIRANGA

Tema: Destaques do Congresso do CCPS

Zuin – IPIRANGA

Gilsa – DNV

Luana – TRANSPETRO

Fábio – PETROBRAS

Glitz - CCPS

2024 Conferência Latino-Americana de Segurança de Processos CCPS

18 a 20 setembro 2024



Maneiras de Participar

- Participante
- Conferencista
- Patrocinador (>\$2K USD)
- Exibidor (\$2.5 USD)

tradução simultânea
(português - espanhol - inglês)



Prazo
April 26, 2024

Visite a página de Expositores e Patrocinadores: aiche.org/lacps
e aprenda maneiras de apoiar este evento





**2024 Barranquilla
Colombia**



10ª Conferência Latino- Americana sobre Segurança de Processos (10ª LACPS)

18 a 20 setembro 2024

Inscreva-se aiche.org/lacps

Congresso Global de Segurança de Processo **2025**

6 a 10 de abril 2025

Dallas, Texas



<https://www.aiche.org/ccps>

The image shows the homepage of the Center for Chemical Process Safety (CCPS). The website has a dark blue background with a subtle pattern of white dots. At the top, there is a navigation bar with a green 'MENU' button on the left, the CCPS logo (Center for Chemical Process Safety) in the center, and a 'SIGN IN' button on the right. The navigation bar also includes links for 'Education', 'Events', 'Membership', 'Projects', 'Tools', and 'Publications', each with a plus sign. A search icon and an 'AICHE' logo are also present in the navigation bar. Below the navigation bar, the main heading reads 'Center for Chemical Process Safety' in large white text. Underneath the heading is the tagline 'A World without Process Safety Incidents™'. To the right of the tagline is a 'Member-only Content' link with a plus sign icon. At the bottom of the page, there are two links: 'ABOUT CCPS' and 'BECOME A MEMBER'.

MENU

CPS
Center for Chemical Process Safety

Education Events Membership Projects Tools Publications

↑ AIChE

SIGN IN

Center for Chemical Process Safety

A World without Process Safety Incidents™

Member-only Content

ABOUT CCPS BECOME A MEMBER

<https://www.aiche.org/ccps>

The image shows a screenshot of the CCPS website navigation menu. The 'Tools' menu item is highlighted with a blue box, and a large green arrow points down from it to the 'All Tools' link in the dropdown menu. The dropdown menu lists several resources: LOPA Database, Process Safety Glossary, Vision 20/20, PERD: Process Equipment Reliability Database, Professional Services Directory, Process Safety Metrics, Process Safety Incident Database, and RBPS Resources Web Tool. The 'All Tools' link is highlighted in a light blue box. The 'Collaborators' link is also visible. The main navigation bar includes 'MENU', 'CPS Center for Chemical Process Safety', 'Education', 'Events', 'Membership', 'Projects', 'Tools', 'Publications', a search icon, 'AICHE', and 'SIGN IN'. The footer features the slogan 'A World without Process Safety Incidents™', a 'Member-only Content' link, and 'ABOUT CCPS' and 'BECOME A MEMBER' buttons.

MENU

CPS
Center for Chemical Process Safety

Education+ Events+ Membership+ Projects+ **Tools+** Publications+

↑ AICHE SIGN IN

LOPA Database

Process Safety Glossary

Vision 20/20

PERD: Process Equipment Reliability Database

Professional Services Directory

Process Safety Metrics

Process Safety Incident Database

RBPS Resources Web Tool

All Tools

Collaborators

A World without Process Safety Incidents™

Member-only Content

ABOUT CCPS BECOME A MEMBER

Semana Internacional de Segurança de Processo

2 a 6 dezembro 2024

International Process Safety Week
December 2-6, 2024 | Online

International Process Safety Week



December 2, 2024 to December 6, 2024
Online

Essas organizações estão trabalhando juntas para oferecer uma semana de conscientização sobre segurança de processo



https://www.aiche.org/ccps

The image shows a screenshot of the CCPS website. At the top left, there is a green 'MENU' button. Next to it is the CCPS logo, which consists of a stylized 'C' and 'PS' in red, with the text 'Center for Chemical Process Safety' underneath. To the right of the logo is a horizontal navigation bar with six buttons: 'Education +', 'Events +', 'Membership +', 'Projects +', 'Tools +', and 'Publications +'. Further right is a search icon and the text '↑ AICHE'. On the far right is a blue 'SIGN IN' button. Below the navigation bar is a large white box containing a list of publications. The list is organized into three columns. The first column contains 'Books', 'Process Safety Beacon', and 'Process Safety Summaries'. The second column contains 'CCPS on Knovel', 'Process Safety Monographs', and 'Safe Work Practices (SWP)'. The third column contains 'Golden Rules', 'Process Safety Progress', and 'Book of Beacons'. To the right of this list is a grey box with the text 'All Publications'. At the bottom of the white box, there are two links: 'ABOUT CCPS' and 'BECOME A MEMBER'.

MENU

CPS
Center for Chemical Process Safety

Education + Events + Membership + Projects + Tools + Publications +

↑ AICHE

SIGN IN

Books

Process Safety Beacon

Process Safety Summaries

CCPS on Knovel

Process Safety Monographs

Safe Work Practices (SWP)

Golden Rules

Process Safety Progress

Book of Beacons

All Publications

ABOUT CCPS

BECOME A MEMBER

AICHE Academy

what type of delivery format of courses would you be interested in?

- E-learning
- Virtual instructor led (live)
- Instructor led (in-person)
- Blended learning



Desafio

Muita informação pública

“mundo de
informação”
associados

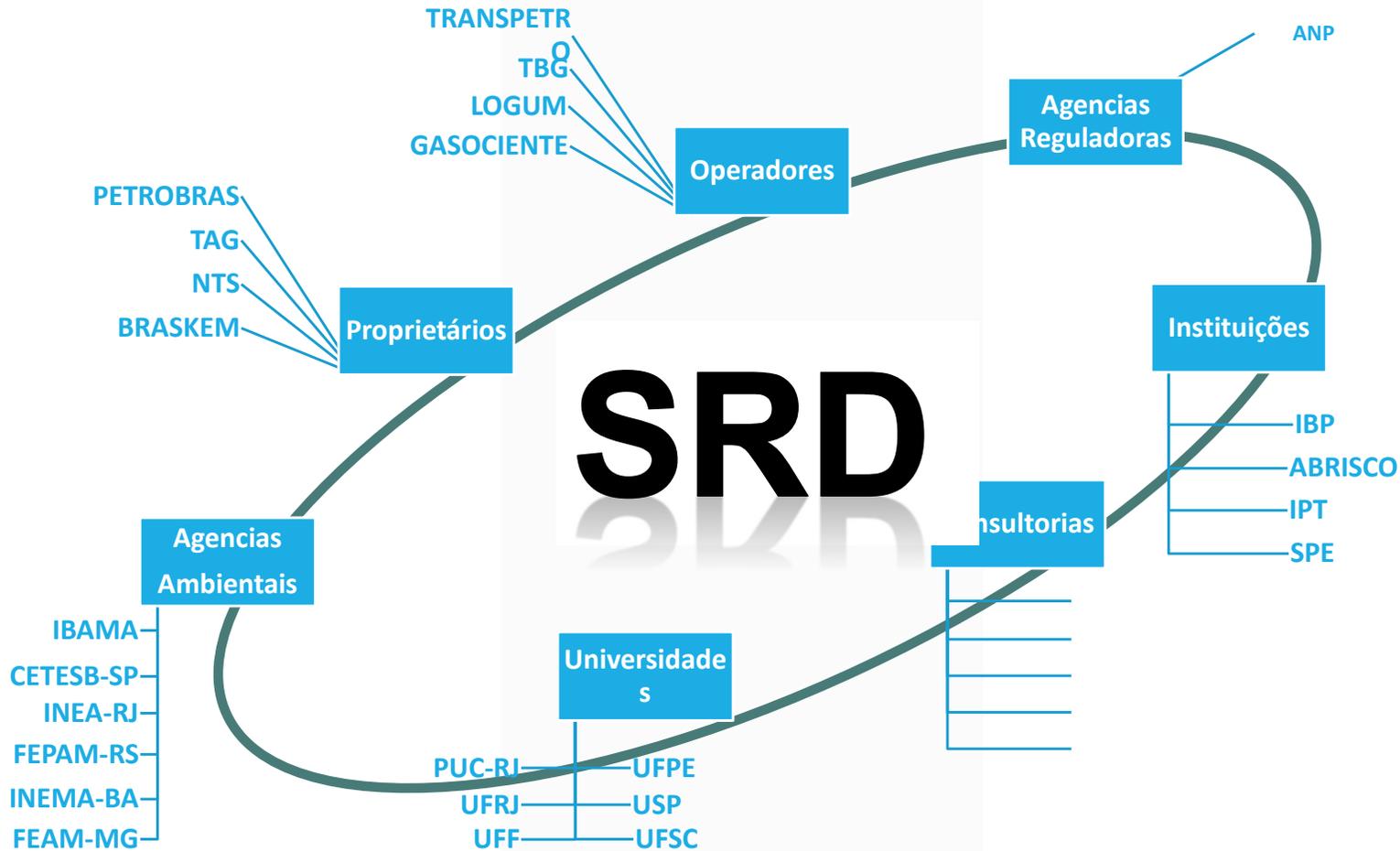
<https://www.aiche.org/ccps>

WWW.ULTRACOLORINGPAGES.COM

Fonte: Pinterest

SRD

Subcomissão de Riscos em Dutos - SRD



Objetivos e Premissas

Encontros CCPS

OBJETIVOS

- Compartilhamento de conhecimento e experiências em Segurança de Processo e assuntos relacionados
- Apresentar casos de sucesso e soluções encontradas
- Networking em Segurança de Processo e assuntos relacionados
- Divulgar o CCPS

PREMISSAS

- Participação e sinergia: $2+2 > 4$
- Custo reduzido (virtual)
- Anfitrião: ceder Plataforma de videoconferência + enviar convite
- 3 ou 4 reuniões/ano
- Grupo sem fins comerciais

OBJETIVOS

- Compartilhamento de Processos
- Apresentação
- Networking

Parar 1 período para TROCAR,
 PENSAR
 TRANSFORMAR INFORMAÇÃO EM
 INSPIRAÇÃO

- 30 minutos relacionados
- 4
- Plataforma de videoconferência + enviar convite
- 3 vezes/ano
- Grupo sem fins comerciais

PAUTA ÚNICA: “Debriefing” do Congresso Global de Segurança de Processo – Nova Orleans (EUA)
25 a 27 de março de 2024

- O que chamou a atenção,
- Quais temas/ assuntos estão sendo discutidos no mundo,
- Principais “ganhos”,
- Insights e reflexões.

14:00 às 14:15 h – Abertura e regras de participação – Alexandre **Glitz** – **CCPS**

14:15 às 15:00 h – Eduardo **Zuin** - **IPIRANGA**

15:00 às 15:45 h – **Gilsa** Monteiro - **DNV**

15:45 às 16:30h – **Luana** Marques – **TRANSPETRO**

16:30 às 17:15h – **Fábio** Rossi - **PETROBRAS**

ENCONTROS CCPS BRASIL – 2024 (terça-feira) 14 às 17:30h

27 fevereiro – IBP 

16 abril – GERDAU 

16 maio (quinta) - IPIRANGA

04 junho – TRANSPETRO (**presencial – Rio de Janeiro**)

06 agosto – CCPS

8 outubro – FM GLOBAL

04 junho – TRANSPETRO (**presencial – Rio de Janeiro**)



TRANSPETRO

Restrito a CONVIDADOS: foco empresas MEMBRO DO CCPS

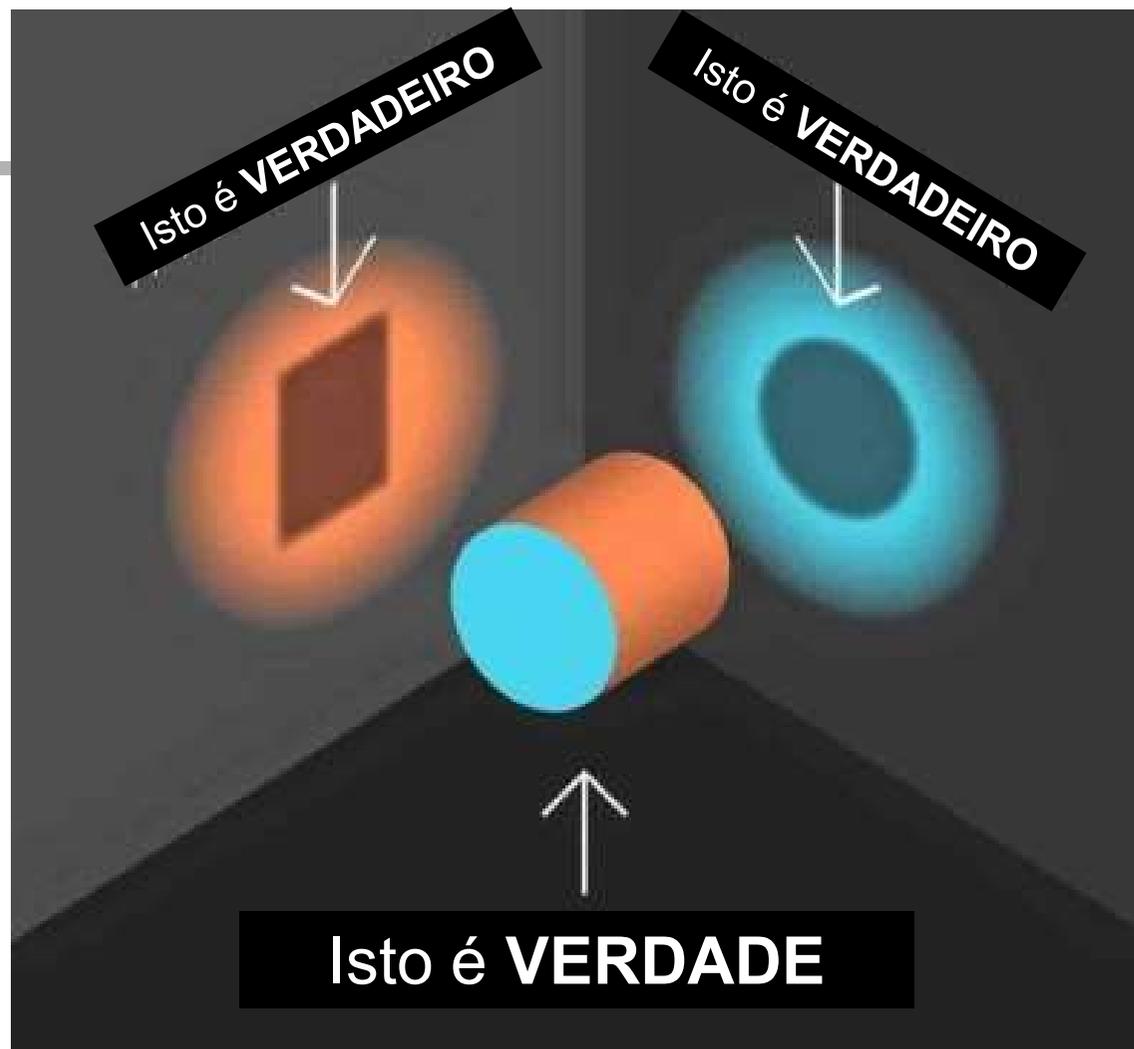
Convites serão enviados pelo CCPS (Carmen Osorio e Glitz)

Necessário o **registro (links no convite)** para poder ter

acesso ao Edifício da TRANSPETRO. **Sem registro prévio,**

não será possível o acesso ao Edifício.

DIFERENTES
PONTOS DE
VISTA DA
MESMA
REALIDADE





20th GCPS 2024

New Orleans

24 à 28/03

SPRING24
+20TH GCPS
A Joint AIChE and CCPS Meeting

O CCPS (Center chemical for Process safety) é o órgão máximo em segurança de processamento no mundo, com mais de 260 empresas filiadas ao redor do mundo



Benefícios:

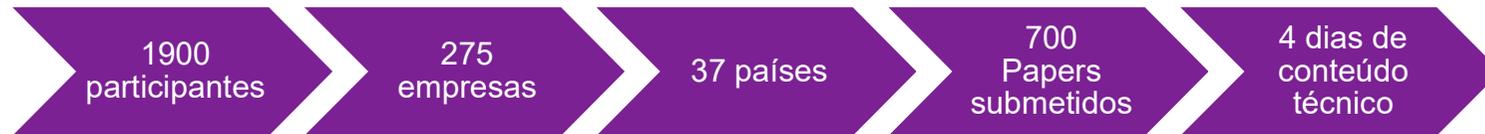
- Acesso a subcomitês do segmento (Armazenamento e distribuição)
- Direito a participação na elaboração/revisão de novos guidelines (ex: API 754)
- Acesso a base de dados de acidentes/investigações
- Acesso a base de dados de auditoria de barreiras (LOPA)
- Acesso a webinars e formações profissionais
- Contato com o maiores especialistas de segurança de processo do mundo
- Contribuição na prevenção de acidentes através de rede de apoio de expert e especialistas

SPRING24 +20TH GCPS

A Joint AIChE and CCPS Meeting

O Evento

- Maior evento de Segurança de Processos do mundo
- Acontece anualmente (geralmente no sul dos EUA)
- Grande presença de empresas petroquímicas

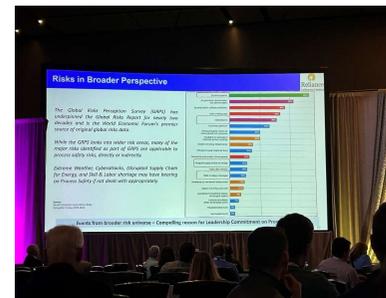


Empresas Brasileiras:

- Ipiranga
- Vale
- Petrobras
- Transpetro
- TAG

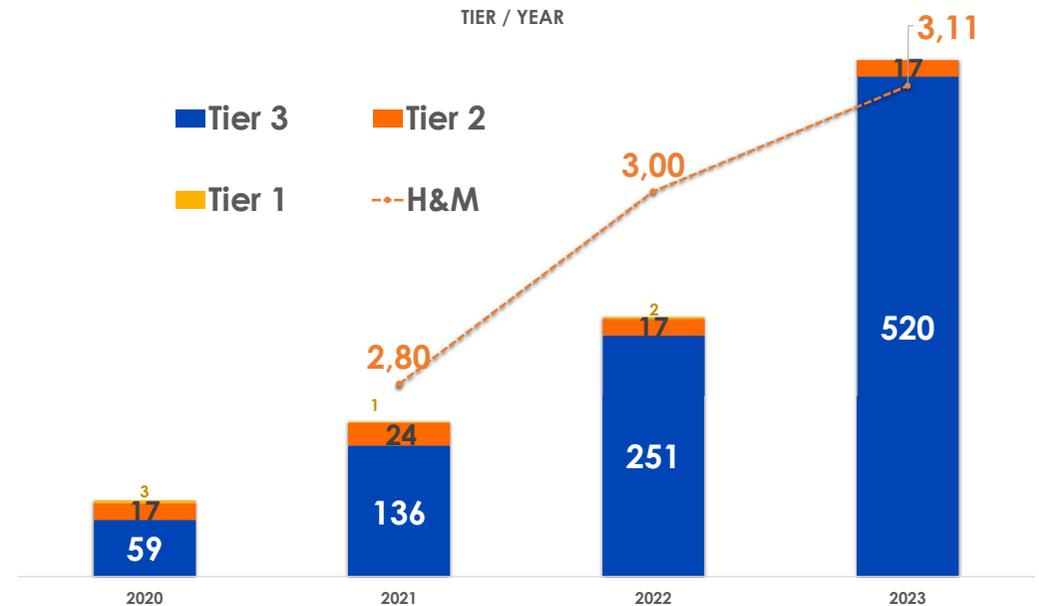
Além das sessões gerais do evento, ocorrem em paralelo 5 salas com diferentes temas.
Nosso trabalho foi apresentado na sessão “Perspectives on Process Safety Around the Globe”

O tema que mais apareceu sob diferentes óticas nas diferentes salas foi
Fatores Humanos



Paper Ipiranga

- Avaliação da correlação entre cultura de Segurança e Segurança de Processos
- Avaliação entre 23 dimensões da Hearts and Minds e 20 RBPS - Risk Based Process Safety - Alta correlação – Aprox 80%
- Nossa trajetória de fortalecimento da cultura apoiou num maior nível de reporte, investigação e prevenção dos maiores derrames



2023

➤ ↓ 81 % - Volume Derramado (23' x 22')

➤ Sem ocorrência de Tier1

Principais Insights

Gerenciamento de Risco



Principais desafios de PSM no século 21

- Gerenciar os maiores riscos (incluindo tolerabilidade e aprovações) de forma dinâmica

- Conheço meus Riscos
- Conheço as medidas de controle desses riscos
(minhas medidas de controle são verificadas e estão efetivas)

- Clareza sobre o que o Board precisa saber
- Clareza de quais executivos precisam saber sobre SEPRO
- Outras áreas precisam estar mais apropriadas do tema
- Melhor definição sobre indicadores Reativos e Proativos
 - O que medimos fala sobre o que é importante
 - Indicadores certos nos dão senso de urgência certo
 - Antecipação de riscos
- Interação entre soluções digitais e assets instalados

- Dono do Risco – Operação
 - Descrição de cargo
 - Accountability
 - Resp. Civil e Criminaç
 - Também é dono do Budget
- Normatização– área técnica
- Auditoria
- Consultorias externas também apoiam como uma camada independente

Comitê de risco dedicado aos riscos operacionais

Principais Insights

Investigação de Acidentes

- Definir e entender papéis e responsabilidades
- Transformar em aprendizado de verdade para a organização
- Documentar o porquê das mudanças dos procedimentos
- Custo do acidente para apoiar em BC
 - HH de mitigação
 - HH de investigação
 - Revisitar PAE e PGC em funções de acidentes (o cenário ocorrido estava coberto)

Cultura

- Conversas mais abertas – de mão dupla
- Feedback para o campo do que está sendo feito e para que está sendo feito
- Gerenciar competência e conhecimento – diferentes skills precisam de diferentes formas de aprendizado – Reciclagem também é importante! Cuidar da nova geração!
- Segurança Psicológica é fundamental
- Walk The Talk – Precisa de registro, entender as causas raízes dos que ouve, plano de ação, tratamento e feedback
- Disciplina Operacional – muito mais do que fazer o certo sempre: Liderança, trabalho em equipe, procedimento e housekeeping
- HOP
 - Errar é normal
 - Culpar não resolve nada
 - Sistemas direcionam comportamentos
 - Respeito é importante
 - Aprender é vital



Obrigada pela oportunidade!





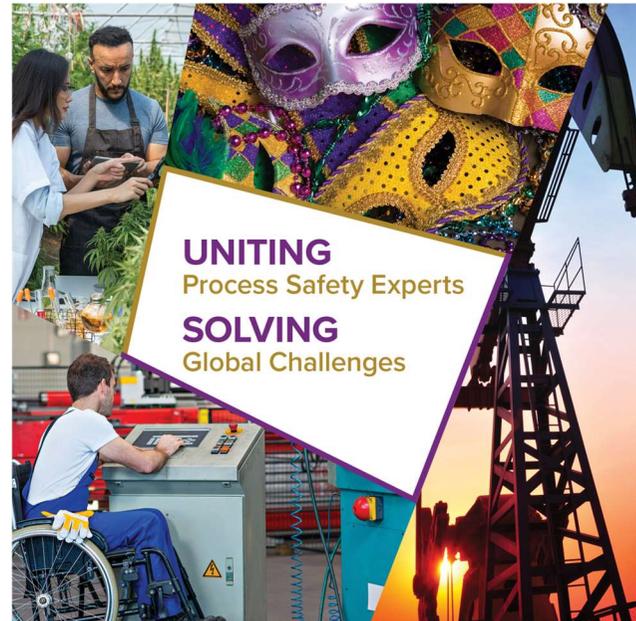
Global Conference on Process Safety

Takeaways and Insights from the Conference
New Orleans, March 25 to 27, 2024

Gilsa Monteiro

16 May 2024
CCPS Meeting – GCPS Debriefing

WHEN TRUST MATTERS



SPRING24 +20TH GCPS

A Joint AIChE and CCPS Meeting

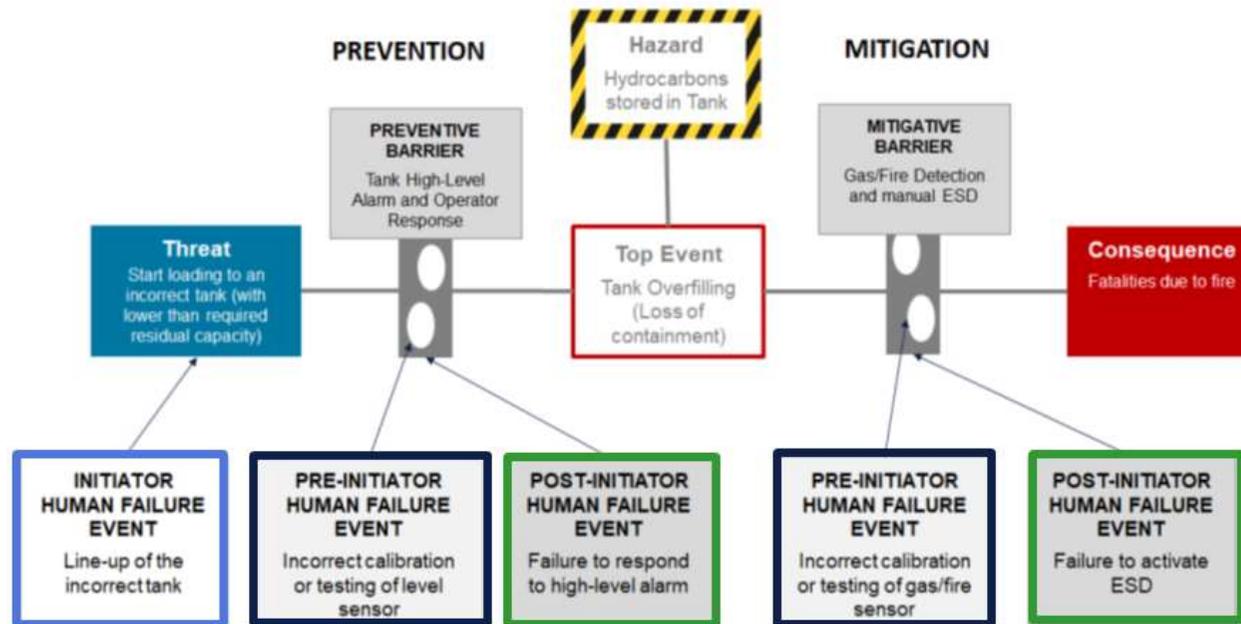
March 24–28, 2024

New Orleans Ernest N. Morial
Convention Center
New Orleans, LA

Human Reliability Analysis (HRA)

What methodological adjustments must be adopted in Petro-HRA to analyse pre-accident operator actions?

Monteiro, G.P; Fernander, M.; Diniz, F.; Bleser, C.



Post-Initiator Events
Tasks involving larger cognitive components for information processing, diagnosis and decision-making in response to an abnormal condition.

Initiator Events
Action tasks dominated by rules and skills performed during safety-critical but normal operations, in which a human error can initiate an accident sequence

Pre-Initiator Events
Action tasks dominated by rules and skills, performed during normal operation (inspection, test and maintenance activities).

Estimating the Human Error Probability (HEP):

$$HEP = NHEP \times \prod_{i=1}^n Multiplier (PSF_i)$$

- NHEP: Nominal Human Error Probability
- PSF: Performance Shaping Factors



Task Type:	Human Failure Event:	SPAR-H NHEP:	Petro-HRA Application
Diagnosis	- Post-Initiator Event	1E-02	Already adopted for Post-Initiator events
Action	- Pre-Initiator Event - Initiator Event	1E-03	To be adopted for Pre-accident human failure events

Human Factors – Procedure Error Drives

CAPTUER – Using Digital Technology for Effective and Efficient Procedures

CAPTUER = Completely Automated Procedure Tool for User Error Reduction



The tool helps in identifying possible error traps in a procedure.

The paper addresses common Procedure error drivers:

- ❑ E.g. Vague Terms (such as “if applicable”; “if needed”; “as appropriate” etc).
- ❑ E.g. Avoid the passive voice; use the active voice explaining the action to be taken.
- ❑ Multiple actions – *Any time there are 3 or more actions in a step there is an increase in error rates.”*

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AIChE Spring Meeting and Global Congress on Process Safety

CAPTUER – Using Digital Technology for Effective and Efficient Procedures

Elliot Wolf-Stokes
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Prepared for Presentation at
American Institute of Chemical Engineers
2024 Spring Meeting and 20th Global Congress on Process Safety
New Orleans, LA
March 25 – March 28, 2024

Human Factors – Biases

Presentation: “**The Impact of Cognitive Bias on Incident Investigations**”,
by Robert Bellair (Dow)



Point for our reflection:

- Are we aware about the common biases that can affect our judgements and decision-making in risk analyses, incident investigations and other analyses?

Do you know the following common biases?

- Confirmation Bias
- Hindsight Bias
- Anchoring Bias
- Overconfidence Bias
- Availability Bias
- Escalation of Commitment

- The author suggested that **increasing diversity** in accident investigation teams can reduce the adverse effects of Bias.
- In my view, “**Groupthink**” can hinder the positive effects of diversity.



AI – Could it help in the process of raising different hypothesis during an accident investigation?

Do you want to
know more?

*How Risk-Informed
Decisions Can Fail:
Lessons from a Nuclear
Power Plant Incident*

Monteiro, GP and Frutuoso e Melo,
P.F.

<https://pubs.acs.org/doi/abs/10.1021/acs.chas.1c00039>

Enhancing PHA Facilitation Through the “Elicit-Provide-Elicit” Method

1 What is elicit-provide-elicit?

Elicit-provide-elicit is a simple but powerful technique to share information with your clients in a way that respects their autonomy and engages them in the process. It involves three steps: elicit your client's existing knowledge, beliefs, or preferences about the topic; provide new or additional information that is relevant, accurate, and tailored to their needs; and elicit their response, reaction, or feedback to the information. This way, you avoid lecturing, imposing, or persuading your client, and instead invite them to explore and integrate the information with their own perspective.

A way to handle resistance or defensiveness

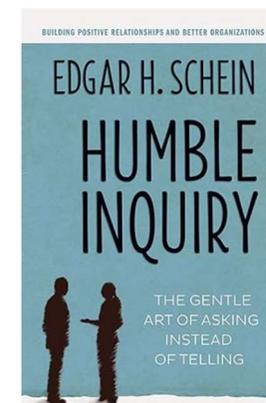
3 How to use elicit-provide-elicit and summaries effectively?

To use elicit-provide-elicit and summaries effectively, you need to abide by some basic principles of motivational interviewing, such as expressing empathy, supporting autonomy, developing discrepancy, and rolling with resistance. To apply these principles, consider asking open-ended questions to understand your client's views, feelings, or goals before providing information. Use affirmations, reflections, or summaries to acknowledge and validate your client's experience, strengths, or values. Before providing information, ask permission and check if your client is ready to hear it. When providing information, use language that your client can understand and avoid generalizing by using words like “some” or “many” instead of “all” or “most”. After providing information, elicit your client's response using questions that encourage them to express their thoughts, feelings, or actions. Lastly, use summaries to wrap up the discussion or review what has been discussed.



Points for our reflection:

- Can this method help us during the HRA Workshop meetings so that constructive conversations are established to address human failure events?
- Could this method be a helpful tool to avoid or at least reduce the adverse effects of biases?



Additional useful reference.



Human Factors and Cybersecurity

Presentation: *Using Human Factors to Improve Cybersecurity*

- What is the role of individuals in cybersecurity: weak link or last barrier of defense?

NEWS / PINELLAS

Oldsmar's water supply attack is a warning, experts say. It could've been worse.

Instead of causing widespread injury or loss of life, the attack could stand as a huge red flag marking quietly pervasive flaws in national security.



How prepared are organizations in Brazil for preventing and mitigating a cyberattack?

Do CROs (Control Room Operators) receive any specific training for it?

What if all barriers (BCPS, F&G, SIS) are controlled by a hacker?

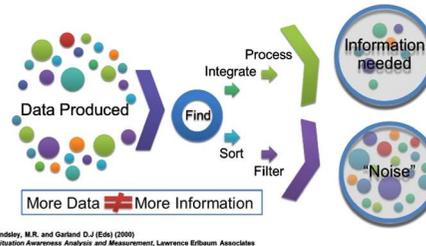
Is there a crisis response and business continuity plan in place?

Risks & Opportunities of Emerging Technology for Incident Responders

Abstract

In this session we will explore the traditional challenges of emergency response and crisis management and ask whether technological solutions provide the answers. We will introduce and explore a Digital Emergency Response Ecosystem as a case study showing how technology can offer significant benefits to responders. Benefits including enhanced situational awareness, real-time communications, streamlined reporting, and improved coordination between organizations and other responders, such as clean up providers. However, we'll also heed caution, discussing the complexities of crisis and emergency situations, the intricacies of human decision making, and why AI and other digital solutions are not a cure-all for our challenges and could in fact create barriers to effective decision making under pressure.

- Responders shall not be overloaded with data.
- Emerging technologies / digitalization can help in better controlling the flow of information within an emergency response structure.
- How could these technologies help in enhancing **situational awareness**?



Endsley, M.R. and Garland D.J. (Eds) (2009)
Situation Awareness Analysis and Measurement, Lawrence Erlbaum Associates

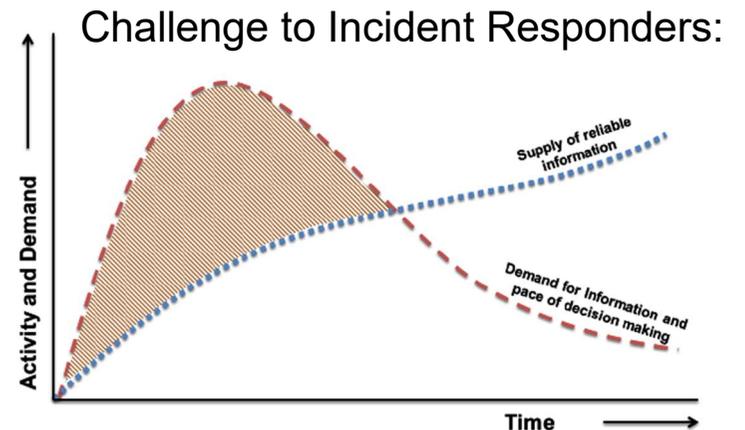


Figure 1: the evidence gap in crisis management

SITUATIONAL AWARENESS is the state of individual and/or collective knowledge relating to past and current events, their implications and potential future developments.



Natural Hazards

Presentation: Last Lunch Session, presentation by Michael Washington, **Arkema**.

Do you remember the flooding incident suffered by Arkema?



Organic Peroxide Decomposition, Release, and Fire at Arkema Crosby Following Hurricane Harvey Flooding Crosby, Texas

Incident Date: August 31, 2017
Exposures to Emergency Responders, Community Evacuation, and Property Damage



Natural Hazards Assessment and Natural Disaster Qualitative Readiness & Preparation Score:

	Score Indicator:
Hurricane	Green square e.g. 98%
Tornado	Yellow square
Winterization	Red square
Flooding	Green square
Etc.	Green square

- The score indicator is based on a checklist that has been prepared using questions from CSB investigation reports; regulatory requirements etc.
- The Natural Hazards have been thoroughly discussed to better comprehend how tough the events could be:
 - E.g. What do you mean by 3-day below freezing point in Texas?
 - What materials do we have which are not designed to withstand these conditions?
 - Do we need to shut down?

Natural Hazards Emergency Response Plan



CCPS Monograph:

Human Factors Primer for
Front Line Leaders



This monograph provides front line leaders in operating plants with human factors concepts and tools to support their decision-making. It complements and references *CCPS/EI Human Factors Handbook*.

Decision

My site is developing a Natural Hazards Emergency Response Plan. In addition to the technical aspects, how do I best address the **teamwork and communication** aspects?

Key Human Factors Concepts for Non-technical Competency Management

- Identify the natural **hazards and associated risks** (CCPS, 2019a)
- Determine **actions and decisions** that may be required to address the emergency
 - Actions before, during, and recovering from the emergency event
 - Methods to maintain situation awareness (HFH 20) recognizing that workers may be in a safe shelter with limited ability to assess the local environment
- Assign the **team** (HFH 11)
 - Select team members that are competent to be on the emergency response team
 - Create plans to minimize fatigue (HFH 15)
 - Consider workers' other (personal) responsibilities in a natural hazard emergency
 - Practice response skills through table-top exercises and drills
- Design the **communications** (HFH 19)
 - System reliability and ability to survive the natural hazard
 - Method, timing, and personnel involved

Incidents to Learn From

Fukushima Daiichi Nuclear Power Plant Release - Japan 2011 (CCPS, 2019b)
Arkema Chemical Plant Fire - Texas, US 2017 (CSB, 2018)

Potential Actions and Tools

- **Understand** the natural hazards and **plan** for them (CCPS, 2019a) (HFH 22).
- Develop a plan that considers **situation awareness and communications** challenges.
- Conduct **training and drills**.
- **Communicate** relevant plan details with internal and external stakeholders.

WHEN TRUST MATTERS

Global Conference on Process Safety

Takeaways and Insights from the Conference
Gilsa Monteiro

New Orleans, March 25 to 28, 2024

CCPS Meeting - Sharing Session
16 May 2024

www.dnv.com



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A Joint AIChE and CCPS Meeting

March 24–28, 2024
New Orleans Ernest N. Morial
Convention Center,
New Orleans, LA

“Debriefing” do Congresso Global de Segurança de Processo – Nova Orleans (EUA) 25 a 27 de março de 2024

Fabio Leandro Rossi

Gerente de Segurança de Processo

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GCPS20
YEARS
ANNIVERSARY

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Destques

Participação como *co-chair* – Português – durante o evento;

- **Avaliação dos trabalhos enviados (*ranking*) (50% aprovado);**
- **Seleção dos trabalhos orais e posters;**
- **Avaliação e comentários dos artigos e apresentações (55%);**
- **Condução da sala em português.**

Representação da Petrobras na reunião dos *steering committee*;

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Destques

Apresentação em inglês na sala internacional;

Nós temos um enorme potencial de participação em diversos temas;

A sala internacional teve uma característica mais aplicável (menos abrangência de demais apresentações);



O 20º Congresso global de segurança de processo ocorrerá em de 24-28 de março de 2024 a ser realizado em Nova Orleans, Estados Unidos.

Os convidamos a compartilhar suas experiências em português. Os tópicos abordados são amplos e relacionados aos últimos avanços na área de segurança de processo.

Ao submeter seus artigos, escolham os dos itens abaixo para sessão em português.

- T1083 Gestão da Segurança de Processos baseada em Risco
- T10100 Análise de Perigos e Riscos

Novos artigos podem ser submetidos até o dia 25/10/2023.



Para maiores informações do evento



Para submissão de seus artigos

*necessário estar logado no site



GCPS 20 YEARS ANNIVERSARY

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Portuguese Session: Gestão da Segurança de Processos baseada em Risco I e II

Co-Chairs: Bruno Menegatti Esperandio e Fábio Leandro Rossi

March 25, 2024

10:30 AM	Overview of Risk-Based Decision-Making Methodologies and Scenario Prioritization in Bow Tie Analysis: Unveiling Benefits and Challenges Deyse Camara
11:00 AM	Implementation Methodology of Third Part Interference Frequency Reduction Using ISO 13.623 Vitor Cersosimo Esposito
11:30 AM	Dynamic Barriers Monitoring in the Mining Industry and Its Contribution to Process Safety Hellen Mello
12:00 AM	Break - Luncheon for Spring and GCPS (Monday) - <i>Great Hall A (New Orleans Ernest N. Morial Convention Center)</i>
1:30 PM	18a Ammonia Mitigation System for Large Release Scenario in Storage Tanks - a Case Study Hormando Leocadio
2:00 PM	Application of Process Safety in Capital Projects - Characteristics Applicable to the Mining Industry Rodrigo Horta
2:30 PM	Dynamic Process Safety Barriers Management at Petrobras: Challenges for Data Integration Sandro Malvao

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Portuguese Session: Gestão da Segurança de Processos baseada em Risco III

Co-Chairs: Bruno Menegatti Esperandio e Fábio Leandro Rossi

March 25, 2024

3:30 PM	Reliability in Mass Alert System for Dam Emergencies: Case Study of Vale Flavio Thimotio
4:00 PM	Reduction of Process Accidents Based on API RP 754, by Improving the Safety Culture Measured by the Hearts & Minds Index Eduardo Zuin
4:30 PM	When Should We Go Beyond Empirical Analysis Vinicius Simoes
5:00 PM	Closing Remarks

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Portuguese Session: Gestão da Segurança de Processos baseada em Risco IV

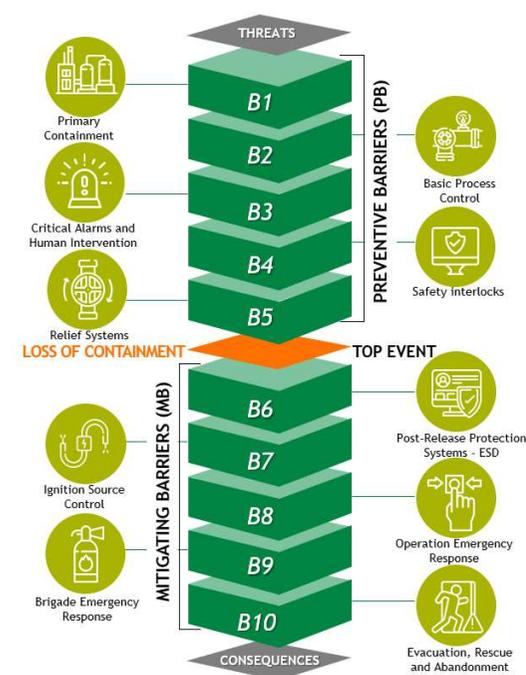
Co-Chairs: Bruno Menegatti Esperandio e Fábio Leandro Rossi

March 26, 2024

8:00 AM	Main Challenges in the Operational Safety Management of Offshore Oil and Gas Production Platforms in the Design and Commissioning Phase, in the View of the Brazilian Regulator Thiago Ormonde
8:30 AM	Dynamic Process Safety Barriers Management: Challenges in the Governance of the Dynamic Monitoring Process in a Petrobras Business Unit Luciana Heil
9:00 PM	Closing Remarks

Gestão Dinâmica de Barreiras

- Gestão dinâmica de barreiras na Petrobras;
- Desafios de tecnologia (artigo Sandro);
- Governança em uma Unidade operacional (artigo Luciana);
- Avanços em tecnologia aplicadas a Gestão de Barreiras (artigo Deyse);



Gestão Dinâmica de Barreiras

Enhancing Organizational Resilience through Advanced Risk Management

Factors shaping the selection of risk management methodologies

Integrating LOPA and Bow tie

Integrating Bayesian Network into Bow tie analysis



Overview of Risk-Based Decision-Making Methodologies and Scenario Prioritization in Bow Tie Analysis

Fuzzy logic in bow tie analysis

Synergizing methodologies in risk management

Roadmap for selecting the optimal risk management methodology

The future of risk management

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RAGAGEP

Normas e padrões regulamentares;

Como lidar com as melhores práticas (codes, standards, RP, etc)?

Como gerenciar revisões e citações em padrões corporativos?

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Networking

- PPCI



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CCPS Global Technical Steering Committee Meeting

March 28, 2024

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CCPS 2024 Plan



Early in the
 PS Journey

- Implement UPSLI 2024 Program
- Execute ECP Training Plan
- Transition CCPSf to AIChE Academy



- Strengthen / grow virtual presence
- Sustain global CCPS membership [280]
- 7 CCPS Regional Meetings + T&T



Advanced
 Practitioners



- Vision 20/20 Assessment Tools Implementation
- Expand Process Safety Training penetration in Middle East
- Grow CCPS Body of Knowledge
- Expand CCPS
- RBPS Assessment Tool launched

REGIONAL CCPS CONFERENCES
Launch IPSW
Global Process Safety & Big Data Conf.
Latin America Conf. on Process Safety
Global Summit on Process Safety

THE GLOBAL COMMUNITY COMMITTED TO PROCESS SAFETY



RAGAGEP

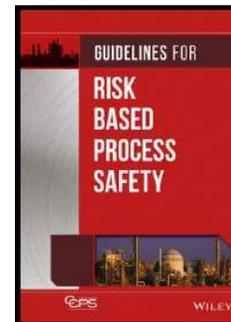
- RAGAGEP – Pesquisa
- Aplicação em sua maioria para projetos de equipamentos;
- 61% ou possuem especialistas (traduzem) ou detalham em seu PSMS;
- 40% contratam (subscription) ou possuem comitê interno que monitora;
- 19% documentam aplicação para cada Unidade de produção;
- 63% não possuem uma ferramenta para acompanhamento;

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- Avaliação da aderência das orientações, práticas e padrões da Petrobras aos requisitos dos elementos do *Risk Based Process Safety* (RBPS) do CCPS.



GCPS20^{YEARS}
ANNIVERSARY

Próximos passos

- Avaliação de maturidade;
- Avanços no risco individual e social (artigo TAG);
- Capacitação em segurança de processo;
- Cultura de segurança de processo;
- Práticas recomendadas padronização;
- Novas tecnologias – diversas frentes;

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Obrigado

