



Ways to promote penetration of standards

Nikolaus A. Gromes

Chairman Plants and Pipelines Committee
WEG, Germany

WEG - Association of the German oil and gas producers

Truth of benefit of standardization

- **80% of world wide trade are based on use of standards (source: OECD).**
- **In UK, influence on increase of productivity by use of standards since 1948 amounts 13 % (source: UK study).**
- **1 % increase of number of standards results in the increase of macroeconomic productivity by 0,13 % (source: new Australian study).**
- **In Germany, the macroeconomic benefit of standardization amounts 16 billion Euro p. a. (source: DIN study).**

Initial situation

- **ISO standards are being developed with significant amount of human energy and financial resources.**
 - **Published ISO standards are available for use by the oil and gas industries.**
- ➔ **What steps can be recommended to inspire the new ISO standards with life, i.e. promote use of the ISO standards?**

Principle ways of promotion

- **Inform and train the company's staff who shall use the standards.**
- **Incorporate the standards in the company's internal specifications and best practices.**
- **Include the relevant national authorities and certified bodies in the implementation process.**
- **Extend the promotion process to the national associations of the oil and gas industries.**

Principle ways of promotion

- **Inform and train the company's staff who shall use the standards.**
- Incorporate the standards in the company's internal regulations and best practices.
- Include the relevant national authorities and certified bodies in the implementation process.
- Extend the promotion process to the national associations of the oil and gas industries.

Training of own staff

Engineers as main users of standards and specifications often tend to stick to their old “proven” documents.

- Internal workshops are suitable for information of the personnel concerned.
 - Furthermore, with the advice of experts and based on actual projects, the engineers need to be trained how to use the new standards.
 - In parallel, the company’s purchasing department has to adjust the related purchasing documents.
- Sufficient training of own staff is one of the key success factors of the standards implementation.

Principle ways of promotion

- Inform and train the company's staff who shall use the standards.
- **Incorporate the standards in the company's internal regulations and best practices.**
- Include the relevant national authorities and certified bodies in the implementation process.
- Extend the promotion process to the national associations of the oil and gas industries.

Improve internal Best Practices

- **Checks to be performed, if the company's own standards can be replaced by the new International Standards completely.**
- **More often, best practices exist which – in the light of the new standards – need to be reviewed and adjusted.**
- ➔ **It is an important opportunity for the company to switch over to the new International Standards and complement its – so far as necessary – by amendment of specific deviation documents.**

Principle ways of promotion

- Inform and train the company's staff who shall use the standards.
- Incorporate the standards in the company's internal regulations and best practices.
- **Include the relevant national authorities and certified bodies in the implementation process.**
- Extend the promotion process to the national associations of the oil and gas industries.

Authorities and Certified Bodies

- **National authorities and certified bodies should be involved closely within the national mirror committees in the standards development process.**
 - **With this, the authorities address the conformity to local regulations and prepare the adoption of the standards as part of the regulations.**
 - **Broad experience and knowledge of certified bodies help to implement the standards requirements to the “real-life” arena.**
- Sufficient involvement leads to a win-win-situation for all.**

Involvement creates win-win-situation

- **The authorities can improve the regulations according to the development of International Standards.**
- **The certified bodies can influence the development of the International Standard and can adjust their rules on time.**
- **The companies' projects and operations run smoother as no extended discussions with authorities and certified bodies on new specifications arise.**

Principle ways of promotion

- Inform and train the company's staff who shall use the standards.
- Incorporate the standards in the company's internal regulations and best practices.
- Include the relevant national authorities and certified bodies in the implementation process.
- **Extend the promotion process to the national associations of the oil and gas industries.**

Role of the National Industry Associations

- **National industry associations consist of partners with broad international experience and national partners.**
- **The associations' committees share the experience of the industry participants with authorities and certified bodies for a mutual understanding.**
- **The committees outline a common understanding of both the ways for implementation of new standards and aligning the industry's stand points with requirements of authorities and certified bodies.**

Successful involvement – Example 1

- **Since 1973, WEG – the association of the German oil and gas producers – gives advise for applying common rules on materials for H₂S systems.**
 - **In past, the WEG guideline (based on the NACE standard) was not fully used by the main WEG companies as they applied their own guidelines.**
 - **Based on ISO 15156 Part 1 to 3, actually, the WEG guideline is being revised and will be published soon.**
- The WEG member companies are going to use a common guideline in future.**



Eastern European Standards Workshop



Title

Guideline on materials used in sour gas systems

Status

Technical regulation based on the ISO 15156 series defining additional requirements to the International Standard with respect to selection, construction and testing which is aligned with expectations of the industry, authorities and certified bodies respectively

Publisher

WEG – Association of the German oil and gas producers

 Wirtschaftsverband Erdöl- und Erdgasgewinnung e.V.		
Technische Regel	Werkstoffleitfaden für Schwefelwasserstoff-beaufschlagte Systeme	Stand: 09/06 Seite 1 von 16
Vorwort		
<p>Zweck dieses Leitfadens ist die Festlegung von Anforderungen für die Auswahl, Herstellung und Prüfung von Werkstoffen, die sich für den Einsatz bei der Behandlung und Fortleitung von Medien eignen, die Schwefelwasserstoff enthalten. Dieser Leitfaden wird vom WEG herausgegeben und ersetzt die Werkstoffrichtlinie aus dem Jahre 1987.</p> <p>Die Neufassung wurde erforderlich, da inzwischen die DIN EN ISO 15156 erschienen ist, die umfassende Empfehlungen für die Werkstoffauswahl zur Vermeidung von gefährlichen Wasserstoff-Risschäden gibt und deren Einhaltung empfohlen wird:</p> <p>„ISO 15156 - Petroleum and natural gas industries – Materials for use in H₂S containing environments in oil and gas production - Part 1, 2, 3“ (in der jeweils letztgültigen Fassung als DIN EN ISO).</p> <p>In diesem WEG-Leitfaden werden zusätzliche Empfehlungen insbesondere hinsichtlich der Prüfung und der Konstruktion beschrieben, die im WEG als sinnvoll erachtet werden und entweder in DIN EN ISO 15156 nicht enthalten sind oder über die dortigen Festlegungen hinausgehen.</p>		
<small>E:\foelich_1w_1\Norm_arb_L1W\WBEI\WWDATA\OGP_Stand_Connm\Eastern_Europe_Workshop_2007\WEG-Beispiele\WEG_Sauerstoffrichtlinie_01092006.doc</small>		

Successful involvement – Example 2

- For many years, WEG has published a guideline for the calculation of casings.
 - The actual version of the guideline is based on the latest revision of ISO 11960 and API 5CT.
 - The main purpose of the guideline is to give additional support by background information and for using the formulas by a specialised computer programme.
- ➔ The WEG member companies use the same way of calculation the casings e. g. by applying the same safety factors.



Eastern European Standards Workshop



Title

Guideline for calculation of casings

Status

Technical regulation based on ISO 11960 / API 5CT which is aligned between industry and authorities

Publisher

WEG – Association of the German oil and gas producers

		Wirtschaftsverband Erdöl- und Erdgasgewinnung e.V.
Technische Regel	Futterrohrberechnung	Stand: 06/06 Seite 1 von 88
Leitfaden		
Futterrohrberechnung		

Successful involvement – Example 3

- **Due to different fields of activity, the WEG member companies are obliged to apply regulations and standards from different sources.**
- **With publication of DIN- EN 14161 (= ISO 13623), the WEG member companies decided to promote the use of the international pipeline standard.**
- **As a guidance paper, a scheme was developed and published containing all regulations and standards to be followed in Germany by the WEG member companies which are operating pipelines.**

Title WEG scheme on regulations for pipelines

- ## Status
- ### Synopsis of regulations for pipelines based on
- authority regulations
 - EN and ISO standards
 - regulations of other associations

Publisher

WEG – Association of the German oil and gas producers

WEG-Übersicht Regelwerk/Rohrleitungen (Blätter A – E) Stand: September 2005

Blatt A: Feldleitungen

Anwendung von Verordnungen und Regelwerken auf Feldleitungen unter Bergrecht (Betriebsplan)

Generell gelten die Vorschriften des BBergG, der ABergV, UVP-V-Bergbau sowie der BVOT (BVOT gilt nur in den alten Bundesländern*) (Die Vorschriften der Rohrfernleitungs-Verordnung vom 02.10.02 gelten nicht)

	Sauggasleitungen		Süßgasleitungen		Rohöl-/Nassölleitung		Lagerstättenwasser-/Soleleitung	
	neu	alt	neu	alt	neu	alt	neu	alt
verpflichtend zu berücksichtigen	BVOT §§ 157-165	BVOT §§ 157-165	BVOT §§ 157-165	BVOT §§ 157-165	BVOT §§ 157-165	BVOT §§ 157-165	BVOT §§ 157-165	BVOT §§ 157-165
					TRFL	RFF (TRbF 301)	TRFL	RRwS
					WEG-RL Prüffristen (TRFL)	WEG-RL Prüffristen (RFF, RRwS)	WEG-RL Prüffristen (TRFL)	WEG-RL Prüffristen (RFF, RRwS)
Zusätzlichfrei willig heranzuziehen, in Anlehnung an	DIN EN 14161	DIN 2470	DIN EN 15001-1/2 DIN EN 14161	DIN 2470	DIN EN 14161		DIN EN 14161	
	*1)		*1)	*1)				
Sauggas Normen-Richtlinie	WEG-H ₂ S-RL	WEG-H ₂ S-RL						
	DIN EN ISO 15156-1							

BVOT §§ 157-165 Rohrleitungen zur Beförderung von Erdöl, Erdgas und anderen Stoffen (die §§ beziehen sich auf Niedersachsen, in anderen Bundesländern z.T. andere Nummerierung *)

DIN EN 14161 Erdöl- und Erdgasindustrie – Rohrleitungstransportsysteme: identisch mit ISO 13623, ausgenommen Ltg. für Gasverteilung in Europa

DIN 2470 Gasleitungen aus Stahlrohren. Diese Norm ist zurückgezogen.

DIN EN 15001-1/2 Rohrleitungen für Gasanlagen > 0,5 bar

TRFL Technische Regel für Rohrfernleitungen mit den abweichenden Regeln für Feldleitungen (Anhang C)

WEG H₂S-RL WEG Werkstoffrichtlinie für schwefelwasserstoffbeaufschlagte Systeme (11/87)

DIN EN ISO 15156-1 Werkstoffe für den Einsatz in H₂S-haltiger Umgebung bei der Öl- und Gasgewinnung, Teil 1 (Teil 2+3 noch im Entwurf)

DVGW-Gas DVGW Regelwerk für Erdgasleitungen

RFF (TRbF 301) Richtlinie für Fernleitungen zum Befördern gefährdender Flüssigkeiten

RRwS Richtlinie für Rohrleitungen zum Befördern wassergefährdender Stoffe

TRGL Technische Regeln für Gashochdruckleitungen (galt für Gashochdruckleitungen der nicht öffentlichen Versorgung, z.B. für Chemiegase)

WEG-RL Prüffristen WEG-Richtlinie zur Ermittlung von Fristen für Prüfung an Feldleitungen gemäß TRFL

DVGW G 496 Rohrleitungen in Gasanlagen

*) In neuen Bundesländern: Betriebsplanverfahren

*1) Die TRFL gilt nicht, kann jedoch als Erkenntnisquelle herangezogen werden

Conclusion

- **Creation of successful standards does not end with its publication, but at this point, it starts towards the important implementation phase.**
- **Training own staff and improvement of company's best practices is the first important step.**
- **Early and sufficient involvement of regulators and certified bodies facilitate the implementation process enormously.**
- **At the national level, industry associations have the opportunity to act as catalysers.**