

Diagnositics of Gas Transmission Pipelines and Risk Management

Geneva

24th January 2008

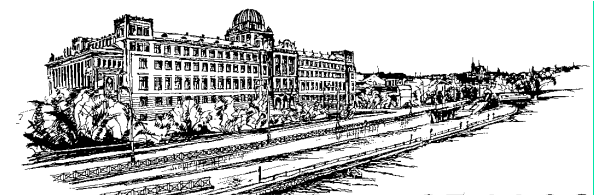
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The Purpose of the Questionnaire

- Growing importance of gas transportation
- Increasing dependence of Europe on non-European natural Gas
- **Safety and reliability of gas transportation**
- Choice of diagnostics methodologies
- Selected approach to risk management
- Need to unify the rules for security of supply
- Exchange of information



Understandings

■ Safety report

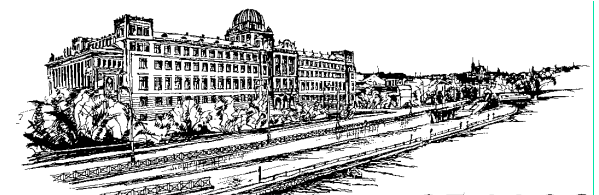
- Prevention system for serious accidents
- Risk of accidents reduction
- Preventive safety measures

■ Risk analysis

- Possibility of failures
- Probability of occurrence

■ Emergency plan

- Activities and measures adopted in case of a serious supply disruptions



Risk Analysis

1. Potential sources of risk?
2. Database for emergency situations?
3. Elaboration of Emergency Plans?
4. Safety reports compulsory?
5. Risk analysis required?
6. Risk assessment methodology by TSO
7. Work security under gas pressure
8. Risk elimination measures?



Prevention + Maintenance

- IS for maintenance management?
- **Minimum operational and emergency standards**
- Maintenance on selected parts?
- Prevention of third party damages
- Pressure stress-tests?
- Advanced maintenance management?
 - RCM
 - RBI
- Monitoring of gas leakage?



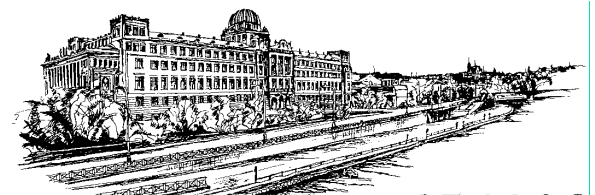
Diagnostics

- Registered check of cathodic protection?
- Internal pipeline inspection?
- All pipelines piggable?
- Method for internal pipeline inspection?
 - MFL
 - TFI
- Approach to unpiggable pipelines?
- External insulation check-out?
- Continuous monitoring of possible leakages?



Conclusion

- Selected diagnostics methods reduce emergency situations
- Regular maintenance increases operational safety
- Risk analysis as a prevention from serious failures
- Harmonized approach of all TSO's ensures security of supply



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Thank You for Your Attention

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