

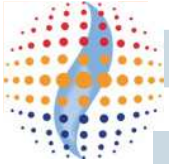
# International Gas Union Study Group 4.2

## Distribution Best Practices

June 7, 2006

**Co-ordinator**  
**Vice-Co-ordinator**

**Jorge Doumanian, Argentina**  
**Fergal Geoghegan, Ireland**



# Forward

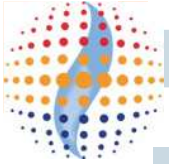


✓ Operation environment: Increasing changes in regulation, liberalization of the markets, globalization and growth of the gas industry.

✓ The performance, safety and security of the gas distribution system are critical to the overall success of the gas industry.

✓ The changes in regulation processes and the development of new markets will require us also to focus on cost control, efficiency, and customer satisfaction.

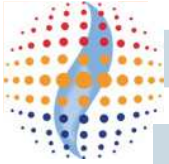
✓ The concept of benchmarking operational performance data and finding leading practices to improve results will be key elements to support gas distribution companies success.



## ■ Objective

Determine Leading Practices for Construction, Maintenance and Operations of the Gas Distribution Systems and how companies implement them, in order to:

- ✓ Improve safety
- ✓ Improve service quality
- ✓ Help in company's costs reduction process



# Methodology



**Phase I  
Benchmarking**

**Subjects of study  
selection**

**Questionnaire I**

**Data collection &  
report**

**“Top companies”  
selection**

**Phase II  
Best Practices  
Identification &  
Report**

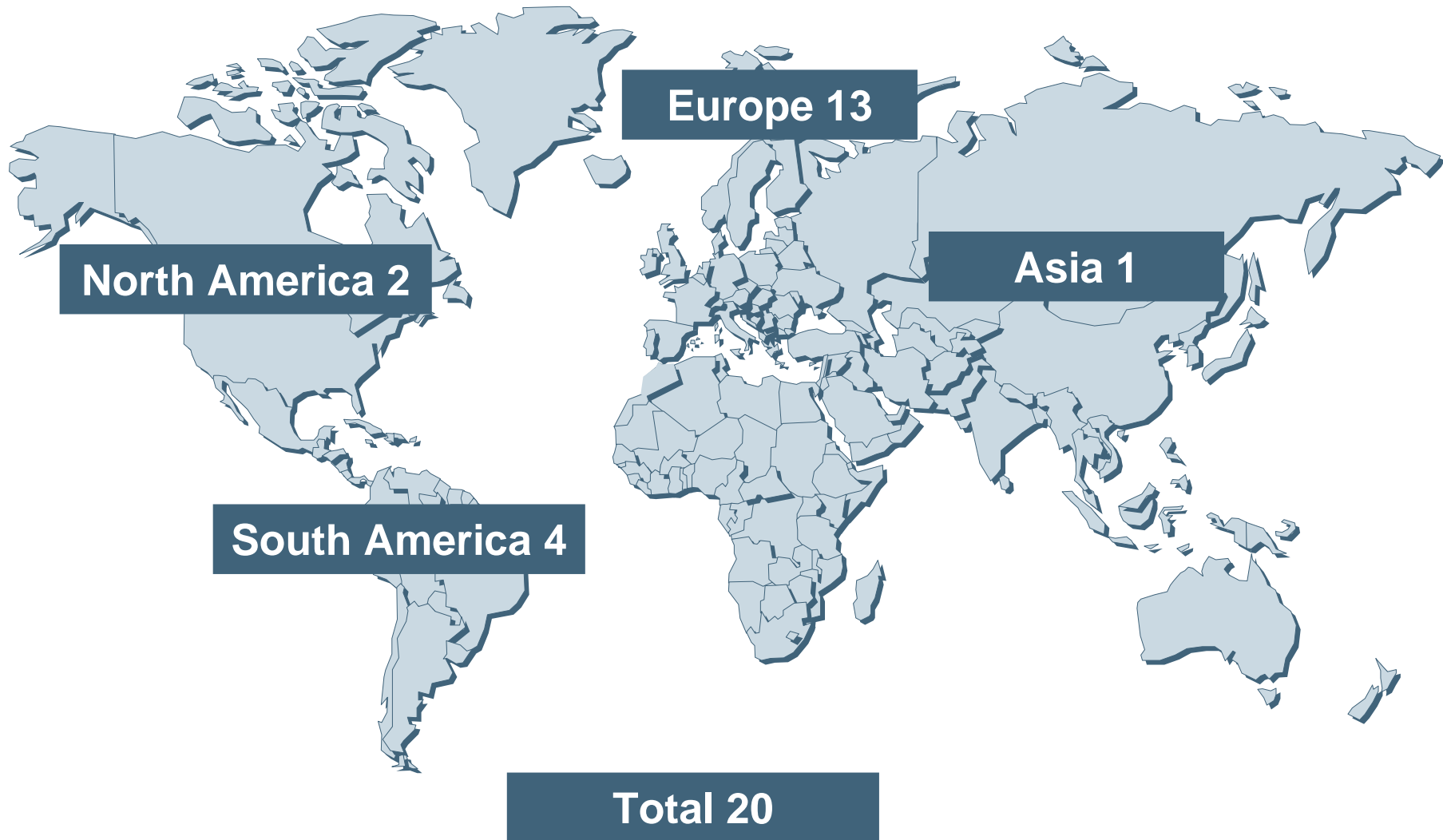
**Questionnaire II**

**Best Practices  
Selection**

**Report**



## ■ Responses from:

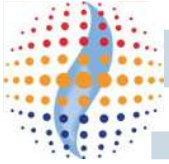




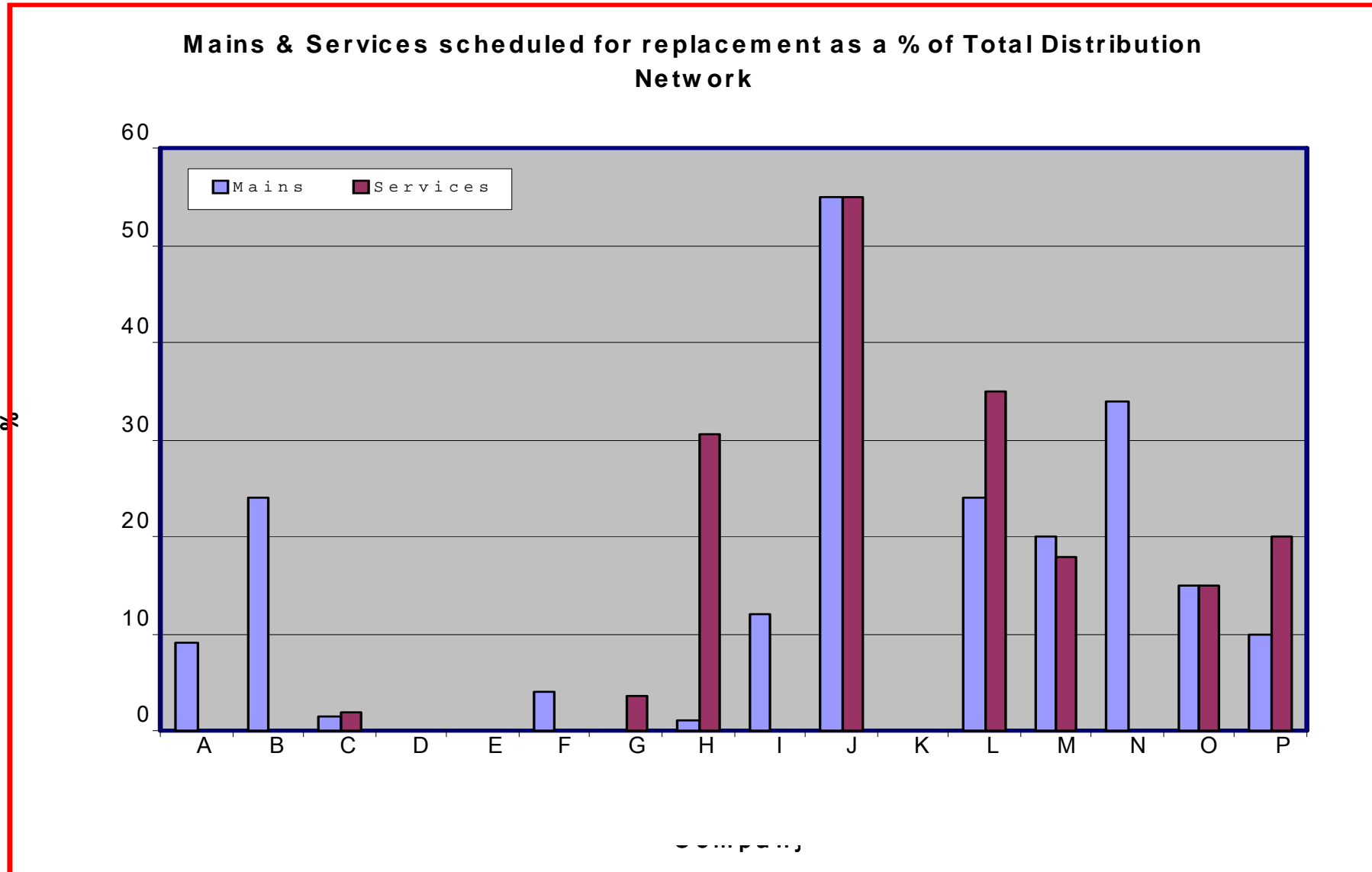
# Benchmarking Operational Areas

- ✓ Main & Service Pipes Construction & Replacement
- ✓ Gas Leak Survey & classification
- ✓ Leak Repairs
- ✓ Emergency Response
- ✓ Third Party Damage Prevention
- ✓ Pressure regulator operation & maintenance policies



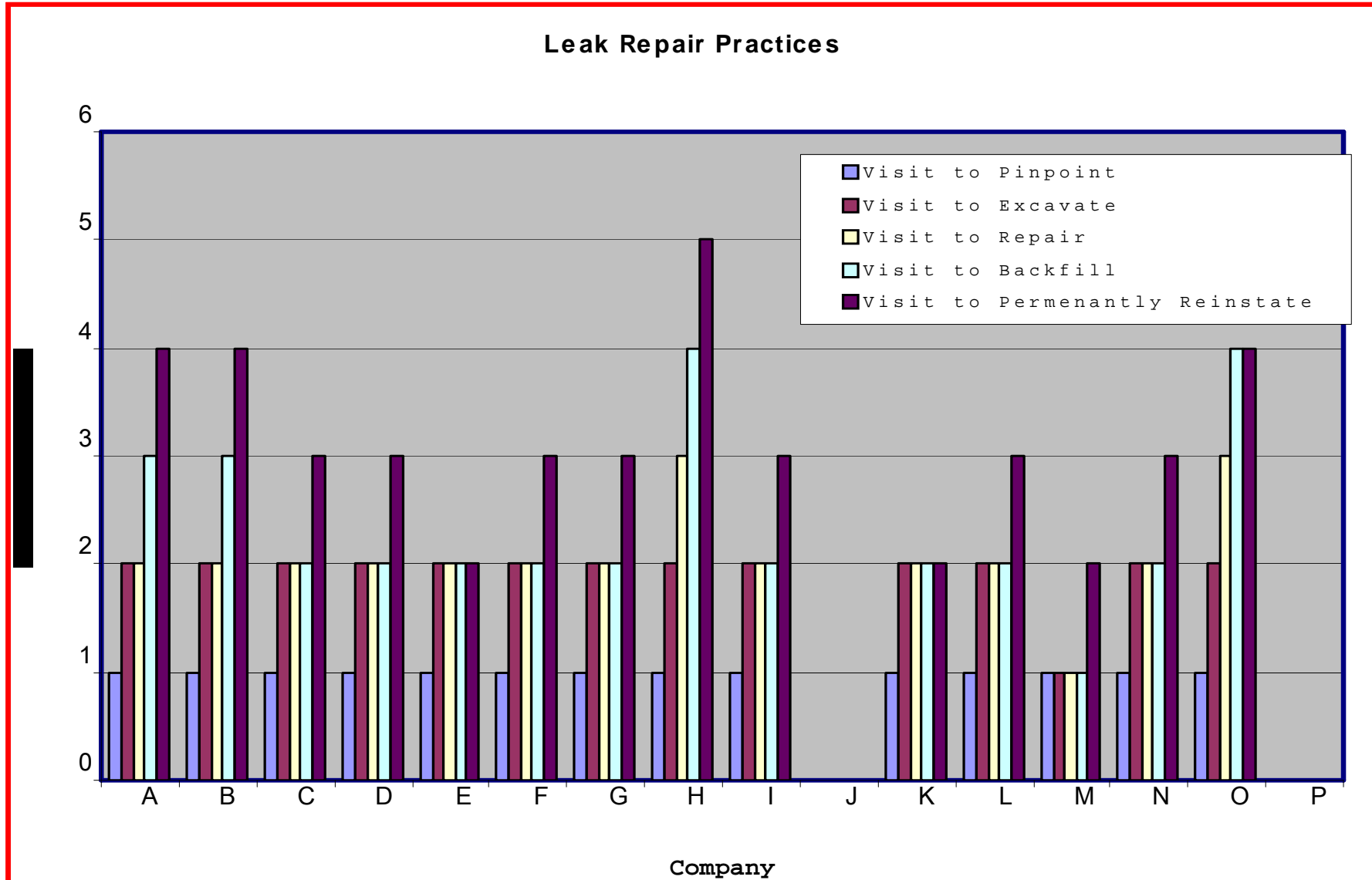


# Main & Service Pipes Construction & Replacement





# Leak Repairs







# Innovative Approaches

## ✓ Main & Service Pipes Construction & Replacement

### *Selection*

- ✓ Geographical driver
- ✓ Condition Replacement Policies
- ✓ Financial driver

### *Methodology*

- ✓ No dig technologies
- ✓ Open dig
- ✓ Cured in-place Lining
- ✓ Pipe Splitting

## ✓ Gas Leak Survey & classification

### *Surveys*

- ✓ Triggered surveys

### *Equipment*

- ✓ Flame ionisation detectors.
- ✓ Semiconductor sensors.
- ✓ Portable laser equipment.
- ✓ GMI Optical Methane Detector (OMD).
- ✓ Heath RMLD (remote methane leakage detector).



# Innovative Approaches

## ✓ Leakage Repairs

*Efficiency measures employed by companies*

- ✓ Asset Management system
- ✓ Use of Keyhole technology
- ✓ Using the first visit
- ✓ Trained teams
- ✓ Outsourcing of the repair process.

## ✓ Emergency Response

- ✓ GPS technology
- ✓ Free phone number
- ✓ Callers are provided with advice to mitigate the risks
- ✓ Call handling staff are guided by a case based reasoning system
- ✓ Designated regional emergency response organizations are in place.
- ✓ Training programmes
- ✓ Evaluation by a group of specialists



# Innovative Approaches

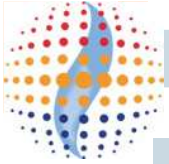
## ✓ Third Party Damage Prevention

### *Preventative measures*

- ✓ Free Services.
- ✓ Liaison with Health and Safety Regulator.
- ✓ Information campaigns.
- ✓ “Damage prevention groups”
- ✓ Reporting policies offenders who repeatedly break the law.
- ✓ Schooling & Training programmes

## ✓ Pressure regulator operation & maintenance policies

- ✓ Personal independent test result
- ✓ Maintenance by condition based maintenance.
- ✓ “Reliability Centered Maintenance”
- ✓ SCADA on-line surveyed



# Best Practices



What do you do that makes you a best practices company?

- ✓ISO certifications
- ✓Telemetry & IT tech.
- ✓Low environmental impact tech's

What practices and procedures do you use?

- ✓Training Programmes
- ✓Continuous Benchmarking

What are the unique techniques to reduce costs?

- ✓Pavement cutting equipment's use
- ✓Pipelines replacing techniques

How do you maximize productivity?

- ✓Remote working
- ✓Global Sub-contracted activities
- ✓Simulation & Real excersises in O&M

Any unique approach to increase public safety?

- ✓"Pipeline Safety Indicator"
- ✓Education Programmes

How do you increase employee safety?

- ✓Tailboard talks to review safety aspects
- ✓Accidents analysing teams

How do you co-ordinate operations with other utilities?

- ✓Periodically meetings
- ✓Adjustment meetings



# Best Practices



How do your company standards exceed those of the national regulator?

- ✓ High Standard O& M programmes
- ✓ Odorization criteria

How do you establish your maintenance schedules?

- ✓ Systems reliability based analysis
- ✓ Failure probability analysis

How do you continually improve your technical processes?

- ✓ Benchmarking
- ✓ Periodically opinion exchange between different sections

Do you use new technologies to improve performances?

- ✓ GPS, CMMS
- ✓ CCTV, REN, NIST,

Is employee's level of education important?

- ✓ Individualized training programmes

Have you registered any patents for the techniques you use?

- ✓ Yes

Any innovations in construction?

- ✓ Recycling procedures



# Conclusions



**The Study confirmed that Best Practice Companies had several similarities**

- ✓ Cost Reductions
- ✓ Maximizing Productivity
- ✓ Increasing Safety of customers, employees and the general public
- ✓ Use of technology & innovative practices
- ✓ Employee training / education

- ✓ No-dig technologies
- ✓ Remote leakage detection, including portable equipment
- ✓ Keyhole excavation process
- ✓ GPS technology to improve response time
- ✓ Collaborative relationship with industry and government to improve 3rd party damage prevention.

**Best Practices definitely exist throughout the industry and are significant in operational areas**



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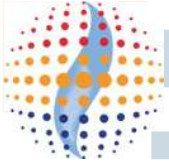
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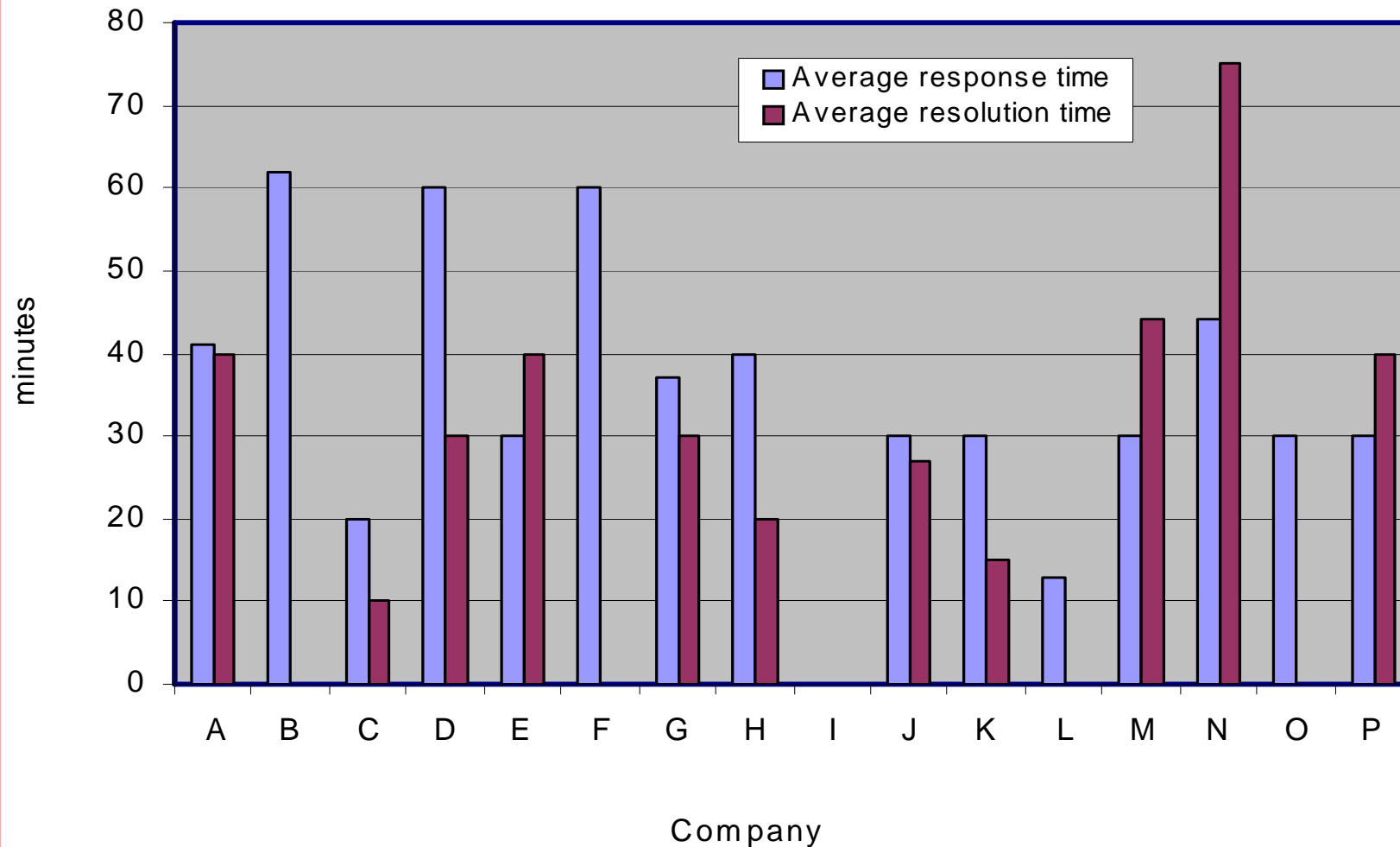
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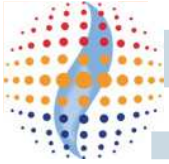
# Emergency Response



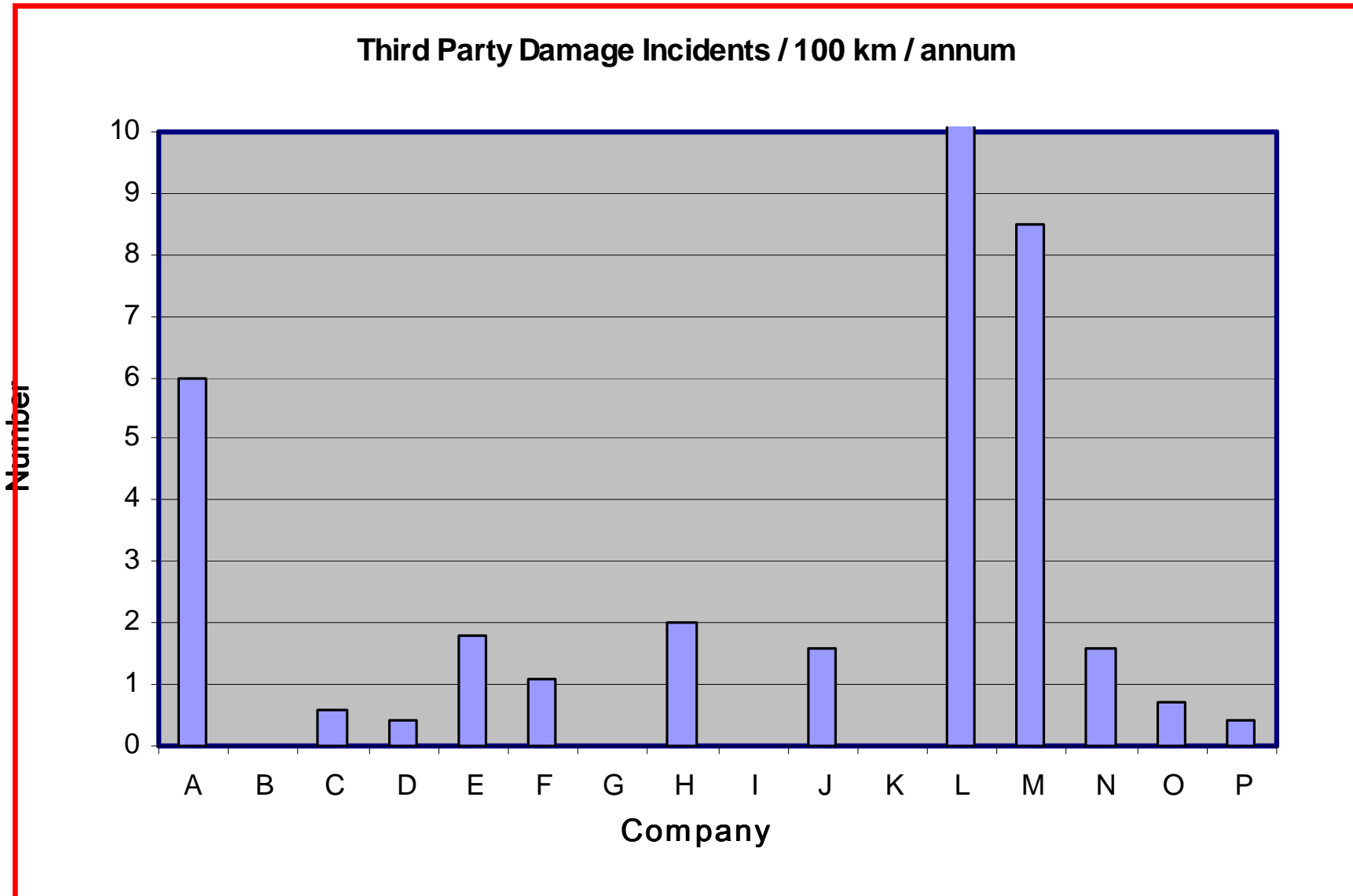
Average response and resolution time

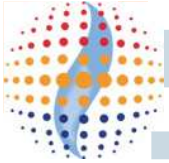






## Third Party Damage





## Pressure Regulator Operation & Maintenance Policies

