
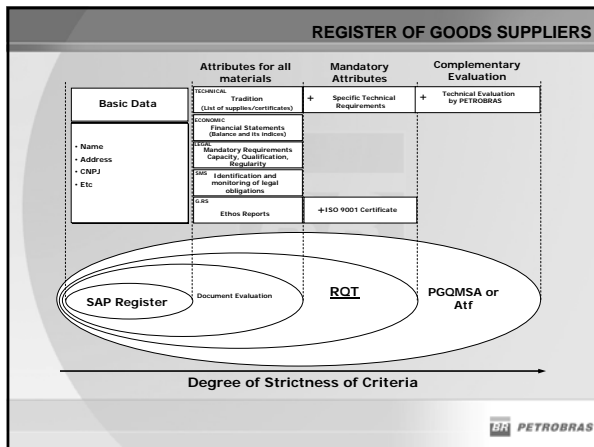
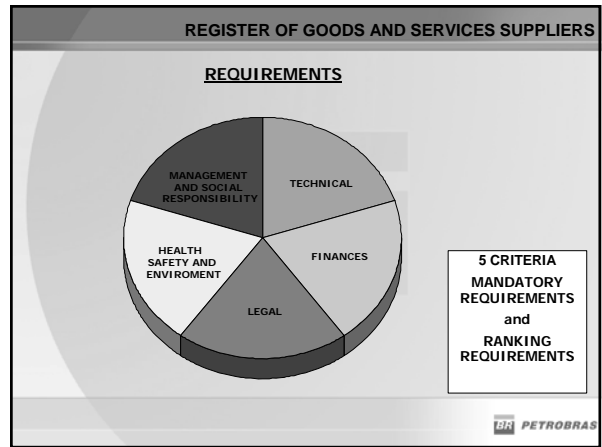
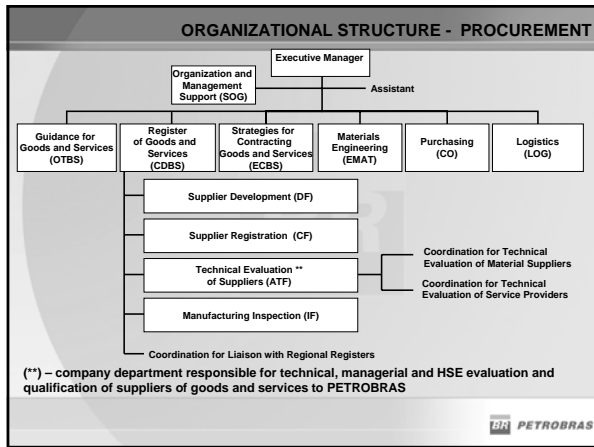
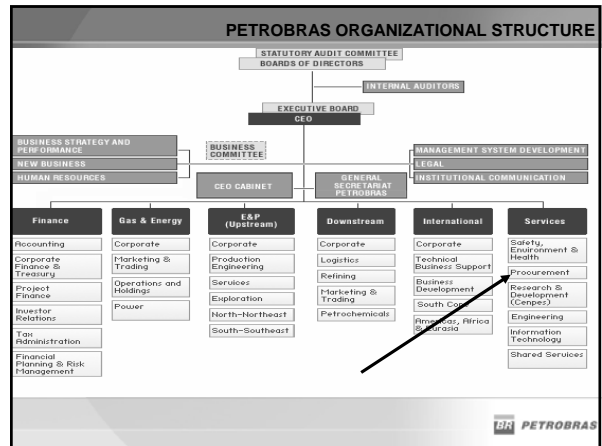


PETROBRAS'S EXPERIENCE ON THE EFFECTIVENESS OF ACCREDITED ISO 9001 CERTIFICATION

Fabiano Gonçalves Martins - PETROBRAS
Luiz Carlos do Nascimento - PETROBRAS

REGISTER OF GOODS SUPPLIERS

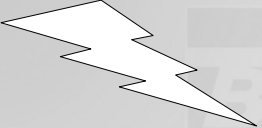
RQT – MATERIAL AND EQUIPMENT WHICH REQUIRE TECHNICAL QUALIFICATION - materials or equipment whose performance in the industrial process of Petrobras may threaten the continuity, compromise the safety of personnel, facilities and the environment, and products that, when included in the industrial process as raw materials, may jeopardize the quality of the Company's end product.

SPECIFIC TECHNICAL REQUIREMENTS – some materials and equipment items may require specific requirements depending on their operational criticality or manufacturing complexity. E.g.: design and prototype approval for a Wet Christmas Tree, field testing of Pumping Units and conformity certification issued by accredited entities such as the certificate for Fire-Safe Valves.



TECHNICAL EVALUATION OF GOODS SUPPLIERS

Principal motivating factor behind evaluations conducted by PETROBRAS

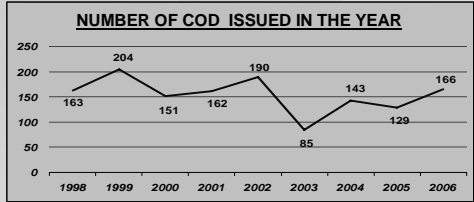


Recognition of a decrease in quality of materials supplied to PETROBRAS

PETROBRAS

INDICATORS SHOWING A DECREASE IN QUALITY

- Increase in the number of Corporate Notifications of Technical Discrepancies (“Comunicados de Ocorrência de Divergências Técnicas” - COD) beginning in the late 1990s.



BEFORE 1998 THE AVERAGE WAS APPROXIMATELY 85 COD/YEAR

PETROBRAS

INDICATORS SHOWING A DECREASE IN QUALITY

- Costs associated with poor quality determined only through COD, between 2000 and 2006, totaled US\$ 180 million, without considering production losses
- Increase in the number of accidents and unscheduled shutdowns in the late 1990s


PETROBRAS

CAUSES IDENTIFIED BY PETROBRAS

- Cutbacks in investments in the 1990s leading to deterioration in the domestic manufacturing base and losses in qualified labor
- Opening of the market without domestic companies being fully prepared for this level of competition
- Sources of financing not internationally competitive for domestic companies causing them to cut costs beyond their limits

PETROBRAS

CAUSES IDENTIFIED BY PETROBRAS

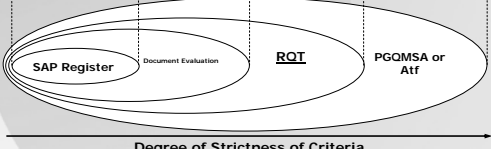


- Market adopted ISO 9001 certification as the only qualification standard, without considering the specific requirements of the petroleum market and especially of PETROBRAS

PETROBRAS

REGISTER OF GOODS SUPPLIERS

	Attributes for all materials	Mandatory Attributes	Complementary Evaluation
Basic Data	Economic: Tradition (List of suppliers/certificates) Financial Statements (Balance and its indices) Mandatory Requirements: Capacity, Qualification, Regularity Identification and monitoring of legal obligations Ethos Reports	Specific Technical Requirements + ISO 9001 Certificate	Technical Evaluation by PETROBRAS




Degree of Strictness of Criteria

PETROBRAS

COMPLEMENTARY EVALUATION

➤ **PGQMSA – PROGRAMA DE GARANTIA DA QUALIDADE DE MATERIAIS E SERVIÇOS ASSOCIADOS (QUALITY ASSURANCE PROGRAM FOR MATERIALS AND RELATED SERVICES)**


- ❑ objective: to improve the quality of critical markets (e.g.: valves, heat exchangers, and flow metering stations)
- ❑ based on: ISO 9001
- ❑ focus: adapt product to technical specifications of PETROBRAS
- ❑ evaluation of six critical items: quality management system; design technology; technology of manufacturing process; inputs and acquisition, and manufacturing and logistic capacity



COMPLEMENTARY EVALUATION

➤ **Atf – TECHNICAL EVALUATION OF MATERIAL SUPPLIERS**


- ❑ objective: to check if the supplier’s Quality Management System conforms to the concepts of ISO 9001
- ❑ based on: ISO 9001
- ❑ focus: to evaluate suppliers presenting quality problems, as requested by internal clients of PETROBRAS, or evaluate potential suppliers



COMPLEMENTARY EVALUATION

➤ **RELEVANT INFORMATION**


- ❑ PGQMSA: average team comprised of 3 auditors (1 lead auditor in SGQ ISO 9001 + 2 auditors with experience in product – design, manufacturing or operation). Average duration: 3 days
- ❑ Average cost of an evaluation by PGQMSA in Brazil: US\$ 7,000 and abroad: US\$ 13,000
- ❑ Example of quality improvements observed within the 2003-2006 period (measured by the quality index – relative to the percentage increment of the market between the average score of the first cycle of evaluations and the last cycle: API 610 centrifugal pump: 25%)



COMPLEMENTARY EVALUATION

➤ **RELEVANT INFORMATION**


- ❑ Atf: average team comprised of 2 auditors (1 lead auditor in SGQ ISO 9001 + 1 auditor with experience in product design, manufacturing or operation). Average duration: 2 days
- ❑ Average cost of an Atf in Brazil: US\$ 3,400 and abroad: US\$7,200
- ❑ Atf results allow the Register of Suppliers to be adapted by temporarily or definitively removing suppliers who fail to meet the technical qualification requirements specified for the materials of their line of supplied products.



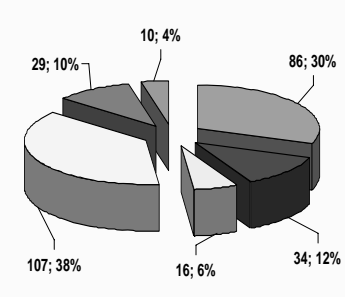
COMPLEMENTARY EVALUATION

➤ **RELEVANT INFORMATION**


- ❑ 156 manufacturers evaluated between 2003 and 2006 (125 Brazilian and 31 foreign manufacturers), corresponding to 12% of the RQT manufacturers registered with PETROBRAS
- ❑ Profile of the 282 evaluations made within the period:
 - ✓ in domestic market: 230 evaluations by PGQMSA and 18 by Atf
 - ✓ in international market: 32 evaluations by PGQMSA and 2 by Atf
- ❑ Total cost of evaluations within the 2003 – 2006 period: **US\$ 1,990,600**

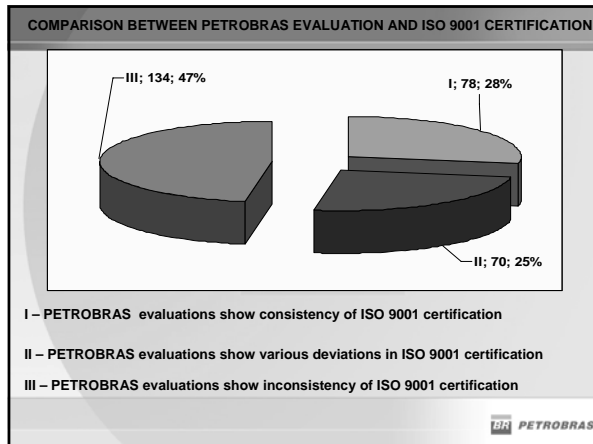


PROFILE OF EVALUATIONS BY MARKET



Market Category	Count	Percentage
Pressure Vessels, Column, Heat Exchanger, etc.	107	38%
Dynamic Equipment	86	30%
Petroleum production and drilling equipment	34	12%
Piping, valves, and accessories	16	6%
Electrical, instrumentation, and automation equipment	10	4%
Others	29	10%





PETROBRAS' VIEW REGARDING ISO 9001 CERTIFICATION

PETROBRAS CONSIDERS THAT ISO 9001 CERTIFICATION STILL IS A NECESSARY CONDITION FOR ITS PROCESSES FOR TECHNICAL QUALIFICATION OF SUPPLIERS, BUT IT IS NOT SUFFICIENT IN VIEW OF THE HISTORY OF COMPARATIVE RESULTS SHOWN ON THE CHART ON THE PREVIOUS SLIDE

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PETROBRAS' PERCEPTION REGARDING THE CAUSES OF THESE DEVIATIONS

STRUCTURAL CAUSES

- DUE TO THE COMPETITIVENESS OF THE CERTIFICATION MARKET, PRICES ESTABLISHED BY CERTIFYING ENTITIES DO NOT ALLOW PROPER PLANNING AND COMPOSITION OF THE EVALUATION TEAM
- SUPPLIERS STILL SEE ISO 9001 CERTIFICATION AS A COMMERCIAL BUSINESS NEED AND NOT AS A CONTINUOUS IMPROVEMENT PROCESS
- INADEQUATE PLANNING. THE AUDITOR (WHO USUALLY IS A FREELANCE AUDITOR) NORMALLY DOES NOT HAVE TIME TO ANALYZE THE PROFILE AND DATA OF THE SUPPLIER TO BE EVALUATED (E.G. MAJOR CLIENTS)

PETROBRAS

PETROBRAS' PERCEPTION REGARDING THE CAUSES OF THESE DEVIATIONS

STRUCTURAL CAUSES

- THE AUDITOR OR EVALUATION TEAM USUALLY DOES NOT HAVE A SPECIALIST IN THE MODALITY OF THE EVALUATED SUPPLIER
- IN SOME CASES, THE EVALUATION TEAM IS UNDERSIZED IN RELATION TO THE SIZE OF THE EVALUATED COMPANY
- THE EVALUATION TEAM DOES NOT CONSIDER THE REQUIREMENTS AND SPECIFICATIONS OF THE MAJOR CLIENTS OF THE EVALUATED SUPPLIER

PETROBRAS

PETROBRAS' PERCEPTION REGARDING THE CAUSES OF THESE DEVIATIONS

EVIDENCE OF DEVIATIONS IN CERTIFICATION PROCESS

- SCOPE OF CERTIFICATION DOES NOT CLEARLY DESCRIBE MANUFACTURED PRODUCTS
- QUALITY MANUAL HAS THE SAME WORDING (IT USUALLY IS A TRANSCRIPTION OF THE STANDARD ITSELF)
- EXCLUSIONS FROM THE CERTIFICATION DO NOT HAVE A PLAUSIBLE JUSTIFICATION
- CONFUSION BETWEEN AUTHORITY AND RESPONSIBILITY CONCEPTS
- IT IS STILL NECESSARY TO ENSURE THE EFFECTIVENESS OF PROCESS OPERATION AND CONTROL

PETROBRAS

PETROBRAS' PERCEPTION REGARDING THE CAUSES OF THESE DEVIATIONS

EVIDENCE OF DEVIATIONS IN CERTIFICATION PROCESS

- INSUFFICIENT TECHNICAL CAPACITY TO PERFORM FUNCTION
- GENERIC AND SUPERFICIAL PROCEDURES/INSTRUCTIONS
- PROCEDURES DIFFERING FROM WORK PRACTICES
- CUSTOMER SATISFACTION SURVEY INVOLVES TOO MUCH PAPERWORK AND NO PRACTICAL RESULTS
- ISSUANCE OF NON-CONFORMITY RECORDS FOCUSED ONLY ON EXTERNAL SUPPLIERS WITHOUT CONSIDERING THEIR INTERNAL PROCESSES

PETROBRAS

EVIDENCE OF DEVIATIONS IN CERTIFICATION PROCESS

- RESEARCH INTO ROOT CAUSE OF NON-CONFORMITIES IS SUPERFICIAL
- SYSTEMATIZED QUALITY PLANNING IS NOT CONDUCTED ACCORDING TO PRODUCT REQUIREMENTS
- PROJECT INPUTS AND OUTPUTS ARE NOT CLEARLY DEFINED AND/OR PRESENTED
- VALIDATION OF MANUFACTURED PRODUCTS IS NOT PERFORMED
- DELIVERY TIME IS NOT CONSIDERED A PRODUCT REQUIREMENT
- ACQUISITION PROCESS DOES NOT ENSURE COMPLIANCE WITH REQUIREMENTS OF PURCHASED PRODUCTS

PETROBRAS EXPECTS:

- ISO 9001 CERTIFICATION TO BE NECESSARY AND SUFFICIENT TO ENSURE TECHNICAL QUALIFICATION OF SUPPLIERS FOR ITS RQT EQUIPMENT AND MATERIALS
- TO CARRY OUT TECHNICAL EVALUATION PROCESSES BASED ON ISO 9001 AIMED SPECIFICALLY AT THE DEVELOPMENT OF SUPPLIERS AND PRODUCTS
- TO REDUCE BY AT LEAST 60% ITS CURRENT COSTS WITH TECHNICAL EVALUATION OF SUPPLIERS
- THAT IMPROVEMENTS IN ISO 9001 CERTIFICATIONS WILL CONTRIBUTE TO REDUCING ITS CURRENT COSTS ASSOCIATED WITH POOR QUALITY

THANK YOU !!!



**Fabiano Gonçalves Martins and
Luiz Carlos do Nascimento**