# Testing in North America for global markets

Luncheon presentation

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# KEMA mission – for utilities & industry

- KEMA provides confidence
  in the performance of
  products, processes and equipment
  for the generation, distribution and use of electricity.
  – we sell night-rest

- KEMA wants to be the partner for clients
  that act local
  in global markets

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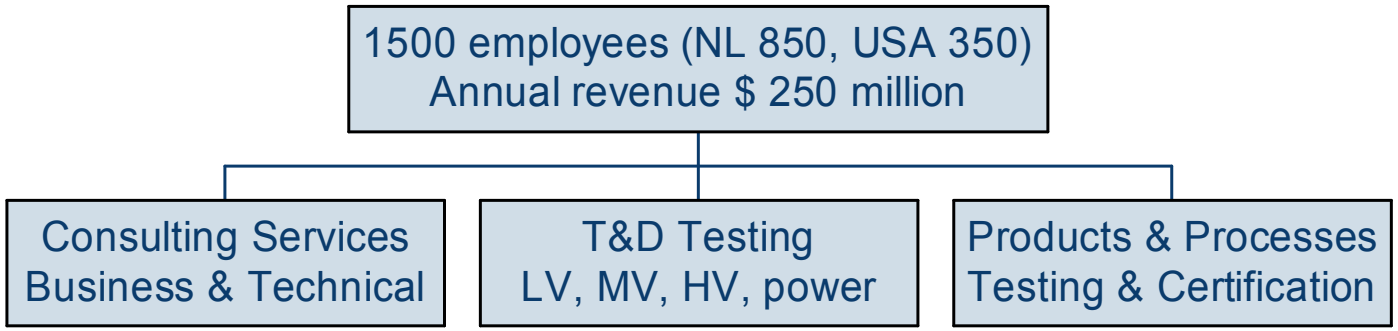
# 1. Introduction KEMA




- Management support
- Asset management
- Scada / IT / infrastructure
- Energy trading
- Power generation,
  - Renewables, inspections
- T&D studies,
  - failure investigations

- Product certification:
  - Electrical safety
  - Conformity testing
  - KEMA-KEUR, CSA, CB
- Quality system certification:
  - ISO, QS, BS
  - Aspect certification

# 1.2 KEMA T&D Testing – Services to ensure Quality T&D Components

- Type testing at our laboratories
- Witnessing of tests at manufacturers laboratories
- On-site tests with our mobile test equipment
- On-site inspection
- Failure analysis

- Independent and impartial
- High reputation & references all over the world
- Expertise & competence

# 1.3 TDT - The High Power Laboratory

- 8000 MVA three-phase /  5000 MVA single phase
- up to 245 kV three-phase / up to 430 kV single-phase
- Synthetic TRV 1000 kV

- Circuit Breakers / switchgear / power and distribution transformers

- Trial full pole 800 kV Circuit Breaker testing

# 1.4 TDT The High Voltage Laboratory

- High Voltage AC - 1 MV
- High Voltage DC - 1 MV
- Impulse Generator - 2.6 MV
- Partial discharge detection
- Faraday cage
  noise level < 0.5 pC
- Mechanical tests
- Climatic tests

- Cables / accessories /
  insulators / instrument transformers / …

KEMA

# 1.5 TDT On Site & Remote Testing

- Mobile Test Equipment
  - Transformers
  - Impulse Generator
- PD on line monitoring


- AC Series Resonant test set for cable circuits (<= 400 kV)
- 0.1 Hz testing for aged MV cables

KEMA

# 1.6 TDT KEMA Powertest: Chalfont PA

# 1.7 KPT January ’07 – in fine shape

- Customer base: USA / Canada
  - Accommodating the high regional demand
- Testing services: short circuit power (LV, MV & HV) AC and DC, HV load switching, dielectric, temperature rise, mechanical & rain testing
- Accredited by A2LA for ISO/IEC 17025
- Engineering / utility / field services
- Over 35 years in business
  - Acquired by KEMA in 1990
  - No larger investments until 2000
- 25 people of which 10 engineers
- Close coordination with Arnhem Netherlands
- Profitable

# 2. Testing situation North America

New opportunities for KEMA Powertest:

2.1 NA industry & utilities
2.2 Competition & standardization
2.3 Mexico & outsourcing

# 2.1 NA industry & utilities

- Partly international operating companies
- Part of the larger companies main base North America
- European and Asian companies active in the US
  - Tendency for more local customizing / adaptations
  - Not many real American producers of HV power circuit breakers
- Utilities increasingly liberalized and deregulated
  - Europe: public procurement directive

- ‘proof of design’ is between utility and manufacturer

# 2.2 Competition & standardization

- Europe: still ‘national’ designs
- NA: one market
  - more product variation / solutions
- IEEE and IEC grow together
  - but 60 Hz and 50 Hz need double testing
- Competition looks for distinguishing features
  - that need to be tested

# 2.3 Mexico & outsourcing

- Mexico is a market with some specific requirements
  - CFE influential with its LAPEM lab
- Trend of NA companies to outsource production facilities to Mexico
  - But R&D centers remain
- Search to have one standard and one design for all NAFTA
- Outsourcing farther away, like to China
  - Needs testing again, against GB standard

- Demand for one integrated certification program

# 3. Drivers

3.1 Globalization of markets

- Time to market: faster development & finalizing

3.2 Demand for (type test) certificates

# 3.1.1 Globalization of markets industry perspective

- Tests at a site with lowest costs (logistic, currency ..)
- Effective report / certificate for the applicable market
  - Competence of test engineer
- Coordination between labs
- Opportunity for development tests
  - synthetic installation

# 3.1.2 Globalization KEMA perspective

- Presence in larger markets
  - China & India to follow
- One KEMA reputation
- Load sharing in case of heavy demand (actual)
- Bench marking and improvement
  - Harvest the local strengths
    - KPT being an original industry lab

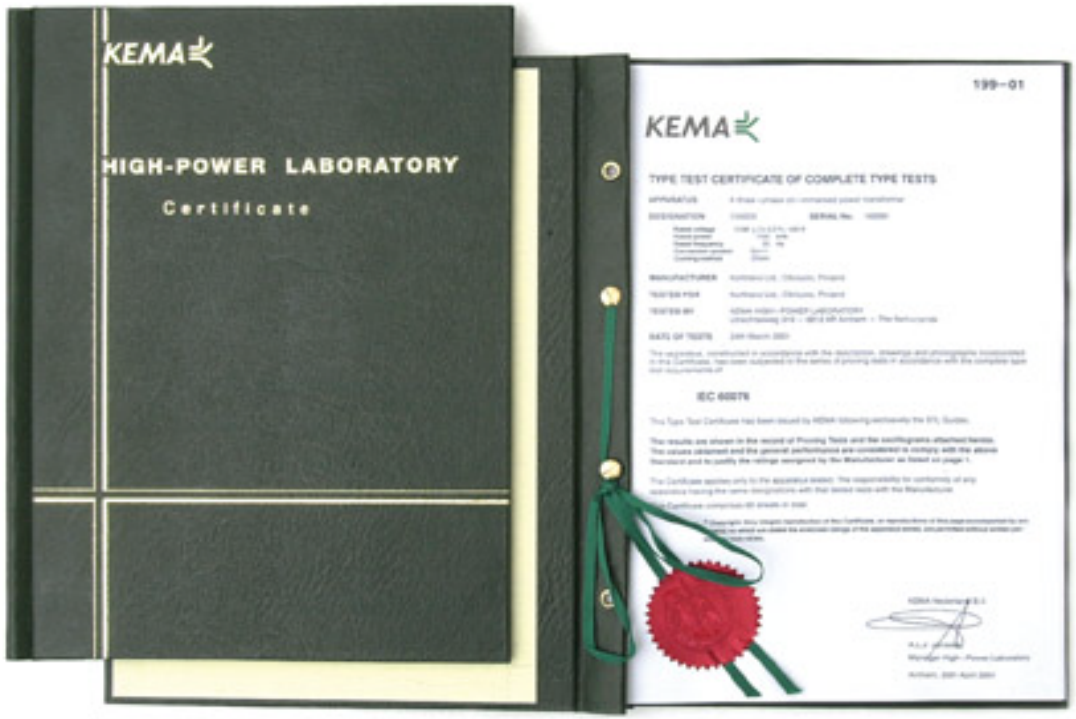
# 3.2 Driver: (type test) certification

- A record of a series of type tests
- Strictly in accordance with a recognized standard.
- The equipment tested has fulfilled the requirements of this standard and the relevant ratings assigned by the manufacturer are endorsed by KEMA.
- Certificate is applicable only to the equipment tested.
- KEMA: responsible validity & contents Certificate.
- Manufacturer: responsible for conformity of any apparatus having same designation as the one tested
- The Certificate contains the essential drawings and a description of the equipment tested.

# 3.2.1 Driver: (type test) certification

- No product certificate
  - Like for LV
- Demand in Europe & Asia
  - Export industries
- Requested by utilities
  - (independent) 3rd party
- No new party for writing / interpreting standard
  - Covered in once
- People of KPT issued this year more then 12
  - Last year 2

Challenge for KEMA Powertest



# 4 A Client's opinion about KEMA

- KEMA USA: - close by
  - flexible schedule
  - eligible for R&D tax deduction
  - 38 kV 25 kA 3 ph mom. and closing into the fault
- KEMA NL: - internationally recognized, independent
  - efficiency & help in installation
  - accuracy
  - strict recognition of requirements from Standards
  - expertise of test engineers
- Arnhem perform tests faster (at the same price)
  - Chalfont more flexible with development testing

# 5.1 Goals & development of KEMA

- 2004 / 05
  - Synthetic installation for 1ph 245 kV CB tests
  - Including Current Zero measurements

- 2007
  - Strengthening global policy
  - Certification of equipment from Asia & Mexico
  - Replacement of Back-Up Breakers by VCB's
  - Efficiency
  - Extension of operating time
  - Internal arc room simulation

# 5.2 Goals & development of KEMA

2007 follow up

– T10 / T30 reactors for MV testing

– Collaboration in investigations (internal arc)

# 5.3 Goals & development of KEMA

- 2008
  - New Test timer
  - Improvements in data & reporting tools
  - Capacitor banks
  - Facilitate more (expectations) international clients
  - New building: room for clients / dielectric tests
- 2009: Paralleling two machines
- Steady: 10% of revenue into capital investments
  - On top of healthy profitability
  - Apart from necessary repairs and replacements

# 5.4 Goals & development of KEMA

## It is our people that make the difference

- Permanent search for / improvement in:
  Competency in standards, testing & certifying
  - Training & exchange
  - Participation in IEEE and ASTM Standards Committees

# Thank you for your attention
# Thank you IEEE for the invitation

Our goal is to continually improve our service.
Your comments & suggestions are always appreciated