

# Introduction and seminar objectives

- **Why this seminar?**
- **Seminar objectives**
- **General Notes**



## Why this seminar?

- Increasing confusion and uncertainty when deciding ***which European Directives are important for control panel design***
- ***Which standards*** are important for control panel design and how can these be fulfilled?
- Uncertainty with regard to the question: ***"Who holds the responsibility?"***
- ***How*** should the documentation be produced?
- ***Which documentation*** must be prepared for the user and which for internal use?
- What is the ***distinction between*** the important ***Machinery directive [MD] 2006/42/EC and Low-voltage directive [LVD] 2006/95/EC*** ?
- To what extent is the ***EMC directive 2004/108/EC for control panel design*** important?

## Seminar objectives

- To provide assistance and support in understanding important European directives and standards
- To clarify ***the relationships between relevant standards and their significance for control panel construction***
- To perform ***the required verifications of the control panel as per IEC 61439-1 & -2***
- To offer assistance regarding ***which documentation the manufacturer requires from the ordering party***
- Requirements concerning ***documentation for the ordering party and internal documentation***
- Suggestions for ***practical documentation that conforms to standards and guidelines***

Examples of documentation:

You will receive the following suggestions for documentation conforming to standards and guidelines at the end of this seminar:

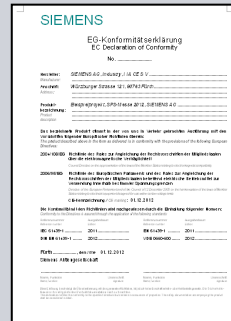
General declaration of conformity



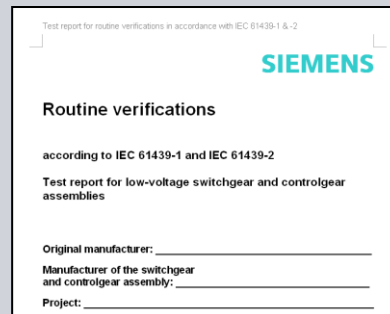
Design verification test report



EC declaration of conformity



Routine verification test report



Example of a plant document



Design verification checklist



Routine verification checklist



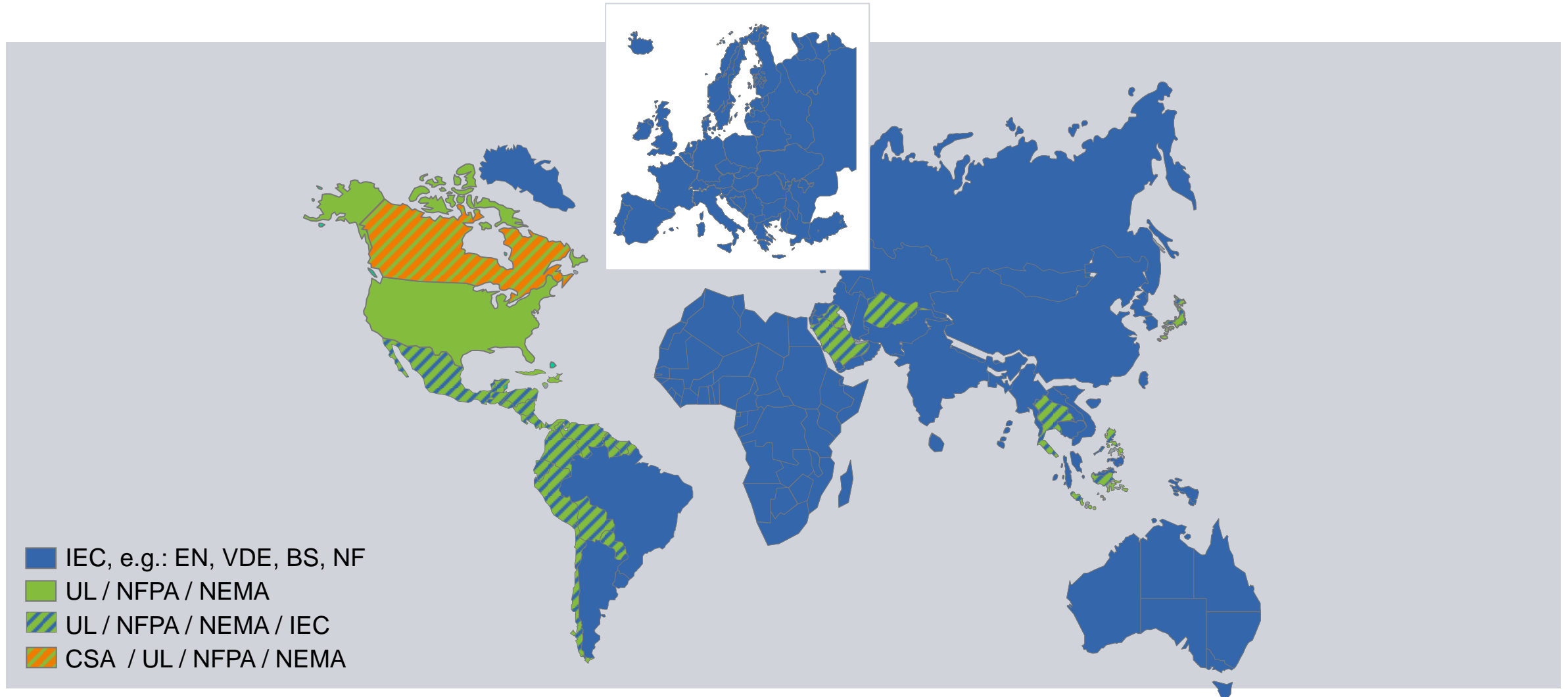
## The importance of standards

### In general, standards are:

- **Standards are not laws** – yet they are followed willingly and strictly. When they are followed they are similar to laws
- **Reflect rules / the state of technology** and are considered a **proven method** in the respective field of application
- **A support function** used to achieve a minimum level of procedure (in different countries, etc.)
- Fulfilling standards is not an achievement – it is the **minimum expected**
- The highest protection objectives of standards are: **the safety of people, livestock, and property**

# Organizations

## The global use of standards

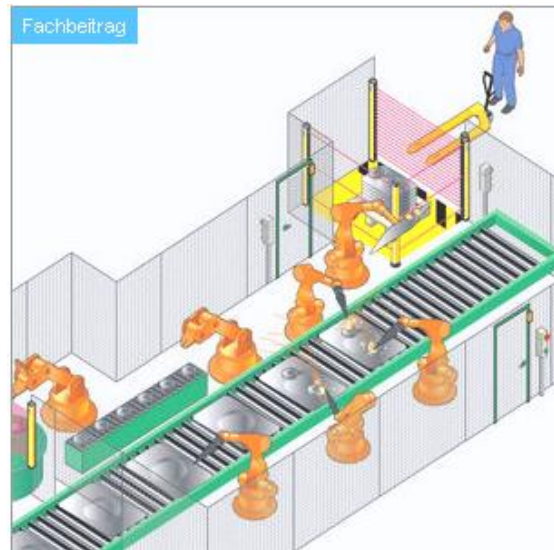


# Differentiating between the Machinery directive $\leftrightarrow$ and the Low-voltage directive

## Machinery directive

### Safety during machine operation

- MD 2006/42/EC
- IEC/ISO standards



## Low-voltage directive

### Machine electrical equipment

- LVD 2006/95/EC
- IEC 60204-1
- IEC 61439-1
- Documentation
- ...

**Main topic of the seminar**



## Definitions of the training documents under discussion

IEC 61439 = EN 61439 = DIN EN 61439

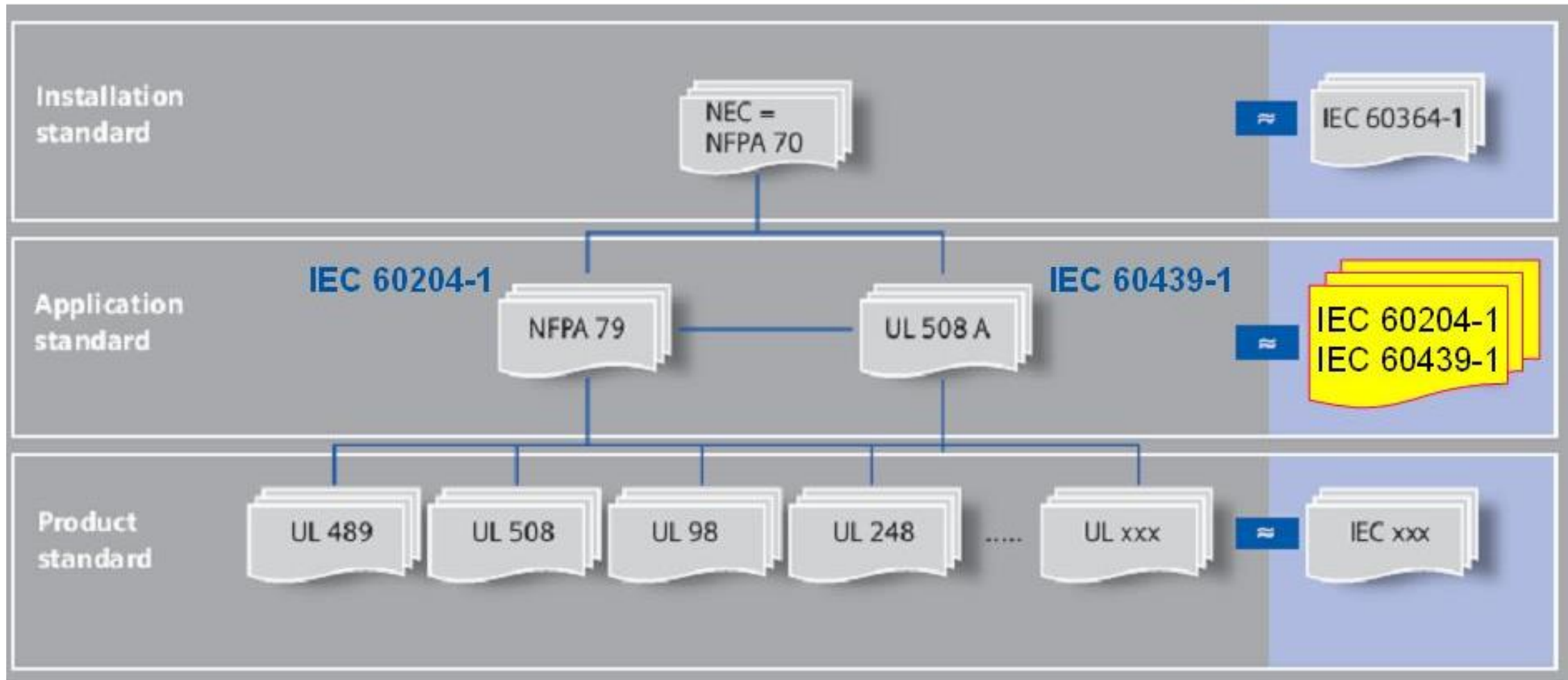
Machinery directive = MD

Low-voltage directive = LVD

Low-voltage switchgear and controlgear assembly = control panel



# Standards – Comparison U.S./UL versus IEC



# Differences Between Europe & North America

## Europe

- Responsibility of the equipment manufacturer
- Responsibility of the operator/user
- Protection targets are defined by directives
- Presumption of conformity with the application of harmonized standards (ISO9000 et seqq., self-certification, self-responsibility)



## USA / North America

- Responsibility of the operator/user
- Protection targets and requirements are defined by laws
- Certification/listing of products
- Verification by independent NRTL/AHJ (Electrical Inspector) (third-party certification)



+ Operating permission of AHJ