EMC and EMF Regulatory Issues for the Power Industry

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Summary

- EMC Directive
  - Apparatus
  - Fixed Installations
- EMF Directive
  - Employers’ obligations
  - Zoning & Measurements
EMC Directive

- Covers EU + EEA
- Electrical/electronic equipment
  - Declaration of Conformity & CE Mark
  - Information for end-users
  - Technical Documentation
- Fixed Installations
  - EMC Documentation
Fixed Installations

- Essential requirements:
  - Emissions – preserve radio services
  - Immunity – operate as intended
  - Apply good engineering practice
  - Respect information on intended use
- Practices to be documented
Managing EMC

- Apparatus now comes with information for “intended use”
- Exemptions (certain apparatus)
  - EM environment identified
- “Responsible person” (RP) to hold documentation
EMC by Design

- Identify environment(s)
  - Source and victim equipment
  - Paper-based or field-based?
- Generate procurement requirements
  - Based on environment identified
  - Referencing European standards
Confirming EMC

• Require documentation
  • DoC, end-user info for CE-marked apparatus
  • Technical Documentation required?
  • Emission/Immunity data for exempt apparatus

• Analysis reveals deficiencies
  • Allows for mitigation
EMF Directive

- Covers EU
- Employees protected in workplace
- Limits from 1998 ICNIRP Guidelines
- Legislation due April 2012
- Low-frequency limits under scrutiny
  - MRI scanners
Employers’ Obligations

- Ensure workers are protected
  - Absolute requirement to meet ICNIRP basic restrictions
- In workplaces with high fields
  - Worker information and training
  - Provisions to reduce fields ALARP
  - Worker consultations and participation
- Keep records of assessment
Assessments

• All workplaces open to employees to be assessed
• Done at “suitable intervals” by “competent persons”
• Competency criteria set by Member States
• See EN 50499 (2008) for details
Approach for complex Workplaces

- Zoning of different areas
  - Areas meeting basic assessment
    - << General Public Reference Levels
  - Areas requiring field measurements
    - Below General Public Reference Levels
    - Above GP RL, below Occupational RL
    - Above Occ. RL, below Occ. Basic R
Approach for complex Workplaces

• On-site surveys
  • Identify threats, frequencies
  • Combine EMF and EMC surveys
• Repeat:
  • On schedule (every 1, 2, 3 years?)
  • When substantial change occurs
Summary

- EMC and EMF Directives place obligations on RPs/employers
- Structured approach is beneficial
- Zoning of complex workplaces useful
- EMF Directive in force by April 2012
- EMC Directive in force since June 2007