



## Engineering Consulting Services

Industry experts provide engineering consulting services to assist customers in understanding their system needs and identify the right solutions to solve system problems, increase efficiency and improve system performance. Cooper's experienced engineering staff combined with industry leading CYME software tools is capable of a full range of engineering and economical studies for transmission, distribution and industrial systems from basic to specialized and non-routine.

### Promoting increased system efficiency and performance through analytics and expertise.

#### Electrical System Studies – Critical T&D System Problems

Electrical Power Industry has entered a new era involving fundamental changes in the way power systems are planned and operated. The main driving forces are to reduce cost, increase efficiency and improve system performance. Achieving these goals constitutes a major challenge to existing systems as it results in special types of problems requiring innovative and sophisticated solutions.

#### Expertise and Innovative Solutions

CYME offers a wide range of consulting services combining utility experience with state of the art technologies to assist customers in addressing new and emerging system problems. These services include, but are not limited to, power system studies for transmission, distribution and industrial systems.

CYME's engineering staff is at a high degree of skill and their knowledge covers almost every area of power system analysis. Backed by extensive field experience in systems' planning, design and operation, they provide a range of options in terms of specialization, experience, and know-how. Their knowledge of industry's best practices allows them to provide innovative solutions to current challenges.

CYME provides consulting services intended to help customers in solving emerging specialized and non-routine problems in the following applications:

- Assessment of system performance, ability to meet regulation requirements, and measure for enhancements.
- Identification of existing and potential problems and means for their mitigation.
- Technical studies for system expansion and/or refurbishment purposes and prepare equipment specifications for these purposes.
- Postmortem analyses to establish failure causes and provision of remedial actions.
- Preparation of technical specifications for tendering purposes, in reviewing tenders and providing third party opinion in disputed matters.

## Specialized Consulting Services

Promoting increased system efficiency and performance through analytics and expertise.

### Analytical Studies Conducted at CYME

System problems with increasing importance need special analytical studies in the following areas:

- Voltage sags and swells
- Arc flash risk assessment and mitigation
- Network transient analysis
- Harmonics levels and their control
- Flicker problems and their mitigation
- Integration of distributed generation in power systems
- Insulation coordination
- Grounding systems and ground potential rise
- Voltage control and VAR flow optimization
- System reliability and outage analysis
- Design of protection systems and coordination of relay settings for optimum selectivity and prompt isolation of faulty sections

### CYME's Involvement in the Industry

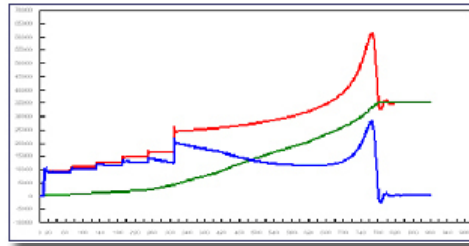
CYME's engineers are heavily involved in industry activities by conducting seminars and workshops for utilities and industrial groups worldwide. They participate in technical societies such as IEEE®, CIGRÉ and International Standards Committees by presenting technical papers and taking part in their working groups and task forces.

CYME's engineers have organized training sessions and seminars in the USA, Canada, United Kingdom, Peru, Indonesia, Malaysia, Singapore, France, Senegal, United Arab Emirates, Australia, India, Ivory Coast, Zimbabwe, and others.

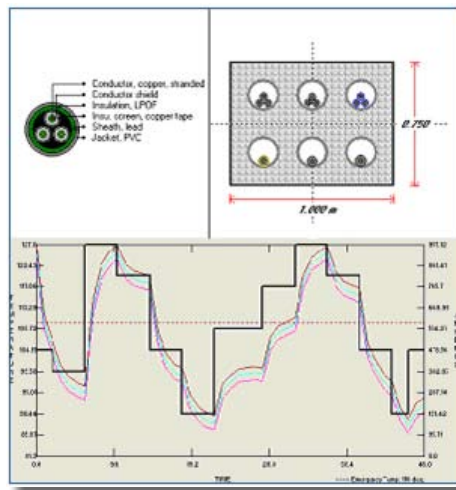
This global involvement in the electrical industry is an important component of our up to date awareness of the most relevant problems and the means to deal with them.

### Our Commitment to Customer Service

For over 20 years, CYME has built a strong reputation with its clients by delivering the best solutions and providing unsurpassed customer services. Our professional team of dedicated experts is committed to work closely with your engineers throughout the entire project to achieve its successful completion.



Reduced Voltage Motor Starting Study



Cable Loading Study

## Power Engineering Analysis Software

### CYMDIST – Distribution System Analysis

- Balanced/unbalanced load flow
- Network optimization
- Distributed generation modeling
- Short-circuit analysis
- Energy profile manager
- Switching optimization
- Harmonic analysis
- Predictive and historical reliability assessment
- Contingency analysis
- Substation and sub-network modeling and analysis
- Secondary network analysis
- Motor starting

### CYMTCC – Protective Device Coordination

### CYMDIST Gateway – Creation and maintenance of CYMDIST Distribution Network Model

### CYMGRD - Substation Grounding

### CYMCAP – Power Cable Ampacity

- Duct bank optimizer
- Multiple duct banks modeling
- Short-circuit cable rating
- Magnetic fields
- Cables in tunnels modeling
- Real-time temperature rating
- Cable crossings ampacity reduction calculation
- Ampacity/temperature calculation of cables in casings
- Cables parameters estimation

Visit [www.cyme.com/software](http://www.cyme.com/software) for more information.

**Cooper Power Systems**  
1485 Roberval, Suite 104  
St-Bruno, QC Canada J3V 3P8  
P: 450.461.3655  
F: 450.461.0966  
P: 800.361.3627 (Canada and USA)

[www.cyme.com](http://www.cyme.com) | [www.cooperpowereas.com](http://www.cooperpowereas.com)  
[info@cyme.com](mailto:info@cyme.com)