

CYMCAP Users Group in Paris, France

August 24, 2016

In margin of the CIGRE conference in Paris (France) next August, CYME (as part of Eaton) is inviting its CYMCAP community of users and all professionals involved with cable ampacity rating to a one-day event featuring several highlights.

CYMCAP Users' Group is a unique event to gain knowledge on trendy topics and ongoing development in the industry by engaging with renown experts in the field. It is also the occasion to share experiences with other users and discuss your specific needs directly with the CYMCAP product manager.

Don't miss this unique event in the heart of Paris!

At CYME, our solutions are at your service so we count on your participation to make this event a success!

Only limited seats are available, so register soon!

Key Benefits

- Insight on the main improvements introduced by the new CYMCAP 7 Series.
- Introduction to the new features of the new version CYMCAP 7.2 Rev.1 (ventilated tunnels, parametric studies, bentonite-filled ducts, etc.).
- Introduction to issues related to selecting thermal backfills for underground power cables.
- Experience sharing on novel "hot spot" mitigation approach due to steam pipe crossing, real-time thermal monitoring and dynamic rating of an EHV cable with forced cooling system.
- Understanding of the scope and limitations of IEC Standard 60287-2-3 on rating of cables in ventilated tunnels.
- Introduction to available alternatives to rate cases which are not covered by IEC Standard 60287-2-3.
- Insight on the latest developments and the future work in cable rating calculations as seen by IEC TC20 WG19 and WG B1.35.
- Discussion panel with CYMCAP manager, renown expert in the field and other CYMCAP users.

Who Should Attend

- Both current and future users of CYMCAP.
- Professionals involved with cable modeling and ampacity rating.

Schedule Highlights

- Introduction to the major improvements of the new CYMCAP 7 Series.
- Preview of the latest features included in CYMCAP 7.2 Rev.1. (official release scheduled this Fall).
- Users' forum featuring 360° CYMCAP training and one-on-one meetings.
- Three high-end workshops by renown experts on challenging real-life cable projects and latest developments in cable modeling and rating calculations.
- Forum with all users, invited experts and CYMCAP product manager.

Registration Information

Date: August 24, 2016

Course Language: English

Fee¹:

US \$400.

US \$300. (CYMCAP Users²)

Paid fees are deductible on the next CYMCAP purchase. Offer is valid until Dec. 31st, 2016.

Location:

Hyatt Regency Etoile
(adjacent to Palais des Congrès)
3 Place du Général Koenig
75017 Paris
France

Registration to Course:

my.cyme.com/events

Further Information:

CymeInfo@Eaton.com

Cocktail hour at Hyatt's Bar La Vue 18h to 19h

After the event, we are inviting you to a one-hour cocktail at the Bar la Vue of the Hyatt hotel. The cozy atmosphere and the exceptional view at the Eiffel Tower will be the perfect way to conclude this promising one-day event and network further with all attendees and invited experts.

The Instructors

- Mrs. Wouleye Kamara, Eng., M.Sc.A.
CYMCAP Product Manager
- Dr. George Anders
Fellow of IEEE
- Dr. Sudhakar Cherukupalli, P. Eng.
Team Lead, Generation and Transmission Engineering, BC Hydro
- Dr. James Pilgrim
University of Southampton



¹ The fee includes tuition, lunches and refreshments.

² Fees for CYMCAP users under valid maintenance contract.

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CYMCAP Seminar

Abstract

This presentation will first introduce the new CYMCAP 7 Series released in July 2015 and will cover its major improvements compared to the previous versions (6.2 and older):

- Improved finite element modeling capabilities for the MDB module.
- Loss factor computations.
- Compliance with latest editions of IEC Standards 60287-1-1 and 60287-2-1.
- New ampacity optimization algorithm.
- Rating of circuits with various operating frequencies, Multiple heat sources, Updated reports.

In the second part of the presentation, the new features available in version 7.2 Rev.1 (release scheduled this Fall) will be presented in exclusivity:

- Cables in ventilated tunnels as per IEC Standard 60287-2-3.
- Parametric studies module.

- Ducts filled with bentonite.
- Extended cable modeling capabilities: jacket around each core, tapes, etc.

The presentation will conclude by discussing the future developments which are under evaluation for CYMCAP road map along with the challenges that they involve.

Learning Outcomes

- Gain insight on the main improvements introduced by the new CYMCAP 7 Series.
- Get introduced to the new features of the new version CYMCAP 7.2 Rev.1 (ventilated tunnels, parametric studies, bentonite-filled ducts, etc.).
- Gain insight on the upcoming developments in CYMCAP road map.



The Instructor

Mrs. Wouleye Kamara is titular of a Bachelor degree and a Master of Sciences' degree in electrical engineering from respectively the universities of UQAC and Polytechnique Montreal.

She is the product manager for CYMCAP, CYME's cable ampacity rating software, and has an experience of more than 9 years in cable modeling and thermal rating. Mrs. Kamara currently leads the engineering team responsible for the development and support of CYMCAP. Her responsibilities include the elaboration of the CYMCAP development road map, R&D projects management, quality assurance, consulting, high-level engineering support and training for major utilities worldwide. She is member of Ordre des Ingenieurs du Quebec.

Workshop 1 – New issues in cable rating calculations

Abstract

This presentation will focus on some new issues in power cable rating calculations. We will discuss new developments tackled by the IEC as well as ideas on selecting the best thermal backfill. It will also review the tools to overcome specific modeling issues. Several practical examples illustrating real-life rating problems will also be discussed.

Part of the presentation will review the recently completed work of CIGRE WG B1.35 summarizing the state-of-the-art in cable rating calculations. Additionally, modeling of 3-core cables with jacket around each core will be discussed. Another topic will discuss some ideas of selecting cable backfills. Finally, calculation of the short circuit currents when a cable has two or more metallic layers will be presented. This work has been recently completed by the engineers from General Cable Company in Spain and will become a new part of the 60287 series of the IEC standards.

Learning Outcomes

- Summary of the latest developments in cable rating calculations as seen by WG19 of the IEC.
- Introduction to the most important findings published in the CIGRE brochure prepared by WG B1.35.
- Gain insight to the problem of short circuit calculations for cables with multiple metallic layers.
- Introduction to issues related to selecting thermal backfills for underground power cables.
- Experience sharing on some difficult rating calculations.

The Instructor

Dr. George J. Anders is the President of Anders Consulting in Toronto, professor at the Lodz University of Technology in Poland and an Adjunct Professor in the Department of Electrical and Computer Engineering at the University of Toronto. Dr. Anders is a world expert in the field of ampacity calculations of electric power cables, published over 50 papers in IEEE Transactions on this subject, wrote 3 books and conducted numerous seminars

on cable rating issues for a large variety of customers around the world. Dr. Anders is a Canadian representative in the WG19 of the International Electrotechnical Commission (IEC) which develops international standards for cable rating calculations and CIGRE working groups B1.35 and B1.56 dealing with cable ampacity issues. He is the author of the computational algorithms implemented in the CYMCAP program.

In 2016 Dr. Anders received an IEEE Halperin Award in Transmission and Distribution and a Medal of Engineering Excellence from the Ontario Association of Professional Engineers. He is also a recipient of the IEC 1907 Award for contributions to the development of international standards for power cable ratings.



Workshop 2 – Field Implementation of a Novel Cooling system on a 230kV Cable Crossing and a Dynamic Rating Study for a 525kV Submarine Cable

Abstract

This two part presentation will provide details of a practical field implementation of a novel idea to mitigate a “hot spot” along a 230kV XLPE cable system due to the presence of a steam crossing in a downtown street in the City of Vancouver

The presentation will cover the practical challenges faced during the implementation, the solutions adopted and the discuss the field results immediately after implementation and over a course of a year.

The second presentation will discuss the placement of an optical fiber in the core of a 525kV submarine Self-Contained Fluid-Filled cable to measure the temperature of the conductor in real-time. Details of the implementation, results from the measurements

over an extended period will also be included. Following the successful implementation of this project phase, the presentation will cover the studies conducted to incorporate a dynamic rating system for these circuits and some of the consideration examined.

The methods used to validate the mathematical models for the real-time rating study of a of such cable system, with a forced cooling system in place, the results obtained, and the considerations to validate the results shall also be presented.

Learning Outcomes

- Experience sharing on projects involving high-level technical challenge: obstacles, solutions and lessons learned.
- Introduction to a novel “hot spot” mitigation approach due to steam pipe crossing.
- Gain insight on the real-time thermal monitoring of an EHV cable with optical fiber at the core location.
- Gain insight on the installation of a real-time dynamic rating system on an EHV cable with forced cooling system.



The Instructor

Dr. Sudhakar Cherukupalli is a Principal Engineer and Team Lead of the Generation and Transmission Cables Design at BC Hydro with 37 years of experience in the industry. Previously, he obtained his Ph.D. in Electrical Engineering from the University of British Columbia and worked at Powertech Labs for 10 years. He has contributed to several IEEE Standards. He is the Vice Chair of SubCommittee F in the IEEE-ICC and has over 40 publications. Dr. Cherukupalli has been active in many CIGRE WGs and served as a Convener for the CIGRE WG D1.34 – DGA Interpretation of Fluid-Filled Cable Systems. He is the Technical Committee Chair of the CIGRE-Canada 2016 Conference.

Workshop 3 – Rating of Cables in Tunnels

Abstract

This presentation will explore the methods used to calculate the ratings of cables in tunnels, both with and without forced cooling.

The session will begin by contrasting the differences between the thermal environment for cables in tunnels and other “in air” installations. After a short review of the relevant heat transfer theory, the possibilities offered by the recent IEC 60287-2-3 standard will be outlined. In particular there will be a focus on the input data required, and the sensitivity of tunnel rating calculations to these inputs, which may not all be known in detail at the design stage. This new IEC method is available in the latest release of the CYMCAP software.

The presentation will conclude by identifying cases which can't readily be solved using the IEC standard method, including available alternatives. Potential localized rating limitations will also be discussed, along with further work to be completed by IEC TC20 WG19 (which maintains the 60287 standard series).

Learning Outcomes

- Gain understanding of the scope and limitations of IEC Standard 60287-2-3 on rating of cables in ventilated tunnels.
- Assess the sensitivity of some input data on tunnel rating calculations.
- Identify cases which are not covered by IEC Standard 60287-2-3 along with available alternatives.
- Gain insight on the future work to be completed by IEC TC20 WG19 to update IEC Standard 60287 series.

The Instructor

Dr. James Pilgrim received the Bachelor's and PhD degrees in electrical engineering from the University of Southampton in 2007 and 2011 respectively. He joined the staff of the University in 2012. Dr. Pilgrim is actively involved in the development of current rating methodologies, acting as the UK member of IEC TC 20 WG19 (Current Rating and Short Circuit Limits of Cables) and CIGRE Working Group B1.56 “Cable rating verification”. He has published more than 10 Transactions papers on the topic of cable current rating and has acted as a consultant on cable rating issues to a number of transmission cable projects in the UK, both onshore and offshore.



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CYMCAP Users' Forum

CYMCAP 360° training and one-on-one meetings

In parallel with the advanced workshops, a users' forum open to both current and future users of CYMCAP will be held.

The first half of the afternoon will feature a training on CYMCAP; providing a complete overview of the program. The training will be performed by the CYMCAP Product manager.

This is specifically addressed to new users and future users who are interested in getting the best out of the software.

The second half of the afternoon will be dedicated to one-on-one meetings with CYMCAP Product manager and Dr. George Anders to give you a unique opportunity to specifically address your requests.

The day will conclude by a forum with all users, the invited experts and the CYMCAP product manager.

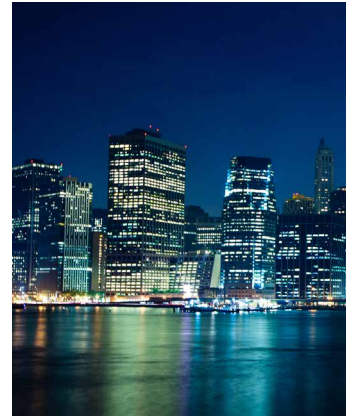
Key outcomes

- 360° training on CYMCAP and its main modules
- Insight on most frequently asked questions
- Tips and tricks sharing
- One-on-one meetings to discuss specific needs
- Experience sharing on CYMCAP features and capabilities
- Discussion on CYMCAP and future developments

The Instructor

Mrs. Wouleye Kamara
CYMCAP Product Manager

See biography on page 2.



Registration and Cancellation Policy

Upon receiving your registration information, a CYME representative will contact you to complete the registration process. CYME will send you an e-mail acknowledging payment and status. For multiple-attendee registration on the same form, acknowledgement will be communicated to the person requesting the registration. It is advisable to register at least one month prior to the start date of the course. Registrations are transferable within your company at no additional cost. The registration fee of the course, along with available discounts, appears on the course description page. Applicable taxes if any are not included in the fee. Travel

and accommodation are at the expense of registrants. For your convenience, CYME will, in most cases, provide you with the name and phone number of a recommended hotel. When a special rate for hotel rooms is announced, attendees should note that this rate applies to a fixed number of rooms and that reservations should be made before the date specified on the CYME web page describing the course.

Cancellation of registrations should be requested in writing, either by mail, e-mail, or fax. For a request received fifteen days or more prior to the course start date, CYME will refund the paid-up fees less US\$ 50.00 administration fee per canceling attendee.

For a request received after that date, the fee is non-refundable.

While CYME makes every effort to meet the published courses schedule, please note that CYME reserves the right to cancel or change the date or location of its courses. CYME's responsibility will not exceed the amount of the fee collected. CYME is not responsible for the purchase of non-refundable travel arrangements or accommodations or for the cancellation/change fees associated with canceling them. Please contact CYME to confirm that the course will proceed as scheduled before confirming travel arrangements and accommodations.

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