This 3-Day course focuses on high voltage transformer design, insulation systems, factory and field testing, and the commissioning and maintenance of transformers to ensure sustained asset health. The course is led by a diverse group of industry experts and covers topics of importance to those who approve specifications, ensure that the equipment is suitable for use, or are involved in electrical equipment commissioning and maintenance. Those involved with the design, installation, operation, and maintenance of electric substations will benefit from sharing knowledge. The course topics include transformer and auxiliary protection design, factory and field testing and commissioning issues, and advanced transformer electrical and insulation fluid testing and assessment techniques. Specific maintenance practices including field oil processing, moisture determination techniques, oil sampling and quality testing, and dissolved gas analysis (DGA) are presented.

As a unique event highlight, the attendees will tour Powertech Labs on the third day. This on-site training will include technical presentations in the morning followed by lunch and a guided tour of the HV test facility. Attendees will tour the Applied Chemistry Lab, Mechanical Lab, the HV and High Current Labs, and see demonstrations of the Lightning Impulse Test, RIV and/or PD Tests (or similar depending on equipment availability). IEEE continuing education units and NETA CTDs are offered for all course attendees at no additional charge.

PRELIMINARY AGENDA – PRESENTATIONS
Tuesday, January 29, 2019 (8:00am - 5:00pm) – ELECTRICAL EQUIPMENT AND TESTING
- Overview of GSU Maintenance and Practices - Xing Zhang, BC Hydro
- Surge Arrester Specification and Application - Dave Peelo, DF Peelo and Associates, Ltd.
- Dielectric Frequency Response Analysis - Abel Gonzalez Gomez, Megger
- BC Hydro’s Bushing Replacement Program and Lessons Learned to Date - William Ma, BC Hydro
- GSU Transformer Cooling Control and Overheating - Xing Zhang, BC Hydro
- Understanding the Value of Electrical Testing for Power Transformers - Charles Sweetser, OMICRON electronics Corp
- The Mystery of Transformer Temperature Rise Test Explained - Stephen Chan, EC & QA Engineering Ltd

WELCOME RECEPTION (Tuesday evening, 5:00pm - 7:30pm) - all are invited to attend this Reception being held right at the Hilton Vancouver Airport Hotel! An excellent opportunity to socialize with your colleagues while enjoying good food and beverages. During the reception our sponsors will have factory representatives on hand showcasing their products and technology for your learning.

Sponsored by:
- WEIDMANN Electrical Technology Inc
- Leading Edge Sales
Wednesday, January 30, 2019 (8:00am - 5:00pm) – **INSULATION SYSTEM MAINTENANCE AND FIELD SAFETY**

- Insulating Liquids: Sampling, Oil Quality Testing, and Assessing Electrical Insulation Aging - Nick Perjanik, Weidmann Electrical Technology Inc.
- Site Vacuum Dryout and Oil Processing - Greg Steeves, Baron USA
- Root Cause Investigation of a 240kV Transformer with Sulphides - Colin Clark, Belinda Di Marco with AltaLink and Mike Lau, Weidmann Electrical Technology Inc.
- Safety Issues When Working on Transformers and Tap Changers - Mike Lau, Weidmann Electrical Technology Inc.
- Dissolved Gas Analysis (Application and Update to PC57.104™ Draft Guide for the Interpretation of Gases Generated in Mineral Oil-Immersed Transformers) - Nick Perjanik, Weidmann Electrical Technology Inc.

Thursday, January 31, 2019 (8:00am - 4:00pm) – **POWERTECH LABS**

- Depart Hotel at 8:00am and travel to Powertech Labs for morning presentations, Lunch and Tour
- Lunch followed by Facility Tour, Testing Demos and Video of High Power Lab
- Return to Hotel approximately 4:00/4:30pm

**Transportation will be provided by WEIDMANN**

**FACILITY TOUR AND TESTING DEMONSTRATIONS AT POWERTECH LABS INC**

Included with this course will be tour and testing demonstrations at Powertech Labs. Powertech, a BC Hydro subsidiary, specializes in clean energy consulting, independent testing and power system solutions. Powertech Labs Inc. is one of the largest testing and research laboratories in North America, situated in beautiful British Columbia, Canada. Their 11-acre facility offers 15 different testing labs for a one-stop-shop approach to managing utility generation, transmission and distribution power systems.

**PROCEEDINGS:** A digital copy of all the proceedings will be provided to each registered attendee at the start of the course.

**REGISTRATION:** Individuals: $1495 (CAD – plus applicable taxes)
Registration fee includes Presentation Materials, Breakfasts, Lunches and Welcome Reception

**BONUS:** Register 3, send the 4th FREE! Any organization sending multiple attendees will receive 1 FREE registration with every 3 paid registrations.

**REGISTRATION INFORMATION:** Register online at [www.weidmann-electrical.com](http://www.weidmann-electrical.com). For questions call Naomi Girouard at 802-751-3567 or email her at naomi.girouard@weidmann-group.com.

**CONTINUING EDUCATION CREDITS:**
1.9 IEEE CEUs and 19 NETA CTDs will be available to attendees at no additional cost for the Training Course.

**COURSE LOCATION:**
HILTON VANCOUVER AIRPORT
5911 Minoru Boulevard  I  Richmond BC V6X 4C7  I  Canada
Reservations can be made by calling 604-232-3990 or 1-800-445-8667
Group Name: Weidmann Power Transformer Technical Course
Group Code: POWER


A block of rooms from January 28 – February 1, 2019 has been reserved at a discounted rate of $189.00 single for the Weidmann Course. Reservations should be made by January 8, 2019 to ensure availability at this rate.

**QUESTIONS AND MORE INFORMATION**
+1 916 778 8435  +1 802 751 3567
nick.perjanik@weidmann-group.com  naomi.girouard@weidmann-group.com

**UPDATED INFORMATION IS AVAILABLE AT:** [www.weidmann-electrical.com](http://www.weidmann-electrical.com)
# WEIDMANN

Weidmann Electrical Equipment, Testing, and Insulation System Maintenance Seminar Agenda

January 29-31, 2019

Hilton Vancouver Airport, Vancouver, BC Canada

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**Tuesday, January 29, 2019 – Electrical Equipment and Testing**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 - 8:00am</td>
<td>Registration and Continental Breakfast</td>
<td></td>
<td>Nick Perjanik</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Weidmann Electrical Technology</td>
</tr>
<tr>
<td>8:00 - 8:20am</td>
<td>Welcome and Introductions</td>
<td></td>
<td>Tom Prevost</td>
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<tr>
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<td></td>
<td>Weidmann Electrical Technology Inc.</td>
</tr>
<tr>
<td>8:20 - 9:20am</td>
<td>Insulation Systems: Design, Function, and Assessment</td>
<td></td>
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<tr>
<td>9:20 - 9:50am</td>
<td>Overview of GSU Maintenance and Practices</td>
<td></td>
<td>Xing Zhang</td>
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<td></td>
<td></td>
<td></td>
<td>BC Hydro</td>
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<tr>
<td>9:50 - 10:10am</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:05 - 12:00pm</td>
<td>Dielectric Frequency Response Analysis</td>
<td>Abel Gonzalez Gomez</td>
<td>Megger</td>
</tr>
<tr>
<td>12:00 - 1:00pm</td>
<td>Lunch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:00 - 1:30pm</td>
<td>Explosion Resistant Transformer (ERT) Design Basics and Technical Highlights</td>
<td>Luke Wang</td>
<td>BC Hydro</td>
</tr>
<tr>
<td>1:30 - 2:05pm</td>
<td>BC Hydro’s Bushing Replacement Program and Lessons Learned to Date</td>
<td>William Ma</td>
<td>BC Hydro</td>
</tr>
<tr>
<td>2:05 - 2:50pm</td>
<td>GSU Transformer Cooling Control and Overheating</td>
<td>Xing Zhang</td>
<td>BC Hydro</td>
</tr>
<tr>
<td>2:50 - 3:10pm</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3:10 - 4:05pm</td>
<td>Understanding the Value of Electrical Testing for Power Transformers</td>
<td>Charles Sweetser</td>
<td>OMICRON electronics Corp</td>
</tr>
<tr>
<td>4:05 - 5:00pm</td>
<td>The Mystery of Transformer Temperature Rise Test Explained</td>
<td>Stephen Chan</td>
<td>EC &amp; QA Engineering Ltd</td>
</tr>
<tr>
<td>5:00 - 7:30pm</td>
<td><strong>WELCOME RECEPTION</strong></td>
<td></td>
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<tr>
<td></td>
<td>with Vendors On-Hand Showcasing Products and Technologies</td>
<td></td>
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</tr>
</tbody>
</table>

**RECEPTION SPONSORS:**

Weidmann Electrical Technology, Inc  
Leading Edge Sales

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**Wednesday, January 30, 2019 – Insulation System Maintenance & Field Safety**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 - 8:00am</td>
<td>Continental Breakfast</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:00 - 9:40am</td>
<td>Insulating Liquids: Sampling, Oil Quality Testing, and Assessing Electrical Insulation Aging</td>
<td>Nick Perjanik</td>
<td>Weidmann Electrical Technology Inc.</td>
</tr>
<tr>
<td>9:40 - 10:00pm</td>
<td>Break</td>
<td></td>
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</tbody>
</table>
## Weidmann Electrical Equipment, Testing, and Insulation System Maintenance Seminar Agenda
January 29-31, 2019

### Wednesday, January 30, 2019 – Insulation System Maintenance & Field Safety

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker/Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 - 11:00am</td>
<td>Moisture in Insulation: Effects, Measurement, and Management</td>
<td>Tom Prevost Weidmann Electrical Technology Inc.</td>
</tr>
<tr>
<td>11:00 - 12:00am</td>
<td>Site Vacuum Dryout and Oil Processing</td>
<td>Greg Steeves Baron USA</td>
</tr>
<tr>
<td>12:00 - 1:00pm</td>
<td>Lunch</td>
<td></td>
</tr>
<tr>
<td>1:00 - 1:45pm</td>
<td>Root Cause Investigation of a 240kV Transformer with Sulphides</td>
<td>Colin Clark, Belinda Di Marco &amp; Mike Lau AltaLink &amp; Weidmann Electrical Technology</td>
</tr>
<tr>
<td>1:45 - 2:40pm</td>
<td>2018 Electrical Safe Work Practices</td>
<td>Joseph Gierlach ABM</td>
</tr>
<tr>
<td>2:40 - 3:00pm</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>3:00 - 3:30pm</td>
<td>Safety Issues When Working on Transformers and Tap Changers</td>
<td></td>
</tr>
<tr>
<td>3:30 - 5:15pm</td>
<td>Dissolved Gas Analysis (Application and Update to PC57.104™ Draft Guide for the Interpretation of Gases Generated in Mineral Oil-Immersed Transformers)</td>
<td>Nick Perjanik Weidmann Electrical Technology Inc.</td>
</tr>
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### Thursday, January 31, 2019 – Powertech Labs, Inc

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker/Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 - 9:00am</td>
<td>Bus Travels to Powertech Labs from Hotel</td>
<td>Raymond Lings &amp; Madhvi Ramnial Powertech Labs Inc</td>
</tr>
<tr>
<td>9:00 - 9:15am</td>
<td>Assembly and Welcome to Powertech Labs</td>
<td>Powertech Labs Inc</td>
</tr>
<tr>
<td>9:15 - 10:00am</td>
<td>Part 1 – Planning: Identification of the Need Through System Modeling and Studies.</td>
<td>Bruce Sunga &amp; Giuseppe Stanciulescu Powertech Labs Inc</td>
</tr>
<tr>
<td>10:00 - 10:15am</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>11:15 - 12:15pm</td>
<td>Part 3 – Operations and Maintenance: Asset Health, Failure Investigations</td>
<td>Stuart Chambers &amp; Giuseppe Stanciulescu Powertech Labs Inc</td>
</tr>
<tr>
<td>12:15 - 1:15pm</td>
<td>Lunch at Powertech Labs facility</td>
<td></td>
</tr>
<tr>
<td>1:15 - 3:15pm</td>
<td>Facility Technical Tours, Test Demos, and Video of High Power Lab (led by Madhvi Ramnial &amp; Giuseppe Stanciulescu)</td>
<td></td>
</tr>
<tr>
<td>3:15 - 4:00pm</td>
<td>Bus Travel back to Hilton Vancouver Airport Hotel</td>
<td></td>
</tr>
</tbody>
</table>

### Continuing Education

As a full participant in the Course you will be able to receive:

- 1.9 IEEE Continuing Education Credits (CEUs); Professional Development Hours; and/or
- 19 NETA Continuing Technical Development Credits (CTDs)

Please Return Completed Applications for **IEEE CEUs to Event Coordinator**.
Return Applications for NETA CTDs to **YOUR NETA company representative or directly to NETA**.
REGISTRATION FORM
Weidmann Electrical Equipment, Testing, and Insulation System Maintenance Seminar
January 29 – 31, 2019 – Vancouver, BC

CONFERENCE LOCATION:
HILTON VANCOUVER AIRPORT
5911 Minoru Boulevard, Richmond BC V6X 4C7 Canada
Reservations made by calling 1-800-445-8667
Group Name: Weidmann Power Transformer Course
Group Code: POWER

Book Online at:

A block of rooms from Jan 28 – Feb 1, 2019 has been reserved at a discounted rate of $189.00 single for the Weidmann Course. Reservations should be made by January 8, 2019 to ensure availability at this rate.

TOUR AND DEMOS AT POWERTECH LABS:
A guided tour of the HV test facility including the Applied Chemistry Lab, Mechanical Lab, the HV and High Current Labs, and demonstrations of the Lightning Impulse Test, RIV and/or PD Tests (or similar depending on equipment availability) WEIDMANN will provide transportation

REGISTRATION:
$1495.00 (CAD - plus applicable taxes)
Registration fee includes Presentation Materials, Breakfasts, Lunches and Welcome Reception.

BONUS: Register 3, send the 4th FREE! Any organization wishing to send multiple attendees will receive 1 FREE registration with every 3 paid registrations.

CONTINUING EDUCATION CREDITS: IEEE CEUs and NETA CTDs will be available to attendees at no additional cost.

TO REGISTER (4 options to register)
• Call 802-751-3567
• FAX Registration Form to 802-751-3555
• or scan and e-mail Registration Form to naomi.girouard@weidmann-group.com
• or mail the form to Weidmann, Attn: Naomi Girouard One Gordon Mills Way, St. Johnsbury, VT 05819.

QUESTIONS or MORE INFORMATION: For agenda or event questions, contact Naomi Girouard at 802.751.3567 or naomi.girouard@weidmann-group.com

PLEASE REGISTER THE FOLLOWING

□ For every 3 PAID attendees from your company, the 4th registration is FREE.
□ $1495.00 (CAD) Transformer Course Registration

How did you hear about this event: (Direct email, Colleague, Speaker(s), etc.)_________________________________________

Name ___________________________________________ Job Title _____________________________________________

Company ______________________________________________________________________________________________

Company Address ___________________________________________________ City _______________________________

State/Prov. ____________________ Zip ____________________ Country __________________________

Telephone ___________________________ Mobile: __________________________ Fax ___________________________

Email ________________________________________________________________________________________________

PAYMENT METHOD

_________________________ Pay with Credit Card ___________Check enclosed ___________Invoice Me

To pay with a credit card (Visa MC, or AMEX), please contact Naomi Girouard at 802-751-3567. By check, enclose a check and mail with this form to: Weidmann, Attn: Naomi Girouard, One Gordon Mills Way, St. Johnsbury, VT 05819.

Register Today! For Questions Call +802-751-3567 or email to: naomi.girouard@weidmann-group.com