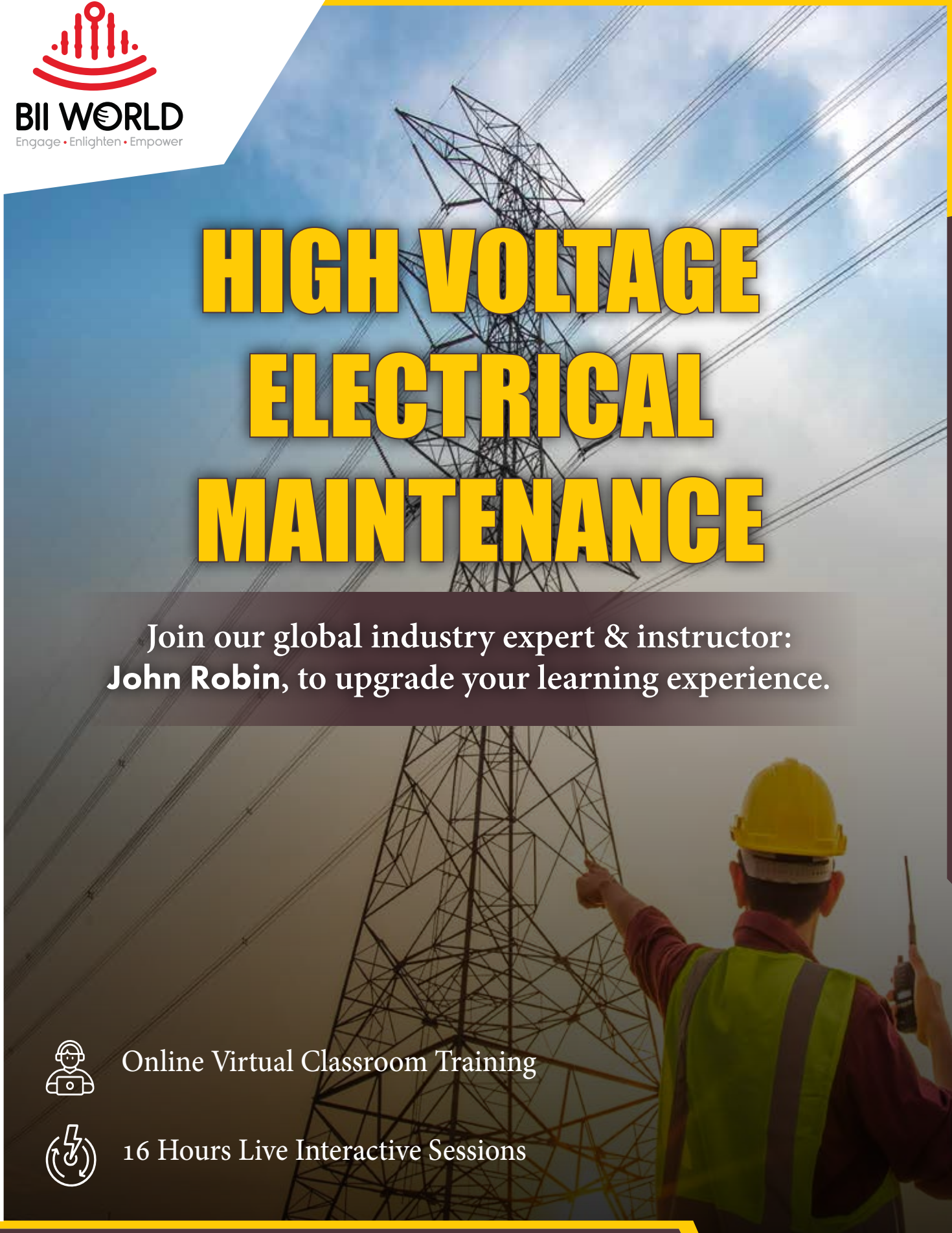
BII WORLD
Engage • Enlighten • Empower

HIGH VOLTAGE ELECTRICAL MAINTENANCE

Join our global industry expert & instructor:
John Robin, to upgrade your learning experience.



Online Virtual Classroom Training

16 Hours Live Interactive Sessions

03 - 06 June 2024

11:00 - 15:00 Atlantic Standard Time (AST)
17:00 - 21:00 Central Africa Time (CAT)
16:00 - 22:00 East Africa Time (EAT)

www.biiworld.com

Course Overview:

Today, electricians moving into the High Voltage work world need more preparation than ever. Once you cross the 750 Volt threshold, new techniques are required to guarantee your personal safety, and the workers entering this environment.

Electricians must recognize all the different parts of high voltage equipment, know the functions of the components, and how to interpret the data on the gauges and relays. Electricians must also be cognisant of safe work regulations covered in CSA Z462 and NFPA 70E.

This 4 Day online High Voltage Electrical Maintenance Course will provide attendees with a comprehensive understanding and the details covered in this course are covered in NFPA 70B, Maintenance Standards. Understanding how to create a safe work environment, and to maintain High Voltage Electrical Equipment will fulfil requirements set out in Occupational Health and Safety Standards.

Learning Objectives:

- **Review** function and operation of electrical transformers
- **Understand** current transformer testing and application
- **Identify** switchgear tests, maintenance, and schedule for safety procedures
- **Key** steps for removal and restoration of a circuit breaker
- **Application** of CSA Z462 shock protection boundaries and their usage
- **Tes(ting)** procedures of electric motor, capacitor, emergency power system

Who Should Attend?

Job Titles : (HSSE Department)

- Fire Safety Officer
- Fire Prevention Engineer
- Fire Code Enforcers
- Fire and Safety Manager
- Safety Manager
- Risk Managers
- Loss Control Specialists
- Emergency Response Team
- HSSE Manager
- HSE Manager
- Law Enforcement Officials
- Fire Safety Consultants
- Facility Managers

(Operation Department)

- Electrical Engineers
- Maintenance Supervisor
- Maintenance Staff
- Engineering Managers
- Plant Managers
- Operation Managers
- HVAC Technicians
- Solar & Wind Generator Installers/Maintainers
- Contractors & Consultants

Industries

- Oil and Gas
- Chemicals
- Mining
- Manufacturing
- Automobiles
- Aviation
- Food & Beverages
- Healthcare
- Hospitality
- Construction
- IT and Finance
- Government

Instructor:
John Robin

… your EXPERT TRAINER for this Course..

John Robin, Power Systems Electrician – Electrical Safety and Maintenance Instructor.
For the past 25 years, have instructed more than 500 courses to a variety of industrial, commercial, and institutional companies across North America.
Have extensive Electrical Safety and Maintenance experience (40 years) working in the Pulp and Paper industry - starting as an operator in pulp production for 10 years, and then apprenticing as an Electrician.
He returned to school for Electrical upgrading, and became a Power Systems Electrician. For the last 24 years of his Pulp Mill career, he was the Lead Hand for the Mill power system. This comprised of 6 – 50 MVA power transformers – 138 to 13.8 kV, as well as 88 mill transformers reducing power to 2300 and 600 volts.
A parallel career in the Canadian Naval Reserve. From 1973 to 2000 I was attached to the Small Boat Training Unit at CFB Esquimalt, and Sea Cadet Training Establishment at HMCS Quadra, Comox, BC. I retired with the rank of Lieutenant Commander.
Since retiring from the Pulp Mill in 2012, I have continued teaching electrical safety and maintenance courses, delivering training to hundreds of various companies throughout North America, and since moving to Online training, the world.

Training courses include:

- Arc flash/Electrical Safety awareness and lock out standards (NFPA 70e and CSA Z462)
- Electrical Safety for Non-Electrical Workers and Operators
- High Voltage Electrical safety
- High Voltage Electrical Maintenance
- Electrical Maintenance Planning (NFPA 70B and CSA Z463)
- High Voltage Cable Splicing

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www.biiworld.com

Training Methodology

1. Pre-Course Preparation:
   a. Pre-course questionnaire needs to be filled and submitted by the attendees before the online training. This will help the trainer to format the training as per attendees' understanding level and specific requirements.
   b. Pre-course materials and assignments will be provided by the trainer before the online training. Attendees need to study the material and submit the assignments before entering the online classroom.
2. Real Time Virtual Training: This course in principle does not differ to the direct presentation and assessment (face to face training). In 4-day classroom immersion, all the material in the original syllabus will be presented online as well as the tests.
3. Live Interactive Sessions: Polling, Q&A round will be provided to interact with the trainer online. Trainer will also be available post course to interact with the attendees.
4. Videos & Exercises: Numerous videos will be shown throughout the course
5. Comprehensive Learning Kit: Trainerwill provide course materials during/after the training which will be helpful for the attendees as the future reference in their continuous learning journey.

Presentations:

Day 1

09:00 - Pre-Course Intro – Delegate Expectation Briefing

Session 1: Insulation Materials and Testing Methods

- Review of insulation materials and the methods to diagnose insulation quality quickly and accurately
- Qualities of good insulation and factors affecting deterioration
- Methods of testing insulation and interpretation of test results

Session 2: Power Cable Splicing and Termination

- Cable
- Electrical code and splicing
- Difference between hot shrink stress cones and Cold shrink
- Construction of shielded and non-shielded cable
- Overview of Tape Products & Electrical Tape Utilization
- Overview of High Voltage Terminations
- How to perform a High Voltage Termination
- Overview of High Voltage Splicing & Pre-Molded Splicing
- How to perform a High Voltage Pre-Molded Splice
- Splicing procedure pamphlets will be supplied to delegates

Quiz

Videos – Heat shrink and Cold shrink procedures will be shown

Post-Session Q &A

13:00 – End of Day 1

Day 2

09:00 – Review of Day 1

Session 3: Power Transformer Testing

- Review: Function and operation of electrical transformers
- Interpret nameplate data
- Air cooled versus oil cooled; benefits and drawbacks
- Transformer protection systems
- Design and construction of power transformers
- Proper oil sampling methods
- Testing and scheduling maintenance procedures
- Electrical safety procedures for power transformers

Session 4: Instrument Transformer Testing

- Instrument transformer operation and application
- Current transformer operation and application
- Purpose of instrument transformers in metering

Session 5: Breakers and Switchgear

- Various types of power switchgear
- Difference between Switches and Breakers
- Operation of switchgear
- HV switchgear tests
- Switchgear maintenance and schedule plus safety procedures

Session 6: Circuit Breaker Maintenance

- Various types of circuit breakers
- Safety procedures critical to circuit breakers
- Correct steps for removal and restoration of a circuit breaker
- Operation of electrically operated circuit breaker controls
- Operation of circuit breaker mechanisms

Presentations:

Day 2

Session 7: Power Use

- Function of power fuses
- Various types of fuses
- Categories of fuses and protection principles

Quiz

Videos – Heat shrink and Cold shrink procedures will be shown

Post-Session Q &A

13:00 – End of Day 1

Day 3

09:00 – Review of Day 2

Session 8: Arc Flash and Electrical Safety

- Define the Flash Protection boundary
- Define the two CSA Z462 shock protection boundaries and describe their use
- Identify the key objectives of job safety planning
- List the personal protective equipment required for shock protection
- List the steps to install and remove temporary protective grounding equipment
- Planning exercises to create a safe work zone
- Identifying potential back feeds to a safe work zone
- Methods of isolating back feeds through planning exercises

Session 9: Protective Relays

- Principles and operation of protective devices.
- Power system disturbances
- Protective functions of various relays
- Types of protective relays, and their function

Session 10: Power System Co-ordination

- Principles of co-ordination of protective devices.
- Process of power system co-ordination

Quiz

Post-Session Q &A

13:00 – End of Day 3

Presentations:

Day 4

09:00 – Review of Day 3

Session 8: Electric Motor Testing

- Operation of large horsepower motors.
- Various types of electric motors
- Test procedures for motors
- Trouble shooting electrical motor failures
- Maintenance testing of electric motors

Session 9: Capacitor Testing

- Operation of high voltage capacitors.
- Various types of capacitor installations
- Safety procedures critical to capacitors

Session 10: Emergency Power System Testing

- Operation of various high voltage emergency power systems.
- Various types of emergency systems: batteries, transfers, ties, temporary etc.
- Maintenance and care of Battery banks for power systems
- Test procedures for operation of these system
- Maintenance and schedule for emergency systems

Test

Post-Session Q &A (Day 1 – 4)

13:00 – End of Day 4 & Course

FAQs

Does BII Online Virtual Training have the same value as traditional classroom training?

Yes, BII Online Virtual Training offers participants; same training system as in-person, i.e face-to-face engagement with instructors, course material, interactive participation of all delegates, and personal support that they would expect to find in a traditional classroom.

What are main features of your online courses? Are they on-demand? Is it different content from the in-person offering?

The content of the virtual training is similar to the in-person sessions and customized presentation makes it a richer online learning experience. As always, we will share presentation materials with attendees for later reference.

The online courses are not on-demand and recordings cannot be purchased. They are set on scheduled dates, live with an instructor and co-host via webinar software. While the day is shorter than an in-person session (4hrs vs 8hrs), timing are adjusted to accommodate attendees in different time zones and allow more time for one-on-one conversations via the Q & A.

What are the technical requirements for participation in a virtual course?

All you need to participate in virtual training are:

- Desktop or Laptop or Tablet Computer, and Internet connection
- Webcam
- Headset with built-in microphone

Can I attend an online training session if I have a Macintosh computer?

Yes, Our Online training systems does allow Macintosh computers, PCs, and computers running Linux to easily enter any of our online training sessions.

What type and version of browser will I need for online classes?

It is recommended that you use the latest version of Firefox, Chrome or Internet Explorer for Windows and Firefox or Safari for Mac. Each of these is available for free download and also suggested you have the PDF Reader

How do I have access to the trainer for questions?

As in the classroom, you will see the trainer in front of you and have the opportunity to ask questions at any time - all via audio and video transmission.

Is there a mute option within an online training session to minimize background noise from my audio connection?

Yes, the Mute button will display to the right of your name as you hover your mouse over your name shown in the Participants panel on the top, right side of the Web conferencing screen.

What if I miss few sessions of the online training program?

The training will be simultaneously recorded which will be provided to you as per request & requirement

Do I get a Certificate at the end?

Yes, you will get a PDF version of your certificate of completion

UPCOMING COURSES 2024

Electrical Power Systems (Design, Protection)

Facilitator : **Eric Stark**
Date : **22 - 26 April 2024**
Timings : **09:00 to 14:00 Atlantic Standard Time (AST)**
13:00 to 17:00 Greenwich Mean Time (GMT)

This 5 Day online masterclass on "Power System Design, Protection & Coordination" addresses many aspects of industrial & utility power systems, including system planning, equipment selection, specification and application, system grounding, protection and conformity with electrical code requirements, etc.

Eric Stack has over 35 years of experience in the field of electrical power system design, protection, and control. Both utilities & industrial clients including oil and gas, silver, gold, and phosphate mining, co-generation, utility systems, pulp and paper, and many applications projects. He is the author of internal technical papers for major players like General Electric, Institute of Technology, Digital Energy, and has prepared and conducted numerous courses, workshops, and tutorials in academics and industry, globally, for GE, IEEE, and many more.

CLICK HERE To access this course agenda.

Energy Storage Systems

Facilitator : **Sean White**
Date : **28 - 31 May 2024**
Timings : **11:00 to 15:00 Atlantic Standard Time (EST)**
15:00 to 19:00 Greenwich Mean Time (GMT)

This 4 Day Online course will cover all the aspects of modernizing the grid from and energy storage point of view, from the individual household to the large utility scale infrastructure. It will cover the technical and business aspects of energy storage systems, including bidirectional electric vehicle technology and virtual power plants (VPPs).

Sean White - Our instructor is a world class expert in energy storage is an Award Winning IREC Certified PV Master Trainer. Our trainer was on the NABCEP PV Installer Exam Committee and helped author the NABCEP PV Installation Professional Task Analysis, which is the "gold standard" of PV certifications. Our instructor was also on the energy storage committee of the Solar ABCs PV Industry Stakeholder Group.

CLICK HERE To access this course agenda.

High Voltage Electrical Maintenance

03 -06 June 2024

BII World Limited
9616 45th Avenue
Northwest, Edmonton, AB
T6E 5Y9, **Canada**

Please complete this form and send it back to:
E-mail to: **zack.miller@biiworld.com**

Event Code: OL TE 89

Delegate Details

1. Name: Mr/Mrs/ Ms .....
.....
Job Title: .....
Email: .....
2. Name: Mr/Mrs/ Ms .....
.....
Job Title: .....
Email: .....
3. Name: Mr/Mrs/ Ms .....
.....
Job Title: .....
Email: .....

Company/Organisation Detail

Name: .....
Person to Contact:.....
Email: .....
Address: .....
.....
City: .....
Country: .....
Contact No: .....
Type of Business: .....
Website: .....

Payment Details

METHOD: CREDIT CARD ☐ OR WIRE TRANSFER ☐

Please debit my

Visa ☐ Eurocard /Mastercard ☐ Amex ☐ Diners club ☐

Card Billing Address:.....
Street: .....City.....
Zip/Postal: .....
Card Holders Name: .....
Email Address: .....
Card Holders Signature: .....
Card Number

Credit Card CVV2/ CVC / CID Number:

Visa / Mastercard (3-digit code on the back) ☐☐☐ Amex (4-digit code on the front) ☐☐☐☐

Valid from: ☐☐ / ☐☐ Expiry Date: ☐☐ / ☐☐

I agree to BII debiting my card

Authorization and Acceptance of Sales Contract & Terms & Conditions

I hereby declare I am authorised to sign this contract and terms & conditions in the name of the company/organisation:

Name:.....
Date:.....
Signature:.....

Delegate Fee ☐ **USD 1099** Per Delegate

Early Bird Discount of 10% until 31st March 2024

20 USD administration charge and any applicable withholding or any other tax or fee will be applied

TERMS & CONDITIONS:

1. Payment terms: BII World LTD requires the full payment of the invoiced amount within 7 working days from the issue date of the invoice. BII World LTD reserves the right to refuse entry to any client who does not pay the invoice in full and on time. The registration fee includes: Training documentation and admission to all training sessions.

2. Cancellation by client: The client has the right to cancel his/her participation in the event. Cancellation must be received by BII World LTD in writing either by mail or fax. If the client cancels the event, he/she will get two options:

A. CREDIT NOTE: Choose 2-year credit note, BII World LTD will send all the schedule training event details throughout the year. Delegate has the right to choose and attend any of the training programs (valid 2 years).

B- NOMINATION: In this option delegate can nominate/refer someone from his/her group/company to attend the particular training program on behalf of the actual delegate.

3. Cancellation by BII World LTD : While every reasonable effort is made to adhere to the advertised program, circumstances can arise which may cause changes in the program, including but not limited to changes in the content, date(s), or special features of the planned event. Such circumstances include but are not limited to acts of terrorism, war, extreme weather conditions, compliance with government requests, orders and legal requirements, failure of third-party suppliers to timely deliver, and failure to register the minimum target number of attendees for a given event. BII World LTD reserves the right to change the content, date(s), and/ or special features of an event, to merge the event with another event, or to postpone it or cancel it entirely as appropriate under the circumstances. Client agrees that BII World LTD shall not be liable for any cost, damage or expense which may be incurred by client as a consequence of the event being so changed, merged, postponed or cancelled and client agrees to hold BII World LTD harmless and to indemnify BII World LTD in case of liability caused by any such changes, mergers, postponements or cancellations.

4. Cancellation of the event: In case BII World LTD cancels an event, then client can choose any of the below mentioned options:

(a) BII World LTD will refund full payment to the client within 15 business days.
(b) Client can choose the credit option for 2 years, for more details please read term no-2 part (a)

5. Postponement of the event : In case BII World Ltd postpones the event to a new date, then client can choose any of the below mentioned options.

(a) The client can attend the course on the postponed dates.

(b) Client can choose the credit option for 2 years, for more details please read term no-2 part (a)

6. Client's identification information. By signing of this sales contract and these terms and conditions the client gives full right to BII World LTD to share the client's identification information, i.e. client's name, address, email addresses, phone numbers and names of representatives and website with other clients who participated in the same event. The client has the right to opt out of this clause by written notice to BII World LTD.

7. Governing law: This contract shall be governed by and construed in accordance with the laws of the Pr ovince of Alberta, Canada. Any disputes arising under or in connection with this registr ation form shall be settled before the competent court in Canada.

8. Indemnification: To the fullest extent permitted by the law, you agree to protect, indemnify, defend and hold harmless BII World LTD, its owners, managers, partners, subsidiaries, affiliates, officers, directors, employees and agents, from and against any and all claims, losses or damages to persons or property, governmental charges or fines, penalties, and costs (including reasonable attorney's fees) (collectively "the Claims"), in any way arising out of or relating to the event that is the subject of this contract, and regardless of negligence, included but not limited to, Claims arising out of the negligence, gross negligence or intentional misconduct of BII World LTD employees, agents, contractors, and attendees; provided, however, that nothing in this indemnification shall require you to indemnify BII World LTD Indemnified parties for that portion of any Claim arising out of the sole negligence, gross negligence or intentional misconduct of the BII World LTD parties.

9. Other currencies. In case that client requests payment in other than official currency (USD), BII World LTD reserves the right to apply 5% currency risk surcharge to the actual exchange rate.

10. Other Conditions: Any terms or conditions contained in the client's acceptance which contradict or are different from the terms and conditions of this registration document shall not become part of the contract unless individually negotiated with BII World LTD and expressly accepted by BII World LTD.