



# WATER SUPPLIES

Fire Protection & Prevention: Storage, Distribution & Controllers.

Join our global industry expert & instructor:  
*John Redden*, and transform your learning experience.



15 Hours Virtual Learning Experience

09 - 11 September, 2024

08:00 - 13:00 Malaysia Standard Time

[www.biiworld.com](http://www.biiworld.com)

## COURSE OVERVIEW:

The 3-Day Online Water Supplies Course is intended to give the participants an expansive overview of the requirements for the facility, and/or community needs for fire protection.

The sessions start with community or corporate risk assessments and calculating the fire flow requirements then follows through on how they are met by the present Water Supplies.

The base calculations are also used to verify Fire Department apparatus and equipment needs. The calculations are also used for a variety of Water Supply design and improvements. This is necessary to give the best fire flows while maintaining water portability.

## LEARNING OBJECTIVES:

- **Identify:** The risk and risk zones within an industry or community
- **Understand:** The design, requirements and maintenance of the overall water supply and suppression needs
- **Key:** Required Fire Flows, Hydrant Flow Testing, Basic Mapping, Basic response
- **Lifecycle:** The design is for a 3-day course. This can easily be expanded and have a separate practical training course available as well
- **Operational:** The water Supply and Suppression within a given area can be met in a variety of ways. It is important that planning and Engineering understand the various implications on taxation and insurance for large complexes
- **Integration:** Typically, it takes up to 5 years for insurance to recognize the changes made. Most time all changes cannot be made at the same time, so it is important to bring in the most critical first.
- **Build:** By design this course can address the needs of all departments at once: fire, water, emergency response, communications and special for fire prevention and maintenance.



## TARGET AUDIENCE:

### Job Titles :

- Water Supply managers and employees
- Fire Department Personnel
- Planning personnel
- Engineering personnel
- Managers
- Developers

### Industries:

- Mining
- Ports
- Industrial parks
- Airports
- Shipping
- Construction





**Instructor:**  
**John Redden**  
CFPS, AIFireE

### International Certifications

1. Certified Fire Protection Specialist (CFPS) from National Fire Protection Association (NFPA)
2. Associate of the Institution of Fire Engineers (AIFireE) from Institute of Fire Engineering which is focused on Fire Science.
3. Certified Level 1 & 2 Instructor Nova Scotia Fire Fighters School
4. Certified Technician for the repair of Survive Air and MSA breathing Apparatus

### Profile Highlights

1. Highly skilled in Fire Management, Emergency Management, Confined Space Rescue, Vehicle Extrication and Emergency Medical Services (EMS).
2. He was part of a program development of the specialized program which included Fire Inspection for Institutions, Breathing Apparatus for Trainers and Maintainers, Fire Investigation and Fire Prevention.
3. He was a Training Officer for Federal Government of Canada Office of the Fire Commissioners and later took the role of Investigator in the Fire Commissioner's Office.
4. After becoming Certified Level 1 & 2 Instructor, he became Field Extension coordinator for the Nova Scotia Fire Fighters School.
5. He has completed Fire Service Officer's training and is an instructor for Fire Ground Command.
6. He has also completed train the trainer program in Marine Fire Protection and Hazardous Material First Responder.



# PRESENTATIONS:

## Day 1:

### 08:00 - Pre-Course Intro – Delegate Expectation Briefing

#### Session 1: Fixed Water Storage Supplies for Fire Protection

- Storage Tanks Gravity and Suction
- Tanks and Towers Foundations
- Tank Towers
- Tank Heating Equipment
- Tank Equipment and Accessories
- Embankment-Supported
  - Coated Fabric Suction Tanks
- Pressure Tanks
- Natural and Constructed Suction Facilities

#### Session 2: Hydraulics for Fire Protection

- Hydraulic Properties of Water
- Bernoulli's Theorem
- Flow of Water Through Orifices
- Coefficients of Flow
- Flow Measurement
- Flow of Water in Pipes
- Water Hammer
- Elastic Wave Theory

### Break

### Session 3: Water Supply Requirements for Public Supply Systems

- Factors Affecting Public Water Supply Design
- Water Requirements
- Calculating Fire Flow Rates
- Other Flow Considerations
- Pressure Characteristics of Systems
- Systems for Higher Elevations
- Adequacy and Reliability of Supply
- Factors Affecting Water Requirements
- History of Water Supply Systems
- Number of Hose Streams
- Engineering: Distribution Network, Hydrants, Spacing, Storage.
- The Insurance Grading Schedule

#### Case Study – 1:

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#### Exercise – 1:

XXXXXXXXXXXXXXXXXXXXXXXXXX

#### Post-Session Q &A

### 13:00 – End of Day 1



# PRESENTATIONS:

## Day 2:

08:00 - Review of Day 1

### Session 4: Water Supplies for Sprinkler Systems

- Types of Supplies
- Influence of Various Factors on Water Supply Need
- Water Supply Requirements for Sprinkler Systems
- Occupancy Classifications
- Water Supply Requirements for Hose Stream Protection
- Hydraulically Designed Sprinkler Systems

### Session 5: Microbiology Influenced Corrosion in Fire Sprinkler Systems

- Defining Corrosion
- The Corrosion Problem
- Defining MIC
- Sources of MIC Infection
- MIC Corrosion Process
- Prevention and Treatment

### Break

### Session 6: Water Distribution (1)

- Centrifugal Pump
- Positive Displacement Fire Pump
- Principals of Operation
- Characteristic Pump Curves Total Head
- Total Head

- Discharge Specific Speed (Nd)
- Net Positive Suction Head
- Cavitation
- Pump Affinity Laws
- Standard Head Discharge Curves

### Session 8: Water Distribution (2)

- Horizontal Shaft Centrifugal Fire Pumps
- Fire Pump Capacity Head Rating
- Horsepower of Fire Pumps
- Fire Pump Drivers
- Field Acceptance Tests
- Location and Housing of Centrifugal Fire Pumps
- Pump Tests
- Pump Operation and Maintenance
- Reciprocating Steam Fire Pumps
- Fire Pump Approval and Listing

### Case Study – 2:

XXXXXXXXXXXXXXXXXXXXXXXXXX

### Exercise – 2:

XXXXXXXXXXXXXXXXXXXXXXXXXX

### Post-Session Q &A

13:00 – End of Day 2



# PRESENTATIONS:

## Day 3:

08:00 - Review of Day 2

### Session 8: Fire Pump Controllers & Power Supply Arrangements for Motor Driven Pumps

- Worldwide Standards for Fire Pump Controllers
- Electric Power Supply
- Electric Drive Controllers
- Limited-Service Controllers
- Full-Service Controllers
- Variable Speed Electric Motor-Driven Fire Pumps
- Controller Parameters
- Standard Controller Components
- Standard Controller Features
- Non-mandatory Controller Features
- Transfer Switches

### Session 9: SCADA Systems

- Supervision and control parameters for a fire-fighting system
- Frequency variation
- Ignition system programming
- Control levels for tanks & pumps

Break

### Session 10: Implementing Site Security Measures

- Pump station
- Pump Layout & Sizing

### Case Study – 3:

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### Exercise – 3:

XXXXXXXXXXXXXXXXXXXXXXXXXX

### Post-Session Q &A

13:00 – End of Day 3 & Course



**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





Please complete this form and mail it back to  
saro dh.panicker@biiworld.com

**Event Code: OL HS 18**

Delegate Details	Payment Details														
<p>1. Name: Mr/Mrs/ Ms .....</p> <p>.....</p> <p>Job Title: .....</p> <p>Email: .....</p> <p>2. Name: Mr/Mrs/ Ms .....</p> <p>.....</p> <p>Job Title: .....</p> <p>Email: .....</p> <p>3. Name: Mr/Mrs/ Ms .....</p> <p>.....</p> <p>Job Title: .....</p> <p>Email: .....</p>	<p><b>METHOD:</b> CREDIT CARD <input type="checkbox"/> OR WIRE TRANSFER <input type="checkbox"/></p> <p>Please debit my</p> <p> <input type="checkbox"/> Visa     <input type="checkbox"/> Eurocard /Mastercard     <input type="checkbox"/> Amex     <input type="checkbox"/> Diners club         </p> <p>Card Billing Address:.....</p> <p>Street: .....City:.....</p> <p>Zip/Postal: .....</p> <p>Card Holders Name: .....</p> <p>Email Address: .....</p> <p>Card Holders Signature: .....</p> <p>Card Number</p> <table border="1" style="width: 100%; height: 20px; border-collapse: collapse;"> <tr> <td style="width: 10%;"></td><td style="width: 10%;"></td><td style="width: 10%;"></td><td style="width: 10%;"></td><td style="width: 10%;"></td><td style="width: 10%;"></td><td style="width: 10%;"></td><td style="width: 10%;"></td><td style="width: 10%;"></td><td style="width: 10%;"></td><td style="width: 10%;"></td><td style="width: 10%;"></td><td style="width: 10%;"></td><td style="width: 10%;"></td> </tr> </table> <p>Credit Card CVV2/ CVC / CID Number:</p> <p>           Visa / Mastercard <input type="text"/><input type="text"/><input type="text"/>     Amex (4-digit code <input type="text"/><input type="text"/><input type="text"/><input type="text"/>            (3-digit code on the back)     on the front)         </p> <p>Valid from: <input type="text"/><input type="text"/> / <input type="text"/><input type="text"/>     Expiry Date: <input type="text"/><input type="text"/> / <input type="text"/><input type="text"/></p> <p style="text-align: center;">I agree to BII debiting my card</p>														
Company/Organisation Detail															
<p>Name: .....</p> <p>Person to Contact:.....</p> <p>Email: .....</p> <p>Address: .....</p> <p>.....</p> <p>City: .....</p> <p>Country: .....</p> <p>Contact No: .....</p> <p>Type of Business: .....</p> <p>Website: .....</p>	<p><b>Authorization and Acceptance of Sales Contract &amp; Terms &amp; Conditions</b></p> <p>I hereby declare I am authorised to sign this contract and terms &amp; conditions in the name of the company/organisation:</p> <p>Name:.....</p> <p>Date:.....</p> <p>Signature:.....</p>														
<p><b>Delegate Fee</b>     <input type="checkbox"/>     <b>USD 109</b> Per Delegate</p>															
<p style="text-align: center;">EUR 20 administration charge and any applicable withholding or any other tax or fee will be applied</p>															

**TERMS & CONDITIONS:**

- 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.
- 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.
- 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.
- 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)
- 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)
- 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.
- Governing law:** This contract shall be governed by and construed in accordance with the laws of the Province of Alberta, Canada. Any disputes arising under or in connection with this registration form shall be settled before the competent court in Canada.
- 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.
- 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.
- 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.