

MARCH 13-16, 2017 | HOUSTON, TEXAS

## Safety and emergency

### Information

#### Your safety at ABB Customer World

Your safety is our top priority. We encourage you to take normal safety precautions that you would adhere to at any hotel or large conference. All hotel guest rooms provide safety information. Please become familiar with the emergency procedures and the closest two emergency exits at your hotel.

#### In the event of emergency while at the George R. Brown Convention Center

Dial 8087 from any house phone or (713) 853-8087 from any cell phone or outside line.

**Do not dial 9-1-1 directly.**

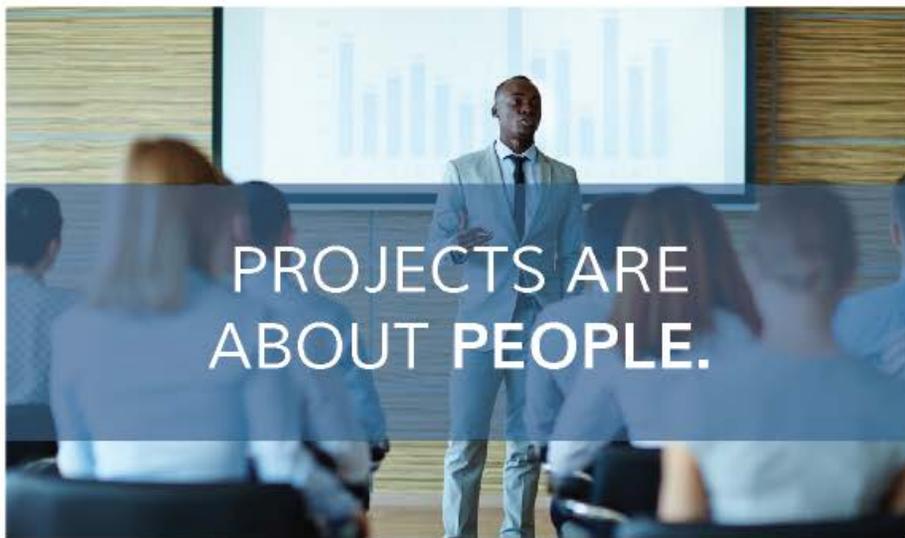
- In the event of an alarm, please proceed to the nearest exit, or utilize the appropriate exit as directed by convention center personnel.
- Use the stairwells or escalators to evacuate and **do not** attempt to use the elevators.
- Convention center associates will be located throughout the public space to assist in directing guests toward the closest exit.
- If evacuation is required, please be alert for handicapped or disabled persons who may need your assistance.
- **Do not** re-enter the building until advised by convention center personnel or an "all clear" announcement is made

#### Event location information

George R. Brown Convention Center  
1001 Avenida de las Americas, Houston, Texas 77010  
Main Phone: 800-427-4697 or 713-853-8000  
Web: [www.houstonconventionctr.com](http://www.houstonconventionctr.com)

## ABB Customer World

Connect. Collaborate. Outperform.



## PROJECTS ARE ABOUT PEOPLE.

At TwentyEighty Strategy Execution, we believe that projects are the building blocks of strategy and people are the architects.

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 or call +1 888-374-8884.



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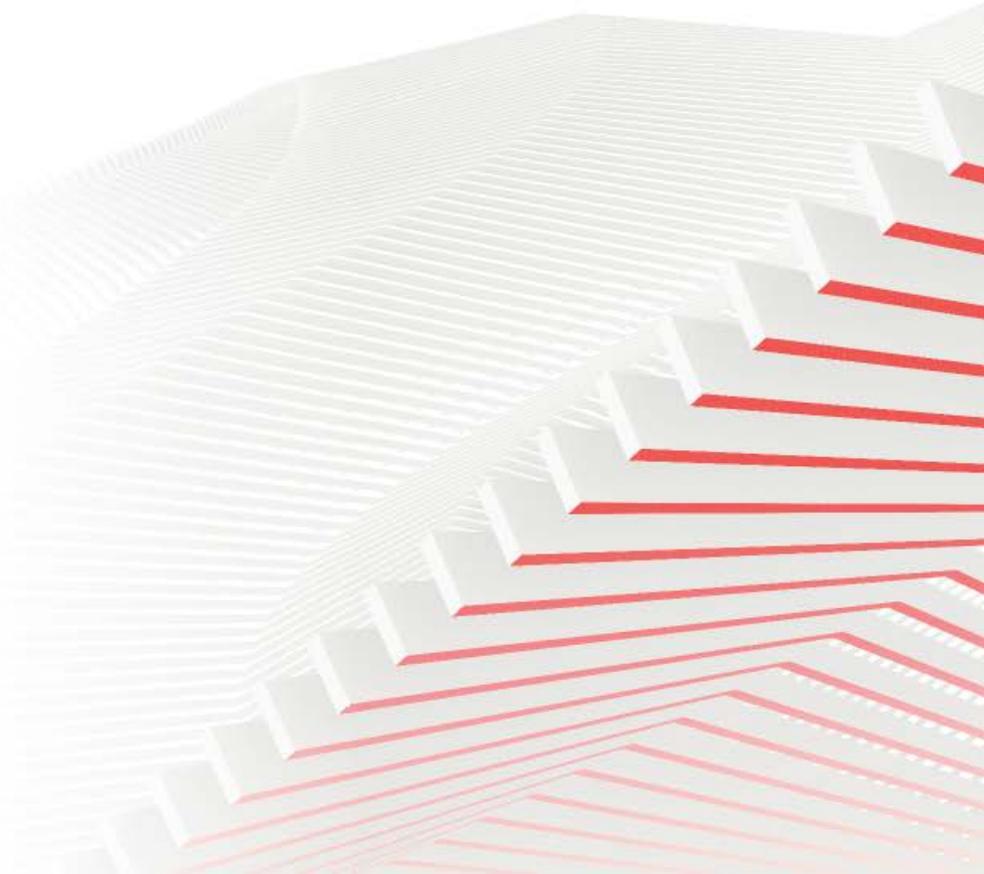
## Thank you

We value your input in making future conferences valuable for you to attend. Please complete the online attendee survey available on the ABB Customer World attendee portal and event mobile application and include your candid feedback. We look forward to hearing from you! We look forward to seeing you again in 2019.

### ABB Customer World 2019

March 4–7, 2019

George R. Brown Convention Center  
 Houston, Texas



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**WELCOME TO ABB CUSTOMER WORLD**

# Greetings,



On behalf of ABB and our partners, I'd like to welcome you to ABB Customer World 2017. We appreciate that you've chosen to join us, and we hope your experience here will inform, energize and inspire you. As always, our goal is to make ABB Customer World the most valuable use of your time.

Right now, digital revolutions in energy and industry are transforming companies in almost every sector. Digital technologies are creating opportunities to better connect operations, improve efficiency, and outperform yesterday's standard. Companies that learn from those who have already navigated these changes have a tremendous advantage.

Our theme this year is "Connect. Collaborate. Outperform." We'll give you an innovative look at new ideas, trends and technologies that will help your company outperform in an increasingly connected and digital future. You'll experience **ABB Ability™** in person, our digital platform that connects the Internet of Things, people, services and digital expertise to turn data into actionable intelligence. And, you'll find many ways to connect with industry experts, including our Applications and Best Practices sessions.

Attendee feedback – and the guidance of our Customer Advisory Boards – has helped improve this event for more than a decade. Focusing on your needs is one reason we changed the name to ABB Customer World, and we would like your input on how we can continue to improve. You can give feedback on the workshops you attend, as well as the overall conference, through a quick survey on our mobile app or online event portal. Please take a minute to let us know what you think.

The greatest value of ABB Customer World is in the connections made with colleagues and the opportunity for learning across industries. I encourage you to take full advantage of everything this event offers, and if there is anything we can do to make your time more valuable, please let us know.

Regards,

A handwritten signature in black ink that reads "Greg Scheu". The signature is fluid and cursive.

**Greg Scheu**

President, Americas Region, ABB Inc.

Member of the ABB Group Executive Committee



Don't Count  
the People you  
Reach. Reach  
the People  
that Count.



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EUCI is registered with the National Association of State Boards of Accountancy (NASBA) as a sponsor of continuing professional education on the National Registry of CPE Sponsors.



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# Agenda at a glance

Event opens at 10:00 AM		Connect to innovation	
Monday, March 13		Tuesday, March 14	
8:30		8:30 AM–10:00 AM	Hall B3 — Level 3
8:45		<b>Keynote speaker:</b>	• Ulrich Spiesshofer, ABB CEO
9:00		<b>General session:</b>	• Guido Jouret, ABB CDO
9:15			
9:30			
9:45			
10:00	TECHNOLOGY & SOLUTION CENTER	10:00 AM–10:15 AM	Break
10:15	Opens at 10:00 AM	10:15 AM–11:30 AM	• Plenary sessions • Training
10:30			
11:15			
11:30		11:30 AM–11:45 AM	Break
11:45	11:45 AM–1:00 PM	11:45 AM–1:00 PM	Keynote panel luncheon
12:00	Hall C, Level 1 - Buffet lunch		Grand Ballroom, Level 3
12:15			• Avijit Sinha, Microsoft • Guido Jouret, ABB CDO
12:30			
12:45			Hall C, Level 1 - Buffet lunch
1:00	1:00 PM–2:00 PM	1:00 PM–2:00 PM	• Business forum
1:15	• Business forum	• Business forum	• Education and training
1:30	• Education and training		
1:45			
2:00	2:00 PM–2:15 PM	2:00 PM–2:15 PM	Break
2:15	2:15 PM–3:15 PM	2:15 PM–3:15 PM	• Business forum
2:30	• Business forum	• Education and training	
2:45	• Education and training		
3:00			
3:15	3:15 PM–3:30 PM	3:15 PM–3:30 PM	Break
3:30	3:30 PM–4:30 PM	3:30 PM–4:30 PM	• Business forum
3:45	• Business forum	• Education and training	
4:00	• Education and training		
4:15			
4:30			
4:45			
5:00	5:00 PM–7:00 PM	5:00 PM–6:30 PM	Reception in Technology & Solution Center
5:15	Reception in Technology & Solution Center		
5:30			
5:45			
6:00			
6:15			
6:30			
6:45			
7:00			

Distributor  
Keynote  
Lunch

Distributor program  
workshops and product training

<b>Connect to next level operations</b>	<b>Connect to the future of energy</b>
<b>Wednesday, March 15</b>	<b>Thursday, March 16</b>
<b>8:30 AM–9:45 AM</b> Hall B3 — Level 3 <b>Keynote speakers:</b> <ul style="list-style-type: none"> <li>• Jose Bustamante, Fluor Corporation</li> <li>• Ricardo Rizo Patrón, UNACEM Corp</li> <li>• Peter Terwiesch, ABB</li> </ul>	<b>8:30 AM–9:45 AM</b> Hall B3 — Level 3 <b>Keynote speakers:</b> <ul style="list-style-type: none"> <li>• Maureen Borkowski, Ameren Transmission Company</li> <li>• Claudio Facchin, ABB</li> </ul>
<b>9:45 AM–10:00 AM Break</b>	<b>9:45 AM–10:00 AM Break</b>
<b>10:00 AM–11:30 AM</b> <ul style="list-style-type: none"> <li>• Plenary sessions</li> <li>• Training</li> </ul>	<b>10:00 AM–11:30 AM</b> <ul style="list-style-type: none"> <li>• Plenary sessions</li> <li>• Training</li> </ul>
<b>11:30 AM–11:45 AM Break</b>	<b>11:30 AM–11:45 AM Break</b>
<b>11:45 AM–1:00 PM</b> <b>Keynote panel luncheon</b> Grand Ballroom, Level 3 <ul style="list-style-type: none"> <li>• Narinder Pal Singh, OLAM International</li> <li>• Tom Willever, Flowserve Corporation</li> <li>• Sami Atiya, ABB</li> </ul> <b>Hall C, Level 1 - Buffet lunch</b>	<b>11:45 AM–1:00 PM</b> <b>Keynote panel luncheon</b> Grand Ballroom, Level 3 <ul style="list-style-type: none"> <li>• Rob Caldwell, Duke Energy Corporation</li> <li>• Tom Rowland-Rees, Bloomberg New Energy Finance</li> <li>• Tarak Mehta, ABB</li> </ul>
<b>1:00 PM–2:00 PM</b> <ul style="list-style-type: none"> <li>• Business forum</li> <li>• Education and training</li> </ul>	<b>1:00 PM–2:00 PM</b> <ul style="list-style-type: none"> <li>• Business forum</li> <li>• Education and training</li> </ul>
<b>2:00 PM–2:15 PM Break</b>	<b>2:00 PM–2:15 PM Break</b>
<b>2:15 PM–3:15 PM</b> <ul style="list-style-type: none"> <li>• Business forum</li> <li>• Education and training</li> </ul>	<b>2:15 PM–3:15 PM</b> <ul style="list-style-type: none"> <li>• Business forum</li> <li>• Education and training</li> </ul>
<b>3:15 PM–3:30 PM Break</b>	<b>3:15 PM–3:30 PM Break</b>
<b>3:30 PM–4:30 PM</b> <ul style="list-style-type: none"> <li>• Business forum</li> <li>• Education and training</li> </ul>	<b>3:30 PM–4:30 PM</b> <ul style="list-style-type: none"> <li>• Business forum</li> <li>• Education and training</li> </ul>
Technology & Solution Center open until <b>6:30 PM</b>	<b>Technology &amp; Solution Center hours:</b> Monday <b>10:00 AM–7:00 PM</b> Tuesday <b>9:30 AM–6:30 PM</b> Wednesday <b>9:30 AM–6:30 PM</b> Thursday <b>9:30 AM–3:00 PM</b>
<b>6:30 PM–9:30 PM</b> Customer Appreciation Event Convention center - Hall B3, Level 3	

 Women in Industry Program  
 Sponsored by EUCI

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# ABB Customer World 2017

## Advisory boards

ABB extends our sincere gratitude to our 2017 Customer Advisory Board and Distributor Advisory Board.

With the help of these industry experts, ABB Customer World is designed to give you real ideas and solutions that you can use today to improve productivity, efficiency and the bottom line. The advisory boards provide input into many aspects of the event, from workshop content and the Technology & Solution Center to the networking and other activities taking place during the week.

These groups reflect today's diverse business marketplace and play an indispensable role in maximizing value for ABB Customer World attendees. We greatly appreciate their time and expertise to make this event a success.

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### Customer Advisory Board



**Jeff Borders**

Pacific Gas and Electric  
Company (PG&E)



**Bob Bradish**

American Electric  
Power (AEP)



**Asheesh Doda**

Fluor Corporation



**Andrew Dolan**

ATC – American  
Transmission Co.



**Graham Duvenhage**

Sasol



**Buddy Rogers**

Duke Energy



**David A. Hammerle**

Bechtel Group, Inc.



**Abhjit Kondajji**

Cargill



**Kevon Makell**  
SEWW



**Marco Marino**  
Flowserve



**Jeff Polishak**  
Dow Chemical  
Company



**Melvin Schoech**  
CenterPoint Energy



**Jon Shaddock**  
Ameren



**Tim Traynor**  
Arconic

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### Distributor Advisory Board



**Randy Breaux**  
Moton Industries



**Chris Chickanosky**  
Rexel



**Steve Dean**  
Anlxter



**John Dellemann**  
EMS Industrial



**Bill Feuerstein**  
State Electric



**Marty Finn**  
Power/mation



**Mike Harvey**  
Standard Electric  
Supply Company



**Brian Radichel**  
Purvis Industries



**Bill Stone**  
Mayer Electric



**Sean Nacey**  
WESCO

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# General event information

## Registration and credentials

The registration desk is located on Level 2 of the George R. Brown Convention Center (GRBCC). Registration staff can assist you with registration and provide you with general conference information.

### Registration hours:

- **Monday** 7:00 AM–7:00 PM
- **Tuesday** 7:30 AM–6:30 PM
- **Wednesday** 7:30 AM–7:30 PM
- **Thursday** 7:30 AM–3:30 PM

## Educational curriculum

ABB Customer World is a premier educational event with over 400 workshops offered. Topics range from detailed hands-on training to industry trends/solutions to non-technical professional skills building. Workshop formats include presentations, case studies, panel discussions, peer-to-peer discussions and hands-on technical training. For most workshops there is no pre-registration requirement and seating is available on a first-come, first-served basis. The exception is for the hand-on technical training because class sizes are limited by the amount of equipment available for lab exercises. Find complete curriculum details and additional information beginning on page 43.

## Hands-on training seat reservations

In order to make the best use of your time, we have established a seat reservation system for hands-on technical training courses. You can reserve a seat in any hands-on course starting at 7:30 AM on the day of the workshop. The hands-on

training seat reservation desk is open from 7:30 AM to 4:00 PM each day and is located adjacent to Room 370A on Level 3 of the convention center.

## Assistance and information

An ABB Customer World concierge desk is located at the main entrance to the Technology & Solution Center on Level 1 of the convention center.

## Student ambassadors

We are pleased to welcome an impressive group of university students from around the country as ABB Customer World ambassadors. Not only are they the future of our industries, they are here to assist you, help you find your way, and answer any event questions you might have. Look for them in red shirts throughout the public spaces.

## Meals

All meals will be held at the convention center. A daily keynote panel discussion luncheon will be held Tuesday through Thursday in the Grand Ballroom on Level 3. Information on the luncheon speakers and topics may be found on page 16. Additionally, Monday through Wednesday, a buffet lunch will be served in the Technology & Solution Center for those wishing to grab a quick bite on a more flexible schedule. Attendees are welcome to attend either lunch, but please note that seating is limited for panel discussion luncheons.

**Monday**

- Lunch  
Technology & Solution Center, Level 1

**Tuesday**

- Grab & go breakfast  
Level 3 Concourse
- Keynote session luncheon  
Grand Ballroom, Level 3
- Lunch buffet  
Technology & Solution Center, Level 1

**Wednesday**

- Grab & go breakfast  
Level 3 Concourse
- Keynote session luncheon  
Grand Ballroom, Level 3
- Lunch buffet  
Technology & Solution Center, Level 1

**Thursday**

- Grab & go breakfast  
Level 3 Concourse
- Keynote session luncheon  
Grand Ballroom, Level 3

**Coat and baggage check**

A coat and baggage check is located on Level 2 of the convention center near the Hall D escalators.

Coat and baggage check hours:

- **Monday** 7:30 AM–7:30 PM
- **Tuesday** 7:30 AM–7:00 PM
- **Wednesday** 7:30 AM–9:30 PM
- **Thursday** 7:30 AM–4:00 PM

**Cellular phones**

We ask that you respect other attendees and speakers by turning off cell phones or setting them to silence/vibrate prior to entering workshops and general sessions.

**Networking lounge/recharge zone**

If you need to take a break and recharge yourself or your devices, join us in the **ABB Ability™ Zone**, as well as the Service and Electrification Products mega booths in the Technology & Solution Center on Level 1 of the convention center. Or, visit the recharge zone on Level 2 of the convention center located just past the Hilton Americas sky bridge.

**Photography and video**

No product or exhibit booth shall be photographed, videotaped, broadcast or recorded without the express consent of the exhibitor.

Your attendance at ABB Customer World implies consent to use, license, or distribute photographs and/or video footage taken during the event in any medium or form of distribution, and for any purpose, including but not limited to all promotional uses, advertising uses, electronic media, social networks, printed matter, editorial comment, and other trade purposes.

**Restaurant reservations and Houston information**

The Houston concierge desk located on the Level 1 concourse of the convention center is available to assist with restaurant reservations and general Houston information.

**Wireless internet**

Complimentary wireless internet is available in each of the conference hotel guest rooms. Complimentary wireless internet is also available throughout the convention center. The network name is **ABBGuest**, password:

**ABBGuest**

# Special events

## Monday, March 13

5:00 PM–7:00 PM

### Networking reception

Technology & Solution Center — Level 1

Join your peers in a relaxed networking opportunity and visit the many exhibits highlighting solutions for utilities, industry, transport and infrastructure and **ABB Ability™**.

## Wednesday, March 15

### Women in industry:

#### Empowering women to leadership

Presented by EUCI | 1:00 PM–5:00 PM

#### General Assembly B

Level 3

The goal of this special program is to help professional women advance their careers in traditionally male-dominated industries by providing insight into key trends and skills needed for personal and professional development. Designed to enlighten and empower women across industries, program sessions will focus on topics such as how to create and expand a women's group within your company, how to win negotiations and how to manage difficult situations during your career. The program is planned and produced by event sponsor EUCI and is open to all ABB Customer World attendees.

## Tuesday, March 14

5:00 PM–6:30 PM

### Agenda:

- **Welcome message**  
Speaker: Anjali Schulte, Chief Operating Officer, EUCI
- **ABB Women's Opportunity Network**  
Speaker: Janet Heppner Jones, SVP Americas Sales, ABB Enterprise Software Product Group
- **Keynote address**  
Speaker: Paula Gold-Williams, President and CEO, CPS Energy
- **Developing political savvy in the workplace**  
Speakers: Tanya Meck, Managing Partner, Global Strategy Group, and Theresa Gilbert, Director of Communications, Global Strategy Group



Paula  
Gold-Williams



Tanya  
Meck



Theresa  
Gilbert



Janet  
Heppner-Jones



H I G H L I G H T

O F T H E W E E K

**Wednesday, March 15****Customer Appreciation Event**

6:30 PM–9:00 PM

**Hall B3 | Level 3**

Dearly beloved, gather together as we shout and let it all out to the sounds of the decade we all know and love...the 80s! Join us for drinks, dinner and a gnarly concert event exclusively for ABB Customer World attendees. Mixing some choice tunes from the best decade ever, our very own dual arm, small parts assembly robot solution, DJ YuMi®, will get the party started. Then, a totally rad encore performance by ABB's very own rock band, Digital Output, will keep the party rolling! If you missed their breakout performance in 2015, now's your chance to experience the tubular jams of ABB's freshest from Wickliffe, Ohio.

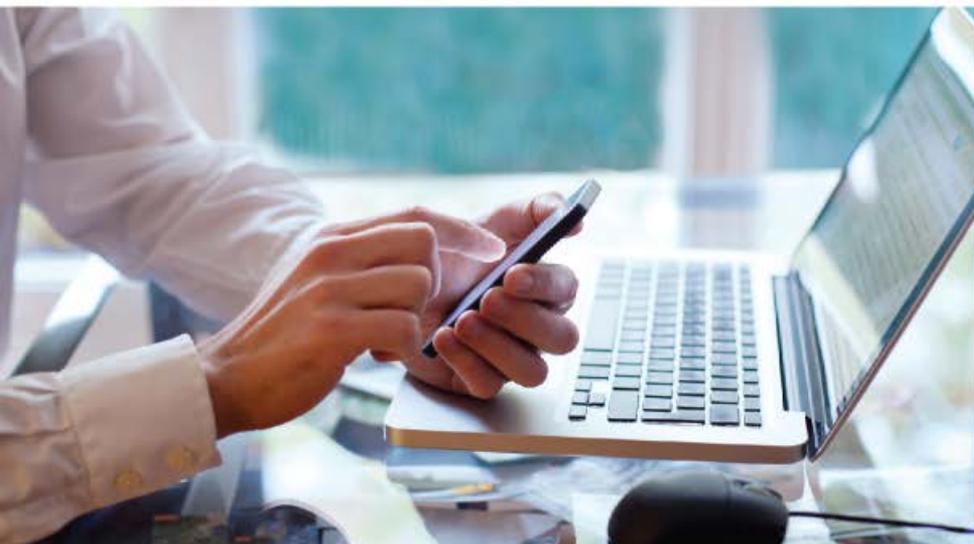
The headline event is a wicked performance by The Molly Ringwalds — The World's Greatest 80s Experience. Hailing from Sheffield, England, this righteous quintet combines their individual and very formidable talents to create the true essence of the most radical decade to ever be called "The 80s." The Molly Ringwalds create the ultimate experience by honing their abilities to apply make-up and tease their hair while showcasing all the musical genres of the decade. It's a no 'duh; plan now for a totally awesome night of fun.


**DIGITAL OUTPUT**

**THE MOLLY RINGWALDS**  
*EXPERIENCE THE 80s*

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## Networking and technology



### Mobile application

The ABB Events application offers expanded information and services, including complete curriculum information, product and solutions locators, the ability to complete session evaluations, surveys, and access other event information, to ensure you get the most out of your time at ABB Customer World! Keep up-to-date with alerts on event highlights and workshop changes, along with maps to find where you want to visit throughout the convention center and Technology & Solution Center. Don't forget to join the Social Hunt in the app to win amazing prizes.

Download the event application from your application store by searching for 'ABB Events'. The application is currently available for Android, iPhone and iPad devices. If you have problems accessing the portal or downloading the mobile application, stop by the registration desk for assistance. Don't have a smartphone? You can still access the event portal by visiting [www.abb.com/customerworld](http://www.abb.com/customerworld) and clicking the 'event portal' link.

## Join the Social Hunt and win powerful prizes for sharing your top stops at ABB Customer World

Competing is easy, simply open the ABB Events application on your phone, and navigate to the "Social Hunt" icon. Once inside the game, choose your challenge category, and start completing the challenges to earn your badges. Each challenge is worth 1-15 points. Once you complete all the challenges in a category, you will earn a badge.

**Challenge posts must include the #ABBhunter hashtag to count.** Look around the event for our "social wall" on TV screens to see your posts featured! At the end of each day, the top 10 leaders on the board will be compiled, and two winners will be randomly selected.

Winners will be selected daily, with one grand prize and one second prize awarded each day. You must be available to pick up your prize at the show or arrange for us to ship your prize if needed. Winners will be notified via the ABB Events application.

Grand prize schedule:

- |                  |  |
|------------------|--|
| <b>Monday</b>    | – Philips Hue Motion Sensor and Lighting Kit   |
| <b>Tuesday</b>   | – Polaroid Snap Instant Digital Camera         |
| <b>Wednesday</b> | – Amazon Echo Dot and Philips Hue Lighting Kit |
| <b>Thursday</b>  | – Syma X8G drone with 8MP HD camera            |

## Win ABB swag just for using the ABB Events app on your smartphone

The In-app game experience is a great way to quickly learn how to use the app and discover new networking opportunities. You'll earn points for exploring the app and earning "achievements," and you can even opt-in to compete on the leaderboard against other event attendees. The leaderboard ranks players by how many points they've earned and by who earned them first. You never know who will be right on your heels. Everyone wins by playing, but only a few earn the right to be at the top of the leaderboard. We'll pick one player each day from the top of the leaderboard to win their choice of an ABB Bluetooth speaker, USB wall charger, or USB powerbank.

## Stay connected... Join our community!

To help keep you current on ABB Customer World, the following social media sites will offer up-to-date conference news and discussions. Join the conversation, make new connections and follow the action:



[twitter.com/ABB\\_CW](https://twitter.com/ABB_CW)  
Hashtag #ABBCW



[facebook.com/ABBCustomerWorld](https://facebook.com/ABBCustomerWorld)



[youtube.com/ABBCustomerWorld](https://youtube.com/ABBCustomerWorld)



Join the ABB  
Customer World group

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# Keynote sessions

**Morning keynote sessions share big ideas and get your day at ABB Customer World off to a great start. Luncheon keynote panel sessions bring together industry leaders to share insights and experiences on timely topics.**

## Opening keynote and welcome



**Ulrich Spiesshofer,**  
Chief Executive Officer, ABB

Ulrich Spiesshofer was appointed Chief Executive Officer in September 2013 and has been a member of the Executive Committee since 2005. From January 2010 to September 2013, Mr. Spiesshofer was the Executive Committee member responsible for the Discrete Automation and Motion division. He joined ABB in November 2005, as the Executive Committee member responsible for Corporate Development. From 2002 until he joined ABB, he was senior partner and global head of operations practice at Roland Berger AG (Switzerland). From 1991 to 2002, he held various management positions with A.T. Kearney Ltd. and its affiliates. Mr. Spiesshofer was born in 1964 and is a German and Swiss citizen.

## Emcee and moderator:



**Greg Scheu**  
President Americas Region, ABB

We welcome Greg Scheu as ABB Customer World's Executive Host and Master of Ceremonies. Greg Scheu was appointed President of the Americas region as well as Head of Group Service and Business Integration in January 2015 and has been a member of the Executive Committee since 2012. From 2013 to 2014, he was Head of Business Integration, Group Service and North America. From 2012 to 2013, he was Head of Marketing and Customer Solutions. Mr. Scheu, a former executive of Rockwell International, joined ABB in 2001 and was responsible for the integration of both Baldor Electric Co. and of Thomas & Betts into ABB. Mr. Scheu was born in 1961 and is a U.S. citizen.

# Keynotes: Tuesday

MORNING SESSION | 8:30 AM | HALL B3, LEVEL 3 CONVENTION CENTER

## Keynote session

### Leadership in the digital revolution

The digital industrial revolution is here, bringing tremendous opportunities to boost productivity and outperform in your market. Working with a partner who can offer global expertise and digital capability is key to meeting the challenges you face. See how ABB helps its customers take advantage of the efficiency and performance improvements that digitalization delivers.



**Ulrich Spiesshofer**  
Chief Executive Officer ABB

## General session

### Winning with digital: ABB Ability™

Learn how **ABB Ability™** solutions and platform can unlock efficiency and productivity for your industry. Our industry solutions deliver ABB's proven expertise in automation, science, and IT using the latest digital technologies. With **ABB Ability™** we enable you to know more, do more, do better, and collaborate.



**Guido Jouret**  
Chief Digital Officer ABB

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LUNCH SESSION | 11:45 AM | GRAND BALLROOM, LEVEL 3 CONVENTION CENTER

### How does Industry 4.0 and digitalization drive innovation in the marketplace?

As more industry segments become digitalized, we explore how disruptive changes may affect industries not fully digitalized. Using lessons from segments ahead of the digital S-curve, we will take a look at how these insights may affect markets from food & beverage, to transportation, to utilities.



**Avijit Sinha**  
Intelligent Cloud & Internet of Things, Microsoft



**Guido Jouret**  
Chief Digital Officer, ABB

## Keynotes: Wednesday

MORNING SESSION | 8:30 AM | HALL B3, LEVEL 3 CONVENTION CENTER

### Next level operational excellence: Efficiency in automation

Who is pushing the Fourth Industrial Revolution? The market environment requires manufacturers to do more with less. Take a closer look at how the new generation of automation enables operators to accomplish complex tasks with a new standard in efficient operations.



**Jose Bustamante**  
Executive VP Business  
Development & Strategy,  
Fluor Corporation



**Ricardo Rizo Patron**  
Chairman, UNACEM  
Corporation



**Peter Terwiesch**  
President Industrial  
Automation Division, ABB

LUNCH SESSION | 11:45 AM | GRAND BALLROOM, LEVEL 3 CONVENTION CENTER

### Next level operational excellence: Benefits of digitalization

From our personal electronics to how we get our food, we all enjoy the benefits of digitalization. Industry 4.0 is also changing how we work, manage our employees and lead our companies to success. Learn the roles technology, digitalization and partnerships play in achieving operational excellence.



**Narinder Pal Singh**  
Vice President Engineering,  
OLAM International



**Tom Willever**  
Director Global Supply  
Chain, Flowserve Corp.



**Sami Atiya**  
President Robotics &  
Motion Division, ABB

# Keynotes: Thursday

MORNING SESSION | 8:30 AM | HALL B3, LEVEL 3 CONVENTION CENTER

## Future of energy: How technology, digitalization and sustainability will impact the energy industry

The world of energy continues to evolve at a fast pace. Grid innovations, big data, smarter devices, and the increasing role of sustainability are creating challenges, new competition and new opportunities for utilities. Join Claudio Facchin, President, Power Grids for ABB and Maureen A. Borkowski, Chairman and President of Ameren Transmission Company as they discuss the future of electricity, new business models and keys for success.



**Maureen Borkowski**  
Chairman and President,  
Ameren Transmission Company



**Claudio Facchin**  
President Power Grids Division,  
ABB

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LUNCH SESSION | 11:45 AM | GRAND BALLROOM, LEVEL 3 CONVENTION CENTER

## Edge of grid technologies

Innovation taking place at the edge of the grid is impacting the relationship between utilities and their customers. Renewables, electric vehicles and car sharing are only the beginning. Discover how utilities are learning and thriving in this new world.



**Rob Caldwell**  
Senior Vice President,  
Distributed Energy  
Resources, Duke Energy



**Tom Rowland-Rees**  
Lead Analyst, Energy  
Smart Technologies,  
Bloomberg New Energy  
Finance



**Tarak Mehta**  
President Electrification  
Products Division, ABB

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## Industry plenary sessions

Discussions and insights on current topics and trends affecting your industry.



**Tuesday, March 14 | 10:15 AM - 11:30 AM**

Chemical, Oil & Gas	Innovation in project execution is causing the chemical, oil and gas industry to think differently	<b>General Assembly A</b>
Food & Beverage	Leveraging digitalization to solve today's food and beverage challenges	<b>350A</b>
Infrastructure	Intelligent data needs intelligent power: Don't be left behind	<b>350B</b>
Manufacturing Industry & Process Industry	The future of industrial technology	<b>General Assembly C</b>
Power Generation	Energy is in everything that we do	<b>340B</b>
Renewables	The future of renewables: A panel discussion	<b>340A</b>
Transmission & Distribution	Microgrids for resiliency, security and energy market participation	<b>320C</b>

**Wednesday, March 15 | 10:00 AM - 11:30 AM**

Chemical, Oil & Gas	How digitalization is driving the chemical, oil and gas industry's next level of operations	<b>General Assembly A</b>
Infrastructure	Urbanization and sustainability initiatives drive innovative transportation solutions	<b>350B</b>
Power Generation	The future of power plant operations	<b>340B</b>
Manufacturing Industry & Process Industry	Improving productivity in process industries through operational effectiveness	<b>General Assembly C</b>
Renewables	Regulations that will push renewables to the next level	<b>340A</b>
Transmission & Distribution	Leveraging technology to manage risk, optimize reliability and improve operations	<b>320C</b>

**Thursday, March 16 | 10:00 AM - 11:30 AM**

Chemical, Oil & Gas	Designing for business transformation and the future of energy production	<b>General Assembly A</b>
Infrastructure	Intelligent infrastructure for smart cities	<b>350B</b>
Manufacturing Industry	U.S. Department of Energy extended product rules for pumps, fans and air compressors	<b>General Assembly C</b>
Process Industry	Moving predictive maintenance programs to the next level	<b>330A</b>
Renewables & Transmission & Distribution	Future Grid: Stronger, smarter and greener	<b>320C</b>

# Business forum

Personal and professional development, networking, market conditions and business trends

Once again the Business forum will feature a range of highly topical, business-oriented sessions. Don't miss the ABB Town Hall meeting with Ulrich Spiesshofer, CEO, ABB on Tuesday at 2:15 PM in Room 320A.

## Business trends and professional development track | Room 320A

### Monday, March 13

1:00 PM	Emotional intelligence: People smarts for technical professionals
2:15 PM	Today's sustainability: More than good corporate citizenship
3:30 PM	Driving culture to embrace Big Data and Smart Mobility at Ford

### Tuesday, March 14

1:00 PM	Navigating through turbulent waters: Growing the electricity (and other) business in uncertain times
2:15 PM	Town Hall with ABB CEO Ulrich Spiesshofer
3:30 PM	Strategic partnering and collaboration: An executive discussion

### Wednesday, March 15

10:00 AM	Tech talk: A CTO roundtable
1:00 PM	U.S. and global economic outlook for manufacturers
2:15 PM	You're not moving SLOW enough: The unexpected formula for lasting impact
3:30 PM	Do you speak millennial? Understanding, motivating and retaining younger workers

### Thursday, March 16

1:00 PM	How to influence senior managers with value orientation
2:15 PM	Creativity and Innovation: Getting your team to see there was never any box to think outside of
3:30 PM	Creative problem solving and ideation: Using the creative process to find innovative solutions

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**Cyber security track | Room 320C**
**Monday, March 13**

1:00 PM	Making the case for cyber security investment
2:15 PM	Secure deployment in the Industrial Internet of Things
3:30 PM	Cyber security: Strategy for electricity distribution management system and security considerations

**Tuesday, March 14**

1:00 PM	ABB Cyber Security Service: Services to improve and maintain your assets' resilience and reliability
3:30 PM	Solving the challenge of control system cyber security maintenance

**Wednesday, March 15**

1:00 PM	Audit ready for NERC version 6?
2:15 PM	Cyber security: The present state and where the future will lead
3:30 PM	Ukraine: Anatomy of a cyber-directed power outage

**Thursday, March 16**

1:00 PM	Cyber security in the supply chain
2:15 PM	Developing a workforce to master cyber security challenges
3:30 PM	Putting your data in the cloud: A risky dream or just dreamed up risks?

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**Effective project management track | Room 330B**
**Monday, March 13**

1:00 PM	Top 10 change management tips to boost project success
2:15 PM	Thoughts from Albert Einstein still apply today
3:30 PM	Stop and think!: Strategies for critical thinking in a business environment

**Tuesday, March 14**

1:00 PM	Theory vs. reality: A collision in project management
2:15 PM	Critical success factors vs. risk
3:30 PM	The Zone of Confusion: Managing ambiguity in projects

**Wednesday, March 15**

1:00 PM	A technical genius my grandfather: Humor in project management
2:15 PM	Earned Value: A hated necessity
3:30 PM	Harvesting the benefits of an EICT contractor in oil and gas project execution

**Thursday, March 16**

1:00 PM	UX design: The next project management dilemma
2:15 PM	Product Breakdown Structure: Breaking down this underutilized tool
3:30 PM	Managing risks through team collaboration and effective project management

**Peer-to-Peer Discussions | Room 350C**

No slides, no formal presentations – the Peer-to-Peer Discussions track offers a place for open dialog among attendees to share experiences, ask questions and talk about concerns or trends around a specific topic. Moderators will be on hand to help keep the conversation flowing, but attendee participation will set the tone and direction for these discussions.

**Monday, March 13**

2:15 PM	Millennial panel discussion
3:30 PM	Is your utility ready for wireless network hypergrowth?

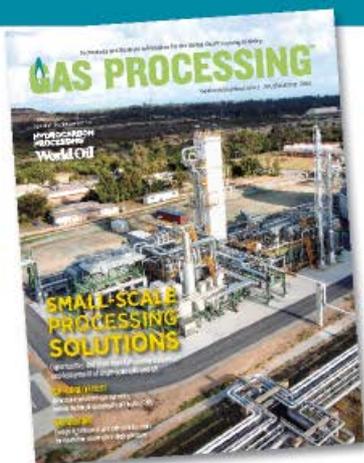
**Tuesday, March 14**

1:00 PM	Big data: What can I do with all this information?
2:15 PM	Keep the power flowing: Engage with your electrical peers from the chemical, oil and gas industry

**Wednesday, March 15**

1:00 PM	Automation in the chemical, oil and gas industry: Sharing insights and experiences
2:15 PM	Managing telecommunications challenges in the chemical, oil and gas industry
3:30 PM	Asset health: How do you get started with smart asset management?

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*Gas Processing* has been providing high-quality technical information and trends to the gas processing industry since 2013. It is published by Gulf Publishing Company, the leading provider of information to the oil and gas industry since 1916 and publisher of *Hydrocarbon Processing*, *World Oil*, and *Petroleum Economist*.

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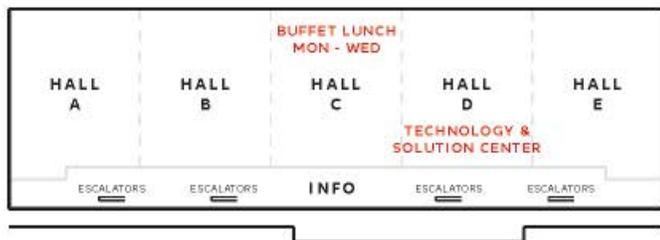
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- Methanol production technologies
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- Unconventional gas processing
- Small-scale gas processing



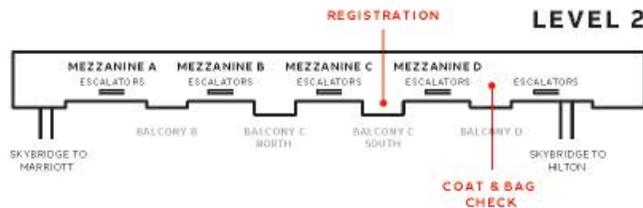
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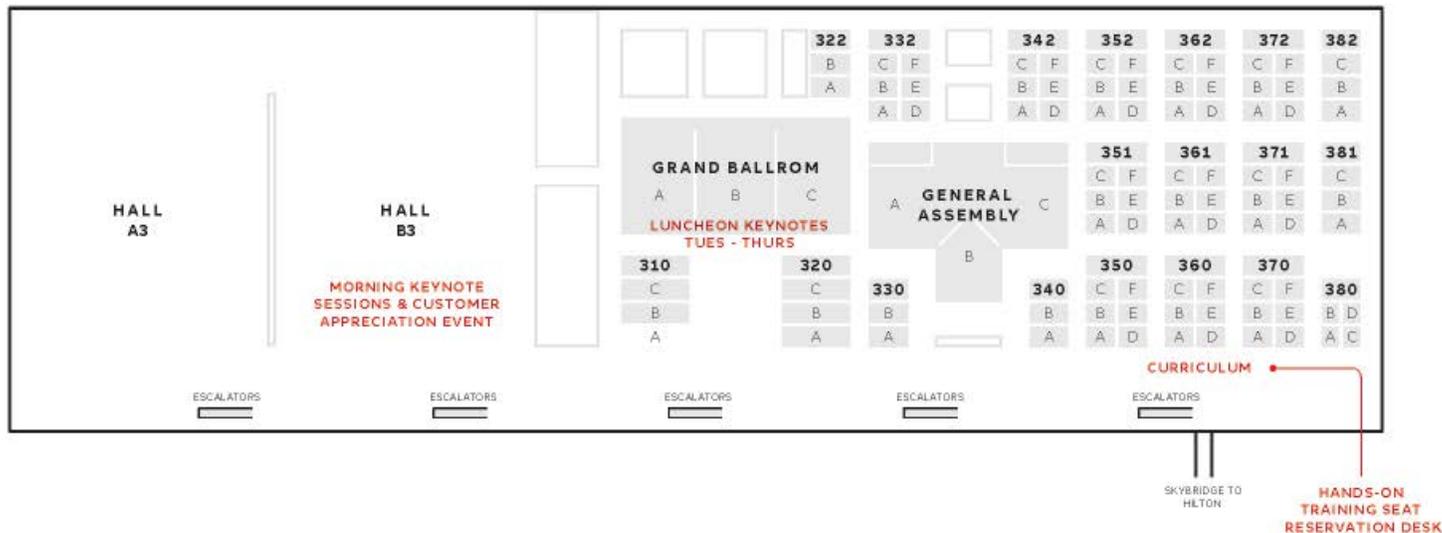
## LEVEL 1



## LEVEL 2



## LEVEL 3

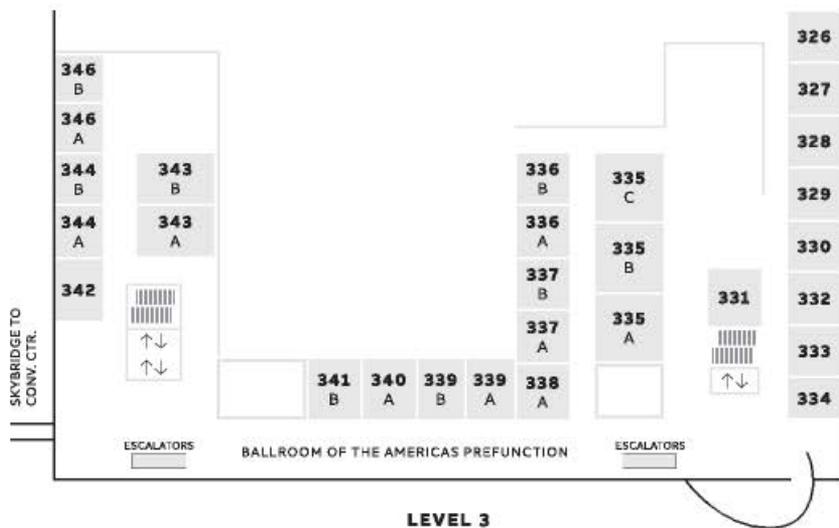
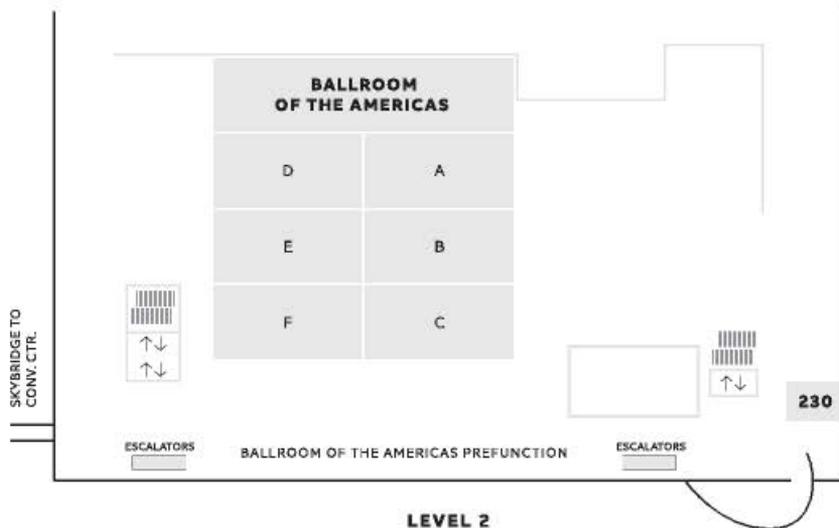


# Key event locations

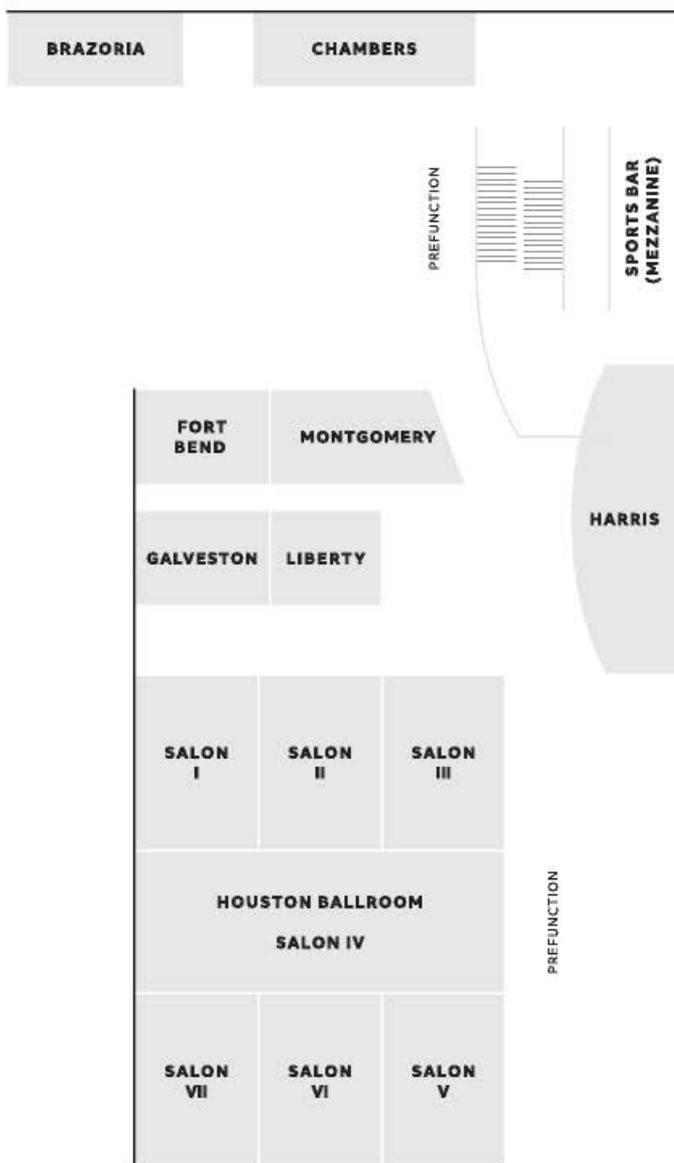
All event meals, workshops and the Technology & Solution Center are located in the George R. Brown Convention Center.

<b>Breakfast – grab and go</b>	<b>Concourse, Level 3</b>
<b>Business forums</b>	
Business trends and professional development	320A – Level 3
Effective project management	330B – Level 3
Cyber Security	320C – Level 3
Peer-to-Peer Discussions	350C – Level 3
<b>Coat and baggage check</b>	<b>Balcony D – Level 2</b>
<b>Customer appreciation event (Wednesday)</b>	<b>Hall B3 – Level 3</b>
<b>Curriculum rooms</b>	<b>Level 3</b>
<b>Distributor program (Monday)</b>	<b>Grand Ballroom – Level 3</b>
<b>Hands-on training seat reservation desk</b>	<b>Outside room 370A – Level 3</b>
<b>Information desk</b>	<b>Registration area – Level 2</b>
Technology & Solution Center concierge desk	Level 1
<b>Keynote morning sessions</b>	<b>Hall B3 – Level 3</b>
<b>Lost and found</b>	<b>Registration area – Level 2</b>
<b>Lunch service</b>	
Luncheon Keynote session (Tuesday–Thursday)	Grand Ballroom – Level 3
Buffet (Monday–Wednesday)	Hall C – Level 1
<b>Medic stations</b>	<b>Concourse E – Level 1 and Level 3</b>
<b>Parking garages</b>	<b>Level 2</b>
<b>Recharge stations</b>	
<b>ABB Ability™ Zone</b>	Hall D – Level 1
Service Mega Booth	Hall D – Level 1
Electrification Products Mega Booth	Hall D – Level 1
Recharge Zone	Concourse E – Level 2
<b>Registration desk</b>	<b>Balcony C South – Level 2</b>
<b>Technology &amp; Solution Center</b>	<b>Hall D – Level 1</b>

## HILTON AMERICAS HOTEL



## MARRIOTT HOTEL



## LEVEL 2

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# Technology & Solution Center

The Technology & Solution Center is a showcase of ABB's products, systems and solutions, but it also offers the opportunity to connect with ABB experts and fellow attendees.

At the center of the Technology & Solution Center, you'll find ABB Ability™, our digital solutions platform that can unlock efficiency and productivity for your industry. This is where IT meets OT and domain expertise is married to advanced digital tools. Be sure to stop by for a look at how **ABB Ability™** enables you to know more, do more, do better and collaborate.

The show floor is organized in a ring design with our utility offerings to the left as you enter via the tunnel, and our solutions for industry and infrastructure on the right. Within these broad categories, the exhibits are arranged into several groups.

These exhibits offer you the chance to see our products, systems and solutions up close and talk specifics with ABB experts.

## **Collaborative Operations**

The Collaborative Operations center showcases one of ABB's leading digital solutions. With a focus on getting actionable information into the right hands, Collaborative Operations helps prevent problems and predict them before they occur. Stop by this booth for live-action demonstrations on how ABB brings together people, operations and information to optimize reliability and profitability.

## **Control centers**

The control centers showcase the products and services at the heart of every power or industrial plant. Here you can learn about ABB's distributed control systems. The industrial control center features the new Select I/O Ethernet-based single channel I/O solution for control, the Extended Operator Workplace for visualization, process safety and integrated electrical control and monitoring, and control room design.

The utility control center and enterprise solutions center includes our generation (Symphony Plus total plant automation and Cyber Security Workplace fleet wide security solutions), transmission (Digital Substation, DER and energy portfolio management), and distribution level solutions (operations control, outage and asset management).

## **Solutions for utilities:**

- Generation
- Transmission
- Distribution
- Service

## **Solutions for industry & infrastructure:**

- Facility electrification
- Mechanical, motion & machines
- Process automation, measurement & control
- Service

### Industry zones

Inside the outermost ring are special Industry zones, smaller booths focused on ABB's work in several key industrial sectors. These booths include new products, demonstrations and special interactive exhibits, as well as dedicated sector-specific staff.

- **Chemical, oil & gas** – Take a virtual tour of an oil refinery, get a look at the subsea station of the future, learn about ABB's approach to the next level of project execution, learn about ABB's approach to the next level of project execution and see how digital technologies bring people and products together to improve operations.
- **Manufacturing** – Learn about collaborative robotics and how ABB is applying the Internet of Things to advanced manufacturing.
- **Mining** – See ABB's integrated systems for electrification, automation and digital applications covering all areas of mining.
- **Food & beverage** – Test your skill against a packaging robot to see who can pack the most chocolate; also get a look at our latest wash-down products.
- **Data center** – Explore ABB's intelligent, reliable and efficient power and automation technology for mission critical applications.
- **Water & wastewater** – Check out Symphony Plus, ABB's control system for water networks, along with demos of Ellipse Asset Management and a first look at our new submersible motor.
- **E-mobility** – Get the latest in transportation electrification for rail, e-bus and e-car applications.
- **Grid innovation** – The grid of the future is here today. Experience a microgrid demonstration, and find out about ABB's new EMAX circuit breaker.

If you work in any of these vertical markets, be sure to stop by the relevant Industry Zone for more information, including recommended conference sessions for your industry.

### Don't miss...

In addition to the exhibits above, we've set aside a special Innovation lab where you can learn what's going on in research and development at ABB. Here, you can get a look at current projects ranging from advanced materials to power generation to process control. Test your drone piloting skills underwater with our STIR (submersible transformer inspection robot) demonstration. Our R&D staff will be on hand to talk about the exhibits and other projects currently under way at ABB's Corporate Research Center.

Private, confidential meetings with ABB researchers are also available – stop by the Innovation lab to arrange a meeting.



# New product spotlight

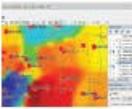
PRODUCT	ABOUT	EXHIBIT HALL LOCATION	
<b>ABB Cognisense Motors</b>	Can you really have more uptime, less energy costs and information about your motor's performance? With ABB Cognisense Motors you can.	Service	
<b>CMS-700 Circuit Monitoring System with open core and closed core sensors</b>	You can't improve what you can't measure. We measure and make it available to you for improvements. Anywhere.	Facility electrification	
<b>ABB Ability™ Electrical Distribution Control System</b>	The new energy and asset management solution for the low-voltage power distribution systems.	Process automation, measurement & control	
<b>ABB Decathlon for Data Centers 6.0.1</b>	Added integrations, more functionality and flexibility with ABB Decathlon® for Data Centers 6.0.1.	Data Center industry zone	
<b>ABB Jokab Safety Sentry Safety Relay</b>	The ABB Jokab Sentry safety relays are powerful and easy to use safety relays, suitable for all common types of safety applications.	Industry/ Infrastructure - Control Center	
<b>ADMS Analytics - intelligence for distribution utilities</b>	ABB ADMS Analytics provides utilities critical info for making key operational decisions during planned/unplanned outages & major storms.	Utility Control Center and Enterprise Solutions	
<b>AssetInsight</b>	AssetInsight saves time to action for decision makers by making real-time condition data from the equipment easily available in the browser.	Oil & Gas Industry zone	
<b>Asset Health Center</b>	ABB's Asset Health Center: User-extensible prescriptive analytics w/ ABB expertise for risk-based maintenance & investment prioritization.	Utility Control Center, Enterprise Solutions, Digital Substation	

<b>Baldor-Reliance RPM XE</b>	Using hybrid technology, the new RPM XE platform achieves efficiency performance 2 to 4 bands above . NEMA premium efficiency	Mechanical, motion & machines	
<b>Conceptpower DPA 120 UL UPS - Modular</b>	The module sets of the Conceptpower DPA UPS offer full scalability. Learn how they work.	Facility electrification	
<b>CP-C.1 Power Supplies</b>	Check out ABB's new high performance Power Supply, CP-C.1 at #ABBCW! Excellent efficiency, high reliability and innovative functionality.	Facility electrification	
<b>DBL Distribution Blocks</b>	DBL Distribution Blocks: 3 Configurations in 1 product. Designed and Manufactured by ABB.	Facility electrification	
<b>Dodge Raptor Elastomeric Coupling</b>	The Dodge Raptor is an easy to assemble coupling, featuring a patented split natural rubber element which significantly decreases total costs and extends driven equipment life.	Mechanical, motion & machines	
<b>EC Gold Series</b>	Baldor-Reliance EC Gold Series synchronous permanent magnet motors designed for simpler installations and retrofits.	Mechanical, motion & machines	
<b>Eco-efficient high-voltage GIS - GLK 14, 170 kV</b>	Eco-efficient GIS as alternative to SF6 substantially lowers environmental impact.	Transmission	
<b>Ellipse Select 8.8 Enterprise Asset Management &amp; ERP Software Solution</b>	ABB's Ellipse Select EAM & ERP: Packaged solution. Pre-configured industry-specific best practices & content. Proven value in 90 days.	Utility Control Center, Enterprise Solutions	

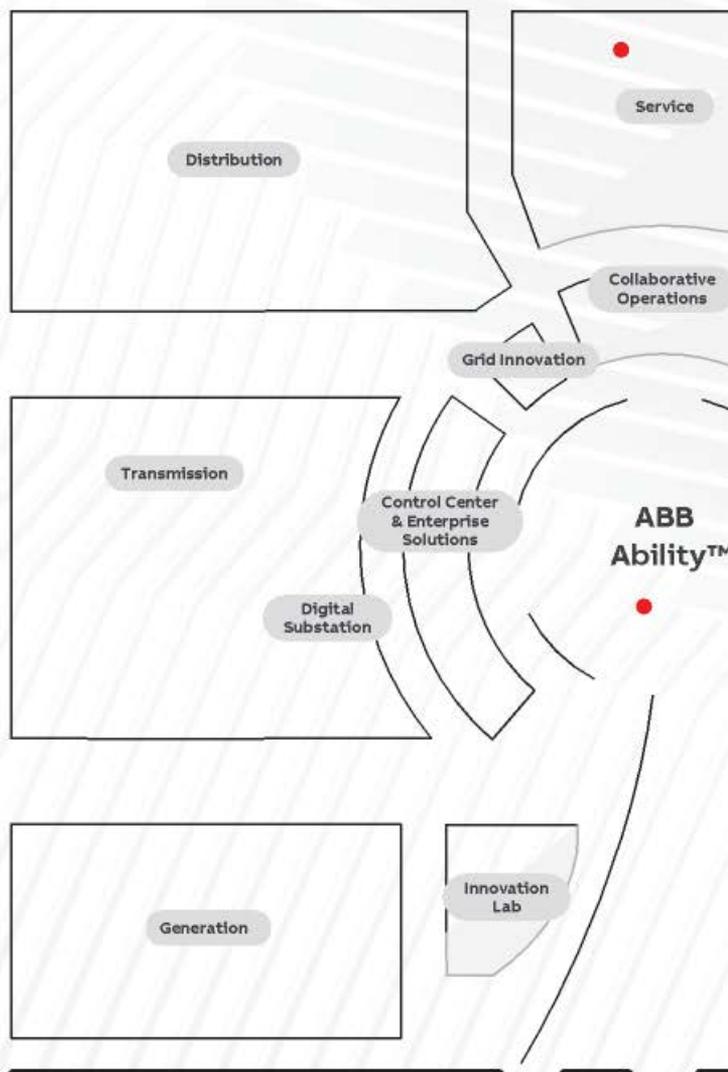
PRODUCT	ABOUT	EXHIBIT HALL LOCATION	
<b>Emax 2 all-in-one innovation with Embedded ATS system</b>	The new Emax 2 Embedded ATS, a high-performance energy automation system, easy to install and program.	Process automation, measurement & control	
<b>e7 Platform</b>	ABB's e7 platform: integrated common UI to manage short/long-term planning and capital investments for markets & portfolio management.	Utility Control Center and Enterprise Solutions	
<b>nMarket</b>	ABB's nMarket software on Azure improves trading & operations for MISO & SPP. Automation= speed. Cloud-synced reporting from ISOs=>agility.	Utility Control Center, Enterprise Solutions	
<b>Fault current limiter</b>	Arc fault protection solutions can reduce injuries & costly damages, designed to detect internal arcs in 1.5ms and eliminate in 4ms or less	Facility Electrification	
<b>HDS Servo</b>	HDS Servo motors feature advanced winding designs for greater position, speed and efficiency in an economical package.	Mechanical, motion & machines	
<b>HEC 10-170 Generator Circuit Breaker</b>	Come see the HEC 10-170 GCB rated up to 31.5 kV - 170 kA - 29,000 A! Equipped with Passive Cooling, minimal SF6 gas and Health Monitoring.	Generation	
<b>Gas-insulated switchgear</b>	MV gas-insulated switchgear recently received ETL listing, showing that all procedures for design and test are according to IEEE C37.122.2	Facility Electrification	
<b>High Voltage Switchgear Module for Asset Health End-to-End Solution</b>	Maximize Operational Excellence with High Voltage's Switchgear Module for Asset Health End to End Solution.	Transmission	
<b>LLT100 laser level measurement</b>	Lasers for level measurement: Now everything is possible.	Process automation, measurement & control	

<b>Magnetostrictive level transmitters - LMT Series</b>	ABB's K-TEK Level products introduces the next generation magnetostrictive level transmitter to Make Measurement Easy for customers.	Process automation, measurement & control	
<b>Medium voltage instrument transformers</b>	The VOG-15R is a lightweight, transient resistant voltage transformer for line-to-ground metering and recloser applications up to 150 kV BIL.	Distribution	
<b>MobileGuard - Natural gas leak detection system ensures pipeline integrity and public safety</b>	ABB's new MobileGuard™ natural gas leak detection system shares real-time data via the Cloud to ensure pipeline integrity and public safety. It can be mounted in a car, ATV, aircraft or large drone.	Process automation, measurement & control	
<b>OPT800 Pulp Mill Optimization Solutions</b>	OPT800 advanced process control for pulp mill operations lead to 60% improvement in quality and up to 10 % reduction in energy consumption.	Process automation, measurement & control	
<b>Pre-configured RTU520</b>	Parameter change in 2 minutes with the new RTU520 engineering approach.	Distribution	
<b>Process Power Simulator</b>	Process Power Simulator allows for testing of and training on electrical control system with Process Power Manager.	Process automation, measurement & control	
<b>ReliaGear LV Switchgear - Low Voltage Drawout Switchgear with Emax 2 Circuit Breakers</b>	ReliaGear LV Switchgear with Emax 2 breaker—The reliable switchgear for power management.	Facility electrification	
<b>ReliaGear SafeT Panelboard</b>	The new ReliaGear SafeT Panelboard: A smarter, smaller, safer, more reliable solution for your low voltage power distribution applications.	Solutions for Industry/ Infrastructure - Facility Electrification	
<b>SENTRICITY Load Centers and Circuit Breakers</b>	Designed with and for contractors, introducing the new SENTRICITY Load Center and Circuit Breaker solution - Faster. Easier. Safer. Better.	Facility electrification	

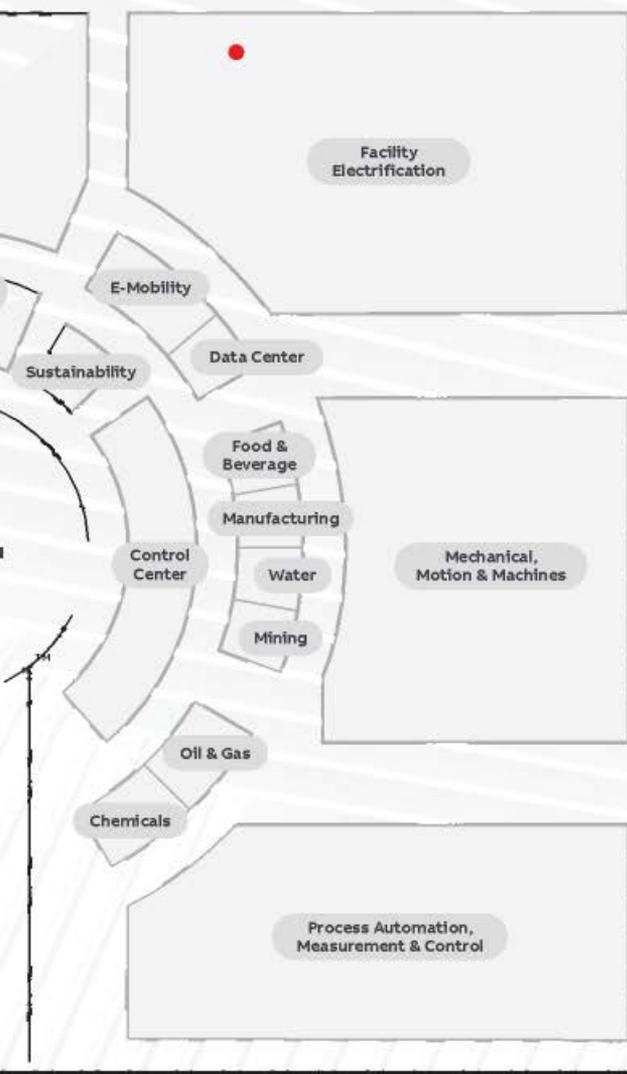
PRODUCT	ABOUT	EXHIBIT HALL LOCATION	
<b>SuprOS 8.5 communication network management system boosts operational effectiveness and efficiency</b>	SuprOS 8.5 increases operational effectiveness and efficiency by managing entire field communication networks from one pane of glass.	Distribution Process automation, measurement & control, Utility Enterprise Solutions	
<b>Symphony Plus Engineering - Device Management 1.0</b>	S+ Device Management 1.0 provides automated support for fieldbus management and includes a web-view for alerts and high priority conditions	Utilities Control Center	
<b>System 800xA Select I/O single channel I/O</b>	System 800xA Select I/O single channel ethernet I/O solutions with xStream Engineering tools. The Future of Project Execution.	<b>Industry/ Infrastructure - Control Center</b>	
<b>T&amp;B Liquidtight Systems</b>	T&B now provides a complete liquidtight conduit & fitting solution with unique ratings for ingress protection to ensure superior performance.	Facility electrification	
<b>TG Combi 362 345kV SF6 Combined Metering Unit</b>	TG Combi 362 SF6 345kV Combined Metering Unit for high accuracy use on critical grid connections.	Transmission	
<b>TXpert Distribution Transformer</b>	ABB's TXpert™ distribution transformer with integrated sensing technology allows effective utilization of transformer and grid.	Distribution	
<b>Ty-Fast Ag+ bacteria-resistant cable ties</b>	Ty-Fast® Ag+™ bacteria-resistant cable ties - A breakthrough safety solution for fastening in bacteria-prone areas	Facility electrification	
<b>Type O plus dry bushings</b>	O Plus Dry bushing technology – no oil, no porcelain, no paper, no problems!	Transmission	

<b>VFD assistant control panel w/ Bluetooth and Drivetune app</b>	Improve productivity by enhancing connectivity. ABB drives get safer, smarter and more mobile with a Bluetooth control pad and Drivetune app	Mechanical, motion & machines	
<b>WirelessHART TTH300 Transmitter &amp; TSP300-W Energy Harvester, the 1st autonomous temperature sensor.</b>	Welcome to the world of truly autonomous temperature measurement with greater flexibility, increasing performance, safety & efficiency.	Process automation, measurement & control	
<b>xSPT: Small Power Transformer – High Efficiency Upgrade of a Proven Technology</b>	Small Power Transformers up to 69kV by upgrading a proven technology.	Transmission	
<b>Velocity Suite</b>	ABB's Velocity Suite software on Microsoft Azure: Cloud-based mission-critical market intelligence delivered within analytics package.	Utility Control Center and Enterprise Solutions	

# Floor plan



HALL D, LEVEL 1



 Solutions for Utilities

 Solutions for Industry & Infrastructure

 Recharge zones

**The Hill is the most followed  
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- Quorum Analytics, September 2016

**The Hill has become the only  
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- Digiday, August 2016

**As digital traffic grows,  
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- USA Today, February 2016

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# Educational curriculum

ABB Customer World is a premier educational event with over 400 workshops offered. Topics range from detailed hands-on training to industry trends/solutions to non-technical professional skills building. Workshop formats include presentations, case studies, panel discussions, peer-to-peer discussions and hands-on technical training. For most workshops there is no pre-registration requirement and seating is available on a first-come, first-served basis. The exception is for the hand-on technical training because class sizes are limited by the amount of equipment available for lab exercises. Find complete curriculum details and additional information beginning on the following page.

## Hands-on training seat reservations

In order to make the best use of your time, we have established a seat reservation system for hands-on technical training courses. You can reserve a seat in any hands-on course starting at 7:30 AM on the day of the workshop. The hands-on training seat reservation desk is open from 7:30 AM to 4:00 PM each day and is located adjacent to Room 370A on Level 3 of the convention center.

## Obtaining copies of presentations, transcripts of completion and CEU certificates

Presentations that have been released for distribution by the presenter are available online now. Log on to the event portal or app and download electronic copies.

In order to confirm your attendance at classes, your badge will automatically be scanned when you arrive at workshop classrooms. At the conclusion of ABB Customer World, you can download and print a “transcript of completion” for any workshops that you attended. You must attend a workshop in its entirety in order to receive credit.

A number of IACET-accredited CEU workshops are being offered at the event. Attendees who pass the quiz given at the end of the course will be mailed their CEU certificate after the event.

## Workshop evaluations

The quality of the workshops and speakers is important. We ask that you complete a simple web-based workshop evaluation for each workshop that you attended. You will receive messages on the event portal and app when you have evaluations to complete. Click on the “Surveys” icon to complete the surveys. Ten winners will be randomly chosen each day from all of the completed surveys. Gift cards in the amount of \$25 will be mailed to winners based on the address information provided at registration.

## DAILY SCHEDULE BY TIME

**Monday** | March 13**1:00 PM–2:00 PM**

Course	Room	Session Title
50001	340B	Connected services: An improved way to manage and monitor your ABB robots
50101	340A	Using DCS data to speed up a kraft paper machine's Fourdrinier drive system
50201	330A	Rethinking the role of process control
50301	360A	Simple and retrofitable arc flash mitigation for LV equipment
50401	360B	Considerations, risks and benefits of replacing an aging motor fleet for chemical, oil and gas
50501	350A	The next generation data center: Automated, hyperscale and secure
50601	350B	Enabling innovation for future-proof smart buildings
50701	350D	Life extend HV substations or power plants on a dime: How to maximize asset lifespan and reliability
50801	350E	Smart inverters for reliability and transactive energy
50901	350F	Practical considerations when working with IEC 61850 GOOSE multivendor projects
51001	361A	Compact substations for substation security
40001	320A	Emotional intelligence: People smarts for technical professionals
40101	320C	Making the case for cyber security investment
40201	330B	Top 10 change management tips to boost project success
70001	370A	Design, implement and test redundant network in substations and utilities <b>2 HOURS   HANDS ON</b>
70101	370B	ACS380 AC drive configuration: Hands-on experience <b>2 HOURS   HANDS ON</b>
70201	370C	ACS880 AC drive configuration: Hands-on experience <b>2 HOURS   HANDS ON</b>
70301	370D	ABB control panel solutions <b>HANDS ON   CEU</b>
70401	370E	Compact HMI: Introduction to programming of Compact HMI SCADA <b>HANDS ON</b>
70501	370F	Flow measurement primer: Theory, selection and operation <b>3 HOURS   HANDS ON</b>
70601	371A	ADVAC models 2, 3 and 4: What's the difference? <b>HANDS ON</b>
70801	371E	S+ Operations: Hands-on Interactive Technical Training, part 1 <b>HANDS ON</b>
70901	371D	System 800xA Control Builder engineering tool: Hands-on Interactive Technical Training, part 1 <b>HANDS ON</b>
71001	371C	Introduction to ABB Wireless <b>2 HOURS   HANDS ON</b>
60001	360D	Disruptive innovations in medium voltage products
60101	360F	Introduction to the new high accuracy LMT series magnetostrictive transmitters
60201	360E	Innovative solutions for air insulated substations
60301	361E	Arc flash classification and mitigation in large medium voltage, adjustable speed drives

**2:15 PM–3:15 PM**

Course	Room	Session Title
50002	340B	Extending the life of critical drive assets: A greener alternative to rip and replace
50102	340A	A phased approach to implementing alarm management
50202	330A	Managing major automation projects to drive business value
50302	360A	The silo factor: Why tackling process safety management silos is key to averting catastrophe
50502	350A	Data center automation for improved capacity forecasting and performance
50602	350B	Wastewater treatment controls evolution: A multi-step program for the City of San Jose
50702	350D	How to extend the life of your switchgear
50802	350E	Collector substations for renewables: Design considerations and project execution
50902	350F	Challenges and opportunities in power and energy systems education
51002	361A	Security and innovations in substation automation: Stop trading one for the other!
51101	360C	Expanding into the future: GM Shrum Station service rehabilitation
40002	320A	Today's sustainability: More than good corporate citizenship
40102	320C	Secure deployment in the Industrial Internet of Things
40202	330B	Thoughts from Albert Einstein still apply today
40301	350C	Millennial panel discussion
70302	370D	Corrosion solutions <b>HANDS ON   CEU</b>
70602	371A	ADVAC and AMVAC advanced medium voltage vacuum circuit breaker: Operation, maintenance, applications <b>2 HOURS   HANDS ON</b>
70802	371E	S+ Operations: Hands-on Interactive Technical Training, part 2 <b>HANDS ON</b>
70902	371D	System 800xA Control Builder engineering tool: Hands-on Interactive Technical Training, part 2 <b>HANDS ON</b>
60002	360D	Advances in monitoring, diagnostics of distribution system assets: Leveraging the Internet of Things
60102	360F	Improving operator performance through smart control room design
60202	360E	The energy cloud: Platforms for growth across the distribution grid
60302	361E	Data use and compliance in FDA-regulated food and beverage environments

**3:30 PM–4:30 PM**

Course	Room	Session Title
50003	340B	Parts Fingerprint: How to maximize uptime and minimize your system life cycle investment
50103	340A	Single loop control methods
50203	330A	Virtualized control system architectures deliver improved business performance at NOVA Chemicals
50303	360A	Zone protection in adjustable speed drive systems
50403	360B	ABB Ability and digitalization in underground mining
50503	350A	Dynamic cooling management for mission critical facilities
50603	350B	Saving a Unesco wonder: Symphony Plus for the MoSE flood barrier in Venice
50703	350D	Transformer oil: Caring for the lifeblood of your assets
50803	350E	Lessons learned from the Mount Holly microgrid at Duke Energy
50903	350F	Fast transient resistant instrument voltage transformer for power distribution network applications

51003	<b>361A</b>	Reducing system losses and implementing self-healing to minimize impact of faults in networks
51102	<b>360C</b>	Modern flame scanners and applications: A fresh look at this new scanner technology
40003	<b>320A</b>	Driving culture to embrace Big Data and Smart Mobility at Ford
40103	<b>320C</b>	Cyber security: Strategy for electricity distribution management system and security considerations
40203	<b>330B</b>	Stop and think!: Strategies for critical thinking in a business environment
40302	<b>350C</b>	Is your utility ready for wireless network hypergrowth?
70002	<b>370A</b>	System reliability advancements achieved through modern DFR evaluation tools <b>HANDS ON</b>
70102	<b>370B</b>	Drive-to-drive communications - fiber: Hands-on experience <b>HANDS ON</b>
70303	<b>370D</b>	Arc flash solutions <b>HANDS ON</b>
70402	<b>370E</b>	Freelance 2016: Introduction to programming a Freelance 2016 DCS <b>HANDS ON</b>
70803	<b>371E</b>	S+ Alarm Manager: Hands-on Interactive Technical Training <b>HANDS ON</b>
71002	<b>371C</b>	Introduction to narrowband point-to-multipoint and point-to-point products from ABB Wireless <b>HANDS ON</b>
60003	<b>360D</b>	Scalable power monitoring system for medium voltage and low voltage distribution
60103	<b>360F</b>	Innovative OEM applications utilize open and flexible design of ABB's Compact Product Suite
60203	<b>360E</b>	ABB's Smart Transformer: The first monitoring solution for distribution class transformers
60303	<b>361E</b>	Elastomeric tire coupling innovation: Maximizing driven equipment life and increasing reliability

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For additional questions, please contact [tara.tonsetti@penton.com](mailto:tara.tonsetti@penton.com).

## DAILY SCHEDULE BY TIME

**Tuesday** | March 14**10:15 AM–11:30 AM**

Course	Room	Session Title
70003	370A	Optimizing SCADA networks with IEC 61850 MMS <b>HANDS ON</b>
70103	370B	ACS380 AC drive configuration: Hands-on experience, part 1 <b>HANDS ON</b>
70202	370C	ABB drives and RSLogix 5000 controllers - Ethernet, part 1 <b>HANDS ON</b>
70304	370D	Grounding/bonding solutions <b>HANDS ON   CEU</b>
70403	370E	Compact HMI: Introduction to programming of Compact HMI SCADA <b>HANDS ON</b>
70502	370F	Valve positioner calibration: Optimize your valve control <b>HANDS ON</b>
70603	371A	ABB low voltage Emax 2 circuit breaker: Modular technology replacement for the SACE Emax breaker <b>HANDS ON</b>
70903	371D	System 800xA Process Portal A HMI: Hands-on Interactive Technical Training, part 1 <b>HANDS ON</b>
71003	371C	Advanced configuration of TropOS broadband mesh routers from ABB Wireless <b>HANDS ON</b>
30001	General Assembly A	Innovation in project execution is causing the chemical, oil and gas industry to think differently
30101	350A	Leveraging digitalization to solve today's food and beverage challenges
30201	350B	Intelligent data needs intelligent power: Don't be left behind
30301	General Assembly C	The future of industrial technology
30401	340B	Energy is in everything that we do
30501	General Assembly C	The future of industrial technology
30601	340A	The future of renewables: A panel discussion
30701	320C	Microgrids for resiliency, security and energy market participation

**1:00 PM–2:00 PM**

Course	Room	Session Title
50004	340B	Achieving production standards through CPM
50104	340A	Life cycle dynamic simulation for 800xA: It's more than OTS
50204	330A	Using gearless technology to improve reliability in process cooling
50404	360B	Lump-sum, turnkey project partnering approach to reduce overall project cost
50504	350A	The industrialization of the data center: What you need to know
50604	350B	The electric vehicle market: Growing, charging and driving faster
50704	350D	Transformer performance models: An in-depth look into ABB's asset health management
50804	350E	Power systems integration for high penetration renewables
50904	350F	Automation markets for electric power
51004	361A	Preventing long-term outages due to loss of power transformers

51103	360C	FERC Order 1000: Tame the beast
40004	320A	Navigating through turbulent waters: Growing the electricity (and other) business in uncertain times
40104	320C	ABB Cyber Security Service: Services to improve and maintain your assets' resilience and reliability <b>2 HOURS</b>
40204	330B	Theory vs. reality: A collision in project management
40303	350C	Big data: What can I do with all this information?
70004	370A	Relion technology builds cost effective schemes to improve safety and efficiency of operations <b>2 HOURS   HANDS ON</b>
70104	370B	ACS380 AC drive configuration: Hands-on experience, part 2 <b>HANDS ON</b>
70203	370C	ABB drives and RSLogix 5000 controllers - Ethernet, part 2 <b>HANDS ON</b>
70305	370D	ABB control panel solutions <b>HANDS ON   CEU</b>
70404	370E	Freelance 2016: Introduction to programming a Freelance 2016 DCS <b>HANDS ON</b>
70503	370F	Level measurement primer: Theory, selection and operation <b>3 HOURS   HANDS ON</b>
70604	371A	ADVAC and AMVAC advanced medium voltage vacuum circuit breaker: Operation, maintenance, applications <b>2 HOURS   HANDS ON</b>
70804	371E	Symphony Plus Security Workplace: Hands-on Interactive Technical Training <b>HANDS ON</b>
70904	371D	System 800xA Process Portal A HMI: Hands-on Interactive Technical Training, part 2 <b>HANDS ON</b>
71004	371C	Introduction to ABB Wireless <b>2 HOURS   HANDS ON</b>
60004	360D	Selection criteria for miniature circuit breakers
60104	360F	Take the drama out of your next project with System 800xA's new Select I/O
60204	360E	FOCS: Improved measurement performance for digital substations
60304	361E	Virtual commissioning for flexible manufacturing systems

**2:15 PM-3:15 PM**

Course	Room	Session Title
50005	340B	Life cycle strategies for your automation system: FirstEnergy case study
50105	340A	Outperform your peers by leveraging the 'dark data' hidden in your control system
50205	330A	Use of vendor-standard designs to simplify power distribution equipment engineering and procurement
50305	360A	New requirements on management of competency after changes on IEC 61511 edition 2 and ISA84
50405	360B	System 800xA providing operations and management benefits to radioactive waste management facility
50505	350A	Internet of Things optimizes data center power system designs
50605	350B	EV charging in the real world: Infrastructure best practices
50705	350D	Innovative HV service solutions for planned preventive maintenance
50805	350E	Distributed energy resources: Seizing opportunities while managing distribution grid impacts
50905	350F	Reach for the skies: Critical substation refurbishment in multi-vendor IEC 61850 automation systems

51005	<b>361A</b>	Adaptable transformers: Optimizing investment and simplifying logistics <b>CEU</b>
51104	<b>360C</b>	Implementing a world-class alarm management strategy: A guide to applying ISA 18.2 to your DCS
40005	<b>320A</b>	Town hall with ABB CEO Ulrich Spiesshofer
40205	<b>330B</b>	Critical success factors vs. risk
40304	<b>350C</b>	Keep the power flowing: Engage with your electrical peers from the chemical, oil and gas industry
70105	<b>370B</b>	IEC 61131-3 programming: Hands-on experience <b>2 HOURS   HANDS ON</b>
70204	<b>370C</b>	Drive/PLC connectivity, 'basic' interface: Hands-on experience <b>2 HOURS   HANDS ON</b>
70306	<b>370D</b>	Corrosion solutions <b>HANDS ON   CEU</b>
70405	<b>370E</b>	Panel Builder 800: Programming basics for Process Panel Version 6 <b>HANDS ON</b>
70805	<b>371E</b>	S+ hardware: Hands-on Interactive Technical Training, part 1 <b>HANDS ON</b>
70905	<b>371D</b>	System 800xA cyber security: Hands-on Interactive Technical Training, part 1 <b>HANDS ON</b>
60005	<b>360D</b>	Complete medium and low voltage electrical distribution line for North America
60105	<b>360F</b>	New System 800xA xStream Engineering approach for Ethernet-based single channel Select I/O
60205	<b>360E</b>	New dry-type transformer technologies: The safest transformation now for sub-transmission
60305	<b>361E</b>	Condition monitoring of low voltage motors through the Internet of Things

**3:30 PM-4:30 PM**

<b>Course</b>	<b>Room</b>	<b>Session Title</b>
50006	<b>340B</b>	Wireless condition monitoring: Shedding visibility into the operations of a chemicals manufacturer
50106	<b>340A</b>	Engineering an ABB solution: Covestro's journey from manual to automated
50206	<b>330A</b>	Asset health: End-to-end solutions from a single sensor to comprehensive enterprise solutions
50306	<b>360A</b>	Integrated process control and safety: Achieving both integration and functional independence
50406	<b>360B</b>	High performance imaging technology of paper or material provides the next level of online quality
50506	<b>350A</b>	Solving a data center's need for rightsizing and simple scalability with modular UPS technology
50606	<b>350B</b>	A case study on deploying energy storage and microgrid controls in a small port environment
50706	<b>350D</b>	Installed breakers: Do you still support that?
50806	<b>350E</b>	Reactive power control strategies to enable the safe and reliable integration of renewables
50906	<b>350F</b>	Creating a reliable and secure smart grid field area communications network
51006	<b>361A</b>	Hardening of power transformers
51105	<b>360C</b>	When safety matters most: Dry-type transformers for chemical, oil and gas applications

40006	<b>320A</b>	Strategic partnering and collaboration: An executive discussion
40106	<b>320C</b>	Solving the challenge of control system cyber security maintenance
40206	<b>330B</b>	The Zone of Confusion: Managing ambiguity in projects
70005	<b>370A</b>	SCADA control applications using DNP3.0, Modbus, and IEC 61850 MMS <b>HANDS ON</b>
70307	<b>370D</b>	Arc flash solutions <b>HANDS ON</b>
70406	<b>370E</b>	Compact Control Builder: Programming basics for AC800M <b>HANDS ON</b>
70605	<b>371A</b>	ADVAC models 2, 3 and 4: What's the difference? <b>HANDS ON</b>
70806	<b>371E</b>	S+ hardware: Hands-on Interactive Technical Training, part 2 <b>HANDS ON</b>
70906	<b>371D</b>	System 800xA cyber security: Hands-on Interactive Technical Training, part 2 <b>HANDS ON</b>
71005	<b>371C</b>	Introduction to narrowband point-to-multipoint and point-to-point products from ABB Wireless <b>HANDS ON</b>
60006	<b>360D</b>	Take full advantage of IEC 61850 and enable digital switchgear
60106	<b>360F</b>	S+ control, communications and I/O technology update, including life cycle and evolution
60206	<b>360E</b>	Protecting your generation assets: Exposing the lurking threats to your generator
60306	<b>361E</b>	Additive manufacturing: Creating homogeneous 3D welded structures using CAD, vision and robotics

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## DAILY SCHEDULE BY TIME

**Wednesday** | March 15**10:00 AM–11:30 AM**

Course	Room	Session Title
40007	320A	Tech talk: A CTO round table
70006	370A	Optimizing SCADA networks with IEC 61850 MMS <b>HANDS ON</b>
70106	370B	Functional safety option (FSO) and the ACS880: Hands-on experience, part 1 <b>HANDS ON</b>
70205	370C	Fieldbus communications protocols (PLCs to Drives) and PC tools: Hands-on experience, part 1 <b>HANDS ON</b>
70308	370D	Grounding/bonding solutions <b>HANDS ON   CEU</b>
70407	370E	Compact HMI: Introduction to programming of Compact HMI SCADA <b>HANDS ON</b>
70504	370F	Introduction to instrumentation and how new digital devices help improve plant performance <b>HANDS ON</b>
70606	371A	ABB low voltage Emax 2 circuit breaker: Modular technology replacement for the SACE Emax breaker <b>HANDS ON</b>
70807	371E	S+ High Performance HMI: Hands-on Interactive Technical Training <b>HANDS ON</b>
70907	371D	System 800xA xStream Engineering methods for Select I/O: Hands-on Interactive Technical Training <b>HANDS ON</b>
71006	371C	Advanced configuration of TropOS broadband mesh routers from ABB Wireless <b>HANDS ON</b>
30002	General Assembly A	How digitalization is driving the chemical, oil and gas industry's next level of operations
30202	350B	Urbanization and sustainability initiatives drive innovative transportation solutions
30402	340B	The future of power plant operations
30502	General Assembly C	Improving productivity in process industries through operational effectiveness
30602	340A	Regulations that will push renewables to the next level
30702	320C	Leveraging technology to manage risk, optimize reliability and improve operations

**1:00 PM–2:00 PM**

Course	Room	Session Title
50007	340B	A practical approach to using the Internet of Things with ABB Ability
50107	340A	Maximizing the use of simulator solution: Best practices implemented by DTE Energy
50207	330A	Demonstrate how a high performance operator experience was achieved at the Belle River Power Plant
50307	360A	How to conduct a conveyor inspection safely
50407	360B	Successful execution of the ABB electrification and control system approach for Codelco in Chile
50507	350A	Equipment and personnel protection with active arc mitigation to maintain operations 24x7

50607	<b>350B</b>	Commercialization of fast charging for electrical buses
50707	<b>350D</b>	Asset management: Why do I need to have my existing electrical equipment evaluated?
50807	<b>350E</b>	Successfully integrating DERs to maximize renewable penetration
50907	<b>350F</b>	Control of VSC-HVDC in weak networks
51007	<b>361A</b>	Building a business case for grid-tied microgrids
51106	<b>360C</b>	Managing protection and control systems to improve security, compliance and operation
40008	<b>320A</b>	U.S. and global economic outlook for manufacturers
40107	<b>320C</b>	Audit ready for NERC version 6?
40207	<b>330B</b>	A technical genius my grandfather: Humor in project management
40305	<b>350C</b>	Automation in the oil, gas and chemical industry: Sharing insights and experiences
70007	<b>370A</b>	Design, implement and test redundant network in substations and utilities <b>2 HOURS   HANDS ON</b>
70107	<b>370B</b>	Functional safety option (FSO) and the ACS880: Hands-on experience, part 2 (cont. from part 1) <b>HANDS ON</b>
70206	<b>370C</b>	Fieldbus communications protocols (PLCs to drives) and PC tools: Hands-on experience, part 2 <b>HANDS ON</b>
70309	<b>370D</b>	Surge protection solutions <b>HANDS ON   CEU</b>
70408	<b>370E</b>	Panel Builder 800: Programming basics for Process Panel Version 6 <b>HANDS ON</b>
70505	<b>370F</b>	Loop configuration: How to configure a simple control loop <b>2 HOURS   HANDS ON</b>
70607	<b>371A</b>	ADVAC and AMVAC advanced medium voltage vacuum circuit breaker: Operation, maintenance, applications <b>2 HOURS   HANDS ON</b>
70808	<b>371E</b>	S+ Operations: Hands-on Interactive Technical Training, part 1   <b>HANDS ON</b>
70908	<b>371D</b>	System 800xA cyber security: Hands-on Interactive Technical Training, part 1 <b>HANDS ON</b>
71007	<b>371C</b>	Introduction to ABB Wireless <b>2 HOURS   HANDS ON</b>
60007	<b>360D</b>	2017 National Electrical Code (NEC) changes
60107	<b>360F</b>	Implementing and using smart instruments to improve plant performance
60207	<b>360E</b>	Asset health performance model development: Unlocking the mystery to improve asset management
60307	<b>361E</b>	Collaborative engineering and the Internet of Things
40000	<b>General Assembly B</b>	Women in Industry: Empowering Women to Leadership presented by EUCI <b>4 HOURS</b>

**2:15 PM–3:15 PM**

Course	Room	Session Title
50008	<b>340B</b>	Motor and generator life cycle management
50108	<b>340A</b>	Dow Oyster Creek: The Control Room of the Year from design to start-up and beyond
50208	<b>330A</b>	Electronic work packages: Digitalizing plant maintenance to increase performance
50308	<b>360A</b>	Human factors and their impact on plant safety
50408	<b>360B</b>	A new era in solutions for the pharmaceutical sector: ABB and Werum in a collaboration for success
50508	<b>350A</b>	Choose your transformer wisely: Smart solutions for switching transient protection

50608	350B	Why rail networks should consider a wayside energy storage system in their traction power network
50708	350D	Repair or re-manufacture: Options for life extension before end of life
50808	350E	Improve wind farm performance through centralized real-time monitor/control and streaming analytics
50908	350F	Maximizing capability of power transmission corridor
51008	361A	Leveraging technology to manage risk and optimize reliability
51107	360C	Is your arc flash study up to code?
40009	320A	You're not moving SLOW enough: The unexpected formula for lasting impact
40108	320C	Cyber security: The present state and where the future will lead
40208	330B	Earned Value: A hated necessity
40306	350C	Managing telecommunications challenges in the chemical, oil and gas industry
70108	370B	ABB drives and RSLogix 5000 controllers: Ethernet <b>2 HOURS   HANDS ON</b>
70207	370C	AC500 PLC and HMI communications to the ACS880 via Ethernet <b>2 HOURS   HANDS ON</b>
70310	370D	Integrating safety and protection components in energy storage systems <b>HANDS ON</b>
70409	370E	Compact Control Builder: Programming basics for AC800M <b>HANDS ON</b>
70809	371E	S+ Operations: Hands-on Interactive Technical Training, part 2 <b>HANDS ON</b>
70909	371D	System 800xA cyber security: Hands-on Interactive Technical Training, part 2 <b>HANDS ON</b>
60008	360D	ABB apparatus retrofit: OneFit solution a true plug-in technology
60208	360E	Optimizing transmission asset health with IT/OT integration
60308	361E	Benefits of servo motors: How the technology has changed

### 3:30 PM-4:30 PM

Course	Room	Session Title
50009	340B	Advanced Services: Pinpoint inefficiencies, determine corrective actions and continuously improve
50109	340A	Legacy process automation system migration: Using tools in the project engineering work process
50209	330A	Why High Performance HMI is changing the way we operate DCS systems and what that means to operators
50309	360A	The role and importance of functional safety assessment for safety instrumented systems
50409	360B	Argentinian beer producer improved processes and quality results with DCI evolution to System 800xA
50509	350A	Data center services that maximize uptime and reliability
50609	350B	Asset health: Manage, protect and control your rail assets
50709	350D	Meeting power plant needs with new GCB functionality instead of sourcing new equipment
50809	350E	Reducing operational costs in the rapidly growing residential PV solar market
50909	350F	Deployment and end-to-end control of distributed smart inverters on the utility grid
51009	361A	Maintaining grid stability as generation mix changes
51108	360C	Strategies that address the challenges of balancing load and unstable grid frequency

40010	<b>320A</b>	Do you speak millennial? Understanding, motivating and retaining younger workers
40109	<b>320C</b>	Ukraine: Anatomy of a cyber-directed power outage
40209	<b>330B</b>	Harvesting the benefits of an EICT contractor in oil and gas project execution
40307	<b>350C</b>	Asset health: How do you get started with smart asset management?
70311	<b>370D</b>	Low voltage smart circuit breaker makes microgrids simpler and more cost-effective <b>HANDS ON</b>
70410	<b>370E</b>	Freelance 2016: Introduction to programming a Freelance 2016 DCS <b>HANDS ON</b>
70506	<b>370F</b>	Use of QR codes on existing products for improved product maintenance <b>HANDS ON</b>
70608	<b>371A</b>	ADVAC models 2, 3 and 4: What's the difference? <b>HANDS ON</b>
70810	<b>371E</b>	S+ Alarm Manager: Hands-on Interactive Technical Training <b>HANDS ON</b>
71008	<b>371C</b>	Introduction to narrowband point-to-multipoint and point-to-point products from ABB Wireless <b>HANDS ON</b>
60009	<b>360D</b>	High voltage capacitor unit teardown
60109	<b>360F</b>	Innovations in integrated condition monitoring help the oil and gas industry stay competitive
60209	<b>360E</b>	HVDC Light: A key enabler for solving grid challenges
60309	<b>361E</b>	An introduction to industrial robotics, now and in the future

# IT'S COMING

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## DAILY SCHEDULE BY TIME

**Thursday** | March 16**10:00 AM–11:30 AM**

Course	Room	Session Title
70009	370A	Optimizing SCADA networks with IEC 61850 MMS <b>HANDS ON</b>
70109	370B	Adaptive programming for the ACS880: Hands-on experience, part 1 <b>HANDS ON</b>
70208	370C	Fieldbus communications protocols (PLCs to Drives) and PC tools: Hands-on experience, part 1 <b>HANDS ON</b>
70312	370D	Low voltage smart circuit breaker makes microgrids simpler and more cost-effective <b>HANDS ON</b>
70411	370E	Compact HMI: Introduction to programming of Compact HMI SCADA <b>HANDS ON</b>
70507	370F	Pressure transmitter configuration: How to configure a pressure transmitter <b>HANDS ON</b>
70609	371A	ABB low voltage Emax 2 circuit breaker: Modular technology replacement for the SACE Emax breaker <b>HANDS ON</b>
70811	371E	S+ Engineering: Hands-on Interactive Technical Training, part 1 <b>HANDS ON</b>
70910	371D	System 800xA Process Portal A HMI: Hands-on Interactive Technical Training, part 1 <b>HANDS ON</b>
71009	371C	Advanced configuration of TropOS broadband mesh routers from ABB Wireless <b>HANDS ON</b>
30003	General Assembly A	Designing for business transformation and the future of energy production
30203	350B	Intelligent infrastructure for smart cities
30303	General Assembly C	U.S. Department of Energy extended product rules for pumps, fans and air compressors
30503	330A	Moving predictive maintenance programs to the next level
30603	320C	Future Grid: Stronger, smarter and greener

**1:00 PM–2:00 PM**

Course	Room	Session Title
50010	340B	Remote monitoring and service: Moving toward predictive maintenance and optimization
50110	340A	Best practices for conveyor drive systems: Product selection and maintenance
50210	330A	Preparing the millennial engineering graduate to join the workforce: Digital integrated system
50310	360A	Can you answer these four questions about process safety?
50410	360B	Optimizing the selection and specification of DC motors from all perspectives
50510	350A	Improving power redundancy with integrated transfer technology
50610	350B	Energy efficiency and conservation in municipal supply and water treatment plants
50710	350D	Life extension of aged substations
50810	350E	Intermittent resources and the promise of energy storage

50910	350F	Power quality issues related to reactive compensation: Utility and industry perspective
51010	361A	Internet of Things-enabled outage communication to improve utility customer satisfaction
51109	360C	NERC CIP compliance for dummies
40011	320A	How to influence senior managers with value orientation
40110	320C	Cyber security in the supply chain
40210	330B	UX design: The next project management dilemma
70010	370A	Relion technology builds cost effective schemes to improve safety and efficiency of operations <b>2 HOURS   HANDS ON</b>
70110	370B	Adaptive programming for the ACS880: Hands-on experience, part 2 <b>HANDS ON</b>
70209	370C	Fieldbus communications protocols (PLCs to drives) and PC tools: Hands-on experience, part 2 <b>HANDS ON</b>
70313	370D	Integrating safety and protection components in energy storage systems <b>HANDS ON</b>
70412	370E	Freelance 2016: Introduction to programming a Freelance 2016 DCS <b>HANDS ON</b>
70508	370F	Analyzer primer: Theory, selection and operation <b>3 HOURS   HANDS ON</b>
70610	371A	ADVAC and AMVAC advanced medium voltage vacuum circuit breaker: Operation, maintenance, applications <b>2 HOURS   HANDS ON</b>
70812	371E	S+ Engineering: Hands-on Interactive Technical Training, part 2 <b>HANDS ON</b>
70911	371D	System 800xA Process Portal A HMI: Hands-on Interactive Technical Training, part 2 <b>HANDS ON</b>
71010	371C	Introduction to ABB Wireless <b>2 HOURS   HANDS ON</b>
60010	360D	Best technologies for power systems optimization
60110	360F	Simplifying service agreements to make it easier for oil, gas and chemicals customers to match needs
60210	360E	New generator circuit-breaker HEC 10-170
60310	361E	Motor and drive standards create power drive systems

**2:15 PM–3:15 PM**

Course	Room	Session Title
50011	340B	The ABB approach to retrofit circuit breaker options
50111	340A	Mounted bearing failure analysis and corrective actions for improving reliability
50211	330A	Controlled by Symphony Plus: ReACT emissions technology, a first-of-its-kind project in the U.S.
50311	360A	Improving safety with installed switchgear
50411	360B	Developing a solid plan for upgrading aging, high uptime, complex multi-drive systems
50511	350A	State-of-the-art digital sensors improve, simplify electrical distribution in critical applications
50611	350B	Improvements in low-speed pump systems for wastewater, flood control and irrigation
50711	350D	Service and consulting: Helping utilities and industry in their challenges with aging infrastructure
50811	350E	DER management to improve distribution grid resiliency
50911	350F	Future directions for the grid, and implications for engineers and society
51011	361A	Dry type bushings provide utilities with solutions to improve safety and reliability

51110	360C	Hogwash! Debunking the myth that NERC CIP Standards are a case against IEC 61850
40012	320A	Creativity and innovation: Getting your team to see there was never any box to think outside of
40111	320C	Developing a workforce to master cyber security challenges
40211	330B	Product Breakdown Structure: Breaking down this underutilized tool
70111	370B	DCS800 DC drive configuration: Hands-on experience <b>2 HOURS   HANDS ON</b>
70210	370C	ABB automation builder software and AC500 PLC controlling a MicroFlex e190 servo drive via EtherCAT <b>2 HOURS   HANDS ON</b>
70813	371E	S+ High Performance HMI: Hands-on Interactive Technical Training <b>HANDS ON</b>
60011	360D	Surge protection devices brings unprecedented safety to mission critical electrical systems
60111	360F	Business drivers, current developments and actual examples of Industrial Internet of Things
60211	360E	Gas insulated switchgear development trends
60311	361E	Power loss ride through in an adjustable speed drive system

### 3:30 PM-4:30 PM

Course	Room	Session Title
50012	340B	Lifecycle Considerations for Microprocessor Relays
50112	340A	Harmonics 101: What are they, why do I care, and how do I reduce them?
50212	330A	Optimizing pulp and paper processes using advanced process control
50312	360A	General purpose transformers and beyond (600V transformers)
50412	360B	Why should I care about power factor?
50512	350A	Medium voltage power protection for large data centers
50612	350B	Asset management for DCS equipment and associated field devices
50712	350D	Critical transformer components: Load tap changer and bushing management
50812	350E	Key considerations for remote/island renewable microgrid development
50912	350F	Leveraging enterprise geographic information systems to support real-time grid management
51012	361A	Advancing transformer physical security with sensors and analytics
51111	360C	Retrofitting safety in medium voltage metal-enclosed capacitor banks
40013	320A	Creative problem solving and ideation: Using the creative process to find innovative solutions
40112	320C	Putting your data in the cloud: A risky dream or just dreamed up risks?
40212	330B	Managing risks through team collaboration and effective project management
70011	370A	System reliability advancements achieved through modern DFR evaluation tools <b>HANDS ON</b>
70611	371A	ADVAC models 2, 3 and 4: What's the difference? <b>HANDS ON</b>
71011	371C	Introduction to narrowband point-to-multipoint and point-to-point products from ABB Wireless <b>HANDS ON</b>
60012	360D	Mechanical connectivity and medium voltage switchgear
60112	360F	Five steps towards autonomous shipping and the power of integrated operations today
60212	360E	Sealed AND dry: The safest transformers for extreme environments
60312	361E	Next generation of motor efficiency

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