

2022 IEEE IAS Electrical Safety Workshop (ESW 2022)

**Jacksonville, Florida, USA
7-11 March 2022**



**IEEE Catalog Number: CFP22ESW-POD
ISBN: 978-1-6654-7864-9**

**Copyright © 2022 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP22ESW-POD
ISBN (Print-On-Demand):	978-1-6654-7864-9
ISBN (Online):	978-1-6654-7863-2
ISSN:	2326-3288

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

Hidden Danger: Reducing Residual Risk in Your Electrical Safety Program.....	1
<i>H. Landis Floyd</i>	
Normal Operating Condition Examined.....	4
<i>Al Havens</i>	
Analysis of NFPA 70E, Table 130(C)(15)(a) using IEEE 1584–2018 Constant Energy Boundaries: ESW 2022–06.....	7
<i>Marcelo E. Valdes, Paul B. Sullivan, Remi Halle</i>	
The Practice and Effectiveness of Equipotential Zone “EPZ” Grounding-Safety Reality Or Pipe Dream?	17
<i>George T. Cole</i>	
Why Be Concerned About Electrical Safety and What Impact it May Have on Business Cost.....	27
<i>Joe Rachford</i>	
Challenge Accepted: Specialty PPE for Shock and Arc Flash Protection.....	31
<i>Hugh Hoagland, Brian Shiels, Stacy Klausling</i>	
Sensitivity Analysis of Epri Overhead Hv Line Arc Flash Model	37
<i>Marvin Antony Devadass</i>	
Who is Getting Hurt? Understanding the Cause of Fatal Electrical Injuries in the Workplace.....	42
<i>Brett Brenner, Daniel Majano</i>	
One Company's Best Practices to Consider When Creating and Streamlining a Company Electrical Safety Standard.....	51
<i>Christopher J. Watson, Duane R. Boswell, Ed Boyer</i>	
An Effective Means of Tracking Temporary Safety Grounds.....	58
<i>Greg Drewiske</i>	
A Detailed Approach for ARC Flash Sustainability for Systems at Or Below 240V and Over 2000A	61
<i>Kyle D. Carr, Zarheer Jooma, John J. Whipple</i>	
AC Induction Conductive Suit - A New Way of Protecting Linemen in the Vicinity of Energized Parts.....	66
<i>Eduardo Ramirez-Bettoni, Balint Nemeth</i>	
Electrical Safety Worldwide.....	75
<i>Lloyd B. Gordon, Jesse Liechty, Ernst Esch</i>	
Safety Considerations While Working at a Private Or Public Utility.....	85
<i>Tom Zampell, Frank Gonzalez</i>	
Human Performance in Workplace Electrical Safety	92
<i>Nehad El-Sherif, Mike Doherty</i>	
The Impact – “Just an Electrician”	101
<i>Jennifer L Martin</i>	

Risk Assessment for the Home Office.....	104
<i>Eric Campbell</i>	
Analysis of Accidents Caused by Induced Current and Voltage on Transmission Lines and Substations Between 1985–2021	109
<i>Marcia L. Eblen, Eduardo Ramirez-Bettoni, Keith Wallace</i>	
Assessing the Electrical Risks in Electric Vehicle Repair.....	116
<i>Vesa Linja-Aho</i>	
Accidents of Electrical Origin, a Detailed Analysis of Statistics. Brazil Compared to Other Countries	123
<i>Edson Martinho, Sergio Roberto Santos, Danilo Ferreira De Souza</i>	
Addressing Misconceptions to Reduce Touch and Step Voltage Hazards at Power Systems	130
<i>David Lewis</i>	
Electric Shock Hazards Beyond 50/60 HZ and DC.....	137
<i>Lloyd B. Gordon, Jesse Liechty, Joseph Bradley, Lee Merrill, Henry Gauss</i>	
Wearable-Based Monitoring System for Lineman in Power Utilities to Mitigate Workplace Health and Safety Risks	145
<i>Fillipe M. De Vasconcelos, Carlos F. M. Almeida, Stéfano R. Gualtieri, Sérgio M. De Eston, Nelson Kagan, Vanessa R. S. Demuner, Joselino S. Filho, João J. B. De Souza, Luiz H. L. Rosa, Eduardo C. Sá, Danilo S. Pereira</i>	
Electrical Shock Sequela	154
<i>Terry Becker, John Knoll</i>	
Human Performance: How Enhancing Safety is Managed.....	161
<i>Joshua Hodges</i>	
Advancing the Risk Assessment for Structures Protection Against Lightning.....	165
<i>Giuseppe Parise, Marco Allegri, Luigi Parise</i>	

Author Index