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H. Landis "Lanny" Floyd (S '72, M '73, SM '84, F '00) is currently Principal Consultant and Global Electrical Safety Competency Leader for DuPont. He is also an adjunct professor, Graduate School of Engineering, Advanced Safety Engineering and Management, University of Alabama at Birmingham. He received his BS degree in electrical engineering from Virginia Polytechnic Institute & State University in 1973. He joined DuPont in 1969 as an engineering intern and held a series of assignments in engineering support to manufacturing operations, including facilities design and industrial electric power systems operations and maintenance. In 1979, he transferred to DuPont Engineering as a consultant in industrial electric power systems maintenance and reliability. He has had various assignments in DuPont Engineering in electrical technology and safety management. Since 1992, he has chaired the DuPont Global Electrical Safety Team, which is responsible for improving management systems, competency renewal, work practices, and the application of technologies critical to electrical safety performance in all DuPont operations. He currently holds the position of Global Electrical Safety Competency Leader.

For over 25 years, Lanny Floyd has challenged the status quo of electrical safety in the workplace. His work has advanced the application of human factors engineering, electrical technology and safety management in preventing occupational electrical injuries. He has authored or co-authored more than 70 published papers and articles, and received twelve prize paper awards from the Institute of Electrical and Electronics Engineers. He has given more than 150 presentations at conferences, seminars and webcasts. His awards for his leadership and contributions in electrical safety include, IAS Distinguished Service Award, NFPA Standards Council Committee Service Award, Harold J. Leviton Outstanding Service Award, presented by Electrical Safety Foundation International, IEEE Medal for Engineering Excellence, IEEE Richard Harold Kaufmann Technical Field Award, and the IEEE IAS Petroleum and Chemical Industry Electrical Safety Excellence Award.

Mr. Floyd has been active in IEEE technical committees since 1983. He is currently Editor-in-Chief of *IEEE Industry Applications Magazine*. He is Past President of the Industry Applications Society, Past Chair of the IAS Petroleum and Chemical Industry Committee, Past Chair of the IAS Power Systems Engineering Committee, Past Chair of the IAS Electrical Safety Committee, Past Chair of IEEE Standard 902 Guide to Maintenance Operation and Safety of Industrial and Commercial Power Systems, Past Chair of the Petroleum and Chemical Industry Committee Safety Subcommittee, and past editor of the Safety Column for IEEE *Industry Applications Magazine*. In 1991, he was a co-founder of the IEEE IAS Electrical Safety Workshop, an annual forum for accelerating application of improvements in electrical safety. He is a past member of the Board of Governors of the IEEE Standards Association. He is a member of the National Fire Protection Association and has represented the IEEE on the National Electrical Code Panel 1 since 1990. He is a member of CSA Z462, *Standard for Electrical Safety in the Workplace* Technical Committee. He is a board director of Electrical Safety Foundation International, is a registered professional engineer in the State of Delaware, and is a Professional Member of American Society of Safety Engineers. He is a member of the Society for Maintenance & Reliability professionals and a Certified Maintenance & Reliability Professional.

Lecture Topics: Explorations in Electrical Safety Excellence

1. **20 Years Later: Creating a Continuous Improvement Environment for Occupational Electrical Safety**
   Electrocution, or fatal electric shock, is the 7th leading cause of occupational fatality in the US. One in 13 lost time injuries from electrical contact is fatal. Most organizations visibly show commitment to safety for moral reasons – to make sure all workers return home safely at the end of their workday. There are also legal reasons, as government regulations hold employers accountable for providing a safe workplace free from hazards. There is also a direct financial benefit for preventing or reducing severity of electrical injuries. A 2010 report from the Liberty Mutual Research Institute for Safety showed that electrical injuries were the 2nd most costly workplace injury, as measured by workers compensation costs. This lecture discusses demonstrated results and lessons learned from the electrical safety improvement strategy documented in the paper, *Creating a Continuous Improvement Environment for Electrical Safety*, presented at the 1992 IEEE IAS Petroleum and Chemical Industry Conference. The lecture examines lessons learned after more than 20 years of application and how this strategy is aligned with leading edge developments in advanced safety management of hazards with high potential for fatality. The lecture includes a discussion on applying this strategy to these other hazards.

2. **Appling Advanced Safety Engineering & Management to Occupational Electrical Hazards**
   There is an emerging field of advanced safety management that is focusing on fatalities associated with hazards characterized as Low Frequency/High Consequence. Workplace electrical injuries in the US are low frequency (~0.2% of workplace injuries), but very high consequence. One in 13 lost time electrical injuries is fatal and non-fatal electrical injuries is reported to be the 2nd most costly workers comp claim. Over the past 30 years, thought leaders in safety management have challenged traditional methods in injury prevention as being ineffective in addressing hazards that are associated with injuries that occur relatively infrequently, but have extraordinary severity potential. This lecture will discuss will review the research of Dan Peterson, Fred Manuel, Tom Krause and other forward thinking leaders in safety management and discuss how we can use their work to further accelerate efforts to prevent occupational electrical injuries and fatalities.

3. **Engineering Reliability Critical to Occupational Electrical Safety**
   Business and commerce in our modern society are completely dependent on electrical technologies. Any unscheduled disruption of electrical energy, control or communications systems can have immediate and costly disruption to operations. This provides the basis for establishing reliability expectations for electrical equipment and systems directly impacting business operations. However the equipment and the necessary reliability for equipment critical to electrical safety are different than that for operations uptime. An organizations that uses operation uptime as the focus for electrical reliability may unintentionally overlook equipment reliability critical to electrical safety. This lecture discusses a common problem in managing in electrical reliability and introduces methods to optimize the application of proven reliability management systems and tools to help assure performance of assets critical to electrical safety. The reliability objectives of the subset of electrical equipment and systems critical to electrical safety can be managed through synergies linking an organization's safety management system and reliability & maintenance management system. In conducting an analysis of existing maintenance strategies, an organization can develop a better understanding for how to manage its electrical safety program more closely coupled with its maintenance and reliability program and will likely find opportunities to derive benefits across a broad set of business performance parameters that depend on defect free operation of electrical energy control and communications systems critical to operations.