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INNOVATING NUCLEAR TECHNOLOGY

ANALYSIS AND MEASUREMENT SERVICES CORPORATION

CASEY D. SEXTON

Manager, Cable Services Group



ACADEMIC BACKGROUND & CERTIFICATIONS

Bachelor of Applied Science
Electrical Engineering
ITT Technical Institute
Knoxville
1996

CASEY D. SEXTON has been with AMS for more than 25 years and is the manager of the Cable Services Group where he directs all laboratory and field services for the testing and evaluation of electrical cables as well as overseeing AMS' cable related research and development projects. During his tenure at AMS, Mr. Sexton has conducted field testing services in facilities worldwide and led research activities for the US NRC, NASA, and DOE. He currently serves as the Principal Investigator for research and development projects focused on the development of an in-situ technology for condition monitoring (CM) and development of acceptance criteria for CM tests used to evaluate the health of electrical cables. He has performed a host of measurements on safety-related instrumentation and control (I&C) systems and provided on-site troubleshooting to over 100 operating nuclear power plants.

Mr. Sexton has been integral to the design and development of electronic test hardware to perform cable testing at nuclear power plants. He has authored numerous publications related to I&C and predictive maintenance of cables and equipment in nuclear power plants. In addition, Mr. Sexton is the co-inventor of AMS technologies that have resulted in patent awards and commercial test equipment for the nuclear energy industry.

Mr. Sexton has extensive experience in testing and analysis of process system data from nuclear power plants worldwide. This includes testing of temperature, pressure, neutron flux, cabling and connectors, thermocouple installation integrity testing, and rod control system testing.

In 2016, Mr. Sexton led a team of AMS engineers who performed commissioning tests of the I&C systems at the first AP1000 reactor by Westinghouse to operate anywhere in the world. These tests were performed to assess the condition of electrical cables and verify the dynamic performance of temperature sensors installed in the plant.



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Technical Contributions and Publications

U.S. GOVERNMENT PUBLICATIONS

Hashemian, H. M., Riggsbee, E. T., Mitchell, D. W., Hashemian, M., Sexton, C. D., Beverly, D. D. & Morton G. W., “Advanced Instrumentation and Maintenance Technologies for Nuclear Power Plants,” U.S. Nuclear Regulatory Commission Report NUREG/CR-5501. Rockville, MD: Originally published August 1998.

“Development of an In-situ Method for Cable Condition Monitoring in Nuclear Power Plants,” U.S. Department of Energy Small Business Innovation Research (SBIR) Program Phase I Final Report, Contract No. DE-SC0009569 (December 2013).

“Development of an In-situ Method for Cable Condition Monitoring in Nuclear Power Plants,” U.S. Department of Energy Small Business Innovation Research (SBIR) Program Phase II Final Report, Contract No. DE-SC0009569 (May 2016).

PUBLICATION CONTRIBUTIONS

(Following are publications in which C.D. Sexton has contributed.)

“Assessing and Managing Cable Ageing in Nuclear Power Plants,” IAEA Nuclear Energy Series No. NP-T-3.6, Vienna, Austria (May 2012).

“Benchmark Analysis for Condition Monitoring Test Techniques of Aged Low Voltage Cables in Nuclear Power Plants,” IAEA Publication TECDOC-1825, Vienna, Austria (October 2017).

“Light Water Reactor Sustainability Program–Physics-Based Modeling of Cable Insulation Conditions for Frequency Domain Reflectometry (FDR)m,” Pacific Northwest National Laboratory, Report Number PHL-26493, U.S. Department of Energy (May 2017)

NATIONAL PUBLICATIONS

Beverly, D.D., Hashemian, H.M. & Sexton, C.D. (2000, June) “Experience with Rod Drop and CRDM Testing in Nuclear Power Plants,” ISA - The Instrumentation, Systems, and Automation Society - 10th Annual Joint ISA POWID/EPRI Controls and Instrumentation Conference and 43th Annual ISA POWID Symposium, San Antonio, TX.

Hashemian, H.M., Shumaker, B.D., Sexton, C.D., Beverly, D.D., Morton, G.W., Riggsbee, E.T., “Neutron Detector Life Extension Through Predictive Maintenance,” 17th Annual Joint ISA POWID/EPRI Controls and Instrumentation Conference, Pittsburgh, PA, USA (June 2007).

Kiger, C.J., Hashemian, H.M., Sexton, C.D., Meining, R.D., Nace, D., “Electromagnetic Environment Testing to Support Digital Upgrades in Nuclear Power Plants,” Presented at the 6th American Nuclear Society International Topical Meeting on Nuclear Plant Instrumentation, Control & Human–Machine Interface Technologies (NPIC & HMIT), Knoxville, TN, USA (April 5–9, 2009).



Hashemian, H.M., Hashemian, M., Kiger, C.J., Riggsbee, E.T., Seibel, J.S., Sexton, C.D., Linn, M., Manges, W., Kuruganti, T., Feltus, M.A., “Wireless Sensors for Predictive Maintenance of Rotating Equipment in Research Reactors,” Presented at the 6th American Nuclear Society (ANS) International Topical Meeting on Nuclear Plant Instrumentation, Control & Human–Machine Interface Technologies (NPIC & HMIT), Knoxville, TN, USA (April 5–9, 2009).

Shumaker, B.D., Campbell, C.J., Sexton, C.D., Morton, G.W., McConkey, J.B., & Hashemian, H.M., “Cable Condition Monitoring for Nuclear Power Plants,” Presented at the Future of Instrumentation International Workshop (FIIW), Instruments, Sensors and Measurements for Energy Generation, Delivery and Consumption, Gatlinburg, TN (October 8–9, 2012).

Hashemian, H.M., Campbell, C.J., McConkey J.B., Sexton, C.D., and Cummins, D.S., “Results of Recent DOE Research on Development of Cable Condition Monitoring and Aging Management Technologies,” Presented at 3rd International Conference on NPP Life Management (PLiM) for Long Term Operations, Salt Lake City, Utah (May 2012).

Hashemian, H.M., McConkey, B., Harmon, G., Sexton, C., “Methods for Testing Nuclear Power Plant Cables,” IEEE Instrumentation & Measurement Magazine, pp. 31–36 (October 2013).

Toll, T.A., Harmon, G. R., Sexton, C. D., & Harris, A.C., “Aging Assessments of 40 Year Old Nuclear Power Plant Cables,” 59th Annual ISA POWID/EPRI Symposium, Charlotte, NC (June 2016).

Sexton, C.D., Harmon, G.H., Toll, T.A., & Harris, A.C., “Development and Implementation of an In-Situ Cable Condition Monitoring Method for Nuclear Power Plants,” American Nuclear Society International Topical Meeting on Nuclear Plant Instrumentation, Control, and Human-Machine Interface Technologies, San Francisco, CA (June 2017).

Kiger, C.J., Sexton, C.D., Hashemian, H.M. O’Hagan, R.D., Dormann, L., Wasfy, W., “Implementation of New Cable Condition-Monitoring Technology at Oyster Creek Nuclear Generating Station,” Nuclear Technology, Vol. 200, No. 2, pp. 93-105 (November 2017).

Kiger, C., Sexton, C., Hashemian, H., Toll, T., Dormann, L., Wasfy, W., “Avoiding Unnecessary Cable Replacement in Nuclear Power Plants,” Proceedings of the American Nuclear Society 2018 Annual Meeting, Philadelphia, PA (June 17-21, 2018).

Kiger, C.J., Hashemian, H.M., Sexton, C.D., Toll, T.A., “Research Gap in Management of Insulation Aging of Medium Voltage Cables in Nuclear Power Plants,” Proceedings of the American Nuclear Society 2018 Annual Meeting, Philadelphia, PA (June 17-21, 2018).

McConkey, J.B., Sexton, C.D., Harmon, G.R., Toll, T.A., “A Holistic Approach to Testing Cables, Connectors, Shielding, and End Devices in Nuclear Power Plants,” Proceedings of the American Nuclear Society 11th International Topical Meeting on Nuclear Plant Instrumentation, Control & Human -Machine Interface Technologies (NPIC & HMIT), Orlando, FL (February 9-14, 2019).



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Sexton, C., Toll, T., McConkey, B., Harmon, G., “A Cable Condition Monitoring Strategy for Safe and Reliable Plant Operation,” Proceedings of the American Nuclear Society 11th International Topical Meeting on Nuclear Plant Instrumentation, Control & Human -Machine Interface Technologies (NPIC & HMIT), Orlando, FL (February 9-14, 2019).

PATENTS

Morton, G.W., Sexton, C.D., Beverly, D.D., Hashemian, H.M., “Nuclear Reactor Rod Drop Time Testing Method.” Patent No. US 6,404,835 B1 (June 2002).

Hashemian, H.M., Morton, G.W., Shumaker, B.D., Beverly, D.D., Sexton, C.D., “Advanced Digital Control Rod Position Indication System with Rod Drop Monitoring for Nuclear Power Plants.” Patent No. US 8,351,561 B2 (January 2013).

Sexton, C.D., Beverly, D.D., Morton, G.W., Hashemian, H.M., Shumaker, B.D., “Control Rod Position Indication Systems and Methods for Nuclear Power Plants.” Patent No. US 8,824,617 B2 (September 2014).

Morton, G.W., Hashemian, H.M., Shumaker, B.D., Beverly, D.D., Sexton, C.D., “High Resolution Digital Rod Position Indication System for Nuclear Power Plants.” Patent No. US 8,903,033 B2 (December 2014).

Shumaker, B.D., Hashemian, H.M., Morton, G.W., Beverly, D.D., Sexton, C.D., “Automated System for On-Line Monitoring and Diagnostics of Rod Position Indication Coils for Nuclear Power Plants”, US 9,697,916 (July 2017).