

LONGENECKER and ASSOCIATES

EXPERIENCE SUMMARIES FOR KEY PERSONNEL

Denise M. Brooks, Ph.D.

EXPERIENCE SUMMARY

Dr. Brooks has over fifteen years human factors and ergonomics experience in most types of industries and manufacturing environments. She has comprehensive experience in both new and retrofit design, and has worked with organizations both internally relative to employees and especially engineering staffs, as well as externally for end-user acceptance of products and services. She draws upon her medical background, basic research experience in physiology, both basic and applied psychological research, and combines her medical training, education in biology, experimental psychology and her PhD in Industrial and Organizational Psychology with her Masters in Business to find an appropriate balance between productivity, efficiency, safety and health, with an organization's profitability and return on investments. She has worked diligently with engineering and operations as well as other organizational departments and management to achieve awareness, understanding and acceptance of human factors and ergonomics and thus yielding appreciable gains in design acceptance, ergonomic implementation, and has a proven record of accomplishment of successfully reducing accidents and injuries while enhancing productivity and contributing toward the achievement of organizational goals. She is known for her problem solving skills, especially related to those issues that have historically resisted resolution.

DETAILED EXPERIENCE

2003 – 2006: Longenecker and Associates. Senior Human Factors Engineer

Efforts include working closely with engineering staff to ensure correctness from a human factors and regulatory perspective, including usability, computer-human interface, controls and display input and evaluation, management consulting, regulatory compliance, accident and injury reduction – particularly musculoskeletal disorders, aging workforce, tools and cranes, work process and flow evaluation as well as assessment of controls and displays, shift work and crew rotation, quality issues, root cause analysis relative to lockout/tagout, tools redesign, anthropometric aspects and other environmental concerns such as heat stress. Additional efforts are geared toward increasing automation and the integration of software to contemporary systems. Usability, compatibility, reliability, automation and user interface are among primary focus efforts. (Department of Energy, Fluor, CHG). Richland, WA 5/03 – 7/05.

2000 – 2003: Science Applications International (SAIC). Senior Human Factors Engineer

Recent endeavors included assessment of work processes at the Spent Nuclear Fuel facilities for the DOE, leading to reengineering geared toward enhanced productivity and reduction of workplace injuries and accidents. Thorough evaluation of all system components, management style, production, tools, environment and workflow. Formerly, Human Factors Lead for vitrification plant proposed to Department of Energy comprised of 5 physical facilities, in early design process and is supported through development of pertinent human factors and ergonomics design guides and implementation plans. This included engineering support to screen design and display requirements. Participated in project groups such as operations, engineering, control and instrumentation through taking part in Integrated Safety Management (ISM) processes and control strategy development. Evaluation of human interfaces, particularly operations and maintenance, an ongoing and an iterative process through evolutions of design development with a goal to reduce possibility of human error through implementation of good

human factors practice while ensuring regulatory compliance. For BNFL, CHG, BNI, Fluor Hanford, BP Amoco. Richland, WA 2/00 – 5/03.

1997 – 2000: ENTOR (For GE Nuclear). Senior Human Factors Engineer

Responsible for the Main Control Room Design, Lungmen Nuclear Project Fourth Nuclear Plants Units 1 & 2, Taiwan Power Company. Responsibilities include panels design and layout, verification of accuracy from both a regulatory and systems perspective while embracing lead-edge technology. Design basis is First-of-a-Kind-Engineering (FOAKE); a plant philosophy based entirely on lessons learned and integration of human factors principles from design phase forward. Further contributions involve Graphical User Interface as well as usability studies.

Also served as lead engineer on control room drawings and verification of implementation plans. Serves on Six Sigma committees and also contributes to mock-up upgrades as well as being responsible for Remote Shutdown Panels. San Jose, CA 11/97 – 2/00

1996 – 1997: GM – Delphi Harrison Thermal. Production Supervisor

Responsible for the tasking, management and oversight of nearly 100 people in four production departments. Accountable for scheduling, labor/management interface, personnel issues as well as safety and other training. Moraine, OH 11/96 – 11/97

1993 – 1996: Integrated Workplace Solutions. Program/Project Manager

Founder and owner of Integrated Workplace Solutions (IWS). Responsible for innovative problem resolution in manufacturing environments. Current work includes human factors support for nuclear and fossil utilities, human-interface with artificial intelligence and neural network systems, and ergonomic solutions for a wide-range of industries. Developed an innovative approach to solving workplace problems that integrates ergonomics with quality concepts, industrial safety and training, worker wellbeing, plant automation, and regulatory understanding. Developed programs for ADA compliance. Dayton, OH

1989 – 1993: Advanced Resource Development Corporation. Senior Human Factors Engineer

Responsibilities included human factors support for nuclear and fossil utilities, control room design reviews, probabilistic risk assessment, human-interface with artificial intelligence and neural network systems and ergonomic solutions for a wide-range of industries. Dayton, OH; Chicago, MD, others

1988 – 1989: Universal Energy Systems. Human Factors Scientist

Performed a wide range of industrial ergonomic services. These included ergonomic job analysis, development and conductance of training seminars and programs, evaluation of workstations, job aids, tools and equipment as well as the provision of recommendations and solutions. Specific efforts include control/prevention of cumulative trauma disorders & back injuries; occupational stress reduction; assessment of physiological & psychological effects of work demands; litigation discovery support; & accident investigation & reconstruction. Dayton, OH

1983 – 1987: General Physics Corporation - Staff Scientist

Evaluated work standards in operation of Multiple Letter Sorting Machines for the American Postal Workers Union. Performed job and task analysis at many of nuclear utility sites in USA as an Instructional Technologist for industry-wide Shift Supervisor/Senior Control Room

Operator task analysis project for Institute of Nuclear Power Operations (INPO). Duties included conducting interviews with utility Subject Matter Experts (SMEs) to obtain task analysis data. Human factors efforts included detailed control room design reviews, design evaluation of instruments and controls, design and assembly of full-scale photographic mockups of control panels, blueprint and drawing updates utilizing site visits and photographs, placement recommendations and so forth. Endeavors also consisted of color coding, demarcation, evaluation of mirror imaging, human error discrepancies (HEDs), labels design and development. Established guidelines and checklists to evaluate annunciator windows. Verification and validation of emergency operating procedures, using walkthroughs, video recording analysis techniques and link analysis. Established and maintained standardized acronym and abbreviation lists. Formulated human factors standards and maintenance plan documents. Evaluated work standards and practices regarding occupational safety and health. Supported various human factors efforts related to systems, equipment and products. Supervised, controlled and administered office functions, including budgetary, employee evaluations, coordination of contract assignments for the staff of research and technically oriented personnel. National locations.

1980 – 1983: Air Force Aerospace Medical Research Laboratories. Research Scientist

Provided support to the Aviation Vision Laboratory of the Human Factors Division of AFAMRL. Duties included data collection, statistical analysis, completion of studies involving contrast sensitivity, detection, identification and visual comparisons. (Synergy - Systems Research Laboratories). Researched animal performance and behavior as a function of pharmacological agents. Specifically, compounds related to the issue of chemical defense were administered as independent variables in order to determine their effect upon performance and physiology. (UDRI). Co-Principal investigator on studies of animal behavior and performance. Studies dealt with continuous performance baselines, visual tracking and circadian rhythms using several species. Most extensive work entailed feature positive discrimination learning using negative reinforcement. (Systems Research Company). Co-Principal investigator in studies of animal learning and tracking performance under stress. Provided special surgical support for studies in development of heart cups and interaortic balloons. Surgical support and instrumentation for separate studies involving research into neurostimulation, lateral G-force effects, phonocardiography and spinal dynamics, including data collection and performance of post-mortem surgery and analysis. Performed surgery required for preparation, implantation and maintenance of sterile portals into the cranial cavity for chronic cerebral mapping studies. Evaluated current technology in transcutaneous (non-invasive) blood gas analysis techniques and apparatus. (Systems Research Laboratories) Dayton, OH

EDUCATION

- Ph.D. Capella University, Organizational/Industrial Psychology
- M.A., Business Management, Antioch University, MacGregor School of Business
- B.S., Experimental Psychology, Wright State University
- Aeromedical Specialist Technical School, Brooks AFB, TX
- A.A., Biological Sciences, Com College of Beaver County, PA

Publications, client list, training topics, and references available upon request.