

User Centered Design Services, Inc.

Biographical & Bibliographical Brief

Who We Are:

Our staff and affiliates are expert in every facet of control building design and operation. The UCDS Team includes process plant operators, supervisors, engineers, safety consultants, and human factors specialists. Our practical plant experience enables us to design a work environment that is effective in routine, abnormal, and emergency situations.

President

With more than thirty-five years experience in control and safety systems design, Ian Nimmo is the former Director of the Abnormal Situation Management Consortium® and a Senior Engineering Fellow for Honeywell IAC. The ASM consortium's members, who include the world's leading energy and chemical companies, are dedicated to improving process industry safety by discovering and publishing best practices in control technology deployment. Prior to beginning the work of founding the ASM consortium in 1991, Ian was a Development Engineer, a Project Engineer, Area Maintenance Engineer and lastly Computer Applications Section Manager for ICI, a large UK Petro-Chemical Company, and worked with the British Government's Health & Safety Executive introducing national & international standards for computer systems after developing the Control HazOp methodology for ICI. In great demand as a speaker, Ian is a faculty member of the Center for Process Plant Management. As a leading thinker in the field of control room operations, Ian was a contributing author of the ISA SP84 Safety Instrumented System Guidelines, ISA SP91.01 Standard, ISA SP18, IEC 61508 Standard, the EMMUA 191 Alarm Management Guidelines, and the Abnormal Situation Management Consortium's Best and Effective Operations Practice Guidelines. Currently Ian is a member of the ISA SP101 standard committee. Ian is an Instrument/Electrical Engineer with over 30 years working experience in the industry, and is a Senior Member of ISA and a Member of IET CEI.

Senior Consultants

With more than twenty years of experience, our Senior Consultant, David Lee, possesses extensive background in the chemical industry having worked for several specialty chemical, pulp and paper and petrochemical companies. A Chemical Engineer by degree David has held multiple positions in automation and control, IT, projects and operations, both as an engineer and a manager. David has extensive experience of multiple control platforms and associated applications, including batch, along with control room and operator interface design. David has significant experience in safety lifecycle development, LOPA and safety instrumented systems (SIS). David is a Chartered Engineer, Member of the Institute of Chemical Engineers, a Senior Member of the ISA and Member of the World Batch Forum. David is currently a working member of the ISA SP101 standard committee.

Our Senior Consultant Rusty Fleming has over 30 yrs experience in the chemical industry with a degree in Chemical Engineering. Rusty has held positions in the pulp chemical industry, water treatment chemicals industry, and the pulp and paper field. He has been a plant superintendent, process engineer and a company safety director. Rusty also has extensive experience in process hazards analysis studies and is a certified HazOp leader

Additional Resources:

User Centered Design Services has relationships with an extensive number of industry experts we can bring in on projects as needs require. This includes experts on training, procedures, human factors, graphics, instrumentation and control, project engineering, and many more. If a client identifies a need, we can find the right resources to put on the job.

Our Experience

The Abnormal Situation Management® (ASM) Consortium was founded in 1994 with a mission to conduct structured research to discover the Best Practices for improving an operator's ability to detect, diagnose and respond to abnormal process conditions. This included extensive research into the control building environment. UCDS delivers the fruits of this proprietary research, as well as Best Practices derived from visiting hundreds of control rooms around the globe and decades of practical operational experience, to our Clients.



With our substantial experience in the operations of production facilities UCDS is uniquely qualified to assess the workload of console and field operators, as well as assessing the entire operations organization against Best Practices and helping them achieve Operations Excellence.

UCDS are world leaders in ergonomic design of control buildings. Our focus when designing a control building is to base the design around the operator's needs and the work flow of the organization. This approach requires extensive experience in control room design as well as through understanding of refinery operations. This is in stark contrast to many others who have little or no operations experience, such as Architects and Engineering Contractors, who recycle control building designs as if one size fit all, and Equipment Vendors who design around their own equipment. Even other human factors consultants can fail to understand how the building will be used under all circumstances, including normal operation, start-up, shut downs, emergencies, training, and the list goes on.

Contact Information:

For more information, or to discuss how User Centered Design Services can help you achieve operations excellence in your facility, please contact us at:

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Please see the following sheets for a list of publications.

List of Publications by Topic

Alarm Management

- Rescue Your Plant from Alarm Overload, Ian Nimmo, Chemical Processing, January 2005
- Operator Consoles: Growing Old Together, Ian Nimmo, Hydrocarbon Engineering, January 2005
- It's Time to consider Human Factors in Alarm Management, Ian Nimmo, Chemical Engineering Progress, November 2002
- Designing an Ethylene Plant Control Room and Operator User Interface using Best Practices, Ian Nimmo & Jamie Errington, AIChE Annual Meeting Houston 2001
- The Importance of Alarm Management Improvement Project, Ian Nimmo, Interkamma 99 ISA Technical Conference Germany January 2000

Control Building Design

- PD-05-156 Operator Situation Awareness and the Impact on Control Room Design – Ian Nimmo – NPRA Meeting October 2005
- Operator Consoles: Growing Old Together, Ian Nimmo, Hydrocarbon Engineering, January 2005
- Designing Control Rooms for Humans, Ian Nimmo and John Moscatelli, Control, July 2004
- Putting a Human Face on the Design of Control Rooms. Ian Nimmo, Engineering Technology, May 2004
- Centralized Control Rooms the Good the Bad and the Ugly, Ian Nimmo, Honeywell User Group Australia 2003
- Designing a Control Building, Ian Nimmo, Hydrocarbon Engineering, November 2002
- Designing an Ethylene Plant Control Room and Operator User Interface using Best Practices, Ian Nimmo & Jamie Errington, AIChE Annual Meeting Houston 2001
- Ergonomic Design of Control Buildings, Ian Nimmo, Honeywell User Group Australia September 2000
- Ergonomic Design of Control Centers, Ian Nimmo, IBC Global Conferences London, England November 2000
- The Human Safety factor in Control Room Design and Location, Ian Nimmo, Interkamma 99 ISA Technical Conference Germany January 2000

Staffing and work team design

- Don't be Thrown for a Loop, Ian Nimmo & John Moscatelli, Chemical Processing, July 2005
- Operator Consoles: Growing Old Together, Ian Nimmo, Hydrocarbon Engineering, January 2005
- Shaping a New Role for the Operator, Ian Nimmo et al, Chemical Engineering Progress, May 2004

Abnormal Situation Management

- Human Machine Interfaces Evolve in Process Control, Ian Nimmo, Control, August 2006
- Effective Shift Handover is No Accident, Ian Nimmo, Chemical Processing, June 2006
- Lessons Learned From A Disaster, Ian Nimmo and John Moscatelli, Hydrocarbon Engineering March 2006
- PD-05-156 Operator Situation Awareness and the Impact on Control Room Design, Ian Nimmo, NPRA Meeting October 2005
- Operator Consoles: Growing Old Together, Ian Nimmo, Hydrocarbon Engineering, January 2005
- Abnormal Situation Management – The Need for Good Situation Awareness, Ian Nimmo, Advances in Process Control 7, York England September 2004
- ASM® A Practice or a Technology? Ian Nimmo, Aspen World Conference Key Note Address, Washington D.C. December 2002
- Mandated Human Error Controls in the USA, Ian Nimmo, Honeywell User Group September 2002
- Designing an Ethylene Plant Control Room and Operator User Interface using Best Practices, Ian Nimmo & Jamie Errington, AIChE Annual Meeting Houston 2001

- A Training Perspective on Abnormal Situation management establishing an Enhanced Learning Environment, Ian Nimmo & Peter Bullemer, AIChE Annual Meeting Houston 1998
- Developing an Improved training Strategy for Abnormal Situation Management, Ian Nimmo, Mary Kay O'Connor Process Safety Conference March 1998
- The ASM Story, Ian Nimmo, Hydrocarbon Engineering, December 1998
- Industrial Initiative Addresses 'Abnormal Events', Ian Nimmo, Hydrocarbon Processing, October 1998
- Managing Abnormal Situations in the Process Industries, Ian Nimmo, Ted Cochran & Peter Bullemer NIST Advanced Technology Program MVMT 1998
- The State of Abnormal Situation Management, Ian Nimmo, Honeywell User Group September 1996 Nice, France , Perth, Australia
- Abnormal Situation Management, Ian Nimmo et al, PACE- Process & Control Engineering September 1996 Vol.49 No.9
- Abnormal Situation Management, Ian Nimmo, 9th Symposium On Microprocessor Based Protection Systems, The BAFTA Center, London, Dec. 1995
- 21st Century Land Warrior technology for the 21st Century Refining Operator Abnormal Situation Management and the Digital Battlefield, Ian Nimmo & Scott Nelson, Mary Kay O'Connor Center and AIChE Mechanical Reliability Conference November 1995
- The Concept of ASM and Mechanical Reliability, Doug Rothenburg & Ian Nimmo, AIChE Mechanical Reliability Conference November 1995 Houston, Texas
- Understanding Abnormal Situations, Ian Nimmo, NPRA Conference 1995
- Adequately Addressing Abnormal Situation Management, Ian Nimmo, Chemical Engineering Progress, September 1995
- Abnormal Situation Management: giving your control system ability to 'cope', Ian Nimmo, Honeywell Journal July 1995
- Abnormal Situation Management, Ian Nimmo, SafeComp '94 13th International Conference on Computer Safety, Reliability & Security, Anaheim California 1994
- Abnormal Situation Management a Challenge, Ian Nimmo, ChemPID Feedforward Vol.30 Number 3 September 1994

Misc

- The Operator as IPL, Ian Nimmo, Hydrocarbon Engineering, September 2005
- Future of Supervisory Systems in Process Industries: Lessons for Discrete Manufacturing, Ian Nimmo et al, Institut Francais Du Petrole France Keynote: June 1998
- Future of Supervisory Systems in Process Industries Lessons from Discrete Manufacturing, Ian Nimmo & Ted Cochran NIST Advanced Technology Program MVMT 1998
- Are you Protected, Ian Nimmo & Alan Johnson, Plantline October 1997
- Process Control Failures in the Chemical Industry, Ian Nimmo, AIChE Loss Symposium Boston MA July 1995
- Extend HazOp to Computer Control Systems, Ian Nimmo, Chemical Engineering Progress, October 1994
- Management of Change Petro-Safe '94 5th Annual Environmental Safety & Health Conference for the Oil, Gas & Petrochemical Industries January 1994 George Brown Conference Center – Houston, Texas. ISA Best Safety Technical Paper 1994 – Winner Basil Balls Safety & Instrumentation Award.
- Start up Plants Safely, Ian Nimmo, CEP 1993. Also published in – Practical Engineering Perspectives Plant Safety by Gail F. Nalven, Editor AiChE
- OSHA 29 CFR 1910.119 Training, Ian Nimmo, Honeywell Designing Training Programs that Work Crescent Hotel Phoenix, AZ October 1992

- Making the Most of Instrumentation Modernization Projects, Ian Nimmo, Chemical Engineering Progress, June 1992
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- Batch Control in the 90's, Ian Nimmo, Monterey University Mexico
- Lessons Learned from the Failure of a Computer System Controlling a Nylon Plant: Microprocessor Based Protection Systems pub Elsevier Applied Science ISBN 1 85166 611 7 Ian Nimmo
- Lessons Learned from the Failure of a Computer System Controlling a Nylon Plant: Achieving Safety & Reliability with Computer Systems SARSS '87 pub Elsevier Applied Science ISBN 1 85166 167 0 Ian Nimmo, Basil Eddereshaw & Stuart Nunns
- Intelligent Programmable Controllers: The answer to industrial Control Problems-European Study Conferences Limited – Effects of Microprocessors on Process Control and Plant Engineering 1th April 1980, The Selfridge Hotel, Orchard Street, London W.1 – Ian Nimmo