

Andy Brazier – Risk consultant specialising in Human Factors and Process Safety

Summary

Andy obtained a degree in Chemical Engineering from Loughborough University in 1990. He later conducted human factors research and development at Edinburgh University and obtained a PhD in 1996. He has worked as a human factors consultant since 1996, mainly in the oil, gas, chemical and power industries. His combination of engineering and human factors experience means he is particularly able to take a systems view of projects and operations to address the full range of technical, process and people risks. He has a reputation for being able to assess complex situations and for developing practical and effective solutions.

Andy is a Chartered Member of the Chartered Institute of Ergonomics and Human Factors (CIEHF) and Associate Member of the Institution of Chemical Engineers (IChemE). His experience and professional qualifications mean he is considered to be at the 'Master' or Technical Authority level of competence for human factors engineering in projects.

Andy's expertise includes task and human error analysis, staffing assessments, management of change, control room assessments, alarm reviews, procedures and competence systems, human factors engineering in design and safety critical communication (including shift handover).

Andy was lead author of the 3rd edition of EEMUA 201 – Control Rooms: A guide to their specification, design, commissioning and operation (2019). He is currently performing a similar role for EEMUA 191 – Alarm Management.

Andy was one of a team of authors of The Trevor Kletz Compendium published by IChemE and Elsevier in 2021. He took a lead role in organising the endeavour both in terms of generation of content, coordinating author input, and liaising with the publishers.

Andy is a member of the editorial panel of Loss Prevention Bulletin, and regularly has articles selected for publication. He has presented at conferences including IChemE Hazards. During 2021 Andy had a trilogy of articles published in The Chemical Engineer with co-author Nick Wise. What Safety Studies Have You Got on Your Menu? (April 2021), Risk: Tools of the Trade (May 2021), and Making Sure Risks are ALARP (June 2021) explored the role of safety studies and other approaches in deciding whether risks of hazardous processes are As Low As Reasonably Practicable (ALARP).

Current Associations

Chartered Institute of Ergonomics and Human Factors – Chartered member
Institute of Chemical Engineers - Associate member
Nebosh General Certificate - Occupational Health and Safety
BOSIET - Valid until 2024

Contact Details

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Employment History

2005 to Current – AB Risk Limited (own company)

Since January 2005 Andy has worked as a self-employed consultant, taking direct commissions and acting freelance for a number of consultancy companies. He continues to consult on human factors, ergonomics, risk, safety and health; and present courses, papers etc. Since December 2008 he has traded as AB Risk Limited. His clients have included Shell, SSE, Ineos, TAQA, Equinor, Wessex Water, Gasnor, Gassco, Centrica, Spirit Energy, BP, PDO, KNPC, Duqm Refinery, Chevron and Flogas. He has worked with engineering design companies including Costain, Genesis, Technip, Tecnicas Reunidas, Larsen and Toubro, Worley, Tebodin, Aker Solutions and Petrofac.

2002 to 2005 - Entec UK Ltd Principal Consultant

Andy was Entec's Principal Human Factors consultant, working within the risk and safety group. He was responsible for project delivery and management, product and business development and staff management. Many of his projects related to management of change to staffing levels, working patterns and departmental organisation. He also made significant contributions to projects including control room assessment, quantified risk assessment, environmental due diligence, occupational health and safety management systems. Andy's clients included ExxonMobil, Pfizer, Huntsman, Lucite, NHS, Health and Safety Executive, and Greater Manchester Waste.

1996 to 2002 - Human Reliability Associates (HRA) Senior Consultant

Andy's main responsibility was the implementation of a fundamental change to the way operating procedures were developed at a major manufacturing site in the UK. This was achieved through high levels of workforce involvement and task analysis, and backed up by rigorous training and competence programmes. The project has been credited with major improvements to the site's safety and profitability. Over this time Andy led projects to rewrite site safety rules and the permit to work system. Andy had other clients whilst working at HRA, including ESSO, Croda, Polymer Latex, ICI and the Health and Safety Executive. He also delivered training at many courses organised by HRA.

1992 to 1996 - Edinburgh University Research Associate

Andy was employed by the Chemical Engineering department whilst studying for a PhD. His topic of research related to human and safety in the process industry. Study included desk based literature review, and visiting industrial facilities, including offshore platforms, onshore manufacturing plants and a nuclear power station.

Education

1996 - Edinburgh University

PhD Sources of human factors data for use in the process industry

1990 - Loughborough University

BSc Chemical Engineering

Recent Experience

Year	Sector	Project
2022	TAQA	Supporting a major review of safety critical tasks and development of improved procedures at several assets.
2022	Gasnor	Supporting a new facility with control of major accident hazards and human factors.
2022	Wessex Water	Providing training, support and leadership to an in-house team set-up to radically change and improve alarm management.

Year	Sector	Project
2022	Perenco	Control room evaluation vs latest guidance and improvement plan.
2022	EEMUA	Lead author of a major rewrite of guidance document EEMUA 191 alarm management.
2021	BOC	Task analysis of nitrous oxide storage and handling.
2021	Campact	Control room evaluation vs latest guidance and improvement plan.
2021	Infinis	Advising the client on how to develop an alarm philosophy for their distributed system, implementing an alarm improvement plan and improve other sources of information used by operators.
2021	CF Fertilisers	Evaluation of a plan to relocate the operator of the waste treatment plant to the existing nitric acid control room.
2021	Perenco	Review of current arrangements and development of an improvement plan to allow significant modifications due to new projects. Findings of this study resulted in the creation of an additional operator role and installation of an additional desk in the control room.
2021	Equinor	Task Analysis of offshore transfer of crude oil from floating storage vessel to marine tanker.
2021	Wessex Water	Control room and alarm review. Development of a plan for significant improvements.
2021	Shell	Review and update of a site's emergency response procedures.
2021	Perenco	Task and human error analysis for gas well plugging and abandonment; and topsides removing by skidding to jack up barge.
2020	Perenco	Decommissioning. Safety Critical Task Analysis for the plugging and abandonment of the wells and skidding of topsides to a jack up barge.
2020	Flogas	Advice about how to modify the existing control room to achieve latest good practices and ensure its effectiveness for the 20+ year life of the modified site.
2020	NEO	Evaluation of existing control room design and review of planned changes to upgrade the human machine interfaces due to equipment obsolescence.
2020	NEO	Human factors reviews of existing critical operations and safety management procedures (inherited from the previous operator). Advice on improvements in support of the facilities safety case.
2020	Sonatrach / Petrofac	Human factors review of the proposed control room design for a new gas processing facility.
2020	Premier Oil	Review of the competence management system to ensure focus on safety critical skills. Developed a method of identifying and assigning competencies based on system lifecycles and Plan-Do-Check-Act (PDCA) framework.
2020	Repsol	Human factors for the safety case thorough review
2020	Perenco	Assessment of changes to control room to accommodate operation of the York normally unmanned installation.
2020	OPA	Task analysis and human factors assessment for new road loading facility.

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2020	Chevron / Aker Solutions	Human factors lead representing the client during FEED for sub-sea compression. Scope includes Field Compression Station (offshore platform), sub-sea modules and onshore power supply.
2019	Perenco	Review of the competence management system to ensure focus on safety critical skills. Used existing Bow Ties to identify safety barriers that require people to have defined competencies.
2019	NPCC	Human Factors Engineering (HFE) review during the detailed design of offshore wellhead towers (full field development project).
2019	Repsol	Human factors for the safety case thorough review
2018	TAQA	Review of control room arrangements compared to ISO 11064 and EEMUA 201 requirements.
2018	Centrica	Human factors Engineering (HFE) ALARP review for new project.
2018	BRM	Critical task and human error analysis to support new entrant COMAH submission.
2018	Petroleum Development Oman (PDO) / Larson & Toubro (L&T)	Farabi project (Saudi Arabia). Human Factors Engineering (HFE) study at detailed design. Study conducted in India.
2018	Syngenta	Staffing assessment.
2018	Shell	critical task and human error analysis of maintenance activities
2018	Centrica Energy	Critical task and human error analysis of helicopter refuelling
2018	Shell	Staffing assessment.
2018	Flogas	Human Factors Engineering (HFE) plan for design phase.
2018	Petroleum Development Oman (PDO) / Tebodin	Al Noor, Oman. Human Factors Engineering (HFE) review of new control room design.
2018	Scottish and Southern Energy (SSE)	Review of emergency response procedures compared to industry guidance and good practice.
2017	Petroleum Development Oman (PDO) / Larson & Toubro (L&T)	Human Factors Engineering (HFE) during detailed design for two similar gas depletion compression projects.
2017	Shell / Gasnor	Human factors and task analysis for a pre-construction safety report for a new LNG import and storage facility
2017	Centrica Hydrocarbon Resources Limited	Task and human error analysis of critical tank farm operations in support of updated operating procedures. Included pipeline transfers and ship loading.
2017	Humbley Grove Energy	Task and human error analysis of critical activities in support of the site's COMAH report.
2017	EEMUA	Development of an online course to introduce EEMUA 191 alarm management guidance
2017	NPCC	Bu Haseer, Abu Dhabi. Human Factors Engineering (HFE) review during the detailed design of an offshore wellhead tower.
2017	Scottish and Southern Energy (SSE)	Task and human error analysis of critical maintenance tasks including SIL loop testing, HV electrical switching and making/breaking pipework.
2017	Solvay	Demonstration of best practices in performing task and human error analysis for a critical tanker loading operation involving a high hazard chemical

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2017	Flogas	Critical task and human error analysis for LPG ship unloading and road tanker loading at a major import terminal.
2017	Centrica Storage Limited	Staffing assessment for a new organisation following a reduction in workload. Key focus was on the minimum arrangements required for safe response to emergencies.
2017	Scottish and Southern Energy (SSE)	Human Factors Engineering (HFE) study for a proposed new multi-fuels/energy from waste plant. Carried out during the Select phase of the project.
2017	BP	Staffing assessment.
2017	Certas	critical task and human error analysis
2017	Sabic	Control room design gap analysis
2017	Cristal	Interactive presentation at the in-house corporate safety on the subject of procedure compliance
2017	Centrica Energy	Critical task and human error analysis of pigging operations
2017	Centrica Storage Limited	ALARP review to support COMAH report
2016	Centrica Hydrocarbon Resources Limited	Morecambe Hub life extension project. Human Factors Engineering (HFE) study at Concept / Select phase.
2016	Centrica Energy	Projects department. Development of procedures for integrating human factors into projects.
2016	Duqm Refinery Company (Oman) / Technip	Control room design study at Front End Engineering and Design (FEED)
2016	Centrica Hydrocarbon Resources Limited	Shift handover. Rerun of training course for operators
2016	Scottish and Southern Energy (SSE)	Projects department. Development of procedures for integrating human factors into projects.
2016	Kuwait National Petroleum Company (KNPC) / Petrofac	Mina Abdulla Refinery Clean Fuels MAB 1 project (Kuwait). Human Factors Engineering (HFE) study at detailed design. Study conducted in UAE
2016	Kuwait National Petroleum Company (KNPC) / Fluor	Mina Abdulla Refinery Clean Fuels MAB 2 project (Kuwait). Human Factors Engineering (HFE) study at detailed design.
2016	Tata Steel	critical task and human error analysis
2016	Petroleum Development Oman (PDO) / Tebodin	Musallim 3rd Module project (Oman). Human Factors Engineering (HFE) study at detailed design.
2016	Coventry & Solihull Waste Disposal Company (CSWDC)	Energy from waste site alarm gap analysis based on EEMUA 191
2016	Centrica Storage Limited	Developing a practical and effective standard for safe isolation of process plant, including use of Double Block and Bleed
2016	Centrica Storage Limited	Evaluation of arrangements in place for managing human factors and preparing appropriate text for the site's COMAH safety report
2016	Centrica Storage Limited	Evaluation of control room to identify easy short term changes to improve working arrangements and equipment layout.
2016	Tata Steel	Development of a shift handover procedure and training course
2016	Centrica Storage Limited	York onshore compression project Human Factors Engineering (HFE) study

Year	Sector	Project
2016	Centrica Hydrocarbon Resources Limited	critical task and human error analysis of offshore and pipeline pigging operations
2016	Scottish and Southern Energy (SSE)	Interactive presentation at the in-house corporate safety on the subject of communication and compliance
2016	Centrica Hydrocarbon Resources Limited	Investigation of a process incident to identify human factors root causes and recommendations for fundamental improvement in performance
2016	Scottish and Southern Energy (SSE)	Evaluation of critical communication including shift handover, permit to work, induction and incident management
2016	Centrica Storage Limited	Task and human error analysis of pipeline pigging activities. Including receiving a pig from the offshore pipeline and opening the receiver to retrieve the pig.
2016	Centrica Storage Limited	Investigation of a process incident that resulted in a hydrocarbon release to identify human factors root causes and recommendations.
2016	Scottish and Southern Energy (SSE)	Human Factors Engineering (HFE) assessment for a proposed additional gas turbine and major upgrade to an existing control room. Carried out during the Concept stage of the project.
2016	Scottish and Southern Energy (SSE)	Human Factors Engineering (HFE) assessment for a proposed new diesel fuelled power station. Carried out during the Concept stage of the project.
2016	Scottish and Southern Energy (SSE)	Review and update of management system procedures covering process safety aspects of gas wellhead interventions.
2016	Centrica Storage Limited	Review of alarm system performance and more general human factors ergonomics at an offshore platform.
2015	BP	Staffing assessment
2015	Centrica Hydrocarbon Resources Limited	Morecambe Terminal. Shift handover procedure development and training course for operators
2015	Centrica Hydrocarbon Resources Limited	Morecambe Terminal Rhyl Project. Evaluation the impact of the project on terminal operation and learning about management of change for future projects.
2015	Centrica Hydrocarbon Resources Limited	Morecambe Terminal high pressure gas sample points. Evaluation of sample point design, construction and operating procedures.
2015	Centrica Hydrocarbon Resources Limited	Offshore platform educator project. Human factors engineering study.
2015	Centrica Hydrocarbon Resources Limited	Staffing assessment and evaluation of the predicted impact of single terminal operation.
2015	Centrica Energi (Norway)	Offshore drilling human factors risk assessment and development of a dynamic risk dashboard.
2015	Dragon LNG	Milford Haven. Alarms one day course based on EEMUA 191
2015	Electricity de France (EDF)	Engineering department. Alarms one day course based on EEMUA 191
2015	Total	Human factors for the safety case thorough review
2015	Gasrec	Truck LNG fuelling station critical task and human error analysis.
2015	Gasrec	Truck LNG fuelling stations. Analysis of drive away incidents and design interventions to reduce their likelihood

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2015	Petroleum Development Oman (PDO) / Al Hassan	Rabab Harweel power plant. Human Factors Engineering (HFE) study at detailed design.
2015	Sonatrach / Petrofac	Alrar Inlet facility. Control room study at detailed design.
2015	Petroleum Development Oman (PDO) / Tebodin	Saih Rawl Coalescer project. Human Factors Engineering (HFE) study at pre-operations phase.
2015	Petroleum Development Oman (PDO) / Tebodin	Upper Shuaiba project. Human Factors Engineering (HFE) study at Concept / Select phase.
2015	Petroleum Development Oman (PDO) / Tebodin	Yibal Rejuvenation project. Human Factors Engineering (HFE) study at detailed design.
2015	Petroleum Development Oman (PDO) / Worley Parsons	Amal Steam project. Human Factors Engineering (HFE) study at detailed design.
2015	Syngenta	Development of a control room evaluation procedure and pilot evaluation.
2015	Semlogistics	Critical task and human error analysis
2015	Semlogistics	Butane injection project human factors engineering study at Front End Engineering and Design (FEED) phase.
2015	Shell	Critical task and human error analysis
2015	Shell	Critical task and human error analysis
2015	Shell	Development of a standard for operating procedures
2015	Scottish and Southern Energy (SSE)	Critical task and human error analysis
2015	Scottish and Southern Energy (SSE)	Control room review and recommendations for improved ergonomics
2015	Survitec	Confidential product. Human Factors Engineering (HFE) advice for the design process.
2014	ADMA / NPCC	Umm Lulu offshore platforms. Human Factors Engineering during detailed design.
2014	Petroleum Development Oman (PDO) / Reunidas Engineering (TRE)	Zauliyah Gas Plant project. Human Factors Engineering (HFE) during detailed design
2014	NuStar	Development of a standard for carrying out critical task and human error analysis
2014	Petroleum Development Oman (PDO) / Larson & Toubro (L&T)	Yibal 3rd stage Depletion Compression Project. Human Factors Engineering (HFE) during detailed design
2014	Petroleum Development Oman (PDO) / Honeywell	Gas Central Control. Control room study during detailed design
2014	Gas de France (GDF)	Human factors review of project to support safety case.
2014	Maersk	Human factors for the safety case thorough review
2014	Maersk	Human factors for the safety case thorough review
2014	Maersk	Human factors for the safety case thorough review
2014	Total	Human factors for the safety case thorough review
2014	Centrica Storage Limited	Review of contractor competence management system
2014	Centrica Storage Limited	Reassessment of staffing arrangements following an organisational change
2014	Centrica Hydrocarbon Resources Limited / Costain	Human Factors Engineering (HFE) study of plant modifications required for single terminal operation.
2014	Centrica Hydrocarbon Resources Limited	Working with shift teams to develop a training course for improving the quality of shift handover
2014	Centrica Storage Limited	Offshore safety case. Human factors review of bow ties.

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2014	Centrica Storage Limited	Development of an in-house alarm policy, management and review procedures.