

DR. JOHANNES BECK



HUMAN FACTORS SENIOR EXPERT

FOR ORGANIZATIONAL AND SAFETY CULTURE,

OCCUPATIONAL SAFETY AND CORPORATE COMMUNICATIONS

CURRICULUM VITAE

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PERSONAL PROFILE

Human and Organizational Factors specialist in the field of organizational and safety culture since 2008. More than six years of experience as human and organizational factors official expert at Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) gGmbH (non-profit limited liability); specialized in the assessment of organizational and safety culture in nuclear power plants (NPP), and international standards and regulations (e.g. IAEA standards); involved in the development of national and international regulations for nuclear safety and in the analysis of the influence of motivational factors on safety behavior and in human reliability analysis.

Contributed to the innovation of a safety culture assessment methodology for operators of NPP (SIKUMETH) and a safety culture assessment tool for NPP – now recommended for the regulatory body in Germany (MESKA) on behalf of the Federal Ministry for the Environment, Nature Conservation, Construction and Nuclear Safety (Germany).

Moreover specialized in the analysis of decision-making processes in the context of uncertainty during emergencies in NPP; Ph.D. from Technical University of Munich (TUM) for a dissertation on decision-making behavior of experts at NPP. Five years of experience as energy electronics engineer.

SERVICES OFFERED

Improvement of safety and organizational culture

- Analysis and evaluation of the safety and organizational culture of companies
- Development and implementation of measures to maintain or improve the safety culture in companies
- Employee training in the areas of safety culture, communication and safety-related behavior
- Seminars and trainings for managers in the field of safety-related management of employees
- Trainings and seminars in the field of occupational safety
- Lectures and seminars at colleges and universities in the following areas: work psychology, organizational psychology, thinking and problem solving, recording and evaluation of safety and organizational culture

EXPERIENCE

2012 - 2018

Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) gGmbH, Garching b. München, Berlin

Human and Organizational Factors official expert:
Evaluation of decisions under uncertainty in emergency situations and the assessment of safety culture
Development of a safety culture assessment tool recommended for use for the regulatory body in Germany (MESKA)
Expert for international standards and regulations (e.g. Assessment of new IAEA standards)
Development of national and international regulations for nuclear safety
Human reliability analysis (PSA)
Analysis of the influence of motivational factors on safety behavior in NPP
Research project leader: Safety related behavior in decommissioning of NPP

2008 - 2011

Technical University of Berlin (TUB)

Research assistant: Development and validation of a safety culture assessment methodology in nuclear industries (SIKUMETH) at the Chair of Work, Engineering & Organizational Psychology, School V – Mechanical Engineering and Transport System, Department of Psychology and Ergonomics (2008-2010: Student research assistant)

2007

Charité – University Medical Center Berlin

Reform degree program in medicine
Student employee
Cooperation in the planning and supervision of the „Objective Structured Clinical Evaluation“ (OSCE)

1998 – 1999

Carl von Ossietzky University, Oldenburg

Civilian Service
Energy electronics engineer in the Department of Ecochemistry and Environmental Analysis

1998

Energieversorgung Oberfranken AG, Bayreuth

Energy electronics engineer in the field of overland high voltage power supply

EDUCATION

2012-2015

Technical University of Munich (TUM)

Ph.D. for the work on decision-making behavior of experts at NPP at the Chair of Ergonomics, Faculty of Mechanical Engineering, Prof. Dr. Klaus Bengler – In cooperation with Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) gGmbH

Doctoral thesis: „Decision-making behavior of experts at nuclear power plants: Regulatory focus influence on cognitive heuristics“

2003-2011

Technical University of Berlin (TUB)

Diploma of Psychology (equiv. to M.A.)

Special emphasis on Work, Engineering & Organizational Psychology as well as clinical psychology

Diploma thesis in the field of Work, Engineering & Organizational Psychology: "The influence of the regulatory focus on the coordination performance of teams - an experimental review of cognitive explanatory approaches"

Final grade: 1,1 (approximate equivalent: A)

1999-2002

Berlin Kolleg

Diploma from German secondary school qualifying for university admission or matriculation

1994-1998

Energieversorgung Oberfranken AG, Bayreuth

Trained as an energy electronics engineer

Specialization: Systems engineering

1985-1994

Grund - Hauptschule Frensdorf

Primary and secondary modern school

Graduation: Qualifying secondary school certificate

AWARDS

1998

Award of the state of Upper Franconia

Excellent vocational training certificate

Middle School graduation

2002

Deutsche Physikalische Gesellschaft (DPG)

Special membership and book price 2002

Excellent achievements in physics

SKILLS

COMPUTER

Microsoft Office, Microsoft Access, SPSS, Endnote,

Siemens SPS 5

LANGUAGE

German (native)

English (fluent)

Spanish (basic knowledge)

PUBLICATIONS (SELECTION)

- W. Faßmann, **J. Beck** (2018). *Leitfaden für die Erfassung und Beurteilung wesentlicher Merkmale der Sicherheitskultur deutscher Kernkraftwerke durch die Genehmigungs- und Aufsichtsbehörden* (Guidelines for the recording and assessment of essential characteristics of the safety culture of german nuclear power plants by the approval and supervisory authorities). BfE-RESFOR-001/18. Salzgitter: Bundesamt für kerntechnische Entsorgungssicherheit (BfE) (Federal Office for the Safety of Nuclear Waste Management). urn:nbn:de:0221-2018011614478
- W. Faßmann, **J. Beck** (2018). *Stand von Wissenschaft und Technik zu Erfassung und Beurteilung wesentlicher Merkmale der Sicherheitskultur* (State of science and technology to capture and assess key features of the safety culture). BfE-RESFOR-002/18. Salzgitter: Bundesamt für kerntechnische Entsorgungssicherheit (BfE) (Federal Office for the Safety of Nuclear Waste Management). urn:nbn:de:0221-2018011614480
- M. Schöbel, A. Klostermann, R. Wagner, **J. Beck**, D. Manzey (2017). Digging deeper! Insights from a multi-method assessment of safety culture in nuclear power plants based on Schein's culture model. *Safety Science*, 95, pp. 38-49. DOI 10.1016/j.ssci.2017.01.012
- W. Faßmann, **J. Beck**, C. Kopisch (2016). The regulatory approach for the assessment of safety culture in Germany – A tool recommended for practical use for inspections. *In Proceedings of the International Conference on Human and Organizational Aspects of Assuring Nuclear Safety – Exploring 30 Years of Safety Culture*, 22-26 Feb., Vienna, Austria: International Atomic Energy Agency (IAEA).
- B. Petermeier, W. Faßmann, **J. Beck** (2016). Method for Analyzing Operator Interactions with Computerized Interfaces and Their Impact on Process Safety. *In Proceedings of the 13th International Conference on Probabilistic Safety Assessment and Management (PSAM)*. 02-07 Oct., Seoul, Korea: International Association for Probabilistic Safety Assessment and Management (PSAM).
- J. Beck** (2015). *Entscheidungsverhalten von Experten in Kernkraftwerken: Der Einfluss des regulatorischen Fokus auf kognitive Heuristiken* (Decision-making behavior of experts at nuclear power plants: Regulatory focus influence on cognitive heuristics), GRS-385. Cologne: GRS. ISBN 978-3-944161-66-2
- J. Beck**, A. Eichinger, K. Bengler (2014). Trait, state or artefact? Assessing experts' regulatory focus in nuclear power plant control. *Cognition, Technology & Work*, 16(4), pp. 531-539. DOI 10.1007/s10111-014-0283-1
- J. Beck**, A. Eichinger, K. Bengler (2014). Nuclear Power Plant Operators' Regulatory Focus and the Probability Estimates of Compound Events. *In Proceedings of the 38th Enlarged Halden Programme Group Meeting*, 07-12 Sep., Røros, Norway: OECD Halden Reactor Project.
- J. Beck** (2013). *Entscheidungsverhalten von Experten in Kernkraftwerken (Decision-making behavior of experts at nuclear power plants)*. *Ergonomie Aktuell*, 14, pp. 33-35. ISSN 1616-7627
- M. Schöbel, A. Klostermann, R. Wagner, **J. Beck**, D. Manzey (2012). *Entwicklung einer Analysemethodik von Sicherheitskultur (SIKUMETH) – Development of a safety culture assessment methodology in nuclear industries*. Reactor Safety Research-project No:

1501340, Technical University of Berlin, School V – Mechanical Engineering and Transport System, Department of Psychology and Ergonomics, Chair – Work, Engineering & Organizational Psychology. DOI 10.2314/GBV:743954149

- A. Klostermann, M. Schöbel, R. Wagner, **J. Beck**, D. Manzey (2012). Entwicklung und Validierung eines Verfahrens zur Erhebung von Sicherheitskultur in Kernkraftwerken (Development and validation of a procedure for the evaluation of safety culture in nuclear power plants). In: *Psychologie der Arbeitssicherheit und Gesundheit. 17. Workshop 2012. Sichere und gute Arbeit erfolgreich gestalten - Forschung und Umsetzung in die Praxis*. Hrsg: G. Athanassiou, S. Costa-Schreiber, O. Sträter, pp. 33-37. Kröning: Asanger.

LECTURES & WORKSHOPS (SELECTION)

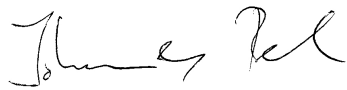
- Denken und Problemlösen: Methode zur quantitativen Bewertung (Thinking and Problem Solving: Method for Quantitative Assessment). Deggendorf Institute of Technology, Deggendorf, Germany. June, 2018.
- Researching safety-related personnel actions during decommissioning. CAPS 4: HOF Organisational Capabilities for Decommissioning, Halden, Norway. March, 2018.
- Human Factors Group GRS – Task Overview and Presentation MESKA. ETSO – EG 7, Meeting 1: TSAG on HOF practices, BEL V, Brussels, Belgium. January, 2018.
- Method For Analyzing Operator Interactions With Computerized Interfaces And their Impact On Process Safety. 13th International Conference on Probabilistic Safety Assessment and Management (PSAM 13), Sheraton Grande Walkerhill, Seoul, Korea. October, 2016.
- Möglichkeiten zur Erfassung von Sicherheitskultur (Options for recording safety culture).
1. MTO – Expertengespräch: Sicherheitskultur in der praktischen Aufsicht, Bundesamt für Strahlenschutz (BfS) (Federal Office for Radiation Protection), Berlin, Germany. June, 2016.
- The Regulatory Approach for the Assessment of Safety Culture in Germany – A tool recommended for practical use for inspections. International Conference on Human and Organizational Aspects of Assuring Nuclear Safety – Exploring 30 Years of Safety Culture (CN 237). International Atomic Energy Agency (IAEA), Vienna, Austria. February, 2016.
- Grundlagen für die Beurteilung von Entscheidungsprozessen in Stör- und Notfällen (Fundamentals for the assessment of decision processes in case of emergencies). Sitzung der Reaktor-Sicherheitskommission (RSK) – Ausschuss Reaktorbetrieb (RB), Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit (BMU) (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety), Bonn, Germany. February, 2016.
- Entscheidungsverhalten von Experten in Kernkraftwerken – Der Einfluss des regulatorischen Fokus auf kognitive Heuristiken (Decision-making behavior of experts at nuclear power plants: Regulatory focus influence on cognitive heuristics). Vortrag zur wissenschaftlichen Aussprache, Technical University of Munich, Garching bei München, Germany. June, 2015.

Nuclear Power Plant Operators' Regulatory Focus and the Probability Estimates of Compound Events. *38th Enlarged Halden Programme Group Meeting*, Røros, Norwegen: OECD Halden Reactor Project. September, 2014.

Entscheidungsverhalten von Experten in Kernkraftwerken (Decision-making behavior of experts at nuclear power plants). Das Simulatorzentrum KSG|GfS, Essen, Germany. April, 2013.

Entscheidungsverhalten in Störfällen (Decision-making behaviour during emergencies). Das Simulatorzentrum KSG|GfS, Essen, Germany. June, 2012.

Bamberg, 01.08.2018

A handwritten signature in black ink, appearing to read 'Johannes Beck', written in a cursive style.

Dr. Johannes Beck