

NUCCON GmbH

Basic Information

Name of the company: Nuccon GmbH, nuclear safety and technology

Registration: Registered by the HANDELSGERICHT WIEN under the registration number Firmenbuchnummer FN 412219 f on 27th February 2014 at Schoenbrunner Allee 9, 1120 Wien, Austria

Authorization: Authorized as Technical Scientific and Support Organization for nuclear safety and nuclear technology activities by the Nuclear Safety Administration of the Republic of Slovenia, authorization number 3571-3/2014/3

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Business Scope

Areas of activity/expertise

NUCCON is fully authorized Technical Scientific and Support Organization (TSSO) dealing exclusively with nuclear matters. It is fully independent from any vendor, utility or governmental organization. NUCCON provides independent review and advice, technical support, safety analyses and training in nuclear technology.

NUCCON was established by Dr. Milorad Dusic, m.dusic@nuccon.eu, former Senior Nuclear Safety Specialist of the IAEA in collaboration with a number of former IAEA colleagues, national regulators and other reputable, highly qualified international experts.

NUCCON's areas of activity/expertise are within nuclear safety and security, radiation protection, emergency preparedness and response, radiological waste, including decommissioning and transport of nuclear material.

Three broad areas can be singled out as the major focus of NUCCON's expertise: regulatory aspects, technology evaluation and safety and security of nuclear facilities:

Regulatory:

- Development of legislation for regulation of nuclear facilities
- Application of fundamental safety and security principles
- Legal and governmental infrastructure for nuclear, radiation, radioactive waste and transport safety
- Regulatory body organization and staffing
- Review and assessment of nuclear facilities and activities by regulatory bodies including the review of all chapters of FSAR
- Regulatory inspection activities
- Nuclear security

Technological:

- Evaluation of advanced reactor technologies including AP 1000, VVER 1500, EPR, CPR 1400, ACR 1000, ATMEA1 etc.
- Tender preparation and evaluation
- Project assessment and auditing

Safety and Security of Nuclear facilities:

- Siting including the Environmental Impact Assessment
- Design evaluation:
 - Evaluation of all chapters of PSAR and FSAR including:
 - Deterministic Safety Analyses including Design Basis, Design Extension and Severe Accidents
 - Probabilistic Safety Analyses
 - Combined use of deterministic and probabilistic safety analyses
 - Evaluation of Defense-in-depth
- Operation:
 - Leadership and Management for Safety
 - Limiting Conditions for Operation
 - Technical Support for operation including:
 - Utilization of Safety Margins for enhanced operational flexibility
 - Safety Culture, Human Factors, Human Performance
 - Feedback of Operating Experience (FOE), Root Cause Analyses, Incident Investigation

- Emergency Preparedness and Response including Accident Management
- Training in nuclear safety and security
- Periodic Safety Review and Long Term Operation
- Transition from Operation to Decommissioning
- Radioactive Waste Management

NUCCON's expertise and independent position is an important advantage for providing support to countries embarking on nuclear technology. NUCCON can provide support throughout all three initial phases of the nuclear power plant project development; phase I, after which the country is ready to make a knowledgeable commitment to nuclear power, phase II, after which it is ready to invite bids for the first NPP and phase III, when it is ready to commission and operate the first NPP. NUCCON would of course continue to provide support also throughout the remaining two phases of a nuclear power plant project i.e., operation and eventual decommissioning.

REFERENCES from performed tasks:

Since its creation in 2014, Nucon GmbH has been engaged in the following projects:

- I. Independent Expert Opinion for NPP Krsko Safety Modifications:**
 - Independent Evaluation Report of NPP Krsko Second Periodic Safety Review (PSR-2) Study, 2014
 - Independent Evaluation Report of NPP Krsko Waste Manipulation Building (WMB) Project, 2014
 - Independent Evaluation Report for NPP Krsko Bunkered Building 2 (BB2) with support systems and emergency electrical power supply, 2020
 - Independent Evaluation Report for the Reconstruction of the Krsko NPP Operational Support Centre (OPC), 2021
- II. Training:**
 - Development of the Training Material for the Basic Professional Training Course on Nuclear Safety, 2015:
 - Module III Basic principles of nuclear safety
 - Module VI Deterministic safety analyses
 - Module VII Probabilistic safety analyses
 - Module VIII Integrated risk informed decision making
 - Module IX Siting considerations

- Module XX Regulatory control
- Module XXI Management system, leadership and safety culture
- Module XXII Human performance
- Involvement in the Training Course on Root Cause Analysis and Event Investigation for EU Regulators, held at EC-JRC Petten in 2014, 2015, 2016, 2017, 2018
- Framework Contract Agreement with the EC-JRC-Petten for 8 Training Courses on Root Cause Analysis and Event Investigation for the time period from 2019 – 2022
- Involvement in the national Training Course:
 - Safety Assessment for Decommissioning of KANUPP, Karachi, Pakistan, 2015
 - New Requirements on Design of NPPs, Amman, Jordan, 2016
 - Power Anomalies Transients, DNBR Calculations and Radiological Consequence Analysis, Islamabad, Pakistan, 2016
 - Essential Knowledge on Deterministic Safety Analysis and Engineering Aspects, Algiers, Algeria, 2016
 - Root Cause Analysis, Bushehr NPP, Iran, 2017
 - Preparatory Mission for OSART, Bushehr NPP, Iran, 2017

III. Development of the IAEA documents:

- Development of the Technical Safety Review Guidelines for the IAEA safety review missions, 2015:
 - Module: Generic Reactor Safety Review
 - Module: Severe Accident Management Programme Review
- Contribution towards the Development of the Design Review Methodology for the IAEA LEU Storage Facility in Kazakhstan, 2016
- Development of the EPR-NPP-Assessment document on Classification, Assessment and Prognosis during NPP Emergencies (Information to be provided to the Emergency Preparedness Decision Maker), 2017
- Development of EPR On-Site EPLAN NPP document on Considerations for Implementing an On-site Emergency Preparedness and Response Plan for Nuclear Power Plants, 2018

IV. Review Missions:

- Review of the Post-Fukushima Actions Taken at Karachi Nuclear Power Plant, Karachi, Pakistan, 2017
- Review Mission to Karachi Nuclear Power Plant on Dry Storage Facility, Karachi, Pakistan, 2017

V. EC – related projects:

- Member of the Consortium for the EC H2020 NARSIS (New Approach to Reactor Safety ImprovementS) Project, September 2017 and lasted for 48 months until 2022
- Member of the Consortium (with ENCO and CONLAR) for the EC ENER/D2/2016-677 Study on Benchmarking of nuclear technical requirements against WENRA safety reference levels, EU regulatory framework and IAEA standards, Start 2017
- Expert contract with EC RTD/E/06 unit for the evaluation of:
 - NFRP-2018 project proposals, 2018
 - Horizon-Euratom-2021-NRT-01 project proposals, 2021