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1. Company Overview

Founded in 1985, EXCEL is known throughout the United States and around the world for providing nuclear energy producers with proven solutions and innovative strategies for turning challenges into opportunities. For over 40 years, EXCEL has been delivering innovative and value-added solutions to the global nuclear energy industry. EXCEL personnel have extensive experience with advanced reactors, construction issues, operational and engineering problems, decommissioning, and other activities related to managing and resolving first-of-a-kind, complex issues. Our personnel include former nuclear industry and Nuclear Regulatory Commission (NRC) executives and senior managers and staff with valuable hands-on experience of planning, building and operating nuclear power plants. EXCEL leadership led to the first-ever 10 CFR Part 52 Early Site Permit for the Clinton Power Station and first-ever Combined Operating License for Vogtle Electric Generating Plant Units 3 & 4. EXCEL personnel bring with them a broad and diverse background. We provide an extensive skills pool in Licensing, Engineering, Operations, Project Management, Maintenance, Quality Assurance, Physical and Cyber Security, Environmental Management, Emergency Planning, and many other specialist areas. EXCEL includes an ever-expanding group of experts that can meet any and all planning, engineering, operational, technical, environmental, or licensing challenges.

EXCEL has gained a reputation for enhancing safety, improving performance and operational flexibility, and reducing the operating costs of operating nuclear facilities in the United States and around the globe. The company is dedicated to the highest levels of regulatory, technical and engineering excellence!

Since 2005, EXCEL has been extensively involved in the preparation, review, and/or defense of most new build applications for Early Site Permits (ESP), Design Certifications (DC), and Combined License Applications (COLA). In doing this, EXCEL has developed strategies to resolve complex licensing issues and regulatory interfacing challenges between reactor vendors and regulators in many countries. Resolving plant-specific issues and modifying plant designs to meet country-specific regulatory requirements is a fundamental deliverable in which EXCEL specializes for all phases of the nuclear plant life cycle, from design certification, initial licensing, license renewal, to decommissioning.

EXCEL has vast U.S. and international experience having worked with government departments, utilities and regulatory bodies in 31 countries. The following are just a few of EXCEL's capabilities and areas of support:

a) Development of National Roadmaps for nuclear power introduction and expansion
b) Feasibility Studies for new nuclear power plants
c) Siting analyses for nuclear power plants
d) Needs assessment, appropriate technology selection and application scoping
e) Regulatory establishment, updating and reform
f) Licensing strategies, licensing planning, risk-informed licensing and license renewal
g) Critical Infrastructure Protection including Physical and Cyber Security
h) Steam generator selection and replacement
i) Refueling strategies including 24-Month Fuel Cycle Extensions
j) Nuclear Plant Ageing Management and Long-Term Operation (LTO) planning
k) PWR, EPR, BWR (ESBWR) and SMR Design Certification
l) Digital Instrumentation and Control (DI&C)
m) Radioactive Waste Management
n) Plant Modifications and Upgrades
o) Maintenance and In-Service Inspection (ISI) planning
p) Geology, Hydrology, Geohydrology and Groundwater Modelling
q) Meteorological and Seismic Assessments
r) Oceanographic and Coastal Engineering
s) Human induced external event management
t) Source term analysis for nuclear materials
u) Environmental Impact Assessments including ecological investigations and evaluations
v) Probabilistic Safety Assessments and Accident Analyses
w) NORM related activities (Naturally Occurring Radioactive Materials)
x) Public Radiation Protection Programs
y) Dosimetry programs and bioassays
z) Decommissioning Planning and Implementation

2. International experience of countries pursuing new nuclear generation

a) Past Projects: Puerto Rico

Undertook a Feasibility Study for the deployment of Small Modular Reactors and Microreactors to Puerto Rico. EXCEL supported the Nuclear Alternative Project and Department of Energy to evaluate the feasibility of small modular reactors (SMRs) and microreactors in Puerto Rico. The study provided information on the latest technology with regards to SMR/Microreactors applications for Puerto Rico geographic and current market conditions and in turn will serve as the technical basis to support future policy changes in support of nuclear energy in Puerto Rico. It also evaluated the suitability of SMR and MMR technologies for deployment in a highly populated economy.

b) Past Projects: Eastern Europe

With funds provided by the US Department of State, EXCEL supported SMR feasibility studies in Poland, Ukraine, Bulgaria, Czechia and Slovakia. These studies, which were conducted between 2023 and 2025, focused on determining the precise long-term energy needs of these economies and to what degree these needs might be met by the SMRs currently on offer.

c) Past Projects: United Arab Emirates (UAE)

Planning work for the 5,600MW Barakah Nuclear Power Plant in the UAE began in 2008 with construction starting in 2012. The first of four APR1400 PWR reactors began generating power in 2020 with the last unit commissioned in 2024. Barakah was one of the fastest large-scale nuclear power developments undertaken in the western world and took the UAE from being a non-nuclear country to a nuclear regional power-house in under 16 years. EXCEL was involved in the following activities during the entire development program:

i. Technology selection
ii. Site selection
iii. Contract negotiations between ENEC (operator) and the KHNP (reactor supplier)
iv. Licensing design and approach
v. Nuclear regulator establishment in the UAE
vi. Environmental Impact Assessment
vii. Training of operators (ENEC)
viii. Commissioning of the four reactors

d) Upcoming Projects: SE Asian island state

Together with local partners, EXCEL will be providing a range of nuclear power consulting services aimed at meeting an island-state's long term clean energy need. These services include needs assessment, plant siting, technology selection and nuclear regulatory development. This country is a non-nuclear nation and EXCEL will be providing hands-on, technology agnostic support at every step of the process.

e) Upcoming Projects: SE Asian state

EXCEL has partnered with local energy companies and utilities to investigate and plan the deployment of a high temperature research micro modular reactor (MMR) at a leading technical university in Southeast Asia. While the country in question has been operating a research reactor for over 40 years, this will be the first time a high temperature reactor is deployed will the intention of a national roll-out for power supply purposes. There is also strong interest being shown by this nation's military for the deployment of MMRs at military bases.

f) Upcoming Projects: Future SMR Feasibility Studies

EXCEL is currently negotiating with the US Department of State to undertake future SMR feasibility studies in the Philippines, Indonesia, UAE and Ghana. This work should begin this year.

g) Active Projects: Development of a Global Thorium Nuclear Fuel Supply Chain

EXCEL is currently involved in the development of a global thorium supply chain for a company that is looking to supply both liquid and solid thorium nuclear fuels to the growing international thorium reactor market. This work involved extensive research and negotiation with rare earth element producers as well as those nuclear fuel manufacturers who are interested in branching into thorium fuel production.

h) Active Projects: International locational analysis for liquid metal fast reactors

EXCEL is currently engaged with a liquid metal fast neutron reactor developer to support siting analysis, licensing and applications investigation in North America and Europe. The reactor requires a MOX fuel that must be manufactured from light water reactor spent fuel rods, thus requiring fuel reprocessing facilities and supporting regulations. EXCEL is also investigating the use of such reactors and the associated fuel reprocessing to produce selective isotopes for industrial and medical purposes, as well as for space exploration.

3. Why Norway?

EXCEL is currently expanding operations into western and northern Europe with work opportunities in the Netherlands, the UK and Finland currently being pursued. Securing work in Norway would be a tremendous achievement for EXCEL's International Team and would anchor our operational capacity in the region for decades to come.

Currently, EXCEL does not have any Norwegian energy industry partners, although we currently work with several international companies that are active in Scandinavia. However, it has always been EXCEL's policy when taking on work in a new country, to seek out local companies with whom we can beneficially partner on a range of activities. We rely on the local knowledge that such partners provide and in exchange we provide training and exposure to the very latest nuclear technologies and applications. Several of these companies, from previous foreign ventures, are now permanent associates of EXCEL who assist us in our work around the world.

4. What can EXCEL offer Norway

EXCEL acknowledges Norway's impressive history in the nuclear engineering and science fields that stretches back many decades. It provides a solid skills foundation should the country decide to expand into nuclear power generation. EXCEL possesses an unrivalled track record in supporting countries with little or no experience of nuclear power generation (for both heat and electricity) and taking them through the entire process comprising:

i. National needs assessment and nuclear strategy (Roadmap) development
ii. Finding common ground between national policy goals and local needs and preferences
iii. Institutional and infrastructural evaluation to support new nuclear power
iv. Stakeholder engagement, communication strategies and public education programs
v. Technology selection and technology applications to meet future needs
vi. Siting investigations (both for in-situ demand and regional transmission)
vii. New nuclear plant feasibility analyses

viii. Nuclear regulatory establishment, gap analysis, reform and upgrading
ix. Technology supplier prequalification, tendering, selection and contracting
x. Technology licensing and interfacing support between reactor vendors and regulators
xi. Design certification, construction permits, safety analysis reporting, emergency planning
xii. Front-End Engineering Design (FEED), construction and commissioning support
xiii. In-depth working knowledge of PWRs, BWRs, EPRs, SMRs and AMRs (including MSRs)
xiv. Quality Assurance (QA) and In-Service Inspection (ISI) setup
xv. Fuel-load and operational readiness reporting and Operational License issuance
xvi. Financing options and investor communications
xvii. Environmental (and Ecological) Impact Assessments
xviii. Operator and Regulator skills development and training
xix. Nuclear waste management options
xx. Decommissioning planning and financing

EXCEL looks forward to discussing these services and other areas of interest and concern with the Norwegian Government and the nuclear community in the weeks and months to come.