

Engineering, R&D solutions to

Nuclear Energy Sector

Project Advisory | Seismic Analysis | Detailed Engineering
FEA / CFD | R&D | FFS / RLA / RLE | Digital Twin



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ProSIM

engineering your designs

ProSIM started its journey with a challenging project from AMEC (now part of Jacobs) to carry out the analysis, and code qualification using RCCM codes and predict damages. Since then, we have handled many projects for nuclear entities in India and abroad, providing engineering and R&D services to nuclear energy community.

We have worked with **NPP operators, EPCs, System Integrators, equipment / system / component vendors; and service providers**. ProSIM works to remove the technical bottlenecks and bridges gap between vendor ecosystem, operator, regulator.

ProSIM has created deep competencies in nuclear engineering, **seismic analysis and qualification, codes and standards**. We understand the importance of taking care of Safety related issues in the design stages. We appreciate well the core theme of **Defence-in-Depth (DiD)** as envisaged by **IAEA and domestic regulators**.

ProSIM has worked practically on all packages / systems in a nuclear power plant including nuclear island, turbine island, and balance of plant. We have worked on **static and rotary mechanical equipment, civil / structures, piping and supports, electrical equipment, instrumentation and control systems**.

Due to the high quality of services we have delivered over last 2 decades, ProSIM has become **"The Go To Company"** for Nuclear energy R&D, engineering services, detailed engineering, seismic evaluation and engineering optimisation.

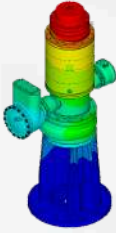


ProSIM's Offerings In Nuclear Power Plants

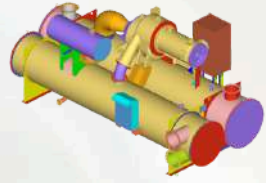


ProSIM's Experience In Nuclear Power Plant Packages and Systems

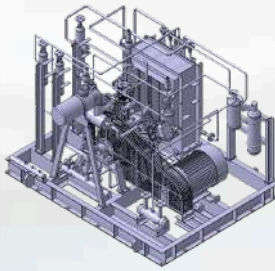
Seismic Analysis - Mechanical Equipment



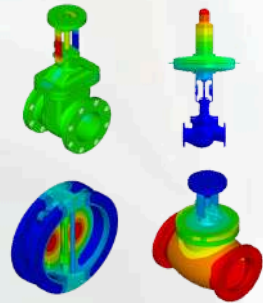
Motor



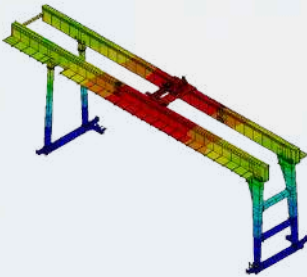
Chiller



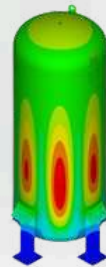
Compressor



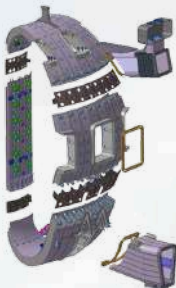
Valves



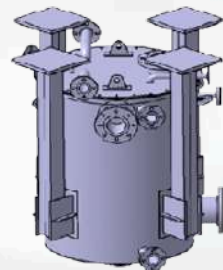
Crane



Pressure Vessel



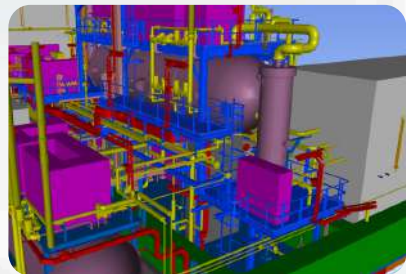
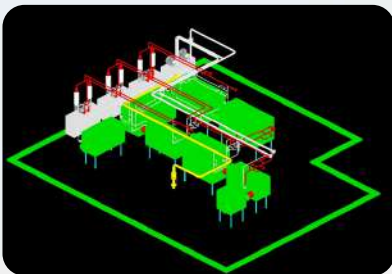
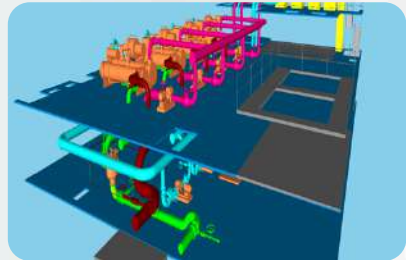
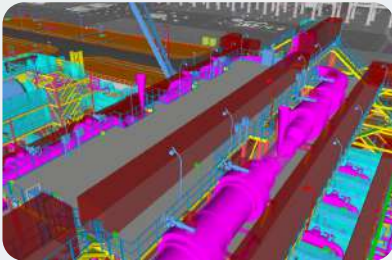
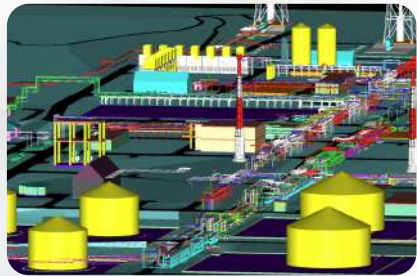
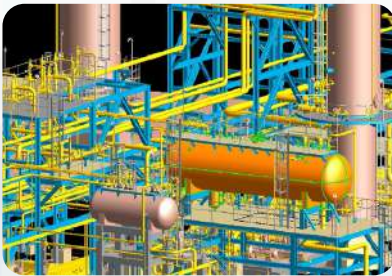
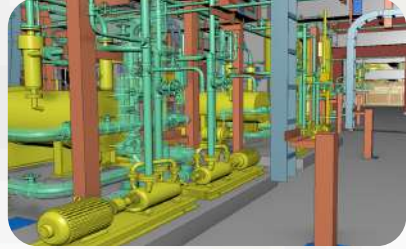
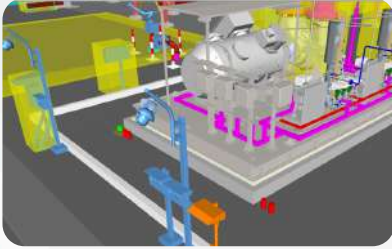
Vacuum Vessel



Tank

Detailed Engineering

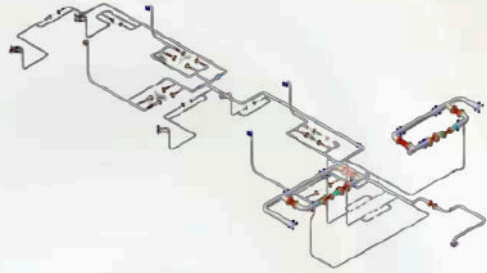
3D Plant Modelling



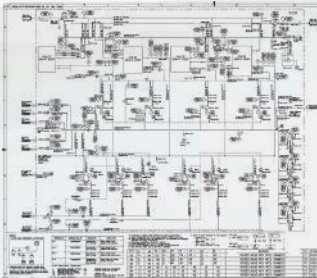
Piping Engineering & Supports



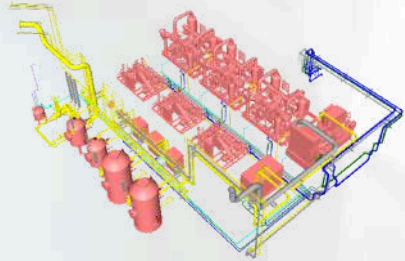
Pipe Stress Analysis Of
Reactor Recirculation Pipe



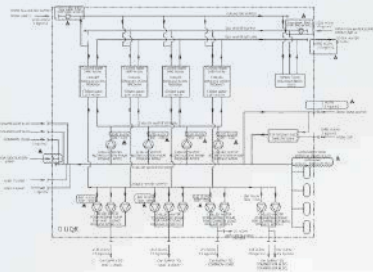
Piping Stress Analysis of
Different systems of PHWR



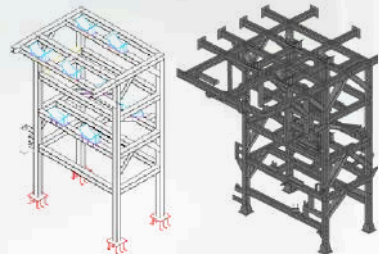
P&ID of Chiller
System



Pipe Routing
Optimisation

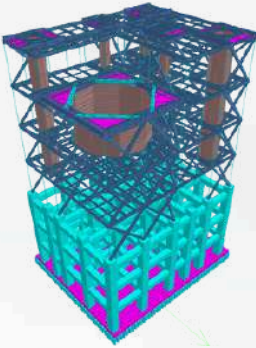


Piping Isometric
Drawings



Piping Supports

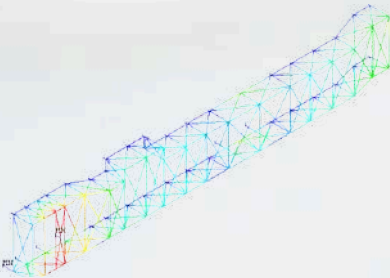
Civil & Structural Engineering



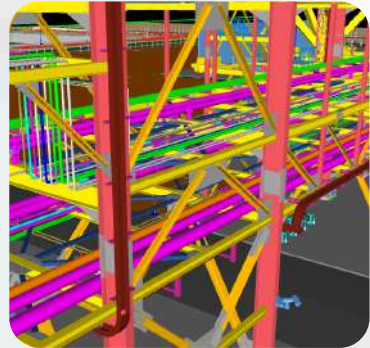
Steel Structure Design



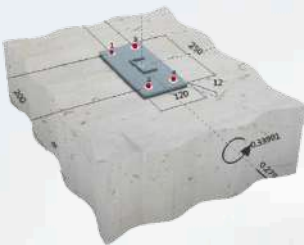
Reactor Building



Cable Tray Support
Structure



Support Structures

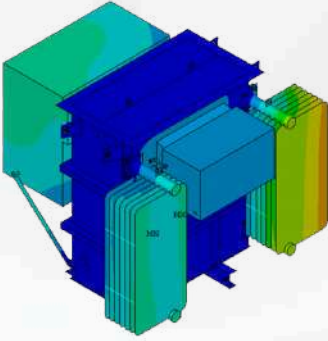


Supports and EP
Design

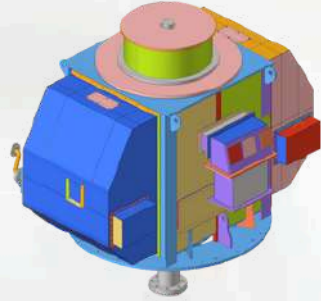


Exhaust Duct
Lattice Structure

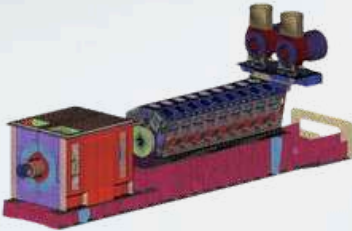
Electrical Engineering



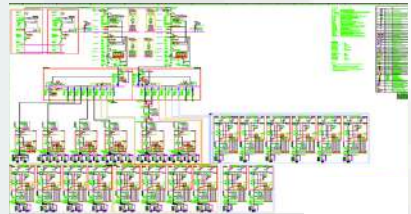
Transformer



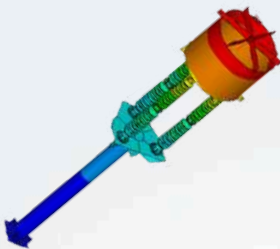
Motor



EDG



Single Line Diagram of
Substation



Wave trap



Thermowell

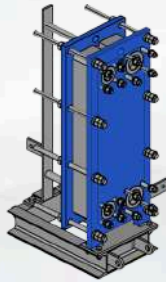
Codal Based Design & Codal Qualification

- Code Based Design:

(ASME - Section II, ASME - Section III, API, EJMA, etc.)



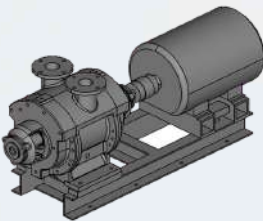
Valve



Heat Exchanger



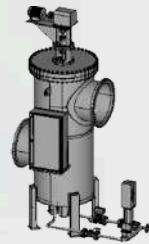
Strainer



Pump



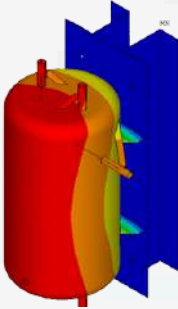
Pressure Vessel



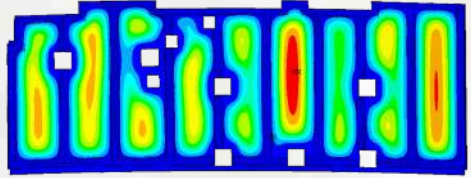
Filter

- Review design for full codal compliance
- Design Modification & Optimization to meet all codal and safety compliance requirements

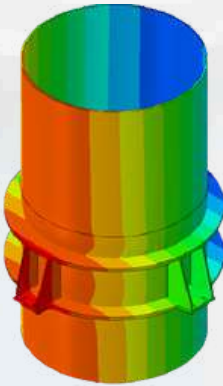
Finite Element Analysis (FEA)



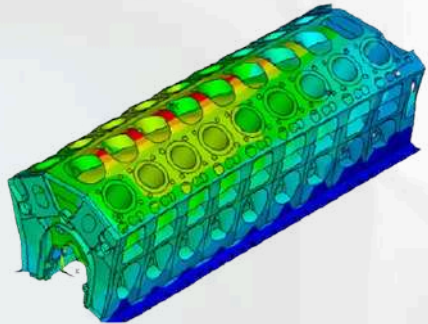
Liquid Strap
Strainer



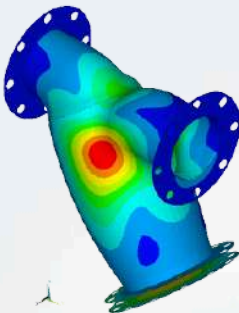
Metallic Liner



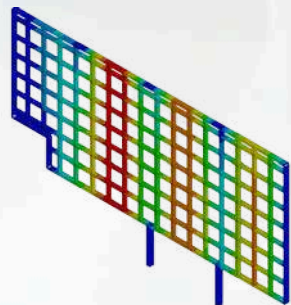
Heat Exchanger



Engine Block

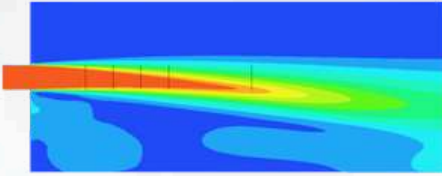


Y-Type Strainer

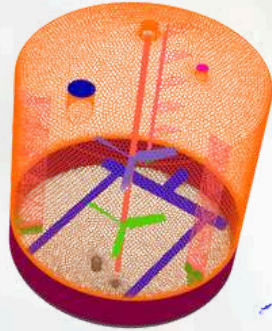


HEPA Filter

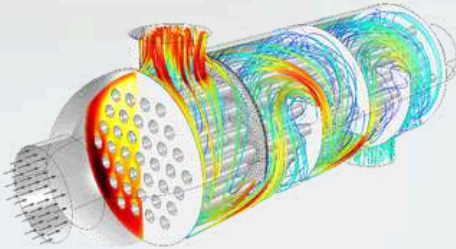
Computational Fluid Dynamics (CFD)



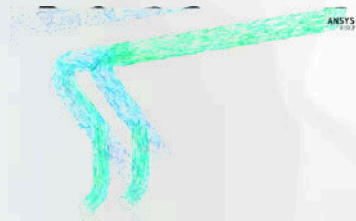
Pressure and Velocity
Distribution



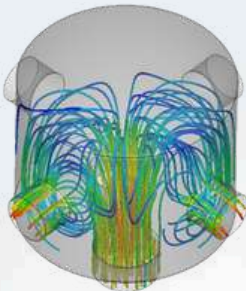
Reactor Tanks



Heat Exchanger



Flow Mixing
Simulation

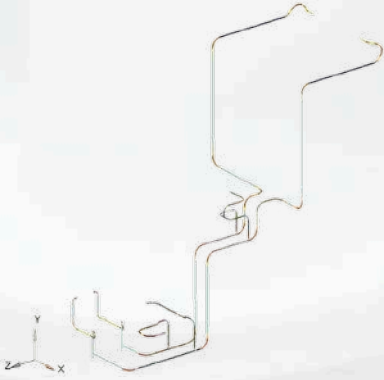


Multiphase Flow
Analysis

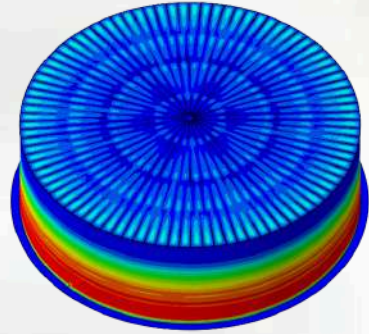


Valve

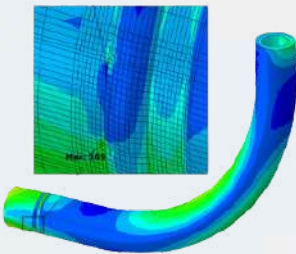
Remaining Life Assessment & Extension (RLA/RLE)



Remaining Life of
High Temperature Pipes



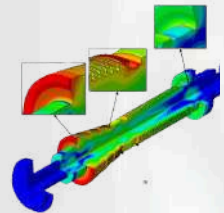
Remaining Life
of Storage Tank



Remaining Life
Assessment of Piping
Systems



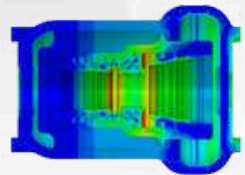
3D Scanning



Remaining Life
Assessment



Remaining Life of
Turbine

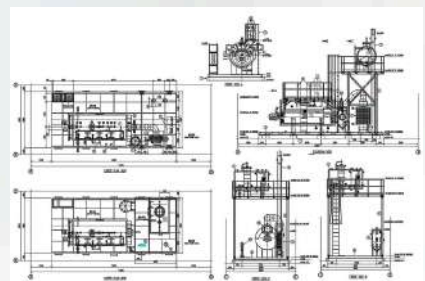
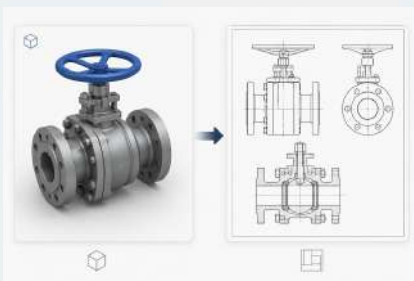


Digital Twins



- Reduced Order Model (ROM) development
- AI/ML model development and implementation (including IIOT)
- Hybrid model development (combination of Physics based models and data based models)
- Building Information Models (BIM)
- R&D

Engineering Process Automation



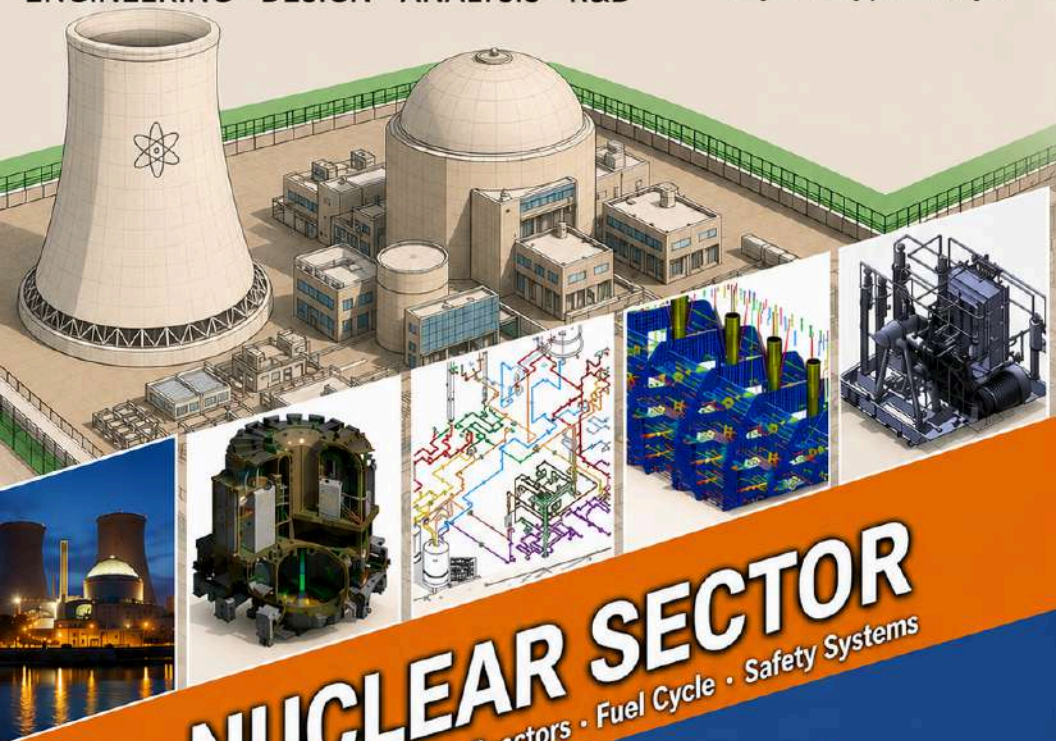
- Automated 3D to 2D Drawing Generation
- Cross-Platform CAD & Data Conversion
- AutoCAD, Plant 3D, AutoPLANT & S3D Customization
- Real-Time Workflow Monitoring & Engineering Automation
- GAD Automation solutions

CONSULTANCY SERVICES

ENGINEERING - DESIGN - ANALYSIS - R&D

ProSIM

engineering your designs



NUCLEAR SECTOR

Nuclear Power Plants · Reactors · Fuel Cycle · Safety Systems

DESIGN

NUCLEAR DESIGN

ASME BPVC

SECTION III

RCC-M / RCC-MRx

FEA

FINITE ELEMENT ANALYSIS

SUPPORT DESIGN

SEISMIC QUALIFICATION

ANCHORAGE

EMBEDDED PARTS

STATIC EQUIPMENT

PIPING SYSTEMS

SEISMIC ANALYSIS

SEISMIC ANALYSIS

PRESSURE VESSEL

DETAILED
ENGINEERING

Skid Design

PIPE STRESS ANALYSIS

FLOOR

RESPONSE

SPECTRA

ASME B & PV

PRESSURE

VESSEL

DETAILED FITNESS FOR SERVICE (FFS)

API

PLANT ENGINEERING

FOUNDATIONS

OBE, SSE

RSS & STEEL

STRUCTURE

PLANT 3D

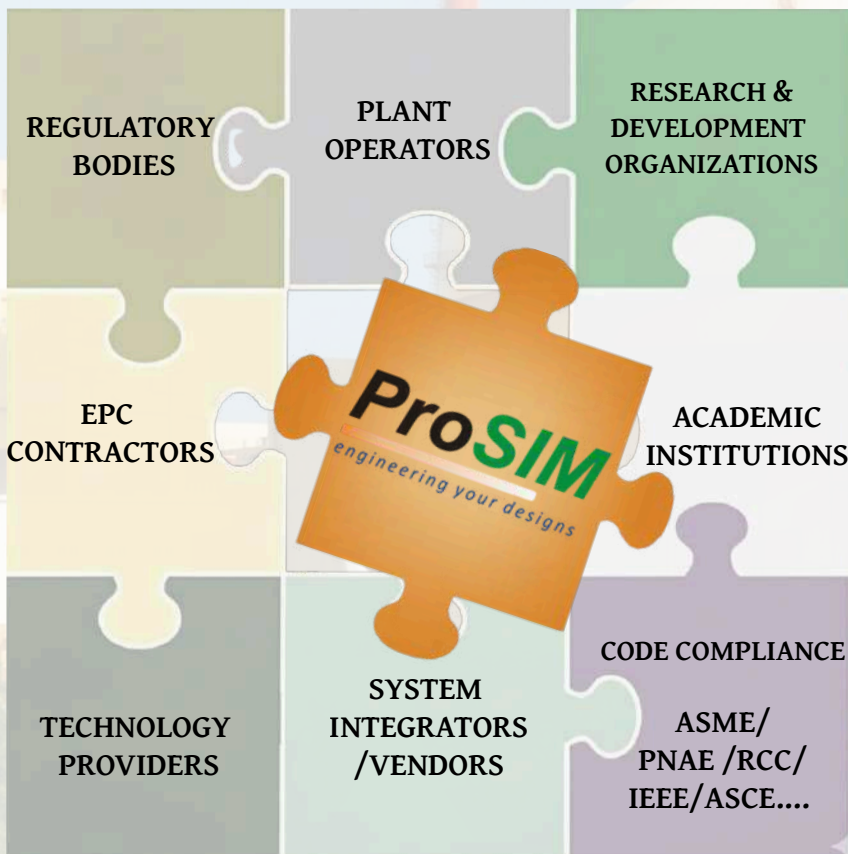
MODELING

HCLPF

Bolt Design

Engineering, R&D solutions to Nuclear Power & Energy Sector

ProSIM *Solves the Nuclear Energy Jigsaw Puzzle*
engineering your designs



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