

# ESDU Nuclear Package

**BUILDING SAFETY AND EFFICIENCY INTO  
DESIGN AND ENGINEERING**

## BENEFITS

The ESDU Nuclear Package provides independently validated engineering design data and methods for the following:

- The design and development of new builds
- Ongoing operation and maintenance of nuclear facilities

The package offers the following:

- Validated engineering data
- Validated methods for analysis and design
- Continually updated methodologies and data that can be employed throughout the design process, from the conceptual stages through the detailed analysis to final certification
- ESDU data and methods are developed by professional engineers under the guidance of technical committees formed of

Safety and efficiency of design are of paramount importance in many areas, but nowhere is this more essential than in nuclear engineering, particularly as many countries are reassessing the environmental and economic benefits of nuclear power.

Within the nuclear industry, there is an ever-increasing demand for products and designs with ever-greater performance in terms of functional efficiency and safety. That performance must be substantiated under stringent conditions of cost, environment, design codes, regulation and certification. Given the skills and expertise of the engineers and designers, no other factor is more important than access to reliable design data and validated methods. ESDU has been developing those data and methods and providing them to engineers in a range of fields over the last 80 years.

The information available in the ESDU Nuclear Package complements the highly conservative design and operating standards and codes used in the nuclear industry. The ESDU validated methodologies provide a reliable source of engineering knowledge for design within the targets set by the International standards and codes. These methodologies are based on experimental data, mathematical analysis, and computational techniques, such as CFD and FEA, and represent the industry best practice in the following areas.

- Thermo-hydraulic, detailed stress, fatigue, and structural design of components, systems, and structures
- Ventilation systems
- Acoustic fatigue and the analysis and suppression of noise
- Environmental impact and the response of structures to wind loadings

The ESDU data, methods, guides and software are easily accessible to nuclear engineers and designers, plant managers, nuclear consultants, thermo-fluids engineers and structural analysts. No matter what role or stage of the process you're in, you can rely on ESDU to support your nuclear design, meet and exceed the requirements set by codes and standards, and ensure safe and efficient engineering and design.

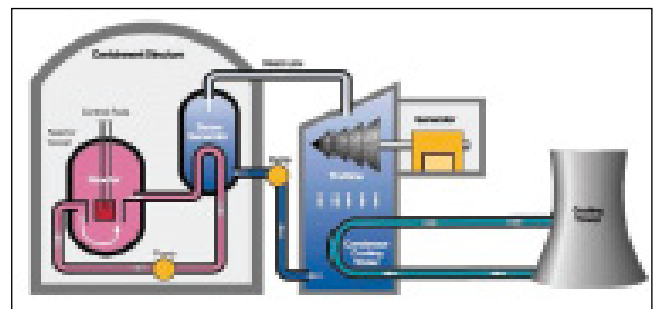
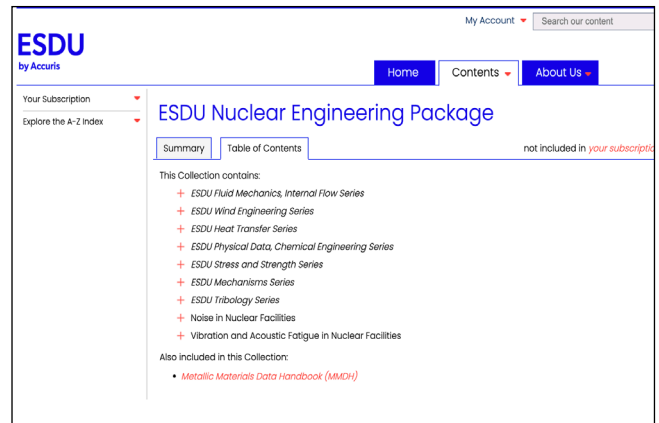
## COMPREHENSIVE INFORMATION FOR NUCLEAR FACILITIES' PROCESSES

The ESDU Nuclear Package offers solutions in the form of validated analytical methods, data and software in the following areas.

- Fluid Mechanics, Internal Flow – Fluid flow parameters and pressure losses in internal flow systems
- Wind Engineering – response of buildings and structures
- Heat Transfer – Design and evaluation of heat exchangers
- Physical Data, Chemical Engineering – Physical properties of fluids
- Stress & Strength – Stress analysis and strength of components, including fatigue and fracture mechanics
- Mechanisms – gears, cams and linkages
- Tribology – interaction of solid surfaces (friction, lubrication and wear)
- Noise – Predictions and reduction of noise in and around nuclear facilities
- Vibration and Acoustic Fatigue – Response and fatigue life of structures subjected to acoustic loading
- MMDH – Mechanical and physical properties of metallic materials

ESDU Subscriptions include the ESDU Engineering Service which provides Users access to:

- All new and amended content included within their subscription
- Access to the Engineers to assist with Technical questions
- Access to IT support and general enquiries regarding content
- Awareness and Training sessions on the ESDU content



With plans underway to build more new nuclear plants in the Americas, EMEA and APAC regions, ESDU Nuclear can help ensure safety and efficiency are incorporated into every aspect of the design. Contact an Accuris Representative to discuss how ESDU Nuclear can play a crucial role in the future development of power generation in your region.

*"We have used ESDU data and design methods for the past twenty five years. We have found benefits from using this information to support design and safety functions in the company. This is because the methods are continuously reviewed and updated and this gives us confidence that we are using the most up-to-date methods and that we are using validated data. This is particularly important when we make licence submissions to Regulatory bodies."*

– Senior Specialist in Heat Transfer and Fluid Flow,  
National Nuclear Laboratory, UK