ProcSee Deliveries

ProcSee deliveries have been divided into the following categories:
1. Plant process monitoring
2. Simulators
3. Miscellaneous

1) Plant process monitoring		
Customer	**Application**	**Year of delivery**
Institute for Energy Technology, Norway *Contact: Terje Bodal*	ProcSee used for HMI in Scorpio; a reactor core surveillance system for nuclear power plants. For relevant installations, the national nuclear safety inspectorate has licensed the system for operation in the plant's control room. Scorpio deliveries include: - Kola nuclear power plant, unit 3&4, Russia - Bohunice nuclear power plant, unit 3&4, Slovakia - Scorpio BWR version for TIARA, Toden SW, Japan - Dukovany nuclear power plant, unit 1-4, Czech Rep.	1994 Updated 1994-2024 2004. Updated 2006 2001. Upd 2005-2009 1999. Upd 2000-2003 1998. Upd 2004-2023
Kernkraftwerk Gösgen-Däniken AG, Switzerland *Contact: Marcel Huber*	Monitoring nuclear power plant process data and historic trends. Used by operators in control room and by authorized personnel from office PCs. Identical system installed at training simulator. Safety Parameter Display System as an add-on to the monitoring system described above. Monitoring physical access points and fire alarms at Gösgen-Däniken nuclear power plant.	2000 Updated 2000-2024 2002 Updated 2003-2024 2004 Updated 2005-2024
Westinghouse Electric Company, USA *Contact: Kasey Corbin*	Plant Monitoring Systems for nuclear power plants worldwide. Specific installations are confidential.	2009 Updated 2010-2023
Korea Hydro and Nuclear Power Company, Republic of Korea *Contact: Dae Seung Park*	ProcSee for Plant Monitoring System at Hanul unit 5&6.	2023
Institute for Energy Technology, Norway *Contact: Pål Thowsen*	Large-screen overview display for Halden research reactor, based on IFE's Information Rich Design concept. Used by control room operators to monitor key process parameters and trends. Supervision of process parameters, in-core signals, radiation detectors and alarms at Halden research reactor. Used by operators in control room and by authorized personnel from office PCs.	2012 Updated 2013-2024 1997 Updated 1998-2024
TechnipFMC, Norway *Contact: David Olaussen*	ProcSee used for HMI in Fiscal Metering Systems for oil and gas production. More than 65 installations worldwide.	1992 Updated 1993-2017
Fortum Power and Heat Oy, Loviisa nuclear power plant, Finland *Contact: Robert Valkama*	Emergency Process Information System for Loviisa nuclear power plant. Remote online visualization of safety-important parameters at Finland's Radiation and Nuclear Safety Authority (STUK) and Fortum's emergency monitoring center.	2010

2) Simulators		
Customer	**Application**	**Year of delivery**
Kongsberg Digital AS, Norway *Contact: Øivind Ibsen*	ProcSee to implement HMIs for operators and instructors of high-fidelity ship engine room simulators. • 3400 ProcSee licenses deployed to civil and navy maritime training institutions worldwide, 2002-2023. • 2000 cloud-based simulator training sessions conducted, 2022-2023 https://marsim.kongsbergdigital.com/products/k-sim/k-sim-engine/	2000 Updated 2001-2024

Kärnkraftsäkerhet och Utbildning AB, Sweden
 	
*Contacts: Jan Lindh,
      Olof Berntsson
      Anders Sandell*
	ProcSee to implement HMIs for training simulator at Ringhals nuclear power plant. Used for training control room operator crews and individual operator sessions.
	https://www.ksu.se/en/our-new-graphical-simulator-increases-process-understanding/
	
	ProcSee to implement HMIs for training simulator at Oscarshamn nuclear port plant. Used for training control room operator crews and individual operator sessions.
		2019
		Updated 2020-2024
		
		2024

Institute for Energy Technology, Norway *Contact: Håkon Jokstad*	Operator interfaces for 3 full-scale nuclear power plant simulators (PWR, BWR, SMR) in HAMMLAB. Applied to 1) study operator and crew performance; and 2) develop, test and evaluate new interface designs to improve operational safety, reliability, and efficiency. Implementation includes operator workstation displays, large screen overview displays, alarm systems and computerized procedures.	1990 Updated 1991-2024
Institute for Energy Technology, Norway / Exitech Corporation, USA *Contacts: Håkon Jokstad (IFE), George McCullough (Exitech)*	ProcSee to implement Simulator Training Monitoring and Evaluation System (STEAMS) STEAMS installations include: - Donald C. Cook Nuclear Plant, USA - Comanche Peak Nuclear Power Plant, USA - Joseph M. Farley Nuclear Power Plant, USA - Surry Nuclear Power Plant, USA	2018 Updated 2019-2024 2018 2019 2021 2024
Forsmark Kraftgrupp, Sweden *Contact: Sofie Isaacs*	ProcSee to implement state-based alarm system for evaluation at Forsmark nuclear power plant's training simulator.	2024
United States Nuclear Regulatory Commission, USA *Contact: Doug Eskins*	ProcSee used for HMI in plant information display system for nuclear power plant simulator. ProcSee used for HMI in safety parameter display system for nuclear power plant simulator. ProcSee for HMI in Nuclear Engineering Workstation Simulator (classroom education).	1997 Updated 1997-2019 1995 Updated 1995-2017 1994 Updated 1994-2010
Korea Hydro and Nuclear Power Company, Republic of Korea *Contact: Dae Seung Park*	Large-screen display, process displays, alarm displays and computerized procedures for Advanced Power Reactor APR 1400 simulator. Used for verification and validation of control room operator interface design. HMI of Shin-Kori unit 1&2 full-scope training simulator. HMI of Shin-Kori unit 3&4 full-scope training simulator. ProcSee used for HMI of Shin-Kori unit 5&6 full-scope simulator for design validation.	1997 Updated 1998-2010 2010 2012 2012 Updated 2013-2016

Idaho National Laboratory, USA *Contact: Ron Boring*	ProcSee to prototype HMIs and alarm displays for US Department of Energy's Light Water Reactor Sustainability Program.	2011 Updated 2012-2018
Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea *Contact: Seung Min Lee*	ProcSee used for studies in human factors engineering and human-machine interfaces for nuclear power plants	2014
Fortum Power and Heat / VTT Technical Research Centre, Finland *Contacts: Matti Paljakka,* *Toni Salminen*	ProcSee to implement HMI of engineering and training simulators. ProcSee displays are used to monitor and control process states and are automatically generated from APROS model output. Installations at nuclear and thermal power plants worldwide.	1994 Updated 1995-2024
Fortum Nuclear Services, Finland *Contact: Karri Honkoila*	Large-screen overview display for Loviisa R&D simulator. Design based on IFE's Information Rich Design (IRD) concept.	2007 Updated 2008
Fortum Power and Heat, Finland *Contact: Karri Honkoila*	Process diagram displays for the instructor's station of Loviisa NPP training and development simulator. The displays are used to monitor the process state and activate malfunctions during training sessions.	2010
Comisión Nacional de Energía Atómica, Argentina *Contact: Celso Flury*	ProcSee to develop Human Machine Interface of nuclear power plant simulator	2009 Updated 2010-2012
Japan Atomic Energy Agency, Japan *Contacts: Y. Yamaguchi, F. Tanabe*	ProcSee used to develop and test concept of ecological operator interfaces on full-scope nuclear power plant simulator.	1994 Updated 1995-2007
Rheinmetall Defence Electronics, Germany *Contact: Bernd Pahlmann*	ProcSee as HMI tool for nuclear power plant simulators	2004 Updated 2005
Electricité de France, CNEN, France *Contact: Eric Berard*	ProcSee as HMI tool for evaluation of operator interface design for future nuclear power plant design.	2002
Oak Ridge National Laboratory, USA *Contact: Richard Wood*	ProcSee as HMI tool in fault detection and isolation and automatic controller response system.	2000 Updated 2001-2002
Tecnatom s.a, Spain *Contact: Luis Fernandez Illobre*	ProcSee used for HMI in prototype of advanced alarm filtering system. Prototype installed and validated at full-scope simulators for Cofrentes and Almaraz nuclear power plants, and in Almaraz control room.	1999 Updated 2000-2001
Korea Atomic Energy Research Institute, Korea *Contact: Kee-Choon Kwon*	ProcSee used for HMI of compact nuclear power plant simulator. The simulator is located at KAERI's nuclear training center and is used for training of NSSS design engineers, maintenance personnel and regulatory body inspectors, and to test control algorithms and diagnostics methods.	1997

Institute for Energy Technology, Norway *Contact: Terje Bodal*	ProcSee to implement a graphics model builder for thermal performance monitoring and optimization. TEMPO deliveries include: - Lappeenranta University of Technology, Finland - Temelin NPP, Czech Rep. (technology evaluation) - Olkiluoto NPP, unit 1&2, Finland - Electricité de France, France (validation studies) - Loviisa NPP, Finland, turbine cycle at unit 2 - VUJE, Slovakia - Paks NPP, Hungary - Forsmark NPP, Sweden (2 applications) - Training simulator for Almaraz NPP, Spain	2000 Updated 2000-2019 2010 Upd 2011-2015 2007 2007 Upd 2009-2010 2006 2004 Upd 2006-2015 2003 Upd 2004-2015 2003 2002-2003 2002

3) Miscellaneous		
Customer	**Application**	**Year of delivery**
Technical University of Denmark *Contact: Prof. Morten Lind*	ProcSee to visualize multi-level flow modelling (MFM) models including end-user interaction, dynamic data input and internal propagation of MFM model results. ProcSee displays are automatically generated from MFM model database. Prototyping HSIs for supervision of electrical power grids.	2010 Updated 2011-2017 2013. Updated 2014
Kola Nuclear Power Plant *Contact: Alexandr Kuchin*	Supervision of radiation measurements within and nearby Kola Nulear Power Plant.	2012 Updated 2013-2014
Siemens AG, Germany *Contact: Axel Grobe*	Radioactivity monitoring system for the surroundings of nuclear power plants in Hessen	1995 Updated 2000, 2010
Arctic Military Environmental Cooperation / Norwegian Defence Research Establishment, Norway *Contact: Monica Endregaard*	Supervision of radiation from dismantlement of Russian submarines. Installations at RTP Atomflot and Polyarninski Shipyard.	2000 Updated 2001-2005
Scandpower Information Technology / Thales, Norway *Contact: Bjørn Brevig*	ProcSee to monitor mobile military telecommunication networks (more than 200 installations).	1994 Updated 1995-2007