



Nuclear Plant Data Life Cycle Management for the EPR

Frank-Peter Ritsche

Project Management Initiative / AREVA NP

PLIM & PLEX Conference

Paris April 10 – 11, 2006

“Virtually everything in business today is an undifferentiated commodity except how a company manages its information.

How you manage information determines whether you win or lose.”

Bill Gates, Microsoft

The Owner/ Operators' asset:

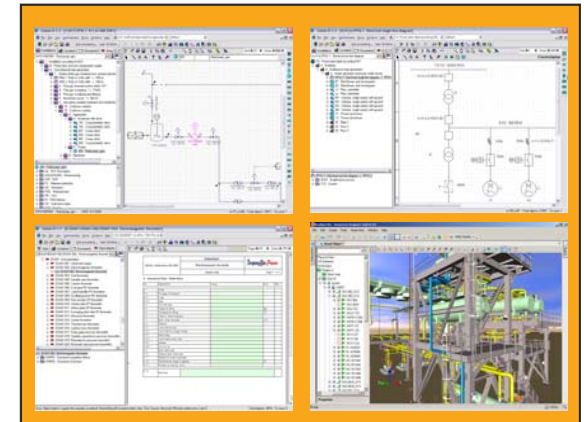
Physical Plant



Documents

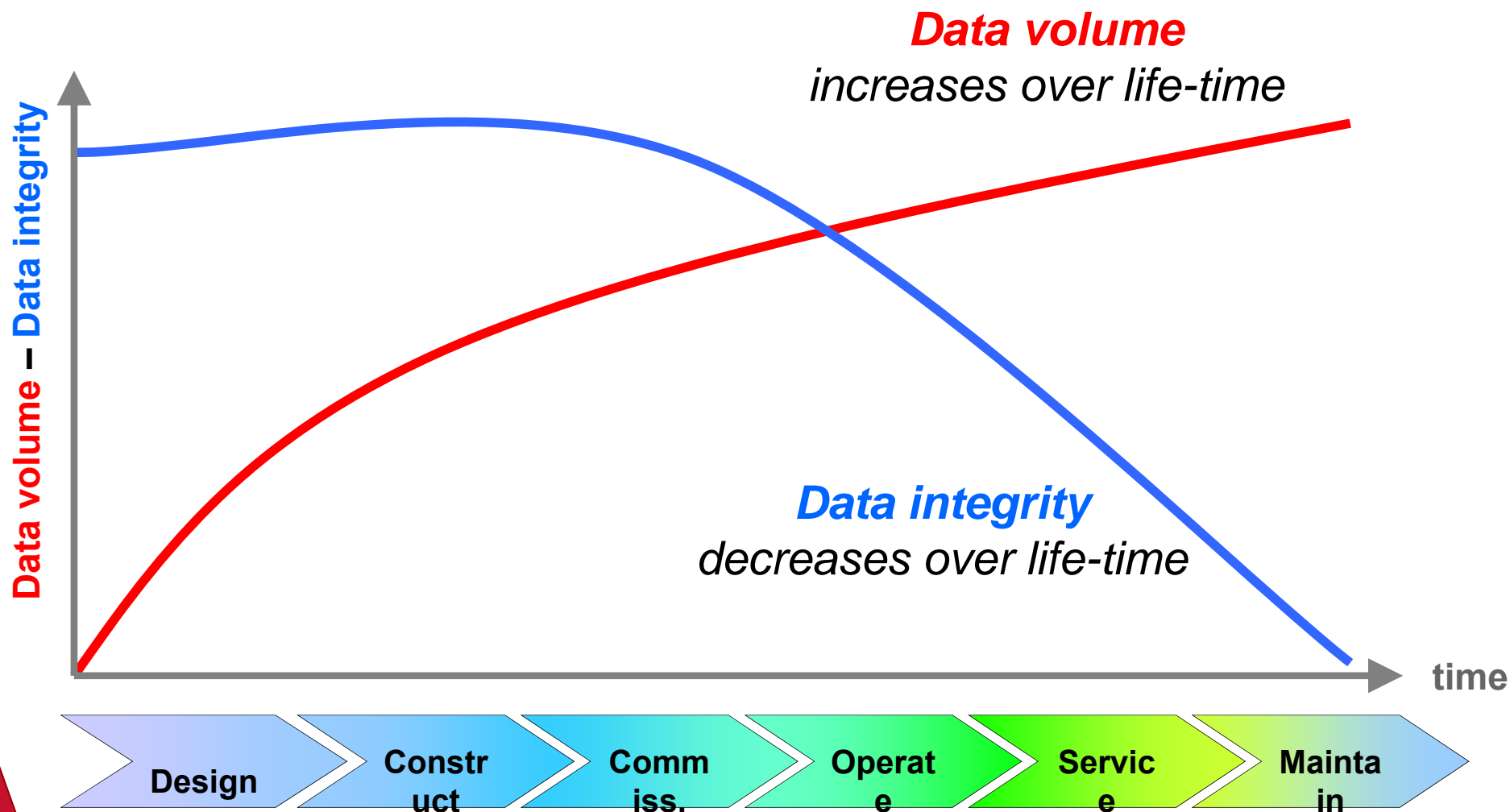


Data



Life Cycle Asset Management requires the Owner/ Operator not only to maintain the physical plant during its entire life time, but also the plant information: documents and data

The challenge of maintaining information



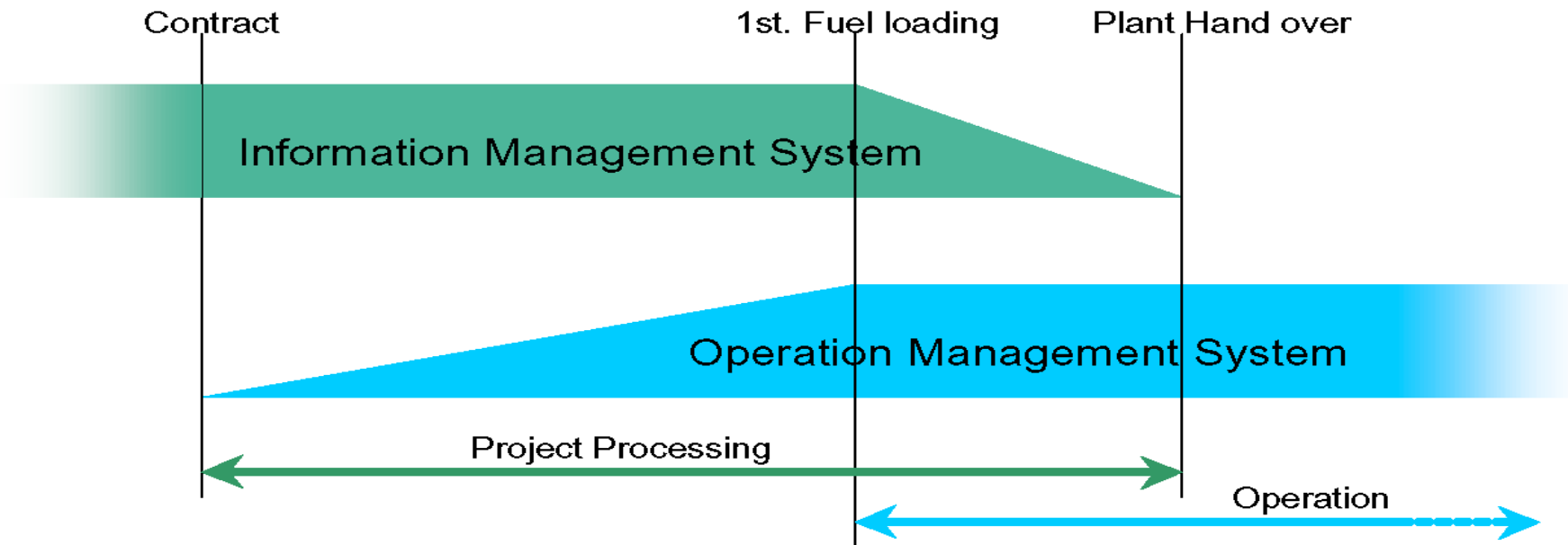
The benefit of managing plant information

Study from Coopers & Lybrand analyzing the benefits that accrued from managing information for offshore oil and gas installations through the plant life: **“an operator could reduce the whole life cost of the asset by 10%”**

- Reduce 10-30% of concept development time
- Reduce 15-28% of engineering hours
- Increase 30% engineering productivity
- Reduce 10-30% cost of quality and change management time
- Reduce 15-20% commissioning engineering hours
- Reduce 60% handover and startup costs
- Reduce 10-20% IT costs
- Reduce 10-20% operational costs

**Source: POSC/Caesar for Better Business,
Coopers & Lybrand Consulting ANS, Oslo 20.10.97.**

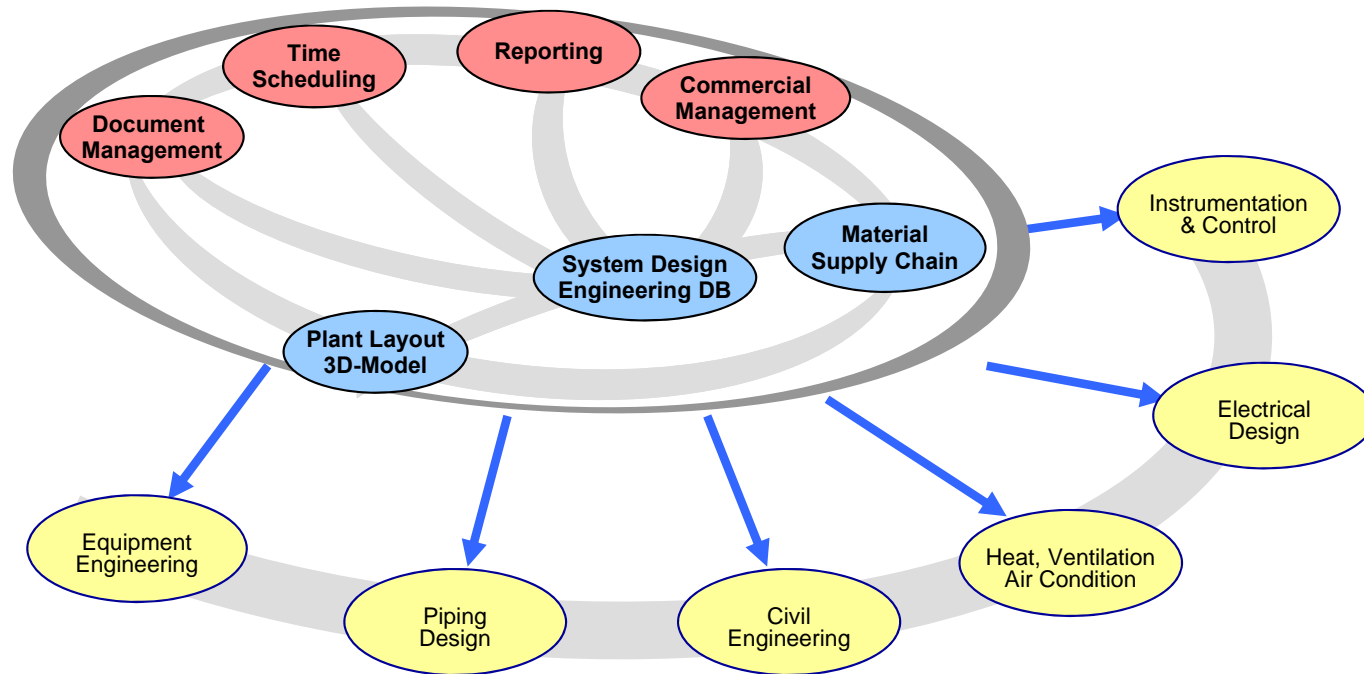
Information and Operation Management



Since start of the EPR-project on Olkiluoto 3 site, AREVA NP implemented a fully integrated „**Information Management System**“ for Engineering and Project Management.

The information generated by AREVA NP is being handed over to the Owner/ Operator in a continuous process.

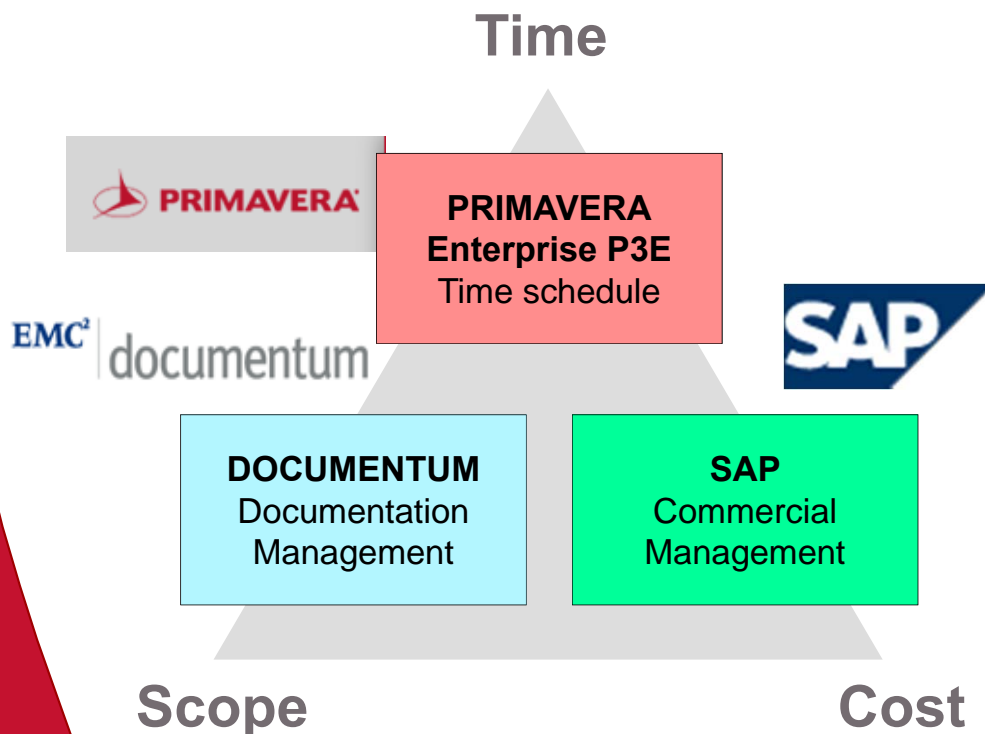
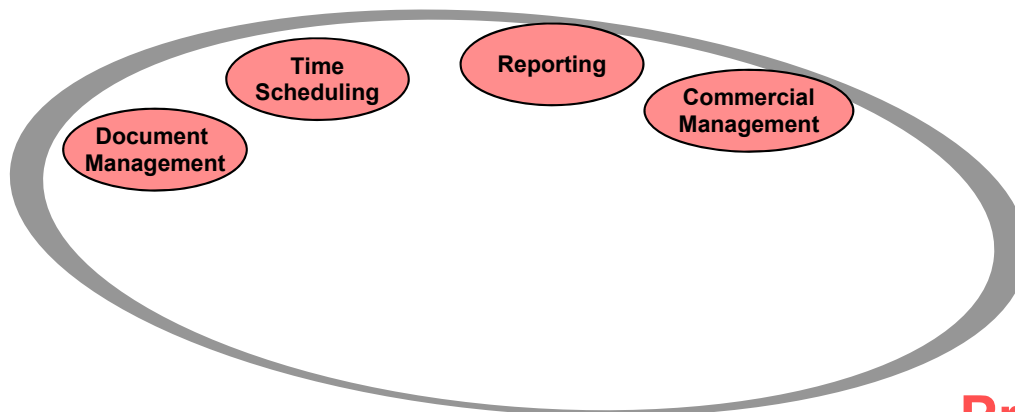
Information Management in New Plants Projects



Information Management in a project comprises

- **Project Management**
- **Design Integration**
- **Engineering**

Information Management in New Plants Projects



Project Management

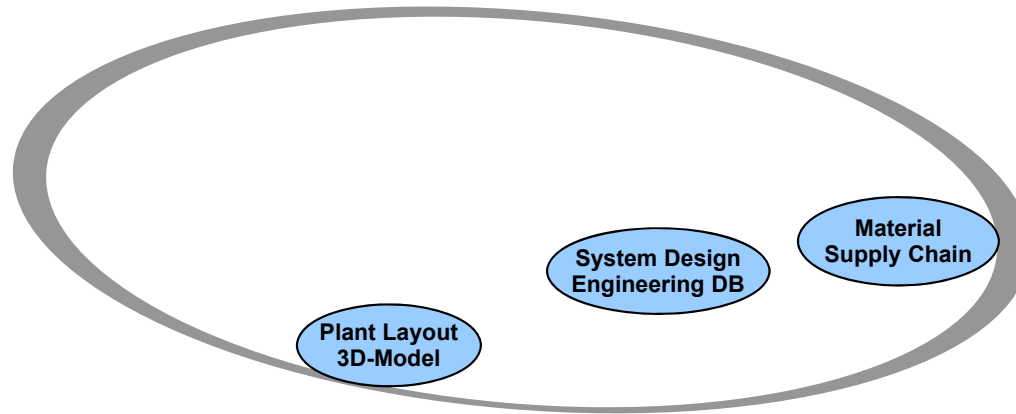
considers the integration of

- time & resource information
- commercial information and
- scope, which for a plant project is
 - documentation
 - data and
 - material

Project reporting covers in addition

- quality
- risks

Information Management in New Plants Projects



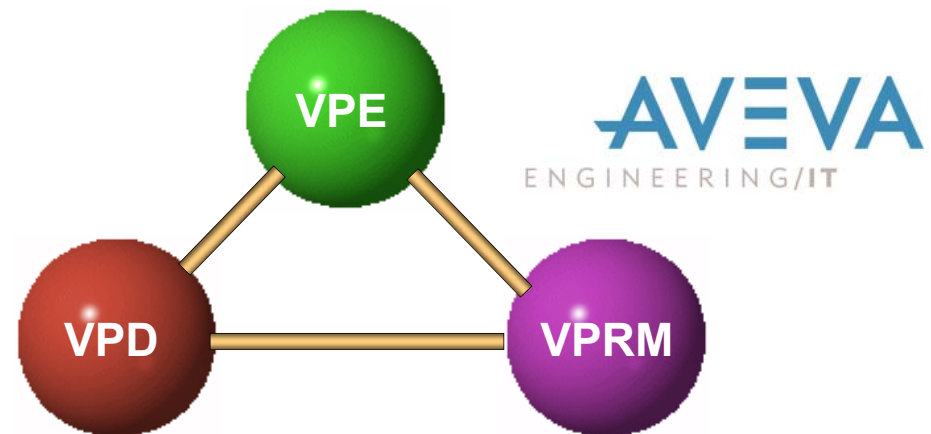
Vantage VPE
Systems Design database

Vantage VPD (PDMS)
3D Design

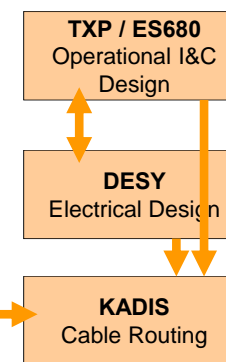
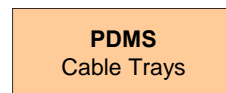
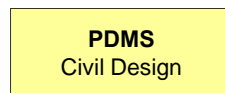
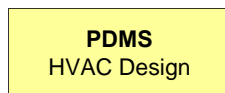
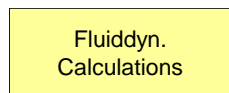
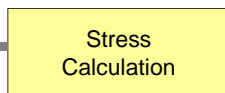
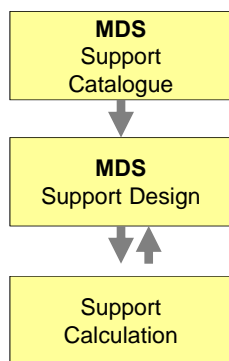
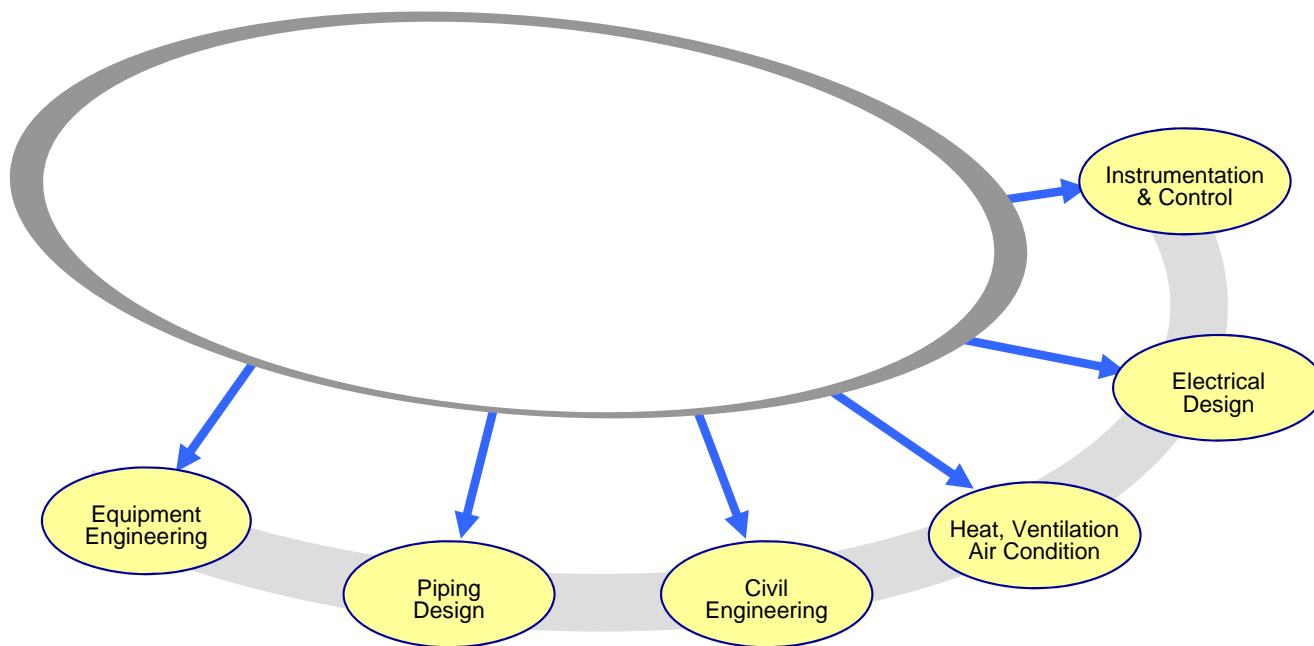
Vantage VPRM
Material Management

Design Integration

in AREVA NP is achieved within Aveva's VANTAGE suite of Engineering tools



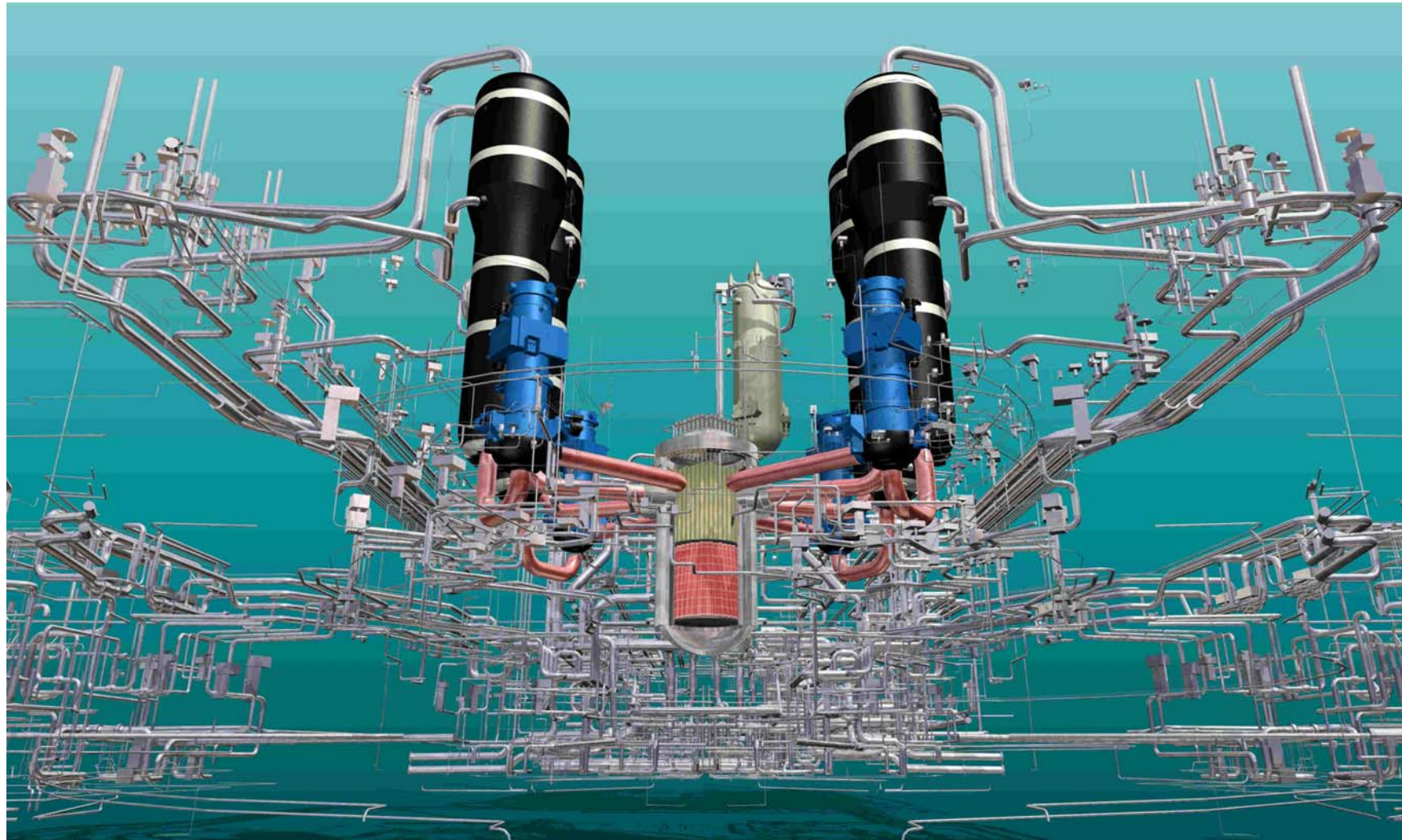
Information Management in New Plants Projects



Engineering

within the specific disciplines is supported by specific design tools from market or in-house.

Engineering Information Technology for the EPR



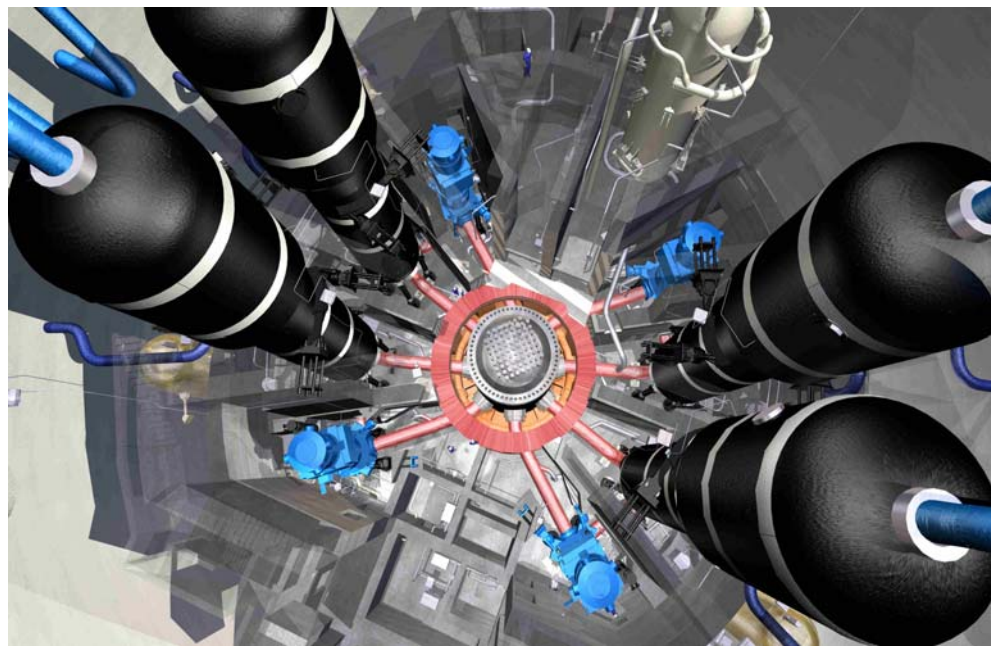
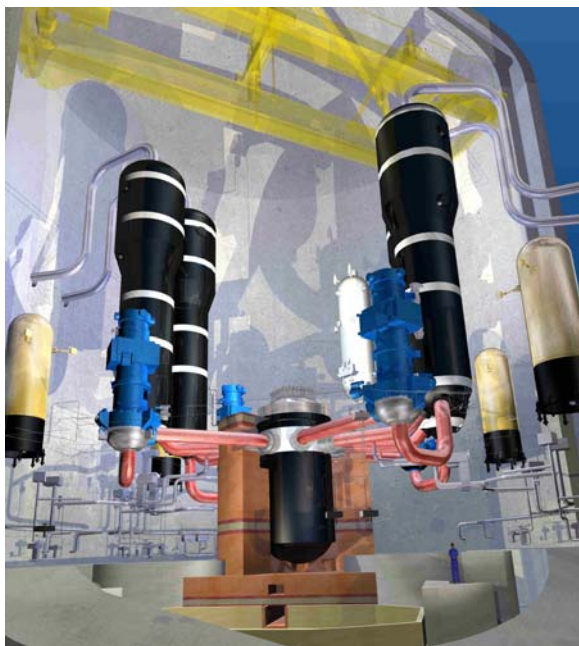
Today more than 200 Engineers in 5 different locations in France, Germany and Finland are designing simultaneously the EPR detailed plant layout in 3D

Engineering Information Technology for the EPR



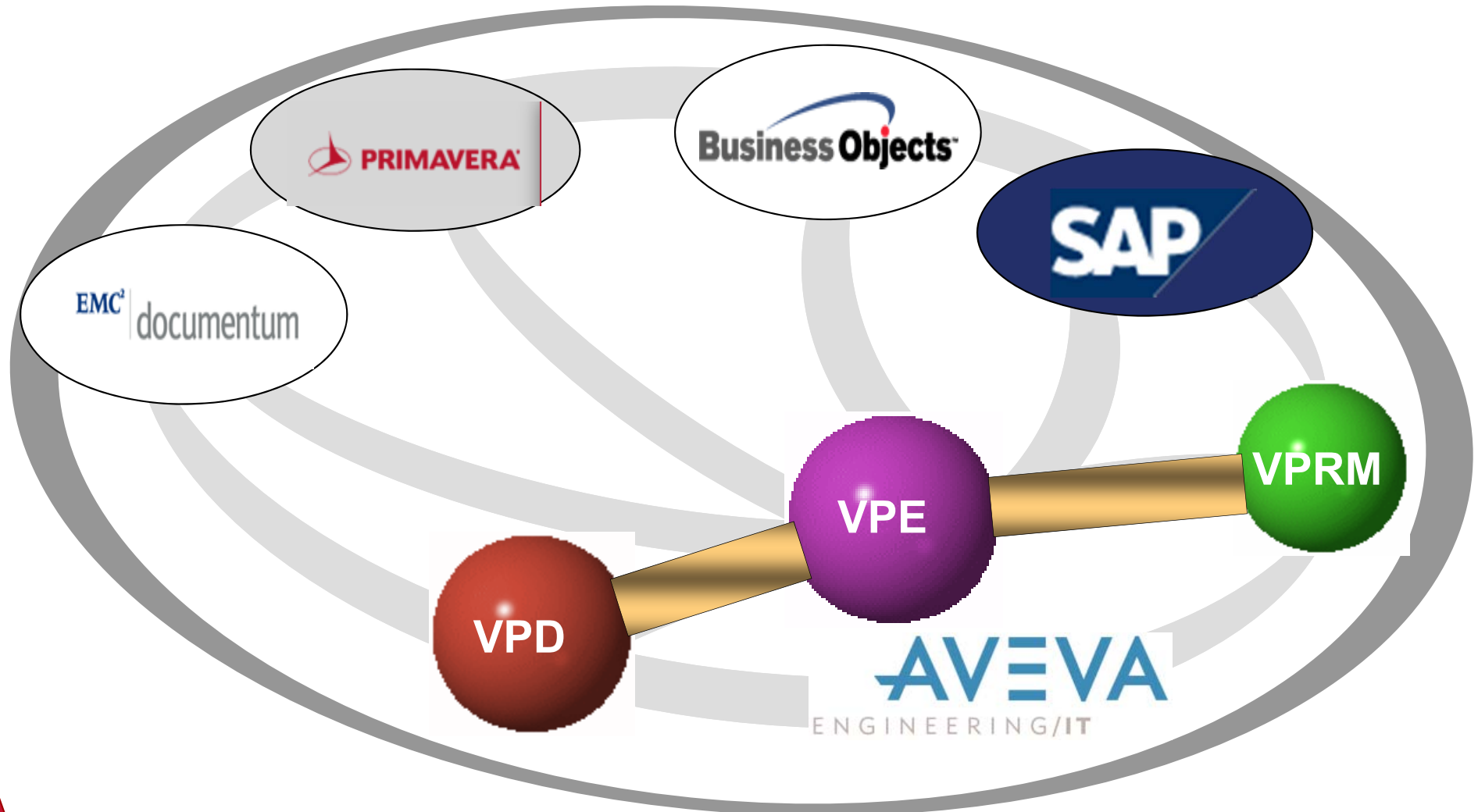
AREVA NP is taking full advantage of the complete and fully integrated VANTAGE suite of Aveva's tools

- VPE P&ID and VPE Workbench for process design
- PDMS (VPD) for 3D plant layout
- VPRM for material management
- MDS for detailed support design
- Model Manager for interfacing VPE and VPD
- Global for synchronizing the 3D around the globe



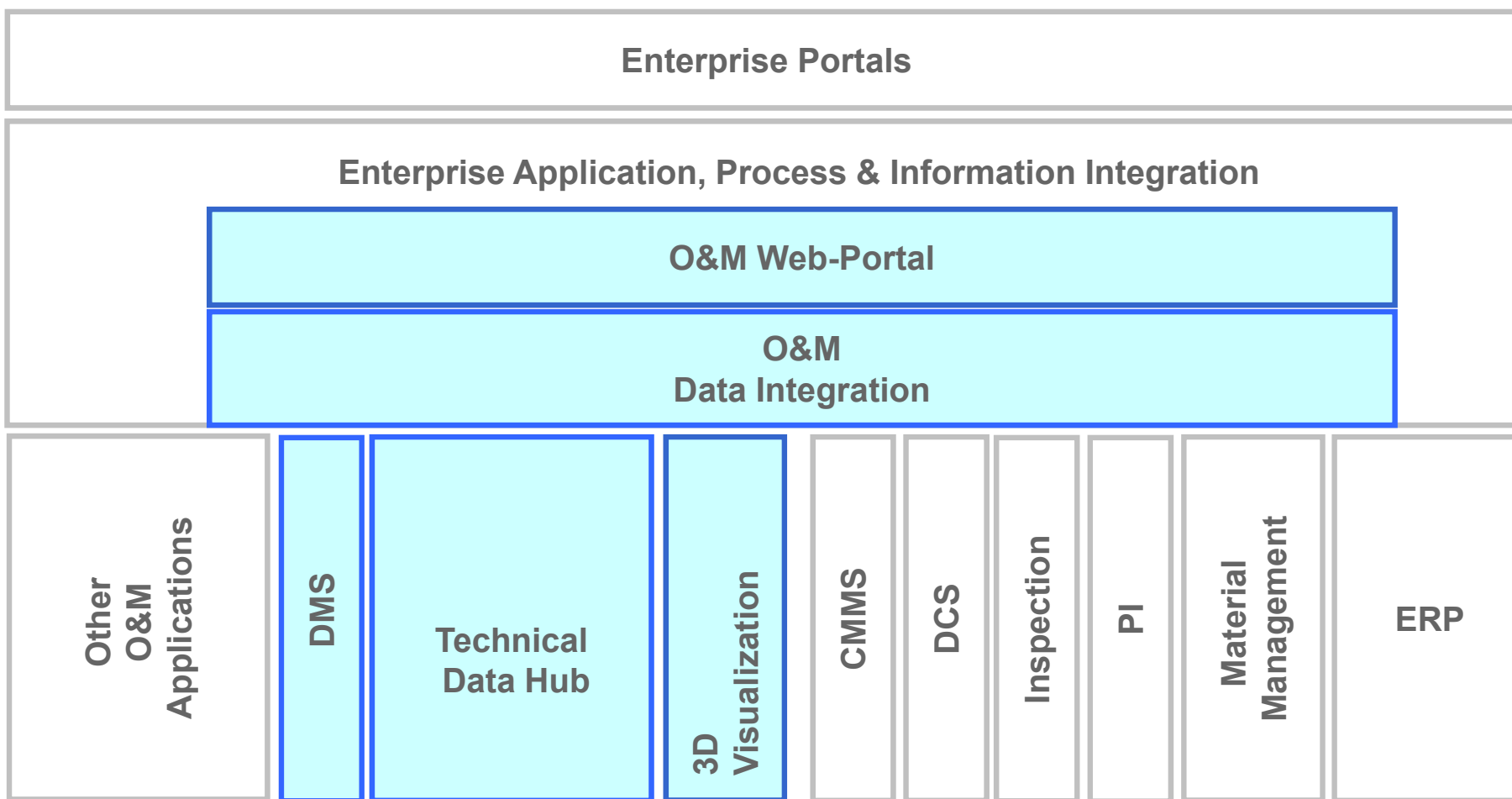
AREVA NP Information Management System

Our partners are the world market leaders in their field

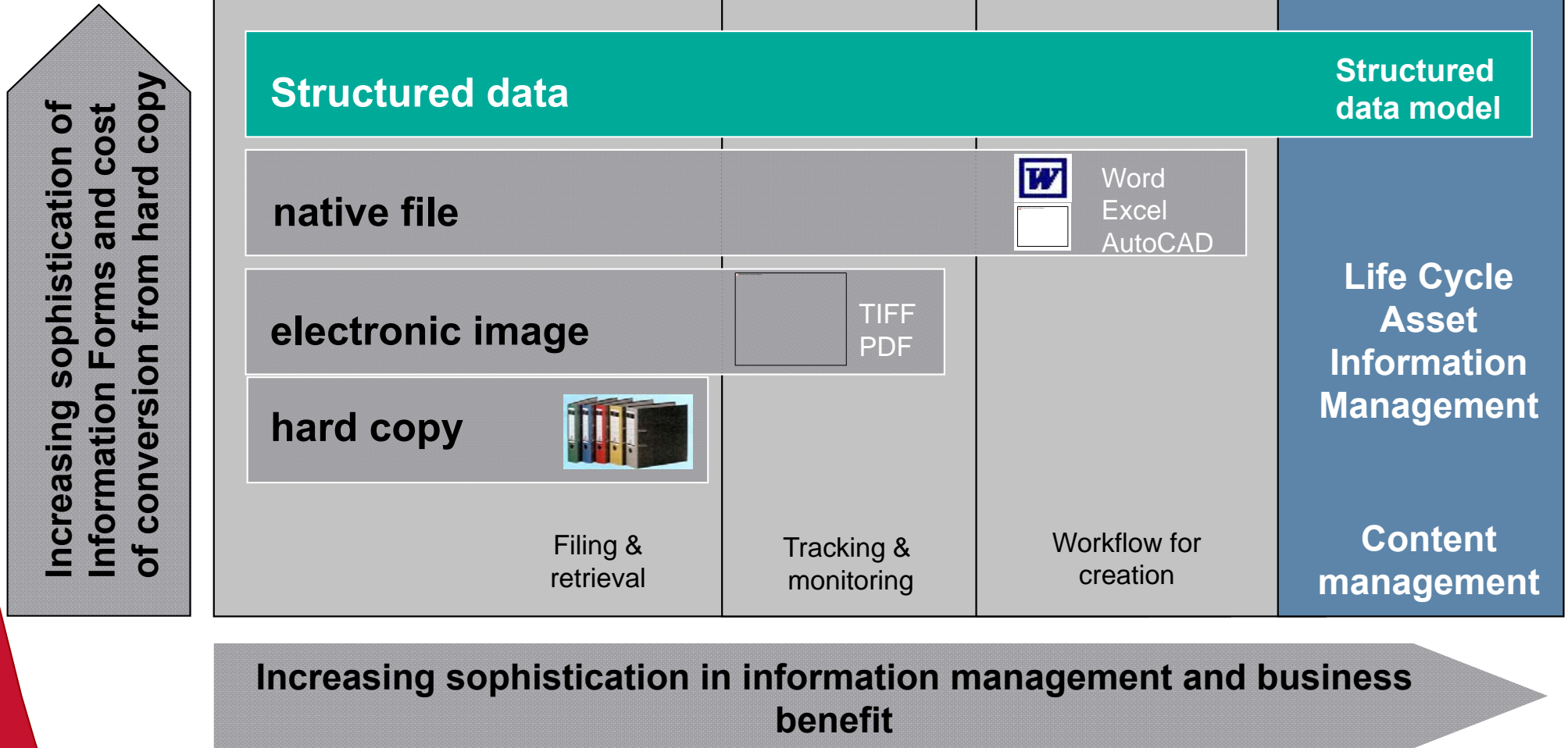


Data Handover to the Owner/ Operator

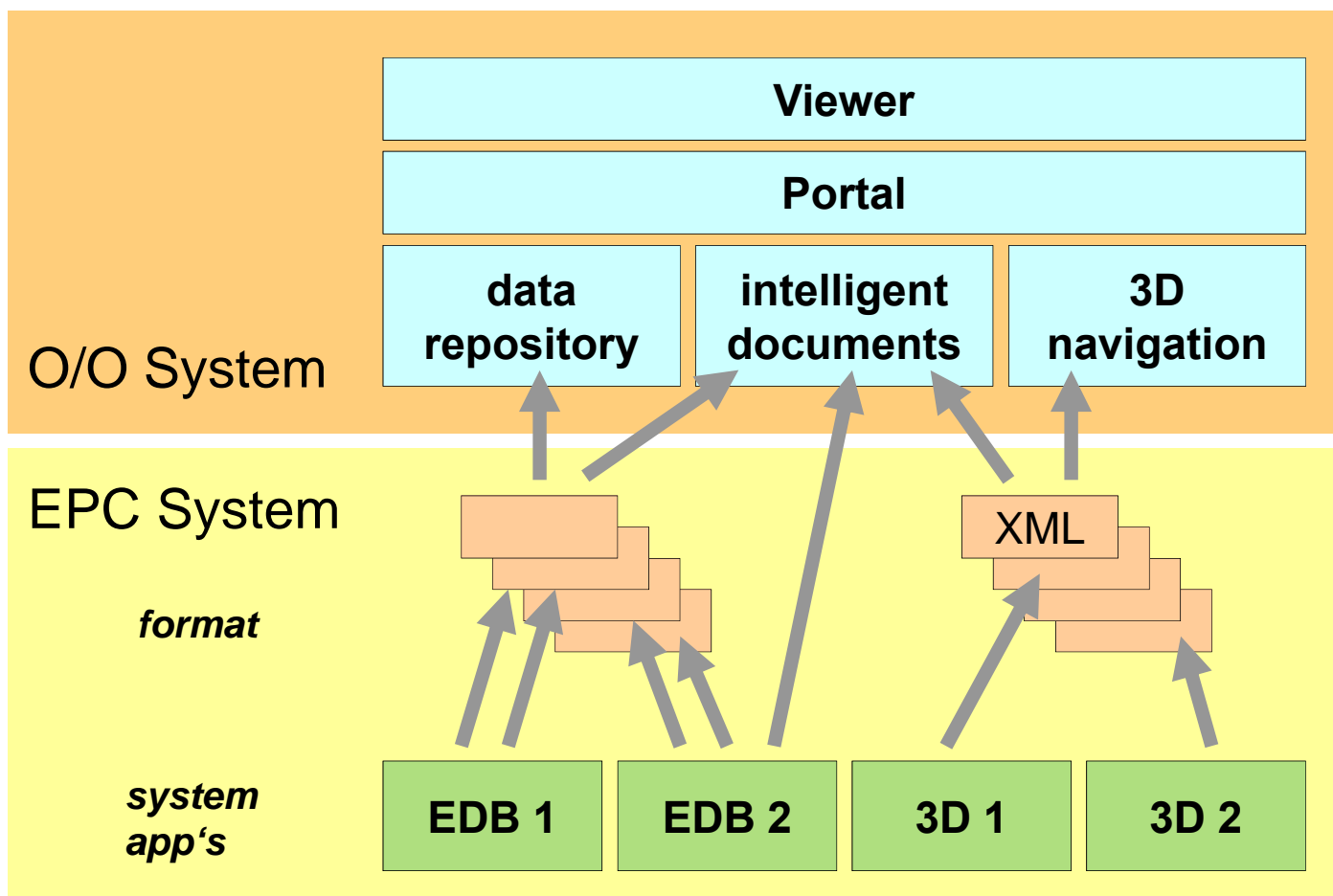
Life Cycle Asset Management Solution – An Owners’ system



Data Handover to the Owner/ Operator

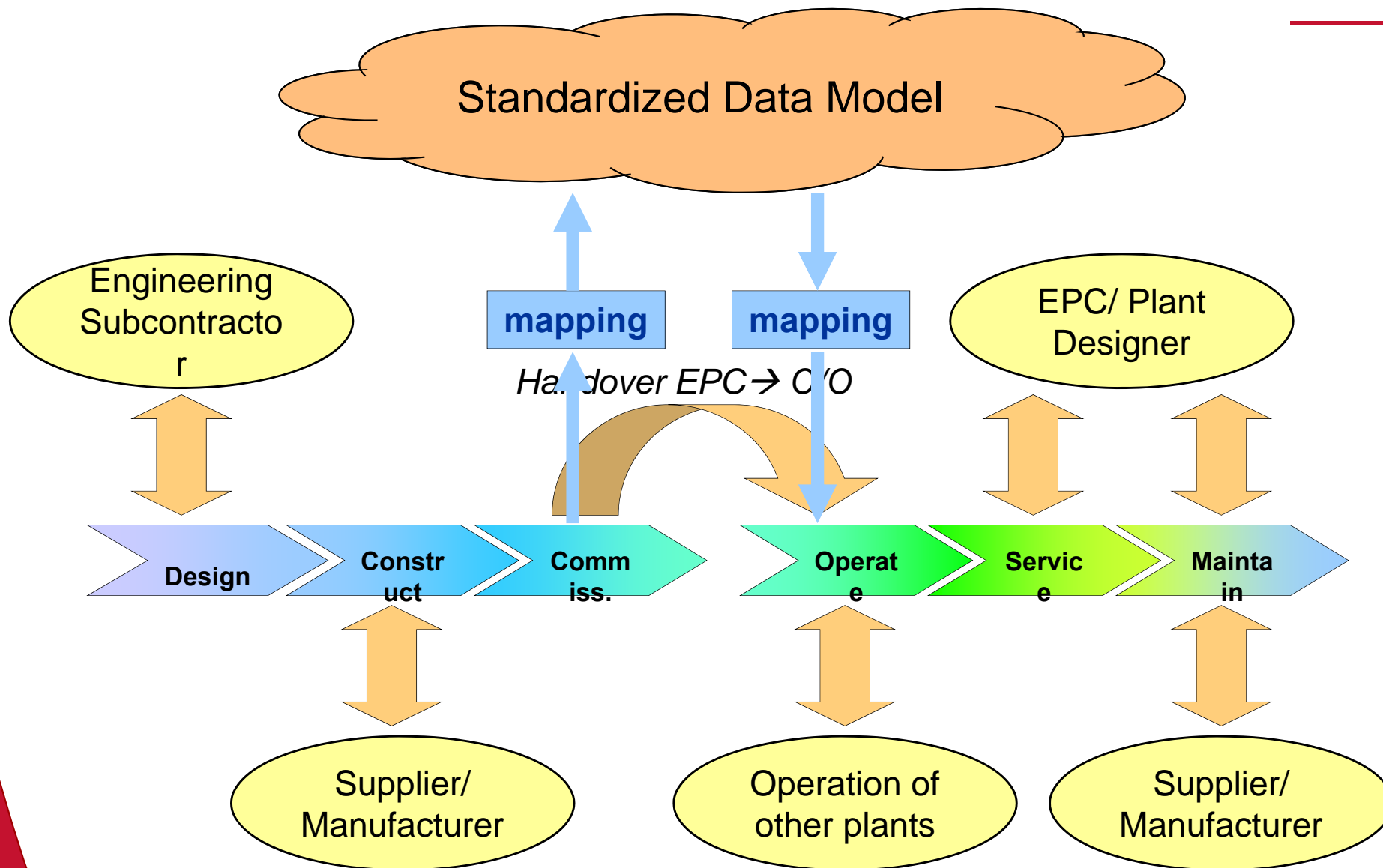


Data Handover to the Owner/ Operator



Only data handover in a structured data model of neutral format provides maintainability of information beyond the life time of specific system applications over 60 years of plant operation

Standardization of Data Handover



Standardization of Data Handover – ISO 15926

Standardization for Data Handover is driven by oil & gas industry:

1998 – EPISTLE handover guide 1+2 (PISTEP, POSC Caesar etc.)

2004 – ISO 15926

2005 – Capital facility information handover guide (US NIS)

2006 – ... might be the time, power industry adopts ISO 15926 as a standard ...?

ISO 15926 is an International Standard for the representation of life-cycle information for process plants.

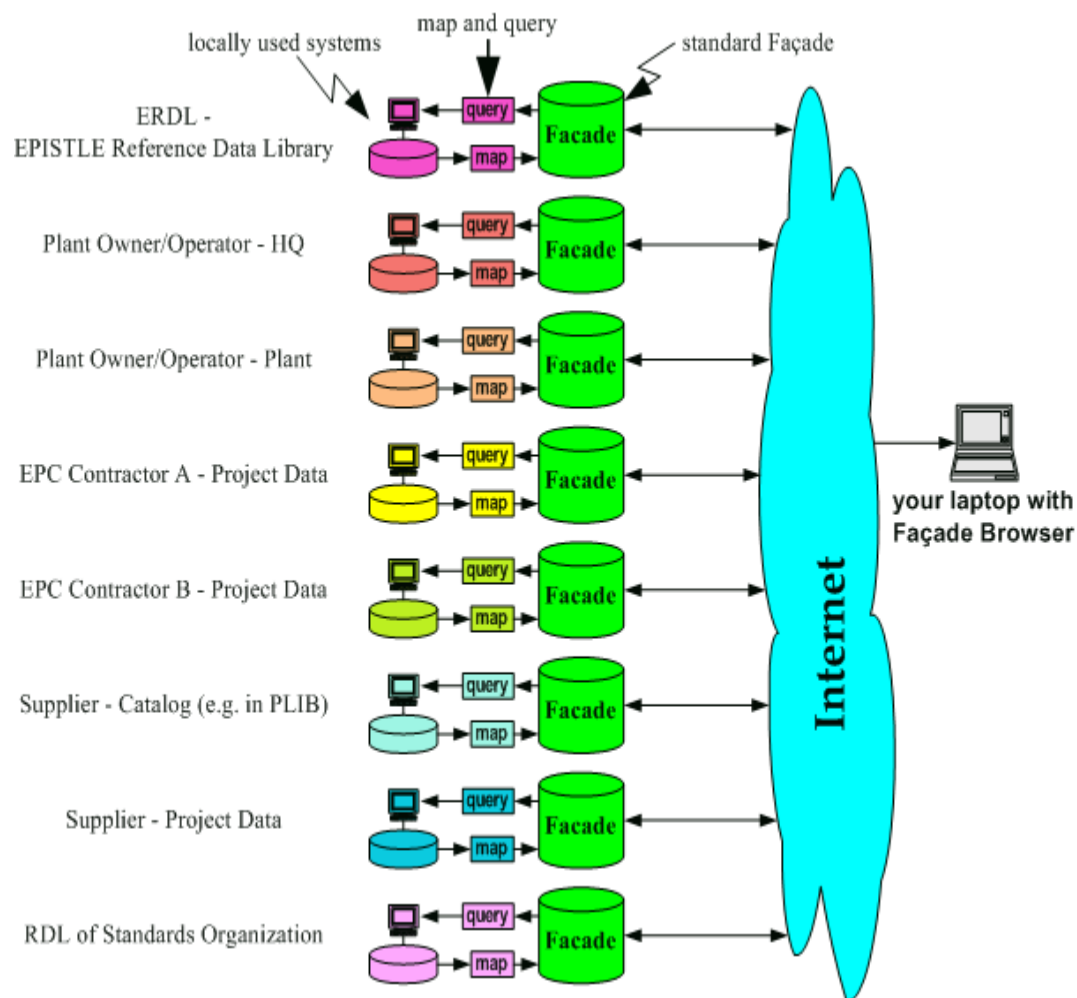
ISO 15926-2 Data Model - specifies a generic, conceptual data model that supports representation of all life-cycle aspects of an oil and gas production facility.

ISO 15926-4 Reference Data - defines the initial set of standard reference data for oil and gas production facilities. This part is also known as the **EPISTLE Reference Data Library (ERDL)**.

ISO-15926-7 XML Implementation - specifies the methods by which part 2 and part 4 can be implemented using XML.

ISO 15926 - Part 7

Source: <http://www.fiatech.org/projects/idim/dsciso15926.htm>



A Confederation of Participating Façades

By mapping system data to and from the standard ISO 15926-7 Transfer File format a Façade can be populated or read.

Façades can communicate with each other over the Internet on a semantic level (they "understand" each other).

In this way the standard ISO 15926-7 format plays the same role for computer systems as English (or any other important natural language) in the communication between human beings.

A challenge for Operators and Plant Designers in Nuclear Power:

- Evolute ISO 15926 standard to the needs of the nuclear power industry
- Establish ISO 15926 as standard for data handover
- Enforce IT-solution providers to provide tools conform with ISO 15926
- Enforce IT-solution providers to allow easy changes to the data without the need to implement the full original tool

The benefit for the Owners & Operators:

- Limit Operators' costs for software licenses/ updates & staff qualification
- Ensure life-time maintainability of information independend from IT-tools
- Facilitate and accelerate data handover processes

Plant Engineering Life Cycle Conference PELC 2006
June 7th Den Hague
www.pelc.nl

Thank you!



www.aveva.com

Contact:

Frank-Peter Ritsche, PMP
AREVA NP GmbH
Project Management Initiative

frank-peter.ritsche@aveva.com

*In the context of providing increased customer responsiveness and higher caliber products and services, the **AREVA NP Project Management Initiative** has been initiated in 2003 by the president of AREVA NP as a tool being developed throughout all business sectors and all regions of AREVA NP to strenghten and to harmonize the project management practices.*





plant life management and plant licence extension in nuclear facilities

PLIM + PLEX 2006

10-11 April 2006

Hôtel Concorde La Fayette, Paris, France

Now in its 15th year, the series of meetings on plant life management and plant licence extension (PLIM + PLEX) continues to develop the crucial themes that are central to the strategic life management of nuclear plants. PLIM + PLEX 2006 sees the return to the European market and home to the second largest provider of installed nuclear capacity – France, bringing the industry together to discuss the following:

- National and utility strategies
- Plant experience
- Financial impact
- Ageing management
- Upgrading and uprating
- Instrumentation and control
- Components ageing
- Replacement programmes



Over 40 case study presentations and contributions will be made from the following countries:

- Argentina
- Belgium
- Canada
- Czech Republic
- Finland
- France
- Germany
- Hungary
- Japan
- Republic of Korea
- Mexico
- Netherlands
- Poland
- Romania
- Russia
- Spain
- UK
- Ukraine
- USA

Delegate registration for this two day event is €1340. SFEN members pay €1190

Register two delegates and a **third** can attend **FREE!**

Book online at www.wilmingtonconferences.com

Day One 10 April, 2006

Chair:

Bertrand Vieillard-Baron, Secretary General,
French Nuclear Energy Society

08.20 Registration and coffee

08.50 Opening remarks from the chair

UTILITY AND NATIONAL PERSPECTIVES

09.00 EDF status report

- EDF policy on plant life management
- Comparing EDF policy against other national strategies
- Managing ageing across the French nuclear fleet
- Effect of new build on lifetime of existing plants

Jean-Pierre Hutin, Head, Nuclear Maintenance, EDF, FRANCE

09.25 The regulator's perspective

Autorité de sûreté nucléaire (speaker tbc)

09.45 Update on license renewal in the USA

- Overview of industry status for completed license renewal projects
- Plans for future license renewal applications
- Changes in the regulatory process during 2005
- Lessons learned from Beaver Valley issues
- Overview of public opinion: survey results on license renewal

Garry Young, Nuclear Plant License Renewal, Entergy USA

10.15 Plant life management at British Energy

- Assessment and monitoring of potential life limiting features for British Energy's fleet of AGR stations
- Identification and delivery of work to secure the economic optimum safely
- Construction of a robust technical, economic and commercial case before any life extension is declared
- Life extension of 10 years for Dungeness B and feasibility of life extension for the other AGRs

Roy Anderson, Chief Nuclear Officer, British Energy, UK

10.40 Morning coffee

11.10 Restarting the 'Bruce A' reactors and the impact on stakeholders

- A brief history of Bruce power in its short lifetime
- Decisions that drove the restart project for the restart of units 3 and 4
- Lessons learned from the unit 3 and 4 project
- The feasibility study for unit 1 and 2 restart
- The scope of the project
- Designing the construction island concept, not used before in Canada
- The role of government and the position of the owners
- What it means to: the site; the community; the industry; and the environment

Ron Mottram, Bruce Power, CANADA

11.40 Life extension of main equipment and pipe lines in a 30 year first generation Russian NPP

- Elaboration of regulatory documents for extension of the design lifetime period. Structure of the document; requests to the volume of initial data, analysis of the results, conclusions
- Data requirements for certificates, normative data, control inspection and full scale inspection
- Investigating missing data fields
- Recommendations for lifetime monitoring to prolong the plant operating lifetime

M. B. Bakirov, Director, VNIIAES, RUSSIA

12.00 Safeguarding the long term integrity of safety relevant NPP systems and components in Germany

- Defining Ageing Management (AM): covers conceptual, technological and physical aspects
- Preventive maintenance
- In-service inspection (ISI)
- Surveillance measures
- Focussing on the bundling of applied AM measures into a conceptual framework
- Describing the AM-concept elements in general plant specific application: basic AM reports
- The periodic documentation of new ageing effects

Ulrich Wilke, Walter Böwing, E.ON Kernkraft, GERMANY

12.20 Managing the Life Cycle of CANDU units

- Describing projects underway in Canada and worldwide
- Outlook for additional projects

- Key features: benefits, technical, regulatory, project organization
 - Defining the project scope and links to managing the life cycle
- Joe Howieson, AECL, CANADA

12.40 Lunch

13.50 Application practice for continuous operation of Korean NPP

- Establishing continuous operation beyond design life
- Periodic Safety Review (PSR)
- Ageing management review for safety-related system structure and components (SSCs)
- Evaluating the completed PLIM study for KORI unit 1 – led by the only nuclear utility in Korea, KHNP
- Continuing development of Wolsong unit 1, CANDU type reactor
- PSR with Integrated Plant Evaluation (IPE)
- Ageing Management Program (AMP)
- Time Limited Ageing Analysis (TLAA)
- Radiation Environment Review (RER)

Jong-Jooh Kwon, Ill-Seok Jeong, Sung-Yul Hong

Korea Electric Power Research Institute, REPUBLIC OF KOREA

14.10 Present state and issues of plant life management of Kansai Electric

- The number of units with 30 years of operation is on the increase
 - The importance of conducting ageing assessments: defining the framework
 - Challenges faced in Japan
 - Working within the Atomic Energy Society of Japans framework
 - Examining the secondary piping rupture accident of Mihama-3 of August 2004
 - Outcomes and the response to government
 - Contents of ageing assessment reports and 10-year maintenance plan
 - Scope of Kansai Electric's ageing assessment to establish a 10-year maintenance plan for Mihama-3 in the first quarter of 2006
 - How degradation modes are identified and introduced
- Hideo Tanaka, Chief Manager, Plant Life Management Group,
Nuclear Power Division, Kansai Electric Power Co, JAPAN

14.30 Ageing management procedures evaluated against IAEA guidelines and national approaches

- Procedural aspects of ageing management
- Features of reactive and proactive ageing management
- Evaluation and implementation of ageing management guidelines
- Ageing management issues for life extension
- Case study: ageing management review at Borssele

Martin Church, Team Leader Structural Mechanics NRG, NETHERLANDS

André de Jong, Staff Engineer EPZ NPP Borssele, NETHERLANDS

PLANT EXPERIENCE

14.45 Feasibility study on operation time extension for 20 additional years for the Borssele nuclear power plant

- Methodology of PLEX study in order to identify major repair or replacement measures required for the KCB lifetime extension
- André de Jong, Staff Engineer EPZ NPP Borssele, NETHERLANDS
Wolfgang Daeuwel, Helmut Nopper, Lueder Warnken, Dietmar Koch, Framatome ANP GmbH

15.00 Expectations for Embalse PLIM + PLEX

- Gaining approval for life extension and insights on nuclear energy production
- Determining the current state of the PLIM of Embalse showing the main programs in existence and those in development
- Demonstrating the plant ability for operating safely and reliably beyond the original design life
- Presenting the ageing assessment program, its findings and the main difficulties and challenges faced
- Summarising the main maintenance activities implemented for PLEX
- Developing the main cost elements, currently known as the major contributor for the refurbishment, of a CANDU plant, that could be life limiting

Gustavo David Díaz, Steam Generator System Engineer and PLIM specialist, NucleoElectrica, Embalse Nuclear Power Plant, ARGENTINA

15.15 Implementation of Plant Life Management in NPP Cernavoda Unit 1

- Addressing the affects of ageing
- Organisational management of ageing
- Evaluating pilot projects as part of the Plim programme strategy
- Effective collaborations between NPP and international suppliers to the industry

Cornel Muscaloiu, Mechanical & Piping Superintendent in Engineering, Cernavoda 1, ROMANIA

15.30 Afternoon coffee

16.00 Core tasks of long-term operation and their relation to plant processes at Paks NPP

- Framework and tasks for the preparation and renewal of long-term operation of operational licence
- Past and recent practice of ageing management of safety related, long-lived, passive and non-replaceable structures, systems and equipment
- Relation of the tasks specific to the long term operation of the regular plant processes; maintenance, in-service inspection, operation
- Examples typical for WWER-440/213 plants long term operation are given from Paks Nuclear Power Plant practice.

Dr. Tamás János Katona, Scientific Advisor, Nuclear Power Plant Paks Ltd. HUNGARY

16.15 Plant life management in Mexico nuclear power plant

- Implementing a methodology to determine the status of all plant components
- Adopting the most suitable actions to keep open the options for long term operation
- Obtaining an exhaustive knowledge about plant ageing
- Improving plant operation

Gilberto Jarvio Cervantes, Equipment Qualification Engineer, Nuclear Research National Institute, MEXICO

16.30 Modernization of Olkiluoto NPP

Esa Unga, Jarmo Tanhua, Juho Hakala and Pekka Sahlberg, TVO, FINLAND

16.45 Capabilities in license renewal project for long term operation of Iberdrola Ingeniería y Construcción

Abdelaziz Kaychouhi and Ignacio Martínez Gozalo, Iberdrola Ingeniería y Construcción, SPAIN

17.00 Licence renewal recovery: Lessons learned at Nine Mile Point

- What factors led to the withdrawal of the NMP License Renewal Application from the NRC review process
- How the recovery plan to amend the application was developed and implemented
- What role a well-integrated checks and balances system played in the recovery process
- How the site met the application criteria and prepared for a subsequent NRC ageing Management Review audit that exceeded NRC expectations

David Dellario, LR Project Manager, Constellation Energy, NMPNS, USA
Dr Jeff Jeffries, LR Senior Licensing Consultant, Paradigm Consulting Services, Inc, USA

INSURER'S VIEW

17.15 Nuclear liability insurance experience of an ageing global nuclear industry

- Analysis of over 30 years worldwide nuclear plant third party nuclear liability (TPL)
- Experience of insurance claims
- Insights into global nuclear industry economic impact and categorizations of TPL claims experience.
- Relationship between global nuclear industry ageing and nuclear TPL insurance claims
- TPL claims correlation with the classic ageing 'bathtub' curve

William G. Wendland, Director, Special Nuclear Projects, American Nuclear Insurers, USA

17.30 Closing remarks from the chair

17.40 Networking reception sponsored by AREVA



Day Two 11 April, 2006

Chair:

Garry Young, Manager, License Renewal Application Development, Entergy Nuclear

08.30 Morning registration and coffee

09.00 Opening remarks from the chair

AGEING STRATEGIES

09.10 EDF lifetime management of nuclear components: A safety and economical issue

- Managing the remaining lifetime of an industrial facility routine maintenance

- Maintaining safety levels for competitive advantage
- Development of the EDF approach using IAEA guidelines in order to systematically review all the ageing management programs implemented on its 3-loop plants
- Justification and selection of components
- Degradation mechanism analysis
- Synthesis and comparison with existing programs
- Overview of the major results obtained by EDF
- Recommendations and conclusions
- Comparison of the methodology with similar methodology used in other countries

Claude Faigy, Consultant Engineer, EDF-SEPTEN, FRANCE

09.25 Enhancing safety and performance of NPPs through effective ageing management: Life management of the primary circuit equipment of Belgian nuclear units

- Ageing management activities carried out on the primary circuit equipment of Belgian nuclear power plants
- Reactor pressure vessel embrittlement
- Primary water stress corrosion cracking of Inconel components (RPV head penetrations and welds, bottom mounted instrumentation penetrations, dissimilar metal welds)
- Irradiation assisted stress corrosion cracking of baffle-former bolts
- Thermal ageing of the primary loop cast stainless steel components

R. Gérard, M.De Smet, Tractebel Engineering, BELGIUM

09.40 Detailed life assessment of Candu power plant for long term operation

- Experience in CANDU PLIM program
 - Approach to utility PLIM program
 - Refurbishment and continued operation beyond design life
- Ill-Seok Jeong, Taek-Ho Song and Sung-Yull Hon, Korea Electric Power Research Institute, REPUBLIC OF KOREA

09.55 How can a Design Organization help a Nuclear Operator with Plant Life Management?

J.H. Nickerson and R. Rabbat, AECL

10.10 Full Implementation of Equipment Reliability Using INPO's AP-913

Luis Martinez Anton (Asociacion Nuclear Asco-Vandellos II, Spain), Ryan J. Hagler (Westinghouse), Charles E. Meyer (Westinghouse), Philippe Monette (Westinghouse), Xavier Coll Sugranes (Westinghouse), M. Isabel Mach Cestero (Tecnatom, Spain), Xavier Castelo Nolla (Tecnatom, Spain)

AGEING MANAGEMENT TOOLS

10.25 Nuclear Plant Data Life Cycle Management for the EPR

- The Framatome ANP "Information Management System" implemented for project execution, engineering and construction of the first European Pressurized Water Reactor (EPR) in Olkiluoto site in Finland
- Hand-over of plant data generated during engineering, procurement and construction to the owner/operator for use in operation and maintenance management systems
- Strategies for plant data life cycle management

Frank-Peter Ritsche, Project Management Initiative, Framatome ANP

10.40 Morning Coffee

11.10 Integration of lifetime prediction research to ensure economic operation of plant life for the future

- Basing prediction on knowledge of materials and their integrity
- Bringing together different scientific principles in order to create significant prediction procedures
- Creating the right networking channels to ensure that 'best knowledge' is integrated and shared in order to produce qualified methodologies
- Technical challenges in predicting plant life
- Results to date

Rauno Rintamaa and Irina Aho-Mantila, VTT, FINLAND

11.25 Visualization technology to support maintenance planning and training

- Description of modern visualization technology that may be applied to improve planning and training in the nuclear power industry
- Examples of nuclear plant applications
- Demonstration of a control room modernization planning and evaluation application and a valve maintenance application
- Discussion of the ease of use of reducing costs of visualization technology, making it practical for plant applications

Lewis F. Hanes, Consultant, USA

Joseph Naser, Program Manager, Electric Power Research Institute, USA

11.40 THERFAT - Thermal fatigue evaluation of piping system tee-connections

- Screening of existing plant and R&D data
- Assessing the fatigue significance of turbulent thermal mixing effects in piping system tee-connections and identifying the fatigue significant parameter
- Quantifying the existing safety margins against failure by applying standard methods and advanced fatigue and fracture mechanics analysis routes and determination of fatigue relevant threshold values
- Verification of selected aspects of fatigue assessment by experimental damage tests with cyclic thermal shock loads
- Proposition of a "road-map" as part of a "European Methodology on Thermal Fatigue" considering the results of current and past activities

Klaus Metzner, Ulrich Wilke, Willi Kohlpaintner, E.ON Kernkraft, GERMANY

Manolatos Panagiotis, European Commission

INSTRUMENTATION AND CONTROL

12.00 I&C challenges to maintain and modernise operating plants with license extension

- Regulatory issues and equipment qualification
- Modernising the control room
- Improving equipment and component condition assessments
- Cost-effective maintenance
- Improving access, handling and presentation of large amounts of data
- Ageing equipment and ageing work force

Joseph Naser, Program Manager, Electric Power Research Institute, USA

12.20 RAFFIA - reliable ASIC/FPGA-based solutions for I&C applications

- Why use ASICs and FPGAs in I&C applications
- What makes ASICs / FPGAs safer than other implementation platforms
- How can we specify, design, and implement ASICs / FPGAs to maximize confidence and simplify the safety justification?
- What role should formal verification and validation techniques play in this process
- How can we make formal techniques more accessible to engineers?

John Lach, Assistant Professor

Charles L. Brown Department of Electrical and Computer Engineering University of Virginia, USA

12.35 Lunch

13.45 Cost effective approach to I&C integrated Modernisation

- The principles of an offensive integrated approach to I&C Modernisation
- Results of task analysis to identify benefits of integrated modernisation
- Summary of an aggressive endpoint vision and architecture for modernisation
- Discussion of work in progress toward improving cost-effectiveness of integrated modernisation

Randall May, Consultant, EPRI,

Nguyen NQ Thuy, Electricite de France & EPRI, FRANCE

Ray Took, EPRI, USA

COMPONENTS AGEING

14.00 WWER steam generators tubing performance and aging management

- Status of WWER steam generators tubing performance
- Assessing tube integrity and maintenance strategy
- Identifying eddy current requirements
- Research activities on corrosion mechanism studies and residual lifetime estimation

N.Trunov, Chief designer –Head of division of OKB "Gidropress" Podolsk, RUSSIA

14.15 Ageing of NPP equipment materials at operation during design lifetime

- Results on thermal ageing after a prolonged operation within various types of reactors WWER-40 / WWER -1000 and RBMK-1000
- Comparing initial properties with similar characteristics after the operation for 100000 and 200000 hours (for materials not subjected to radiation attack) showed that in most cases the variations of mechanical properties (UTS, YS, elongation, reduction of area, DBTT) were insignificant
- Satisfying the required level of characteristics according to the Russian code, namely strength calculation norms PNAE G-7-002-86 and PNAE G-7-010-89

Dr Boris Timofeev, Head of Scientific and Technical Information, Central Research Institute of Structural Materials "PROMETHEY" Prof. Igor Gorynin, General Director of CRISM "Prometey", Academician of the Russian Academy of Science, RUSSIA

14.30 Reactor Pressure Vessel Embrittlement of Borssele Nuclear Power Plant

- Considering the Design Lifetime and Lifetime Extension
- Embrittlement status of Borssele reactor pressure vessel
- Status with respect to US, French and German nuclear safety standards
- Results from fracture toughness and Charpy tests
- Status with respect to state-of-the-art
- Embrittlement at design lifetime and lifetime extension

Frederic Blom, Senior engineer structural mechanics NRG, NETHERLANDS

14.45 Ageing effects on operation and reliability of NPP equipment rotors

- Determining the reliability of turbogenerators
- Analysis of damage to steamturbines and turbogenerators from internal factors eg, admixtures
- Estimating individual resource
- Applying different methods for diagnosing and forecasting physio-mechanical theories
- Ensuring that the residual resource is less than the service period

A. I. Balitskii, O. A. Balitskii, P. Kawiak, I. V. Ripsey

Karpenko Physico-Mechanical Institute of the NASU, Lviv, UKRAINE

Franko National University, Lviv, UKRAINE

Institute of Materials Engineering Technical University Szczecin, Szczecin, POLAND

Werst Energy Co, Lviv, UKRAINE

15.00 Afternoon coffee

REPLACEMENT PROGRAMMES

15.30 Large component replacement. Status of the alloy 600 issue in Framatome-ANP

- Integrated head assembly, heater nozzles improvement, 3D imaging and as-built modelling concept
- 'First of a kind' at St Lucie 1, for the replacement of the pressuriser (PZR) and the reactor vessel head (RVH) in the same outage
- Sensitivity to PWSCC is now a concern for all pieces and welds (Alloy 600 / 82 / 182) of the primary circuit in BWR and PWR worldwide
- Feedback from the US, French, or German FANP teams will show their particular capabilities (engineering, methods, tooling) to withstand the Alloy 600 issue

G. Mignogna, M.S. Sills, SGT

Bernard Michaut, Manfred Knapp, Dan Schlader, R. Thévenet Framatome ANP - Services

15.50 Steam Generator Asset Management: Technology's Role in Asset Management

David Cislo, Paul Shoemaker, Framatome ANP

16.00 World's First PWR Reactor Internals Replacement

- PWR reactor internals replacement
- Preventive maintenance and reliability upgrade for reactor internals
- All-in-one-piece extraction method of old reactor internals
- High accuracy installation of new reactor internals

Junichi Uchiyama, Project Manager, Mitsubishi Heavy Industries, JAPAN

CLOSING OVERVIEW

16.15 Technology Challenges: Implications for license renewal success

- Technology as a key ingredient of growth, effectiveness and efficiency
- How plant owners and operators will act to assure that plant staff have success with the technologies they have in place or will select in the future
- Cost competitiveness of power plant operations
- Availability - the reliability of systems and components
- Leveraging of technology as a key to future success
- Effective management of physical plant assets
- Technologies that identify emerging threats to reliable performance
- Identifying specific threats to technology success and suggested actions

Kenneth Ferguson, Senior Consultant

KL Ferguson, LLC

16.30 Closing remarks from the chair

16.45 Close of conference



Senior representation will be made by major international utility owners and operators that are committed to plant life management. We are delighted to present significant case studies and presentations from leading innovators in R&D, senior managers, operators, regulators and international associations. Leading operational case studies will be presented covering the following topics:

- Implementing life management strategies at your plant
- Effectively increasing operational life
- Managing costs and improving the financial viability of your operations
- Strategic replacement and refurbishment of key components
- Examining the balance between restart versus new build
- Dealing with obsolescence

Due to the volume of interest we could not include all case studies for oral presentation, so poster presentations will be made available as part of the exhibition

Participants will include:

- Senior representatives from utility owners and operators
- Engineering staff
- Plant life managers
- Licence renewal and regulatory managers
- Team leaders in technical services
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