

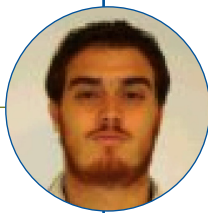
2010-2011



Master of Science in Project Management for Environmental and Energy Engineering (PM3E)

Thursday 7 July 2011 - Amphithéâtre Sadi Carnot

9h10



ALSTOM

Bruno Ezequiel MONSO

Alstom Power Sweden AB (Växjö, Sweden)

Dynamic Modeling of Wet Flue Gas Desulfurization in Open Spray Tower.

Alstom Power, Environmental Control System is a global supplier of equipment for removing emissions from Power Plants and Industries. One of the most important processes is the wet removal of SO_x in a so-called Open Spray Tower (OST).

The aim of the Master's thesis is to develop a dynamic model for the OST unit in order to acquire a qualitative process understanding and provide a simulation tool for future operators and process engineers.

Major challenges involve validation of the model with real plant values, choosing the correct software and finally build an easy-to-handle interface and comprehensive tool. Validation represents a trade-off between the selection of very detailed equations vs. simpler but enough accurate ones.

10h30



Hector BRACAMONTES

ArcelorMittal – Research & Development (Maizières les Metz, 57, France)

Process modeling for by products internal recycling at steel plants.



ArcelorMittal is the largest worldwide steel producer and leader in different markets including automotive, construction, household appliances and packaging.

Nowadays, steel is one of the most required materials for economical development and its demand is expected to increase in the next following years.

Furthermore, during the steelmaking process, different by-products are generated and some of them contain an important fraction of raw materials; such as iron and carbon and pollutants like lead and zinc. Therefore, the increasing cost of raw materials and solid waste handling encourage the valorization of these materials by internal recycling. The purpose of the internship is to develop a model which simulates and predicts the effects of by-products recirculation through different steel production processes.

The model will support plant's operators to define different strategies for the by-products handling reducing the production cost and the environmental impact.

11h40



Luis Eduardo SARMIENTO ARGUELLO

GDF SUEZ Trading (Paris la Défense, 92, France)

Gas Price forecasting using a stochastic economic model with multiple variables.



The aim of the project is to determine the most relevant factors in Gas price formation within Europe. To thoroughly accomplish this, factors influencing supply and demand must be understood and analyzed to generate an appropriate economic model. This project presents a stochastic economic model using historical time series to forecast Natural Gas Prices on short and long-term. Correlated variables are certainly Oil prices, temperature and supply and demand characteristics, among others. It also may be of interest to measure the accuracy of this model comparing real data with forecasted data and describe geopolitical implications.

Moreover, energy derivatives need to be comprehended in GDF SUEZ Trading activities to hedge and balance energy portfolios. From Back Office Operations & Collaterals there will be an interaction with other departments to gain a better understanding of how these trades are executed and thus improve the overall knowledge of GDF SUEZ Trading business. Back Office Operations & Collaterals intern is also in charge of portfolio reconciliation, assuring the good unwinding of the process, managing margin settlement and invoices, developing information systems (mostly VBA macros) and contributing to the writing of specifications.

14h



Arnaud GODET

Safege (Brussels, Belgium)

Assistance to the development and management of the environmental framework contracts with the European Commission.



Safege is an engineering and consulting company delivering sustainable services and solutions in the field of water, infrastructure, environment and institutional development. Safege is a subsidiary of Suez Environnement and has global presence in over 20 countries. The Europe & Africa Division of Safege based in Brussels has set up a project management unit (FWC unit) for the purpose of managing the framework contracts (FWC) with the European Commission.

The Internship mission consists in providing assistance to the Project Manager in the commercial development and the management of FWC projects dealing with environmental and water areas, with the objective of winning contracts and ensuring the good implementation of the requested engineering and/or consultancy works. Main tasks of the commercial phase include coordination and record of the consortium activity; liaising with partners and clients; searching for qualified experts and contributing to the elaboration of offers. The managing phase focuses on monitoring the project progress status and providing support in project team mobilisation, project critical points as well as in tracking project performance and delivery schedule.

15h10



Ali AL DABBAS
SUBATECH (Nantes, 44, France)

Bio-corrosion of radioactive waste steel container under environmental conditions.



SUBATECH is a joint laboratory shared by the EMN (Ecole des Mines de Nantes), the University of Nantes and the CNRS (IN2P3: Institut National de Physique Nucleaire et de Physique des Particules). The research activities of SUBATECH mainly focus on nuclear physics and chemistry.

SUBATECH educational activities are performed at the EMN and at the University of Nantes. At EMN, through the existing engineering formation NTSE (Nuclear, Technology, Safety, Environment). New formations are actively being prepared in Advanced Nuclear Waste Management, Reactor Physics and Technology, Nuclear Safety.

My internship subject is focused on studying the influence of microorganisms on the corrosion of steel in the context of deep geological disposal of radioactive waste.

Batches samples have been prepared in different culture conditions, later-on; the results will figure out the steel coupon corrosion rate as a function of time and temperature which is differ from sample to another one. Reference samples without steel are considered.

Sulfate Reducing Bacteria (SRB), Ionizing radiation, temperature of the radioactive waste and other factors are influencing and enhancing steel corrosion in the context of deep geological disposal of radioactive waste. This experiment is a part of a huge study is being done by SUBATECH to study all the corrosion causes in order to develop new methods to support the radioactive waste packages against expected nuclear leakage under ground which is forbidden since the nuclear contamination there will destroy so many necessary natural resources and basics of human needs.

Friday 8 July 2011 - Amphithéâtre Sadi Carnot

10h30



Emmanuel OKPALE
Total Exploration and Production Nigeria Limited (Port Harcourt, Nigeria)

Implementation of Risk Management in Major Oil and Gas Modification Projects (Focus: OML 100 & OML 58 Upgrade Projects)



TOTAL ESP NIGERIA LIMITED

Total Exploration and Production Nigeria Limited (TEPENG), operator of NNPC / TEPENG Joint Venture, and a subsidiary of Total S.A France, was incorporated in Nigeria in 1962 under the name SAFRAP. Total has been serving the Nigerian hydrocarbon industry for nearly half a century in partnership with the Nigerian Government and different equity partners.

This internship thesis highlights my role of providing routine technical support to Total's Engineering team for the ODP1 ODD1 Firewater System Upgrade Project as well as researching into implementation of Best Available Technologies (BAT) and methods deployed in Risk Management during oil and gas project implementation phases.

It is expected that this research will provide a panacea for the increasing oil and gas incident cases in the light of the April 20, 2010 Transocean Deepwater Horizon offshore drilling unit fire incident in Gulf of Mexico.

11h40



Pierre LEBON
ENERDATA (Grenoble, 38, France)

Developing indicators for the monitoring of the world gas and electricity markets.



Enerdata is an independent information and consulting company that is specialised in the global energy industry and the carbon market. It manages and produces advanced databases, reports, forecasts, news, research and analysis on the oil, gas, coal, power and emissions markets. Enerdata possesses huge amounts of data concerning the above markets and this data is continuously updated throughout the year.

The objective of the internship will be to work on the development and valorisation of energy indicators and forecasts concerning the oil, gas, coal, power and emissions markets. Focus will however be put on gas and power markets. The work undertaken will involve the collection and analysis of data from Enerdata's database in order to produce valuable and relevant indicators (ratios, indexes, graphical representations etc...) The long term objective of the internship is to provide a template for easy creation of these indicators for future use in the company's presentations or information products, and eventually to automate the process.

At the end of the internship, the trainee will have acquired a global vision of supply and demand trends, policies and measures related to the world energy market.

14h



Ana María MOLLON
Association DELPHIS (Paris, 75, France)

Management of R&D projects on the field of energy performance of European social housing.



DELPHIS is a professional non-profit association grouping 21 non-profit companies working in the field of social housing in France. DELPHIS is founding member of EURHONET, European network of 25 social and public housing organizations. DELPHIS objective is sharing a professional project among its members on the core business of the social housing sector: Corporate social responsibility, energy savings, social integration, ageing of the population.

The internship mainly focuses on providing management assistance for the development of two European projects in which DELPHIS participates, under the Competitiveness and Innovation Framework Program of the EU: BECA, ICT Services for resource saving in social housing and AFTER: Cost Optimum and Standard Solutions for Maintenance and Management of the Social Housing Stock. Main tasks are dissemination and exploitation activities, advancement reports and deliverables, communication activities and coordination among participants of each project. The internship also covers a methodology proposal to monitor and measure the energy performance of renovated residential buildings in the French social housing stock. The first step is to identify and analyze current available energy efficiency measures and technologies currently used among DELPHIS members.

15h10



Mohammed AL-AZBA
Technip (Paris la Défense, 92, France)

Development of Energy Efficiency Assessment Procedure.



While energy efficiency reviews are often considered as a means to investigate potential opportunities to improve the efficiency of existing facilities by identifying plant net energy producers and consumers, the regulatory framework is calling more and more for the optimization of energy efficiency at the conception stage and requires a documented demonstration of it.

This regulatory focus along with the increase in our clients' environmental awareness puts TECHNIP in a favorable position to produce the above mentioned demonstration.

As it was the case in the 1960s for safety reviews, such reviews involve the contribution of many different engineering disciplines all interfacing with the HSE Design department. A methodology resembling as closely as possible existing HSE Design reviews needs to be formalized and tested before a typical procedure can be developed for implementation in a project.

The thesis presents the work and the approach followed to develop such corporate procedure along with issues and difficulties encountered.

Tuesday 30 August 2011 - Amphithéâtre Sadi Carnot

9h10



Juan Pablo BORDA ANGEL
Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT)
(Madrid, Spain)

Characterization of hybrid systems for rural electrification with renewable energies using Geographic Information Systems (GIS).



The CIEMAT is a Public Research Agency for excellence in energy and environment.

CIEMAT activities are organized around research projects that span the bridge between R&D and the interests of society. The sphere of CIEMAT collaboration extends from universities to business and is framed by the National Plan for Scientific Research, Development and Technological Innovation. Its presence is relevant in the power production sector, and also collaborates with the rest of industry in those fields.

The rural electrification using hybrid systems based on renewable energies depends on the resources in the study area. To get the optimal system configuration is necessary to use Geographic Information Systems (GIS), which, through maps of Geographic Information, helps to define the energy demand and the available renewable energy resources in the study area.

The project consists in make a study about the current values which define the wind-diesel hybrid systems for rural electrification, using a software called "IntiGIS", which is a methodology developed by CIEMAT, that enables to calculate the Levelized Electrification Cost (LEC) of those systems. Is necessary to review the methodology, applying values to a case study, drawing conclusions about their suitability and proposing appropriate changes within the application in Visual Basic language.

10h30



Adekunle ADEYEMI
Energy Carbon Performance SAS (ENERCAP) (Rillieux-La-Pape, 69, France)
Development of Energy Efficiency projects in Africa.

ENERCAP is an Energy and Carbon Strategy Consulting firm based in France. The mission of the company is to aid private and public entities to define, implement, and finance their energy and carbon strategies.

The project to be developed focuses on the technical, socio-economic solutions to problems of inadequate power supply in Sub-Saharan Africa. This will include the review of the current energy status of various countries in the region, meetings and negotiations with stakeholders and come up with solutions tailored to their needs and available resources.

Energy Efficiency measures plays an important role in energy issues nowadays. The project will mainly focus on the distribution of Compact Fluorescent Lamps (CFLs), replacing Incandescent Lamps in Sub-Saharan Africa, as lighting represents up to 40% of total electricity consumption in most countries in the region. The projects will be refinanced through Carbon Credit revenue generated through the deployment of Clean Development Mechanism (CDM).

My role as a consultant during my internship affords me the opportunity to be involved in the phases of project conception, feasibility studies, development and implementation. This includes data gathering and analysis, CO2 emissions estimation, development of PIN (Project Idea Note) and PDD (Project Design Document), and ultimately presentation of projects to the UNFCCC.

11h40



James McCREADY
SCE (Nantes, 44, France)
Optimisation of energy efficiency and reduction of energy consumption in buildings.

SCE is the French leader in consulting, design and engineering in environmental and energy management and town and country planning at a European scale.

Energy consumption is forever on the rise, particularly in buildings, with an increase of 30% over the last 30 years in France. At 70 millions toe which corresponds to 120 million tonnes of CO2 emissions, the building sector is the biggest consumer of energy across all sectors of the French economy. Thus, improvements in energy efficiency in these buildings are critical to meeting national commitments with regards to reducing greenhouse gases and energy consumption.

The tasks involved in this internship are to undertake energy audits on buildings to determine its performance in terms of energy use and more importantly energy losses. A current project is the campus of the University of Maine, France, where around 45 buildings are presently being audited. An assessment is made and major structural and managerial improvements are identified unique to each of the 45 buildings to implement and improve the overall energy use. Computer simulations using energy modeling software are then undertaken to demonstrate the positive effect of the recommended improvements and highlight the corresponding energy/CO2 and financial benefits.

14h



José Eugenio HERNANDEZ RUIZ
SoWiTec development GmbH & Co. KG (Sonnenbühl, Germany)
Wind Project Developments in Latin America.

SoWiTec is a group established in southern Germany. Developing wind farms - from greenfield to turnkey projects - is SoWiTec's Group core business. SoWiTec group provides site identification, arrangement of land leases, acquisition of building permissions and grid access, systematic screening of large geographic regions as well as detailed planning and optimization of a specific site layout, technical construction management and finally commissioning of the wind farm. SoWiTec development is one of the subsidiary companies of the SoWiTec group. SoWiTec development performs all steps in the wind farm project planning process. One major focal point of SoWiTec development are wind measurements using their own meteorological masts and solar devices. Measurements results are used to correlate data in the energy prediction process.

A great stock of wind farms and proven projects in Germany provided stability on the domestic market. The SoWiTec group is now developing its activities in international markets through its subsidiary SoWiTec international and local companies in emerging markets, principally in Latin America.

The internship's main subject takes place within the above-described SoWiTec's development group of activities. The student will be involved in the technical project planning process of wind farms in Latin America.

15h10



ALSTOM

Konstantinos GIOTOPOULOS
Alstom Power (Baden, Switzerland)
Development of a cost estimation tool.

Alstom is a global leader in the world of power generation, power transmission and rail infrastructure and sets the benchmark for innovative and environmentally friendly technologies. Alstom builds the fastest train and the highest capacity automated metro in the world, provides turnkey integrated power plant solutions and associated services for a wide variety of energy sources, including hydro, nuclear, gas, coal and wind, and it offers a wide range of solutions for power transmission, with a focus on smart grids.

In R&D of Gas Turbine integration department of Alstom (Switzerland) AG Baden, this internship aims at developing a cost estimation tool for Gas Turbine components to estimate the production costs. Working within the manufacturing support team and cost excellence group, the main objectives of this internship are followings:

- A good understanding of technical documentation of Gas Turbine components
- Collecting, preparing and analyzing design and cost data of components
- Dealing with sourcing, logistics and manufacturing.
- Assessing technical and economical aspects in order to develop the cost estimation model.
- The cost estimation tool will provide support to strengthen the position within supplier negotiation.
- The cost tool will allow a cost estimation in the early phase of design.



VEOLIA
EAU

Kiran MELKOTE
Veolia Eau (Saint-Mauric,94)
Development of a tool for calculating specific energy consumption of water treatment plants.

World leader in water treatment, Veolia Water Solutions & Technologies is a company at the forefront of innovation & specializing in engineering with 12.1 billion € revenue and 95,789 employees in 66 countries and a responsibility of Drinking water and wastewater services provided to 163 million people. Veolia Eau is known for its continuing efforts to improve efficiency and development of analysis and research tools to assess and track the performance of current technologies.

The objective of the Thesis is to develop a tool for calculating the specific consumption of energy of water and wastewater treatment plants of Veolia Eau. It involves participation in on-site measurement campaigns with the operator for the calibration of the tool and working within an expert team of the Technical Division of Veolia Eau, in contact with the manufacturer's engineering department. This developed tool will then be used to track existing plants performance and for future projects by Veolia Environment.