

# Mr. Frédéric AVERTIN's Competences Record

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Last significant employment \_\_\_\_\_

## Electrician Specialist

As a Sub-contractor for SONANGOL on Block 3 (off-shore /ANGOLA)

Mains realizations:

- Supervision of the replacement and commissioning of 48Vdc chargers (ELTEK-SFEE) on 8 sites. Production loss reduction to 1 hour.
- Involved in the replacement of former protection relays (CEE) by SEPAM. Protection settings optimization.
- PCB transformers replacement up to 5MVA (AREVA, France Transfo, OCREV...).
- Control and excitation cabinet replacement for 9MW turbo-generators with gas turbine. Supervision of all the electrical performance tests as well as GPC (DEIF) optimization settings.
- Reliability improvement for all homopolar protection devices.
- Realization and set up of new preventive plans with excel sheets for motors, transformers, chargers and battery with automatic plots of critical parameters versus time.

Competence area \_\_\_\_\_

## Electricity:

- Networks and equipments up to 20kV,
- Rotating machines up to 6MW,
- Batteries
- Solar PV and related devices.
- Maintenance (industry and off-shore oil rig),
- Safety.

## Electronics:

- Power electronics (charger, inverter, UPS, VSD), IGBT & SCR applications,
- Physics, manufacturing, application, test and reliability of high power semiconductor devices (IGBT, Thyristors, Bipolar and Unipolar Transistors, Diodes).

## Computer science:

- Operating Systems: all Windows, MsDos (all versions). A smattering of UNIX.
- Languages: C, C++, Visual Basic, HTML, Assembler x86 and 68HC11,
- Packages: Microsoft Office, Visio, ACCESS, Publisher, PSPICE, IFS, SAP.

## Languages:

- French: Fluent,
- English: Fluent,
- Spanish: Basic.

## Work experience\_\_\_\_\_

### **UPS and VSD (variable Speed Drive) Specialist**

**TOTAL EP Angola (Block 17) (onshore / ANGOLA)**

**November 2012 - Present**

Electrical method engineer acting as a subcontractor for TOTAL EP Angola. I am onshore-based and involved in the maintenance level 1 to 5 of the following equipments installed on FPSO GIRASSOL, DALIA, PAZFLOR and CLOV:

- all backup power supplies : chargers, and UPS of all brands,
- all Batteries,
- all kind of rectifiers (alternator excitation regulators, chlorination units, Impressed Current Cathodic Protection, ...)
- all kind of Variable Speed Drives
- motors starters and SCR power controllers.

Within that framework, I am responsible for:

- site technical support,
- on site studies for equipment improvement, modification and revamping,
- provision of service and site workforce requirement,
- detailed technical studies and specifications,
- direct invitation to tender or in collaboration with purchasing department,
- technical offers comparison and selection,
- site works setup with all departments,
- preparation of ROC and RLO,
- site works follow-up, plans update,
- preparation of accounting documents for ordering and billing,
- site intervention and technical reports,
- stock and spare parts requirements (SAP),
- troubleshooting procedures for complex equipments.

Material management:

- installations availability improvement,
- equipment documentation and maintenance data,
- site intervention traceability,
- SAP data creation and update,
- preventive maintenance periodicity,
- reliability studies and implementation.

As a technical and hierarchical manager of my entity:

- planning, works coordination with other departments,
- provisional budgets for future maintenance operations,
- cooperation with shutdown teams regarding future maintenance tasks and manpower needs,
- maintenance contracts specifications and follow-up,
- installations security optimization through personnel and environment risks minimization,
- respect for standards,
- technical support within the electrical department,
- cost control in order to match allocated budgets,
- procedure regarding critical tasks,
- equipment improvement,
- specifications regarding new equipments.

## **Methods Electricity Engineer**

**SONANGOL (Block 3) (onshore / ANGOLA)**

January 2012 - September 2012 (9 months)

- Ensure follow up of all electrical maintenance activities (levels 1 to 3) on block 3 (PALANCA, PACASSA, COBO).
- Ensure that scheduling and execution of maintenance operations are carried out as planned and maintenance tasks undertaken are adequate to prevent unplanned equipment failure.
- Ensure that proper procedures are followed, and that all modifications are properly documented.
- Participate to maintenance optimization studies.
- Provide technical support to the site.
- Analyze cause of breakdown, relevant reports and recommendations for improvement and future preventive actions.
- Troubleshoot complex or recurring electrical problems which require technical analysis and resolution with the help of other departments, vendors or original equipment manufacturer and recommend cost effective solutions.
- Propose and justifies recommendations for the improvement of equipment availability, efficiency or maintainability.
- Maintain a daily contact with Electrical team leader's site for maintenance follow-ups and problem resolution.
- Liaise with vendors, HQ specialists and original equipment manufacturers for all queries regarding maintenance, modifications, spare parts, drawings and resolution of technical problems.
- Follow up on statutory electrical inspection of asset, integrity assurance and certifications.
- Use CMMS (Computerized Maintenance Management System).
- Ensure standardization of materials and spare parts for electrical equipment and related systems.
- Define stock management levels regarding spares parts (mini / Maxi - re-supply thresholds) by monitoring and updating materials MRP data, reviewing stock quantities, usage and consumption in order to minimize the stock value.
- Assist the Head of Maintenance and the Electrical Maintenance team in the preparation of budgets, contracts, shutdowns, modifications, warranty claims, vendor mobilization and all other support functions necessary for the efficient operation.

## **Electrician Specialist at Global Petroprojects Services AG**

**Sub-contractor for SONANGOL on Block 3 (off-shore /ANGOLA)**

November 2009 - September 2011 (1 year 10 months)

Under the responsibility of onshore electrical methods:

- Ensure availability and integrity of the electrical equipments on the platforms of PALANCA, PACASSA and COBO.
- Site team technical support in electrical power generation, distribution systems and networks, rotating machines, UPS...
- Technical aid for other specialists, service teams and production leaders in the failure causes search and diagnosis of breakdowns.
- Failure analysis and troubleshooting.
- Technical aid for Methods / Planning in creation and modification of maintenance procedures or instructions.
- In charge of preventive and corrective maintenance operations and/or modifications, specifications for repairs/modification of equipment, technical documentation update.

- Onshore methods engineers reporting of equipments status (experience feedback, abnormal events, behavior, ageing, lifetime expectation ...).
- In charge of technical maintenance operations performed by Maintenance Contractors.
- Onshore methods assistance in preparation of modification and revamping files.
- Commissioning.
- Involved in operability / safety audits.

### **Project Manager at ELTEK VALERE FRANCE**

July 2008 - October 2009 (1 year 4 months)

- Design and tests of industrial power electronic converters (battery chargers, UPS, DC/DC converters).
- Technical support in France.
- In charge of the design and installation of the new 48Vdc chargers, inverters, and DC/DC converters cabinets on block 3 off-shore ANGOLA.

### **Development Engineer at ALSTOM Transport**

February 2006 - June 2008 (2 years 5 months)

1<sup>st</sup> assignment (from 02/2006 to 11/2007):

- Development of an IGBT-based static switch and circuit breaker for 6600Vac medium voltage grid.

2<sup>nd</sup> assignment (from 11/2007 to 06/2008):

Railenergy European Project (<http://www.railenergy.org/>)

- Have a global view of all the various work packages.
- Synthesize essential information for the different ALSTOM TRANSPORT teams.
- Coordinate actions among the teams.
- Involved in simulation models specification and use.
- Technological development monitoring.

### **Power Semiconductor Devices Reliability Expert at General Electric HealthCare**

May 2005 - December 2005 (8 months)

Semiconductor devices qualification and validation for high voltage generators for X-rays tubes.

### **Semiconductor Devices Reliability and Technology Expert at Renault**

November 2004 - April 2005 (6 months)

As an external contractor within the framework of a hybrid car pre design project, I played the role of technical expert in the selection of power semiconductor devices.

### **Maintenance Manager at AL TAIF (Saudi Arabia)**

January 2003 - June 2004 (1 year 6 months)

In the KING FAHD CULTURAL CENTER, I was in charge of the management of the electronic team in order to ensure optimal operation of all the electronic equipments (stage machinery, planetarium, Audio/Video equipments, fire detection installations, telephone installations, computers...).

### **Senior Engineer R&D at DYNEX Semiconductor Ltd (United Kingdom)**

August 1998 - August 2002 (4 years 1 month)

High Power IGBT modules development. I acted as an interface between silicon designers and application engineers and provided a technical support with regard to ratings and electrical tests performed in production.

### **Maintenance and Calibration Technician at MITEL Semiconductur S.A.**

August 1996 - August 1998 (2 years 1 month)

In the MITEL Semiconductor company, (formerly MARCONI Electronic Devices of the GEC PLESSEY Semiconductors group), I dealt with maintenance and calibration on fast power semiconductor testing benches.

### **Trainee for the preparation of C.N.A.M. thesis at ALPHATEST**

October 1995 - August 1996 (11 months)

Design and construction of a close looped surge generator test bench for crowbar devices. This equipment was PC-controlled via Windows 3.11. The dissertation in French can be downloaded at: <http://www.chez-fred.net/CV/memoire.zip>

### **Maintenance and Calibration Technician at MARCONI Electronic Devices**

September 1993 - September 1995 (2 years 1 month)

Maintenance and calibration on fast power semiconductor testing devices.

### **Electronics Technician at SAFT Power Systems**

October 1991 - September 1993 (2 years)

I was in charge of tests in plant, installation and troubleshooting for high power UPS systems all over the world.

## **Publications**

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### **Ratings of High Power IGBT Modules for PWM Inverters for Traction Applications.**

PCIM Europe 2000 June 1, 2000

Authors: Frédéric AVERTIN, Dinesh Chamund, Bill Findlay.

This paper I presented during the conference has been voted best publication and presentation of the PCIM EUROPE 2000 conference by the chairman committee.

The paper can be downloaded at:

[http://www.chez-fred.net/CV/pcim\\_2000\\_Europe\\_paper.pdf](http://www.chez-fred.net/CV/pcim_2000_Europe_paper.pdf)

## **Education**

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### **Conservatoire National des Arts et Métiers**

Engineer, Electronics, 1991 - 1996

### **I.U.T. Génie Electrique et Informatique Industrielle de TOURS**

D.U.T., Electrical Engineering and Applied Computer Studies, 1989 - 1990

### **Lycée Grandmont de TOURS**

Baccalauréat, Electrotechnics, 1987 - 1988

### **LEP de Grandmont TOURS**

C.A.P., Electrical Construction Draftsmanship, 1985 - 1986

## Advanced Training courses

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- SAP Training “Systems, Applications, and Products for data processing”  
Angola, 02/2000.
- Behavioral Average Modeling and SPICE Simulation of PWM and Resonant Converters PCIM 2000 Seminar  
Nuremberg, 06/2000.  
The contents of this training can be downloaded here:  
[http:// www.chez-fred.net/CV/training\\_PCIM2000.pdf](http://www.chez-fred.net/CV/training_PCIM2000.pdf)
- Presentation of a technical report C.N.A.M. oral examination  
Stated on 09/1995 at the C.N.A.M. of TOURS.  
Subject: Limits and performances for high power thyristors in switching mode operation.  
This subject has been dealt with a semiconductor physics point of view. The report in French can be downloaded here:  
[http://www.chez-fred.net/CV/Rapport\\_CNAM.pdf](http://www.chez-fred.net/CV/Rapport_CNAM.pdf)
- Microsoft ACCESS master level ADHARA INFORMATIQUE  
05/1995. 36 hours.
- Quality, Safety, nuclear plant service supplier E.D.F.  
Paris, 06 to 07/1993. 35 hours.
- Electromagnetic compatibility A.E.M.C.  
12/1992. 32 hours.
- Microprocessors, microcontrollers G.R.E.T.A. TOURAINÉ.  
TOURS, 01 to 05/1992. 60 hours.
- Industrial training period E.D.F.  
TOURS 05 to 06/1990.  
Assignment: Program development in advanced language (Pascal) for active protections for medium voltage transformers.
- Industrial training period E.D.F.  
TOURS 05 to 06/1990.

## Distinction

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Best publication and Poster/Dialog Session of the PCIM EUROPE 2000 conference.

The paper can be downloaded at:

[http://www.chez-fred.net/CV/pcim\\_2000\\_Europe\\_paper.pdf](http://www.chez-fred.net/CV/pcim_2000_Europe_paper.pdf)

## Habilitations

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- ATEX AT/B001 - APAVE / July 2015.
- B2T Electrical certificate - APAVE / April 2015
- Further Offshore Emergency Training (FOET.010421)  
Refresh - “BST + HUET + CA-EBS + H2S” STCW / Valid until May 2025.
- H2V, B2V, BC, HC, BR, BE essai, HE essai, BE mesure, HE mesure Electrical certificate  
APAVE / February 2022.