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**THE COMPETENCE CERTIFICATION
IN CATHODIC PROTECTION
EVOLUTIONS FROM THE ORIGINS TO NOWADAYS.
SHORT-TERM PROJECTS AND PROSPECTS.**

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Summary:

Since 1998, France has set up a system of competence certification of personnel working in cathodic protection. Initially it was applied to the buried metal structures and then we built from 2007 to 2010 a training center and an examination center for structures exposed to sea. Today, this unit has become international with training and certification tests in English. Partnership Agreements have been currently under consideration or have been developed with European certification organizations.

The competence certificates issued by the CEFRACOR are all certified " AFNOR Compétence / Protection cathodique " or " CEFRACOR Compétence/Protection cathodique".

The author got an overview of the different certifications in the main countries of our continent and he proposes to create, if it is possible through the CEOCOR, a system that could enable a mutual recognition of the different European certifications. The final goal could be the allocation of a quality label such as " European C.P. certification ".

This quality label, linked to a European accreditation, similar to the one delivered in France by the COFRAC, would lead Europe to a high global level in the field of competence certification of personnel working in cathodic protection.

As for the national accreditation organizations, they would certify that the different certifications systems respect the clauses defined in the standard EN 15257.

Zusammenfassung:

Seit 1998 hat Frankreich ein System von Befähigungsnachweisen für Arbeitnehmer eingeführt, die auf dem Gebiet des kathodischen Korrosionsschutzes arbeiten. Ursprünglich galt es nur für unterirdische Metallkonstruktionen. Von 2007 bis 2010 wurde dann ein Schulungs- und Prüfungszentrum für Konstruktionen aufgebaut, die Meerwasser ausgesetzt sind. Inzwischen ist daraus eine internationale Einrichtung geworden, in der Schulungen und Prüfungen auf Englisch stattfinden. Derzeit werden Partnerschaftsvereinbarungen mit europäischen Zertifizierungsstellen erwogen oder wurden solche entwickelt.

Die Befähigungsnachweise von CEFRACOR lauten entweder auf „AFNOR-Befähigung für kathodischen Korrosionsschutz“ oder „CEFRACOR-Befähigung für kathodischen Korrosionsschutz“.

Der Autor hat eine Übersicht über die verschiedenen Zertifizierungen in den wichtigsten Ländern unseres Kontinents und schlägt vor, ein System ins Leben zu rufen – wenn möglich via CEOCOR –, das die gegenseitige Anerkennung der verschiedenen europäischen Befähigungsnachweise ermöglicht. Endziel könnte die Vergabe eines Qualitätszeichens sein, zum Beispiel eines europäischen Befähigungsnachweises für kathodischen Korrosionsschutz.

Dieses Qualitätszeichen in Kombination mit einer europäischen Zulassung ähnlich

der, die COFRAC in Frankreich erteilt, würde Europa im weltweiten Vergleich auf ein hohes Niveau in Sachen Befähigungsnachweise für Arbeitnehmer bringen, die im kathodischen Korrosionsschutz tätig sind.

Was die nationalen Zulassungsorganisationen betrifft, so würden sie bestätigen, dass die verschiedenen Zertifizierungssysteme die in der Norm EN 15257 definierten Klauseln einhalten.

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1 CFPC set-up.

The competence certification of people in cathodic protection is the result of a work started in the standardization sector since 1988, when a European Technical Committee about cathodic protection was created.

“Centre Français de l’Anticorrosion” (CEFRACOR) got immediately involved in this work, carried out under the aegis of the AFNOR, and it was a real driving force.

The main steps were as follows:

- 1989: Development of the first experimental NF standards concerning soil corrosion and Cathodic protection.
- 1990: Setting up of a " quality approach" within the CEFRACOR.
- 1992: Creation by the CEFRACOR of the working group which will become later the “Conseil Français de la Protection Cathodique” (CFPC).
- Announcement of the project to AFNOR in Paris, on 24th October, 1995.
- 1996: Publishing of two NF standards about the certification and the qualification of people in Cathodic protection.
- Preparation of the set-up of the CFPC on 27th November 1996 with the modification of the statutes of the CEFRACOR.
- 1997: Official creation of the Conseil Français de la Protection Cathodique (CFPC), specialized department of the CEFRACOR responsible of certification.
- 1998: Creation of the certification AFNOR Compétence / Protection cathodique.
- 2000: Approval of the first French training Center concerning the "buried structures " application sector.
- 2000: Issue of the first AFNOR Compétence / Protection cathodique certificates– “Land” application sector.

Thus, more than ten years of preliminary work were necessary to set up a competence certification of people specialized in cathodic protection.

The whole work was carried out in agreement with the AFNOR standards about cathodic protection, which were used as a basis for the creation of the European standards.

2 ACHIEVEMENTS DONE SO FAR.

The setting up of a certification system implies:

- a) The writing of various administrative texts: Internal rules of the certifier organization, Quality manual, certification procedures, associated technical documents, certification rules, documents about the organization of exams, etc
- b) the construction of an examination center including an examination room, a laboratory and industrial instrumented works.
- c) Finally the approval of the examination Center carried out in conformity with a specific procedure of the CFPC

2.1 National achievements

- a) The “Land” sector examination Center for the candidates to the certification, already existed on the Gaz de France site in Compiègne. So, the aim of the CFPC was to approve the installations and to establish an operating convention with the owner of the site.

Since the beginning of 2000, the Center was operational and ready for the first exams.

- b) Because of a need for certification in cathodic protection for the structures exposed to sea, the CFPC started in 2006 the creation of an examination Center especially dedicated to the “Seawater” sector

This Center, built on the IFREMER site in Brest, required public and private financing from the Région Bretagne, the département of Finistère and the Brest area, from IFREMER, the Institut de la Corrosion and CFPC. It included an electrical laboratory, three tanks supplied with seawater and was able to have an industrial instrumented structure and various assemblies as well as measurement devices necessary for the certification practical tests.

In 2008, the Brest examination Center was transformed into an international examination Center with new equipments: an equipped laboratory, a preparation office for the candidates and the instrumentation of a sheeting piles pier. Marine measurement devices for undersea works completed the existing material.

We can say about this Sea examination Center, that it is the only complex of this type in Europe and probably one of the rare ones in the world that works.

The total cost of the investments is currently approximately of 500.000 € VAT excluded. including 80 000 € of CFPC own funds, 90 000 € of funds coming from the local Public bodies, 150 000 € from IFREMER and private financiers and approximately 180.000 € of hidden costs from the CFPC and IFREMER.

2.2 International achievements

At the international level, the CFPC has started since 2005 various actions in order to develop its notoriety and its position as regards certification of personnel in Cathodic protection, that is to say:

- a driving force in the harmonization of the certification procedures with Italy (APCE).

This work of partnership between the systems of certification will continue in 2011/2012.

- Project manager for the construction, at the Ecole des Mines in Rabat, of a training Center and a “Land” sector examination Center financed by the Ecole des Mines, the French Embassy in Morocco and partially by Moroccan industrialists.
- Partnership with Norway through the development of the examination Center in Brest.
- Advanced projects of co-operation with Russia (GAZPROM), Tunisia, Algeria and, to a lesser extent, Cameroun.

3 CERTIFICATION IN THE APPLICATION SECTOR «LAND»

The competence certification in cathodic protection in the application sector “Land” concerning the buried metal works was the first one to be set up. It is issued in agreement with the specifications of the standard EN 15257 and the CFPC Procedure 5000 about the exams process.

The certification exams take place in Compiègne (France) and in Rabat (Morocco).

4 CERTIFICATION IN THE APPLICATION SECTOR «SEAWATER»

The competence certification in the application sector “Seawater” (metal quays, harbour structures, oil rigs, boats, beacons...) remains the essential objective of the CFPC for 2011 and 2012.

The first certifications were delivered in 2009 for the competence levels 1 and 2. In 2010, a new certification level was created especially for divers. It is a simplified level 1 called 1S Mer (Seawater).

5 CERTIFICATION IN THE APPLICATION SECTOR «REINFORCED CONCRETE»

Since 2009 a sectoral Committee “Reinforced concrete” was created with the goal to set up a competence certification.

From the administrative point of view, work has been normally progressing in order to be completed at the end of 2011.

A training Center and an examination Center specific to the competence certification for the application sector “Reinforced concrete” are under construction.

The first level 1 examination is planned for January 2012.

6 CERTIFICATION PROCESS

6.1 Training

The preparatory training for the certification examination must be done, according to the standard EN 15257, in self-training or in training Centers approved by the CFPC.

We will find below the list of the centers approved by the CFPC after an audit as defined in our procedure PR 18000:

- Application Sector “Land”:
 - GDF Suez Training Center in Nantes.
 - Mr MAREC in Compiègne.
 - The company CCTA in Toulouse, training only for Level 1.
- Application Sector “Seawater”:
Institut de la Corrosion in Brest

6.2 Certification examination

6.2.1 Requirements.

The prerequisites below are required for a candidate who applies for the certification examination:

Candidate Level	Minimum duration of the training	Required professional experience	Grade
1 S « Seawater »	28 hours	0	
1	40 hours	1 year	A temporary certificate can be issued if the professional experience is not sufficient.
2	80 hours	2 years	
3		7 years	

6.2.2 Exams description

- a) For levels 1 and 2, the tests are organized under the authority of the Person in charge of the sectoral Committee. They are supervised and graded by two examiners, except for the examination level 1S “Seawater” that only needs one examiner. The examination questions are selected randomly by the President of the CFPC among some series of questions created and ratified by the members of the sectoral Committee.

The exams include:

- A common core written test in order to evaluate the general knowledge of the candidate. Its duration is 1 hour for level 1 and 1 hour 15 minutes for level 2.
 - A Sectoral written test to evaluate the knowledge and the competence of the candidate in the selected application sector. The duration of this test is 1 hour for level 1 and 1 hour 15 minutes for level 2.
 - A practical test including three separate tests: one in a laboratory, one carried out on an industrial instrumented structure and one written document.
- b) The examination level 3 includes a written memorandum of about forty pages relating to a personal study carried out by the candidate. Then, the candidate defends his or her memo in front of a board of examiners including the President or its representative and by at least four experts.

6.2.3 Tests grading

- a) For levels 1 and 2, the tests grading is done according to a grid defined in the procedure CFPC PR 5000 “Certification process”. It is done on three different levels:
- Separately by each of both examiners.
 - Then, after a dialogue between both examiners.
 - The proposals for grading made by the examiners are finally examined by the Board members who meet together in certification Board. After justification of the allotted or amended grades, the certification Board rules.
- b) the grades obtained by the candidate in level 3 concern on the one hand, the memo itself, and on the other hand the grades allotted during the memo defence.

The grading is done by each member of the examiners board and an average grade is then calculated.

The minimal required grade to obtain the certification is 70/100, without any grade lower than 6/10 for each test described above. Any grade lower than 6/10 is eliminatory.

Claims and appeals can be lodged by the candidates or their companies.

6.2.4 Number of exams planned in 2011

	Level 1 « Land » Sector	Level 2 « Land » Sector	Level 3 « Land » Sector
		8th to 10th March	The oral memo defence dates are determined in agreement with the candidates
	12th to 14th April		
	14th to 16th June		
		27th to 29th Sept.	
	18th to 20th Oct.		
	14th and 14th Oct. *		
Level 1S « Seawater »	Level 1 « Seawater »	Level 2 « Seawater »	Level 3 « Seawater »
24th / 28th Jan.			The oral memo defence dates are determined in agreement with the candidates
		14th and 15th April	
	19th and 20th May		
	20th and 21st Oct.		
<i>1 exam Level 1S</i>	<i>6 exams Level 1</i>	<i>3 exams Level 2</i>	<i>Unspecified number of oral memo defence</i>

6.3 Issue of certificates.

On proposal of the CFPC certification Board, the certificates are printed and sent to the certified candidates.

The list of the certified persons is published on the AFNOR website and on the CEFRACOR CFPC website: www.protectioncathodique.net

7 QUANTITY OF AFNOR COMPETENCE CERTIFICATES ISSUED BY THE CFPC ON 30TH MARCH 2011.

Period	Application Sector « Land »			Application Sector « Seawater »				Applica tion Sector « Concr ete»	Applica tion Sector « Intern al surfaces »
	Level 1	Level 2	Level 3	Level 1S	Level 1	Level 2	Level 3	Level 3	Level 3
On 31st December 2009	228	101	9	0	14	11	6	2	1
Year 2010 + 2011	39	21	0	12	12	3	0		
Total on 31/03/2011	267	122	9	12	26	14	6	2	1
Total number of certificated issued on 30th March 2011: 459.									

8 EUROPEAN SITUATION IN OCTOBRE 2010.

Level	Application Sector	France AFNOR	Germany FKKS	Italy CICPnD	Netherlands KEMA	England I Corr	Switzerland S.Cert	Total Europe	Total USA NACE
1S	Land								2634*
	Seawater	6						6	
	Total	6						6	2634*
1	Land	267	10	76	98	152	36	639	908**
	Seawater	25						25	
	Concrete		3			36	2	41	
	Intern surf							0	
	Total	292	13	76	98	188	38	705	908**
2	Land	115	54	95	57	36	9	366	197***
	Seawater	12						12	
	Concrete		4				8	12	
	Intern surf							0	
	Total	127	58	95	57	36	17	390	197***
3	Land	9	8	44	4	5	2	72	421 Δ
	Seawater	6	2	9		5		22	
	Concrete	2	2	3		8	2	17	
	Intern surf	1		3		4		8	
	Total	18	12	59	4	22	4	119	421 Δ
Overall total		443	83	230	159	246	59	1.220	4.160

Note about the NACE certification:

- 1* : Level 1 NACE. Is equivalent to the simplified level 1.
- 2* : Level 2 NACE. Is equivalent to the European level 1.
- 3* : Level 3 NACE. Is equivalent to the European level 2.
- Δ : Level 4 NACE. Is equivalent to the European level 3.

9 CFPC SHORT-TERM PROJECTS

From June 30th 2011, the CEFACOR CFPC will become certification Board. It will issue the competence certificates in cathodic protection instead of AFNOR Certification.

This decision was made in agreement with AFNOR Certification, since the executive management of the AFNOR group wish to stop, for budgetary reasons, the competence certification sector.

For the CFPC, the opening of a certification Board in Cathodic protection from the 1st July 2011 involved:

- A registration at the Ministry for Industry.
- The creation of a logo.
- The registration of our own trademark "**CEFACOR Certification/Protection cathodique**" at the Institut National de la Propriété Industrielle (INPI).
- The setting up of an application file for the accreditation by the COFRAC.

All these actions involved a significant administrative work, in particular a complete revision of our quality documents: internal Rules, quality Manual, Certification rules, Procedures and associated documents...

Today, this work has been practically completed and the CFPC is preparing the first COFRAC audit.



10 MEDIUM-TERM PROSPECTS

Among the projects of development already started by the CFPC we will note:

- An international action for a revision of the reference standard EN 15257. We would wish more particularly 4 levels of certification so we could be closer from the NACE certification.
- A larger harmonization of the European levels of certification.
- A proposal for the creation of a common logo: EUROPEAN Certification.
- The development of the French certification “Seawater” with the construction of a communication plan and the wish to sign partnership agreements with European colleagues.
- The development of the anti corrosion Training and Certification in Morocco: Certification in anti corrosion Painting and Certification in Cathodic protection.
- Continuation of the negotiations with Algeria and Tunisia and keep contacts with Cameroun.
- Strengthening the links with Russia and export our system of certification in this country.

11 CONCLUSION

Independently of the significant work initiated by the current transformations, the functioning of the CFPC is satisfactory. The Non qualities that could be observed are exceptional.

On a financial level, our accounting is correct with a positive operating income in 2010. 2009 was a difficult year because of the significant investments made in the “Seawater” examination Centre in Brest.

Under these conditions, I can see the future of the CFPC without apprehension, with much hope justified by the arrival of the new coordinators of the CFPC. The arrival on June 30th 2011 of a new President and a new Vice President, will revive, I am sure, the dynamism and the enthusiasm which has always prevailed within our team since the creation of the CFPC.