The Antenna

No.11 2009

NEWSLETTER FROM ANT INTERNATIONAL

NETWORK CLOSE UP

PETER SCOTT

How did you get started as an engineer?
I didn't really start seriously in corrosion engineering until I transferred from Harwell, where I worked principally as a research scientist, to Framatome, as described below. From that moment I became very much aware of the frequent need for exercising engineering judgement based on a wide background knowledge and experience.

Your career history?
I received my B.Sc. in chemistry from the University of Sheffield in England in 1965 and then a Ph.D. in physical chemistry from the same university in 1968. I then spent two years as a Post Doctoral Fellow in the Department of Applied Chemistry of the National Research Council of Canada before starting my career in the nuclear industry in the Materials Development Division at the Harwell Laboratory of the UKAEA.

During 18 years at Harwell, I became a section head and an expert in corrosion of metallic materials, particularly concentrating on the phenomena of corrosion fatigue and stress corrosion cracking in both thermal and fast reactor systems. In addition, I worked on corrosion fatigue of structural steels in seawater as part of the support work carried out for large oil production platforms for the then burgeoning North Sea oil business.

I entered the Framatome Group (now AREVA NP) in 1989 and was named 'Expert Principal' (or Senior Corrosion Consultant) in 1993 and International Expert in 2003. In this capacity, I represented the company on several international working groups dealing with problems of stress corrosion cracking of materials, mainly in light water reactors and particularly Pressurized Water Reactors.

During my period with Framatome and AREVA NP I also served as a member of the editorial board of the NACE Corrosion Journal. In 2000, I received the F. N. Speller Award from the NACE for outstanding contributions to the practice of corrosion engineering. I am

Continues on the next side

FOLLOW UP ZIRAT13 AND LCC4

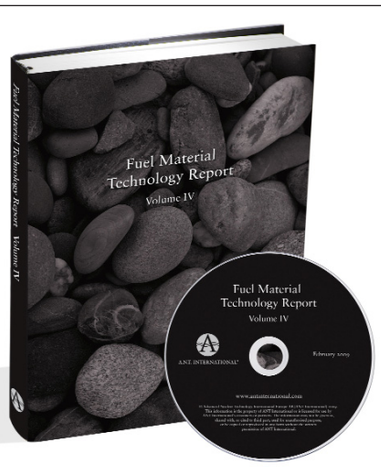
Increased number of attendees

THIS YEAR THE ZIRAT and LCC Program took place in Clearwater Beach, Florida USA and in Dresden, Germany. In the ZIRAT seminar 63 (last year 51) participants from 32 (last year 22) member organsations attended. In the LCC seminar in total 44 (last year 37) participants from 20 (last year 15) member organsations attended. The overall opinion of the seminars was very positive. In both the US and in Europe the audience took the opportunity to be active, asking questions and commenting, which was highly appreciated. The clear opinion from Peter Rudling was – this year was good – but next year will be even better!

Read the full evaluations at our website and see pictures from the seminars and dinners by clicking below.

READ MORE

NEW HANDBOOK AVAILABLE



FMTR Vol IV –
A Mean to Improve Fuel Reliability

THE PRIMARY OBJECTIVE of this volume of the *Fuel Material Technology Report*, FMTR Vol. IV is to provide guidance in improving fuel reliability. To reach this objective various Poolside and Hot Cell Examinations techniques may be used. A good knowledge of the pros- and cons- with the different techniques can guide the utility/fuel vendor to select the most cost efficient techniques for this specific objective. A second objective of this Report is to document this knowledge in a form, which can be updated as new information, and methods become available.

For an offer please contact Peter Rudling at
peter.rudling@antinternational.com

READ MORE

Editor & publisher: Peter Rudling © ANT INTERNATIONAL 2009

the author or co-author of over 100 scientific publications.

How did you get introduced to ANT International and the LCC Program?
I was introduced to ANT International and the LCC Program by my long standing friend and colleague Peter Ford

How has the field of Water Chemistry changed during your career and what do you foresee for the future in the nuclear industry? How does the LCC Program fit in?
My departure from Harwell and arrival in Framatome and AREVA NP coincided with loss of interest in nuclear power for electricity generation in the UK and the final stages of the PWR building program in France. From that point, my work was essentially dealing with the problems of materials aging management in the existing reactor fleet. It was not until a few years after the start of the present century that nuclear power station construction revived and, certainly for those of us working for vendors, a step change into work dominated by new materials specification and procurement with the aim of avoiding the generic materials aging issues that had occurred previously.

It seems clear to me that young scientists and engineers entering the nuclear industry have a bright future in front of them since nuclear power is obviously going to make a major contribution to electricity generation in a world with declining fossil fuel resources. In that respect, the LCC program will play an important role in educating the new generation of scientists and engineers entering the nuclear industry. As far as my field of expertise is concerned, it will be important for them to recognize that all metallic materials we use practically have a fundamental thermodynamic driving force to revert to the oxidized state and that a long term, strongly scientific approach is required to slow the kinetics of those oxidation processes to a minimum and to maximize the operating life of these extremely capital intensive nuclear power machines. Thinking in terms of 40, 60 or even 80 years of operation necessitates a sound knowledge and application of the fundamental science underlying corrosion and stress corrosion cracking if these goals of plant longevity are to be realized.

How do you spend your leisure time?
A few years ago, I would have quickly said walking in the countryside, bird watching, listening to classical music and, dare I say it, watching the television. However, the arrival of grandchildren, now numbering five in two families based respectively in France and Germany has somewhat shifted the emphasis to a large measure of child minding, and a great joy in my life it is.

READ MORE

One Day IZNA Tailored Seminar

"In June of 2008, Peter Rudling and Ron Adamson gave a one-day seminar at GNF's Wilmington, North Carolina site. The Seminar was attended by members of GNF's Materials Technology and Fuel Reliability team as well as researchers interested in Zircaloy corrosion at GE's Global Research Center. The seminar covered a range of topics selected from the IZNA7 Annual Report and Special Topical Reports. The seminar agenda was developed with input from GNF to address specific interests of attendees. As one of the STR was on corrosion mechanism, a significant portion of the seminar was devoted to various aspects of Zircaloy corrosion and mechanisms for corrosion failures. Ron and Peter took turns to present materials. The seminar was conducted with an open manner with plenty of audience interaction, a feature that was well appreciated by all attendees. Overall, the expertise of Peter and Ron and the candid nature of their comments were well appreciated. Comments on the seminar included *"It covers many different topics in a short time. May need to extend it as a two-day schedule"* and *"I think level of expertise brought to seminar is key"*.

Dr. Yang-Pi Lin, *Lead Engineer Global Nuclear Fuel, USA*

One Day Lecture by Peter Ford well-received

"ON DECEMBER 17TH, 2008 Peter Ford gave a very well prepared one-day-lecture on corrosion phenomena that lead to the degradation of structural materials in water-cooled nuclear reactors. In the audience physisists, chemists and materials scientists of Borssele NPP were represented.

The presentation is based on the ANT report of the same title. The report had been purchased by us, but no one had found time yet to carefully read it. The lecture by Peter was an excellent introduction to the report and it helps us in using the information from the report in an efficient way.

The presentation started with the introduction of the thermodynamics that is necessary to understand the mechanism of the various corrosion phenomena. Subsequently, a wide range of different types of corrosion in the various important construction materials of the NPP has been discussed. The mechanism that leads to degradation of the material have been elaborated and discussed with the audience.

Peter has such a broad knowledge on the subject that he is an excellent teacher both for them who already have a lot of knowledge in the field themselves and for those for whom the subject of the lecture is quite new.

The lecture brought us what we hoped it would bring and it made the Structural Material Degradation Report much more valuable for us."

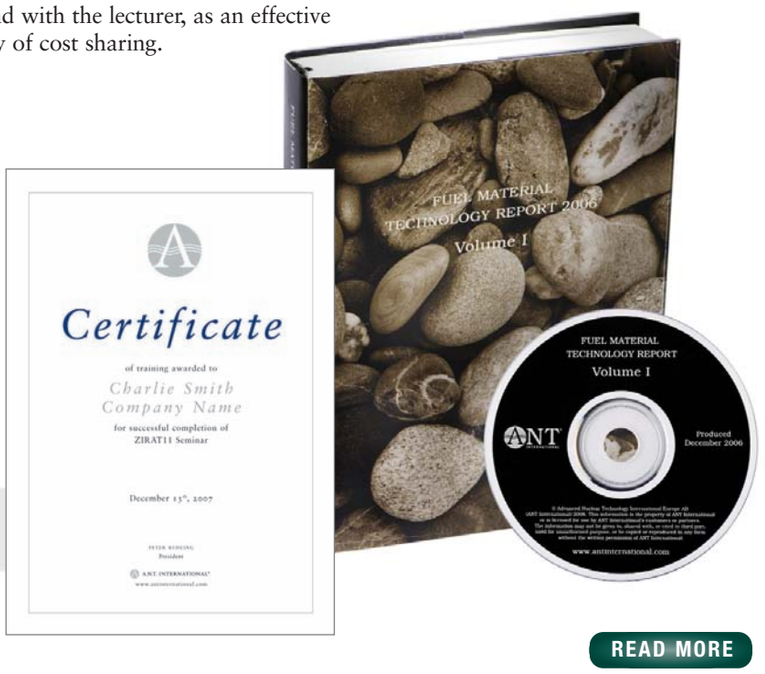
Menno Crajé, *Manager Monitoring NPP Borssele, Netherlands*

Tailored Seminars - adjusted to fit your company´s training needs

EVERY YEAR ANT INTERNATIONAL in co-operation with the network of Experts gives tailored seminars in Europe, in the US and in Asia. The topics are selected from published information within the ZIRAT/IZNA or the LCC Program or from a handbook like the *"Degradation of Structural Materials"* by Peter Ford. The topics are always adjusted to fit the needs of the organization where the seminar takes place. Below are some characteristics of the tailored seminars.

- Your company pays a fixed price – regardless of the number of attendants
- For the same fixed price your company can invite attendees from other organizations in your country/ region if this is discussed on beforehand with the lecturer, as an effective way of cost sharing.
- The Seminar is adjusted to fit the needs of your company and the topics of the seminar are decided in agreement between your company. The lectures (usually one or two)
- All seminar participants receives a CD with the presentation material and a certificate
- The tailored seminars are suitable for specialized engineers as well as engineers entering a new field

If your company is interested to know more or to receive a proposal, please contact Peter Rudling at:
peter.rudling@antinternational.com



READ MORE

The Network

RON ADAMSON (1)
PIERRE COMBRADE (2)
BRIAN COX (3)
PETER FORD (4)
FRIEDRICH GARZAROLLI (5)
JAN KYSELA (6)
FRANCIS NORDMANN (7)
SUAT ODAR (8)
CHARLES PATTERSON (missing)
ROLF RIESS (9)
PETER RUDLING (10)
WILFRIED RÜHLE (11)
PETER SCOTT (12)
ALFRED STRASSER (13)
HARTMUT VENZ (14)

A.N.T. INTERNATIONAL®
Advanced Nuclear Technology International. Krongjutarvägen 2C, SE-730 50 Skultuna, Sweden.
Tel. +46 (0)21-700 20. Fax +46 (0)21-702 66. info@antinternational.com. www.antinternational.com