

NETWORK CLOSE UP



PETER FORD

How did you get started as an engineer?

I started my career as an engineering apprentice for a UK turbine manufacturer in 1958, and from that early experience I developed an interest in materials performance. This led to my going to Cambridge University where I was awarded my bachelors' and doctoral degrees, with the latter concentrating on stress corrosion cracking and corrosion fatigue.

Your career history?

After receiving my PhD I joined the Central Research Laboratories of the (former) CEGB in the UK working mainly on corrosion problems in steam turbines and the SGHWR. In 1977 my wife and I returned to the USA where, for 24 years, I managed the Corrosion Group at the GE Corporate Research and Development Center. Apart from activities associated with gas turbines, steam turbines, chemical plant, etc., the main research activities, related to environmentally-assisted degradation problems in BWRs. From this research evolved such processes as GEZIP, noble metal technology, life prediction methodologies for environmentally-assisted cracking, monitoring systems, etc. Upon retiring in 2000 I was a member for four years of the Advisory Committee on Reactor Safeguards to the USNRC Commissioners.

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THE FUEL MATERIAL TECHNOLOGY REPORT



The valuable answer to our questions

ALEXANDER LINDQVIST AND MARCUS NILSSON,
FUEL ENGINEERS AT OKG AB, E-ON GROUP, SWEDEN

Being fairly new to the nuclear area, a lot of time is spent learning about the specific material issues dealt with by the nuclear industry. Many of these issues are more or less unique to the nuclear industry, due to the fact that the environment in the nuclear reactors is scarcely found elsewhere. The Fuel Material Technology Report provides us with an excellent, comprehensive and well-written review of nuclear fuel material aspects. It therefore serves as a reference guide, enabling us to quickly and efficiently find high-quality information and thus increasing our own ability to solve fuel material related problems. It also serves as a very good basis for discussions regarding fuel assembly material selection and fuel assembly productions related issues.

The Fuel Material Technology Report is written in a very systematic and logical fashion, making it suitable to use not only as a reference but also for studying and reading. The vast experience and excellent knowledge-level of the authors ensures that all aspects of each and every important fuel material issue are completely covered.

Even though OKG only operates BWRs, the fact that the report covers fuel material aspects from PWR, Candu, VVER and RBMK as well as

BWR actually helps us in our long and vivid discussions regarding fuel assembly material issues. Sometimes the solution to our problems has already been found but for another reactor design. Then, the Fuel Material Technology Report with its comprehensive coverage of nuclear fuel material properties can provide an extremely valuable and quick path towards an answer to our questions.

The Fuel Material Technology Report is the latest addition to our library of reports from ANT International and we are impatiently looking forward to the coming volumes of the report. We believe that the Fuel Material Technology Report enables us to more quickly adapt to the demands of the nuclear industry and that it provides a true advantage for us. The Fuel Material Technology Report together with the Zirat and LCC programs has been very helpful to us on numerous occasions.

The fact that we also received the report on CD was extremely useful, it provides for instant access. It also minimizes the wear and tear of the very attractive hardcover book.

[Read more about FMTR](#)

PETER FORD CONT.

How did you get introduced to ANT International and the LCC Program?

Al Strasser approached me at a conference in 2005 and, following discussions with Peter Rudling, I joined the LCC team in 2006.

How has the field of material integrity issues changed during your career? Environmentally-assisted material degradation has largely been managed in a reactive manner and this has led to less-than-optimum mitigation actions because of both a limited development time and the inadequacy of many of the laboratory testing procedures. As a result there is now a determined development of proactive management approaches, such that controlled mitigation actions are developed before the degradation has unacceptable economic and safety consequences. Such proactive management approaches have been made feasible by the development of qualified life prediction methodologies and extremely sensitive materials characterisation and damage accumulation techniques.

What do you foresee for the future in the nuclear industry, and how does the LCC Program fit in?

There is no question that there is a resurgence of nuclear power in the Far East, and this is also very likely to occur in the US following the Energy Policy Act passed in 2005. The new reactors in the near term will likely be evolutionary designs (e.g. EPR, AP-1000, ACR-700, ESBWR) of the current water-cooled models, but after 2025 an increasing number may have considerably different design principles (i.e. the so-called GEN IV designs). All of these designs present significant materials-degradation challenges if the business expectation of "no materials failures" is to be met. A critical need in this resurgence is designers, engineers and researchers (both experimental and analytical) who have the necessary knowledge of materials-degradation modes. The output from the LCC program supplies the necessary education for this population.

How do you spend your leisure time?

Sailing in the summer, cross country skiing in the winter, travelling, reading and gardening (or at least digging where my wife tells me to).

Thank you Peter! [More about the Network](#)



NEW REPORT

FMTR and Seminar

The Fuel Material Technology Report will consist of four separate volumes. The first volume was published January 2007, the second will appear January 2008. The second volume will discuss issues like Irradiation, Water Chemistry Impact on Fuel as well as Material Properties. For a full content list [please click here](#). For a full description of FMTR Volume I-IV [please click here](#).

In conjunction with each volume of the FMTR ANT International provides seminars on site. A total of 13 engineers participated in the FMTR vol. 1 seminar provided by Peter Rudling in June 2007. For an evaluation from the participants in the seminar [please click here](#).

ZIRAT12 and LCC3 February 2008

Two similar ZIRAT12 3-day Seminars will be held to present the results of the ZIRAT 12 program, one in the US and one in Europe. The LCC3 Program will be presented in Europe during two days. We will provide more detailed information regarding ZIRAT and LCC later this Autumn.

Please note the dates:

ZIRAT12: USA, February 4-6, 2008.

Europe, February 18-20, 2008

LCC3: Europe, February 21-22, 2008.

Please visit the hotels:

FLORIDA: www.sheratonsandkey.com

MALTA: www.phoenicia.lemerdien.com

Successful Japan Seminar

On July 5-6 2007 Dr Ron Adamson and Mr Peter Rudling gave a two day combined ZIRAT11 and IZNA6 seminar in Osaka, Japan hosted by MHI.

In total 13 dedicated managers, senior engineers and scientists from TEPCO, Kansai EPCO, MHI, GNF J and NFI attended the seminar.

A summary of the evaluation from the participants in the seminar is provided in the table below. The grades ranged from 1 (poor) to 5 (excellent).

Average	Median	Question	Please click here for the whole evaluation
4.9	5.0	What is your overall opinion of the ZIRAT/IZNA program?	
4.7	5.0	How were the presentations?	
4.2	4.5	How did the level of the information fit your background?	



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