# The for tenna No.4 2006 Newsletter from ANT International

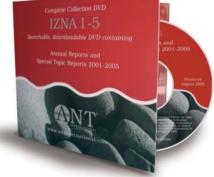
### NEWS

# Now Available to ZIRAT and IZNA Members

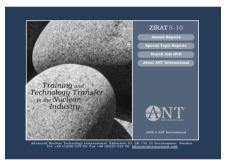


A complete collection DVD containing high resolution PDF files.

- For ZIRAT members: All Annual and Special Topics Reports from ZIRAT 5-10 (published from the year 2000 to 2005), in total 18 reports.
- For IZNA members: All Annual and Special Topics Reports from IZNA 1-5 (published from the year 2001 to 2005) in total 17 reports.



Each DVD is searchable with only one query and contains information from more than 2000 references exceeding 5000 textpages.



Please contact Peter Rudling at <u>peter.rudling@antinternational.com</u> for more information, or read more at <u>www.antinternational.com</u>

### COMING UP

# Time to make reservations for ZIRAT11 and LCC2

ANT International and the Expert Network welcome all customers to the ZIRAT11 and LCC2 seminars in Naples, FL and in Valencia, Spain January – February 2007.

### Dates and Details:

Naples Florida, USA January 29th – February 2nd 2007 Please make your hotel reservation before October 15th at www.hiltonnaples.com Refer to ANT International Conference.

Valencia, Spain February 12th – 16th 2007 Please make your hotel reservation before October 15th at commercial@sidisaler.com or by fax to Hotel Sidi Saler +96 161 08 38 Refer to ANT International Conference. If you need any assistance please contact Pernilla Larsson at <u>pernilla.larsson@</u> <u>antinternational.com</u>

Read more at www.antinternational.com

### **CLOSE UP**



### Friedrich Garzarolli

How did you get started as an engineer? I studied material science at the Montanistic University in Leoben, Austria.

*Your career history?* I started at AEG in Karlstein in 1964 working on BWR and high temperature steam reactor materials (all material in primary circuit). Later I was directing PIE cladding examinations at the Karstein hot cells. In 1974, after the merger of AEG and Siemens to KWU, I moved to KWUs Fuel Lab in Erlangen. Here I was directing performance analysis and material development for PWR and BWR fuel elements. There are about 200 publications describing a large fraction of my contributions.

How did you get introduced to ANT International and the ZIRAT Program? I was asked to contribute to ZIRAT4 by Al Strasser. Later, after my retirement I was asked by Peter Rudling to participate as an expert member of the ZIRAT team. I have been participating since ZIRAT7 (since 2002).

How has the field of nuclear materials changed during your career, and how does ZIRAT fit in? During my active time it has changed from careful performance analysis to a careful material development. After my retirement I got the impression that both fuel material development and fuel performance analysis have changed to fulfil mainly marketing demands. Many of the experienced people working in this field are retired.

Continues on next page ->

Editor & publisher: Peter Rudling | formad by Eva Lind | © ANT INTERNATIONAL 2006

### FRIEDRICH GARZAROLLI Cont.

The most important goals of the critical review of the literature, that we do in the ZIRAT/IZNA Program, are 1 - to preserve the state of knowledge, 2 - to asses the development and performance analysis of the fuel suppliers, 3 - to point out important aspects, 4 - education of young engineers, and 5 - to help utilities in case of problems.

What do you forsee for the future in the nuclear industry? I think that due to the increase of oil and gas prices new reactors will be ordered in US and Europe soon. New reactor types will also be developed with the goals of further improved safety and enhanced U235 utilization. As far as LWR fuel is concerned, I expect 1 – even more demanding fuel duties, 2 - a further optimization of ZIRLO type materials to become more competitive with M5 for PWR fuel, 3 – new BWR material development programs, 4 – a step back to a SRA cladding condition for BWR fuel to avoid radially oriented hydrides at high burnups, 5 – introduction of PCI improved fuel, and 6 – development of fuel with improved thermal conductivity.

How do you spend your leisure time? Living with my wife, mountain hiking, bicycling and visiting interesting spots of this world.

Thank you Friedrich!



Conference in Salamanca, Spain October 22nd to 26th

## Top Fuel 2006

**Focus:** The importance of nuclear fuel developments in the light of the current revival of the debate on nuclear energy.

For more information and registration on line please visit:

#### www.topfuel2006.org



# Fuel Material Technology Report, volume 1, available January 2007

This state of the art reference report on fuel Material Technology in BWR, PWR, CANDU and VVER reactors, will be published in four volumes. It will be a useful tool to engineers at all levels giving in depth understanding of various material related to fuel performance. The report will cover the range from basic information to current knowledge.

The four separate volumes will be published as follows **Volume 1** – January 2007 **Volume 2** – January 2008 **Volume 3 and 4** – January 2009

The volumes can be purchased separately, or altogether with a discount.

Please read more about the Fuel Material Technology Report and view the content list and the authors at  $\underline{www.antinternational.com}$ 

### **INFORMATION FROM THE NETWORK**

# ZIRAT10 and IZNA5 Seminar in Japan

Beginning of September 2006 Dr Ron Adamson and Mr Peter Rudling gave a two day combined ZIRAT10 and IZNA5 seminar in Fukuoka, Japan hosted by Kyushu EPCO. In total 15 dedicated managers, senior engineers and scientists from TEPCO, Kyushu EPCO, 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).

Questio No.	on No. of responses	-	Standard deviation	Median	Question
1	10	4.3	0.6	4.0	Overall opinion of ZIRAT10/ IZNA5 seminar?
2	10	4.2	0.6	4.0	How was the ZIRAT10/IZNA5 Annual Report?
3	10	4.2	0.8	4.0	How was the ZIRAT10/IZNA5 Spec. Topics Report on Irrad. damage?
4	10	4.1	0.9	4.0	How was the ZIRAT10/IZNA-5 Spec. Topics Report on Struc. Behav.?
6	10	4.6	0.5	4.8	How were the speakers?
				Read	d more at <u>www.antinternational.com</u>

