

The Antenna

NEWSLETTER FROM ANT INTERNATIONAL No.17 2011

FOLLOW UP FROM ZIRAT15 AND LCC6 IN CLEARWATER AND DUBROVNIK



Participating organizations in ZIRAT & LCC continuously increase!

From ANT International we are very happy to see that the interest for training and education in the nuclear industry and the commitment for our Programs are increasing. From our side we will work hard to increase the benefits and the quality of the Programs even further. One specific tool that we offer all our ZIRAT and IZNA customers from now on is the AWIKI. Please read more below. The AWIKI will also become available for our LCC customers soon.

We also would like to send our thoughts to the people of Japan in this difficult time to rebuild the country after the devastating earthquake and tsunami. We in the nuclear industry should be proud how well the Fukushima plants has managed the destruction and it shows that even in the most critical times, nuclear power is safe. To study the events and the coming reports from Fukushima will

be of greatest value and importance to us all. Moving forward will be a big challenge in order to meet the public opinion trustworthy – based on facts and not emotions. We in the nuclear industry all have a responsibility to educate and to support politicians with scientific facts in their decisions on how to solve the energy challenges in the world. It is ANT International's opinion that the time has come for us to act in a more proactive way. By working together we will regain and increase the confidence in nuclear power world-wide. And ensure the renaissance of nuclear power in the world.

Please find below:

[Evaluations from the ZIRAT Seminars](#)

[Evaluations from the LCC Seminars](#)

[More pictures](#)

Welcome to sign up for AWIKI

Try this powerful tool out for 4 weeks free of charge!

ANT International now offers all ZIRAT, IZNA & LCC Members to sign up for the AWIKI – the Nuclear Wikipedia. A Powerful tool to quickly find answers to your questions related to fuel material and in reactor performance. ZIRAT, IZNA & LCC Members can receive a free trial for 4 weeks. Please contact ***Ida Balog*** for more information and an offer.

[Read more here](#)



FEEDBACK ON THE FFPH HANDBOOK



**Matt Kirkland – Principal Engineer,
Reactor Engineering – Fermi 2 Nuclear Power Plant.**

“A Great Way to Learn the Fuel Fabrication Process”

I PERFORMED MY FIRST surveillance of our fuel vendor approximately 20 years ago. It was essentially on-the-job training. My mentor had performed audits/surveillances for many years. After about a 10-year hiatus I was thrust back into performing audits, serving as a “technical specialist.” I always felt strange being called a technical specialist on a fuel fabrication audit because my

background was not in fabrication, but rather operating. The on-the-job training I had helped. I could pretty much tell if someone was following a procedure but I didn’t have the background to really understand all the activities involved in the fabrication of fuel. When we began preparing for the INPO Fuel Integrity Review Visit (FIRV) I began to seriously consider seeking out training on the Fuel

Fabrication Process. I had met Peter Rudling about 10 years prior and remembered him mentioning their seminar and handbook. I sought out Peter and we put together the plan to acquire the handbook and to put on the seminar.

Peter and Al Strasser are experts in this field. Their book is superb and the seminar was outstanding. I liked the seminar because it gave a quick insight into the whole fabrication process in a day and a half. That’s a lot faster than I could get through the book. The book will be a valuable resource to reinforce the seminar with greater insight into all the different processes. Another reason I liked the seminar is that I was able to get other, newer engineers exposed to the process. I was even able to get some QA auditors involved. We are planning to make this seminar a requirement to serve as a technical specialist for our fuel fabrication surveillances.

[Read more about the
FFPH Handbook](#)

Your name, title, where you live

Robert L. Cowan (but I liked to be called Bob), BWR Consultant, 2273 St. Charles Ct., Livermore, California, USA.

How did you get started as an engineer?

I attended Lehigh University for two years as an undergraduate and then transferred to The Ohio State University where I received a B.S., M.S. and Ph.D., all in metallurgical engineering. My graduate work was in corrosion and high temperature electrochemistry.

Your career history?

I joined the General Electric Company directly from University in 1969, assigned to the Vallecitos Nuclear Center. Initially I did research in measuring ECP in operating BWRs to better understand the intergranular stress corrosion cracking phenomenon. I then worked on Zircaloy corrosion issues for several years and then worked on the development of IGSCC resistant alloys for five years. I became the head of the Water Chemistry groups in the early 1980s. I helped lead the development of hydrogen water chemistry, zinc injection and noble metal applications before retiring from General Electric in 2000. During that period I worked closely with EPRI and was very active in developing the first edition of the BWR Water Chemistry Guidelines and every subsequent edition. I've authored or co-authored over 70 papers and hold 20 patents. Since "retiring", I have consulted extensively.

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

My good friend Chris Wood, of EPRI, told me about ANT International and asked me to consider taking over his efforts on BWR chemistry issues while he underwent cancer treatments.



Bob in front of the plane he constructed.

Robert Cowan

How has the field of water chemistry issues changed during your career?

I have seen the field of BWR water chemistry change from one in which the plants **monitored** the chemistry with a goal of keeping the reactor water conductivity at less than 1 uS/cm. Now the fleet average conductivity is near 0.1 uS/cm. Because our fundamental understanding has improved so much, the chemistry is now **managed** to optimize ECP (to mitigate IGSCC), to minimize shutdown dose rates and minimize harmful... to name a few of the important water chemistry goals.

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

I think the LCC program is an ideal way for senior people like me to pass

on our perspective, experience and knowledge to the newer generations of nuclear professionals.

How do you spend your leisure time?

I have four main pastimes: aviation, grandchildren, golf and travel. After I retired, I constructed a homebuilt airplane (it took about 7 years of effort). She is a wonder to fly and has a top speed of over 300 km/hr. She still gets a lot of my attention and I fly her on a 5,000 kilometer round trip every summer to an international fly-in in the state of Wisconsin. I have six grandsons (ages 1-8) and plan to introduce them all to flying and golf! My wife Karen and I love 'adventure' travel. We've been to all eight continents (Antarctica was really spectacular) and Tahiti is our next stop!

“Why did you not exist in 1965 when I was starting out?”

THE SCIENTIFIC LITERATURE continues to expand and it is difficult for one person to keep on top of it, even on what would seem to be a specialized topic like the metallurgy of zirconium. The ZIRAT Program fills this gap by summarizing the year's activities on topics relevant to the use of zirconium alloys in nuclear reactors. The added value of the Special Topics is the collected opinion of the experts writing and presenting the information; they highlight the significant advances, point out deficiencies in data and models and are happy to take suggestions on how to deal with controversies.

The approach is unlike that at a conference, where presenters are often making cases for their point of view. Since the world mostly uses light water reactors, much of the focus and attention is rightly placed on the issues presented in PWRs and BWRs. Interpreting the information for reactors that use pressure tubes is sometimes difficult because the operating conditions and the time scales are so different. The inclusion of occasional pressure tube topics has the reverse difficulty for the LWR community. Since both groups are dealing with



Kit Coleman, Researcher Emeritus at Atomic Energy of Canada Ltd, AECL.

zirconium, areas of overlap, such as fabrication, creep, corrosion and fracture, provide common ground for transfer of data and ideas.

The ZIRAT Program provides an excellent post-graduate course for those just starting in the field as well as helping those with more experience

to keep up-to-date. The contact with an instant network of knowledgeable people through the magic of the Internet is most valuable. Why did you not exist in 1965 when I was starting out?

Read more about the ZIRAT Program

NEW STAFF MEMBER



New Head of Administration at ANT International
Mrs Angela Olpretean



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