



Preserving Canada's Nuclear Heritage NEWSLETTER

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President's Update

My retirement from Canadian Nuclear Laboratories (CNL) in January meant moving my large collection of public-domain historical articles and documents to the "presidential suite" at 51 Poplar St. A good used computer was installed/updated in July, and connected to a new printer. We await connection to a local internet provider, but we are becoming better organized at 51 Poplar (aka Area 51). For those wondering about the exalted nature of being president, the job also entails: yard/parking lot cleanup; cleaning windows, siding, floors, toilet, and artifacts; painting; cleaning eavestroughs/installing heater cable (to avoid winter ice build up over the entrance); and minor maintenance. The results are worth it, namely a tidier and safer building.

Visitors: It's been a busy year, as Artifacts Chair Jim Ungrin described in Newsletter#11 (2023 August). My list shows 263 visitors to 2023 Nov 3. The Deep River Science Camp visited one August afternoon - 17 children were busy for two hours with a scavenger hunt, demonstrations (levitating magnetic spinning top, Stirling cycle engine), acting out fission (caramels as neutrons), and an "isotope raffle".

Documents: To help tour guides become familiar with the museum, Jim Ungrin wrote a Tour-Guide Manual, providing a very useful reference text on how to prepare for visitors, and describing many artifacts. Bruce Heinmiller wrote a comprehensive Health Physics Assessment of SPCNHI Nuclear Museum, which ensures we know the radioactive contents of our exhibits (due diligence); it also provides a reference when visitors ask about the radiation fields (all very low, with whole-body dose rates less than 0.2 $\mu\text{Sv/h}$). Tom Alburger and Marilyn Charbonneau continue indexing our expansive document and book collection (we plan to put the index online), and John Fleurie has been working on his own projects such as a description of all AECL buildings at CRNL. Tara Wisdorf (granddaughter of nuclear

pioneer George Laurence) catalogued many of the reports and documents in the Terry Rogers fonds, and Ela McDonald continues identifying photographs (who, what, where).

Publicity: Jim Ungrin continues to write engaging articles for the North Renfrew Times; some have been published in the Canadian Nuclear Society newsletter. He also commissioned professionally-produced signs, including a large one on the front lawn proclaiming Canadian Nuclear Heritage Museum. Jim and I were featured, along with Nobel laureate Art McDonald at our in-house studio, in a video made for the 17th International Conference of Radiation Science (Montreal 2023 Aug). In October, videographer and nuclear engineer Osama Baig (on YouTube) toured the museum while on a CNL visit; I will be interested to see what he creates from interviewing me!

On-line: Our presence on social media has increased, and we now have 262 followers on LinkedIn. I may come to regret one post, where I offered to build a 1:350 scale card model of a German PWR (inherited from our first president, the late Michael Stephens) but at least I have begun! Sourena Golesorkhi continues updating and maintaining our web site, and we hope to post a summary of our interviews with nuclear pioneers. Sourena has also attempted to establish a Wikipedia page for the Society, but the requirements have been toughened (e.g., references by external organizations).

Finances: Don Barrington, our first treasurer, decided not to run for re-election to the board at our September AGM, so I have taken over from him in the short term; many thanks to Don for his years of service to our Society. We are doing well financially and are looking at the prospects for hiring students for the summer, and paying for some web assistance. At the AGM, the annual membership fee of \$20 was approved, and multi-year memberships (up to and including 10 years) can now be purchased.

Summary: The Society is doing well and we are gaining traction with respect to our on-line presence, our visitors, and our reputation as a source of knowledge about Canadian nuclear history. We remain sorely pressed, however, needing additional volunteers: a treasurer, board members, and people to take over tasks from some of our senior directors who do not wish to stand for re-election. We strongly believe the Society is a worthwhile enterprise, to preserve and celebrate Canada's long nuclear history.

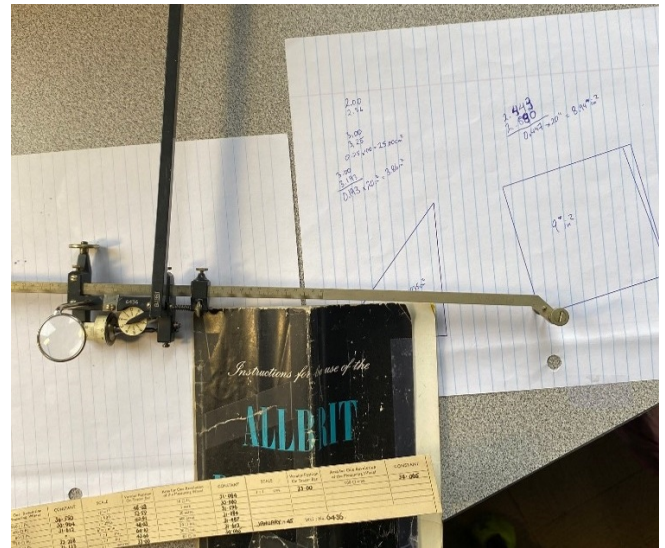
Mathematical and Drawing Instruments

The SPCNHI collection has a number of fascinating computational machines: a Friden electro-mechanical calculator; electronic calculators (a preponderance of Hewlett-Packards!); the input desk and some modules of Atomic Energy of Canada Limited's first digital computer; and a variety of disks and drives. But for me, the most beautiful are the hand-held instruments used for drawing, measuring and calculating.



Above is a montage of drawing and calculating instruments, lying on our 1959 drawing of the 19 element CANDU fuel bundle for 3-inch pressure tubes (i.e., NPD and Douglas Point). The drawing (pencil on vellum) is stamped by the late Les Haywood, PEng, a senior reactor designer/manager at Canadian General Electric in Peterborough and later AECL; the museum has several items linked to Les, including a beautiful coffee table made for his retirement. Keuffel & Esser (K&E) was a major drafting instrument and supplies company, founded in 1867 in New York by two German immigrants, William Keuffel and Herman Esser.

K&E also made slide rules, and there are several in the SPCNHI collection. It is amazing that so much of CANDU design was done with these remarkable instruments, which are generally good to 3 or perhaps 4 significant digits. Recently I began to learn to use a slide rule – multiplication is the physical addition of the logarithms of the multiplicand and multiplier, and one has to be aware of significant digits and orders of magnitude. My late father extolled the virtues of working with a slide rule, and I am beginning to appreciate his perspective.



A recent donation is a polar planimeter (January 1945), a very clever mechanical means to calculate the area of a 2-D shape. As the user moves the pointer (RHS) to completely follow the outline, a small cylinder (dial on LHS) rotates depending upon the movement of the arm. The difference between the initial and final values (the net number of turns of the cylinder), multiplied by a scale factor, gives the area. Such a device could be used to calculate the net work output from the area on a pressure-volume diagram, or the total fluid flow on a flow-versus time chart. I will have to spend more time with both the slide rule and the planimeter to better appreciate their usefulness, but I'm already impressed!

SPCHNI Executive

To see the members of the society executive, visit: <https://nuclearheritage.com/society-executive/>