IN STEP WITH
Capintec
The Newsletter of Capintec, Inc.

WINTER 2008

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SNM Awards Art Weis Presidential Distinguished Service Award

SNM President Sandy McEwan, MD, awarding Arthur Weis, Chiarman of the Board of Capintec, Inc the Presidential Distinguished Service Award.

by Art Hall, BS, CNMT, FSNMTS and Kathy Thomas, MHA, CNMT, FSNMTS

Sandy McEwan, MD, SNM President awarded Arthur Weis, founder and Chairman of the Board of Capintec, Inc. the Presidential Distinguished Service Award at the 55th Annual Meeting of the Society of Nuclear Medicine Meeting in New Orleans, LA.

In his presentation, Dr. McEwan explained that this award was being presented to recognize Mr. Weis' continuous dedication and contributions to the field of nuclear medicine. Aside from Capintec's well known measurement technology, these accomplishments include consultant to the French Atomic Energy Commission (CEA), Italian Atomic Energy Commission (CNEN) and a number of Japanese companies in the fields of nuclear power and nuclear medicine. He also holds a number of US patents including those for Isotopic Fueled Thermo-Electric Devices and Isotopic Fueled Thermionic Devices. Additionally, Dr. McEwan cited Mr. Weis' life-long commitment to professional organizations supporting the field of nuclear medicine including SNM, ASNC, ACNP and the New York Academy of Medicine. Although these accomplishments are impressive, they provide only a glimpse into the life of the man that created Capintec, Inc.

Art began his professional life's journey by earning a degree in Aero Engineering from Renssealaer Polytechnic Institute. He attended the New York University's School of Engineering, the US Naval Academy, and then went on to obtain his Juris Doctor from Rutgers University

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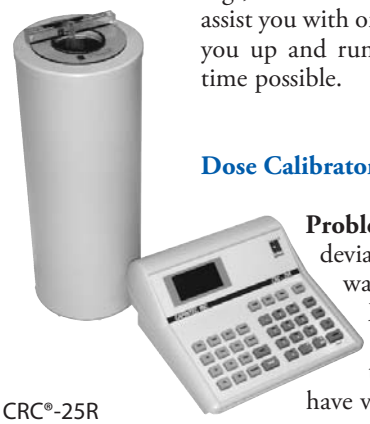
Useful 'Do It Yourself" On-Site Solutions

On rare occasions when your Capintec equipment provides results that are outside the expected readings, the following suggestions can assist you with on-site solutions to get you up and running in the shortest time possible.



CRC®-25R Dose Calibrator

Dose Calibrators:

Problem: My constancy deviation on my chamber was 1.2% on Friday. Monday morning the constancy deviation was 48.7%. I have verified that the reference source information (activity, date of calibration, etc.) is correct. What is the problem with my unit?

Answer: A sudden deviation in the constancy reading is most often the result of an unexpected power surge that has changed the current date/time in the dose calibrator. Go to your menu, select 'Set-up', select Time/Date and verify that the date is correct. Be sure to look at both the day as well as the year. In most cases, the dose calibrator's date has jumped many years ahead or fallen many years behind; thus, effecting the calculation of the deviation between the calibrated activity and the entered activity. Reset your date/time and repeat daily test.

on-site solutions to get you up and running in the shortest time possible

Problem: I have an older dose calibrator. My display screen is reading 'memory corrupt'. What does that mean?

Answer: In the older dose calibrator's, an unanticipated power surge can cause a memory corrupt error. Turn off the dose calibrator - then turn it back on. The 'memory corrupt' message will include one or more addi-

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School of Law.

Art's initial association with nuclear technology began with the Curtiss-Wright Corporation, a major producer of propulsion systems including propulsion in ram jets, rockets, aircraft and marine craft. During his tenure with Curtiss-Wright Corporation's Research Division, Art held multiple positions including research engineer, project engineer, marketing manager, and patent and license attorney.

As Marketing Manager for the Research Division, Art was responsible for all aspects of marketing the company's first research reactors to the domestic and international market. Additionally, Art was responsible for developing applications for the use and sale of radioisotopes. In this capacity, Art worked closely with Paul Aebersold and the newly established Department of Radioisotope Development of the AEC whose charter was to expand the use of radionuclides for industrial, medical and biological research purposes. During this same time period, Art became interested in the medical applications of radioisotopes as the result of discussions with research personnel from Abbott Laboratories who were looking for a resource to supply certain radiopharmaceuticals for a new diagnostic technology called nuclear medicine.

After a dozen years with Curtiss Wright, Art joined a new start-up company in Pittsburgh, PA called Nuclear Materials and Equipment Corporation (NUMEC). NUMEC was one of the first commercial companies awarded a contract by the US Atomic Energy Commission to produce fuel elements using enriched uranium for nuclear reactors for use in land-based power plants and submarines. In addition to producing radioactive sealed sources such as plutonium/beryllium used in reactor start-up, NUMEC was also the first commercial company in the world to join in the development of plutonium as a fuel for nuclear power plants and was a leader in high purity zirconium and hafnium crystal bars for nuclear power applications. While with NUMEC, Art developed the concept for the use of plutonium in radioisotope thermoelectric generators which has, in part, been incorporated into probes that provide electrical power for solar exploration vehicles.

Art founded Capintec, Inc. in 1964. As President and CEO, he assembled a team of experts to provide consultative and other services to companies interested in nuclear energy including the French and Italian Atomic Energy Commissions and the United Kingdom Atomic Energy Authority. Consulting services assisted a number of companies and governments develop cyclotrons and linear accelerators for applications as diverse as non-destructive testing and the production of new radioisotopes as well as explore programs for the sale and efficient transport of nuclear fuels and waste. Other projects included feasibility studies to establish full-scale radiopharmaceutical plants in the US that would meet regulatory compliance standards.

With its team of experts including two Noble Prize physicists and in consultation with the French and Italian Atomic Energy Commission, major Japanese companies and other associates, Capintec developed product concepts related to radiation detectors and monitors with applications principally in nuclear medicine and radiology. These initial product concepts drawn from Capintec's expertise in quality assurance design, engineering and manufacturing were the foundation of Capintec's transition from a consulting organization to an instrument manufacturer.

Over the next several decades under Art's innovative direction, Capintec's team of expert physicists and scientists designed and developed instrumentation for RIA, x-ray dosimeter multi-detector systems, electrometers, and DMSL liquid scintillation devices. The electrometer designated the '192' became a therapy standard and several thousand are still in use today.

The design for Capintec's dose calibrator began as a collaborative effort with the French; however, the early detector was found to be unstable and inaccurate in both electronics and the newly patented noble-gas filled detector chambers. Capintec increased the atmospheric pressure in the chamber to allow for a more accurate measurement and made significant changes in the chamber's electronics to produce the first Capintec Radioisotope Calibrator - also known as the CRC. The CRC-1 was the prototype and the first commercially available instrument was the CRC-2.

It's interesting to note that Capintec never expected the CRC units to achieve high sales volume. The Radx Radcal dose calibrator offered stiff competition to Capintec's new offering to the nuclear community. To offset this well established market share, Capintec developed a non-exclusive marketing arrangement with Abbott Labs, one of the leading manufacturers of Tc-99m generators and Squibb, Inc. to sell the CRC product with their generators. This relationship vaulted Squibb into a leadership role as supplier of Tc-99m generators and placed Capintec in the forefront of the industry as supplier of dose calibrators. Later, NEN, Searle and General Electric (GE) would join in this relationship. At the request of GE, Capintec enhanced its CRC model by designing and manufacturing a dose calibrator complete with an analog computer that could calculate, measure and print dose measurements; thus, establishing Capintec as the gold standard for high quality dose calibrators throughout the world. Today, Capintec's diverse range of dose calibrators meet the ever changing needs of the nuclear community for the accurate measurement of beta, gamma and positron radionuclides.

Other well known Capintec products including the Caprac well counter, probe technology including the Captus Thyroid Probe Systems and the solid state Cadmium Telluride (CdTe or CdZnTe) probe and the scintillation probe (CsI(Tl) scintillator coupled to a silicon photodiode), hot cells, mini-cells, lead cabinetry, shielding and its latest new products, the Alert Screening System and the CapIMAGE Gamma Camera System, demonstrates the continued commitment of a company started by a man with a vision. Congratulations Mr. Weis - and thank you for your dedication to the field of nuclear medicine technology.

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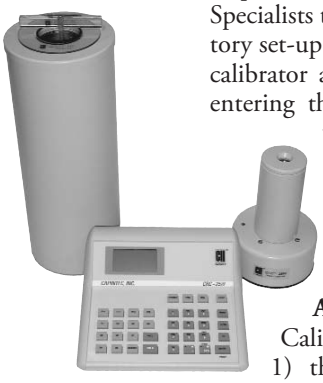
tional letters: F, U, or S.
• 'S' means that the unit has lost reference source information. Re-enter the reference source information and repeat the daily test.
• 'U' means that the unit has lost user key information. Re-enter your site-selected nuclides on the user keys.
• 'F' means the unit has lost factory set-up information. Contact Capintec's Customer Support Specialists to obtain the necessary factory set-up information for your dose calibrator and to assist you with re-entering this information into your unit.



CRC®-25W
Dose Calibrator

Problem: My linearity test failed. I use the CaliCheck system. What should I do next?
Answer: In most cases, the CaliCheck system will fail if, 1) the correction factors for your dose calibrator have not been calculated correctly, 2) the tubes have been dropped and are now bent, or 3) the geometry of the radioactive source is different from its initial placement when the calibration numbers were calculated. Repeat the test using the manual decay technique (measuring a source over several days) to verify that the unit is operating correctly. Once you have determined that the instrument is linear, re-measure the sleeves/tubes using the manufacturer's recommended guidelines to determine new correction factors. Important note: correction factors are not the same for every dose calibrator. Correction factors must be determined individually for each dose calibrator.

Well counters:

Problem: My constancy test on my Caprac (or my 15W well) exceeds 5%. What should I do?
Answer: First, perform an autocal. The software automatically adjusts the gain to compensate for normal drift of the NaI detectors. Over time as the detectors age, the system may drift out of calibration range. That's why it's important to perform autocal on a weekly basis. If autocal does not bring the well into calibration, it may be necessary to make a manual adjustment using a small screwdriver to reset the gain. If a manual calibration is needed, contact Capintec's Customer Support Specialists for assistance. Of note, recent engineering changes have extended the automatic calibration range on newer units, eliminating the need for manual adjustments. The manual calibration procedure is performed with just a few simple key strokes. Older units may be upgraded by Capintec's Service Center.

Captus®3000
Thyroid Uptake
System

Problem: What else can cause my constancy deviation to exceed the expected value?
Answer: If the conversion factor (also known as the efficiency on some units) has not been correctly measured, the constancy deviation may exceed the expected value. In the utilities menu, select CONV FACTOR and follow the prompts to measure the reference source. If you need assistance, contact Capintec's Customer Support Specialists.

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Capintec Meeting Schedule 2008-2009

Oct 16-19	**SNM Western Regional**	Portland, OR
Oct 24-25	**SNM Northeast Regional**	Newport Beach, RI
Oct 31-Nov 4	**AOCNMB**	New Delhi, India
	*Passports are required for this meeting	
Nov 30-Dec 5	**RSNA**	Chicago, IL
Feb 5-8, 2009	**SNM Midwinter**	Clearwater, FL
Mar 20-22, 2009	**SNM Southwest Chapter**	Houston, TX
May 10-13, 2009	**ICNC-9**	Barcelona, Spain
	*Passports are required for this meeting	
June 13-17, 2009	**SNM Annual Meeting**	Toronto, Canada
	*Passports are required for this meeting	

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Captus 3000/600 probes:

Problem: My Captus 3000 deviation on the probe is exceeding 5%; however, the well accuracy is correct. What is the problem?
Answer: The check source may not be in the same position as it was during the initial calibration - or it may not be positioned correctly. Turn the collimator so that it is facing the ceiling. Gently place the rod source - black side down - in the center of the probe making sure that it is upright and not touching the sides of the unit. If the source is off-center, or the source is placed black side up, the percent deviation from the original calibration will exceed the expected value. Note: Capintec now offers a rod source positioning holder that assures simple and reproducible geometry each and every time. Contact Capintec for additional information and pricing for this useful product.

Problem: My count rate on my probe is inconsistent and sometimes the energy window seems to shift unexpectedly. What is the problem?
Answer: Over time as the probe is positioned to perform uptake measurements the high voltage (HV) cable and/or tube base may be damaged; thus, affecting the ability to of the detector to accurately detect radioactive energy. Have your biomedical engineers examine the HV cable and tube base for stress-related damage. Replacing the HV cable and/or tube base is an easy procedure that can be performed onsite. Contact Capintec's Customer Support Specialists to obtain replacement part information.

Problem: A technical problem occurred during my thyroid uptake test and the administration time was entered incorrectly. How can I change the administration time in the unit?
Answer: You cannot change the administration time in the Captus 3000 or 600 once it has been entered; however, you can complete the procedure by using the MCA module and calculating the percent uptake manually. Contact Capintec's Customer Support Specialists to receive a written description on using the MCA module for manual thyroid uptakes.

Additional technical problems that can be resolved on-site will be covered in future newsletters. If you have a problem that you would like to see discussed, please contact Kathy Thomas at kthomas@capintec.com.