

**Community Advisory Council
October 9, 2014
Action Items/Notes**

Final

These notes are in the following order:

1. Attendance
2. Correspondence and Handouts
3. Administrative Items
4. Nuclear Energy Research
5. Natural Resources Update
6. November Agenda setting
7. Community Comment

1. Attendance

Members/Alternates Present: See Attached Sheets.

Others Present: S. Bogart, J. Carter, A. Clapper, D. Garber, L. Garber, P. Genzer, D. Gibbs, T. Green, W. Horak, R. Howe, S. Johnson, M. Maraviglia, G. Mattson, R. McKay, C. Prattea, A. Rapiejko, J. Remien, J. Stiller, N. Sundin

2. Correspondence and Handouts

Items numbered one and two were mailed to Members with a cover letter dated October 2, 2014. Items numbered three through six were available as handouts at the meeting.

1. Draft agenda for October 9, 2014
2. Draft notes from the September 11, 2014 meeting
3. Presentation – Nuclear Energy Research
4. Presentation – Natural Resources Update
5. Informational flyer on Hofstra debate on Nuclear Energy
6. Information on NSLS Last Light

3. Administrative Items

The meeting was called to order at 6:31 PM. Reed Hodgkin, facilitator, reviewed the ground rules and the agenda. Those in attendance introduced themselves.

Don Garber requested CAC membership under the Emeritus category.

Hodgkin said according to the CAC Guidelines, a vote will occur at the next meeting after a membership request has been made as to whether or not the request is granted.

Lab Director, Doon Gibbs, told the CAC that the Lab will be operating under a Continuing Resolution until December. The Lab will be fine until then, but if a budget is not in place after that, the NSLS-II will be impacted.

Jason Remien, Interim Environmental Protection Division Manager, reported that the Lab's Sewage Treatment Plant is now successfully discharging into groundwater via recharge basins. Samples have been taken, but we do not have the results yet. He said he has a sample of the filter being used if anyone is interested in seeing it during the break.

Approval of Minutes

Hodgin asked for corrections, additions, or deletions to the September 11, 2014 draft notes.

Member Shea said last month, she asked about the average radiological dose to individuals and the fact that it has increased over the past few years. She would like that information included in the notes and she would like to include in her comment on page 4 that she wants to know what the regulatory limits are for the maximally exposed individual. Member Chaudhry asked for clarification of the reimbursement rates on page 2. Gibbs said the dollar amount indicated is cost per hour for machine time at the light sources based on eight hour shifts. There is a large difference in capital due to the large cost difference to build the two machines. The notes were approved as amended with none opposed and two abstentions.

4. Nuclear Energy Research – William Horak, Chair – Nuclear Science and Technology Department

Bill Horak said there are currently 435 operable nuclear power reactors in the world, with 100 of those in the US. He said the Nuclear Science and Technology Department at the Lab has a staff of 55 and an \$18 million budget. He spoke about the main research areas and the National Nuclear Data center, which is the longest continuing program at BNL and is funded by the Office of Nuclear Physics. They provide nuclear data sets for research, medical, industrial, nuclear energy, and national security applications. He spoke about nuclear safety, advanced nuclear systems and materials in radiation environments. Horak said the NSLS-II has a beamline dedicated to real time and in situ studies of materials in a radiation environment (MRE). He spoke about fuel cycle research and development and gave the CAC a look ahead to Nuclear Energy Research from 2014 – 2020.

Member Chaudhry said the CAC had requested a presentation on the pros and cons of nuclear energy and he didn't feel that this presentation answered those questions

Horak said he wanted to talk to the CAC about the problems, rather than have a debate with himself. He said there will be a debate entitled; "Does Nuclear Energy Have a Role in Our Sustainable Energy Future?" at Hofstra University on November 20th. Flyers on the debate were available for anyone interested in attending. He also said if anyone would like a tour of Building 526, he can arrange it.

Member Sprintzen stated that he felt this discussion was over his head.

Horak invited Member Sprintzen to come by his office sometime and talk, he said perhaps one of our scientists would be able to explain it better to you.

Member Peskin asked what type of computing system and what type of storage is being used.

Horak said we have our own computer cluster. It is housed where NYBLUE used to be. Our plan is to expand our capacity by 50 percent in 2015 and another 50 percent in 2016. Information is stored on hard drives.

Member Doroski asked some questions regarding thorium as a fuel source.

Horak said thorium is a good alternative to uranium in nuclear power plants. It is 4 – 10 times more abundant, it has properties that make it not suitable for use in nuclear weapons, and it is much more heat resistant.

Member Chaudhry said it seems like not much is being done right now to improve safety. You said the expansion of battery life will improve safety, but if an accident happens, batteries would not be capable of running the cooling system.

Horak explained that the purpose of batteries in a nuclear power plant is to run the controls and instrumentation, not to run the pumps for the cooling system. All nuclear power plants are designed to run in a state of natural circulation, where the heat is rejected to a heat sink. The problem at Fukushima was that they had no way to manage their controls. The batteries went out after 8 hours and they lost the ability to put it into the mode that would allow them to cool the plant. In addition, they had no instruments to tell them how quickly things were heating up, whether or not releases were happening, and they had no way to control anything. We are trying to improve battery life to longer than 8 hours.

Member Shea asked what the Lab is doing at Fukushima and if there is research being done on ways to get rid of nuclear waste.

Horak said the Lab is not involved in Fukushima, the Federal government is providing limited assistance. We are working to reduce the amount of time that you have to isolate nuclear waste from the environment. If we can reduce it to 100 years, that is a more acceptable amount of time. We are working on ways to improve the structural stability of dry casks; where the spent fuel rods are stored.

Member Kaplan asked for a list of specific projects that the Lab is working on and a list of the things the CAC was told about that are not being funded right now, but are expected to be funded in the future.

ACTION ITEM – Provide a list of projects the Lab is working on and a list of projects that the Lab expects to be funded in the future.

5. Natural Resources Update – Tim Green, Natural & Cultural Resources – Environmental Protection

Green's update included information on the 2013 SER - Chapter 6, the 4-Poster system, and the status and implementation of deer management.

Green reported on the populations of wildlife onsite, research conducted during the year by interns, and the results of bat surveys. He said that the northern long-eared bat, found on the Lab site, has been proposed for federal listing as an endangered species.

He described deer and fish sampling. For deer, there were 6 samples taken on-site and 5 off-site. The highest value for Cs-137 was 1.39 pCi/g wet weight from a sample taken near Sunrise Hwy. The ten-year trend for on- and near off-site samples indicate a stabilizing trend with average values less than 2.0 pCi/g wet weight and a ten-year average of 0.98 pCi/g wet weight. Green said there have not been many deer samples available for testing because drivers are being more careful and there have not been as many deer/car accidents.

On- and off-site fish sampling indicated low levels of Cs-137 which was consistent with previous years. The maximum value of mercury was 4.08 mg/kg in a chain pickerel from on-site Area D. On-site aquatic vegetation sampling resulted in a single sample with Cs-137 content of 0.09 pCi/g, wet weight.

Member Doroski asked if the results were found in areas located in the Town of Riverhead.

Green said no, Area D is onsite.

There were no detections of Cs-137 in farm vegetables, farm soils had ≤ 0.10 pCi/g dry weight of Cs-137. Grassy vegetation showed no detection to 0.08 pCi/g, wet weight of Cs-137 and the associated soils had no detection to 0.26 pCi/g, dry weight. Green noted that this would be the last time farm vegetables would be monitored as the Lab no longer has operating reactors and what's being found in the soils is similar to levels from world-wide fallout.

Basin sediments, precipitation, and the Peconic River post cleanup areas were sampled. In the river in 2013, all samples were < 1.50 mg/kg for mercury.

Green also gave a brief preview of some of the 2014 sampling data for Peconic River fish, water column, and sediment. He explained that one water column sample was high, 140 ng/l but attributed the high reading to a cloudy sample that shouldn't have been processed. There was a sediment sample in a post-cleanup area identified as PR-WC-06 that was 7.4 mg/kg. We've seen a variety of up and down readings in this area over the past four years. We don't think mercury is increasing there; it's a very small area. Green said we are discussing this with the regulators and it's important to note that we have removed the STP discharge from the river.

Green said next year it may be difficult to get water samples if the area is dry and the lack of discharge from the STP makes it even drier. Next year, we have our Five-Year Review and we will talk to the regulatory agencies to see if we need to continue to monitor.

4-Poster Update

Green said that 18 4-Poster tick management devices were installed in 2014. Three of those used in 2013 have been moved to heavier use areas due to lack of use and 4 new locations have been added. They were deployed from mid-April through September and the Lab used 2000 lbs. of corn per week to keep them full. He described how field surveys for ticks are conducted and showed a chart detailing how the tick population has decreased from 2013 – 2014.

Member Midura asked if feeding corn to the deer at the 4-Poster devices is actually increasing the deer population.

Green said the corn will fatten the deer up, but it does not increase fertility.

Member Midura asked what would decrease the population.

Green said starvation.

Member Guthy asked if deer get Lyme disease.

Green said we don't know. It takes three years to see if this system is working to reduce the tick population.

Member Shea asked if the 4-Poster system was used elsewhere.

Green said it was used on Shelter Island. It is very expensive and labor intensive.

Member Guthy asked if spraying would kill the tick larvae.

Green said only if it lands on them, otherwise it will not kill them and it is bad for the environment.

Member Kaplan asked how the employees who go out to take samples protect themselves.

Green said they wear permethrin treated pants, use a lint roller as soon as they come in, and put their clothes through a hot dryer to kill any ticks left behind.

Deer Management

Green spoke about deer management and reported that the Lab had planned to participate in the East End effort last year, but was asked to wait. The goal this year is to reduce the number of deer by 250-300.

Starting in November, the Lab hopes to take 40% of the females to overcome the reproductive effort. Corn will be used to draw the deer away from the buildings. Mobile sharp shooters will be used to take deer along mobile routes. Laboratory protection will ensure the area is clear of personnel. There will be one vehicle with a driver, spotter, and a shooter and a second vehicle will drive behind and retrieve the deer. Deer will be field dressed and samples of the meat will be tested for Cesium-137. The carcass will be taken to the butcher for processing and then the meat will be frozen pending the results of testing. Results below 1.00 pCi/g will be released to shelters and food pantries.

Member Midura asked if the large snowfall last winter affected the number of deer.

Green said that it really didn't affect the population.

Member Sicignano said the fenced in area at the Long Island Solar Farm gives them less room so you will have a denser population.

Green said that the solar farm did not really cause a significant increase in deer density and that they are eating the forests and lawns.

Member Chaudhry asked if deer have any predators.

Green said coyote, but only one has been found (sighted in 2013 in Water Mill). Other than that, it would be humans and cars.

Member Shea asked why they want to kill females. Who will take care of the fawns?

Green said females are taken for population control and that deer are indiscriminant breeders so it is more effective to take females. During the time of year that we do it, the fawns are already yearlings.

The benefits of the deer population reduction will be a safer Lab site with reduced deer accidents and numbers of ticks, improved deer health, an improved ecosystem, and reduced costs for the replacement of landscaping and less corn needed for the 4-Poster systems.

6. November Agenda Setting

Sundin said next month Bill Dorsch will present on the annual groundwater report and the STP discharge. Berndt Mueller will present on e-RHIC. There will also be a presentation on battery storage. She asked if there are any other topics that the CAC would like to hear about.

Member Ravel said research is being done at his beamline on safe disposal of nuclear waste. Perhaps the CAC would like to hear a presentation from one of the Lab's external users on that topic.

Hodgin asked and the CAC agreed.

Hodgin asked if there was any more information on the Hofstra debate.

Sundin said they are still looking for presenters, we will send updated information to the CAC when it becomes available.

7. Community Comment

Michael Maraviglia, Suffolk County Division of Water Quality, asked if the Lab's groundwater is sampled for permethrin.

Green said no, it is very short-lived.

Bruce Martin commented, as a citizen, that BNL is a 24-hour operation. He is disappointed that the Brookhaven Center has closed.

The meeting adjourned at 9:21 PM.

CAC Agenda Setting – May 8, 2014

PRESENTATIONS

- ~~Pros & Cons of Bringing Back Commercial Nuclear Power~~ – 12 (10/9/14 Bill Horak)
- Holographic Principles of Quantum Mechanics – 8
- Biological Research at BNL – 7
- The Gamma Forest (where was it onsite; the kind of research done there) - 7
- ~~Survey of all DOE Labs~~ – 6 (9/11/14- Frank Crescenzo)
- Climate Science & W.H. Report (Steve Schwartz) – 5
- NASA Research – 5
- Waste Minimization at BNL - 5
- Update on Battery Storage – 5
- More History – 4
- Economic Impact of the Lab - 4
- Nanotech Research, Safety, Environment, Ethics – 4
- Fukushima – 4
- Update on LI Solar Farm (production, environment) – 4
- Research / Trends on Wildlife on LI – 3
- Non Proliferation – 3
- Patents & Commercialization – Pros & Cons of Science vs. Commercialization – 3
- Update of Tick-borne Diseases – 3
- Electric Grid (by J. Misewich) – 3
- Update on G-2 – 3
- Invite HS Students to Speak on Their Topics – 3
- Update on State Program for Carbon Footprint Reduction (80x50?) – 2
- Research towards Sustainability – 2
- STEM Research Update (InSynC) – 2
- Computer Facility for LHC/ATLAS / RHIC – 2
- Research by Students at NSLS – Reach Out Program – 1

TOURS

- ~~ISB~~ – 3 (6/12/2014)

P = Present	2014	Affiliation			Jan	Feb No mtg	Mar	Apr	May	June	July No mtg	Aug No mtg	Sep	Oct	Nov	Dec
			First Name	Last Name												
		ABCO (Garber - 04/02)(Bevington – 6/14) (Keenan-10/14)	Member	Ray	Keenan					P			P	P		
		(Madigan -10/10)	Alternate	Michael	Madigan			P	P							
		American Physical Society	Member	Margaret	Malloy	P	P	P	P	P			P	P		
		(Schuhmann 1/14)	Alternate	Reinhart	Schuhmann											
		Brookhaven Retired Employees Association (Peskin - 09/09)	Member	Arnie	Peskin				P	P			P	P		
		(Franz - 12/09)	Alternate	Eena-Mai	Franz	P	P	P	P	P				P		
		(Shapiro-1/13)	Alternate	Steve	Shapiro											
		Citizens Campaign for the Environment	Member	Adrienne	Esposito	P	P									
			Alternate													
		Colonial Woods Whispering Pines (Birben - 06/09)	Member	Christine	Birben											
		(Rehbein -11/10)	Alternate	Eric	Rehbein	P	P		P	P						
		Coram Civic Association (Ziems - 06/12)	Member	Paul	Ziems	P	P		P	P			P	P		
		(Meade – 06/12, Jim M 10/12)	Alternate	Jim	Meade			P								
		East Yaphank Civic Association (Midura 10/14)	Member	Robert	Midura	P	P	P	P	P				P		
		(Feinman - 02/09)	Alternate	Bob	Feinman		P		P	P			P			
		Emeritus (changed 3/8/12)	Member	Jean	Mannhaupt											
		Foundation for Economic Education (5/14)	Member	Greg	Bush											
			Alternate	Bruce	Martin		P	P	P	P			P	P		
		Friends of Brookhaven (Kaplan - 07/01)	Member	Ed	Kaplan									P		
		(Schwartz - 11/02)	Alternate	Steve	Schwartz			P	P	P			P			
		Huntington Breast Cancer Coalition	Member	Mary Joan	Shea	P	P	P	P	P			P	P		
			Alternate	Scott	Carlin											
		IBEW/Local 2230 (Krsnak 01/07)	Member	Scott	Krsnak											
			Alternate													
		Individual (changed 3/12)	Member	Karen	Blumer	P			P							
		(added 6/12)	Alternate	Michael	Madigan	P	P						P			
		Individual – (changed 3/12)	Member	Jane	Corrarino		P		P				P			
			Alternate													
		Individual – (changed 3/12)	Member	Iqbal	Chaudhry	P		P	P	P			P	P		

P = Present	2014	Affiliation		Jan	Feb No mtg	Mar	Apr	May	June	July No mtg	Aug No mtg	Sep	Oct	Nov	Dec
			First Name Last Name												
			Alternate												
		L.I. Pine Barrens Society	Member Richard Amper			P									
		(Murdocco - 04/11, deleted 6/12) (Muller added – 8/12)(Katie Rose Leonard added – 6/13)	Alternate Katie Rose Leonard	P					P			P	P		
		L.I. Progressive Coalition	Member David Sprintzen	P		P	P	P	P			P	P		
			Alternate												
		Lake Panamoka Civic Association (Biss - 04/02)	Member Rita Biss	P		P						P	P		
		(Grandal - 10/10)	Alternate Bonita Grandal	P		P			P			P	P		
		Longwood Central School Dist. (Castro -06/09)	Member Maria Castro				P					P	P		
		(Gerstenlauer removed & Sterne added 5/14)	Alternate Phyllis Sterne												
		Mastic Park Civic Association (Sicignano – 6/12)	Member John Sicignano	P		P		P						P	
			Alternate Clara McManus												
			Alternate Joe May												
		Middle Island Civic Association	Member Tom Talbot	P		P	P	P	P			P			
			Alternate Kevin Crowley												
		Photon Sciences User Committee	Member Jean Jordan-Sweet	P			P		P			P			
		(Ravel -02/11)	Alternate Bruce Ravel	P		P						P	P		
		Ridge Civic Association	Member Pat Henagan	P		P	P	P	P			P	P		
			Alternate												
		Town of Brookhaven (Graves - 06/06)	Member Anthony Graves												
			Alternate												
		Town of Brookhaven, Senior Citizens Office	Member James Heil	P		P	P	P				P			
			Alternate												
		Town of Riverhead (Doroski - 04/11)	Member Isidore Doroski	P		P		P	P			P	P		
		(Hulme - 04/11)(Hulme removed 4/14)	Alternate												
		Wading River Civic Association	Member Helga Guthy	P		P	P		P					P	
			Alternate Sid Bail												