Community Advisory Council
March 9, 2006
Action Items/Notes

Final

These notes are in the following order:

1. Attendance
2. Correspondence and handouts
3. Administrative Items
4. Draft Thank You Letters
5. Update on Main Gate Contamination, Jim Tarpinian
6. Renewal of RCRA Permit, George Goode
7. ROD for Former UST, BLIP, & g-2, Doug Paquette
8. Community Comment
9. HFBR Remedial Alternatives, Bruce Lein
10. Agenda Setting

1. Attendance

Members/Alternates Present:
See Attached Sheets.

Others Present:
C. Adey, M. Bebon, P. Bond, J. Carter, H. Carrano, A. Carsten, F. Crescenzo, J. D'Ascoli, B. Dorsch, K. Geiger, G. Goode, L. Hill, B. Howe, S. Kumar, R. Lee, E. Lessard, M. Lynch, A. McNerney, D. Paquette, M. Parsons, T. Peterson, D. Quinn, A. Radiejko, R. Rimando, S. Robbins, D. Ryan, S. Schwartz, J. Tarpinian

2. Correspondence and Handouts

Items one through four were mailed with a cover letter dated March 3, 2006. Item five was provided in the member's folders and items six and seven were available as handouts.

1. Draft agenda for March 9, 2006
2. Draft notes for February 9, 2006
3. Draft notes for January 12, 2006
4. Draft notes for December 8, 2005
5. Draft thank you letters
6. Presentation on the UST, BLIP, and g-2 ROD
7. Presentation on HFBR Alternatives

3. Administrative

The meeting began at 6:31 p.m. Reed Hodgin went over the ground rules and the draft agenda. Those present introduced themselves.

Member Garber stated that he had seen a press release announcing that Dr. Chaudhari would be stepping down as of May 1. Some discussion ensued regarding possible reasons for this decision. The CAC recognized the sensitivity of the situation and it was agreed that Reed would possibly work to set up a meeting for three or four CAC members with an appropriate individual for them to express their views.

Jeanne D'Ascoli extended Dr. Chaudhari's apologies for not attending the meeting, he had to give a presentation offsite. D'Ascoli noted that there were draft thank you letters in the member's folders prepared by Jean Jordan-Sweet. She said that Mike Giacomaro also had prepared a letter, but due to miscommunication it was not included, she apologized to him.

Reed said that changes had been made to the December and January notes to reflect Member Shea's comments. There were no further corrections, additions, or deletions. The December notes were approved with two abstentions.

Member Kaplan referred to page four of the January notes where he asked for copies of any environmental impact study reports that were related to the Nano Center. As he hasn't gotten any response he asked that the minutes indicate that the information would be available at the next CAC meeting. Member Jordan-Sweet indicated that two commas were missing in the fourth paragraph on page 14. The January notes were approved.

ACTION ITEM: Provide copies of any environmental documents and reports on the Center for Functional Nanomaterials (CFN).

Regarding the February notes, Member Guthy asked that the acronyms OMB and CFN be spelled out. There were no other corrections, additions, or deletions. The notes were approved as amended with two abstentions.

4. Draft Thank You Letters

Letters were drafted by Jean Jordan-Sweet to Senator's Clinton and Schumer, Congressman Bishop, and Dr. Jim Simons to thank them for their support of the Laboratory. She explained that the two letters to the senators were identical, the letter to Congressman Bishop was slightly different, and the Simons letter was completely different. Reed asked if anyone had issues with the letters to the elected officials. Member Evanzia suggested the wording be tightened up a little bit. Member Corrarino suggested a change to the last paragraph clarifying who the CAC advised. Reed asked Member Evanzia if he could work his suggested change during the break and said that the changes would be read to the CAC later during the meeting for their approval. Member Guthy commented that Member Jordan-Sweet did a great job covering everything very nicely.

Member Giacomaro suggested inviting Dr. Simons to a CAC meeting to see them at work. Member Guthy suggested inviting him to personally thank him. Dr. Bond reported that Dr. Simons and three of his colleagues were at the Laboratory today. They pushed the button in the Control Room to begin the RHIC experimental collisions. The letters will be approved at the end of the meeting. The CAC thanked Members Jordan-Sweet and Giacomaro for their work on them.

5. Update on Main Gate Contamination, James Tarpinian

James Tarpinian reminded the CAC that the Laboratory was investigating a section of roadway near the Wm. Floyd Parkway that had higher than expected radiation levels associated with it. The levels were within the background radiation levels of Long Island but were higher than the natural background levels that are in that immediate area. Sampling was done to identify the source. The results indicated that the asphalt used to construct that portion of the roadway consisted partly of aggregate made up of thorium and potassium-40 containing materials that are naturally occurring. There are some areas on Long Island that have thorium sands and rocks that have that high a concentration.

Member Giacomaro asked where else that material was used. If it's natural, it could be any and every place on Long Island.

Tarpinian agreed.

Member Sprintzen noted that Member Garber had been making that point about naturally occurring radiation for the past eight years. Member Garber said that Smith Point had a lot of the black thorium sand.

Member Anker expressed concern and asked about any possible health risk.

Tarpinian said there was no public health risk associated with the levels found, what got the Lab's attention was that it was higher than the surrounding area.

Member Anker asked what agency of the government was in charge of public safety.

Tarpinian said at the federal level there are established standards. Locally, the Lab has been in contact with the public health commission.

Member Anker said her concern is not so much BNL, but with the other areas of thorium sand and rocks. Other CAC members asked if the beaches had ever been checked and if there was any impact to public water supply wells.

Sy Robbins of the Suffolk County Department of Health Services said that there is no monitoring program for beaches and explained that all wells have periodic screening for radiation by the Health Department. They monitor for radiation in general and if it's found, they look for the cause.

Member Kaplan asked if the initial reports that there was Cesium-137 in the roadway had been discounted.

Tarpinian said out of the 106 samples analyzed only five came back with any indication of Cesium and it was at levels that were within background. The highest was .29 pCi/g.

6. Renewal of RCRA Permit, George Goode, Environmental & Waste Management Services Division

George Goode, Manager, Environmental & Waste Management Services Division, informed the CAC that the Lab was working on renewing its Resource Conservation and Recovery Act (RCRA) Part 373 Hazardous Waste Permit. It is issued by the NYSDEC and must be renewed every ten years. The permit application is complete and there will be a public notice published in Newsday and announced on WALK radio. There are no major changes to the facility but the storage capacity has been reduced from 31,000 gallons to 21,000 gallons. That reflects the success of the Pollution Prevention Program. The added capacity is no longer needed. Goode offered to show the CAC the facility if there was any interest. The CAC had no questions.

7. ROD for Former UST, BLIP, & g-2, Doug Paquette, Environmental & Waste Management Services Division

Doug Paquette gave an overview of the Record of Decision (ROD) that is being prepared. The ROD will include documentation on a final remedy for eight underground storage tanks (USTs) that have been previously removed, for the Brookhaven LINAC Isotope Producer (BLIP), and for the g-2 experimental area activated soils.

The Focused Feasibility Study and the Proposed Remedial Action Plan are being prepared and will be provided to the regulators at the end of March. Paquette expects there will be a presentation on the g-2 alternatives this Spring and the public comment period is planned for this Summer. A draft ROD will then be submitted to the regulators in the Fall.

Paquette gave background information on the removal of the USTs. He described what the BLIP does, the tritium that's been detected in wells down gradient of the facility, the activated soil zone, and the corrective actions. The surface corrective actions included installing caps and drainage piping to control stormwater. He explained that silica grout was injected into the ground in June 2000 to lockup the activated soils. He also discussed the long-term groundwater monitoring in the area that the Lab has been doing and the tritium concentrations after capping. The goal is to maintain the stormwater controls and continue monitoring.

Member Giacomaro asked if there were moisture detectors under the cap. Paquette said there are not.

Member Kaplan asked if the graph was information from the same well. Paquette said there are three wells that the data is from.

Member Chaudhry asked the direction of groundwater flow. Paquette explained that it was from north to south.

Member Giacomaro asked for clarification on where the silica was injected and how high the water table rises. Paquette said it was injected into the soil around the target. They keep track of the water levels in the wells and that data is plotted against the tritium values. They can measure how long it takes the tritium to reach the first well once it enters the water table (80-90 days).

Member Kaplan asked how many curies of tritium were associated with the BLIP plume. Paquette said he wasn't sure if the actual amount released has ever been characterized but he did say it was a very small amount.

ACTION ITEM: Get data on tritium released.

Member Chaudhry asked for a comparison of the concentrations of tritium with the groundwater standards for drinking water. Paquette said that the maximum concentration observed has been about 55,000 pCi/L, which is two and a half times the 20,000 pCi/L drinking water standard.

Member Giacomaro asked where the drinking water supply wells were located and where they were located in relation to BLIP. Paquette showed him on the map where the wells were located.

Paquette described the g-2 experiment. It was a physics experiment that ran from June 1997 to April 2001. He said that prior to the start of g-2 there were two areas that had been identified as having potentially activated soils. One was an iron beam stop and the other was below the target. A cap was placed over the beam stop area and the target building and concrete slab protected the soils from direct rainwater. Monitoring wells were also installed. In 1999 tritium was discovered in a well downgradient of the area. New wells were installed. The source was identified as beam loss to the VQ-12 magnet. It turned out that the beam loss monitors were not working properly. The tunnel was drilled through and the area was sampled and it was confirmed that the soil had been activated.

Member Kaplan asked if the beam migrating was the cause of the activated soils, if that was a generic problem and if the beam had to be constantly monitored. Paquette said in this case the pathway was not optimum and one of the corrective actions was to retune the beam. Ed Lessard, Associate Chair for ES&H/QA, Collider-Accelerator Department, said the beam does have to be constantly monitored. The As Low As Reasonably Achievable (ALARA) beam loss monitoring program involves operators and radiation monitors throughout the whole complex along the beam line. There are administrative controls and there are engineered controls to keep the beam exactly where it's wanted.

Paquette said that the activation occurred in an area that was not protected by the original cap. He also pointed to a gap that was on one side of the wall where rainwater was able to infiltrate and get below the concrete pad. Corrective actions included tuning the beam, installing a new concrete cap and installing new groundwater monitoring wells. Paquette discussed tritium concentrations found after the capping. He pointed out several spikes in the levels and said that the likely cause was residual tritium near the water table. The plume, as of November 2005, is a thin, narrow plume that goes back to the source area and goes down to just north of the HFBR. Modeling results indicate that the tritium concentrations will drop to approximately 20,000 pCi/L by 2010 to 2015. Paquette said he would present more details and the remedial alternatives based on the Focused Feasibility Study to the CAC later this Spring.

Member Giacomaro asked about the rainwater that is shed by the caps. Paquette said that is taken into account when the caps are designed.

Member Sprintzen asked for clarification on the g-2 activated soils and on BLIP. And he asked if there were continual releases associated with its operation. Paquette said when BLIP runs there will be additional radiation added to the zone that has been encapsulated with the silica grout. As long as the grout holds up, rainwater will not get into that soil. The material that has already been released is harder to control. It is preferred that the caps be in place first.

Member Chaudhry asked about the effectiveness of the concrete cap in view of its porosity and tendency to crack. Paquette explained that the caps were sealed and there is a routine inspection program to make sure that they do not crack.

Member Garber asked about the movement of the aquifer and if that affected sampling. Paquette explained that is taken into account and the sampling pump is adjusted.

Member Anker asked about the beam bouncing off the g-2 target and if that was a problem with BLIP. Ed Lessard, BNL, explained the beam loss monitoring network. She asked if there was anything around the RHIC beamline to protect the soil. Lessard explained that there are 26 miles of beamline and soil is used as shielding. It's kept in place by caps. Member Anker asked if radioactivity could go into the soil anywhere along the beamline? Lessard explained that it only goes out a few feet. She asked if it could get into the groundwater. Lessard said if rainwater is allowed to percolate through it. Anker asked what BNL was doing to prevent that. Lessard explained that most of the beamline is capped with a building, a target building or concrete. Member Anker asked about the areas where there is no shielding. Lessard said there are monitors and limits on the beam loss that is allowed.

Member Kaplan asked who pays for the environmental cleanup, the project or EM? Paquette said the programs at the Collider-Accelerator are paying for the caps and monitoring. Kaplan asked if that applied to any project that causes an environmental impact. Paquette said yes, the Lab would like to identify the projects early on and not have the environmental impact. In a situation like BLIP, they want to have controls in place so that the activated materials can be controlled so that it doesn't get into the groundwater.

Member Kaplan asked if there is a pot of money being put aside by the Center for Nanomaterials to take care of any type of environmental problem that might occur? Paquette said he was not the right person to answer that question, but he does know that there are a lot of people looking at the potential environmental consequences of the Nano Center. George Goode, BNL, added there is a team of professionals working with a group from DOE HQs and across the complex where the other Centers for Nanoscience are developing. They are very active in looking at developing policies to anticipate and control any safety and environmental impacts from the research. They are trying to be proactive very early. This started well before construction of the facility. He said they have developed a policy and procedures for work.

Storage of chemicals will be well designed. The goal is to prevent impacts especially from the new facilities.

Member Biss asked how many magnets focused the beam. Ed Lessard said there are several thousand. She asked how they are aligned. Lessard said the line is surveyed with every shutdown. He said that the facility is restarted with small amounts of beam and they make sure that those small amounts go through cleanly.

Member Corrarino asked if there are monitoring systems in place how did the contamination occur in the first place. Paquette said in the case of g-2 it was in an area that was not designed as a beam loss area and the monitors that were there were not functioning properly. One of the Lessons Learned is that criteria for the successful operation of the Accelerator Facility were developed. There is now an Accelerator Safety Subject Area, which lists the Laboratory requirements necessary to maintain proper beam alignment and for accessing potential beam loss. The need for placing caps and protective measures in place is spelled out in that process.

8. Community Comment

There were no comments from the community.

During the break the CAC members present posed for a group photo.

9. HFBR Remedial Alternatives, Bruce Lein

Les Hill reminded the CAC that background information on the characterization and facility design of the High Flux Beam Reactor had been provided at a previous meeting. He reminded the CAC of the August workshop and that they had a presentation on the differences between the HFBR and the BGRR. The goal tonight was to introduce the four different remedial alternatives under consideration. The Feasibility Study is being drafted and will be sent to the DOE and regulators shortly. In subsequent meetings the alternatives will be compared and a preferred alternative will be discussed.

Bruce Lein reviewed the facility. The HFBR complex encompasses approximately 13 acres and includes buildings such as the Fan House, the red-and-white Stack, the Stack Fan House, the Cold Neutron facility, and the confinement building (the domed structure). He described the floor levels and equipment found within the confinement building. Since the reactor was shutdown in 1996 there has been extensive characterization. There are a total of 416,000 Ci of activity within the complex. This is a very large number compared to the pile at the BGRR, which contains 5,000 Ci.

Lein said that 99.9% of the activity is found in activated components such as the control rod blades, the reactor internals, the reactor vessel and the thermal and biological shields. The majority of the radionuclides that are radioactive are short-term with half-lives that range from 2.7 to 8.8 years. However, there are extremely high dose rates attributed to the activated components – each control rod blade has a dose rate of 80,000 rem/hr. To compare that to the BGRR, the entire pile has a dose rate of one rem/hr.

The remaining .01% of activity is found in the confinement building within the piping systems, tanks, etc. There is a small amount found in the ancillary buildings and there is some soil contamination under the confinement building and in isolated pockets within the complex.

The four draft alternatives were described. Alternative A calls for no additional action. Alternative B will phase the decontamination and dismantlement (D&D). Alternative C will phase the D&D however, the control rod blades will be removed in the near-term. Alternative D calls for near-term D&D.

The end states for B, C, and D are the same. In each, the HFBR complex, with possible exception of the subsurface concrete monoliths under the confinement building and the stack foundation, will be removed. The contaminated soil will also be removed. The difference is the timing.

Under Alternative B, the ancillary buildings, underground piping, and their associated soils will be removed by 2009. After 75 years, the control rod blades, activated structures and components, the confinement building, and contaminated soils will be removed.

Under Alternative C, by the end of FY2009 the ancillary buildings, underground piping, their associated soils, and the control rod blades will be removed. After 75 years, the activated structures and components, the confinement building, and contaminated soils will be removed.

Under Alternative D, the end state will be reached by the end of FY2012. The ancillary buildings, underground piping, their associated soils, the control rod blades, activated structures and components, the confinement building, and contaminated soils will be removed by the end of FY2012.

Why wait under Alternatives B and C? As explained earlier the dose rates on the control rod blades are 80,000 rem/hr. That introduces extraordinary risk and hazard to the workers that would be doing the D&D work and the dismantlement of the buildings in current time as well as packaging and shipping the waste. The wait period allows natural radioactive decay to take place, which will ultimately lower the dose rates. When the dose rates are lowered after this wait period the D&D work can go on with lower risk and hazards. Lein explained the reduction that would take place using several graphs.

Member Chaudhry asked what the level of commitment by future generations would be. Will they simply sit on it and say somebody back there in 2006 decided they would sit on this for 75 years and that's it. He questioned whether the government and public will honor that commitment? Reed held that question for the panel.

Lein explained that 75 years was chosen because most of the large activated components including the bioshield, the thermoshield and the reactor vessel, will decay to a level of 100 mrem/hr in that time. He said that at that level and below it's standard radiological work. Levels above 100 mrem/hr are high radiation areas and there is more complexity and risk. The control rod blades and internals will also reduce. They will not be as low as the 100 mrem/hr but they will be more manageable. The transportation hazards would also be reduced to a 10,000-fold reduction in dose rates.

The next steps are review of the draft Feasibility Study and Proposed Plan, discussion of the preferred alternative with the CAC, a public comment period, and the Record of Decision.

A panel made up of Les Hill and project staff that included Bruce Lein, Chuck Adey, and Dennis Quinn were introduced to answer questions. Reed said that the goal tonight was not to debate the Alternatives but to get a clear understanding of what the Alternatives are.

Member Guthy asked why the half-lives ranged from 2.7 to 8.8.

Dennis Quinn explained that activation depends on the different materials. Steel for example contains iron and that leads to Iron-55, which has a 2.7-year half-life. There is also cobalt, which leads to Cobalt-60. That has a 5-year half-life. The control rod blades contain europium, which has an 8.8-year half-life.

Member Guthy asked why the clean buildings were to be removed.

Les Hill said the ancillary buildings external to the confine building will eventually become occupational injury risks. The buildings are obsolete. They're no longer required and it's sound business to prevent accidents to take the buildings down. In addition some of the older buildings contain asbestos and other types of non-radiological hazardous materials.

Reed went back to Iqbal's question, which was over the long period of time, 75 years, for the whole project. Where's the level of confidence that the commitment is there to do all the things that are being discussed for the out years.

Les Hill said that in the end the Record of Decision, if the decision is made for some number of years, whatever the number is, will be an enforceable commitment. It will be a legally binding commitment and will be enforced by the EPA and the NYSDEC.

Member Chaudhry asked why no alternatives were considered that would have faster cleanup than Alternatives B and C but take longer than Alternative D.

Les Hill said a number of years was looked at that would give the Lab a substantial dose rate reduction. The experience in the industry with other reactors was also looked at. Hanford has a 75-year agreement with the state of Washington. Commercial power reactors were reviewed. The NRC has something called safe store and they contemplate a 60-year wait period. Based on industry experience, the duration is not excessive. We also looked at trying to make sure that there were sufficient dose rate reductions where a lot of the risks and hazards could be eliminated.

Reed asked what's the quickest duration. You have Alternative D, which ends in 2012. When does that remediation process begin?

Hill said in order to remove the reactor in that timeframe, it's a five or six year project starting now. That's as promptly as the job could be completed.

Member Kaplan asked how the HFBR job compares with Hanford?

Hill said it's similar in that it's a graphite-moderated reactor. There are the same issues; long-lived isotopes, extremely high dose rates, and transportation.

Member Kaplan said if the starting dose rate is 80 million mrem/hr how could you possibly consider 2009 or 2012. In 2009, you're talking about maybe one half-life. In 2012, maybe two half-lives? 2012 gets you down to roughly 20 million mrem/hr. If the target is 100 mrem/hr how can you possibly consider 2012?

Hill said Alternative D was included as one of the alternatives, there are technologies that exist to remotely, using robots, dismantle highly radioactive components such as those at the HFBR. So you can mitigate the dose rates with the use of these tools and a lot of this would be done under water. When we start talking about how you go about doing this inevitably you talk about comparisons of these of these different alternatives. The technology does exist to take the facility apart in the present day but we're going to talk about some of the ramifications and issues associated with that in a future meeting.

Member Kaplan said that the point he was making is that on slide 22 Bruce implies that the target of 100 mrem/hr is what you'd like to have to minimize risk to the workers. Correct?

Hill said that assumes you would not use the underwater systems.

Member Kaplan said that if 100 mrem/hr is the target, then even by 2012 you're orders of magnitude, many orders of magnitude, above that even with underwater and anything else you

may want to do. How can you consider putting a worker in the position of facing that kind of dose rate?

Hill said that when the alternatives are discussed you'll see that we would approach that job in a completely different fashion.

Member Heil asked for a description of the control rod blades.

Bruce Lein said that the control rods were used as absorbing material to absorb the neutrons that control the fission reactions. They were located around the fuel. The fuel would have been located in the center of the vessel. There are eight control rods that come in from the top and eight from the bottom. There are 16 control rod blades inside the vessel. The materials are europium and dysprosium clad by stainless steel. The majority of the neutron absorption is performed by the europium and dysprosium. They are operated by motors and they were designed to be taken apart. We could use remote handling tools to take them apart and disassemble them from up in the shielding area.

Reed asked why they are called control rod blades instead control rods.

Lein said that the control rod is basically the whole system. The blade is about 2 feet long. The rest of the system is extension tubes, motors, and everything else associated with the system. The blade is just the part in the core that's used to absorb and control the neutrons.

Hill said the control rod blades have been removed in the past in the connection with the normal operation of reactor facilities. They were designed to be removed. When they were taken out of service they were placed in the spent fuel pool.

That operation has already happened. That type of element has been removed from the vessel when it was operated. The biggest factor was it was done underwater to provide shielding to lower the dose rates plus some of the operation was done from the other side of the biological shield. All these things were in place so the dose rate to the worker was never anywhere near the dose rate of 80,000 rem/hr.

Member Biss asked if the difference between B, C and D was the way the work was going to be done. If it's going to be done sooner you're going to have to use a different method. She asked that the method be described.

(Tape switched)

Hill said the demolition of the reactor facility at that time would be very similar to types of things that we can do, for example decommission and dismantle the fan house, or dismantle the stack, or it would be very similar to the types of things we're going to do all through the BGRR in connection with the graphite pile. B and C will be very similar to these dismantlement operations. We really are just talking about general dismantlement techniques using standard equipment, track hoes, hands-on operating tools and equipment. When you look at Alternative D, it would involve very sophisticated tools and equipment. Because of the radiation dose rates most of the work would happen underwater so we'd have to design and build a floodable compartment around everything. Then you install special tools that have been use elsewhere in the industry. You have to manage the risks and hazards, but it can be done.

Reed asked what type of protective equipment would be used to protect people under Alternatives B and C.

Hill said normal health physics practices. Workers would be monitored for radiation exposure. Standard protective clothing, the actual measures to protect human beings themselves, would be the same, just the tools would be far more sophisticated.

Member Biss asked the difference in cost.

Hill said that the information on cost would be available at the next meeting.

Member Sprintzen asked what the percentage of long-lived isotopes was in the HFBR and what would be left after 75 years.

Dennis Quinn said there are two main components that are long-lived. They are Nickel-63 which has a 100-year half-life and that's a very weak beta emitter meaning it doesn't cause a lot of radiation dose. It can be handled fairly easily even at relatively high levels. The other is Holmium-166 and it's in the control rod blades. There isn't that much there, but it has a 1200-year half-life. It's a gamma emitter.

Member Sprintzen commented about the liability of the enforcement of the remedy chosen. He sees all kinds of enforcement procedures being overlooked or overridden. He doesn't share Hill's confidence that because it's legally binding that would mean it will be enforced.

Member Garber asked about the on-site facilities that have strong radiation shielding and on the other side people do very productive experiments. Has there been any thought that in the waiting period there might be some type of reuse of the facility?

Hill said that the industrial reuse of the facility was looked at. No feasible alternative function or service use has been found.

Member Jordan-Sweet asked that more information be added to the Alternatives timeframe such as a breakdown of the radiological inventory for each row, the elements and their half-lives and the percentages of each one, and the cost at each step.

Hill said that information would be provided during the comparison of the alternatives.

Member Conklin asked about preventing accidents in the ancillary buildings. Less than one percent of the actual radiation that's of concern is associated with these. Are you getting rid of these buildings because they're old and you want new ones? Are you getting rid of these buildings because you have the money to do it? Or are you saying that you have absolutely no use for these buildings.

Hill said that there is absolutely no use for the buildings. If you were to put the HFBR into some kind of long-term surveillance and maintenance program that was some number of years you would like to shrink the footprint back to the confinement building to minimize it. The more buildings you have drives up the surveillance and maintenance costs. You have to go and survey these buildings periodically. You look at the cost of taking them down versus the cost of maintaining them in a safe condition. In the overall scope of the job, these buildings will be inexpensive to remove. It doesn't make sense to maintain them.

Member Conklin didn't hear any option for encasement of the core as an alternative. One of the options talked about for the BGRR was that there was the possibility of encasement and we wouldn't have to send our problems out to everyone else around the country. It could stay here under safe conditions. I didn't hear anything like that in this case. You have a bioshield there that if you listen to what you say is very very successful in what it's been able to accomplish. Why can't that bioshield and that unit be encased and we wouldn't have to worry about passing on the legacy, if it could be encased safely.

Hill said that in the BGRR feasibility study and PRAP one of the observations was that in the case of the BGRR even if it was entombed you would still have to provide surveillance monitoring. You're going to have to watch it. In the case of the BGRR you had really an

indefinite period of time for the long-lived isotopes. In the case of the HFBR you also have the holmium, which also has a fairly long half-life so you still have a similar situation in that you have to provide surveillance and monitoring to manage, monitor and maintain residual contamination. When we did the analysis of the BGRR we concluded that that there were some unmanageable risks and uncertainties about managing it. We just didn't view that as a viable alternative for the HFBR.

Member Conklin commented on the future of the technology of decommissioning. You're talking 75 years in the future. If you look at what could be done 75 years ago and look at what can be done now and project that another 75 years, I still would think that entombment might be a good alternative. Considering you may have, and of course this is a question mark, but if we had some faith in the future.

Reed asked for clarification on the type of accidents in the buildings.

Hill said he meant standard industrial accidents. People going into the buildings and tripping, fall hazards, electrical apparatus becoming aged and defective, people getting hurt.

Member Walker asked if the CAC could see a timeline during the next discussion. There are a lot buildings that are being taken down. He'd like to see how it all falls in together. Will you be using the same crew, will they just move along from building to building?

Member Shea asked for a breakdown of all the radionucluides according to all the different categories and even the decay products and their breakdown. That would be helpful. She said that her question was about the time difference for the removal of the control rod blades in Alternatives C and D. Is that because of the different method being used? I don't understand why it would be very dangerous for the exposure to the workers and yet under D it's a longer period.

Lein said that if you look at D, all the activities are done by the end of 2012. The control rod blades will come out sometime earlier and all the rest of the activities will take until the end of 2012. In C, the control rod blades will be taken out by 2009 and the rest of the activities aren't completed until after 75 years.

Member Shea asked if there's been an analysis of the alternatives in regard to a threat of terror and how that relates to what's left, the radioactive risk involved with having these products and transporting them.

Hill said that the comparative analysis would have greater detail on the materials that remain. But the materials that remain in the HFBR are activated steel and components. The building will remain heavily secured. The items are encased inside the vessel, inside of concrete bunkers and the like. From a theft standpoint, you'd have to get in there with heavy equipment and be in there quite some time to take the control rod blades or any of the internals out. It's a robust building, what remains isn't dispersible in any kind of event. It's not flammable. It's steel and concrete.

Member Henagan asked about transportation. Have the governing bodies been approached yet on moving 416,000 curies through the city? Is moving it over water an option? What is the plan for moving the material off the island?

Hill said that they were in the stage of evaluating the alternatives. When we go through the process with DOE and the regulators, as the process evolves we will work closely with the communities that are involved in the transportation. That has yet to begin, but it will when we zero in on a preferred alternative.

Reed asked the CAC if they wanted to keep going or extend the discussion to the next meeting. The CAC agreed to take the questions from the members with their cards already up.

Member Kaplan asked what the dates were of the next steps. He expressed concern that they would be asked to review massive documents on very short notice.

Hill said that the Feasibility Study was going to DOE and the regulators later this month. Then we will be in the position to start talking about the comparative analysis of the four alternatives. We will be looking at a public comment period very late this spring or early summer.

Member Giacomaro said that assuming that Alternative D is the preferred alternative, has a site plan been developed for what the 13 acres could be used for in the future after 2012.

Reed said this discussion would be continued at the next meeting along with additional information.

Member Evanzia read his proposed changes to the draft thank you letters. "Your support of BNL is important to everyone on Long Island and the nation. Indeed, BNL's work directly impacts the reputation and standing of the U.S. as a global science and technology leader." It just makes it a little clearer. In the third paragraph the change he suggested was that the last sentence should read, "The CAC is completely independent of the Lab." The rest of the sentence is not necessary.

Reed asked Jean Jordan-Sweet if the changes were okay with her. She indicated they were. No one had any questions or further changes and a motion was made to accept the letters as changed. The motion was seconded and approved with four abstentions.

10. Agenda Setting

April 06 Agenda
HFBR
Peconic River

The meeting adjourned at 9:38 p.m.

2006 Affiliation		First Name	Last Name	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Chart Key - P = Present															
ABCO (Garber added on 4/10/02)	Member	Don	Garber	P	P	P									
ABCO	Alternate	Doug	Dittko												
Brookhaven Retired Employees Association	Member	Graham	Campbell		P	P									
Brookhaven Retired Employees Association (L. Jacobson new alternate as of 4/99)(A. Peskin 5/04)	Alternate	Arnie	Peskin		P										
CHEC (Community Health & Environment Coalition (added 10/04)	Member	Sarah	Anker	P		P									
	Member	Adrienne	Esposito	P											
Citizens Campaign for the Environment (Ottney added 4/02-takenoff 1/05 Mahoney put on)	Alternate	Brendan	Mahoney	P	P										
E. Yaphank Civic Association	Member	Michael	Giacomaro	P	P	P									
E. Yaphank Civic Association (J. Minasi new alternate as of 3/99) (M. Triber 11/05)	Alternate	Matthew	Triber												
Educator	Member	Audrey	Capozzi												
Educator (B. Martin - 9/01)	Alternate	Bruce	Martin												
Educator (A. Martin new alternate 2/00) (Adam to college 8/01)(add. alternate 9/02)	Alternate	Adam	Martin												
Environmental Economic Roundtable (Berger resigned, Proios became member 1/01)	Member	George	Proios	P											
Environmental Economic Roundtable (3/99, L. Snead changed to be alternate for EDF)	Alternate	None	None												
Fire Rescue and Emergency Services	Member	Joe	Williams												
Fire Rescue and Emergency Services	Alternate	Don	Lynch												
Fire Rescue and Emergency Services	Alternate	James	McLoughlin		P										
Friends of Brookhaven (E.Kaplan changed to become member 7/1/01)	Member	Ed	Kaplan	P		P									
Friends of Brookhaven (E.Kaplan changed to become member 7/1/01)(schwartz added 11/18/02)	Alternate	Steve	Schwartz			P									
Health Care	Member	Jane	Corrarino	P		P									
Health Care (as of 10/02 per JD)	Alternate	Mina	Barrett												
Huntington Breast Cancer Coalition	Member	Mary Joan	Shea	P		P									

2006 Affiliation		First Name	Last Name	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Huntington Breast Cancer Coalition	Alternate	Scott	Carlin												
Intl. Brotherhood of Electrical Workers/Local 2230	Member	Mark	Walker	P	P	P									
IBEW/Local 2230	Alternate	Philip	Pizzo												
L.I. Pine Barrens Society	Member	Richard	Amper												
L.I. Pine Barrens Society (added P. Loris 6/05)	Alternates	Elina	Alayeva			P									
L.I. Progressive Coalition	Member	David	Sprintzen	P	P	P									
L.I. Progressive Coalition	Alternate	None	None												
Lake Panamoka Civic Association (Biss as of 4/02)	Member	Rita	Biss	P	P	P									
Lake Panamoka Civic Association (Rita Biss new alternate as of 3/99)	Alternate	Joe	Gibbons												
Long Island Association (Groneman replace 10/05)	Member	Lauren	Hill	P											
Long Island Association	Alternate	William	Evanzia		P	P									
Longwood Alliance	Member	Tom	Talbot	P	P										
Longwood Alliance	Alternate	Kevin	Crowley												
Longwood Central School Dist. (switched 11/02)	Member	Barbara	Henigin	P	P	P									
Longwood Central School Dist.	Alternate	Allan	Gerstenlauer												
NEAR	Member	Jean	Mannhaupt												
NEAR (prospect taken off ¾)(blumer added 10/04	Alternate	Karen	Blumer												
NSLS User	Member	Jean	Jordan-Sweet	P	P	P									
NSLS User	Alternate	Peter	Stephens												
Peconic River Sportsmen's Club (added 4/8/04)	Member	John	Hall	P		P									
Peconic River Sportsmen's Club	Alternate	Jeff	Schneider												
Ridge Civic Association	Member	Pat	Henagan	P	P	P									
Science & Technology (added 1/13/05)	Member	Iqbal	Chaudhry		P	P									
Town of Brookhaven	Member	John	Turner												
Town of Brookhaven	Alternate	Anthony	Graves	P											
Town of Brookhaven, Senior Citizens	Member	James	Heil	P	P	P									
Town of Brookhaven, Senior Citizens (open slot as of 4/99)	Alternate	None	None												
Town of Riverhead	Member	Robert	Conklin	P	P	P									
Town of Riverhead (K. Skinner alternate as of 4/99)	Alternate	Kim	Skinner												
Wading River Civic Association	Member	Helga	Guthy	P	P	P									
Wading River Civic Association	Alternate	Sid	Bail												