



November 16, 2005

Ms. J.B. Culpepper  
Acting Planning Director  
Town of Chapel Hill  
405 Martin Luther King Jr. Blvd.  
Chapel Hill, NC 27514-05705

**Subject: UNC-Cogeneration Facility – Special Use Modification (File No. 792.H.2)  
Response to Questions for Town Council**

Dear Ms. Culpepper:

Attached you will find our responses to the questions forwarded by Town Staff on behalf of Citizens and Town Council members at our Public Hearing on November 9<sup>th</sup>, 2005.

Additionally, we have enclosed a copy of the “outcomes document” that was referred to in our presentation. As stated in the meeting, in the negotiation with the neighbors at the time we needed to replace the coal silos, we agreed that future boiler expansions at the Cogeneration Facility complex would be limited to natural gas or fuel oil only; we are not asking for any boiler expansions as part of the modification. In other words, we are not requesting any increase in our steam production capacity or in the capacity to burn coal.

I hope this information clarifies the points of concern that were raised at the November 9<sup>th</sup> meeting.

With this submittal and the other information in the record, the University has submitted substantial, competent and material evidence to support the University’s application for the Special Use Permit modification.

Sincerely,

Anna A. Wu, AIA  
Director of Facilities Planning

Enc: Response to November 9<sup>th</sup> Questions  
Outcomes Document

cc: Pat Crawford  
Carolyn Elfland  
Mary Jane Felgenhauer  
Bruce Runberg

Responses to Questions Raised at the November 9, 2005 Public Hearing on the  
University of North Carolina at Chapel Hill's  
Special Use Permit Modification Request

---

1. What is the nature of the surveying currently being done on the south side of McCauley Street (Please verify the location and provide photographs in the next presentation)? Is the surveying associated with the current application to upgrade the Cogeneration facility, such as for steam or electrical supply lines? Is any of the area surveyed outside of the public right-of-way and on private property not owned by the University? Have neighbors been notified of this work?

Response: The surveying on McCauley Street was related to a ductbank (conduit encased in concrete) project that will connect the Cameron Avenue substation to the Manning Drive substation. The ductbank will contain 5 layers, 4 for electrical cables and 1 for telecommunications cables, with 5 conduits per layer.

The University stopped the surveying immediately when it learned of the work at the Council meeting on November 9, and held a meeting for neighbors on November 14, 2005 to update them on this project and on the project to replace the 1939 steam tunnel that runs between the Cogeneration Facility and the campus.

The exact route of the western end of the ductbank is unknown at this time. The plan has been to run the ductbank in the public right-of-way on McCauley Street, but the potential for locating it within the steam corridor also is being explored. In either case, there will be no use of private property. The need for the ductbank was identified in the late 1990's and the construction is being funded by the 2000 Higher Education Bonds.

On May 18, 2004, the University held a meeting for neighbors to explain several upcoming projects, including the ductbank and the projects included in the special use permit modification request. The notification for this meeting was mailed with the Town letter regarding the SUP modification request that went to all property owners within 1,000 feet of the Cogeneration Facility property boundary.

Recently, a new design firm took over the responsibility for the ductbank project, and contracted for completion of a new site survey and underground utilities investigation. In hindsight, when the design firm changed and the project began anew, the University should have held another meeting for the neighbors.

The surveyors were told to begin work on the main campus near the South Chiller Plant, where the construction of the ductbank is time-sensitive, and to survey 20 feet on either side of the right-of-way on University property. The surveyors took it upon themselves to conduct surveying work in McCauley Street without prior authorization, and surveyed 20 feet on either side of the right-of-way although they were entering upon private property.

At the Town Council meeting, citizens also asked about soil boring investigations that have been underway since mid-October. These soil borings, which have been completed, were related to the replacement of our 1939 steam tunnel, which will be constructed entirely on University property. The steam tunnel is being replaced because of loss of structural integrity on account of age. The University sent preliminary information about this project by e-mail for distribution to the neighborhood and at the time of the November 9 hearing was in the process of setting up a follow-up meeting.

At the November 14 meeting, the University staff and the neighbors agreed that the most appropriate time for follow-up on both projects would be in spring 2005 after surveying and preliminary design work are completed. In the interim, the University will establish a system for regular communication with the neighborhood.

2. How can the University have an expansion of the Cogeneration Facility without an increase in the amount of coal used?

Response: When constructed, the coal-fired boiler capacity of the Cogeneration Facility was sized to accommodate campus growth. As the campus grows, and the need for steam increases, more of the coal-fired boiler capacity is utilized and more coal is burned. The University has not said there will be no increase in the amount of coal burned. The University has said that it is not requesting an increase in the coal-burning capacity of the plant. This situation is similar to a kitchen equipped with a four-burner range. Initially one may not use all the burners but as the years go by, the usage of the existing burner capacity of the range increases as you expand the use of the range to include all four burners.

3. Has UNC installed the most advanced scrubbers available to reduce as much as possible the air pollutant point source emissions? (This is not a questions about what is required by federal or state laws, and it is apart from the fluidized bed combustion system.)

Response: The coal-fired boilers at the Cogeneration Facility do not use scrubbers. Emissions from these boilers are controlled by combination limestone injection/baghouse control systems. The control efficiency of these systems meets or exceeds the control efficiency of state-of-the-art scrubber systems. No scrubbers are necessary on the natural gas fired boiler.

4. If not, why not?

Response: Scrubbers used to control emissions from coal-fired boilers are primarily used on pulverized coal-fired units in the electric utility industry. The scrubbers inject alkaline materials into a post-combustion device to control acid gas emissions, primarily sulfur dioxide. In contrast, the Cogeneration Facility uses circulating fluidized-bed boilers where alkaline material is injected directly into the bed and later collected in a baghouse to achieve reductions in emissions.

The baghouses are the best available particulate matter control systems, reducing these emissions by greater than 99.5%.

In the case of hazardous air pollutant emissions, including toxic particulate metals and mercury, the EPA recently promulgated a new regulation requiring the installation of the best available control technologies on new and existing coal-fired boilers. The required emission limits are based on an EPA survey of the best controlled boilers throughout the nation. The limestone injection/baghouse control systems at the Cogeneration Facility exceed the level of control required by these new standards. Based on actual stack test measurements, the Cogeneration Facility reduces mercury emissions by greater than 90% below the EPA's estimate for uncontrolled emissions and more than 50% below the mercury limit for new well-controlled boilers.

It is of note that federal standards require the limitation of sulfur dioxide emissions to a maximum of 1.2 pounds per million BTUs and also require uncontrolled sulfur dioxide emissions to be reduced by 90%. Most facilities comply with these requirements by burning high sulfur content coal, which makes it easier to achieve the 90% reduction but results in higher emissions. The Cogeneration Facility burns very low sulfur coal in combination with a better than 90% efficient control system, and achieves emissions that are only approximately 10% of the federal 1.2 pounds per million BTU limit. By comparison, the Cogeneration Facility emissions are only half the emission rates of home heating furnaces using #2 fuel oil.

In summary, the level of emissions control achieved by the control systems and fuels used at the Cogeneration Facility exceeds the performance of the typical high efficiency scrubber systems used on well-controlled coal-fired boilers in the utility industry.

5. How is the Emissions Inventory determined? (i.e., a measuring device on stacks, computer modeling based on amount and kind of coal, changing methodology, etc.?)

Response: Emissions of sulfur dioxide and nitrogen oxides from the coal-fired boilers are measured in pounds per million BTUs and recorded by computerized continuous emissions monitoring systems. The nitrogen oxides emissions from the large natural gas-fired boiler also are measured by a continuous emissions monitoring system. These values are multiplied by the measured amount of fuel burned and the heating value of that fuel to calculate emissions values for these pollutants.

Mercury and hydrogen chloride emissions were measured in pounds per ton of coal by stack tests of the coal-fired boilers in 2003 and 2004. These values are multiplied by the tons of coal burned to calculate the emissions values. Combustion emissions of all other pollutants from the boilers are based on the measured amounts of each fuel burned and USEPA and N.C. Division of Air Quality (DAQ) emission factors. Particulate emissions from coal, limestone, and ash handling systems are also based on the measured amounts of materials handled and USEPA and DAQ emission factors.

6. A comparison with the 1999 Emissions Inventory shows some pollutant emissions about the same, some reduced, and some increased. How do you account for the changes or lack of changes?

Response: The Cogeneration Facility uses multiple fuels, and the proportions burned change from year to year. Pollutants vary with the type of fuel used. As a result, each year pollutants associated with a particular fuel may be higher or lower.

7. Specifically, the 1999 Emissions Inventory showed 1.2 tons of actual emissions of PM-2.5 and 2004 showed 4.4 tons of actual emissions of PM-2.5 – small particulate matter. How do you account for such significant differences when the Carbon Monoxide for the two years was about the same (1,010 tons/Year for 1999 and 1,040.8 Tons/Year for 2004)?

Response: The small CO emissions increase from 1999 to 2004 was due to a correspondingly small increase in fuel consumption between the two years. The relatively larger increase in PM<sub>2.5</sub> emissions was due to a change in Division of Air Quality (DAQ) reporting requirements. PM<sub>2.5</sub> emissions are not measured directly, but must be calculated. The University was not required to submit PM<sub>2.5</sub> emissions in 1999; DAQ estimated the value based on PM<sub>10</sub> emissions. The University was required to submit PM<sub>2.5</sub> emissions in 2004, and calculated the value based on the EPA's uncontrolled PM<sub>2.5</sub> emission factors and on a conservatively-low estimate of baghouse control efficiency.

8. A study published in The Journal of the American Medical Association pointed to the threat of small particulate matter. There have been other studies indicating these dangers and the fact that “there appears to be no level below which effects disappear.” Has UNC made any assessment of how far small particulate matter from the plant could travel, depending of course on the weather circumstances?

Response: Because all significant particulate matter sources at the Cogeneration Facility are controlled by baghouses, the Division of Air Quality has never requested any dispersion modeling or a compliance demonstration with the PM<sub>2.5</sub> national ambient air quality standards (NAAQS).

9. Has UNC calculated how far any of the pollutants travel, both those that would be heavier, such as mercury, and the lighter gases?

Response: The University has conducted dispersion modeling of sulfur dioxide and nitrogen oxides emissions out to a distance of 30 miles from the plant. The highest potential ambient concentrations of these two pollutants have been shown by the modeling to occur near the plant and to be well below the safe ambient air quality standards.

In addition to this modeling, Dr. Doug Crawford-Brown conducted a dispersion modeling and risk assessment for mercury emissions from the Cogeneration Facility. Again, this study focused on the maximum mercury concentrations that could occur near the plant, and was not intended to determine the distance at which ambient mercury concentrations would be

reduced to zero. This study showed that the maximum potential health risks near the plant from mercury emissions were also well below the minimum safe levels.

10. UNC has own some sustainability awards for its work. But as far as energy efficiency, what hard data does UNC have about either before or after installing energy efficiency measures in older buildings or comparison between newer and upgraded older buildings of comparable sizes?

Response: The University prepares a strategic energy plan annually. The 2005 report is available at

[http://sustainability.unc.edu/office/Energy/PDFs/SEWP%20Final%20Sep\\_%2027\\_05.pdf](http://sustainability.unc.edu/office/Energy/PDFs/SEWP%20Final%20Sep_%2027_05.pdf)

The University has allocated over \$15 million for HVAC improvements in 10 buildings, \$2.4 million for window replacements in 6 buildings, and \$1.2 million for smaller energy upgrades such as replacing older fluorescent lights and installing variable speed motors, and constructed a 5 million gallon thermal energy storage tank that can be charged at night when costs are lowest.

In addition, commissioning of new buildings, and retro-commissioning of existing buildings is being carried out, with 10 buildings to be assessed for retro-commissioning in 2005-06. The University is developing the capability to collect before-and-after data on energy efficiency projects. Automated steam, chilled water, and electric meters are being added to each building.

11. What monitoring methods are there in each building to insure that all windows and doors are closed and as air tight as possible when being heated and cooled?

Response: The University operates a central energy management controls system (EMCS) that provides continues data on energy usage of most campus buildings. The operators of the EMCS are trained to notice unusual deviations, and HVAC mechanics are sent to investigate the cause.

12. Are the buildings that have window air conditioning units on campus being cooled by the power plant as well?

Response: No. Buildings with window air conditioning units are not connected to the central chilled water system.

13. It is my understanding that there are currently no technologies that can remove greenhouse gases from such facilities as this one. Though UNC has given the amount of coal burned in certain years, what are the greenhouse gases emitted and how much of each?

Response: Greenhouse gases are not currently regulated air pollutants and are not reported in the annual Emission Inventories submitted to the Division of Air Quality. The University calculated the carbon dioxide emissions from the Cogeneration Facility, based on the actual coal burned in 2004, at approximately 345,335 tons. This value was included in Dr. Doug Crawford-Brown's presentation to the Town Council on November 9, 2005. The only other

greenhouse gases emitted by the Cogeneration Facility are methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O). Based on the actual coal burned in 2004, the University calculates that the emissions of methane and nitrous oxide were 3.59 tons and 201.6 tons, respectively. By providing combined heat and power, the Cogeneration Facility produces half the greenhouse gases that would be emitted if the same energy were obtained from a coal-fired electric generating utility.

14. Could this coal burning facility be converted to the use of #2 low-sulfur fuel oil that I understand is used elsewhere on the campus?

Response: No. The coal boilers can only operate at 70% of their rated capacity using solely #2 fuel oil, and our boilers have been able to sustain this 70% capacity only for very short periods, i.e. less than one hour during tests. The #2 fuel oil is used as a supplemental fuel only.

15. Could this coal burning facility be converted to the use of bio diesel fuel when this or other such alternative fuels become more plentiful?

Response: Biodiesel is similar to #2 fuel oil, and we would expect similar results as described above in question 12.

16. UNC officials have said many times that the Main Campus is almost built out. Given that, why is UNC asking for such a large power plant expansion now?

Response: The University is asking for an increase in the electricity generation capacity of the plant, not the steam production capacity of the plant. The increase in electricity generation capacity is needed in order for the University to serve the electricity needs of critical facilities, including UNC Hospitals, and to improve the efficiency of the plant by better matching electricity generating capacity to the increase in generation of steam.

17. Does Carolina North figure into this expansion proposal in any way?

Response: No. The improvements requested in the special use permit modification are needed to serve the main campus, not Carolina North.

18. How is UNC proposing to heat, cool and provide electricity to Carolina North?

Response: Chancellor Moeser has made the commitment that Carolina North will be a model of sustainable development. While no specific energy plan for Carolina North has been developed at this time, cogeneration including alternative and renewable energy sources is being explored. A potential alternative fuel source is the landfill methane gas from the Eubanks Road landfill.

**OUTCOME DOCUMENT  
DECEMBER 9, 1998**

*Facilitated Meeting Process Between  
UNC-Chapel Hill Cogeneration Facility Representatives  
and  
Cogeneration Facility Neighbors  
Facilitated by: Orange County Dispute Settlement Center*

***I. Statement of Outcome --***

Cogeneration Facility Neighbors participating in the facilitated meeting process agree to support the University proposed project to replace the existing coal storage silos. A summary of the proposal is briefly presented below. This statement of support is based on certain assumptions concerning the urgency of the need to replace the silos and is conditional on certain specific expectations and assurances by the University. These assumptions and conditions are also enumerated below.

***II. Specific Proposal for Coal Silo Replacement Project --***

- A. Two existing silos will be demolished
- B. New silos will be reconstructed in the same location as existing silos
- C. New silos will be designed and constructed using mass flow technology
- D. New coal handling equipment added as part of the silo replacement project will be designed in accordance with noise level criteria that is considerably more restrictive than criteria used for the original silo design
- E. Measures will be developed and implemented to make noise from the demolition and construction processes minimally disruptive
- F. Existing coal pile will be used during silo demolition and re-construction; protocols will be developed to minimize both pile use and fugitive dust
- G. New silos will be 138' tall and 58' wide (24' taller and 2' narrower than the existing silos that are 114' by 60'); additionally the new silos have a +/- 3' wall or parapet at the top perimeter of silos (effectively making the new silos 27' taller than the existing)
- H. A bucket elevator structure similar to the existing, but totally enclosed, will be affixed to the west side of west silo. The conveyors on top of the silos will also be totally enclosed. In concept, the enclosures will be similar to what was depicted on the photo-renderings for silo appearance options.
- I. Withdrawal equipment below new silos, as well as transfer equipment needed to move coal into boiler building, will be re-configured, improved and enclosed
- J. Coal pile will remain as inactive storage after new silos are built; protocols will be followed to minimize both pile use and fugitive dust

***III. Present Situation, Basic Assumptions and Accepted Facts --***

- A. Cogen Facility is the sole source of steam for UNC-CH campus and UNC Hospitals
- B. Coal is the principal fuel for the Cogen Facility's primary steam producing boilers



**OUTCOME DOCUMENT  
DECEMBER 9, 1998**

- C. 20,000 tons of coal storage (10,000 tons active and 10,000 tons inactive) at the Cogen Facility site is the minimum capacity required to support Cogen Facility operations
  - 1. Silos provide active storage capacity of 10,000 tons
  - 2. Outside covered pile provides inactive storage capacity of 10,000 tons
- D. Flow problems make the existing silos defective and dangerous; to ameliorate flow problems the rated capacity of silos has been reduced by one-half
- E. Silo repairs are neither feasible nor cost effective; would also result in reduced active capacity
- F. Reduced capacity increases the possibility that coal pile will be used; lack of prolonged periods of extreme weather, lack of coal industry labor strikes, and lack of major delivery disruptions have prevented pile use to date
- G. Five different engineering consultants have all concluded and recommended that the most viable method of correcting the silo flow problems is to demolish the existing silos and to construct two, new mass-flow silos in the same location
  - 1. Mass-flow means first in, first out
  - 2. Height of new silos shall be 138'; diameter of new silos shall be 58'
- H. Height and diameter of silos are determined by required capacity; significant cost premium associated with shorter silos
- I. No other Cogen Facility site locations and no off-site locations were found to be economically or functionally suitable for coal storage facilities
- J. No other physical arrangement, configuration or number of silos were found to be economically or functionally suitable for coal storage facilities
- K. The need to resolve silo flow problem is immediate and the project budget is limited
- L. Given the elimination of all other coal storage alternatives, replacing the existing coal storage silos with two, new mass-flow silos meets all Cogen Facility coal storage and boiler operating requirements and:
  - 1. is the most economical
  - 2. is the closest to existing in outward appearance
  - 3. is the closest to existing in operability and functionality
  - 4. is the closest to what the Town approved in 1986
  - 5. has the least additional impact on surrounding neighborhoods
  - 6. provides opportunity to incorporate noise abatement into design
  - 7. although mass and height of silos will be increased, provides opportunity for improved silo appearance and aesthetics
  - 8. restores on-site storage capacity to original design level
  - 9. recommended by several different design consultants
- M. It is not financially feasible (either via capital investment or annual operating expense) to convert the Cogen Facility to primary fuels other than coal; natural gas is 3 times the equivalent cost of coal, fuel oil is about double the equivalent cost of coal
- N. Primary boilers can use natural gas and fuel oil as supplemental fuels
- O. Back-up boilers will be used when primary boilers are unavailable or when additional capacity is required and will only use natural gas or fuel oil

**OUTCOME DOCUMENT  
DECEMBER 9, 1998**

***IV. Expectations and Assurances –***

- A.** That neighbors will continue to be involved in the silo design; primarily concerning those issues related to outward appearance and architectural detail
- B.** That neighbors will be involved in the development of reasonable contract specifications, primarily concerning those issues related to the demolition and construction process, including noise, dust, traffic, work hours, work practices
- C.** That new silos will significantly reduce the potential for post-construction use of the coal pile; whether perceived or real, the neighbors associate a number of undesirable conditions (i.e. noise, dust, health related factors) with the use of the coal pile, minimizing usage of the coal pile is important neighbor priority
- D.** That post-construction coal pile protocols (as detailed herein) will be utilized
  - 1.** The coal pile will be used only as an emergency measure to support the operation of the Cogeneration Facility in its role of providing vital University and Hospital services and only when the University has satisfied the following stipulations:
    - a.** The supplemental fuels, natural gas and/or fuel oil, will be used to the maximum extent possible to extend the period of usage of coal stored in the active coal silos. Such usage of supplemental fuels shall be initiated as soon as a possible threat that will consume the active coal storage has been identified.
    - b.** The coal pile will be used only after the coal supply in the silos has been exhausted, or after a failure of essential equipment needed to operate the coal silos.
    - c.** If at all possible, neighbors will be notified at least three days in advance of the likelihood of the declaration of a coal pile use emergency. If not possible to give such advance notice, the University will provide an explanation as to why the three day notice was not given.
  - 2.** During the period of emergency usage of the coal pile the University will do the following:
    - a.** The supplemental fuels, natural gas and/or fuel oil, will be used to the extent technically possible to minimize usage of the coal pile.
    - b.** To the extent possible, available coal deliveries and required equipment maintenance and repair will be scheduled so as to make possible the transfer of coal directly to the boilers, without cycling through the coal pile.
    - c.** Special attention will be given to minimizing usage or replenishment of the coal pile on weekends.
    - d.** Fugitive dust preventive treatments will be utilized to meet other Special Use Permit requirements during the period of usage of the coal pile or at any time when the grass cover is removed. Water will be used if needed to control dust during reclaim or stacking operations, and a sealant treatment will be applied while the pile is inactive.
  - 3.** Usage of the coal pile shall terminate as soon as the active coal supply has been reestablished and the coal pile has been returned to full storage capacity.
  - 4.** The University agrees to maintain a database of names, street addresses, telephone numbers, fax numbers and electronic mail addresses for neighbors

**OUTCOME DOCUMENT  
DECEMBER 9, 1998**

who have specifically requested to be included on an active notification list; such list will be updated annually.

- E. That UNC-CH will make noise abatement a primary design consideration; the goal is to reduce coal handling equipment noise to a level comparable to rest of the Cogen Facility (i.e. full compliance with both day and nighttime Town Noise Ordinance criteria), and to not add any new noises that will be perceived in the community
- F. That UNC-CH's noise abatement consultant (presumably Dr. John Stewart, Noise Control Services Inc.) will continue to serve as he has in the past, providing assurances that selected noise abatement methods are adequate and effective. While a significant reduction in noise associated with coal handling operations is anticipated, even the best technology cannot completely eliminate all coal handling or Cogen Facility noises.
- G. That future boiler expansions at the Cogeneration Facility complex will be limited to natural gas or fuel oil only
- H. That neither the coal storage capacity nor the coal fired boiler capacity are increasing as a result of the silo replacement project
- I. That all existing Cogen Facility operations are in full compliance with all applicable environmental regulations
- J. That all planned Cogen Facility operations will be in full compliance with all applicable environmental regulations
- K. That future Cogen Facility expansions will be in accordance with the "Steam System Master Plan" prepared by RMF Engineering, Inc. and dated February 1997.

**V. Summary of Facilitated Meeting Proceedings --**

- A. Met weekly between July 15, 1997 and November 4, 1998 (except 9/2/98); average meeting duration +/- 3 hours
- B. Facilitated meeting participants:
 

Bill Christian	109 Cameron Glen Drive
Rebecca Clark	205 Crest Drive
Ed Cockrell	102 Cameron Glen Drive
Allison & Lee Corum	227 Vance Street
Baird Grimson	407 Ransom Street
Bob Hollister	104 Cameron Glen Drive
Pierre Morell	404 Brookside Drive
Allen Stutts	102 Locust Court
Bruce Runberg	UNC-CH Facilities Services
Jim Mergner	UNC-CH Facilities Services
Ray DuBose	UNC-CH Cogeneration Systems
John Masson	UNC-CH Cogeneration Systems
Andy Sachs (facilitator)	Orange County Dispute Settlement Center
Gene Poveromo (observer)	Town of Chapel Hill Planning Department
- C. UNC addressed concerns and answered questions regarding:
  - 1. Cogen Facility fuel uses and inventory requirements
  - 2. Cogen Facility storage options (methods, locations, capacity)

**OUTCOME DOCUMENT  
DECEMBER 9, 1998**

3. Cogen Facility role in campus growth
  4. health and safety issues related to environmental matters
  5. noise and noise abatement
  6. silo height
  7. visual mass of silos
  8. outward appearance and location of silos
  9. demolition and construction disruptions
  10. coal pile use
- D. Major neighbor concerns and UNC-CH responses developed for, presented and discussed at facilitated meetings:**
- 1. increased height of silos**
    - a. height of silos is a function of the internal silo geometry
    - b. shape of conical outlets and size of cylinder determine silo capacity
    - c. mass flow requires steeper outlets and longer cylinders (i.e. more height)
    - d. on cost-per-ton basis, cost premium paid for shorter silos
  - 2. desire to make the silo solution better than what exists (i.e. less obtrusive)**
    - a. physical size of silos determined by capacity required; need 10,000 tons
    - b. site limitations do not allow for more, smaller silos; or silos in other locations
    - c. aesthetics of new silos will improve via roof top parapets and equipment enclosures
    - d. simpler, cleaner outward appearance for silos with minimal architectural detail planned
    - e. facilitated meeting discussions regarding the appearance issue are ongoing
  - 3. coal pile use and/or possible elimination of pile altogether**
    - a. inactive coal pile is integral part of Cogen fuels inventory; provides for emergency supply of coal
    - b. new silos will significantly reduce the possibility that pile use will be required
    - c. protocols will be followed to manage use of pile (including pre-construction, during construction and post-construction periods)
  - 4. desire for Cogen Facility to increase reliance on fuels other than coal and/or ways to provide for steam (BTU) needs without using coal**
    - a. main Cogen Facility boilers are designed to burn coal; the cheapest and most plentiful fuel
    - b. natural gas and fuel oil are used as supplemental fuels
    - c. significant capital investment would be required to convert coal burning boilers for alternate fuel use
    - d. alternate fuels would substantially increase yearly operating expenses; currently natural gas is three times the equivalent cost of coal, fuel oil is about double
    - e. back-up boilers are designed to use only natural gas and fuel oil
  - 5. perception that silo replacement project was increasing the capacity of facility**
    - a. coal storage capacity is not increasing; current silos were designed for 10,000 tons, new silos will hold 10,000 tons

**OUTCOME DOCUMENT  
DECEMBER 9, 1998**

- b. existing coal pile will remain and will continue to accommodate roughly 10,000 tons
  - c. coal fired boiler production capacity is not increasing; each boiler has a capacity of 250,000 pounds per hour
  - d. back-up boilers improvements accommodate load growth; back-up boilers do not use coal
- 6. neighborhood disruptions from demolition and construction activities; concern about never-ending construction**
  - a. UNC-CH committed to working with neighbors to make silo demolition and re-construction minimally disruptive
  - b. design consultants will solicit neighbor input during the design phase in developing appropriate and effective contract provisions re/ work practices, work hours, traffic, noise, lights, dust, etc.
- 7. desire for facility to be clean, quiet and dark at night**
  - a. UNC-CH remains committed to this requirement
  - b. since 1992, approximately 35 individual noise, light and environmental type projects have been completed to help achieve this goal
  - c. noise consultants will continue to play a major role in all future Cogeneration Facility projects, providing assurances that noise abatement measures are adequate and effective
- 8. assurance that Cogen Facility meets all environmental standards**
  - a. the Cogeneration Facility currently operates in full compliance with all applicable environmental standards
  - b. all new facilities will be designed and constructed in accordance with the latest applicable standards
- E. Two Informational Handouts (newsletters) were drafted and distributed to property owners and residents within approximately 1,500 feet of the Cogen Facility; the newsletters provided details about the silos problems and discussed the facilitated meeting resolution process.**
- F. A public meeting was held on October 7, 1998 to present the results of the facilitated meeting process to the public at large. A total of 660 Informational Handouts were distributed by mail announcing the meeting and, other than people who had participated in the facilitated meeting, only two (2) neighbors representing one (1) household attended.**

***VI. Proposed Schedule --***

- A. Submit Conceptual Plans to Town of Chapel Hill Community Design Commission**
  - 1. Submit by November 1 – Design Commission Meeting on November 18**
- B. Start detailed design; will begin immediately and should be completed in about twelve months (SUP process and design work to proceed concurrently)**
- C. Incorporate Design Commission Comments into SUP Modification Request and Submit Application**
  - 1. Submit by December 8 – Public Information Meeting January 14**
  - 2. Submit by December 22 – Public Information Meeting January 28**

**OUTCOME DOCUMENT  
DECEMBER 9, 1998**

- D. Request Expedited Review – Formal request usually accompanies SUP application
  - 1. Requires Town Council Action (minimum of two (2) Council meetings)
  - 2. (January 1999 time frame)
- E. Town Department Head Review Comments Received
  - 1. January 28 (for a December 8 application submittal)
  - 2. February 11 (for a December 22 application submittal)
- F. Incorporate Department Head Comments and Re-submit Application Package
  - 1. Allow two (2) weeks for UNC to incorporate all comments and re-submit
  - 2. Allow four (4) weeks for Planning Department to process and review
- G. Review by Town Boards and Commission -- April/May 1999 timeframe
  - 1. Planning Board
  - 2. Transportation Board
  - 3. Community Design Commission (2<sup>nd</sup> review)
  - 4. Historic Commission (courtesy review at applicant's request?)
- H. Town Council Public Hearing & Town Council Action
  - 1. May/June 1999 timeframe
- I. Complete detailed engineering design (October/November 1999)
- J. Solicit contractor bids and award contract; normally takes 3 to 4 months (late 1999)
- K. Demolition and construction period; anticipate a contract award in early 2000, total project duration will be approximately 18 months (project complete in late 2001)

**VII. What's Next --**

- A. Continue meetings to reach closure on:
  - 1. silo design, outward appearance and architectural detail; includes possible simulation of architectural features after "plain" silos are constructed
  - 2. reasonable limitations on contractor construction practices and procedures
  - 3. any other miscellaneous leftover issues from facilitated meetings

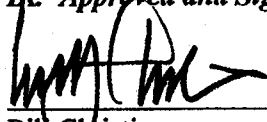
**VIII. Statement of Support --**

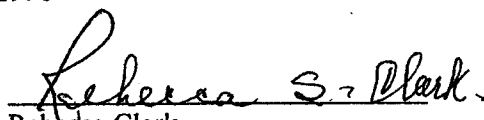
- A. It is the belief of the undersigned neighbors participating in the facilitated meeting process, with University of North Carolina at Chapel Hill Cogenerations Systems representatives, that the University has made a good faith effort to inform, listen, cooperate and accommodate our concerns, as they relate to the coal silo replacement project.
- B. We therefore conditionally support the University's efforts to proceed with a project to replace the two existing silos with two new mass-flow silos.
- C. Our conditional support is based on the assumptions, facts, expectations and assurances stated in this document.
- D. UNC-CH representatives confirm that all assumptions and facts included in this document that relate to the coal silo replacement project and/or to the operation of the Cogeneration Facility are accurate and complete.
- E. UNC-CH representatives agree to continue acting in good faith to ensure that all expectations and assurances included in this document are realized.

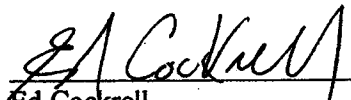
**OUTCOME DOCUMENT  
DECEMBER 9, 1998**

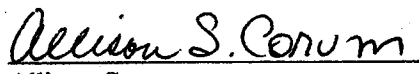
F. There are as yet unresolved issues concerning which consensus could not be reached. Statements addressing these issues are appended as part of this document.

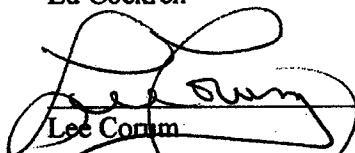
***IX. Approved and Signed on December 9, 1998***

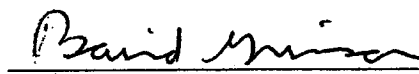
  
Bill Christian

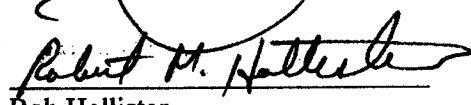
  
Rebecca Clark

  
Ed Cockrell

  
Allison Corum

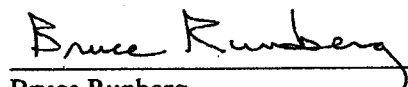
  
Lee Corum

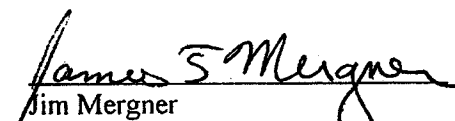
  
Baird Grimson

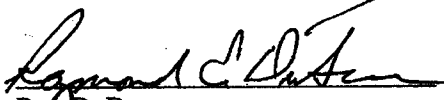
  
Bob Hollister

  
Pierre Morell

  
Allen Stutts

  
Bruce Runberg

  
Jim Mergner

  
Ray DuBose

  
John Masson

***X. Statements of As Yet Unresolved Issues (appended) --***

## NEIGHBORHOOD CONCERNS AND RECOMMENDATIONS

### APPENDIX TO OUTCOME DOCUMENT

#### FACILITATED MEETING PROCESS BETWEEN UNC-CHAPEL HILL COGENERATION FACILITY REPRESENTATIVES AND NEIGHBORS OF COGENERATION FACILITY

Future changes in the management and development of the UNC Cogeneration Facility remain a major concern for the neighborhoods surrounding the facility.

Under the development plan discussed in the Outcome Document, the Cogen-Neighbors will experience the following negative impacts:

1. The new mass flow silos will be taller and will continue to have an adverse visual impact on the surrounding neighborhoods.
2. Long-term plans for the Cogen Facility call for increased coal consumption and increased coal shipments into the neighborhood raising increased environmental concerns due to increased noise, vibrations and particulate emissions.

The prior Cogen-Facility Special Use Permit, dated 23 June 1986 and as modified on 22 June 1998, included a special term and condition requiring that "the use and development will maintain or enhance the value of contiguous property." Any future special use permit must include similar terms and conditions.

The Cogen-Facility Neighbors, whose signatures appear below, recommend that that following language be included as a term and condition of any and all future special use permits:


That the University prepare plans for the future development of the Cogeneration Facility that minimize the scale of the buildings and structures and serve to minimize the negative impacts of the Facility due to noise, vibrations and particulate emissions. Future Cogeneration Facility operation, management, planning and development shall maintain or enhance the value of contiguous properties. As used in this provision

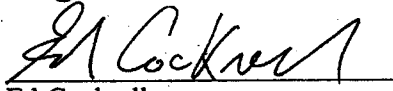


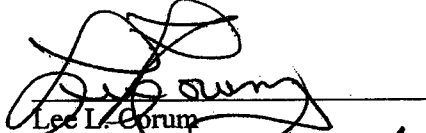
"contiguous properties" shall include all property located within 2,000 feet of the boundary of the Cogeneration Facility.

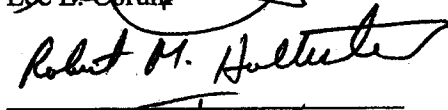
Additional Reservations: Our conditional support of the Outcome Document is based on the assumptions, facts, expectations and assurances stated in that document. Current University consideration to expand student enrollment may dramatically alter the assumptions and support a revised plan for development of the Cogen Facility. The University has made the commitment that all future boiler expansion at the Cogeneration Facility complex will be limited to natural gas or fuel oil only. If larger University enrollment targets require a revision of the Cogeneration Facility development plan, the University should reevaluate the recommendations set forth in the Outcome Document.

Approved and signed the 9<sup>th</sup> day of December, 1998

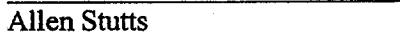
  
Bill Christian

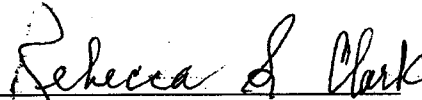
  
Ed Cockrell

  
Lee L. Corum

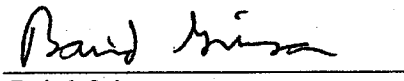
  
Robert M. Hollister

  
Bob Hollister

  
Allen Stutts

  
Rebecca Clark

  
Allison S. Corum

  
Baird Grimson

  
Pierre Morell

## NEIGHBORHOOD CONCERNS AND RECOMMENDATIONS

### APPENDIX TO OUTCOME DOCUMENT

Some neighbors, especially those of Cameron Glen, are concerned that the proposed Option # 1 will lower the value of adjoining properties. The concern is that the increased height and mass of the silos will harm the neighborhood and will adversely affect home values. The Cameron Glen neighborhood requested that the University agree to engage in an objective process whereby knowledgeable but disinterested parties would evaluate the impact, if any, of the silos on neighboring property values. In an attempt to deal with this issue constructively and without resort to litigation, it was suggested that the following statement be included in this Outcome Document:

"The visual impact of the new silos and the adverse impact of the construction process may affect the power plant neighbors, especially Cameron Glen. The University agrees to pursue an objective process to evaluate and value the possible negative impact on Cameron Glen and other neighborhoods, and agrees to enter into a binding arbitration process to reach a settlement if it is found that the silo project will adversely affect the temporary or long term property value of neighboring properties."

The University refused to include this or a similar statement in the outcome document, and it refuses to acknowledge that property values may be affected. The University will not agree to enter into a process or procedure to evaluate the possible impact on property values, nor will it agree to any form of arbitration. This position is difficult to understand, given that both the original and the modified Special Use Permit requires that the University develop plans that,

"... will serve to integrate the appearance of the Power Plant with surrounding residential areas so that the use and development will maintain or enhance the value of contiguous property." (See Condition # 19 of the original SUP and # 9 of the Modified SUP.)

The neighbors believe that the review and consideration of this current application for another - and significant - modification to the SUP be based on the essential issue of property value impact. The neighbors acknowledge that the new silos will serve a public purpose. This does not mean, however, that the town's review criterion of "maintaining or enhancing the value of contiguous property" can be waived.

Recently, the Town Council decided that relative to a proposed office park in the Meadowmont development, the definition of "contiguous" would extend to 2,000 feet for "legal purposes of determining property value impact."

At issue here in the Power Plant instance is an industrial use, not an office park, that is entirely surrounded by residential uses.

The neighbors were told that the University would not sign the Outcome Document if it contained any reference whatsoever to the issue of property values. Insofar as the property value issue is an essential part of review procedure, we can only make conjecture about what objective is served by not acknowledging it any way. One important purpose of our facilitated process was to openly discuss concerns and issues, with the objective of pre-empting more costly and time-consuming procedures to resolve disagreements.

In addition to the property value question, some neighbors disagree with statements that appear in the Outcome Document. For example, a number of options that were looked at would move the coal storage silos away from the power plant and place them on land outside of town. These options would have eliminated the impact of the silos on the neighbors and on the town altogether.

In the opinion of some neighbors, options # 8 or # 13 would have lowered the impact of the silos on surrounding neighborhoods by orienting the silos in a north-south instead of an east-west configuration. This would lower the visual impact of the silos from Cameron Avenue and would possibly have the added benefit of blocking noise that has been a problem for neighbors to the south of the plant. These options were rejected primarily because of cost.

Some neighbors also disagree with the conclusions reached in "L" of part III of the document. The operative phrase is "Given the elimination of all other coal silo options...". Most of the other other options were eliminated by the university on purported operational or financial considerations. In fact, some of the other options:

1. would be more economical than the Option # 1 that was chosen;
2. would remove the coal storage silos to a location outside of town and thus eliminate the impact of the silos on the neighbors and the town;
3. would still assure an uninterrupted supply of coal;
4. would greatly reduce the impact of trains, coal grinding, dust, and bucket operation on the neighbors; and
5. would do more than anything else to maintain property values and improve community relations.

  
\_\_\_\_\_  
Bill Christian  
\_\_\_\_\_  
Bob Hollister