



APPLICATION FOR A COASTAL ZONE ACT STATUS DECISION

**State of Delaware
Department of Natural Resources & Environmental Control
Office of the Secretary**

March 25, 2011
Edge Moor Energy Center Auxiliary Boiler
Calpine Mid-Atlantic Generation, LLC

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CZA Status Decision Application Instructions

1. Complete all parts of the application. For questions which are not applicable to your project, do not leave blank; present a statement that clearly states why the section is not applicable to your project.
2. Because all applicants' projects are different, this word document template will provide you flexibility for needed space to answer the questions. Please insert additional lines for text where needed for your application. If appropriate, attach extra pages referencing each answer by the corresponding question number.
3. Submit eight complete hard copies of the application to:

State of Delaware
Department of Natural Resources & Environmental Control
Office of the Secretary
89 Kings Highway
Dover, DE 19901

***See Exhibit 1**

In addition to the eight hard copies, submit a complete electronic "pdf" copy of the permit application on cd-rom. ***See Exhibit 2**

4. Comply, if required, or as requested by the DNREC Secretary, with [7 Delaware Code, Chapter 79, Section 7902](#). If requested, but not completed, your application will not be considered administratively complete until this form is reviewed.

***See Exhibit 3**

5. Be sure to include your permit application fee of \$3,000; otherwise the application will not be considered administratively complete. Make checks payable to the "State of Delaware."
6. Be advised that the application for a Delaware Coastal Zone Act Status Decision is a public document, which may be displayed at DNREC offices, public libraries, and the web, among others. If this application requires you to place confidential information or data in the application to make it administratively complete, note the Delaware Freedom of Information Act ([29 Delaware Code, Chapter 100](#)) and [DNREC's Freedom of Information Act Regulation](#), Section 6 (Requests for Confidentiality), for the proper procedure in requesting confidentiality.

Note: This application template was last revised by DNREC on August 31, 2007. Please discard any previous versions.

P A R T 1

CERTIFICATION BY APPLICANT

Edge Moor Energy Center Auxiliary Boiler

Under the penalty of perjury pursuant to 11 Delaware Code § 1221-1235, I hereby certify that all the information contained in this Delaware Coastal Zone Act Status Decision Application and in any attachments is true and complete to the best of my belief.

I hereby acknowledge that all information in this application will be public information subject to the Delaware Freedom of Information Act, except for clearly identified proprietary information agreed to by the Secretary of the Department of Natural Resources & Environmental Control.

Print Name of Applicant: James W. Klickovich

Signature of Applicant

Title: Regional Director, Environmental Health & Safety

Date: March 25, 2011

PART 2

APPLICANT INFORMATION AND SITE IDENTIFICATION

2.1 Identification of the applicant:

Company Name:
Calpine Mid-
Atlantic
Generation, LLC
Address: 500
Delaware Ave.,
Wilmington, DE
19801
Telephone: 302-468-5310
Fax: 302-468-5401

2.2 Primary contact: Please list the name, phone number and email of a preferred contact within your company in case the DNREC needs to contact you regarding this status decision.

Jim Klickovich
(302) 468-5310
james.klickovich@calpine.com

2.3 Site of proposed project (if different than above):

Edge Moor Energy Center
200 Hay Road
Wilmington, Delaware 19809

2.4 Authorized agent (if any):

Name:
Address:
Telephone:
Fax:

If you have an authorized agent for this status decision process, provide written authorization from client for being the authorized agent.

2.5 Is the applicant claiming confidentiality in any section of their application?
NO

If yes, see instructions on page 3.

P A R T 3

PROJECT SUMMARY

Provide a one -page summary describing the proposed project or use. Include a brief quantitative description of any anticipated environmental impacts.

Calpine Mid- Atlantic Generation, LLC is a limited liability company and an indirect wholly-owned subsidiary of Calpine Corporation (Calpine), a Houston, Texas based corporation. On July 1, 2010 Calpine Corporation acquired the generation assets of Conectiv Delmarva Generation, LLC (CDG) including the Edge Moor Power Plant (now referred to as the Edge Moor Energy Center). Calpine Mid-Atlantic Generation, LLC operates the Edge Moor Energy Center (Energy Center).

Calpine is committed to helping meet the needs of an economy that demands more and cleaner sources of electricity. To that end, Calpine has implemented a pollution reduction/control measure that significantly reduced emissions from the Edge Moor Energy Center. This pollution reduction/control measure was implemented on July 1, 2010, the date of the acquisition of the CDG generating assets, and involved the permanent termination of the firing of coal in two of the large electric generating boilers at the Edge Moor Energy Center specifically Units 3 and 4.

The proposed project is the replacement of existing reboilers at the site with a small auxiliary boiler to provide steam for heating the facility's residual oil tank, piping system, and buildings. The boiler modeled for this project is a Cleaver Brooks 350 HP fire tube boiler model that will be equipped with flue gas recirculation and low NOx burners. The boiler will be capable of burning both natural gas and No. 2 oil, and natural gas will be the primary fuel source. The auxiliary boiler will be a stand-alone unit located within the existing boiler building at the Edge Moor Energy Center and will not produce any steam for electric generation.

Steam for heating uses (ancillary steam) at the Edge Moor Energy Center is currently provided by ancillary steam from the firing of one or more of Edge Moor Energy Center's Units 3, 4 or 5 as part of the electricity generating process. This ancillary steam heated the reboilers, providing for steam-to-steam generation capability from these units. Some steam from the reboilers has in the past been supplied to DuPont for use at its adjacent manufacturing facility (this practice will terminate summer 2011). The reboilers were installed at the Energy Center in 1981, at which time the State of Delaware issued a status decision finding that the project did not require a permit under the Coastal Zone Act.

As stated above, Calpine has elected not to fire the Edge Moor Energy Center's Unit's 3 and 4 with coal and now primarily fires these electric generating Units on an intermittent basis with natural gas. As a result, the costs to operate the Edge Moor Units solely to provide steam to the reboilers have become significant. The installation of the auxiliary boiler would satisfy the ancillary steam needs of the Energy Center and avoid the need to fire one of more of Edge Moor Energy Center's Units 3, 4 or 5 for non-electrical generation purposes. Any emissions from the operation of the proposed auxiliary boiler will be more than offset by the avoided emissions of firing any existing Edge Moor Unit

for non-electrical generation purposes especially given the emissions reductions realized from the pollution reduction/control measure of the permanent termination of firing coal. There would be a ~95% reduction in heat input (mmbtu) between firing the auxiliary boiler (on natural gas) versus firing Edge Moor Energy Center's Unit 3 or Unit 4 at minimum load.

In sum, the implementation of Calpine's recent pollution control initiative (the elimination of firing a polluting solid fuel (coal) under base load conditions) has caused the collateral need for Calpine to secure a small auxiliary source (aux. boiler) of steam to provide heating services for the existing oil tanks, piping systems and buildings. The proposed auxiliary boiler will provide for an efficient mechanism to satisfy these needs.

[The proposed auxiliary boiler will not be used to generate electricity.]

P A R T 4

PROJECT INFORMATION

- 4.1 Is the proposed project entirely or partly a new, or improved, or extended pier or other ship docking facility?
NO

If yes, will it be used at least in part for bulk cargo transfers by the applicant?
N/A

- 4.2 Is this project entirely for pollution control purposes?
The Project is the result of a pollution reduction/control measure that was recently put in place by Calpine. The pollution reduction/control measure consists of the permanent termination of the firing of coal in the large electric generating boilers Units 3 and 4. Because of the termination of the firing of coal in these Units the primary fuel will now be natural gas and as such the Units will operate at a lesser frequency/capacity factor than they have historically under coal fired (i.e. based load) operations thus reducing short term and long term air emissions associated with the combustion process. Since the Units will not operate as often, they can not economically be relied on to provide steam for heating purposes thus the need for the small auxiliary boiler.

- 4.3 Is this project a new research and development facility?
NO

- 4.4 Is this project a new or expanding (flow rate) public sewage wastewater treatment plant?
NO

- 4.5 Will the proposed project meet the following definition of “Manufacturing” as found in the [Coastal Zone Act](#): “Manufacturing means the mechanical or chemical transformation of organic or inorganic substances into new products, characteristically using power driven machines and materials handling equipment, and including establishments engaged in assembling component parts of manufactured products, provided the new product is not a structure or other fixed improvement.”
NO

If no, explain what kind of activity will be carried out at this project site:

The auxiliary boiler will provide steam for heating purposes at the Edge Moor Center in lieu of steam currently supplied by the firing of one or more of Edge

Moor Energy Center's large electric generating facilities-Units 3, 4 or 5. This project will allow the Edge Moor Energy Center to avoid firing of Units 3, 4 or 5 at the Energy Center for non-electrical generation purposes (steam for heating purposes), thereby reducing costs and facility air emissions.

- 4.6 Will the project have the following equipment or facilities?
- | | |
|-------------------------------------|------------------------------------|
| a. Smoke stacks | YES (one) |
| b. Tanks | NO (no new chemical or fuel tanks) |
| c. Distillation or reaction columns | NO |
| d. Chemical processing equipment | NO |
| e. Scrubbing towers | NO |
| f. Pickling equipment | NO |
| g. Waste treatment lagoons | NO |
| h. Smelters | NO |
| i. Incinerators | NO |

- 4.7 Will the project use 20 acres or more?
NO

How many acres will it use?

The auxiliary boiler will be located inside the existing Energy Center's boiler building in the general area of Unit 2 (retired).

- 4.8 Does this facility appear in Appendix B of the Coastal Zone Act Regulations (the list of the nonconforming uses)?
NO

If no, proceed to question 4.11

- 4.9 Will the proposed activity described in this application occur entirely within the lines delineating the area of nonconformity for this site, as seen in the Appendices of the Regulations?
N/A

- 4.10 Will the proposed activity or use straddle this line?
N/A

If yes, describe what equipment, facilities, or machinery will be within the delineated area of nonconformity AND what will be outside of this area of nonconformity:

4.11 Is the proposed project or use part of a manufacturing use that was in operation prior to and on June 28, 1971?

YES, the Edge Moor Energy Center has been recognized by DNREC as a manufacturing use in connection with previous coastal zone status decision requests and permit applications.

4.12 Has this facility ever been granted a Coastal Zone Act Permit?

YES

If yes, please provide the following information:

Applicant Name	Permit Number	Date Issued
Conectiv Delmarva Generation	1 T* -Edge Moor Docket	7/17/1973 (boiler 5 construction)
Conectiv Delmarva Generation	11 6 T* -Edge Moor Docket	1980 (boiler 3 & 4 conversion from oil to coal)
Delmarva Power & Light	221 -Hay Road Docket	8/22/1988 (transferred to Conectiv Delmarva Generation, Inc. on 8/30/2000 as Permit Number 221(T))
Delmarva Power & Light	248 P -Hay Road Docket	6/21/1990(transferred to Conectiv Delmarva Generation, Inc. on 8/30/2000 as Permit Number 248(T))
Conectiv Delmarva Generation.	327 -Hay Road Docket	10/16/2000 (transferred to Conectiv Delmarva Generation 12/3/2001)

*A transferred permit. Original permit holder was Delmarva Power & Light.

4.13 Does the new or expanded use involve any change in existing:

- a. processes? NO (connecting to existing systems)
- b. facilities? NO (exhaust stack previously mentioned)
- c. buildings? NO
- d. emissions discharge? YES (**there will be a net reduction in air emissions and water discharges**)

If yes, please explain each in detail. Use the following tables to help describe any new or changed air or water emissions:

Air Emissions

Unit 3 minimum load:

Firing natural gas 0.07 lbs/mmbtu NOx 0.003 lbs/mmbtu SOx

Firing coal 0.12 lbs/mmbtu NOx 0.32 lbs/mmbtu SOx

Unit 4 minimum load:

Firing natural gas 0.11 lbs/mmbtu NOx 0.005 lbs/mmbtu SOx

Firing coal 0.12 lbs/mmbtu NOx 0.32 lbs/mmbtu SOx

Proposed auxiliary boiler full load:

Firing natural gas 0.03 lbs/mmbtu NOx 0.001 lbs/mmbtu SOx

Pollutant	Existing Emissions		Net Increase/Decrease		New Total Emissions		Percent Change (compare tons/year)
	Lbs/day	Tons/year	Lbs/day	Tons/year	Lbs/day	Tons/year	

~~SEE COMMENTS ON PERMITS WITH A CHANGE THAT MAKES SENSE THAT SHOWS PERMITS FOR THE PROPOSED PROJECT.~~

Water emissions

There will be a net decrease in condensing water use when the proposed auxiliary boiler is used in lieu of one of more of the large electric generating boilers. Unit 3 even at minimum load discharges 103.7 Mgalpd (condensing water). Unit 4 even at minimum load discharges 160.3 Mgalpd (condensing water). The proposed auxiliary boiler even at full load discharges zero galpd (condensing water).

Pollutant	Current Discharge Concentration (ppm)	New or Changed Discharge Concentration (ppm)	Current Discharge		Net Increase/Decrease		New Total Emissions	
			Lbs/day	Tons/year	Lbs/day	Tons/year	Lbs/day	Tons/year

4.14 Will this project directly or indirectly increase plant production over present capacity?
NO

If yes, explain in what way and by how much:

4.15 Will this project result in the production of any new products, either directly or indirectly, at this facility?
NO

If yes, list each new product:

4.16 List materials and/or ingredients to be utilized by this proposed project and how they will be transported to the site.

There are no new materials and/or ingredients to be utilized by the proposed project that are not already being used on site already and they are transported to the site by truck.

P A R T 5

PROJECT SITE AND ZONING

5.1 In a separate attachment, provide a map of appropriate scale to clearly show the site. Mark important natural features and project buildings and processing equipment of the proposed project such as roads, wetlands, railway sidings, drainage ways, tanks, sewer systems, water mains, wells, etc.

***See Exhibit 4**

5.2 What is the current SIC code for the proposed use?

The nature of the business of the Edge Moor Energy Center is electric power generating facility, and it's SIC code is 4911.

5.3 What is the current zoning and planned land use of the proposed project site?

The Edge Moor Energy Center is currently zoned "Heavy Industrial", and the installation and operation of the auxiliary boiler is consistent with the current use of the facility.

5.4 Will the proposed project require a zoning change?
NO

If yes:

A. To what classification will it be changed?

B. What zoning authority is responsible for reviewing and approving the change?

5.5 Will this project require new supporting facilities?
NO

If yes, describe each facility, and how it will be used:

P A R T 6

PROJECT DESCRIPTION AND PROJECT IMPACTS

- 6.1 On a separate attachment labeled “**Project Description,**” provide a concise but complete description of the proposed project or use. Be sure to answer the following questions:
- a. How does the project relate to any existing manufacturing operations and facilities (if this is not for an entirely new manufacturing plant)?
 - b. What effects will there be, if any, on land use acreage, manufacturing production capacity, modification of current product line(s), and safety risks to the public and to company employees?
 - c. Is this project or use a complete, single project, or is it part of a long-term, large-scale project that has other components to it that may need approval under the Coastal Zone Act at a later date?
 - d. If it is part of a larger project, describe the entire project in detail and mention ALL major machinery, facilities, land, products, and processes involved.
- 6.2 On a separate attachment labeled “**Environmental Impacts,**” provide a detailed and accurate impact analysis that describes the proposed project’s impacts on:
- a. air quality
 - b. local surface and ground water quality
 - c. surface and groundwater withdrawals
 - d. habitat loss
 - e. solid and hazardous waste generation
 - f. noise
 - g. odors
 - h. local aesthetic quality
 - i. any other notable factors not listed above
 - j. Provide a detailed statement describing the proposed project’s potential to pollute should equipment malfunction or human error occur, including a description of backup controls, backup power, and safety provisions.
- 6.3 On a separate attachment labeled “**Other Project Impacts,**” provide a detailed and accurate analysis on how the proposed project will impact each of the following (include both positive and negative impacts):
- a. the economy (corporate, state, county)
 - b. county and municipal comprehensive plans/ zoning
 - c. effect upon neighboring land uses
 - d. the impacts, if any, that *supporting facilities* will have on: the environment; economics of the area; zoning; neighboring land uses; and aesthetic quality.

Project Description

(Refer to Question 6.1)

REFERENCE PART 3 “PROJECT SUMMARY”

Calpine is committed to helping meet the needs of an economy that demands more and cleaner sources of electricity. To that end, Calpine has implemented a pollution reduction/control measure that significantly reduced emissions from the Edge Moor Energy Center. This pollution reduction/control measure was implemented on July 1, 2010, the date of the acquisition of the CDG generating assets, and involved the permanent termination of the firing of coal in two of the large electric generating boilers at the Edge Moor Energy Center specifically Units 3 and 4.

The proposed project is the replacement of existing reboilers at the site with a small auxiliary boiler to provide steam for heating the facility’s residual oil tank, piping system, and buildings. The auxiliary boiler modeled for this project is a Cleaver Brooks 350 HP fire tube boiler model that will be equipped with flue gas recirculation and low NOx burners. The auxiliary boiler will be capable of burning both natural gas and No. 2 oil, and natural gas will be the primary fuel source. The auxiliary boiler will be a stand-alone unit located within the existing boiler building at the Edge Moor Energy Center and will not produce any steam for electric generation.

Steam for heating uses (ancillary steam) at the Edge Moor Energy Center is currently provided by ancillary steam from the firing of one or more of the large Edge Moor Energy Center’s Units 3, 4 or 5 as part of the electricity generating process. This ancillary steam heated the reboilers, providing for steam-to-steam generation capability from these units. Some steam from the reboilers in the past was supplied to DuPont for use at its adjacent manufacturing facility (this practice will terminate summer 2011). The reboilers were installed at the Edge Moor facility in 1981, at which time the State of Delaware issued a status decision finding that the project did not require a permit under the Coastal Zone Act.

As stated above, Calpine has elected not to fire the Edge Moor Energy Center’s Unit’s 3 and 4 with coal and now primarily fires these electric generating Units on an intermittent basis with natural gas. As a result, the costs to operate the Edge Moor Units solely to provide steam to the reboilers have become significant. The installation of the auxiliary boiler would satisfy the ancillary steam needs of the Energy Center and avoid the need to fire one of more of Edge Moor Energy Center’s Units 3, 4 or 5 boilers for non-electrical generation purposes. Any emissions from the operation of the proposed auxiliary boiler will be more than offset by the avoided emissions of firing any existing Edge Moor Unit for non-electrical generation purposes especially given the emissions reductions realized from the pollution reduction/control measure of the permanent termination of firing coal. There would be a ~95% reduction in heat input (mmbtu) between firing the auxiliary boiler (on natural gas) versus firing Edge Moor Energy Center’s Unit 3 or Unit 4 at minimum load.

In sum, the implementation of Calpine’s recent pollution control initiative (the elimination of firing a polluting solid fuel (coal) under base load conditions) has caused the collateral need for Calpine to secure a small ancillary source of steam to provide heating service for existing oil tanks, piping systems and buildings. ¹³ The proposed auxiliary boiler will provide an efficient mechanism to satisfy these needs.

Environmental Impacts

(Refer to Question 6.2)

The installation and operation of the proposed auxiliary boiler at the Edge Moor facility will have a net environmental benefit from the facility's current operations. Air emissions and condensing water discharges will significantly decrease at the facility by avoiding the need to fire Units 3, 4 or 5 solely to provide steam for heating purposes. Individual environmental impacts are as follows:

Air Quality:

Calpine has implemented a pollution reduction/control measure that significantly reduced emissions from the Edge Moor Energy Center. This pollution reduction/control measure was implemented on July 1, 2010, the date of the acquisition of the CDG generating assets, and involved the permanent termination of the firing of coal in two of the large electric generating boilers at the Edge Moor Energy Center specifically Units 3 and 4. The implementation of Calpine's recent pollution control initiative (the elimination of firing a polluting solid fuel (coal) under base load conditions) has caused the collateral need for Calpine to secure a small ancillary source of steam to provide heating service for existing oil tanks, piping systems and buildings. The proposed auxiliary boiler will provide an efficient mechanism to satisfy these needs. The operation of the proposed auxiliary boiler in lieu of one or more of the large existing electric generating boilers will have a further positive impact on short term and long term air emissions.

Local Surface and Ground Water Quality:

The installation and operation of the proposed auxiliary boiler will have no impacts to local surface and groundwater quality.

Surface and Groundwater Withdrawals:

The installation and operation of the proposed auxiliary boiler will have no surface of groundwater withdrawals.

Habitat Loss:

The installation and operation of the auxiliary boiler will have no impact upon any animal or plant habitats. The auxiliary boiler will be installed within the existing boiler building at the Edge Moor Energy Center.

Solid and Hazardous Waste Generation:

The installation and operation of the proposed auxiliary boiler is not expected to result in the generation of hazardous waste. However in the unlikely event small quantities of hazardous waste are generated then the waste will be handled/managed/disposed of in accordance with all applicable Federal, State and Local requirements. Small quantities of solid waste that are generated will be handled in a similar manner.

Noise:

The proposed auxiliary boiler has manufacturer predicted sound levels of 85dB. As the auxiliary boiler is to be located within the existing Energy Center's boiler building, no negative environmental noise impact is expected from the operation of the boiler.

Odors:

The installation and operation of the proposed auxiliary boiler is not expected to be associated with odors and surely not with any odors emanating beyond the Energy Center property line.

Local Aesthetic Quality:

As the proposed auxiliary boiler is to be located within the existing Energy Center's boiler building, no negative aesthetic impacts are expected from the installation and operation of the auxiliary boiler. The exhaust stack from the auxiliary boiler will protrude through the roof of the existing boiler building extending ~10 ft. above the roof. Other existing vents extend through the roof.

Other Factors:

None

Potential to Pollute:

The proposed auxiliary boiler will be installed to ASME Section 1, ASME B 31.1 and NFPA 86 standards. The proposed auxiliary boiler will be covered by the Energy Center's updated Emergency Response Plans (ERP). The ERP covers among other things fuel transfer procedures, hazard evaluation, preparedness and prevention, spill response, waste management, site health and safety, training and drills, storm-water pollution prevention, etc.. The auxiliary boiler will be operated in accordance with standard industry-based operating procedures and good operating practices. The boiler will also meet DNREC's Division of Air Quality Management requirements with respect to Regulation #1102 Construction Permit limitations and associated operating procedures and operating restrictions. The potential for emission exceedances will be minimized through the use of state of the art monitoring systems, operator alert signals, automatic shutdown procedures and enhanced operator training.

Other Project Impacts

(Refer to Question 6.3)

Economic Impacts:

The positive economic impacts from the proposed project are two-fold. First, installation of the auxiliary boiler at the Edge Moor Center will require approximately 200 hours of construction employing approximately 15 construction workers during that period and other labor within the City of Wilmington and the State of Delaware, generating taxable revenue. Second, this project will allow the Edge Moor Energy Center to implement a business solution to avoid significant, unnecessary operating costs and will promote pollution reductions.

County and Municipal Comprehensive Plans/Zoning Impacts:

The proposed project is consistent with the current and future use of the property as found in the Comprehensive Plan for New Castle County.

Neighboring Land Use Impacts:

The proposed project will have no impact upon neighboring land uses. As previously stated the auxiliary boiler will be located within the existing Energy Center's boiler building and is consistent with the current use of the site.

Supporting Facility Impacts:

The proposed project will not require any new supporting facilities for either its installation or operation.

END OF APPLICATION

ATTACHEMENTS TO FOLLOW