



CAPE COD COMMISSION

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DATE: October 21, 1999 #JR-98033 (A)

TO: Norm Cowden
Southern Energy Canal, LLC
C/of Attorney D. Michael Ford, Esquire
72 Main Street
P.O. Box 665
West Harwich, MA 02671

FROM: Cape Cod Commission

RE: Development of Regional Impact
Section 12(i) of the Cape Cod Commission Act
Sections 2 and 3(e) of the Enabling Regulations Governing Review of
Developments of Regional Impact

APPLICANT: Norm Cowden, Southern Energy Canal, LLC

PROJECT: Canal Plant Redevelopment - Phase Two of Installation of SCRs on Unit
#1

BOOK/PAGE: Book 11961 Page 224
Book 11961 Page 226
Certificate of Title No.: 151549

9 Freezer Rd, Sandwich
Map 9a, Parcel 2

DECISION OF THE CAPE COD COMMISSION

SUMMARY

The Cape Cod Commission (the Commission) hereby approves with conditions the request of Mr. Norm Cowden, representing Southern Energy Canal, LLC for a Development of Regional Impact pursuant to Section 3(e) of the Enabling Regulations Governing Review of Developments of Regional Impact for Phase Two work to prepare Canal Station Unit #1 for installation of Selective Catalytic Reduction (SCR) pollution control technology. Phase Two work shall consist of the erection of a steel external frame structure to support the SCR, installation of ductwork, insulation and siding of the SCR, tying the SCR's ductwork into Unit #1, loading catalyst into the SCR, testing the SCR, and construction of the ammonia on demand (AOD) system. Including as described above, the Phase Two work shall also include the activities as outlined in a fax dated September 29, 1999 (specifically Exhibit A) received by the Commission on September 29, 1999. This decision is rendered as a result of a vote by the Cape Cod Commission on October 21, 1999.

The re-powering of the existing Unit #2 power generating unit is the subject of a

MEPA/Cape Cod Commission review. This review is on-going and has not been completed as of the date of this decision. It is not the subject of this decision.

PROJECT DESCRIPTION

The project which is the subject of this decision consists of the erection of a steel external frame structure to support the SCR, installation of ductwork, insulation and siding of the SCR, tying the SCR's ductwork into Unit #1, loading catalyst into the SCR, testing the SCR, construction of the ammonia on demand (AOD) system, and operation of the SCR and AOD system. Including as described above, the Phase Two work shall also include the activities as outlined in a fax dated September 29, 1999 (Exhibit A) received by the Commission on September 29, 1999.

PROCEDURAL HISTORY

In On December 29, 1998, Southern Energy Canal, LLC, submitted a Draft Environmental Impact Report (DEIR) to the Massachusetts Environmental Policy Act (MEPA) Unit for development of a third power generation unit at the existing Canal Station power plant in Sandwich. This project, Canal Unit #3/Canal Station Redevelopment (DRI# JR98033 and MEPA# 11703) was categorically included as a Development of Regional Impact (DRI) under Section 12(i) of the Cape Cod Commission Act. It was also a DRI based on Section 2 of the Cape Cod Commission DRI Enabling Regulations (revised, September, 1998). The project qualified as a Development of Regional Impact under Section 3(e) of the Enabling Regulations as commercial development which "involves new construction greater than 10,000 square feet."

On July 29, 1999, the Commission granted Southern Energy Canal, LLC a Development of Regional Impact Decision with conditions for Phase One of work to prepare Unit #1 and Unit #2 for installation of SCRs. Phase One work included construction of foundations, by-pass ducts and fan work. On the same day, the applicant submitted a request for Phase Two of the SCR work.

Subsequent to receiving the request for Phase Two of SCR installation, the applicant substantially altered their entire project. According to a press release received by the Commission on September 27, 1999, rather than building a new third unit, Southern Energy Canal, LLC is now proposing a major "re-powering" of Canal Unit #2 (Exhibit B).

Phase Two work includes the activities as outlined in a fax dated and received by the Commission on September 29, 1999 (Exhibit A).

A duly-noticed public hearing was held by a Commission Subcommittee on Wednesday, October 6, 1999 in Sandwich to allow public testimony on the applicant's request. At this hearing, the Subcommittee instructed the staff to draft a decision with conditions approving the applicant's request to perform work on the Canal Station site to prepare Canal Station Unit #1 for Phase Two of installation of Selective Catalytic Reduction (SCR) pollution control technology. The Subcommittee also held a public meeting on October 13, 1999 to discuss the draft decision.

At its regular meeting on October 21, 1999, the Commission reviewed a draft decision

and voted to approve, with conditions, the request of Mr. Norm Cowden, representing Southern Energy Canal, LLC for a Development of Regional Impact for Phase Two work to prepare Canal Station Unit #1 for installation of Selective Catalytic Reduction (SCR) pollution control technology. The vote was nine to two with the Chair abstaining.

MATERIALS SUBMITTED FOR THE RECORD

A. Materials submitted by the Applicant:

Southern, Press Release on redesign of Unit #2	9/27/99
Fax, from Southern, Description of Phase Two	9/29/99
Fax, from Attorney Ford, Information on transportation impacts from Phase One	9/30/99
Fax, Attorney Ford, Response to Staff Report	10/5/99
Southern, Perspective drawings (large size set)	10/5/99
Southern, Landscaping proposal to address view from railroad tracks (large size plan)	10/6/99
Southern, Site plans showing location of urea hydrolyzer and a drawing of the urea silos	10/6/99
Fax, Attorney Ford, Transportation information on Phase Two	10/12/99
Fax, Attorney Ford, changes to draft decision	10/20/99

B. Materials submitted by the State/Federal Agencies:

Letter, from Cape Cod Conservation District	9/15/99
Army Corps of Engineers, Letter on Freezer Road	10/6/99

C. Materials submitted by the Town:

July 23, 1999 letter from the Selectboard in support of SCR (resubmitted)	10/6/99
Letter from Town's air quality technical consultant	10/12/99
Letter from Town's air quality technical consultant	10/13/99

D. Materials submitted by the Public:

Letter, from Cape Clean Air, concerns about SCR with sample copies of a petition attached	10/5/99
Copies of a petition expressing concern about SCR	10/5/99
Letter, from Cape Clean Air, expressing concern that Commission tie installation of SCR on Unit #1 to a re-review	10/6/99
Letter, from Dr. Lornell, expressing concern about particulates and SOx emissions	10/6/99
Letter, from Matt Patrick, Self Reliance, expressing concern about SCRs and urging the Commission to make it subject to re-review	10/6/99
Fact sheet and report, from MASSPIRG, providing data on power plants in New England	10/6/99
Letter, from Cape Clean Air, expressing concern about SCRs and urging the Commission to make it subject to re-review	10/11/99
Letter, from Dr. Lornell, expressing concern about SCRs and urging the Commission to make it subject to re-review	10/12/99
Letter, from MASSPIRG, responding to points raised at the October 6, 1999 public	

hearing and expressing concern 10/12/99
 Article, "Toxic Releases from Power Plants," from *Environmental Science and
 Technology* (Vol.33, pgs. 3062-3067)
 Letter, from Cape Clean Air, recommends changes to draft decision 10/19/99

E. Materials submitted by the Cape Cod Commission:

Staff Report	9/30/99
Minutes (Public Hearing)	10/6/99
Minutes (Public Meeting)	10/6/99
Report from Dr. Knapp of Summit Environmental	10/11/99
Hearing Notice	Undated

The plans, photos and notice of public hearings relative thereto, the Commission's Staff Reports, exhibits, minutes of all hearings, and all submissions received in the course of the proceedings for the applicant's request to perform work on the Canal Station site to prepare Canal Station Unit #1 for installation of Selective Catalytic Reduction (SCR) pollution control technology as well as all materials submitted on file DRI#JR-98033, including the applicant's DEIR/DRI application, are incorporated into the record by reference.

TESTIMONY

Public Hearing – October 6, 1999

Attorney Michael Ford, of Stinson & Ford and Mr. Norm Cowden, representing the applicant, Southern Energy Canal, LLC explained the project.

Ms. Adams, the project planner, presented the Staff Report. She also noted the Commission had received a cover letter and petitions containing 2700 signatures from the Cape Clean Air group requesting certain conditions be considered by the Subcommittee.

Representative Nancy Caffyn asked what kind of oil would be burned in Unit #1. She also questioned why the Staff Report indicated there were no natural resources concerns with the proposed Phase Two work.

Mr. Dunham, Sandwich Town Administrator, re-submitted for the record a copy of the Board of Selectmen's July 23, 1999 letter as evidence of its support for installation of an SCR on Unit #1.

Ms. Katherine Kleecamp, representing the Cape Clean Air group, submitted a letter for the record.

Mr. Matt Patrick, representing Self Reliance, read a letter into the record and submitted a copy for the Commission's consideration. He urged the Subcommittee to consider a 3-year technical review and upgrade of pollution control devices.

Dr. Anna Manastis-Lornell expressed a concern over impacts to her patients from ammonia and particulate emissions. She advocated a 3-year technical review of the SCR and newer pollution control devices. She also stressed that additional remote air monitoring stations were needed.

Sharon Loberg noted a concern about air emissions.

Ms. Jane Estes read the petition statement for the Subcommittee. She noted that petitions with over 2700 signatures had been collected expressing concern about the air emissions and urging a review in three years.

Ms. Michelle Touring of MASSPIRG submitted a fact sheet and report on emissions from power plants for the record. She noted that the Canal plant was one of the "filthy five" power plants in New England.

Ms. Beth Ellis from Bourne said she was not completely for the Canal redevelopment project yet. She said the re-design of Unit #2 was progress.

Mr. Dunham, Sandwich Town Administrator, responded that the Town of Sandwich does not gain additional tax revenue from the project. He also said the Board of Selectmen supported the SCR on Unit #1 after doing their own air quality review.

Mr. Charles Kleecamp noted that the Cape Clean Air group was heartened that Southern has taken a major positive step with the re-design of Unit #2.

Representative Ruth Provost said she commended Southern for proposing to clean up the Cape's air. She also expressed concern for improvements to Unit #1 and supported installation of an SCR under a time limit.

Mr. Deane asked if the state could support funding for additional in-the-field monitoring stations. Representative Provost said she would look to Southern to do this.

Mr. Robert Rigo of the Southeastern Mass Building Trades expressed support for the project.

Mr. Steven Spear of East Dennis noted that the power plant affected all of Cape Cod. He also noted the Cape suffers from emissions coming from installations in the mid-West. He said for this reason, the Cape should seek to clean up the Canal plant as much as possible.

Ms. Loberg said the Massachusetts Department of Environmental Protection (DEP) does provide oversight of the plant, but it is fragmented. She related an incident where she called the DEP on the weekend and was referred to the State Police and finally the Framingham office.

Ms. Touring of MASSPIRG questioned if Unit #1 could be converted to burn natural gas like Unit #2. She questioned also if Dr. Knapp had had an opportunity to analyze the data from Southern.

Dr. Knapp said looking at the graphs comparing the emissions from Units #1 and #2, the NOx decrease was due to the SCR on Unit #1. He noted fact that the emissions of carbon monoxide, SOx, volatile organic compounds (VOCs) and particulates appear to

indicate Southern is not proposing any changes of the Unit #1 fuel utilization; they are still planning to burn the same oil as fuel. The increase of ammonia comes from the operation of the SCR. He noted Southern had not taken into account the possible transformation of emissions in the air into particulates. He noted Southern's consultants did look at this transformation of ammonia and SOx into particulates as part of the review of Phase One of the SCR. Dr. Knapp said this analysis would need to be addressed for the overall project.

Mr. Travelo said the Towns of Sandwich and Bourne should be notified of when the urea is shipped. Attorney Ford said the applicant has already made contacts with the public safety departments in both Towns.

Mr. Cowden thanked the audience for its support of the SCR on Unit #1. He said there was no new data for Dr. Knapp to analyze. He noted the SCR on Unit #1 was a voluntary cleanup by Southern. He said it would cost \$20 million dollars to install the SCR. He said that the plant did not have to use this option; it could buy pollution emission credits instead. He said the company would not move forward with an SCR on Unit #1 if the Commission makes it conditional on a review and replacement in three years.

The Subcommittee adjourned the public hearing and opened a meeting to provide direction to the staff on the decision.

Public Meeting – October 6, 1999

The Subcommittee discussed the relevant project issues and provided direction to the staff on drafting a decision with conditions for consideration by the full Commission on October 21, 1999.

Public Meeting – October 13, 1999

The Subcommittee discussed the following issues including incorporating the findings and conditions of the Phase One DRI decision into this decision, air quality monitoring, hazardous materials, hazardous wastes, water resources impacts and transportation issues.

After discussion of the draft decision, the Subcommittee recommended approval of the project with conditions, subject to the draft decision as amended, at the full Commission meeting on October 21, 1999.

Ms. Bebout wanted it noted for the record that at the time when the motion was made to recommend approval of the project with conditions, subject to the draft decision as amended, there were three members of the Subcommittee present: Bebout, Olsen and Deane.

JURISDICTION

Canal Unit #3/Canal Station Redevelopment (DRI# JR98033 and MEPA# 11703) was categorically included as a Development of Regional Impact (DRI) under Section 12(i) of the Cape Cod Commission Act. It was also a DRI based on Section 2 of the Cape Cod Commission DRI Enabling Regulations (revised, September, 1998). The project qualified as a Development of Regional Impact under Section 3(e) of the Enabling

Regulations as commercial development which "involves new construction greater than 10,000 square feet."

FINDINGS

The Commission has considered the request of Mr. Norm Cowden, representing Southern Energy Canal, LLC for a Development of Regional Impact for Phase Two site work to prepare Canal Station Unit #1 for installation of Selective Catalytic Reduction (SCR) pollution control technology.

Based on its consideration of such request, the information presented at the public hearing and submitted for the record, the Commission makes the following findings:

GENERAL

G1. The applicant's request is the second phase of work to prepare the Canal Station site and Unit #1 for installation of Selective Catalytic Reduction (SCR) pollution control technology. No other phases of site work prior to review of the re-powering of Unit #2 are anticipated.

G2. The redevelopment/re-powering of Unit #2 (Exhibit B) is before the Cape Cod Commission as a Development of Regional Impact. The rendering of a decision on the applicant's request to prepare the Canal Station site and Unit #1 for installation of Selective Catalytic Reduction (SCR) pollution control technology is separate from the on-going review of the Canal Station re-development. Part of this review will include air quality permitting of the re-configured Unit #2 and methods to address other pollutants besides oxides of nitrogen (NOx).

G3. At the public hearing on October 6, 1999, the Sandwich Town Administrator re-submitted a copy of the Selectboard's July 23, 1999 letter in support of installation of SCRs on Units #1 and #2 as evidence of the Board's support of the applicant's current request.

G4. The findings and conditions contained in the Phase One Southern Energy Canal, LLC decision (#JR-98033) pertaining to Unit #1 are hereby incorporated by reference and enforceable through this decision.

HAZARDOUS MATERIALS/WASTES

HAZ1. The applicant proposes to utilize an SCR on Unit #1 as a way of controlling emissions of oxides of nitrogen (NOx). SCRs are the only current technology available to control NOx on utility boilers of this type and size. They utilize ammonia gas as an input. As a result of a Development of Regional Impact Decision rendered on July 29, 1999, the applicant is now committed to use an "ammonia on demand" (AOD) system for the SCR instead of aqueous ammonia as originally proposed. The AOD system will utilize urea pellets instead of ammonia: it will generate ammonia gas through a chemical process.

HAZ2. As outlined in a fax dated September 29, 1999 (Exhibit A), the AOD system will appear as a 40ft (l) by 14ft (w) by 10ft (h) building of similar siding to the existing plant. Dry urea will be stored in two silos which will extend through the roofline. The silos will have a height of 45 ft above the AOD building; 55 ft above ground level. According to the prior DRI Decision on Phase One, the silos can hold up to about 360,000 pounds

of material.

HAZ3. Installation of the SCR and AOD system for Unit #1 will result in 4 to 5 truck deliveries of urea per week.

HAZ4. According to Attorney Ford's October 5, 1999 Memorandum, the SCR catalyst uses vanadium pentoxide, titanium dioxide, tungsten trioxide, ceramic fiber and silicon dioxide. In its unused form, the catalyst must be handled as a hazardous material. According to Material Safety Data Sheets, the primary hazards are irritation to skin and mucus membranes. Long term exposure to vanadium pentoxide dust/fumes causes lung and central nervous system damage. The ceramic fibers have been classified as an animal carcinogen. In its spent (used) form, it is a hazardous waste if disposed of, but if recycled, vanadium pentoxide is considered a hazardous material. Vanadium pentoxide is regulated by the Massachusetts Hazardous Waste Regulations, 310 CMR 30.00, as an acutely hazardous waste - P120. Its Chemical Abstracts Number is 1314-62-1. It is also regulated as vanadium oxide. 310 CMR 30.00 allows Large Quantity Generators (LQGs) to generate in excess of one kilogram of acutely hazardous waste per month. Based on information reviewed as part of the previous DRI on Phase One, the Canal Station is both an LQG of MA-regulated hazardous wastes and a Small Quantity Generator (SQG) of all other hazardous waste generated at the plant. As such, Canal Station is not prohibited by state or federal law from generating vanadium pentoxide from spent SCR catalysts.

AIR QUALITY

AQ1. The Phase Two work to prepare Canal Station Unit #1 for installation of Selective Catalytic Reduction (SCR) pollution control technology has already received approval by the Massachusetts DEP subject only to verification of technical information/operational parameters such as ammonia slip.

AQ2. SCR technology is used to only control oxides of nitrogen (NOx). It does not control other air pollutants such as oxides of sulfur (SOx) or particulates. The SCR unit will also result in ammonia emissions and additional emissions of particulates. By comparison, installation of SCRs on Unit #1 is estimated to reduce NOx emissions by 1,440 tons - from 4,294 tons (Unit #1 - 1998 data) to 2,854 tons during the ozone/NOx season (May - September). The SCR on Unit #1 will result in 10 additional tons of ammonia or 39 additional tons of particulates.

AQ3. Massachusetts is classified as a non-attainment area for ozone under the National Ambient Air Quality Standards. As a result of this, the Massachusetts DEP has implemented a NOx reduction and cap program which has set a NOx budget on the Canal Station. Southern Energy Canal, LLC has chosen to meet these requirements for Unit #1 by installing an SCR.

AQ4. According to an October 11, 1999 analysis presented by the Commission's air quality consultant, it appears that Unit #1 has operated at over a 75% capacity factor for 1997 and 1998. Unit #1 is fueled by No. 6 oil. Southern Energy Canal, LLC currently projects a 60 % unit capacity factor for Unit #1 over time.

AQ5. Southern presently operates a continuous emissions monitoring (CEM) system

that monitors the pollutant emissions from Units 1 and 2. The CEM system continuously measures the pollutant emissions in the existing 500-foot stack. It does not measure the pollutant concentrations in the surrounding environs. Southern Energy also owns and maintains two existing ambient air quality monitoring stations in Sandwich.

AQ6. The applicant has already conducted an air quality modeling assessment of the pollutant emissions from the Canal facility to estimate the ambient air quality concentrations. It is expected that this air quality modeling assessment will demonstrate that the emissions from Canal's 500-foot stack will result in ambient air quality concentrations that meet all National Ambient Air Quality Standards (NAAQS) and Massachusetts Department of Environmental Protection's (DEP's) Guideline standards for selected air contaminants.

WATER RESOURCES

WR1. The use of dry urea to supply the AOD system requires make-up water. According to an October 5, 1999 Memorandum from Attorney Ford, Unit #1 currently uses 189 gallons per minute (gpm) of water on average for the year. The AOD system will require an initial fill of 500 gallons of water and a 5 gpm make-up stream for the 5-month ozone season when it is operational. This is a 1.1% increase in Unit #1's annual water consumption. It is a one-half of one percent increase in consumption for the entire plant over current operation. The additional make-up water for Unit #1 is proposed to be supplied using existing on-site wells.

COMMUNITY CHARACTER

CC1. According to a set of perspective drawings submitted by the applicant on September 29, 1999 and an October 5, 1999 Memorandum from Attorney Ford, the SCR for Unit #1 will be visible from distant view sheds from the North and South. This is a public view of the plant from the South looking North from the railroad right-of-way. What is seen is the existing developed area between the existing Unit #1 and #2. Part of the Phase Two work (top of the SCR building) is also visible from the North. There are no public views of Phase Two of the SCR installation from the East or West.

CC2. At the public hearing on October 6, 1999, the applicant submitted a proposed landscaping plan to address mitigation for the public view from the railroad right-of-way. The applicant intends to submit this plan to the Sandwich Old Kings Highway Committee.

TRANSPORTATION

T1. Southern Energy Canal, LLC proposes to complete work to prepare Canal Station Units #1 for installation of Selective Catalytic Reduction (SCR) pollution control technology. The work will consist of erection of a steel external frame structure to support the SCR, installation of ductwork, insulation and siding of the SCR, tying the SCR's ductwork into Unit #1, loading catalyst into the SCR, testing the SCR, construction of the ammonia on demand (AOD) system, and operation of the SCR and AOD system at the existing Canal Station on Freezer Road in Sandwich. The motor vehicle access for the facility will be by way of Freezer Road which is classified as a local road on the Federal-Aid Highway Systems Functional Classification Maps. According to

a letter dated October 6, 1999 from the Army Corps of Engineers, Freezer Road is owned and maintained by them.

T2. The trip generation for this project assumes that the operation of the pollution control devices (SCR's) will not require any new employees at the existing power plant and thus no new vehicles trips will be added to the roadway network. The zero net increase in vehicle trips is below the threshold of 25 vehicle trips requiring analysis and mitigation under Minimum Performance Standards (MPS) 4.1.1.1 of the RPP.

T3. MPS 4.1.1.5 requires all Developments of Regional Impact (DRIs) access/egress locations with public ways to meet Massachusetts Highway Departments (MHD) and American Association of State Highway Transportation Officials (AASHTO) standards for safe stopping sight distance. Staff conducted field inspection at the existing site driveways and Freezer Road. Based on field observations, staff concludes that the Freezer Road driveways meet or exceed safe stopping distances based on AASHTO standards.

T4. MPS 4.1.1.7 states that there shall be no degradation in public safety because of a DRI. The Army Corps of Engineers has expressed concerns about potential conflicts between construction vehicles and recreational and commercial users of Freezer Road. According to the Army Corps of Engineers, Freezer Road carries approximately 1.2 million trips per year. The proponent has agreed to adopt several measures to minimize traffic impacts on the roadway system:

- schedule construction workers arrival and departure times to avoid school bus hours of operation.
- define the travel route for construction workers.
- train current station personnel for operation of the SCR (results in no increase in employee traffic).
- provide police officer control for construction activities relative to transportation.

T5. According to the applicant's anticipated schedule, construction impacts are anticipated to end by mid-May, 2000. Therefore, construction impacts for Phase Two of the SCR on Unit #1 are not expected at the peak Summer usage times for Freezer Road. The applicant has agreed to hire a police detail for Freezer Road, if requested by the Army Corps of Engineers, to minimize conflicts.

T6. Regardless of project size, all Developments of Regional Impact (DRIs) are required to reduce site generated traffic by 20 percent (MPS 4.1.2.1). The net increase of new vehicle traffic is zero thus 20% trip reduction is not required for this phase of development.

T7. MPS 4.3.1.1 of the Regional Policy Plans states "approval of development and redevelopment which increases the intensity of use shall be based on existing infrastructure and system capability or on a development's ability to provide for or contribute to the infrastructure and services necessary to support it". The construction

traffic generated by the Canal Unit #1 SCR Phase Two may cause an increase in maintenance and repairs on Freezer Road. Due to the possibility of the construction traffic degrading the structural integrity of the roadway, and as requested by the Army Corps of Engineers, the proponent has agreed to post a bond to repair Freezer Road if Freezer Road is damaged by the construction traffic.

CONCLUSION

Based on the public hearings, the materials submitted for the record and the above findings and conditions below, the Commission hereby concludes:

1. The benefits of the proposed development outweigh the detriments. This conclusion is supported by findings G2, G3, G4, HAZ3, AQ1, AQ2, AQ3, WR1, CC1, CC2, T2, T3, T4, T5, T6 and T7 .
2. Provided that the project obtains all permits required by the Town of Sandwich, the project will be in compliance with local zoning requirements.

The Commission hereby approves, with conditions, the request of Southern Energy Canal, LLC for a Development of Regional Impact for Phase Two work to prepare Canal Station Unit #1 for installation and operation of Selective Catalytic Reduction (SCR) pollution control technology. Phase Two work shall consist of work as outlined on Exhibit A. Such approval is granted provided that the findings above are complied with and the following conditions are met:

CONDITIONS

GENERAL

- G1. This decision is without prejudice to the Commission in the exercise of its statutory duties and does not prejudice any action that the Commission may take after completion of this Phase Two review process.
- G2. This decision does not create any vested rights. In addition, this decision does not create an expectation that the Commission will act favorably on subsequent phases of the Southern Energy Canal project, including but not limited to the re-powering of Unit #2. The review of the Unit #2 re-powering will, however, include, but not be limited to air quality issues/permitting and methods to address other pollutants in addition to oxides of nitrogen (NOx).
- G3. Anyone who proceeds pursuant to this decision proceeds at his or her own risk with respect to any future development.
- G4. All requirements of all conditions of this decision shall be complied with prior to receipt of a Certificate of Compliance from the Cape Cod Commission or as otherwise specified by each condition. If compliance prior to issuance of a Certificate of Compliance is not specified, the condition shall be an on-going requirement to maintain the validity of the Certificate.
- G5. The applicant shall obtain all applicable local permits for this project.
- G6. The applicant shall undertake work on the site relative to this decision as defined

by Exhibit A.

G7. Prior to commencing Phase Two development, the applicant shall submit for Commission staff review and approval a revised set of site plans which show the equipment and site work which are part of the Phase Two request.

G8. All construction activities relative to the Phase Two work for installation of an SCR on Unit #1 shall end no later than May 13, 2000.

AIR QUALITY

AQ1. Installation of an SCR on Unit #1 shall be subject to a technical review by the Cape Cod Commission after a period of 5 years. This period shall commence on January 1st of the first year after issuance of a Certificate of Compliance by the Commission for Phase Two. The technical review shall be limited to an evaluation of Reasonably Available Control Technology (RACT) for control of NO_x, SO₂, ammonia and particulates. The applicant shall conduct a RACT analysis for these pollutants and shall report back to the Commission in writing within three months.

AQ2. The applicant shall perform an air quality modeling assessment of the pollutant emissions of the Canal facility to select the best remote, in-the-field monitoring location(s) where the maximum concentrations can be expected. Based on the air quality modeling assessment, the applicant shall prepare an ambient air quality monitoring plan for review and approval by the Cape Cod Commission or its designee. The ambient air quality monitoring program shall include the measurement of nitrogen dioxide (NO₂), sulfur dioxide (SO₂), ozone (O₃), inhalable particulate matter (PM-10's and PM-2.5's) and vanadium. The applicant shall be responsible for the final design, installation, and operation of the ambient air quality program. The ambient monitoring program shall meet as a minimum the DEP's approval criteria. The air quality modeling plan shall be submitted for review and approval by the Commission or its designee by January 1, 2000.

AQ3. The applicant shall use best efforts to implement the ambient monitoring program prior to operation of the SCR on Unit #1 in order to develop a baseline of existing ambient air quality conditions.

AQ4. Copies of results from the ambient monitoring program shall be provided to the Cape Cod Commission and DEP on an annual basis.

HAZARDOUS MATERIALS/WASTES

HAZ1. At least fourteen business days prior to the first urea delivery to the site, the applicant shall provide to the Commission for staff review and approval a defined route and schedule for the delivery of urea.

HAZ2. The applicant shall utilize an "Ammonia on Demand" (AOD) system using urea pellet as a feedstock and as the source of ammonia for the SCR unit.

HAZ3. The applicant shall manage spent SCR catalyst, if not recycled, as a hazardous waste in compliance with the Massachusetts Hazardous Waste Regulations, 310 CMR 30.00.

TRANSPORTATION

T1. The applicant shall use the following travel route and schedules for construction workers: Route 6 to Route 6A to Tupper Road to Freezer Road with 7:30 AM arrival and 4:00 PM departure times.

T2. If requested by the U.S. Army Corps of Engineers, the applicant shall provide a police detail to control construction vehicle activities.

T3. Prior to issuance of a Certificate of Compliance from the Cape Cod Commission, the applicant shall post a bond in the amount of \$200,000, in a form which is satisfactory to Commission Counsel, for the reconstruction of the portion of Freezer Road from the site driveway to Tupper Road in the event that Freezer Road is damaged by the construction vehicles accessing the site.

COMMUNITY CHARACTER

CC1. Evergreen plant material shall be planted as per the viewshed analysis plan dated 10/6/99 prior to the issuance of a Certificate of Compliance. Such plantings shall consist of evergreens planted at 4' to 8' intervals, depending on species and size. Species, spacing and size shall be approved by Cape Cod Commission staff prior to the application for Certificate of Compliance.

CC2. Prior to the application for a Certificate of Compliance, the applicant shall provide a signed maintenance agreement for watering of newly installed plant material. Also included in the maintenance contract shall be provisions for mulching, pest management, staking and guying, removal of tree wraps, fertilization, and replacement of dead plant material. The maintenance contract shall take effect at the time the plantings are installed. The contractor shall maintain the specified planting for two full growing seasons, which extends from March 15 through October 31. A draft maintenance contract shall be submitted for staff approval prior to execution of the final contract.

CC3. If all required landscape improvements are not complete at the time a Certificate of Compliance is sought from the Commission, any work which is incomplete shall be subject to an escrow agreement of form and content satisfactory to Commission counsel. The amount of the escrow fund under the escrow agreement shall equal 150% of that portion of the incomplete work, including labor and materials, with the amount approved by Commission staff. The escrow funds shall be payable to Barnstable County. The work shall be approved by Commission staff prior to release of the escrow funds to the applicant.

SUMMARY

The Commission hereby approves with conditions the application of Southern Energy Canal, LLC for a Development of Regional Impact for Phase Two work to prepare Canal Station Unit #1 for installation and operation of Selective Catalytic Reduction pollution control technology. Phase Two work shall consist of the activities as outlined in a fax dated and received by the Commission on September 29, 1999 (Exhibit A).

Thomas Broidrick
Thomas Broidrick, Chair

11/18/99
Date

COMMONWEALTH OF MASSACHUSETTS

Barnstable, ss.

Subscribed and sworn to before me this 18th day of November, 19 99.

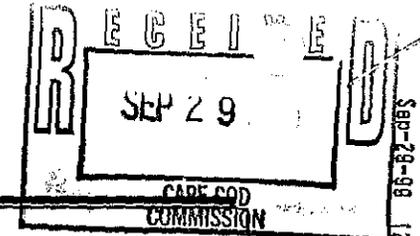
Katharine L Peters

NAME, Notary

My Commission expires:



SOUTHERN ENERGY CANAL - UNIT 1 SCR CONSTRUCTION - PHASE II



ACTIVITY	DESCRIPTION	PRUDENCY
<p>Building the SCR</p>	<p>Now that the foundations are installed (under Phase I), steel will be erected to create an external structural frame that will support the Selective Catalytic Reduction (SCR) equipment. Ductwork will be placed inside the structural frame to create the SCR. After the ductwork is installed, the SCR will be insulated and siding will be hung that is similar in appearance to the existing unit buildings. The SCR will then be tied into the Unit 1 SCR ductwork, which was previously approved and installed as part of Phase I. This ductwork required the Unit 1 building lower roofline to be raised.</p> <p>Once the SCR is complete and tied into Unit 1, catalyst will be loaded and the equipment will be tested and commissioned.</p> <p>In summary, approval of Phase II will permit the balance of SCR construction and the startup, commissioning and operation of the equipment.</p> <p>Visually the Phase II SCR work can be seen from only two directions. First, from the south into the courtyard, between Units 1 and 2. From this view you will be able to see the ductwork tying the SCR to the Unit 1 building, the top of the SCR, and the SCR structural columns at the bottom. The middle part of the south view is blocked by the existing ductwork between the precipitators and the stack. Second, from the north view, the top of the SCR will be seen over the existing turbine building roofline. One other view, that was identified and approved during the Phase I approval process, is the change in the Unit 1 lower roofline elevation, which can be seen from the west. The SCR cannot be seen from the east as the existing Unit 2 building blocks the view.</p>	<p>The approvals need to be granted in October in order for the SCR to be completed for smog season 2000. Should Phase II work not begin on schedule, the SCR will not be ready to tie to the Unit 1 duct work during the Spring 2000 outage. The timing of the Spring 2000 unit outage is set and cannot be delayed until later in the year.</p> <p>Should the SCR not be ready for the spring 2000 outage, the SCR will not be operational until the fall of 2000. This will result in no SCR operation during the 2000 smog season.</p>
<p>Build the Ammonia On Demand (AOD) System</p>	<p>The AOD system will appear as a ~14'(W) X ~40'(L) X ~10'(H) enclosed building with similar siding as the plant. The building will be located east of the Unit 1 precipitators. Extending through the building roofline will be two silos in which the urea will be stored. These silos will have a height of approximately 45' above the AOD building roofline (approximately 55' from the ground). Small diameter piping will run between the building and the plant to carry water, steam, and gas. The AOD system will only be seen from the south. The height of the ductwork between the precipitator and the stack is 90', so only the bottoms of the silos can be visible.</p>	<p>The SCR uses a catalyst to combine ammonia gas (NH₃) with the NO_x to form water (H₂O) and nitrogen (N₂). The AOD system allows ammonia to be generated onsite from urea fertilizer. This system must be operational before the spring outage of 2000 to ensure the SCR is commissioned according to 2000 smog season schedule.</p>

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News



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Southern Energy announces new proposal for Canal power station; design cuts SO₂, other emissions in half

SANDWICH, Mass. – Southern Energy Inc., a unit of Southern Company, is proposing a redesigned upgrade at its Canal Electric Power Station on Cape Cod to cut sulfur dioxide and some other emissions in half, while boosting the plant's capacity to produce electricity.

Southern Energy's original proposal called for adding a third power-generation unit to the plant. But further study has led to a new proposal to reconfigure Unit 2, expanding its power-production capabilities and making the addition of a third unit unnecessary.

Rather than building a new Unit 3, as first proposed, Southern Energy now seeks to produce steam for Unit 2 with new, cleaner equipment. This equipment, four combustion turbines with waste heat steam production, will make steam for Unit 2 and additional electricity through attached generators with only a fraction of the emissions of the Unit 2 boiler.

The combustion turbines will be fueled primarily by natural gas and will use No. 2 distillate oil only as a backup fuel. The total electric generation capacity of the redesigned Canal Electric Power Station would be 1,785 megawatts, 665 megawatts larger than the current 1,120 megawatts.

"The concerns voiced by our new neighbors on Cape Cod spurred us to think about new engineering options, and Congressman Bill Delahunt challenged us to take a more aggressive look at the sulfur dioxide issue," said Gale Klappa, president of Southern Energy's North America Group. "We believe that further study has helped us create a classic win-win situation – finding a way to significantly cut emissions from the plant while increasing its output.

"What we now have is a better design -- one that responds to the concerns of the residents on the Cape," Klappa said.

Emissions decrease while power output increases under the redesign because the new turbines are more efficient and capable of using natural gas in greater amounts than the existing boiler. The changes are believed to mark the largest voluntary reduction in power plant emissions in Massachusetts history.

Southern Energy also plans to install new pollution control equipment on the Unit 1 boiler. The control equipment, known as selective catalytic reduction, dramatically cuts emissions of nitrogen oxide, a component of smog.

Approval of the redesign and pollution controls by the state Environmental Facilities Siting Board, the Cape Cod Commission and other state and local authorities will allow emissions of nitrogen oxide to drop 63 percent (85 percent during the May-September smog season). Emissions of sulfur dioxide will decline 51 percent, particulate matter will go down 40 percent, and carbon monoxide emissions will fall 47 percent.

Southern Energy Inc. develops, builds, owns and operates power production and delivery facilities and provides a broad range of services to utilities and industrial companies around the world. Southern Energy supplies energy in 10 countries on four continents. Its Southern Company Energy Marketing unit provides energy trading, marketing and financial services and other energy-related commodities, products and services to customers in North America.

Southern Company (NYSE: SO), the largest producer of electricity in the United States, is also the parent firm of Alabama Power, Georgia Power, Gulf Power, Mississippi Power and Savannah Electric.

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