# CAPE COD COMMISSION

3225 MAIN STREET
P.O. BOX 226
BARNSTABLE, MA 02630
(508) 362-3828
FAX (508) 362-3136
E-mail: frontdesk@capecodcommission.org

DATE: July 29, 1999 #JR-98033

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 One of Installation of SCRs on Units #1 and #2

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

9 Freezer Rd Sandwich

map 92, Parcel 2

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## 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 One work to prepare Canal Station Units #1 and #2 for installation of Selective Catalytic Reduction (SCR) pollution control technology. Phase One work shall consist of installation of a bypass duct, foundation construction and replacement of fans, including the activities as outlined in a letter dated April 22, 1999 with attachments (specifically Exhibit A) received by the Commission on April 26, 1999. This decision is rendered as a result of a vote by the Cape Cod Commission on July 29, 1999.

The installation of a proposed third power generating unit (Unit #3) 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 Phase One work to prepare Canal Station Units #1 and #2 for installation of Selective Catalytic Reduction (SCR) pollution control technology. Phase One work shall consist of installation of a bypass duct, foundation construction and replacement of fans, including the activities as outlined in a letter dated April 22, 1999 with attachments (specifically Exhibit A) received by the Commission on April 26, 1999.

## PROCEDURAL HISTORY

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

The applicant's request to perform work on the Canal Station site to prepare Canal Station Units #1 and #2 for installation of Selective Catalytic Reduction (SCR) pollution control technology was received by the Commission on April 26, 1999 in a letter with attachments from Attorney Michael D. Ford.

A duly-noticed public hearing was held by a Commission Subcommittee on Wednesday, June 23, 1999 in Sandwich to allow public testimony on the applicant's request.

Subcommittee meetings where then held on June 30, 1999 and July 9, 1999 to allow further discussion of the applicant's request. They were also scheduled to allow the Subcommittee to take account of the position of the Sandwich Board of Selectmen which discussed the applicant's request at meetings in June. The Selectboard took a formal position in favor of the applicant's request on July 8, 1999.

At the July 9, 1999 Subcommittee meeting, 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 Units #1 and #2 for installation of Selective Catalytic Reduction (SCR) pollution control technology. The Subcommittee also held a public meeting on July 15, 1999 to discuss the draft decision.

At its regular meeting on July 29, 1999, the Commission, with the exception of Mr. Deane and Mr. Travelo, voted to approve, with conditions, the applicant's request for the Phase One work. Mr. Deane and Mr. Travelo voted opposed.

## MATERIALS SUBMITTED FOR THE RECORD

A. Materials submitted by the Applicant:

Letter, from Attorney Ford, requesting ability to proceed with site work 4/26/99
Letter, from Attorney Ford, clarifying that SCRs on Units #1 and #2 are part of original DEIR/DRI application 5/27/99
Letter, from Attorney Ford, to Sandwich Town Administrator, enclosing plans and a letter explaining why SCRs are the best technology to control NOx 6/1/99

A. Materials submitted by the Applicant (continued):

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| Plans, installation of SCRs (set of 9 plans) | |
| Site plans showing SCRs on Units #1 and #2 and Unit #3 | 6/1/99 |
| Colored graphics (5), showing Canal Station with SCRs and air emissions | 6/23/99 |
| Letter, from GoalLine Technologies, clarifying availability of SCONOX | 6/30/99 |
| Letter, from David Johnston, DEP, clarifying permit status of SCRs | 6/30/99 |
| Letter, from Representative Atsalis, in support of SCRs | 6/30/99 |
| Letter, from Attorney Ford, about SCRs' compatibility with other pollution control devices and NOx emissions | 7/6/99 |
| Material Safety Data Sheet (MSDS) on urea | 7/8/99 |

B. Materials submitted by the State/Federal Agencies:

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| Letter, from David Johnston, DEP, clarifying permit status of SCRs | 6/30/99 |
| Letter, from Brendan McCahill, EPA, clarifying permit status of SCRs | 6/30/99 |
| Letter, from Representative Atsalis, in support of SCRs | 6/30/99 |
| Letter, from Representative Delahunt, in support of SCRs | 7/9/99 |
| Letter, from Representative Caffyn, expressing concern | 7/15/99 |

C. Materials submitted by the Town:

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| Letter, from Sandwich Town Administrator, clarifying Selectboard's intent to discuss the applicant's request and desire to review additional information | 5/19/99 |
| Letter, from Tech Environmental, to Sandwich Town Administrator, analysis of SCR request | 6/16/99 |
| Letter, from Cornelius Andres, Superintendent of Bourne Public Works, expressing concern about SCRs on Units #1 and #2 | 6/29/99 |
| Letter, from Chief Philbrick, Bourne Fire Department, expressing concern about SCRs on Units #1 and #2 | 6/29/99 |
| Letter, from Tech Environmental, with attachments, to Sandwich Town Administrator commenting on several points related to SCRs and SCONOX | 7/1/99 |
| Letter, from Sandwich Board of Health, urging request be subject to Commission's permitting process and that more information be provided | 7/9/99 |

D. Materials submitted by the Public:

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| Article, Cape Cod Times | 3/8/99 |
| E-mail, from Paul Gannett | 5/12/99 |
| Article, Cape Cod Times | 5/20/99 |
| Letter to the Editor, Cape Cod Times, David Dow | 5/21/99 |
| Letter w/attachments, M. Elizabeth Ellis | 5/23/99 |
| Letter, Shawn P. Murray | 5/26/99 |
| Article, Upper Cape Codder | 5/27/99 |
| Article, Cape Cod Times | 6/23/99 |
| Article, Editorial page, Cape Cod Times | 6/23/99 |
| Article, The Enterprise | 6/25/99 |
| Article, Upper Cape Codder | 7/1/99 |
| Article, Upper Cape Codder | 7/1/99 |
| Article, Cape Cod Times | 7/1/99 |
| Article, Falmouth Enterprise | 7/2/99 |
| Article, The Enterprise | 7/2/99 |
| E-mail, Jack Thwaits | 7/6/99 |

D. Materials submitted by the Public (continued):

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| Letter, on MGH Institute of Health Professions letterhead (signature illegible) | 7/6/99 |
| Letter, Howard Mattes, including attachments, urging Canal Station should switch to natural gas | 7/8/99 |
| Resolution by Cape Clean Air | 7/9/99 |
| Letter, from Matthew Patrick, Self-Reliance, suggested conditions | 7/12/99 |

E. Materials submitted by the Cape Cod Commission:

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| Letter, to Dr. Knapp, requesting analysis of SCRs relative to 3 questions | 2/27/99 |
| Letter, to Attorney Ford, discussing Army Corps concerns for construction impacts to Freezer Road | 5/7/99 |
| Staff Report, with attachments | 6/15/99 |
| Staff Report, with attachments | 6/23/99 |
| Notes of phone conversation with DEP staff | 6/23/99 |
| Notes of phone conversation with EPA staff | 6/23/99 |
| Minutes, Public Hearing | 6/23/99 |
| Memorandum to Subcommittee about SCONOX analysis | 6/24/99 |
| Notes of phone conversation with DEP staff | 6/29/99 |
| Notes of phone conversation with EPA staff | 6/29/99 |
| Minutes, Public Meeting | 6/30/99 |
| Minutes, Public Meeting | 7/9/99 |
| Hearing Notice (for 6/23/99 hearing) | 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 Units #1 and #2 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 - June 23, 1999

Ms. Bebout opened the hearing at 7:05 PM.

Attorney Michael Ford, of Stinson & Ford, representing the applicant, noted a narrow issue was before the Commission. He noted the DEIR/DRI included the redevelopment of Units #1 and #2 and installation of SCRs. This was the first phase of SCR installation. Attorney Ford noted the applicant has committed to the first phase of SCRs. He noted the anti-segmentation policy of the Commission and no development requirement of pending DRIs. He said this was why this issue was being brought before the Subcommittee and the full Commission. He said Southern has a timing crunch with the SCR installation contractor. He noted local permits were also needed. He said the first phase of SCRs included site preparation work, bypass and duct work on Unit #1, foundation work and alterations to Unit #2 fan building. Attorney Ford noted the applicant would also need Commission approval for SCR construction and operation - a second phase of permitting.

Mr. Norm Cowden, representing Southern Energy Canal, LLC described the applicant's

proposed project. He noted there were three options for addressing the NOx cap: 1.) don't run the plant as much, 2.) buy NOx off-set credits or 3.) reduce NOx emissions. He noted NOx was a contributor to smog between May and September. He noted Southern would buy NOx credits if SCRs were not installed. He said Southern was currently buying NOx credits. Mr. Cowden said SCRs were the best technology available. He said with SCRs, the NOx level would be below the cap such that the plant would have NOx credits to sell. He noted the price of NOx credits was very volatile so installation of SCRs would provide additional operational flexibility and cost-control. Revenue would result from selling credits. He noted the plant was spending between $2.50 million and $3.0 million on NOx credits which translates to about $0.13/kilowatt hour. He said the selling price of power was the highest during the smog season so Southern could easily buy off-set credits. He said the choice was to control NOx via SCRs. He explained why ammonia was needed to run the SCRs. He noted the original proposal in the DEIR/DRI was to use liquid ammonia and now Southern was proposing to use pellet fertilizer. Mr. Cowden said the pellet form was easier to handle and safer to transport. He described the site preparation work for the SCRs. He said it was phase one - foundations, installation of fans and duct work. Mr. Cowden said it was critical to make the 2000 smog season with Unit #1. Unit #2 would not be ready until 2001. He said Southern is committed to making NOx reductions. He was committed to move forward with construction of SCRs on Units #1/#2 regardless of Unit #3.

He said the pellet is converted in a closed system to gas under pressure using steam and water. He said the urea would be stored in a silo. He described the process using a diagram. He contrasted this to use of aqueous ammonia. He said that through use of urea, the plant did not have to develop a risk-management plan because there was very little ammonia on site at any one time.

He noted the ammonia and SOx emissions from the SCRs were both below significance levels. He used colored bar graphs to compare the NOx reductions relative to added ammonia, SOx and particulates coming from the SCRs. He said there was a trade-off in NOx reductions versus additional SOx and particulates. He said based on stack height and dispersion, the ammonia concentration would not exceed the MA standard. On particulates, he noted the concentrations at the point of maximum impact would be minimal. He noted if Unit #2 switched to 100% gas during the NOx season without doing anything else, NOx emissions during the NOx season would drop from 2,751 tons to 2,692 tons. He said NOx comes from natural gas as well. Mr. Cowden said if Unit #3 was added and SCRs were installed on Units #1 and #2, NOx emissions during NOx season would drop to 624 tons.

Ms. Adams introduced herself and Dr. Knapp, the Commission's air quality consultant. She noted the Commission had posed three questions to Dr. Knapp: 1.) Is SCR an appropriate technology for NOx control, 2.) Can SCRs run on gas and 3.) How would the proposed installation of SCRs on Units #1/#2 influence air permitting for Unit #3?

Dr. Knapp noted SCRs controls only NOx. He noted the existing plant burns No. 6 oil with a 1% sulfur content. Dr. Knapp noted the units were older and emit SOx in addition to NOx. He said this was a concern for future permitting of the plant. He noted that SCRs are a proven technology. Dr. Knapp said SCRs reduce NOx but add

more SOx, ammonia and particulates. Released from a 500-foot stack, the impacts on the ground of these emissions will be not be measurable. These won't exceed established MA or federal air quality standards. He noted the stack ammonia emissions are one tenth of one percent of the guideline established by the DEP.

Dr. Knapp said that burning gas was not a problem for SCRs. Dr. Knapp noted that the trade-off was 2,000 fewer tons of NOx for 16 added tons of ammonia. He was concerned to not have the ammonia. He said his prime concern was for anhydrous ammonia.

Dr. Knapp said that with regard to future air permitting, installation of SCRs should have limited impact for Unit #3 with the exception that it gives Southern greater flexibility. It gives Southern more flexibility to meet the NOx cap. It will likely give Southern the ability to reduce NOx to levels where they can sell credits during the smog season. Dr. Knapp said that installing SCRs on Units #1 and #2 would give them the ability to increase utilization of these units. If this is the case, the other pollutants coming from Units #1 and #2 (SOx and particulates) would be uncontrolled. They would increase because the two existing units would be run more.

Ms. Adams noted that she had had conversations with the DEP and EPA concerning SCONOX. She noted that installation of SCRs on Units #1 and #2 was a voluntary undertaking by Southern. She noted that the DEP was aware of the SCONOX technology. Ms. Adams noted it was the DEP's opinion that Canal Unit #3 was a new air permit.

Mr. Travelo questioned whether there were other criteria pollutants which would decrease with SCRs? Dr. Knapp responded that SCRs only control NOx. He noted that by burning natural gas, you would not gain much added reduction of NOx. However, he said burning natural gas would result in major emissions reductions of SOx and particulates.

Mr. Travelo questioned how much money Southern was spending on NOx credits? Mr. Cowden responded that the company was spending approximately $2.5 million this year to purchase credits worth 600 tons of NOx.

Ms. Bebout recognized the legislative aides from Representative Caffin, Representative Atsalis and Senator Murray were present. Mr. Buckley, Representative Caffin's aide, noted the Representative had concerns about the project. Ms. Bebout advised that they be submitted in writing to the Commission. The aides from Rep. Atsalis' and Senator Murray's offices had no comments.

Mr. George Dunham, Sandwich Town Administrator, noted the Town had received comments from its technical consultant, Tech Environmental. He submitted copies to the Subcommittee. He noted the Selectboard was intending to take a formal position on the SCRs proposals at its meeting on July 8, 1999. It was Tech Environmental's opinion that the SCRs ammonia emissions would be minimal and that Unit #3 would be a new source and subject to LAER permitting.

Mr. Don Ellis of Bourne expressed a concern for ammonia transport. He said this was a

negative for Bourne: congestion, added truck trips, truck pollution. He noted the pelletized system needed large amounts of distilled water to hydrate the ammonia which means more truck trips yet. He said the personal health, safety and welfare of Cape and Bourne residents was paramount. He noted Sagamore Village was densely populated.

Mr. Neil Andres, Bourne DPW Superintendent, expressed concern about construction impacts to Bourne including additional truck traffic, particularly large trucks. He was concerned about use of hazardous materials and concerns for staffing of the Town Fire Stations. Mr. Andres said the Fire Chief asked him to express his concerns about ammonia and confined space issues. Mr. Andres said there were no offers to mitigate these impacts. He urged the construction and operation of the SCRs to go through the whole DRI process.

Mr. Patrick Ellis, Sandwich Board of Selectmen, noted the Board would discuss the SCRs request on June 24, 1999 and was scheduled to take a formal position on the matter on July 8, 1999.

Mr. Deane noted that Mr. Andres and the Town of Bourne Fire and Police Chiefs meet weekly to discuss matters of concern to Bourne. He also noted the Town serves as the host community for the regional hazmat response vehicle and this affects the Town's Fire Department.

Mr. Charles Kleecamp of Sandwich said the Commission should postpone action on the applicant's request to install SCRs on Units #1 and #2 for at least 60 days so that there can be an open discussion about SCONOX. He noted a representative of GoalLine Technologies was available to make a presentation to the Commission on SCONOX which reduces NOx emissions and SOx emissions. He noted SCRs do not reduce SOx emissions. Mr. Kleecamp expressed concern over ammonia use and noted SCONOX does not use ammonia.

Mr. Olsen asked what Mr. Kleecamp's qualifications were to evaluate the project, particularly SCONOX. Mr. Kleecamp responded that he was a recently-retired professional electrical engineer.

Mr. Matthew Patrick, Executive Director of Cape and Islands Self Reliance, provided copies of his testimony for the record. Mr. Patrick said the installation of SCRs made sense on the surface. He noted it was regulations and economics shaping Southern Energy's decisions. He noted his written comments explained SCRs. He noted vadium metal comes from the deteriorated SCR catalyst and ends up in the air along with added particulates and ammonia. He believed SCONOX was a better technology to clean up stack emissions. He noted he had heard about this at a meeting on June 22, 1999. He noted SCONOX cost more to install but suggested it cost less in the long term because it does not use hazardous materials. He noted SCONOX could achieve LAER. He noted it worked on plants using No. 2 oil and gas and was being tested on plants using No. 6 oil. He urged the Subcommittee to look into SCONOX. He noted SCRs do not remove other pollutants like SOx and particulates. Mr. Patrick said Southern Energy was proposing to avoid LAER standards by using SCRs. He asked the Subcommittee to delay consideration of the request until an independent economic

feasibility study was done comparing SCRs to SCONOX.

Mr. Kaufman noted Mr. Patrick said vanadium was emitted. He questioned whether the quantity emitted was measurable. Mr. Patrick said it was a heavy metal. He said as far as he knew it was measurable but he did not have data on this. He noted the catalyst has to be replaced every several years. He said to his knowledge, the SCONOX catalyst lasted longer than 3 years. Mr. Cowden noted the SCR catalyst lasts about 5-6 years and the SCONOX catalyst lasts about 3 years.

Mr. Schlaikjer asked if vanadium is what the SCR catalyst was made of. Mr. Cowden said it was vanadium pentoxide. It is removed and recycled every 6 years when exhausted. He said none of the vanadium goes up the stack.

Ms. Adams noted that vanadium in its virgin form, as part of the SCR, it is a hazardous material. In its used form, vanadium pentoxide is a P-120 code hazardous waste. She noted it is not unusual that the plant would have a recycling arrangement with the vendor.

Mr. Robert Jones commended Southern for its decision to proceed with SCRs on Units #1 and #2 regardless of permitting on Unit #3. He noted the formation of the Cape Light Compact presents an opportunity for Southern Energy to offer competitive power prices below the legislatively-imposed standard pricing. He said Southern's response to the consumers was a resounding "no." He noted Southern wants to be the Cape's neighbor, to use the Cape's waters, blight vistas and add pollution to the atmosphere. He questioned what was the economic benefit to Cape Cod and the Islands. He said it was Southern's goal to produce power here, sell it elsewhere and leave the Compact to source electricity elsewhere. He noted the Compact was on the verge of getting power from another vendor.

Mr. Luke Daley of Sandwich resented the fact the Commission was considering accelerating the permitting process for a private commercial gain. He noted there had to be a balance of public and private interests. He noted SCRs limit NOx only and releases aerosolized ammonia. When exposed to UV light, it contributes to formation of micro-soot/particulates. He noted this is associated with premature death and lung disease. Mr. Daley noted MA has a high incidence respiratory illness. He noted local physicians have documented in a public survey that as you approach the plant, lung cancer rates rise. He said ammonia only adds another public health hazard. Mr. Daley noted the SCR catalyst will deteriorate and that its volatile components, including vanadium, can be aerolized. He noted vanadium will be in the air. He noted SCONOX's catalyst was based on platinum which made it more expensive. He said the relative cheapness of SCRs made it the industry standard. He said if the urea contacts water, there would be a cloud of ammonia vapor. He suggested the hydrolyzer might make the local area smell of ammonia like a bathroom. Mr. Daley urged the Subcommittee to study the zero-ammonia technology.

Dr. Donna Lumell noted the Harvard Medical School had done a study on the impact of particulates. She said it was a battle of economics and public health. She noted Dr. Knapp had pointed out fuel use in the plants and changes in fuel. Dr. Lumell said this would address the SOx emissions and other pollutants. She said NOx causes

emphysema and SOX causes nose bleeds, allergic rhinitis. Dr. Lumell expressed concern about ammonia use. She said an open forum was needed to discuss the merits of the SCONOX technology. She said her research showed urea has been used for about 10 years but there is a tendency for plants to switch back to aqueous ammonia.

Ms. Beth Ellis noted the letter from the DEP in March, 1999 to Southern Energy. She noted DEP had noted Southern Energy would have complete discretion with respect to whether or not the SCRs operate and at what level they operate. She questioned whether Southern could install the SCRs and not use them. She said that if the Commission granted Southern's request, the Commission must make Southern run the SCRs all the time. Ms. Ellis said Southern Energy could have what it wanted if it used a combination of SCONOX and burning No. 2 oil and natural gas in the plant.

Ms. Adams said it was part of June 15, 1999 Staff Report packet. She noted Mr. Winkler had said Canal Units #1 and #2 have an existing permit and installation of SCRs on these units is voluntary from the DEP's standpoint. She explained how Unit #3 was a new permit.

Ms. Sharon Loberg, resident of Town Neck and a member of Cape Clean Air urged the Commission not to make a precipitous decision on allowing Southern to start putting in the SCR equipment. She was suspicious of Southern Energy's motives. She noted Governor Celluci is being pressured to have utilities clean up their act. Ms. Loberg said that in a short time, there would be more regulations in place to clean up SOx. She was concerned about the transport of urea. She said Southern did not have a concern about aqueous ammonia until public outcry.

Ms. Jane Estes said NOx was not the only pollutant of concern, there were other pollutants. She noted the EPA website emissions data showed the Canal Station plant emitted more SOx than all the stationary sources (power plants, boilers, etc.) in the entire state of Maine.

Mr. Paul Gannett urged the Commission to take the long-term view. He urged the Subcommittee to carefully weigh the impacts of NOx emissions, SOx emissions and heavy metals. He urged the Commission to insure the Canal Station met the Clean Air Act standards.

Mr. Travelo questioned whether the SCONOX technology was available for use. Ms. Adams noted staff had not specifically requested Dr. Knapp analyze the SCONOX technology for the public hearing because it was not part of the applicant's submittal and because the information was received at such a late date.

Dr. Knapp said he had not analyzed SCONOX. He noted he understood there had been problems in developing the technology for use in the utility industry. He questioned whether SCONOX could be ramped up from a 5-megawatt facility to the size of the Canal Station.

Mr. Kaufman said he had read the GoalLine information and he felt it was primarily a package of marketing information.

Ms. Bebout questioned whether there were any plants in the United States the size of Canal Station which were currently using SCONOX. Dr. Knapp said he had not looked into this.

Mr. Cowden said he understood the concerns of the public. He said SCR was the only technology Southern could buy today. He said ABB, the SCONOX licensee would not build it for Unit #2. He noted the installation of SCRs was voluntary. He said Southern would not move forward with SCONOX on Unit #2 because it was experimental.

Attorney Ford noted the applicant had a time crunch based on getting a contractor. He said that if construction did not begin in July, they would loose the contractor until next season.

Ms. Bebout said based on the amount of information which had been received, she felt it would be very difficult for a Subcommittee to reach a decision tonight. She said the applicant was entitled to a full and fair review.

Ms. Adams noted the next regularly scheduled Commission meeting was July 15, 1999.

Ms. Bebout asked for a motion to continue the hearing to a date to be determined. Mr. Kaufman made a motion to continue the hearing and the record to a date to be determined. Mr. Olsen seconded the motion. The Subcommittee voted all in favor of the motion.

Ms. Bebout asked for a motion to open a Subcommittee meeting. Mr. Schlaikjer moved to open a Subcommittee meeting. Mr. Travelo seconded the motion. The Subcommittee voted all in favor of the motion.

Subcommittee Meeting - June 23, 1999

Ms. Bebout opened the Subcommittee meeting at 9:15 PM. She asked for discussion on the matter.

Mr. Kaufman said he was inclined to approve installation of SCRs based on air quality improvements now.

Mr. Olsen said the SCONOX technology was new to him. He said there should be an evaluation of the technology from Dr. Knapp.

Ms. Bebout noted other comments that there was a 250-megawatt plant in CA using SCONOX.

Mr. Schlaikjer said the 32-megawatt plant was existing: the 250-megawatt plant was not yet built. He said the Subcommittee should investigate the claims made. He noted ABB was the licensee and that the GoalLine representative said ABB would guarantee SCONOX performance for installations over 100-megawatts.

Ms. Adams said the DEP was aware of current SCONOX permitting.

Ms. Bebout questioned what controls the Subcommittee had relative to the application

in front of them.

Mr. Fox noted the applicant had asked for installation of SCRs and staff was uncertain the Subcommittee could require installation of SCONOX.

Mr. Travelo suggested concentrating on SOx and NOx emissions was clouding other issues and the request before the Subcommittee.

Mr. Kaufman moved to hold a Subcommittee meeting on June 30, 1999 beginning at 4:30 PM at the Commission offices. Mr. Olsen seconded the motion. The Subcommittee voted all in favor of the motion.

Mr. Kaufman moved the Subcommittee meeting be adjourned. Mr. Schlaikjer seconded the motion. The Subcommittee voted all in favor of the motion.

Subcommittee Meeting - June 30, 1999
Ms. Bebout opened the Meeting at 4:45 PM. She asked for comments from the staff.

Ms. Adams noted conversations she had had with the DEP and EPA concerning the SCONOX technology.

Ms. Bebout asked if SCONOX had ever been used on a gas-fired boiler? Ms. Adams responded that it had, but that the units on which it had been used were quite small.

Ms. Bebout asked if pelletized ammonia can react with water. Both Ms. Adams and Mr. Kaufman responded that pelletized ammonia can react with water.

Ms. Adams noted she had tried but had not been successful in finding answers to questions posed by Mr. Travelo concerning fuel use and pricing.

Mr. Fox discussed the staff's position on the applicant's proposal. He noted it was important to insure that Unit #3 was held to restrictive air permitting standards. He said staff were recommending that the Subcommittee support the applicant's request if the review of Unit #3 was conditioned upon it being subject to Lowest Achievable Emission Rate (LAER) permit requirements.

Ms. Bebout asked for comments from representatives of the Sandwich Board of Selectmen. Ms. Jan Teehan responded that the Board was scheduled to take a formal position on the applicant's request for work connected to SCRs on Units #1 and #2 at its meeting on July 8, 1999.

Mr. Kaufman noted the Subcommittee was concerned with a very narrow issue. At the same time, he noted SCONOX was not a viable technology for addressing NOx emissions. He said he thought the installation of SCRs was a benefit to Cape Cod.

Mr. Travelo said he felt changes in fuel use were more important. He agreed with Mr. Kaufman that SCONOX was not a viable technology at this time.

Mr. Schlaikjer said the reduction in NOx from SCRs on Units #1 and #2 was a benefit.

He questioned whether SCRs could be retrofitted to accommodate technology to address SOx emissions.

Mr. Kaufman said it would be difficult for the Commission to mandate the use of SCONOX.

Mr. Olsen said the NOx reduction was a benefit. He said he was also torn at the idea of separating any portion of a project under review out for Commission consideration. He was also concerned about the review of Unit #3 and that any decision on this request should not require the Commission to take any particular stance on Unit #3.

Mr. Schlaikjer said it was important for the Commission to hear from the Sandwich Board of Selectmen.

Ms. Bebout questioned whether the applicant was contemplating future retrofits to address other pollutants like SOx.

Mr. Schlaikjer said he believed SCRs could be configured to allow for retrofits to address SOx and particulates.

Mr. Cowden noted SCRs address NOx. At the same time, he noted installation of SCRs would not limit the installation of other technologies in the future.

Mr. Travelo questioned whether the applicant could save as much as the SCR installation would cost by switching to No. 2 oil or gas.

Mr. Kaufman said the issue before the Subcommittee at this time was more narrow: a limited amount of site work - Phase One of work - to prepare Units #1 and #2 for installation of SCRs.

Mr. Cowden said even if fuels were switched, it would not be possible to get below the plant's NOx cap. He noted that ozone was the pollutant of concern relative to NOx control. He said that changes in fuel choice might have an impact on other pollutants, but not NOx.

Mr. Schlaikjer noted this was the case: switching fuels - burning No. 2 oil or gas - would lessen SOx emissions and perhaps particulates.

Mr. Ford stressed the applicant's request before the Subcommittee was only Phase One of work connected to installation of SCRs on Units #1 and #2.

Mr. Olsen moved that the Subcommittee hold another meeting on the applicant's request on July 9, 1999 beginning at 9:00 AM in Barnstable. Mr. Travelo seconded the motion. The Subcommittee voted all in favor of the motion.

Mr. Olsen moved to adjourn the meeting. Mr. Schlaikjer seconded the motion. The Subcommittee voted all in favor of the motion. Meeting adjourned at 5:20 PM.

Subcommittee Meeting - July 9, 1999

Mr. Olsen opened the Meeting at 9:30 AM at the meeting room at 16 Jan Sebastian Drive in Sandwich. He apologized for the confusion over the meeting location. Ms. Adams summarized the Subcommittee's discussions on the applicant's request to date. She noted the Subcommittee had been presented with new information at the June 23, 1999 hearing and as such, had held a meeting on June 30, 1999. She noted that at the June 30, 1999 meeting, staff had recommended that the Subcommittee support the applicant's request if the review of Unit #3 was conditioned upon it being subject to Lowest Achievable Emission Rate (LAER) permit requirements. Ms. Adams noted the following points:

1.) the review of Unit #3 was proceeding subject to an FEIR and DRI and that staff would recommend LAER permitting at that time,

2.) it was the Commission's goal as stated in its February 8, 1999 comment letter to MEPA that the FEIR analyze the conversion of the entire plant, Units #1, #2 and #3 to burning gas,

3.) As a new source, Unit #3 will be subject to LAER permitting,

4.) the Sandwich Board of Selectmen voted 5-0 at its meeting on July 8, 1999 to support the applicant's request,

5.) research shows that zero-ammonia technology such as SCONOX is not commercially viable at this time for use on Units #1 and/or #2,

6.) that the Commission anticipates the applicant will request further work on the site to install and operate the SCRs such that this will receive additional scrutiny and there will be additional opportunities for public comment, and

7.) that the applicant in comments and based on letters received for the file intends to utilize a urea pellet system to produce ammonia rather than the aqueous ammonia storage as originally proposed.

Ms. Adams said that based on the information received to date, including the points enumerated above, the staff would now recommend the Subcommittee support the applicant's request for Phase One work. She recommended that this be conditioned at least upon the use of the urea pellet system instead of the aqueous ammonia system.

Mr. Schlaikjer noted there was a continuing concern over SOx and particulates emissions.

Mr. Travelo noted the Subcommittee had just received a comment letter from the Sandwich Board of Health. He asked if a Board member was present to comment on it. Ms. Kathy Hardy of the Board said the Board was concerned that SCRs not be allowed to proceed before the review of the entire project was completed. She said the applicant was not committed to using a urea pellet system.

Ms. Adams said that based on her research, urea was much safer to handle, store and transport than aqueous ammonia.

Mr. Schlaikjer asked what occurs during the chemical transformation of urea to produce ammonia.

Mr. Cowden explained that the products of the hydrolyzation process include ammonia, carbon dioxide and water vapor.

Ms. Teehan of the Sandwich Selectmen said she was concerned about use of the urea. She urged the Commission to condition the project to use urea. She also noted a concern for other pollutants like SOx.

Mr. Deane asked the applicant if they were committed to using urea pellets.

Mr. Cowden said the applicant was committed to using urea. He said that he was concerned about a condition which required the use of urea in that the SCRs would still need to be supplied with ammonia to function and in the case of a failure of the urea system, Southern would need to supply the SCRs. He suggested the condition, if included at all, be written that other forms of ammonia be allowed to be used if the urea system failed for technical reasons, but not for economic ones. At the same time, he noted Souther was committed to the urea system and was in the process of contracting with vendors to use the system.

Mr. Deane said that if backup supplies of ammonia was needed in the event that the urea system failed, he did not want trucks going through Sagamore. He said the decision should require the trucks to use Exit #2, not Exit #1 to reach the plant.

Mr. Olsen asked Mr. Cowden to respond. Mr. Cowden said Southern was looking into barging backup supplies of ammonia to the plant should the urea system fail.

Mr. Schlaikjer asked Mr. Cowden to comment on discussion about problems with the urea system. Mr. Cowden responded previous installations of urea systems which have proven problematic involved a technology called N-SCRs which is different from what Southern was proposing to install on Units #1 and #2. He said that with N-SCRs, urea was sprayed into the flue gas in a slurry form and that this had caused technical problems. He noted that in the case of Units #1 and #2, the urea was being converted to ammonia gas, so the problems encountered with urea in N-SCR technology were not present. He said that Souther was confident in the urea technology it had chosen.

Mr. Olsen noted that there would have to be changes to the site plans given Southern was now proposing to use a silo or silos to store the urea instead of the two tanks for aqueous ammonia.

Mr. Deane said there were benefits and negatives to what the applicant was proposing.

Mr. Cowden noted he was torn about asking the Subcommittee to review now what he saw as a main benefit of the overall project: NOx reductions from Units #1 and #2 due to the SCRs. He also noted the industry demand for installation of SCRs had gone up. He said because of this, Southern needed a decision now on SCRs for Units #1 and #2.

Mr. Deane suggested the Subcommittee approve the installation of SCRs on Unit #1 and delay a decision on Unit #2 to see if newer technology is available.

Ms. Adams suggested the commercial viability of zero-ammonia technology was some way off based on the way permits in California had been written. The permits allow the developer of a power plant who chose to use SCONOX on one unit to switch back to SCRs if SCONOX was not viable at the time the power plant was built.

Mr. Olsen agreed noting SCRs are the best technology available now to control NOx.

Mr. Dunham suggested that Town's technical consultant had commented that zero-ammonia technologies are at least five years away from being viable.

Mr. Olsen questioned whether Southern had a DEP permit for installation of SCRs on Units #1 and #2.

Ms. Adams noted that no, the installation of SCRs on these units was a voluntary undertaking by Southern. It had received DEP approval subject to verification of the SCRs basic operational parameters based on a letter submitted by the applicant from the DEP back in March, 1999,

Mr. Olsen asked Southern to respond. A representative from Southern Energy Canal, LLC noted they had a letter of authorization from the DEP. He noted it was the letter of March 17, 1999 as referred to by Commission staff.

Mr. Olsen noted the Subcommittee had received a comment letter from Representative Delahunt supporting Southern's request to install SCRs. He read it into the record and accepted it for the file.

Mr. Travelo said he thought the installation of SCRs was a band aide bottom-line driven approach to a larger air quality problem.

Mr. Schlaikjer said that under the current permits, there is no provision for the cleanup of Units #1 and #2: what the applicant is doing is voluntary. He supported SCRs because they would reduce NOx emissions.

Mr. Olsen noted there would be some air quality benefit.

Mr. Travelo was concerned about the urea and/or ammonia being transported by barge through the Canal.

Mr. Olsen asked staff to comment on procedure.

Ms. Adams noted Ms. Bebout had instructed her by telephone this morning to state that if the Subcommittee believed it could reach a recommendation, it should do so or defer until Monday at 11:00 AM when she would be available.

Mr. Patrick of Self-Reliance asked for the ability to speak on the applicant's request. Mr. Olsen said it was not standard procedure in Subcommittee meetings, but he would allow a brief statement in light of the same courtesy the Subcommittee had extended to other members of the audience to make comments.

Mr. Patrick said he supported installation of SCRs with conditions. He said Southern needed SCRs to build Unit #3 because they were allotted 14% of the Massachusetts NOx budget. He said that the installation should be conditioned on a review of technology available in 3-5 years and if newer technology was available, Southern should be required to use it. He said Southern should be required to run the SCRs year-round for

maximum NOx reductions.

Mr. Cowden asked for the opportunity to respond. Mr. Olsen allowed a few brief comments but stressed that there was to be no further comment from the audience after this.

Mr. Cowden said that Southern could build Unit #3 without installing SCRs on Units #1 and #2 by purchasing NOx credits.

Mr. Olsen asked for a motion from the Subcommittee.

Mr. Deane moved that the staff be instructed to draft a decision with conditions to approve the applicant's Phase One request. He also moved that the draft decision be placed on the July 29, 1999 Commission agenda for a final hearing before the full Commission. Mr. Schlaikjer seconded the motions. The Subcommittee voted all in favor of the motions.

Mr. Deane moved that the Subcommittee hold a public meeting on July 15, 1999 beginning at 1:00 PM at the Assembly of Delegates chambers in Barnstable to discuss the draft decision. Mr. Schlaikjer seconded the motion. The Subcommittee voted all in favor of the motion.

Mr. Deane moved to adjourn the meeting. Mr. Schlaikjer seconded the motion. Meeting ended at 10:30 AM.

Subcommittee Meeting – July 15, 1999

Ms. Adams noted the Subcommittee was meeting to discuss a draft decision based on a vote taken at the last meeting on July 9, 1999. She noted the Decision included testimony drawn from the previous meetings and hearings. She noted the applicant as well as the Towns of Bourne and Sandwich had received a copy of the draft decision.

Ms. Bebout suggested the MEPA process should be referenced in the decision. Mr. Fox responded the project was before the Commission as a DRI.

Mr. Deane asked how much gas was burned in Canal Unit #2. Ms. Adams said the decision noted it could burn gas up to a 60% load.

Ms. Bebout noted this was a statement of how much gas Unit #2 could use but that questions of fuel use relative to improving air quality would need to be addressed by the applicant in the next phase of SCR review and/or as part of the review of Unit #3.

Mr. Olsen said that finding AQ2 should recognize that SCRs on Units #1 and #2 would reduce NOx "during the ozone/NOx season (May - September)."

Mr. Deane asked how high the proposed urea silos would be. Attorney Ford said they would be about 60 feet high.

Mr. Olsen suggested the silos be addressed in a subsequent phase of the SCR installation and as such, the last part of condition G7 should be stricken.

Mr. Travelo also felt that the language in G7 about the silos should be removed.

Ms. Adams noted that this could be done since this decision dealt with just Phase One of site work to prepare the site for installation of SCRs on Units #1 and #2.

Mr. Schlaikjer noted the shipment of any type of ammonia was regulated by the Federal Department of Transportation.

Mr. Olsen noted that the language of condition HAZ3 dealt with this.

Mr. Schlaikjer asked how the emergency supply of ammonia, if needed, would be stored: would the delivery barge be kept tied up at the Canal plant's berthing area?

Ms. Bebout questioned whether it was possible to get to this level of detail now.

Mr. Cowden said Southern Energy was not going to build any on-site storage tanks for emergency back-up supplies of ammonia should the urea system fail. He suggested it was difficult to say at this stage how ammonia might be handled, but suggested the ammonia would possibly be pumped from the barge to empty tanker trucks waiting on site, store it in the trucks and then pump it into the SCRs. He suggested pumping from the barge would not be feasible because it would tie up the berthing area. He emphasized it was not Southern's desire or expectation that ammonia would be needed.

Mr. Schlaikjer questioned why the decision dealt with the urea system at all since it would presumably be the subject of subsequent reviews: phase 2 installation of SCRs.

Ms. Bebout said it was important, nonetheless, that this decision recognize that the project incorporate the use of a urea system to supply the SCRs with ammonia. She noted it was important given the amount of discussion about the urea system.

Ms. Adams also emphasized the findings and conditions in the decision which recognized no vested rights were created, that the Commission was not obligated to make any decisions on Unit #3 and that Unit #3 was still under review.

Mr. Olsen noted that Mr. Broidrick was now Chair of the Commission and the decision's signature line should be modified accordingly.

Ms. Adams noted a detailed comment letter had been received from Matthew Patrick of Self-Reliance suggesting several conditions. She noted that point #2 raised by Mr. Patrick's letter was in the decision. Point #1 was not in the decision and point #3 was probably more appropriate to be a condition at a later phase in the SCR review.

Ms. Bebout noted what the applicant was requesting was done at their own risk.

Mr. Deane asked Attorney Ford if the applicant anticipated difficulties complying with the Transportation conditions.

Both Attorney Ford and Mr. Cowden said they had no problem with the transportation conditions, including the information submittal deadlines.
Mr. Travelo asked that a quotation of his on page 14 of the draft from the July 9, 1999 Minutes be changed.

Mr. Schlaikjer said he had noted in the same set of Minutes that Mr. Travelo was also concerned about ammonia and asked this be added to the Testimony section.

Mr. Olsen said Subcommittee members should transmit corrections to the staff about the Minutes in time for the draft decision to be mailed to the full Commission.

Ms. Bebout asked for a motion from the Subcommittee.

Mr. Olsen made a motion to recommend the revised decision for approval with conditions to the full Commission. Mr. Deane seconded the motion. Mr. Olsen, Mr. Deane, Mr. Schlaikjer and Ms. Bebout voted in favor of the motion. Mr. Travelo voted in opposition.

Mr. Schlaikjer moved to adjourn the meeting at 1:45 PM. Mr. Travelo seconded the motion. The Subcommittee voted all in favor of the motion.

## JURISDICTION

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

The project which is the subject of this decision consists of Phase One work to prepare Canal Station Units #1 and #2 for installation of Selective Catalytic Reduction (SCR) pollution control technology. Phase One work shall consist of installation of a bypass duct, foundation construction and replacement of fans, including the activities as outlined in a letter dated April 22, 1999 with attachments (specifically Exhibit A) received by the Commission on April 26, 1999.

## FINDINGS

The Commission has considered the request of Mr. Norm Cowden, representing Southern Energy Canal, LLC for a Development of Regional Impact for Phase One work to prepare Canal Station Units #1 and #2 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 first phase of work to prepare the Canal Station site and Units #1 and #2 for installation of Selective Catalytic Reduction (SCR) pollution

control technology. Other phases are anticipated which include but may not be limited to other site work and construction, actual installation of the SCRs and operation of the SCRs.

G2. The redevelopment/addition of a third power generating unit, Unit #3, 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 Units #1 and #2 for installation of Selective Catalytic Reduction (SCR) pollution control technology is separate from the on-going review of Canal Unit #3. Part of this review will include air quality permitting of Unit #3 and methods to address other pollutants besides oxides of nitrogen (NOx). This is also recognized by finding AQ6, below.

G3. The applicant's request is summarized in a letter dated April 22, 1999 from Attorney Ford, received by the Commission on April 26, 1999. It is also discussed in Exhibit A to that letter. The applicant also submitted preliminary construction drawings and site plans received by the Commission on June 1, 1999 as part of a letter to the Sandwich Town Administrator.

G4. Local permits are required from the Town of Sandwich for the applicant's requested work.

HAZARDOUS MATERIALS/WASTES

HAZ1. The applicant proposes to utilize SCRs on Units #1 and #2 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 and they utilize ammonia gas as an input. The applicant originally proposed to use 240,000 gallons of liquid ammonia, stored on site in two 120,000 tanks. These tanks would have been located near the proposed Unit #3, very close to the SCR for Unit #2. These tanks would have been 28 feet tall and 28 feet in diameter. The SCR units, according to the DEIR/DRI application, will be 139 feet tall, 19 feet wide and 139 feet long next to each Unit. In a letter from Attorney Ford, dated July 8, 1999, the applicant commits instead to use of an "ammonia on demand" (AOD) system to replace the aqueous ammonia. The AOD system will utilize urea pellets instead of ammonia: it will generate ammonia gas through a chemical process.

HAZ2. According to a letter from Attorney Ford dated July 8, 1999, the dry urea is installed in silos which can hold up to about 360,000 pounds of material. It is then fed into a mixing tank where a total quantity of 250 gallons of condensate is used to make up the final mixture. The final mixture solution is them pumped through a heat exchanger and then to a hydrolyzer where it is heated and further sparged with steam. The material is at this point at 450 psi and about 450 degrees F. This produces a gaseous mixture of about 20% ammonia, 10% carbon dioxide and 70% water. This gaseous mixture then flows into the SCR where it is used in the same manner as if aqueous ammonia was used.

HAZ3. The AOD system will be supplied by truck deliveries of urea. Comments from the applicant together with information from the DEIR indicate the urea system will result in eight to ten truck deliveries of urea per week as opposed to the 12 truckloads of aqueous ammonia per week.

HAZ4. Urea, according to a Material Safety Data Sheet provided by the applicant on July 8, 1999, has a Chemical Abstract Number of 57-13-6. It is a solid, crystal or white powder under typical conditions. It's melting point is 132.7 degrees C or about 271 degrees F. It is stable and non-flammable. It does produce ammonia when decomposition occurs, but it is also unregulated by the Occupational Safety and Health Administration (OSHA) relative to hazard communication plans. Urea is also not listed as a carcinogen by the American Conference of Governmental Industrial Hygienists or the Internal Agency on Research on Cancer.

Aqueous ammonia (CAS # 7664-41-7), by comparison, is listed as one of the 16 substances mandated by Congress for inclusion on the Extremely Hazardous Substance List of the Clean Air Act. Companies using or handling up to or over 500 pounds of any form of ammonia are required to develop detailed emergency response plans. Releases of 100 or more pounds of ammonia trigger notification to the Local Emergency Planning Committee.

HAZ5. According to Attorney Ford's July 8, 1999 letter, the catalyst in SCRs uses vanadium pentoxide and titanium pentoxide. In its unused form, the catalyst must be handled as a hazardous material. In its spent (used) form, it is a hazardous waste. 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 allow Large Quantity Generators (LQGs) to generate in excess of one kilogram of acutely hazardous waste per month. Based on information in the DEIR/DRI, 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 from generating vanadium pentoxide from spent SCR catalysts. It is anticiapted based on information received that the catalyst would need to be replaced less frequently than once a month - perhaps after several years of operation.

AIR QUALITY

AQ1. The Phase One work to prepare Canal Station Units #1 and #2 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. SCRs can run using natural gas.

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 units will also result in ammonia emissions and additional emissions of particulates. By comparison, installation of SCRs on Units #1 and #2 is estimated to reduce NOx emissions by 2,437 tons during the ozone/NOx season (May - September). SCRs will result in 16.9 additional tons of ammonia and up to 65.6 added tons of particulates.

AQ3. There are no Federal ambient air quality standards for ammonia. The Massachusetts DEP has established a 24-hour average Threshold Effects Exposure Limit and an annual average Allowable Ambient Limit. These values are the exposure limits recommended to protect public health for over 100 pollutants, including ammonia. The estimated ammonia emissions from Units #1 and #2 are 16 pounds per hour. Based on

ambient air quality modeling provided to the Commission's consultant, Dr. Knapp of Summit Environmental, the maximum 24-hour ammonia concentration calculated was one-tenth of one percent of the standard established by the DEP. This ambient concentration is well below the DEP guideline established to protect public health and is below the ammonia odor threshold.

AQ4. 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 three possible options to meet these requirements for Units #1 and #2: 1.) purchase NOx credits, 2.) restrict fuel burned (use the Units less) or 3.) install SCRs. Comments received from the DEP indicate that permission has been given to Southern Energy Canal, LLC to install SCRs on Units #1 and #2. The SCRs will be used to reduce NOx emissions under the NOx budget program.

AQ5. NOx allowances for Unit #3 will be generated by the operation of SCRs on Units #1 and/or #2. With SCRs installed on Units #1 and #2, or with acquisition of the necessary NOx credits, Southern Energy Canal, LLC might increase the amount of No. 6 oil fired in Units #1 and #2 which would increase other pollutants. Unit #1 is fueled by No. 6 oil. Unit #2 has the ability to burn No. 6 oil as well as natural gas to a 60% load. According to the DEIR/DRI application, Unit #3 will be fired primarily with natural gas using a limited amount of No. 2 oil as a backup fuel for 30 days in any one year.

AQ6. In a letter dated February 8, 1999 to Secretary Durand of EOEA and the MEPA Unit, the Commission recommended "that the FEIR should include an analysis of converting the entire plant, Units #1, #2, and #3, to natural gas as a way of addressing the air quality issues. The analysis in the FEIR of converting the plant to burn natural gas should address project impacts, including those which affect all the topic areas discussed in the Subcommittee Report."

Comments from the DEP indicate that Unit #3 will be subject to a new source non-attainment permit application.

Comments from the EPA indicate that Unit #3 may be subject to two Clean Air Act permitting programs: 1.) PSD permit program which requires the source to install Best Available Control Technology (BACT) for those pollutants for which the area is in attainment and 2.) nonattainment new source review (NSR) program which requires the source to install Lowest Achievable Emission Rate (LAER) and emission offsets for those pollutants for which the area is in nonattainment. (emphasis in original)

AQ7. Comments received from both the DEP and EPA indicate that SCRs are the current technology used to control NOx. Zero-ammonia technologies, such as SCONOX, are not currently guaranteeable or warrantable by the vendor, or commercially viable for use on units such as Canal Station Unit #1 and/or Unit #2.

TRANSPORTATION

T1. Southern Energy Canal, LLC proposes to begin work to prepare Canal Station Units #1 and #2 for installation of Selective Catalytic Reduction (SCR) pollution control

technology. The work will consist of installation of bypass and duct, foundation construction and Unit #2 induced fan building 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.

T2. The trip generation for this project assumes that the operation of the pollution control devices (SCRs) 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. At the same time, brush trimming on the east side of Freezer Road at the middle and northern most driveways may be helpful to provide additional sight distance for the vehicles exiting the site.

T4. MPS 4.1.1.7 states that there shall be no degradation in public safety because of a DRI. As part of the review of the DEIR for Unit #3, the proponent has already agreed to the following provisions to minimize traffic impacts on the roadway system:

a.) schedule construction workers and delivery trucks arrival and departure times to avoid peak commuter and school bus hours of operation.
b.) define the travel route for construction workers and delivery trucks.
c.) train current station personnel for operation of SCR's (results in no increase in employee traffic).

T5. 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.

## 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 HAZ1, HAZ2, HAZ3, HAZ4, AQ1, AQ2 (in part), AQ3, AQ4, AQ6, AQ7, T2, T3 and T4.

2. Provided that the project obtains all permits required by the Town of Sandwich, as noted in finding G4, 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 One work to prepare Canal Station Units #1 and #2 for installation of Selective Catalytic Reduction (SCR) pollution control technology. Phase One work shall consist of installation of a bypass duct, foundation construction and replacement of fans, including the activities as outlined in a letter dated April 22, 1999 with attachments (specifically Exhibit A) received by the Commission on April 26, 1999. 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 prejudge any action that the Commission may take after completion of this Phase One 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 Unit #3. The review of Unit #3 will, however, include, but not be limited to air quality issues/permitting of Unit #3 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 as 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 the letter from Attorney Ford, dated April 22, 1999, received by the Commission on April 26, 1999 and the work described in Exhibit A. Work undertaken shall also be in conformance with the plans submitted as part of the June 1, 1999 letter to the Town of Sandwich or those required by condition G7, below, whichever is most recent.

G7. Prior to issuance of a Certificate of Compliance, 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 One request.

HAZARDOUS MATERIALS/WASTES

HAZ1. 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 units, the outlines of which are described in a July 8, 1999 letter from Attorney Michael Ford.

HAZ2. In the event that the applicant is unable to utilize the AOD urea system as described in this decision and Attorney Ford's July 8, 1999 letter, failure to use the AOD

urea system shall be based solely on technical/mechanical reasons. They shall not include nor be based on cost or other economic factors.

HAZ3. In the event that the applicant is unable to utilize the AOD urea system as described in this decision and Attorney Ford's July 8, 1999 letter, for only those reasons outlined in condition HAZ2, above, the applicant shall:

1.) Immediately provide written notice to the Commission and the Towns of Sandwich and Bourne describing the technical reasons for the inability to utilize the AOD urea system, methods for meeting the need for ammonia to supply the SCR units and providing an anticipated schedule for repair of the AOD urea system.

2.) Be allowed to supply the SCR units using ammonia for not more than 90 calendar days, or until the AOD urea system is repaired, whichever is sooner, provided the ammonia is transported in accordance with all local, state and federal regulations and is shipped by barge to the plant's berthing station in the Cape Cod Canal.

HAZ4. In the event that the applicant utilizes ammonia on a temporary basis to supply the SCRs as outlined in condition HAZ3, above, the applicant shall handle and store the ammonia in compliance with all local, state and federal hazardous materials regulations, Occupational Safety and Health (OSHA) requirements and emergency planning regulations. This includes but is not limited to OSHA workplace Right-to-Know requirements and the Emergency Planning and Community Right-to-Know Act.

HAZ5. The applicant shall manage spent SCR catalyst as a hazardous waste in compliance with the Massachusetts Hazardous Waste Regulations, 310 CMR 30.00.

TRANSPORTATION

T1. Prior to issuance of a Building and/or Foundation permit from the Town of Sandwich, and prior to issuance of a Certificate of Compliance from the Commission for the construction and other site work outlined in Attorney Ford's April 22, 1999 letter with attachments, the applicant shall provide the following to the Commission for staff review and approval:

a.) A construction schedule,
b.) A defined route for construction workers,
c.) A schedule for arrival and departure of construction workers,
d.) A defined route for the delivery of construction materials and urea, and
e.) A schedule for delivery of construction materials and urea.

**SUMMARY**

The Commission hereby approves with conditions the application of Southern Energy Canal, LLC for a Development of Regional Impact for Phase One work to prepare Canal Station Units #1 and #2 for installation of Selective Catalytic Reduction (SCR) pollution control technology. Phase One work shall consist of installation of a bypass duct, foundation construction and replacement of fans, including the activities as outlined in a letter dated April 22, 1999 with attachments (specifically Exhibit A) received by the Commission on April 26, 1999.

Thomas Broidrick, Chair

8/9/99
Date

**COMMONWEALTH OF MASSACHUSETTS**

Barnstable, ss.

Subscribed and sworn to before me this 9th day of August, 1999.

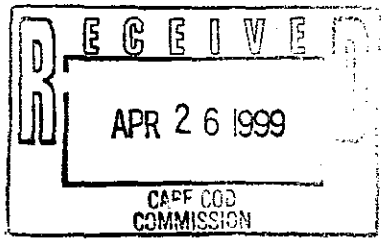
NAME, Notary

My Commission expires:

OFFICIAL SEAL
KATHARINE L. PETERS
NOTARY PUBLIC-MASS.
BARNSTABLE COUNTY
My Comm. Expires Nov. 19, 2004

MICHAEL D. FORD, ESQUIRE
ATTORNEY AT LAW
72 MAIN STREET, P. O. BOX 665
WEST HARWICH, MA. 02671
TEL. (508) 430-1900 FAX (508) 430-8662
EMAIL: mdfesq@capecod.net

CAPE COD COMMISSION
DEVELOPMENT OF REGIONAL IMPACT
DECISION EXHIBIT A
(includes this letter and its attachment, also "exhibit A")




April 22, 1999

Dorr Fox, Chief Regulatory Planner
Cape Cod Commission
P. O. Box
Barnstable, MA. 02630

RE: Southern Energy Canal, L.L.C. - SCR Systems - Canal Plant Units I and II

Dear Mr. Fox:

I write on behalf of Southern Energy Canal, L.L.C. ("Southern") to confirm my conversations with you and Ms. Fenn regarding Southern's request to proceed with certain work during the pendency of the EIR/DRI review of the Canal Plant Redevelopment Project, in order to prepare Units I and II for the future installation of Selective Catalytic Reduction Systems ("SCR") . SCR Systems are a form of pollution control technology for the control of oxides of nitrogen (NOx) emissions. The first phase of this work will include the following activities:

. . . . Installation of bypass and duct . . . .
. . . . Foundation construction . . . .
. . . . Unit II induced fan building . . . .
. . . . Station Service Transformers . . . .

Per your request, I have attached a more detailed description of this first phase of the SCR Systems' installation for which Southern is seeking approval to proceed with at this time. (See Exhibit A) It is anticipated that Southern will be seeking approval of subsequent phases of the SCR installation depending upon the tract of the permitting for the entire Canal Redevelopment Project which includes proposed Unit III.

As you are aware, Massachusetts is presently part of a non-attainment area for the National Ambient Air Quality Standards ("NAAQS") for ozone. While Southern's pending EIR/DRI application for Unit III includes SCR Systems installation for Units I and II, Southern is willing to proceed with this phase of the work while permitting review continues for the entire redevelopment project. The DEP has advised Southern of its approval of the SCR installation for Units I and II at this time. (See Letter from DEP attached as Exhibit B) Per your request, I have confirmed that the SCR technology will be a benefit to air quality regardless of whether oil or natural gas is used to fuel the operation in the future.

Portions of the first phase of the SCR installation work may need a building permit, and to the extent exterior alterations are performed which are subject to public view, a Certificate of Appropriateness may be needed from the Sandwich Old Kings Highway Committee. Further, a Determination of Applicability will be requested from the Sandwich Conservation Commission under their local wetland bylaw with respect to the 500 year flood zone. Finally, a Special Permit may be required from the Zoning Board of Appeals as an extension to a nonconforming structure.

As a result, it would appear necessary, given the pending EIR/DRI, and the Cape Cod Commission anti-segmentation Policy, for the Cape Cod Commission to authorize the issuance of these local development permits. It would seem appropriate that both the existing Canal Subcommittee and the Regulatory Committee act on this request, but I await your advice in that regard. Given Southern's current schedule for SCR installation, time is of the essence if Southern is to achieve its goal of being in a position to provide air quality benefits in time for the 2000 ozone Season.

Thank you for your cooperation and assistance in this matter to date.

Very truly yours,

Michael D. Ford

MDF/djw
enc.

cc: Henry Coolidge
Norm Cowden
Dean Brunton
Sandwich Selectmen
Bud Dunham, Town Administrator
Marian Riley, OKH
Joanne Buntich, Town Planner
Vickey Bebout, Chair Subcommittee
Margo Fenn, Executive Director
Patty Daley, Legal Counsel
Scott Smith
Donna Sharkey, Esquire

# EXHIBIT A

# CANAL UNITS I & 2
## SCR CONSTRUCTION - PHASE I

Installation of bypass and duct -

Inside the existing plant there is duct to carry the exiting flue gas from the boilers to the chimney. The bypass will allow the exiting gas to be diverted through the SCR, in the future. Installation of the exiting and returning duct should be added when installing the bypass. The duct added to Unit 2 will be within the skin of the existing building and thus have no appearance changes. The duct added to Unit I will, however, cause the lower roof on the south side of the budding and under the transmission lines to be raised to accommodate the installation. The roof will be raised from 122'- 4" to 143"- 10", but this will still be below the 2 10" roofline The importance of accomplishing this work now is to make this modification during planned outages this year. If we wait, the work would cause extended outages at a later time and limit our ability to help supply power to the grid.

Foundation construction -

Against the western walls of Unit I and Unit 2 we will be installing foundations to support the SCR units. The majority of this work will be below grade and therefore not visible. Building these concrete foundations before winter will be most prudent and produce the best workmanship. We would Re to have all concrete work performed well before the winter months.

Unit 2 Induced Fan Building -

This building will house the Unit 2 Induced Fans. The exiting 4500 Hp fans will be replaced with new 7000 Hp fans. The stronger fans are required for operating the existing SCRs, but reviewing future outage schedules and the loading on the current fans we find this work to be prudent now. Changing these motors will require 5 -6 weeks of work, once everything is in place. This building will be an extension off the existing housing on the south side of Unit 2. The roofline will be the same, but the building will extend approximately an additional 40". We already have an extended outage scheduled for this fall and would like to take advantage rather than force another similar outage in the spring of 2000. The existing fans are currently loaded higher than their rating and should be changed, regardless.