THE KEY WEST CITIZEN

Published Daily

Key West, Monroe County, Florida 33040

STATE OF FLORIDA)

SS.

COUNTY OF MONROE)

Before the undersig	ed authority personally appeared
- Ruth T. Peeples :	, who on oath says that she is
o Advertising Manager	of the Key West Citizen, a daily news-
paper published at Key W	est in Monroe County, Florida; that the
attached copy of adverti	sement, being a
in the matter of State of Ala.	
envis regulation	· · · · · · · · · · · · · · · · · · ·
3/29/89	ewspaper in the issues of
a newspaper published at and that the said newspaper lished in said Monroe Co and has been entered as in Key West, in said Monroe year next preceeding the of advertisement; and as not promised any person	ys that the said The Key West Citizen is to Key West, in said Monroe County, Florida, aper has heretofore been continuously publounty, Florida, each day (except Saturdays) second class mail matter at the Post Office proe County, Florida, for a period of one he first publication of the attached copy ffiant further says that he has neither paid, firm or corporation any discount, rebate, or the purpose of securing this advertisement said newspaper.
	fore me this day of
13ett	E fush commission expires:

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State of Florida Department of Environmental Regulation

Notice of Intent to Issue

The Department of Environmental Regulation hereby gives notice of its Intent to issue a permit to Key West City Electric System. 1006 James Street, Key West, Florida, 33041, to construct two 10 MW diesel generation at the Stock Island plant in Morrae County, Florida. The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

The project will involve the shut down of three 10.5 MW steam units located at the Key West Plant and the construction of two 10 MW diesel generators at the Stock Island plant.

A determination of Best Available Control Technology (BACT) was required. BACT review was conducted for nitrogen oxides, carbon roonavide, sulfur dioxide, particulates and votatile organic compounds. In determining the BACT, the Department has considered toxics and those air pollutants not regulated by the Clean Air Act. A discussion of how BACT was elemined is included in the Department's preliminary determination.

The maximum degree of increment consumed is as follows: $\mathcal{T}_{i} = \mathcal{T}_{i} \cup \mathcal{T}_{i}$

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The maximum combined pollutant concentrations from the two diesel engines and other sources in the erea will be less than the National Ambient Air Quality Standards (NAAQS). The NAAQS are levels set by the EPA which identify the ambient concentration necessary to protect human health and welfare with an adequate margin of safety.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (ircelved) in the Office of General Counsel of the Department at 2600 Blair Stone Road. Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waver of any right such person may hove to request an administrative determination thearing) under Section 120.57, Florida Statutes.

The petition shall contain the following information:

- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Fermit File Number and the county in which the project is proposed:
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action:
- (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action:
- (d) A statement of the material facts disputed by Petitioner, if any,
- (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action:
- (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and
- (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the explanation between the become a party to the proceeding. The petition must contorm to the requirements specified above and be filed freceived, within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure its petition within the allowed time frame consultate a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

The application is available for public inspection during normal .business hours, 8:00 a.m. to 6:00 p.m.; Monday through Friday, except legal holidays, at:

Department of Environmental Regulation Bureau of Air Quality Management 2600 Blair Stone Road Tallahassee FL 32399-2400

Dept. of Environmental Regulation South Florida District Office 2269 Bay Street Ft. Myers Ft. 33901-2896

Dept. of Environmental Regulation South Florida District Branch Office 11400 Overseas Hwy., Suites 219-224 Marathon FL 33050

Any person may send written comments or request a public hearing on the proposed action to Mr. Bill Thomas at the Department's Tallahassee address. All comments mailed within 30 days of the publication of this notice will be considered in the Department's final determination. Furthermore, a public hearing can be requested by any person. Such requests must be submitted within 30 days of this notice.

March 29, 1989

The Deposition The Upaer

PROOF OF PUBLICATION

BERVING THE URDER KE	Y6
BOX 1197, TAVERNIER, FL. 33070	
STATE OF FLORIDA)	
COUNTY OF MONROE)	
Before the undersigned authority personally appeared	
, who on oath, says that he is	
of THE REPORTER, a weekly newspaper published at Tavernier, Monroe County, Florida	;
that the attached copy of advertisement, being a LEGAL NOTICE	
IN THE MATTER OF NOTICE OF INTENT TO ISSUE	
Court, was published in said	
newspaper in the issues of MARCH 30TH, 1989	
Affiant further says that the said REPORTER is a	
newspaper published at Tavernier, in said Monroe County,	
Florida, and that the said newspaper has heretofore been	
continuously published in the said Monroe County, Florida,	
each week (on Thursday), and has been entered as second	
class mail matter at the Post Office in Tavernier, in said	
County of Monroe, Florida, for a period of one year next	
preceding the first publication of the attached copy of	
advertisement; and affiant further says that he has neither	
baid nor promised any firm, person, or corporation any	
discount, rebate, commission or refund for the purpose of	
securing this said advertisement for publication in the	
said newspaper.	
Drami Wolf	

SWORN TO AND SUBSCRIBED BEFORE ME THIS

ARY PUBLIC STATE OF FLORIDA MOTARY PUBLIC STATE OF FLORIDA HY COMMISSION EXP. APR. 2,1991

MY COMMISSION EXPIRES:_

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THE FLORIDA KEYS KEYNOTER Published Twice Weekly MARATHON, MONROE COUNTY, FLORIDA

RECEIVED 100 mm

DER - BAQM

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A determination of Best Available Control Technology (BACT) was required. A determination of Best Available Control Technology (BACT) was required. A determination of BACT (BACT) and a determination BACT. Department has considered lowes and those air pollutants not regulated by Clean Air Act A discussion of how BACT was determined is included in the partment's preliminary determination.

The maximum depress of increment consumed is as follows:						
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The maximum combined pollutent concentrations from the two diesel engine and other sources in the area will be less than the National Ambient Air Qualitional Standards (NAAGS). The NAAGS are levels set by the EPA which identify the ambient concentration necessary to protect human health and wolfare with an adequate margin of safety.

A person whose substantial interests are affected by the Department's propose permitting decision may petition for an administrative proceeding (hearing) accordance with Section 120 57. Florida Statutes. The petition must contain the information set forth below and must be filled (necessed) in the Office of Gener Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Floric 23399-2400, within fourteen (14) days of publication of this notice. Petroner sharmal a copy of the petition to the applicant at the address and cated above at the time of filling. Failure to file a petition within this time period shall constitute it waver of any right such person may have to request an administrative determination (hearing) under Section 120 57, Florida Statutes.

The Petition shall contain the following information;

- (a) The name, address, and telephone number of each potitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed.
- (b) A statement of how and when each petitioner received the notice of the Department's action or proposed action;
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- (e) A statement of facts which politioner contends warrant reversal or modification of the Department's action or proposed action; (f)A statement of which rules or statutes politioner contends require reversal or modification of the Department's action or proposed action; and
- (g) A statement of the relief sought by petitioner, stating procisely the action petitioner wants the Department to take with respect to the Department's action or

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F.S., and to participate as a party to this proceeding. Any subsequent intervents with the section of the person has the received of the presiding officer upon motion filed pursuar, to Rule 28-5.207, F.A.C.

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or just∦

Department of Environmental Regulation Bureau of Air Quality Management 2600 Blair Stone Road Tallahassee, Flonda 32399-2400

Dept. of Environmental Regulation South Florida District Office 2269 Bay Street FL Myers, Florida 33901-2896

Dept. of Environmental Regulation South Florida District Branch Office 11400 Overseas Hwy., Suites 219-224 Marathon, Florida 33050

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Publish: March 29, 1989

STATE OF FLORIDA CONTROL OF THE CONT 'n., Mind over the . NOTICE OF INTENT TO ISSUE DESCRIPTION

The Department of Environmental Regulation hereby gives notice of its intent to issue a permit to Key West City Electric System, 1006 James Street, Key West, Florida, 88041; to construct two 10 MW dissel generators at the Stock Island plant in Monroe County, Florida. The Department is issuing this Intant to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

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The maximum degree of increment consumed is as follows:

Shr - 24-hr - Annual 16-2 Pollutant - a sca Class I - - - - - - - - - - - - Annual

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The maximum combined pollutant concentrations from the two diesel engines and other sources in the area will be less than the National Ambient Air Quality Standards (NAAQS). The NAAQS are levels set by the EPA which identify the ambient concentration necessary to protect human health and welfare with an adequate margin of safety.

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A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

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Published: 3/30/89 The Reporter Tavernier, FL 33070 Gary Smallridge

Read New Remit Frovision of CAA Amendments

Some inclination on part of EPA to liberally and have flexible permits 20 pages of how they are thinking about doing it Need specifics. Tonnage Transportation Build up Preliminarily can make decision representation. to go on oral Can anyone in state give us a fix Geological Survey Cet a fix on geographics 1, Gary Smallridge will need sufficient porticulais Need someone who can speak ling of from engineering point of view. Can Request a declaratory statement 17-103.

ne are by which of company gives precise factual narration of what is to transpise. Description we can profer an opinion which would be birding on hern. They can show this to the public

#150 they could submit a letter more detailed than what they have. Must clavify what to charge \$1500 Remind him that Cole stuck it to us after we to accomo dated him. Are we going to do it free Ask Buck + Preston Preston - Ful and electrical would be danged Estimate 150 to 175 Tons per year SO2 at least
144 tons per year of NOx
1.7 tens per year of PM

Can't get exempte	on based on 17-2,210(3)
also doesn't mee	on based on 17-2,210(3) of cutaria for relocatable
facility since	the devation of enusyings
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Cont get exemption as PSD facility from 17-2,500 (3)(a) 1. be cause this won't be a temporary faulity not to exceed 2 years

According 17-2.100 (50) the owner must have all preconstruction permits a possible regular before commencing construction. According to 17.2.100(55) construction include the laying of foundations.

Installation of foundation which in this case is the installation of a subtenental pile.

The age Key West intends to more the turbine to docation approximately & mile to the east. of the present position

More are

27Apr

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Conservature	
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PM 4-19-89 Atlanto, 3A filicopy

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET ATLANTA, GEORGIA 30365

4APT-APB-cdw APR 1 9 1989 ORGIA 30365 RECEIVED

Mr. Clair Fancy, P.E., Deputy Chief Bureau of Air Quality Management Florida Department of Environmental Regulation Twin Towers Office Building 2600 Blair Stone Road Tallahassee, Florida 32399

APR 2 1 1989

DER - BAQM

Re: Key West Diesel Engine Generating Station (PSD-FL-135)

Dear Mr. Fancy:

We have reviewed your March 21, 1989, letter containing the preliminary determination, public notice, and draft permit for the proposed: construction of two 10MW diesel generators for the Key West City Electric System (Key West) at the Stock Island Plant, Monroe County, Florida. We offer the following comments which were discussed on April 10, 1989, during a telephone conversation between Mr. Pradeep Raval of your staff and Ms. Karrie-Jo Shell of my staff.

Best Available Control Technology (BACT) for Nitrogen Oxides (NO.)

Using a diesel engine with an uncontrolled emission rate of 8 gm/hp-hr as the basis for the evaluation, four options considered in the "top-down" BACT approach were:

	Control Option	Emission Limit	(gm/hp-hr)
2. 3.	Diesel Engine with SCR Combined Cycle Engine Gas Turbine Diesel Engine with Timing	0.8 1.0 1.3 6.0	
	Retardation		

Selective Catalytic Reduction (SCR) was rejected as BACT because of its large capital cost. In order to cover the \$2.3 million capital cost, the applicant claims they will need additional bonding coverage, which in turn would raise electrical rates in the Key West area. The increase in rates would allegedly result in financial burdens for the citizens of Key West, who recently experienced rate increases for water.

The use of a gas-fired turbine or a combined cycle engine was rejected because these units are typically sized larger than stationary diesel engines (only one unit of 20MW would be needed instead of the desired two 10MW units), which means one large unit would have a lower reliability than two smaller units. The fact that these units are typically sized larger than stationary diesel engines does not mean gas turbines or

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET ATLANTA, GEORGIA 30365

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300

AIR-4

Mr. Clair Faney, P.E., Deputy Chief Bureau of Air Quality Management Florida Dept. of Environmental Regulation Twin Towers Office Building 2600 Blair Stone Road Tallahassee, FL 32399

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combined cycle engines are unattainable (there are several permitted gas-fired turbines under 10MW using water injection as a NO control). Nonetheless, this is not a major issue because SCR appears to be the best candidate for BACT for this source, as outlined later in this letter.

BACT was determined by DER to be timing retardation combined with limiting the hours of operation for each unit to 1870 hours per year. At levels of operation greater than 1870 hours per year (for each engine), SCR was determined to be BACT. 1870 hours of operation was chosen as the "transition point" because beyond 1870 hours, it becomes more economical for the applicant to use SCR rather than timing retardation.

We feel that SCR should be BACT even at the proposed operating rate of 1870 hours per year for two main reasons. Key West's consultant, R.W. Beck and Associates, states that certain conditions must be met before additional financing is granted above what has already been awarded. We understand that obtaining additional bond coverage may be difficult because cost estimates were made prior to any knowledge that SCR may be considered a viable control option for NO emissions from this diesel engine. However, the applicant has not demonstrated that obtaining more funding is impossible, nor should applicants be allowed to assume a specific BACT control option or cost for pollution controls prior to the actual BACT determination.

Secondly, the overall and incremental costs associated with SCR appear to be reasonable. The overall cost to operate the units with either SCR or timing retardation at 1870 hours is \$1,333 per ton of NO removed and the incremental cost associated with these options is \$1,186 per ton. As you can see, for the same amount of pollutant cost benefit the applicant has the option of using timing retardation, which will remove 110 TPY of NO, or SCR, which will remove 398 TPY of NO. The difference in the amount of NO removed is 288 TPY. As stated earlier, the applicant claims that SCR is economical only for hours of operation greater than 1870, but we believe SCR is still a viable option. For example, even if the applicant operated each unit less than 1870 hours per year the costs associated with SCR still appear reasonable, as estimated below:

Hours of Operation	*Cost per ton of NO removed for SCR (\$/ton)	*Cost per ton of NO removed for TR (\$/ton)	*Incremental cost (\$)
1,500	1,627	1,585	1,589
1,200	2,005	1,582	2,097

^{*}cost for both units

Draft Permits

To be more sufficient the permit should specify that the 1870 full load equivalent hours per year limit for each unit will be based on a 12-month rolling average. Note that as previously stated, we believe that SCR should represent BACT for this facility and that this limit, as well as the 145 TPY $^{NO}_{\chi}$ emission limit, would be different as a result.

Please address our concerns prior to issuance of the final determination and permit so that any outstanding issues can be resolved. If you have any questions, please feel free to contact me or Karrie-Jo Shell of my staff at (404) 347-2864.

Sincerely yours,

Bruce P. Miller, Chief Air Programs Branch Air, Pesticides, and Toxics Management Division

cc: Robert R. Padron General Manager Utility Board - City of Key West P.O. Drawer 6100 Key West, Florida 33041-6100

experd: P. Reval

2. Andrews

3. Chec

D. Knowles, SF-Oit.

R. Helberg, SF Branch

C. Chance 1175

CHF/8T



33041-6100

Mr. Clair Fancy, Central Air Permitting
Bureau of Air Quality
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

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UTILITY BOARD OF THE CITY OF KEY WEST

POST OFFICE DRAWER 6100
KEY WEST, FLORIDA 33041-6100

April 25, 1989



TELEPHONE: (305) 294-5272

TELECOPIER: (305) 294-3685

RECEIVED

APR 2 8 1989

Mr. Clair Fancy, Central Air Permitting Bureau of Air Quality Florida Department of Environmental Regulations Twin Towers Office Building 2600 Blair Stone Road Tallahassee, Fl 32399-2400 DER - BAOm

SUBJECT: PSD Application for Two 10-MW Diesel Generators at Key West, Florida

Permit Nos. AC44-152197, AC44-152198 and PSD-FL-135

Dear Mr. Fancy:

We have reviewed DER's March 21, 1989 Intent to Issue, Technical Evaluation and Preliminary Determination, draft Permit, and BACT Determination for the subject PSD application and offer the following comments. Our primary concern is that the numerical limits on operating hours, fuel consumption and NOx emission should be expressed on a per-plant, rather than per-unit basis, in order to allow CES operating flexibility. Otherwise, our comments are of an editorial nature.

We have no comment on the Intent to Issue or BACT Determination.

We have three comments on Tables I, II and III of the Technical Evaluation and Preliminary Determination. In Table I, footnote "(3)" should appear next to "173" under SO2 Emission. In Table II, the "9" under Actual Emission should be deleted and the following four values moved vertically upward. In Table III, the values "9.2, 0.2 and 5.8" should be inserted under Diesel Impact in vertically downward order.

We request that consideration be given to addressing numerical limits on a perplant, rather than per-unit basis in the draft Permit in order to allow CES operating flexibility. Specific Condition 1 could be changed to "3740 hours" for the plant. Specific Condition 4 could be changed to "2.6 million gallons", "3740 hours" and "290 tons per year" for the plant.

Mr. Clair Fancy Florida Department of Environmental Regulations 4/25/89 Page 2

We appreciate your consideration of this request prior to making a final determination on our application. We commend your staff on the thorough, accurate and diligent manner in which they have processed our application. Thank you for your assistance throughout the process.

Very truly yours,

UTILITY BOARD - CITY OF KEY WEST

"CITY ELECTRIC SYSTEM"

Robert R. Padron General Manager

RRP/sh

CC:

Leo Carey, Ass't. to the Manager Ralph Garcia, Sr., Ass't. to the Manager

Larry J. Thompson, Operations Manager Paul Esquinaldo, Jr., Finance Manager

L. T. Curry, Jr., Production Manager

M. D. Henderson

B. Pattinson

K. Platte

N. Guarriello

T. J. Reder

copied: A. Raval B. Andrews

J. Chu CHF/BT

UTILITY BOARD OF THE CITY OF KEY WEST

POST OFFICE DRAWER 6100
KEY WEST, FLORIDA 33041-6100

TELEPHONE: (305) 294-5272

TELECOPIER: (305) 294-3685

RECEIVED

MAY 3 0 1989

DER - bang 1

May 24, 1988

Mr. Clair Fancy, Central Air Permitting Bureau of Air Quality Florida Department of Environmental Regulations Twin Towers Office Building 2600 Blair Stone Road Tallahassee, Fl 32399-2400

SUBJECT: PSD Application for Two 10-MW Diesel Generators at Key West, Florida

Permit Nos. AC44-152197, AC44-152198 and PSD-FL-135

Dear Mr. Fancy:

As discussed at our meeting in Atlanta on May 19, 1989, Fairbanks Morse has prepared a position paper relative to the commercial status of SCR technology for large stationary diesel engines. The position paper is attached. We would appreciate your review prior to our scheduled conference call on May 25, 1988.

Thanking you in advance for your consideration to this matter, I remain,

Very truly yours,

UTILITY BOARD - CITY OF KEY WEST "CITY ELECTRIC SYSTEM"

14/1/Va

Robert R. Padron General Manager

RRP/sh

cc:

Leo Carey, Ass't. to the Manager Ralph Garcia, Sr., Ass't. to the Manager Larry J. Thompson, Operations Manager Paul Esquinaldo, Jr., Finance Manager L. T. Curry, Jr., Production Manager Wayne Aronson, EPA, Atlanta, GA. M. D. Henderson, R. W. Beck & Assoc. B. Pattinson, R. W. Beck & Assoc. K. Platte, R. W. Beck & Assoc. N. Guarriello, R. W. Beck & Assoc. T. J. Reder, Faibanks Morse

Colt Industries



V1A FAX #305/294-3685

Fairbanks Morse Engine Division 701 Lawton Avenue Beloit, Wisconsin 53511-6492 Telephone: 608/364-8228 Telecopier: 608:364-0382

Paul R. Danyluk Vice President — Engineering

May 24, 1989

Mr. Robert Padron, Manager Utility Board, City of Key West 1001 James Street P. O. Drawer 6100 Key West, FL 33041-6100

Dear Mr. Padron:

During our meeting in Atlanta we were asked to again document our position on the commercial status of SCR technology. This was driven by the belief on the part of the EPA that SCR technology is commercially proven for large stationary diesel engines. We, at Fairbanks Morse, do not believe that the technology is commercially available for the Key West application for the following reasons:

- 1. The Pfizer application in Adams, Massachusetts referred to is quite different from the Key West application. The Pfizer engine is a dual fuel engine and not a diesel. Because the Pfizer engine is dual fuel, it is inherently low BMEP (200 vs. 322 psi). The Pfizer engine is optimized for gas operation and not diesel and employs 1950's diesel technology.
- 2. The Pfizer engine is dual fuel because the preferred fuel is gas. It only operates on diesel when gas is not available. The Pfizer SCR catalyst is reported to have approximately 2000 hours of diesel operation intermixed with as many hours operation in gas mode. The engine in diesel mode is very low in BMEP rating and the gas operation serves to clean the catalyst because of the different nature of the hydrocarbon emission in gas versus diesel mode.
- 3. The Pfizer engine is a baseload cogeneration application providing most of the electrical and thermal needs for the plant. As a result, it runs all the time at high load levels. Engine exhaust temperatures and flows remain fairly constant as compared to the 1870 hours per year start and stop Key West application.
- 4. Controls are required with the SCR unit in order to add ammonia on about a one-to-one basis with NO_X, which requires a NO_X sensor and safety controls. In the Key West application with start and stop operation and load following during emergencies it is conceivable the exhaust temperatures could reduce below efficient and/or safe levels of catalyst operation whereby the conversion efficiency would greatly reduce or other compounds like highly explosive ammonium nitrate would form.

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- 5. NH₃ controls require NO_X sensors which are lab type instruments. This entails reference gases for calibration and zeroing. Operating and maintaining instrumentation of this type for ammonia control in an SCR application is much more critical than for simple NO_X monitors and require calibration very frequently because the instrument is being used in an absolute mode.
- 6. Two thousand (2000) hours of low BMEP diesel operation does not establish commerciality. Commercialization in the large engine industry requires many thousands of hours followed by technical publications subjected to peer review, not proclamation by the manufacturer.
- 7. Very little is known about light load operation of SCR catalysts behind engines in either diesel or gas mode. In diesel mode at light load (under 10%) unburned fuel will heavily coat the catalyst. Such prolonged light load operation could drown the catalyst in liquid fuel which burns off when the conditions become right, potentially harming the catalyst.
- 8. On dual fuel engines like at Pfizer or Peissenberg, cylinders can completely cease firing in gas mode of operation. These upsets are not uncommon and could be due to a failed injector or a burned valve. Under these upset conditions, all gas flow to the cylinder ends up in the exhaust and SCR system. Natural gas, like ammonia, is a reducing agent and could overheat the reactor and explode in the exhaust system. Nothing is known about this, or any other normal engine upset conditions, with regard to the catalyst in the limited number of dual fuel applications and limited time they have been operating.
- 9. The Key West units have quick start capability and are expected to start and stop often. Thermal cycling environments are known to be extremely difficult on exhaust systems. Experience with catalysts in extreme thermal cycling environments are unknown. Both the Peissenberg and Pfizer SCR applications are steady load and not cycling applications.
- 10. There are immediate hazards associated with storage and use of ammonia which must be considered. Ammonia, being a reducing chemical compound, is explosive in certain combinations with oxygen. An undetected leak into the exhaust system during shut-down periods could result in an explosion during engine start-up. Ammonia is toxic to humans in minor concentrations, exposure results in blindness and death. The Stock Island plant is located on a peninsula in the Atlantic Ocean. The atmosphere is humid and salt-laden. Circulating water is drawn from deep wells in the coral structure and releases hydrogen sulfide to the air. With this combination of corrosive atmospheric contaminants, almost all common construction metals are subject to severe corrosion. The ammonia must be stored in an above ground tank because of the high water table. A leak could potentially result in serious disability or loss of human life. The immediate hazards to life and health far outweigh the long term consequences associated with NO_X emissions.
- 11. Colt has an active diesel NO_x reduction development program ongoing with its lab engines. BACT techniques have been developed using these lab resources. In 1988 a joint R & D program was developed with a major catalyst supplier. Upon completion of the development program, results will be jointly published via ASME, etc., for peer review to establish and resolve outstanding issues.

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In conclusion, Fairbanks Morse feels strongly that the application of SCR technology for Key West is premature and not commercially viable. As a leader in large engine development we are knowledgeable about the available technology and currently are testing methods of emissions reductions, including SCR.

If and when SCR or other methods of emissions reductions become proven technology through thorough lab engine testing and significant operational experience, we would consider offering them as a NO, control option along with our then current proven BACT control technology.

CØD 364 9302

Vice President-Engineering

PRD/jc

cc: Nicholas Guarriello, R. W. Beck Michael Henderson, R. W. Beck John Robinson, CES, Key West Harold Kleinschrodt, Colt