

Florida Department of  
Environmental Protection

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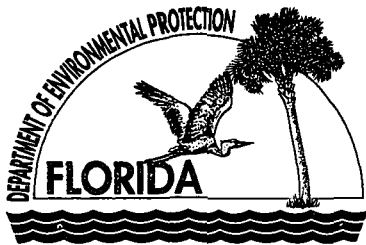
**Memorandum**

TO: Trina Vielhauer, Chief - Bureau of Air Regulation  
FROM: Syed Arif, New Source Review Section SA 417  
DATE: April 7, 2009  
SUBJECT: Project No. 0470002-068-AC  
PCS Phosphate – White Springs  
E Auxiliary Boiler Economizer Replacement  
Evaluation of Routine Maintenance, Repairs or Replacement of Equipment Components

Attached for your review is an applicability determination regarding economizer replacement for the E Auxiliary boiler at Swift Creek Chemical Facility. A request was received from PCS Phosphate which requested an applicability determination that the economizer replacement for the E Auxiliary boiler qualifies as “routine maintenance, repairs or replacement” activities and is not subject to the definition of modification under the State Rules.

Your approval is recommended of the attached applicability determination.

Attachment



# Florida Department of Environmental Protection

Bob Martinez Center  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Charlie Crist  
Governor

Jeff Kottkamp  
Lt. Governor

Michael W. Sole  
Secretary

April 7, 2009

*Sent by Electronic Mail – Received Receipt Requested*

Mr. Charles B. Pults, P.E., Sr. Environmental Engineer  
PCS Phosphate White Springs  
P.O. Box 300  
White Springs, Florida 32096

Re: Project No. 0470002-068-AC  
Swift Creek Chemical Facility – E Auxiliary Boiler  
Routine Maintenance, Repair and Replacement of E Auxiliary Boiler Economizer

Dear Mr. Pults:

On March 26, 2009, we received a request to consider the proposed economizer replacement for the E Auxiliary Boiler to be routine maintenance, repair and replacement (RMRR) type work to maintain efficiency of the existing auxiliary boiler. The Department of Environmental Protection (Department) is being asked for concurrence that the proposed work to the E Auxiliary Boiler Economizer constitutes RMRR and therefore is excluded from the definition of *modification* in Rule 62-210.200, Florida Administrative Code (F.A.C.).

**Project Background:** The proposed project entails replacement of the economizer for the E Auxiliary Boiler at Swift Creek Chemical Facility. The replacement will be an in-kind replacement. The E Auxiliary Boiler has a design capacity of 125,000 pounds per hour of steam. This steam is used to augment steam produced from the two sulfuric acid plants (E and F) to provide operating flexibility in the phosphoric acid production and evaporation process. The boiler is permitted to fire natural gas with No. 6 fuel oil as a stand-by fuel. The maximum heat input rate is 156 million British thermal units per hour (MMBtu/hr).

The economizer is a heat exchanger that increases the efficiency of the steam production of the auxiliary boiler by ten percent. The economizer does not have any air emissions of its own, it only helps in increasing the efficiency of the steam production. Due to recent excessive leaks in the economizer tubes, the economizer is currently being by-passed until it can be replaced. This has resulted in lower fuel efficiency. Replacement of the economizer will allow the boiler to operate at its design capacity and efficiency.

E Auxiliary Boiler does not operate all the time. It is only used to generate steam when there is insufficient steam from the sulfuric acid plants or when the sulfuric acid plants is/are shut down. With the current market conditions, the possibility of sulfuric acid plants not operating is high. Therefore, E Auxiliary Boiler might be operated more than normal to augment the steam requirements for the facility. It is critical for the auxiliary boiler to be operating efficiently if it has to be operated more as less steam is being produced for the same amount of fuel being burned.

**Determination:** The relevant criteria for determining whether a given project constitutes RMRR are set out in EPA's 1988 Wisconsin Electric Power Company (WEPCO) memorandum and in EPA's 1992 "WEPCO Rule". In the preamble of the WEPCO Rule, EPA states that the determination of whether the activity in question is routine "must be based on an evaluation of whether that type of equipment has been repaired or replaced by sources within the relevant industrial category." The 1988 WEPCO determination articulates five factors for assessing the "routineness" of a maintenance, repair or replacement activity: nature, extent, purpose, frequency and cost. The proposed replacement of the economizer is evaluated in light of these factors as follows.

**ROUTINE MAINTENANCE REPAIR AND REPLACEMENT DETERMINATION**


**CERTIFICATE OF SERVICE**

The undersigned duly designated deputy agency clerk hereby certifies that this Determination was sent by electronic mail (or a link to these documents made available electronically on a publicly accessible server) with received receipt requested before the close of business on 4/7/09 to the persons listed below.

- Mr. Charles Pults, PCS Phosphate ([cpults@pcsphosphate.com](mailto:cpults@pcsphosphate.com))
- Mr. Pradeep Raval, Koogler & Associates ([praval@kooglerassociates.com](mailto:praval@kooglerassociates.com))
- Mr. Christopher Kirts, Northeast District Office ([christopher.kirts@dep.state.fl.us](mailto:christopher.kirts@dep.state.fl.us))
- Ms. Leslie Maybin, Northeast District Office ([leslie.maybin@dep.state.fl.us](mailto:leslie.maybin@dep.state.fl.us))
- Ms. Kathleen Forney, EPA Region 4 ([forney.kathleen@epamail.epa.gov](mailto:forney.kathleen@epamail.epa.gov))
- Ms. Catherine Collins, Fish and Wildlife Service ([catherine\\_collins@fws.gov](mailto:catherine_collins@fws.gov))
- Ms. Vickie Gibson, BAR Reading File ([Victoria.Gibson@dep.state.fl.us](mailto:Victoria.Gibson@dep.state.fl.us))

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), F.S., with the designated agency clerk, receipt of which is hereby acknowledged.

  
\_\_\_\_\_  
(Clerk)

4/7/09  
\_\_\_\_\_  
(Date)

## ROUTINE MAINTENANCE REPAIR AND REPLACEMENT DETERMINATION

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**Nature and Extent:** The economizer is not a major component of the auxiliary boiler as it contributes to about a ten percent increase in heat recovery. The heat recovery is important to the operation of the boiler in terms of its overall fuel efficiency. Tube leaks are common in auxiliary boilers with infrequent operation, which are usually repaired. If there are many tubes leaking, it is more practical and cost effective to replace the economizer. The time and manpower requirements for the proposed project are not significant and the work can be arranged at short notice. The boiler will be shut down only to connect the economizer. Once the economizer is obtained and fitted, it will only take a day to connect. Since the economizer replacement will be in-kind, there will be no changes in the auxiliary boiler steam production rate or the air emission rates.

**Purpose:** The purpose of the project is to return the auxiliary boiler to its normal operating condition by replacing the economizer with in-kind replacement. The operation during the past few weeks has been inefficient; less steam is being produced for the same amount of fuel being burned. Based on data obtained from the applicant, the boiler steam production with the economizer operating (2008) was 13,330 pounds per hour of steam. The fuel rate was 339 gallons per hour which equates to 51 MMBtu/hr or 33 percent of design rate. The boiler steam production without the economizer operating (2009) was 10,620 pounds per hour of steam. The fuel rate was 401 gallons per hour which equates to 61 MMBtu/hr or 39 percent of the design rate. The boiler was operating at a reduced rate under the two scenarios due to available steam from the sulfuric acid plants. The boiler had to be operated at a higher fuel rate without the economizer operating to compensate for the loss of efficiency without the economizer. Even at the higher fuel rate, a reduction of more than 20 percent steam production was seen when the boiler is operated without the economizer. Performing this work will improve the fuel efficiency of the auxiliary boiler and hopefully reduce fuel oil consumption and associated costs for making steam. The reduction of fuel oil consumption with the economizer operating shall reduce the instantaneous air emission rates if the boiler is operated at the same heat input rate.

**Frequency:** Economizer tube repairs are routine for boilers of this type which are operated intermittently (average hours of operation for last 8 years is 860 hours per year). The maintenance requirements depend mostly on the effects of corrosion, which is dependent upon frequency, duration and rates of operation. Consequently, the maintenance requirements are different for each unit. While the economizer has not previously been replaced (operating since 1979), there has been maintenance work conducted on the refractory as well as tube cleaning and repairs almost every year. The frequency of economizer replacement would have been high if the boiler had been used more regularly. Since the boiler utilization is dependent on the non-operation of the sulfuric acid plants and because the sulfuric acid plants are operated on a consistent basis, unless the demand diminishes for sulfuric acid, the frequency for economizer replacement for an auxiliary boiler is around 30 years in a typical fertilizer industry.

**Cost:** The estimated cost of the proposed economizer replacement is \$200,000. The cost is less than 7% of the estimated \$3 million cost of a comparable new boiler. Repairs and replacement of a few tubes in the economizer can cost around \$20,000, as was the case in 2007. In December 2008, the economizer tube repair costs were around \$11,000. Since many more tubes need to be replaced now in the economizer, it is more practical and cost effective to replace the economizer.

### **PSD NSR Requirements Evaluation:**

- The first issue is whether the project is excluded in accordance with the Department's definition of a modification in Rule 62-210.200 (Definitions), Florida Administrative Code (F.A.C.), which states:

205. "Modification" – *Any physical change in, change in the method of operation of, or addition to a facility which would result in an increase in the actual emissions of any pollutant subject to regulation under the Act, including any not previously emitted, from any emissions unit or facility. (Emphasis added)*

## ROUTINE MAINTENANCE REPAIR AND REPLACEMENT DETERMINATION

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- The project is clearly a physical change and thus is eligible for consideration as a modification. The Department considered whether the project is excluded from the definition of modification as provided in Rule 62-210.200(205)(a), F.A.C. This provision states:

*A physical change or change in the method of operation shall not include: 1. Routine maintenance, repair, or replacement of component parts of an emissions unit; (Emphasis added).*

Based on the above information, the Department does not consider the proposed project to be subject to the provisions of Prevention of Significant Deterioration (PSD) New Source Review (NSR) contained in Chapter 62-212, F.A.C. This permitting decision is issued pursuant to Chapter 403, Florida Statutes (F.S.).

**Permitting Authority:** Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, F.S., and Chapters 62-4, 62-210 and 62-212, F.A.C. The Permitting Authority responsible for making a permit determination for this project is the Bureau of Air Regulation in the Department's Division of Air Resource Management. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

**Petitions:** A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000 (Telephone: 850/245-2241). Petitions must be filed within 14 days of receipt of this permit action. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of when and how each petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this written notice. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

**ROUTINE MAINTENANCE REPAIR AND REPLACEMENT DETERMINATION**

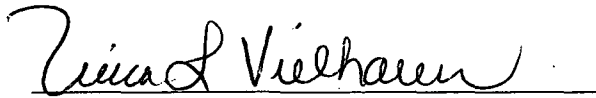
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**Mediation:** Mediation is not available in this proceeding.

**Effective Date:** This permitting decision is final and effective on the date filed with the clerk of the Department unless a petition is filed in accordance with the above paragraphs or unless a request for extension of time in which to file a petition is filed within the time specified for filing a petition pursuant to Rule 62-110.106, F.A.C., and the petition conforms to the content requirements of Rules 28-106.201 and 28-106.301, F.A.C. Upon timely filing of a petition or a request for extension of time, this action will not be effective until further order of the Department.

**Judicial Review:** Any party to this permitting decision (order) has the right to seek judicial review of it under Section 120.68, F.S., by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department in the Office of General Counsel, Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.



Trina Vielhauer, Chief  
Bureau of Air Regulation

TLV/sa

## Livingston, Sylvia

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**From:** cPults@pcsphosphate.com  
**Sent:** Wednesday, April 08, 2009 9:09 AM  
**To:** Livingston, Sylvia  
**Subject:** Review docs

Got it. Please note my correct email address.  
Charlie Pults

## Livingston, Sylvia

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**From:** Pradeep Raval [praval@kooglerassociates.com]  
**Sent:** Tuesday, April 07, 2009 10:23 PM  
**To:** Livingston, Sylvia; cpults@pcphosphate.com  
**Cc:** Maybin, Leslie; forney.kathleen@epa.gov; catherine\_collins@fws.gov; Gibson, Victoria; Arif, Syed; Walker, Elizabeth (AIR)  
**Subject:** RE: Determination for PCS Phosphate (Swift Creek Chemical Facility 0470002-068-AC)

Thanks, Sylvia.

Pradeep Raval

Koogler and Associates, Inc.  
4014 NW 13th Street  
Gainesville, FL 32609  
tel: 352-377-5822  
cell: 352-317-8635  
fax: 352-377-7158

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**From:** Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]  
**Sent:** Tuesday, April 07, 2009 4:49 PM  
**To:** cpults@pcphosphate.com  
**Cc:** praval@kooglerassociates.com; Maybin, Leslie; forney.kathleen@epa.gov; catherine\_collins@fws.gov; Gibson, Victoria; Arif, Syed; Walker, Elizabeth (AIR)  
**Subject:** Determination for PCS Phosphate (Swift Creek Chemical Facility 0470002-068-AC)

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software, *noting that you can view the documents*, and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: <<http://www.adobe.com/products/acrobat/readstep.html>> .

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

4/10/2009