



Progress Energy

Robby A. Oddin
Plant Manager
Crystal River Fossil Plant & Fuel Operations

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AIR REGULATION

May 6, 2011

Mr. Jeff Koerner, P.E.
Florida Department of Environmental Protection
Division of Air Resource Management
2600 Blair Stone Road MS 5500
Tallahassee, Florida 32399-2400

Re: Crystal River Energy Complex (Facility ID No. 0170004)
Units 4 and 5 – Temporary Use of Sodium Bicarbonate
Request for Exemption from Permitting Requirements

0170004-029-4c PE-mail Received 5/6/11

Dear Mr. Koerner:

As part of the ongoing efforts to help mitigate the negative effects associated with handling and storage of the fly ash collected from Units 4 and 5 that contains undesirable levels of ammonia, a sodium bicarbonate product is being added in the fly ash collection system. To date this activity has been conducted manually by plant personnel adding bags of the material to the system. In an effort to automate the process, Progress Energy Florida (PEF) is proposing to bring onsite temporary storage containment vessels capable of storing and transporting the material to the fly ash collection system. This storage and transportation system will be completely contained, with the exception of an air ventilation system on the storage unit (to vent air during filling operations) and a ventilation system associated with the vacuum system used to transport the material to the fly ash collection system. Particulate emissions from the ventilation systems are controlled by the use of a baghouse that removes particulate matter from the air prior to it being emitted to the atmosphere. A separate storage and transportation system is required for each unit (two system total; one for Unit 4 and one for Unit 5).

Two storage options are currently under evaluation, each having similar overall emissions potential. Approval for either of the options is requested. In the first option a 100 ton storage "pig" will be used to store the material and transfer the material to a metering silo, where it will be transferred for use in the fly ash system. In the second option two 49 ton storage silos will be used in tandem to feed the metering silo. In either option, a delivery truck will pneumatically fill the storage container (pig or silo) directly with the material. The expected delivery and transfer duration is up to two hours once per day per unit. The particulate matter in the air vented during the loading process will be controlled by a baghouse (Belgrade: 375 cfm flow rate; 0.10 grain/cfm emission rate) attached to the silo. The material will then be transferred from the metering silo to the fly ash collection system via a vacuum system venting air through a separate baghouse (MAC: 350 acfm flow rate; 0.01 grain/cfm emission rate) for a proposed duration of up to 12 hours per day. The proposed system may be installed on both Units 4 and 5. Please refer to the enclosed documents for a process diagram of each of the material handling system options as well as manufacturer's information on the baghouses.

Based on the above baghouse flow rates and operational durations, along with the manufacturer's emission rating on the baghouses, the predicted particulate matter emissions are not expected to exceed 0.424 lbs/day (0.077 tons/yr) per system.

Progress Energy Florida, Inc.
Crystal River Steam Plant
15760 W. Powerline Street
CN77
Crystal River, FL 34428

PEF plans to use these systems on a temporary basis while other ammonia mitigation projects are being evaluated. Should the need arise to permanently install the systems described in this letter, PEF understands the need to apply for an air construction permit associated with the installation of permanent equipment and air emission sources.

Based on the temporary nature of this project and the minimal amount of potential emissions associated with the use of the proposed systems, PEF respectfully requests an exemption from permitting this activity in accordance with the allowances established in Rule 62-4.040, F.A.C.

If you have any questions or concerns, please contact Jamie Hunter at (727) 820-5764 or John.Hunter@PGNmail.com. Thank you very much for your consideration of this request.

I, the undersigned, am the responsible official as defined in Chapter 62-210.200, F.A.C., of the Title V source for which this document is being submitted. I hereby certify, based on the information and belief formed after reasonable inquiry, that the statements made and data contained in this document are true, accurate, and complete.

Best regards,

A handwritten signature in black ink, appearing to read 'R. Odom', with a long horizontal flourish extending to the right.

Robby A. Odom
Manager, Crystal River Fossil Plant & Fuel Operations

Enclosures

cc: Cindy Mulkey, FDEP Siting Office

FABRIC FILTERS

Point Number (from flow diagram)		Manufacturer & Model No. (if available) Belgrade Steel Tank Co. - Belle 150		
Name of Abatement Device Belle 150 Dust House		Type of Particulate Controlled Cement Dust		
GAS STREAM CHARACTERISTICS				
Flow Rate (acfm)		Gas Stream Temperature (°F)	Particulate Grain Loading (grain/scf)	
Design Maximum 375	Average Expected 375	Ambient	Inlet N/A	Outlet 0.01
Pressure Drop (in H ₂ O) 5"		Water Vapor Content of Effluent Stream (lb water/lb dry air) Ambient	Fan Requirements (hp) (cubic ft/min) N/A N/A	
PARTICULATE DISTRIBUTION (by weight)				
Micron Range		Inlet	Outlet	
0.0 - 0.5		0%	99.98%	
0.5 - 1.0		3%	0.02%	
1.0 - 5.0		17%	0.00%	
5.0 - 10.0		18%	0.00%	
10.0 - 20.0		21%	0.00%	
over 20.0		41%	0.00%	
FILTER CHARACTERISTICS				
Filtering Velocity (acfm/sq ft of cloth) 2.5	Bag Diameter (inches) 8"	Bag Length (inches) 48"	Number of Bags 18	Number of Compartments in Baghouse 1
Bag rows will be: Staggered			Walkways will be provided between banks of bags: No	
Filtering Material: PE 37 100% Polyester 9oz.				
Describe Bag Cleaning Method and Cycle:			Air Vibrator Shaker	
Capital Installed Cost:		\$1,900	Annual Operating Cost: \$50	



**FILTER EMISSIONS STATEMENT
FOR
16 oz. Dacron Polyester Bags**

MAC Equipment, Inc. warrants its filters to be free of mechanical defects for a period of one year from the date of shipment in accordance with the "Warranty and Limitation" statement included with the original proposal.

MAC Equipment, Inc. also expects the emissions of its new 16 oz. Dacron Polyester bags, when properly installed, applied and maintained, and when operated per the design parameters referenced in the original proposal and in accordance with the manufacturers operations manuals, to emit no more than approximately **0.010 gr / dscf of air based on dry dust particle sizes of 2 microns and larger.**

The Buyer will be responsible for any emissions testing expense and MAC Equipment Inc. reserves the right to be present during any emission tests and shall be notified at least 2 weeks prior to the testing. Emissions testing must be conducted within 30 days of start-up, or 60 days from equipment shipment.

Misuse, abuse, operating outside the stated parameters, and / or water, oil, or hydrocarbons will void the emissions expectation. MAC Equipment, Inc. shall not be held responsible for any failures or excess emissions due to upset operating conditions.

This emissions expectation is contingent upon MAC Equipment receiving a process dust sample for testing, analysis, and approval. Such testing could indicate another filter media as a more suitable choice. The expected emissions are also contingent upon an inlet grain loading acceptable to MAC Equipment.

Under no circumstances will MAC Equipment, Inc. be liable or responsible for incidental or consequential damages.

Greg Huffstetler
Account Executive, Filtration
6/27/06



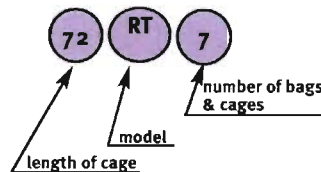
Standard Specifications

- Carbon steel or 304 stainless steel construction*
- Pneumatic receiver
- Rated to 40" w.c. static pressure
- Full welded exterior and skip welded interior
- Timing board enclosures: NEMA 12
- Top mounted hinged access doors
- Venturi nozzles and bag cups: mineral reinforced nylon
- Bag cages: galvanized carbon steel
- Bags: 16oz. singed dacron polyester
- Lifting lugs: Two on top plenum
- Inspection door:
 - Units with 18" long bags have an 18" x 17" tall bolted inspection panel
 - Units with bags longer than 18" have an 18" wide hinged inspection door
- Pressure differential gauge kit
- 60° hopper flanged to housing (Style III only)
- MAC white paint

*stainless steel includes housing, hopper and tubesheet with all carbon steel flanges and reinforced ribs

Options

- 316 stainless steel
- 10 gauge carbon steel construction rated to 20" static pressure
- 304 stainless steel flanges for 304 stainless steel filters
- High entry inlet with bag protectors
- 70° hopper slope (style III only)
- Aluminum Venturi
- NEMA 4, 7 or 9 timer enclosure
- Exhaust weather hood with birdscreen 4 x 4 mesh (Style II only)
- Carbon steel service platform with ladder and safety cage
- T-handle food grade door
- Structural steel legs, 12" clearance
- Flanged air inlet
- Mount pads
- Side mounted or top mounted fans (restrictions exist - please contact your MAC Sales Representative)



Each RT filter comes with an informational model number to better identify it.

MODEL	FILTER AREA	NO. OF BAGS	Dimensions (IN.)										MAXIMUM		WEIGHT LBS.
			A	B	C	D	E	G	H	J	K	AIRLOCK	SCFM		
18RT7	17	7	28	22	17 ¹ / ₁₆	40 ³ / ₄	95 ³ / ₁₆	10 DIA.	3	8	MD 20	MD 40	3.3	570	
38RT7	34	7	28	40	17 ¹ / ₁₆	40 ³ / ₄	113 ³ / ₁₆	10 DIA.	3	8	MD 20	MD 40	3.3	720	
54RT7	52	7	28	58	17 ¹ / ₁₆	40 ³ / ₄	131 ¹ / ₁₆	10 DIA.	3	8	MD 20	MD 40	3.3	820	
72RT7	68	7	28	76	17 ¹ / ₁₆	40 ³ / ₄	149 ³ / ₁₆	10 DIA.	3	8	MD 20	MD 40	3.3	910	
18RT14	34	14	40	22	26 ³ / ₈	51	109 ⁷ / ₁₆	10 DIA.	5	10	MD 40	MD 40	4.7	990	
38RT14	68	14	40	40	26 ³ / ₈	51	127 ⁷ / ₁₆	10 DIA.	5	10	MD 40	MD 40	4.7	1100	
54RT14	104	14	40	58	26 ³ / ₈	51	145 ¹ / ₁₆	10 DIA.	5	10	MD 40	MD 40	4.7	1290	
72RT14	138	14	40	76	26 ³ / ₈	51	163 ⁷ / ₁₆	10 DIA.	5	10	MD 40	MD 40	4.7	1440	
98RT14	185	14	40	100	26 ³ / ₈	51	187 ⁷ / ₁₆	10 DIA.	5	10	MD 40	MD 40	4.7	1570	
38RT21	104	21	47	40	32 ³ / ₁₆	57	136 ⁷ / ₁₆	10 X 20	6	10	MD 40	MD 40	5.4	1690	
54RT21	158	21	47	58	32 ³ / ₁₆	57	154 ¹ / ₁₆	10 X 20	6	10	MD 40	MD 40	5.4	1920	
72RT21	208	21	47	76	32 ³ / ₁₆	57	172 ⁷ / ₁₆	10 X 20	6	10	MD 40	MD 40	5.4	2090	
98RT21	278	21	47	100	32 ³ / ₁₆	57	196 ⁷ / ₁₆	10 X 20	6	10	MD 40	MD 40	5.4	2340	
54RT32	238	32	60	58	43 ⁷ / ₁₆	68 ¹ / ₄	165 ¹ / ₁₆	10 X 20	6	10	MD 40	MD 40	6.5	2610	
72RT32	318	32	60	76	43 ⁷ / ₁₆	68 ¹ / ₄	183 ¹ / ₁₆	10 X 20	6	10	MD 40	MD 40	6.5	2890	
98RT32	425	32	60	100	43 ⁷ / ₁₆	68 ¹ / ₄	207 ¹ / ₁₆	10 X 20	6	10	MD 40	MD 40	6.5	3250	
54RT39	281	39	66	58	48 ³ / ₈	73 ¹ / ₂	175 ¹ / ₁₆	10 X 30	8	10	MD 40	MD 40	7.5	3260	
72RT39	388	39	66	76	48 ³ / ₈	73 ¹ / ₂	193 ¹ / ₁₆	10 X 30	8	10	MD 40	MD 40	7.5	3500	
98RT39	518	39	66	100	48 ³ / ₈	73 ¹ / ₂	217 ¹ / ₁₆	10 X 30	8	10	MD 40	MD 40	7.5	3810	
72RT52	518	52	72	76	53 ⁷ / ₈	78 ³ / ₈	199 ¹ / ₁₆	10 X 30	8	10	MD 40	MD 40	9.1	4080	
98RT52	690	52	72	100	53 ⁷ / ₈	78 ³ / ₈	223 ¹ / ₁₆	10 X 30	8	10	MD 40	MD 40	9.1	4440	
72RT62	817	62	84	76	62 ¹ / ₂	89 ¹ / ₄	212 ¹ / ₁₆	10 X 45	10	12	MD 75	MD 139	10.6	4800	
98RT62	823	62	84	100	62 ¹ / ₂	89 ¹ / ₄	236 ¹ / ₁₆	10 X 45	10	12	MD 75	MD 139	10.6	5220	
72RT80	787	80	93	76	66 ³ / ₈	97	220 ⁷ / ₁₆	10 X 45	10	16	MD 139	MD 139	13.2	5610	
98RT80	1062	80	93	100	66 ³ / ₈	97	244 ⁷ / ₁₆	10 X 45	10	16	MD 139	MD 139	13.2	6060	



Bags
page 3-39

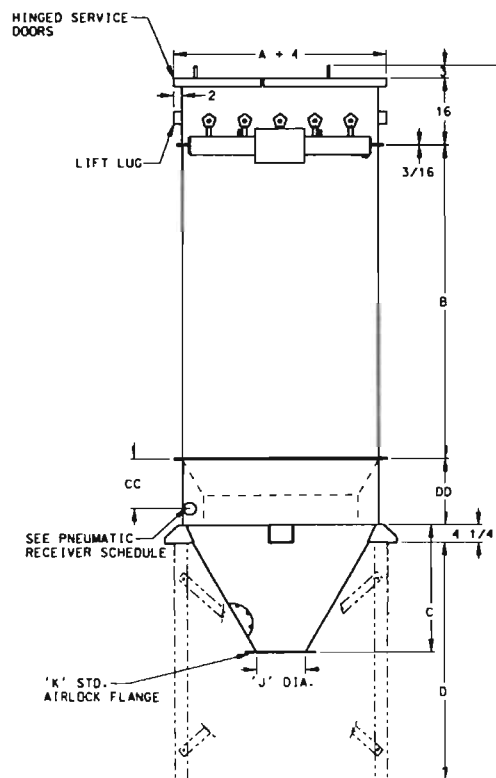
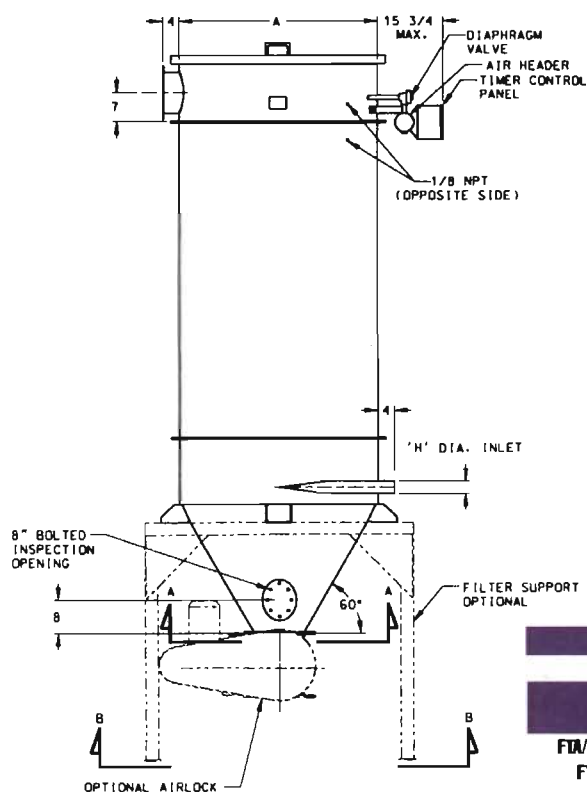
Cages
page 3-39

RT Filter with Pneumatic Receiver



When fitted with a pneumatic receiver, the MAC RT filter becomes an excellent product receiver. Product enters the filter and is discharged from the bottom through an airlock. Centrifugal force separates the product from the airstream and gently discharges it.

MAC offers this filter in two styles: without the hopper (Style II) the filter is ideally suited as a bin vent filter for storage tanks, work bins and surge hoppers. With a 60° hopper (Style III) the filter receives dust through the hopper inlet and discharges the collected dust through an airlock for dust disposal or recycling.



HOPPER SCHEDULE

Dimensions (in.)

AIRLOCK FLANGE	'J' DIA. DISCHARGE	RT FILTER / 'C' DIMENSION							
		7	14	21	32	39	52	62	80
FIA/TRA-30, 8X8, MD20	8	17 ⁷ / ₁₆	27 ⁷ / ₈	33 ⁷ / ₈	45 ³ / ₁₆	53 ¹ / ₈	64 ¹ / ₂	72	
FIA/TRA-60, MD40	10	15 ³ / ₄	26 ³ / ₈	32 ³ / ₁₆	43 ⁷ / ₁₆	48 ³ / ₈	53 ⁷ / ₈	64 ³ / ₄	72
12X12, MD76	12	14	24 ³ / ₈	30 ⁷ / ₁₆	41 ¹ / ₁₆	46 ⁷ / ₈	52 ³ / ₈	62 ¹ / ₂	70 ¹ / ₄
16X16	14			28 ³ / ₄	40	45 ⁵ / ₈	50 ³ / ₈	60 ³ / ₄	68 ⁹ / ₁₆
16X16	16			27 ⁷ / ₈	39 ¹ / ₈	44 ³ / ₁₆	49 ¹ / ₂	59 ⁷ / ₈	67 ³ / ₄
MD138	18			27	38 ³ / ₄	43 ⁷ / ₁₆	48 ³ / ₈	59	66 ⁷ / ₈
18X18	18			25 ¹ / ₄	36 ¹ / ₂	41 ¹ / ₁₆	46 ⁷ / ₈	57 ¹ / ₈	65 ⁵ / ₈
MD280	19			24 ³ / ₈	35 ³ / ₈	40 ⁷ / ₈	46	56 ⁷ / ₁₆	64 ³ / ₄
MD400	20			23 ¹ / ₂	34 ³ / ₄	40	45 ⁵ / ₈	55 ⁵ / ₁₆	63 ³ / ₈