

# Indiantown Cogeneration, L.P.

April 7, 1997

Mr. Tom Tittle  
Department of Environmental Protection  
PO Box 15425  
400 South Congress Avenue  
West Palm Beach, FL 33416

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APR 16 1997

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AIR REGULATION

RE: Indiantown Generating Plant  
Permit Nos.: PSD-FL-168 & PA 90-31

Dear Tom:

We appreciated the opportunity to discuss the incident of January 18, 1997 with you along with the issues which led up to the incident. ICLP believes this event was a short term malfunction of newly installed bag clamps in multiple compartments over a short period. We now understand better the failure mechanism, and have taken action to minimize the exposure for potential failure by the following:

- Replace bag clamps in a single compartment, with a multi-day test period.
- Use of a bag and clamp model as a training tool to improve the skill level of the employees tasked with the work.
- Develop specific procedures with defined actions to follow. This will assure the nature of the problem is determined in the most efficient manner.

The following responses are to the specific questions you asked:

1. ***What methods did ICLP use to assure that the clamps were installed properly and that workmanship did not contribute to the failure?***

**Response:** During the outage ICLP used approximately 20 different individuals from the Maintenance and Operating departments to accomplish the work. These employees were directly supervised by one of the plant's Shift Supervisors assigned to manage that particular job. All the supervisors had reviewed the ABB instructions on the proper installation of the bag clamp and the tensioning of the bag. Most of the individuals installing the bag clamps were involved during the plant's October outage when all 12 compartments were individually re-tensioned with no subsequent failures of the clamp. Therefore, we felt these individuals were very familiar with the process of removing, setting and re-tensioning the bag and clamp assembly. (See attachment 1- ABB installation instructions). ICLP personnel used the following procedure to complete the clamp replacement process.



- a) The bag clamps were all loosened and removed in a individual compartment.
- b) The new stainless steel clamps were put on the collar of the bag and then positioned on the thimble of the lower plenum.
- c) The individual at the bottom of the bag then used an electric screw driver to tighten the clamp until the entire assembly was tight enough to position next to the locking collar of the thimble.
- d) The individual at the top of the bag placed the tensioning device in position on the bag spring and removed the lower locking pin on the tensioning assembly.
- e) Using ( 110 - 115 psig) plant air a pressure of 54 pounds is applied to the tensioning device resulting in a force of 75 psi to the spring of the tensioning assembly.
- f) The individual at the top of the filter assembly then radios the individual at the lower end of the assemble to check the position and do the final tightening of the clamp.
- g) Once this is complete the lower retaining clip is replaced on the tensioning assembly and the air is bled from the tensioning device.
- h) After the work on a section was complete the area was inspected.

2. *What type of procedure is used to guide operations in determining a problem in the emissions and taking the proper actions?*

**Response:** All ICLP plant personnel have been training on the operating limits of the plant, specifically the air emission limitations. In the control room, at the operator control station is a copy of the plant current emission limits.

In addition to this the plant has developed an Environmental action level response guide for the plant personnel to use in such situations in the future.

3. *How many prior failures of bag were a result of clamps coming loose?*

**Response:** In reviewing the history of the last year and one-half of the plant's operation, the first bag clamp failure occurred on November 11, 1997 when a carbon steel clamp in a compartment corroded and failed. The failure mechanism of the January incident involved a release of the clamp rather than a failure of the clamp's integrity.

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4. *What is the schedule for the replacement of the remained of compartments.* APR 16 1997

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**Response:** The current plan is to begin this project after our spring outage is completed. The remaining seven compartments should be completed in three to four months based on plant operations and system needs.

#### Summary

The events of January 18 and 19, did result in the plant exceeding the permitted opacity limit of 10% during the four periods in question. The maximum six-minute average experienced during any of the events was 18.7% opacity. This occurred when the plant experienced failures in two compartments with one compartment already out of service for repairs. During this time the plant staff made every reasonable effort to minimize the impact and return the plant to an in compliance condition as soon as possible. These efforts included; dropping the plant to minimum load, switching over to natural gas as a fuel to minimize the particulate loading, and calling out overtime for repairs. These efforts indicate the plant took the incident very seriously and did react in an appropriate and timely manner to control the incident.

However, it is beyond our complete control to ensure that during the repair of the remaining compartments and in the future when maintenance is required, that this type of event will not reoccur. We will, always use best management practices to ensure maximum compliance with our existing limits. Due to the nature of this process not all responses to environmental incidents can occur instantaneously. Time must be allowed in order for the staff to make an appropriate and safe response to the myriad of possible events we are confronted with.

ICLP thanks you for this opportunity to further elaborate on this incident and if you have any further questions, please contact Byron Veech or myself at (407) 597-6500.

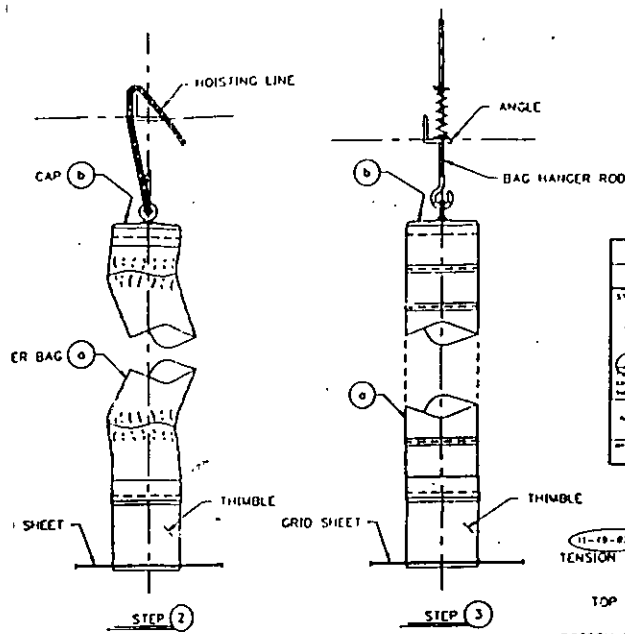
Sincerely,



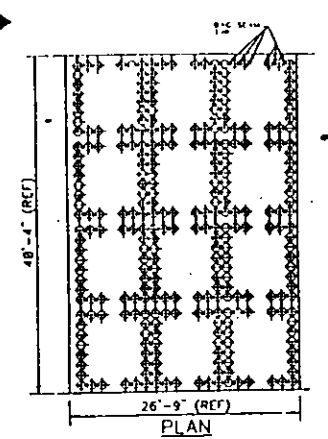
Douglas Bullock  
Engineering Manager

Enclosure 1

cc: Rich Hofman, FDEP  
Martin Costello, FDEP ✓  
J. Heron, BAR  
M. Harley, BAMMS  
B. Owen, PPS



M-CELL HOME CORPORATION		FIG. NO.
		22019
SUPPLIER DOCUMENT REVIEW STATUS		
STATUS NO.		
1. <input type="checkbox"/> Work was approved		
2. <input type="checkbox"/> Work not approved. Work may not proceed without the approval of project manager		
3. <input type="checkbox"/> Review not required. Work may not proceed		
4. <input type="checkbox"/> Review not required. Work may proceed		
<small>           *Condition to proceed does not require the approval of design details, calculations, or other test methods of materials approved or selected by the contractor and does not require approval from full compliance with contractual obligations.         </small>		
Reviewed	By	Date
	DM	1-27-95
<small>           Rev. 1-27-95            C. 11/18/94 Rev. 1/95         </small>		



TYPICAL COMPARTMENT SHOWING BAG SEAM ORIENTATION

**NO INSTALLATION OF GLASS CLOTH FILTER BAGS**

TO DURABLE, HOWEVER IT IS SUBJECT TO CERTAIN ASSOCIATED WITH OTHER FABRICS. CARE IN ITS HANDLING MAY AFFECT DURABILITY AND LONGER LIFE.

NE, AS THEY ARE INSTALLED, TO AVOID PROJECTIONS OF METAL OR OTHER OBJECTS WHICH MAY CAUSE RIPS OR TEARS.

IF ANY OF THE BAGHOUSE WHERE BAG FAILURE MAY RESULT.

TO BE AVOIDED BY GRASPING BETWEEN THE RINGS (LIPPAGE OF YARNS) FOLDED TO AVOID HEAVY PRESSURE.

IF WHEN BAGS & CAPS ARE SHIPPED PREASSEMBLED)

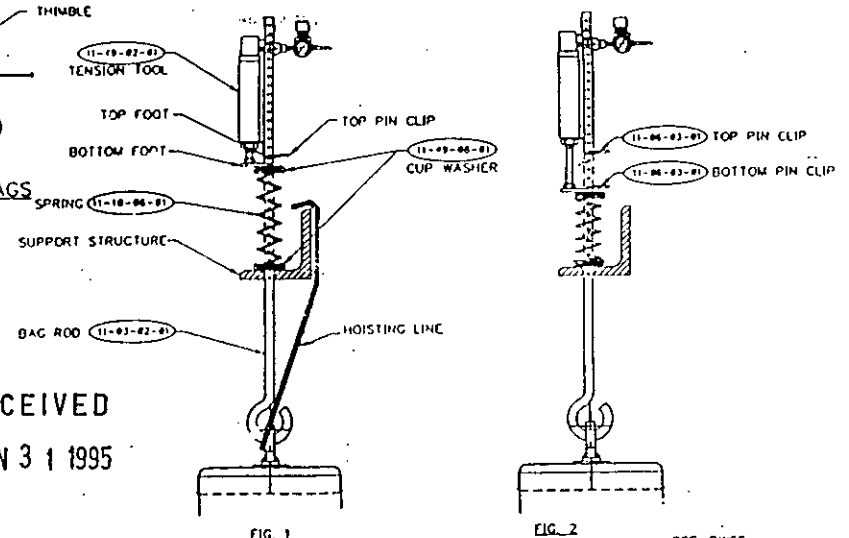
IF BAGS NEAR AREA OF FILTER BAG (O) AND INSERT. ROTATE CAP 90° AND PULL CAP SNUGLY AGAINST ROLLED RIM TO CAP (b) AND RAISE BULK OF BAG (o)

TO TIGHTEN THIMBLE AS SHOWN IN STEP (2) UNTIL THIMBLE RIM IS COMPLETELY TIGHT. EVERY TIME BAG IS MOVED UPWARD UNTIL IT IS 1" FROM GRID SHEET, CLIP MUST BE PARALLEL TO GRID SHEET. USE WRENCH ONLY (NO SCREWDRIVER REQUIRED).

TO INSTALL CLAMP SCREW HOLDER DIRECTLY OVER BAG SEAM. CLAMP SCREW HOLDER IS INSTALLED

TO CONNECT TO BAG HANGING SYSTEM. JUST TENSION ON BAG TO APPROX. 65 PSI. CLIP, USE TENSION TOOL REF. DWG. 000-11-49-02 (THIS DWG)

IF THE BAG IS TIGHT AT THE THIMBLE (LE). X. 1-WEEK AFTER BEING PLACED INTO SERVICE



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FIG. 1  
BAG TENSION INSTRUCTIONS

FIG. 2  
REF. DWGS. 725-11-01-01

1. - HOLD ROD & BAG IN POSITION WITH HOISTING LINE. (FIG. 1)
2. - INSTALL WASHERS & SPRING AS SHOWN. (FIG. 1)
3. - POSITION BOTTOM FOOT ON SPRING WASHER. (FIG. 1)
4. - PLACE TOP CLIP IN ROD & POSITION TOP FOOT UNDER CLIP. (FIG. 1)
5. - SET GAUGE TO 65 PSI FOR DESIRED BAG TENSION & ACTIVATE CYL. AIR. (FIG. 2)
6. - INSERT BOTTOM CLIP JUST ABOVE BOTTOM FOOT OF TENSION TOOL. (FIG. 2)
7. - RELEASE CYL. AIR PRESSURE AND REMOVE TENSION TOOL.
8. - REMOVE HOISTING LINE. LEAVE TOP & BOTTOM PIN CLIP INSERTED IN ROD.

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M-032-1449/001

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Size	3'-1'-0"	INDIANTOWN COGENERATION PROJECT INDIANTOWN, FLORIDA FLUE GAS CLEANING SYSTEM FABRIC FILTER BAG INSTALLATION ASSEMBLY
Date	11-00	
Project No.	725	DWG NO. 725-11-00-E-01
Drawn by	J. F. SYKES 03-16-94	REV. 0
Checked by	B. JOHNSON 01/23/95	
Approved by	J. W. CURR 01/23/95	

(1) 2x6 S 12x35 RA 363x37(576)

