G-000-709.7

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COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT: FMPC RESPONSE TO ITEM 1.A OF CERCLA SECTION OF THE FEDERAL FACILITIES COMPLIANCE AGREEMENT

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FMPC

Comprehensive Environmental Response,
Compensation and Liability Act

FMPC Response to Item 1.A
of CERCLA Section - FFCA

FEDERAL FACILITIES COMPLIANCE AGREEMENT

60-Day Deliverable

September 16, 1986

EP
Com

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Executive Summary

The FMPC has implemented effective operation and maintenance procedures, and administrative policies to control radioactive emissions from production operations and on site waste storage facilities. These requirements help to ensure that exposures are As Low As Reasonably Achievable (ALARA). In December, 1984, a plant directive was issued to immediately implement controls to reduce FMPC stack emissions and provide better guidance for operation and maintenance of the dust collectors. A detailed discussion of the operation and maintenance procedures of the air pollution control equipment is presented under a separate cover as a response to section G of the Clean Air Act Sections of the FFCA. Emission control of radon and radon decay products is maintained by controlling the entrance to, and the work performed in those areas that have the potential to emit radon and its decay products.

Introduction

This report is submitted in response to item 1.A under "CERCLA Actions" of the FFCA. Specifically, the EPA requires the following actions:

> "U. S. DOE shall develop effective operation and maintenance procedures and work practices to control radioactive emissions, including radon gas and radon decay products, from production materials and on site wastes to maintain all exposures As Low As Reasonably Achievable (ALARA). Within sixty (60) days of the effective date of this agreement, U. S. DOE shall implement effective operation and maintenance procedures and work practices for the control of radioactive emissions, including radon gas and radon decay product emissions. Progress reports shall be provided to U. S. EPA quarterly."

The radioactive emissions identified above fall into two categories: 1) Emissions of radionuclides from operations, and 2) Emissions of radon and its decay products from stored materials (i.e., K-65 residues). This report will identify the FMPC operation and maintenance procedures which are used to control radionuclide emissions from these sources.

Discussion

Radionuclide emissions from operations occur when process ventilation air is discharged from process buildings. This air passes through emission control devices before being released to the atmosphere. There are 203 emission points at the FMPC that have the potential to release radionuclides to the atmosphere. These consist of vents from process storage vessels or hoods, stacks controlled by dust collectors, and wet scrubber stacks. Table 1 is a catalog of all of these potential emission points and shows the emission control devices for each point. Each production plant has standard operating procedures for the dust collectors in that building. These procedures describe the controls, operation, and inspections required for the operation of each device. In addition, separate maintenance procedures describe the manner in which maintenance is performed on each of these devices.

2

A discussion of the operation and maintenance procedures for all of the air pollution control equipment at the FMPC is submitted under separate cover as the response to item G of the Clean Air Act Section of the FFCA. A discussion of the specific procedures, and the plant directive issued in December, 1984 to implement controls to monitor and reduce stack emissions was included in the responses to items B1-B4 of the Clean Air Act Section of the FFCA, which was submitted August 17, 1986.

Any operation that involves the K-65 silos must receive prior technical review and approval by both WMCO ES&H and DOE. A critical part of this review will be ensuring that radioactive emissions are maintained ALARA. The proposal for any such work must include a discussion of the procedures and control equipment which will be used to minimize radioactive emissions to ALARA levels. To control operations which could possibly effect the emission of radon and decay products in the K-65 storage area, a procedure has been drafted to control entry into the waste storage area. This procedure (ESH-P-01-004) "Completing and Using the Waste Storage Area Entry Permit Form" is currently in revision.

A second procedure, SOP ES&H-P-30-013, "Procedure for Issuing Radiation WorK Permits for Work in Thorium Storage Area," has been drafted to control emissions from thorium storage locations. Under this procedure, work permits for work in thorium storage areas may be issued only if all storage containers (drums, silos, bins, etc.) will remain closed. Work that requires opening storage containers cannot be authorized by a work permit; a written work plan must be submitted to the ES&H department for review and approval before work begins. ES&H approval will be granted only if emissions are to be kept ALARA.

The following is a list of the applicable procedures for the operation and inspection of the FMPC dust collectors:

SOP 1-C-701	"Plant 1 Dust Collectors"
SOP 2-C-701	"Refinery Dust Collection System, Plant 2/3"
SOP 4-C-701	"Plant 4 Dust Collectors"
SOP 5-C-701	"Plant 5 Dust Collectors"
SOP 6-C-701	"Plant 6 Dust Collectors"
SOP 8-C-701	"Plant 8 Dust Collectors"
SOP 9-C-701	"Plant 9 Dust Collectors"
SOP 11-C-238	"Pilot Plant Dust Collectors"

The SOP 4-C-701 is provided in Attachment I as an example of the plant procedure.

Plant Test Authorization (PTA) is used to document procedures for non-routine tasks and to amend SOP's when changes are desired. Usually PTA's are initiated by the Production Department, Production Technology, or Waste Management, but any organization may initiate them. Signature approval of the PTA is required by Production Department Manager, Environment, Safety and Health Manager, and Production Technology Manager. ES&H approval is granted only when it is assured that emissions will be maintained ALARA.

Specific Maintenance Procedures for each type of dust collector in use at the FMPC are listed below.

43-C-7701	"Changing Bags in Pulverizing Machine Co. (Mikro Pulverizer) Type Dust Collectors"
43-C-7702	"Changing Bags in American Air Filter (Amerjet) Type Dust Collectors"
43-C-7703	"Changing Bags in Day-Type Dust Collectors"
43-C-7704	"Changing Bags in General Resources Company Dust Collectors"
43-C-7705	"Changing Bags in Turner-Haws 'Aeroturn' Type Dust Collectors"
43-C-7706	"Changing Bags in Hoffman High Vacuum Units"
43-C-7707	"Changing Bags in Spencer Portable Vacuum Units"
43-C-7708	"Changing Bags in Wheelabrator Type Dust Collectors"
43-C-7709	"Changing Bags in Hoffman Portable Vacuum Units (Mikro Pulverizer) Type Collectors"
43-C-7710	"Changing Bags in Pangborne Model CM-1 Dust Collectors"
43-C-7711	"Changing Bags in Mikro Pulverizer Dust Collectors"
43-C-7712	"Changing Bags in Dracco Dust Collectors"
43-C-7713	"Changing Bags in EVO Corporation G2-95 (Incinerator Building)"
43-C-7714	"Changing Bags in Buffalo Forge Dust Collectors"
DC-4	"Periodic Inspection of Dust Collectors"

These procedures cover changing of collector bags, routine maintenance and preventative maintenance on a regular basis. The procedures DC-4 and 43-C-7702 are included in Attachment II as examples of these maintenance procedures.

Conclusions

Operating and maintenance procedures are in place to minimize releases of airborne radioactivity. Operating procedures call for dust collector bags and gauges such as the differential pressure monitors, and monitors of stack sample radioactivity, which would indicate abnormal conditions to be inspected once per shift. ES&H approval is required of proposed work in the K-65 area, and will be granted only if radioactive emissions will be maintained ALARA.

Table 1

POTENTIAL RADIONUCLIDE EMISSION POINTS

Emission Point Number	Control ID #	Stack Sampler	Real Time Alarm Monitor	SOP for Air Sample Collection	SOP for Alarm Monitor Response
PLANT 1					
001	G2-172	I		1-C-701; IH&R 1.4	
002	G2-6042	I	H	1-C-701; IH&R 1.4	1-C-701
003	G2-76	I		1-C-701; IH&R 1.4	
004		V			
005	G2-2	I		1-C-701; IH&R 1.4	
006	G2-64	I		1-C-701; IH&R 1.4	
007	G2-1	I		1-C-701; IH&R 1.4	
008		V			
009	G2-6015	I		1-C-701; IH&R 1.4	
010	G2-6014	I		1-C-701; IH&R 1.4	
015	G2-171	I		1-C-701; IH&R 1.4	
016	G2-235	I		1-C-701; IH&R 1.4	
PLANT 2/3					
001		S			
002 - 009		V			
012	G1-856	I		IH&R 1.4	
016		V			
017		V			
018 - 021		V			
022	G2-252	I		IH&R 1.4	
023	G1-94	I		IH&R 1.4	
025 - 034		V			
037 - 058		V			
060		V			
063 - 067		V			
069 - 078		V			
080 - 085		V			
088 - 091		V			
092		S			
093		S			
098 - 099		V			
103 - 105		V			
107		V			
119 - 128		V			
130 - 139		V			
144 - 147		V			
148	G2-103	I	H	IH&R 1.4	(1)
149	G2-104	I		IH&R 1.4	
152 - 154		V			

Table 1

POTENTIAL RADIONUCLIDE EMISSION POINTS

Emission Point Number	Control ID #	Stack Sampler	Real Time Alarm Monitor	SOP for Air Sample Collection	SOP for Alarm Monitor Response
PLANT 4					
001	G4-7	I	L	4-C-701; IH&R 1.4	4-C-701
002		S			
003	G4-13	I		4-C-701; IH&R 1.4	
004	G4-14	I	L	4-C-701; IH&R 1.4	4-C-701
005	G4-2	I	L	4-C-701; IH&R 1.4	4-C-701
006	G4-12	I	L	4-C-701; IH&R 1.4	4-C-701
007	G4-15	I		4-C-701; IH&R 1.4	
008	G4-1	I		4-C-701; IH&R 1.4	
009	G4-5	I	H	4-C-701; IH&R 1.4	4-C-701
025	G4-4	I		4-C-701; IH&R 1.4	
PLANT 5					
2	G5-247	I	H	5-C-701; IH&R 1.4	5-C-701
3	G5-248	I	H	5-C-701; IH&R 1.4	5-C-701
4	G5-249	I	H	5-C-701; IH&R 1.4	5-C-701
5	G5-250	I	H	5-C-701; IH&R 1.4	5-C-701
6	G5-251	I	H	5-C-701; IH&R 1.4	5-C-701
8	G5-253	I	TBI,H	5-C-701; IH&R 1.4	5-C-701
9	G5-254	I	H	5-C-701; IH&R 1.4	5-C-701
10	G5-256	I	TBI,H	5-C-701; IH&R 1.4	5-C-701
11	G5-258	I	H	5-C-701; IH&R 1.4	5-C-701
12	G5-259	I	H	5-C-701; IH&R 1.4	5-C-701
13	G5-260	I	L	5-C-701; IH&R 1.4	5-C-701
14	G5-261	I	L	5-C-701; IH&R 1.4	5-C-701
15	G5A-100	I	H	5-C-701; IH&R 1.4	5-C-701
16	G5A-101	I	TBI,H	5-C-701; IH&R 1.4	5-C-701
17	G5-262	I		5-C-701; IH&R 1.4	
18	G55-E100	I	H	5-C-701; IH&R 1.4	5-C-701
19	G5-267	I	H	5-C-701; IH&R 1.4	5-C-701
PLANT 6					
1	G6-6057	I		6-C-701; IH&R 1.4	
2	G6-3579	I		6-C-701; IH&R 1.4	
3	G6-3578	I		6-C-701; IH&R 1.4	
6		S			
7 - 10		V			

Table 1

POTENTIAL RADIONUCLIDE EMISSION POINTS

Emission Point Number	Control ID #	Stack Sampler	Real Time Alarm Monitor	SOP for Air Sample Collection	SOP for Alarm Monitor Response
PLANT 8					
001	G43-27	I	L	8-C-701; IH&R 1.4	8-C-701
002		S			
003	G8-021	I		8-C-701; IH&R 1.4	
004	G8-024	I		8-C-701; IH&R 1.4	
005		S			
006	G8-035	I	H	8-C-701; IH&R 1.4	8-C-701
007		S			
008	G8-7	I		8-C-701; IH&R 1.4	
009		S			
010		S			
011	G43-29	I		8-C-701; IH&R 1.4	
012 - 015		V			
017 - 019		V			
020	G8-057	I		8-C-701; IH&R 1.4	
021 - 024		V			
028 - 032		V			
PLANT 9					
001	G9E2-400	I		9-C-701; IH&R 1.4	
002	G9N1-1039	I	L	9-C-701; IH&R 1.4	9-C-701
003		V			
005		V			
007	G42A-100	I		9-C-701; IH&R 1.4	
PILOT PLANT					
001		V			
003 - 004		V			
006		V			
008 - 011		V			
015	G-1	I	A	11-C-238; IH&R 1.4	11-C-238
016	G-2	I	A	11-C-238; IH&R 1.4	11-C-238
R-14	735-13-7041	I		11-C-238; IH&R 1.4	
R-50	735-13-7051	I		11-C-238; IH&R 1.4	
LABORATORY					
001	G15-001	TBI	TBI,L		

Table 1

POTENTIAL RADIONUCLIDE EMISSION POINTS

Emission Point Number	Control ID #	Stack Sampler	Real Time Alarm Monitor	SOP for Air Sample Collection	SOP for Alarm Monitor Response

KEY: A - Auburn particulate alarm, alarm sent to control panel
H - Alarm sent to Honeywell computer and operator control panel
L - alarm at operator control panel
S - Scrubber system, characterazation of emissions to begin August, 1986.
TBI - To be installed
V - This is a vent for a process, storage vessel, or hood where there is only the potential to emit trace amounts of radionuclides. Random air sampling of these minor emission points will be conducted annually to assess the potential for radionuclide emissions.
I - Stack sampler is installed.

Footnote:

(1) Manager's Directive, of 12-18-84, "Equipment and Procedural Changes - Dust Collectors", outlines site wide administrative controls to respond to stack alarms.

ATTACHMENT I

NLO - FMPC MANUFACTURING STANDARDS

TITLE			PROCEDURE NUMBER
SOP - PLANT 4 DUST COLLECTORS			4-C-701
DIVISION & PLANT	SUPERSEDES	PREPARED BY	ISSUE DATE
Operations 4	4-C-701 01-13-71	J. H. Graver	12-30-85
		REVISED BY	REVISION DATE
PAGE 1 REVISION DATE: _____			

REFERENCES: SOP 4-C-901
SOP 20-C-101
MS 4-BN/E-410-1
MS 4-BN-480-1

DESCRIPTION OF OPERATION AND EQUIPMENT

Dust collectors are supplemented by various blowers and Hoffman vacuum cleaners, and serve Plant 4 equipment and enclosures. The dust collectors and the areas served are listed in Table 1.

Collectors filter uranium contaminated dust by removing the dust from the air streams and exhaust the filtered air to the atmosphere. The collected dust falls into a hopper from which it is air conveyed to a vacuum cleaner for drumming.

TABLE 1

PLANT 4 DUST COLLECTION EQUIPMENT

COLLECTOR NO.		TYPE	Associated Collector	AREA AND EQUIPMENT SERVED
G-4-1	Wheelabrator	Shaker (Mechanical)		Drum Dumper - Enriched and Normal
G-4-2	Turner-Haws	Blow Ring		Screw Conveyor into No. 2 Packaging Station
G-4-4	Turner-Haws	Blow Ring	G-4-9	Drumming Station Back-Up for G-4-9
G-4-5	Turner-Haws	Blow Ring	G-4-11	Back-Up for G-4-11
G-4-7	Turner-Haws	Blow Ring		H_2 Burner

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TABLE 1 (cont.)

PLANT 4 DUST COLLECTION EQUIPMENT

COLLECTOR NO.	TYPE	Associated Collector	AREA AND EQUIPMENT SERVED
G-4-9 Hoffman	Shaker (Manual)	G-4-4	Scrap UF_4 Dust High Vacuum
G-4-11 Hoffman	Shaker (Manual)	G-4-5	Scrap UF_4 Dust High Vacuum
G-4-12 Mikro Pulsaire	Pulse Jet		No. 3 Packaging Station
G-4-13 Mikro Pulsaire	Pulse Jet		Drumming Station Bank 8 Packing Station
G-4-14 Day	Blow Ring		No. 1 Packaging Station
G-4-15 Mikro Pulsaire	Pulse Jet		Drumming Station Enriched Material

ENVIRONMENTAL CONSIDERATIONS

It is the intention of NLO, Inc. to achieve and maintain those levels of air and water quality which will protect health and promote welfare and safety. The responsibility for limiting the uncontrolled or unintended release of pollutants rests with all personnel, both management and operators.

INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS

1. Observe all nuclear safety requirements for dust collector material per MS 4-BN/E-410-1 and 4-BN-480-1.

2. A dust-type respirator fitted with cartridges approved for radionuclides shall be worn when there is a possible contact with dust.

3. Leather-palm gloves shall be worn when handling drums or when working with dust collector equipment.

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INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS (cont.)

4. Move and store dust collector material per SOP 20-C-101.

5. When working in dusty conditions, vacuum excessive nuclear material from the exterior of clothing before removing the respirator.

6. Respirators must be worn anytime a dust collector is entered. A dust-type air-purifying respirator may be worn when exposure periods inside a dust collector do not exceed five minutes. An airline respirator shall be worn for exposure periods inside a dust collector which exceed five minutes.

7. Safety glasses shall be worn at all times.

8. Dust spills shall be immediately vacuumed.

9. Exhausters shall remain on while the equipment served is in use, except in an emergency, or during the inspection of the units. If the dust collector must be shut down, follow the procedure in Table 2, "Operator Emergency Shutdown." The shutdown procedure shall be posted on each dust collector control panel.

10. Process clothing shall be worn and be completely buttoned when working inside the dust collector.

11. Before entering the filter housing enclosure, check that a "Work Permit" Form NLO-H&S-973 has been issued and is posted outside the collector.

12. Before entering the bag house enclosure, lock and tag "Out Of Service" the power equipment to the collector and the associated unit including the main exhaust motor, blow ring blower motor, and blower motor per NLO "Lock and Tag Procedure, Section 8.3, NLO Health and Safety Manual.

13. Any circumstance which could have resulted in a significant intake of radioactive materials by inhalation, ingestion, or absorption will be immediately reported to a supervisor. The involved employees, wage or salary, will report to the Medical Department at the end of their shift to submit a urine sample and again report at the start of their next shift to submit another urine sample. The supervisor will inform the Industrial Hygiene Technician of the circumstance and file a minor event report before the end of the shift during which the circumstance happened.

PROCEDURE

1. Each shift of operation perform the following for all collectors:

   1.1 Check the high and low differential pressure alarms. Record that the check has been completed on Form NLO-PRO-1127 "Daily Check of Dust Collectors". Date and replace the recorder chart if less than eight hours remain on the chart. Charts may be used for three days at the rate of one shift per day.

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1. PROCEDURE (cont.)

1.2 Change and initial the differential pressure recorder chart. Forward the completed chart to the office of the supervisor.

1.3 At a time specified by the supervisor shut down the collector and inspect the collector per items on Form FMPC-PRO-2609, "Dust Collector Inspection Check Sheet."

WARNING: WEAR A DUST-TYPE RESPIRATOR DURING INSPECTION.

1.4 If the collector is equipped with a shaker mechanism, shake down the bags. Manually operate the blowring mechanism on collectors equipped with blowrings.

1.5 If problems exist after inspection per items on Form FMPC-PRO-2609 "Dust Collector Inspection Check Sheet," the supervisor is to correct the problems per Table 4, "Inspection Troubleshooting Guide." If damaged bags are found, notify the Mechanical Department.

2. Each hour of operation perform the following for all collectors:

2.1 Check the differential pressure and record on Form FMPC-PRO-2623, "Dust Collector Differential Pressure Check Sheet."

2.1.1 If the pressure reading or manometer reading is above the upper limit as listed in Table 2, "Dust Collector Differential Pressure Recorder-Controller Settings and Manometer Readings," check that the instruments are functioning properly and clean the bags or operate the blowrings as required.

2.1.2 If the pressure reading or manometer reading is below the lower limit as listed in Table 2, turn off the dust collector and check for broken bags.

2.1.3 Notify the supervisor if the trouble cannot be corrected.

2.1.4 Note on the differential pressure recorder chart that the dust collector was down.

2.2 If the collector is equipped with a temperature gage, check for a sudden rise in temperature (100° ± 25°F). If there is a sudden rise, notify the supervisor.

2.3 Check the radiation stack monitor and record the readings on Form FMPC-PRO-2608, "Dust Collector Stack Monitor Readings." If the reading increases more than 10 percent of any scale in one hour, notify the supervisor and the Industrial Hygiene Technician.

2.4 Check the stack sampler rotameter for proper flow and record the reading on Form FMPC-PRO-2612, "Stack Sampler Check Sheet." If necessary, adjust the flow and record the adjusted flow on Form FMPC-PRO-2612.

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PROCEDURE (cont.)

3. G-4-1 Wheelabrator Dust Collector

3.1 Turn on the main power disconnect.

3.2 Start the differential pressure recorder-controller.

3.3 Set the differential pressure recorder-controller at settings as indicated in Table 2. Open the air inlet valves, and close the bypass and drain valves. Alarm points are preset by maintenance.

3.4 Starting the dust collector:

3.4.1 Press the "START" button for the main exhauster blower, ring blower, and drive motor.

3.5 Shutting down the dust collector:

3.5.1 Press the "STOP" button for the exhauster motor.

NOTE: The blowring drive and high pressure blower motors are interlocked with the exhauster motor switch.

3.6 Empty the dust collector after the drums are dumped into a hopper and before the material is removed from loading stations. Discharge the dust from the collector into the hopper as follows:

3.6.1 Perform a scale check of scale in use per SOP 4-C-901.

3.6.2 Tare weigh a 30- or 50-gallon drum, record the weight on a "Residue Production - Transfer and Identification" Form NLO-AC-1945 and attach the ticket to the drum.

3.6.3 Premark the drum with the 15-digit lot number and place the drum under the dust hopper outlet.

3.6.4 Open the discharge valve.

3.6.5 Start the automatic bag shaker.

3.6.6 To prevent overfilling while discharging the dust, frequently check the drum by tapping or by visual inspection.

3.6.7 Close the discharge valve.

3.6.8 Remove the full drum and replace with a pretared, premarked empty drum.

3.6.9 When the shaker cycle is complete, push the shaker "STOP" button.

3.6.10 When the hopper is empty, restart the main blower.

3.6.11 Gross weigh the filled drum(s). Enter the lot number, drum number, gross, tare, and net weights on Form NLO-AC-1945. Stencil the data on each drum.

3.6.12 Record on Form NLO-PRO-1127 that the dust collector was emptied.

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PROCEDURE (cont.)

3. G-4-1 Wheelabrator Dust Collector (cont.)

3.6.13 Forward the Form NLO-AC-1945 to the Production Recording Office.

3.6.14 Send the filled drums to Plant 1.

4. G-4-2 Turner-Haws Dust Collector

4.1 Turn on the main power disconnect.

4.2 Start the differential pressure recorder-controller.

4.3 Set the differential pressure recorder-controller at settings as indicated in Table 2. Open the air inlet valves, and close the bypass and drain valves. Alarm points are preset by maintenance.

4.4 Turn on the screw conveyor and rotary valves.

4.5 Open the exhaust blast gate to atmosphere.

4.6 Starting the dust collector:

4.6.1 Press the "START" button for the main exhauster blower, ring blower, and drive motor.

4.7 Set the selector switch on "AUTO."

4.8 Shut down the dust collector as follows:

4.8.1 Press the "STOP" button for the exhauster motor.

NOTE: The blowring drive and high pressure blower motors are interlocked with the exhauster motor switch.

4.8.2 Close the exhaust blast gate.

4.9 Empty the dust collector as follows:

NOTE: G-4-2 empties directly and automatically into the No. 2 Packaging System.

5. G-4-4 Turner-Haws Dust Collector

5.1 Turn on the main power disconnect.

5.2 Open the exhaust blast gate to atmosphere.

5.3 Start the differential pressure recorder-controller.

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Table 2
Dust Collector
Differential Pressure Recorder-Controller Settings and Manometer Readings

Collector No.	Differential Pressure Recorder-Controller Settings ($in./H_2O$) Alarm Settings Low	High	Blowring/Shaker Settings Low	High	Manometer Readings ($in./H_2O$)
G-4-1	2	5	<2		
G-4-2	1	5	2	4	
G-4-4	1	5			
G-4-5	1	5	2	4	
G-4-7	2	6	3	4.5	
G-4-9					5 - 8
G-4-11					5 - 8
G-4-12	1	5	2	4	
G-4-13					2 - 5
G-4-14	1	5	2	4	
G-4-15					2 - 5

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5. G-4-4 Turner-Haws Dust Collector (cont.)

5.4 Set the differential pressure-recorder at settings indicated in Table 2. Open the air inlet valves, and close the bypass and drain valves. Alarm points are preset by maintenance.

5.5 Starting the Dust Collector:

5.5.1 Press the "START" button for the main exhauster blower (blow rings and blowring drives on the unit are not used).

5.6 Set the selector switch on "AUTO."

5.7 Shut down the dust collector as follows:

5.7.1 Press the "STOP" button for the exhauster motor.

5.7.2 Close the blast gate.

5.8 Empty the dust collector as follows:

5.8.1 Attach the vacuum hoses to the drum hood.

5.8.2 Perform a scale check of scale in use per SOP 4-C-901.

5.8.3 Tare weigh a 30- or 50-gallon drum, record the weight on a "Residue Production - Transfer and Identification," Form NLO-AC-1945 and attach the ticket to the drum.

5.8.4 Premark the drum with the 15-digit lot number and place the drum under the dust hopper outlet.

5.8.5 Shut down the main blower and turn on the rotary valve.

5.8.6 To prevent overfilling while discharging the dust, frequently check the drum by tapping or by visual inspection.

5.8.7 Remove the full drum and replace with a pretared, premarked empty drum.

5.8.8 When the hopper is empty, turn off the rotary valve and restart the main blower.

5.8.9 Gross weigh the filled drum. Enter the lot number, drum number, gross, tare, and net weights on Form NLO-AC-1945. Stencil the data on each drum.

5.8.10 Record on Form NLO-PRO-1127 that the dust collector was emptied.

5.8.11 Forward the Form NLO-AC-1945 to the Production Recording Office.

5.8.12 Send the filled drums to Plant 1.

R - MATERIAL REVISED, ADDED, OR DELETED.

6. G-4-5 Turner-Haws Dust Collector

6.1 Turn on the main power disconnect.

6.2 Start the differential pressure recorder-controller.

6.3 Set the differential pressure recorder-controller at settings indicated in Table 2. Open the air inlet valves, and close the bypass and drain valves. Alarm points are preset by maintenance.

6.4 Open the exhaust blast gate to atmosphere.

6.5 Starting the dust collector:

6.5.1 Press the "START" button, for the main exhauster blower, ring blower, and drive motor. Start collector G-4-11 per paragraph 11.

6.6 Set the selector switch on "AUTO."

6.7 Shut down the dust collector as follows:

6.7.1 Press the "STOP" button for the exhauster motor.

6.7.2 Close the blast gate.

NOTE: The blowring drive and high pressure blower motors are interlocked with the exhauster motor switch.

6.8 Empty the dust collector as follows:

6.8.1 Attach the vacuum hoses to the drum hood.

6.8.2 Perform a scale check of scale in use per SOP 4-C-901.

6.8.3 Tare weigh a 30- or 50-gallon drum, record the weight on a "Residue Production - Transfer and Identification," Form NLO-AC-1945 and attach the ticket to the drum.

6.8.4 Premark the drum with the 15-digit lot number and place the drum under the dust hopper outlet.

6.8.5 Shut down the main blower and turn on the rotary valve.

6.8.6 To prevent overfilling while discharging the dust, frequently check the drum by tapping or by visual inspection.

6.8.7 Remove the full drum and replace with a pretared, premarked empty drum.

6.8.8 When the hopper is empty, turn off the rotary valve and restart the main blower.

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6. G-4-5 Turner-Haws Dust Collector (cont.)

6.8.9 Gross weigh the filled drum. Enter the lot number, drum number, gross, tare, and net weights on Form NLO-AC-1945. Stencil the data on each drum.

6.8.10 Record on Form NLO-PRO-1127 that the dust collector was emptied.

6.8.11 Forward the Form NLO-AC-1945 to the Production Recording Office.

6.8.12 Send the filled drums to Plant 1.

7. G-4-7 Turner-Haws Dust Collectors

7.1 Turn on the main power disconnect.

7.2 Start the differential pressure recorder-controller.

7.3 Set the differential pressure recorder-controller at settings indicated in Table 2. Open the air inlet valves, and close the bypass and drain valves. Alarm points are preset by maintenance.

7.4 Turn on the plenum temperature recorder.

7.5 Open the automatic flapper valve.

7.6 Starting the dust collector:

7.6.1 Push the "START" button for the main exhauster blower, ring blower, and drive motor.

7.7 Set the selector switch on "AUTO."

7.8 Shut down the dust collector as follows:

7.8.1 Press the "STOP" button for the exhauster motor.

7.8.2 Shut down the blowring drive and the high pressure blower.

7.9 Empty the dust collector as follows:

7.9.1 Turn on the air to the air lock valves.

7.9.2 Push the "START" button for the airlock valves.

7.9.3 Perform a scale check of scale in use per SOP 4-C-701.

7.9.4 Tare weigh a 30-gallon drum and record the tare weight on Form NLO-AC-1945, and attach it to the drum.

7.9.5 Mark the collector number and the 15-digit lot number on the drum and place under the proper discharge outlet.

7.9.6 Check the drums under the storage hopper to prevent them from overfilling.

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7. G-4-7 Turner-Haws Dust Collectors (cont.)

7.9.7 When the drum is filled, attach a vacuum hose to the drum hoods. Remove and replace the filled drum with a pretared and premarked empty drum.

7.9.8 Gross weigh the filled drum. Enter the lot number, drum number, gross, tare, and net weights on Form NLO-AC-1945 and stencil these data on the drum.

7.9.9 Record on Form NLO-PRO-1127 that the dust collector was emptied.

7.9.10 Forward the Form NLO-AC-1945 to the Production Recording Office.

7.9.11 Send the filled drums to Plant 1.

8. G-4-9 Hoffman High Vacuum Dust Collector

8.1 Turn on the main power disconnect.

8.2 Start dust collector G-4-4 per paragraph 5.

8.3 Starting the dust collector:

8.3.1 Press the "START" button on the controller.

8.3.2 After startup and once each hour, check that the manometer is registering the readings as listed in Table 2. Record the readings on Form FMPC-PRO-2617.

NOTE: If reading exceeds listed limit, shake bags using manual shaker.

8.4 Shut down the dust collector as follows:

8.4.1 Press the "STOP" button.

8.5 Empty the dust collector as follows:

8.5.1 Attach a vacuum hose to the drum hood.

8.5.2 Perform a scale check of scale in use per SOP 4-C-901.

8.5.3 Tare weigh a 30-gallon drum, record the tare weight on a Form NLO-AC-1945, and attach to the drum.

8.5.4 Pre-mark the drum with the material type, code number and tare weight.

8.5.5 Place the drum under the appropriate discharge outlet.

8.5.6 Shut off the vacuum collector exhauster, and manually shake the bags with the handle.

8.5.7 Open the dust discharge valve on the vacuum collector hopper.

8.5.8 Check the drums frequently by visual inspection to prevent overfilling.

8.5.9 When the drum is full, remove and replace it with an empty, pretared, premarked drum.

8.5.10 When the hopper is empty, close the dust discharge valve.

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8. G-4-9 Hoffman High Vacuum Dust Collector (cont.)

8.5.11 Gross weigh filled drums and record the weight on the Form NLO-AC-1945. Enter the lot number, drum number, gross, tare, and net weights on "Weight Ticket."

8.5.12 Complete the drum identification to include the lot number, drum number, gross, tare, and net weights.

8.5.13 Record on Form NLO-PRO-1127 that the dust collector was emptied.

8.5.14 Send the filled drums to Plant 1.

9. G-4-11 Hoffman High Vacuum Dust Collector

9.1 Turn on the main power disconnect.

9.2 Start dust collector G-4-5 per paragraph 6. If not in operation, check with the supervisor and wait until G-4-5 is operating.

9.3 Close the inlet blast gate to the Hoffman vacuum exhauster.

9.4 Open the blast gate to G-4-5.

9.5 Starting the dust collector:

9.5.1 Press the "START" button on the controller.

9.6 After startup and once each hour, check that the manometer is registering the readings as listed in Table 2. Record the readings on Form FMPC-PRO-2617.

NOTE: If reading exceeds listed limit, shake bags using manual shaker.

9.7 Shut down the dust collector as follows:

9.7.1 Press the "STOP" button.

9.8 Empty the dust collector as follows:

9.8.1 Check that the "Reject Dust" packaging hopper has capacity.

9.8.2 Open the blast gate on the vent line from the "Reject Dust" packaging hopper.

9.8.3 Close the G-4-11 exhauster.

9.8.4 Manually shake the bags.

9.8.5 Open the manual dust discharge valve.

9.8.6 When the hopper is empty, close the dust discharge valve and return the system to normal operation.

9.8.7 Perform the scale check on scale in use per SOP 4-C-901.

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9. G-4-11 Hoffman High Vacuum Dust Collector (cont.)

9.8.8 Tare weigh a 30-gallon drum, record the weight on Form NLO-AC-1945, and attach the ticket to the drum.

9.8.9 Mark the collector number on the drum and place the drum under the proper discharge outlet.

9.8.10 Turn on the power to the packaging unit.

9.8.11 Transfer the dust from the hopper to the drum.

9.8.12 Fill the drum to a maximum of 5 inches from the top.

9.8.13 Clamp the lid on the drum and remove it from the enclosure.

9.8.14 Replace the drum with an empty, pretared, premarked drum.

9.8.15 Gross weigh the drum and record the weight on Form NLO-AC-1945. Enter the lot number, drum number, gross tare and net weights on the weight ticket.

9.8.16 Stencil the lot number, drum number, gross, tare, and net weights on each drum.

9.8.17 When the hopper is empty, turn off the power to packaging unit.

9.8.18 Vacuum any spillage of contaminated dust to dust collector G-4-11.

9.8.19 Deliver the Form NLO-AC-1945 to the Production Recording Office.

9.8.20 Record on Form NLO-PRO-1127 that the dust collector was emptied.

9.8.21 Send the filled drums to Plant 1.

10. G-4-12 Mikro-Pulsaire Dust Collector

10.1 Turn on the main power disconnect.

10.2 Start the differential pressure recorder-controller.

10.3 Set the differential pressure recorder-controller at settings indicated in Table 2. Open the air inlet valves, and close the bypass and drain valves. Alarm points are preset by maintenance.

10.4 Turn on the rotary valve.

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10. G-4-12 Mikro-Pulsaire Dust Collector (cont.)

10.5 Starting the dust collector:

10.5.1 Press the "START" button for the exhauster blower.

10.6 Turn on the air supply to the bag cleaning mechanism.

10.7 Set the selector switch on "AUTO."

10.8 Shut down the dust collector as follows:

10.8.1 Press the "STOP" button for the exhauster blower.

10.9 Empty the dust collector as follows:

NOTE: G-4-12 empties directly and automatically into the No. 3 Packaging System.

11. G-4-13 Mikro-Pulsaire Dust Collector

11.1 Turn on the main power disconnect.

11.2 Start the differential pressure recorder-controller.

11.3 After startup and once each hour, check that the manometer is registering the readings as listed in Table 2. Record the readings on Form FMPC-PRO-2617.

NOTE: If reading exceeds listed limit, activate reverse air to clean bags.

11.4 Turn on main exhauster blower.

11.5 Turn on the air supply to the bag cleaning mechanism.

11.6 Set the selector switch on "AUTO."

11.7 Shut down the dust collector as follows:

11.7.1 Press the "STOP" button for the exhauster blower.

11.8 Empty the dust collector as follows:

11.8.1 Place all empty 10-gallon drums under the discharge valve.

11.8.2 Open the discharge valve.

11.8.3 Fill the drum. Check the drum frequently to prevent over filling.

11.8.4 When the drum is full, close the discharge valve.

11.8.5 Remove the filled drum and replace it with an empty 10-gallon drum.

11.8.6 Record on Form NLO-PRO-1127 that the dust collector was emptied.

11.8.7 Send the filled drum to the No. 8 Reactor Bank.

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116

12. G-4-14 Day Dust Collector

12.1 Turn on the main power disconnect.

12.2 Start the differential pressure recorder-controller.

12.3 Set the differential pressure recorder-controller at settings indicated in Table 2. Open the air inlet valves, and close the bypass and drain valves. Alarm points are preset by maintenance.

12.4 Turn on the rotary valve.

12.5 Starting the dust collector:

12.5.1 Press the "START" button for main exhauster blower, ring blower, and drive motor. (The discharge screw conveyor and rotary valves under Dust Collector G-4-14 will start automatically.)

12.6 Set the selector switch on "AUTO."

12.7 Shut down the dust collector as follows:

12.7.1 Press the "STOP" button for the exhauster blower.

NOTE: The blowring drive and high pressure blower motors are interlocked with the exhauster motor switch.

12.8 Empty the dust collector as follows:

NOTE: G-4-14 empties directly and automatically into the No. 1 Packaging System.

12.8.1 At least twice per shift, check that the bins under the dust collector are empty. (If the bins are not empty, check the operation of the screw conveyor rotary valves and vibrators.)

13. G-4-15 Mikro-Pulsaire Dust Collector

13.1 Turn on the main power disconnect.

13.2 Start the differential pressure recorder-controller.

13.3 After startup and once each hour, check that the manometer is registering the readings as listed in Table 2. Record the readings on Form FMPC-PRO-2617.

NOTE: If reading exceeds listed limit, activate reverse air to clean bags.

13.5 Starting the dust collector:

13.5.1 Press the "START" button for the main exhauster blower.

13.6 Turn on the air supply to the bag cleaning mechanism.

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24

13. G-4-15 Mikro-Pulsaire Dust Collector (cont.)

13.7 Shut down the dust collectors as follows:

13.7.1 Press the "STOP" button for the exhauster blower.

NOTE: The bag cleaning mechanism is interlocked with the exhauster motor switch.

13.8 Empty the dust collector as follows:

13.8.1 Place a 55-gallon drum under the discharge chute.

13.8.2 Open the discharge valve.

13.8.3 Fill the drum. Check the drum frequently to avoid overfilling.

13.8.4 When the drum is full, close the discharge valve.

13.8.5 Remove the full drum and replace it with an empty 55-gallon drum.

13.8.6 Record on Form NLO-PRO-1127 that the dust collector was emptied.

13.8.7 Send the filled drum to the No. 3 Packaging System.

14. Stack Monitor Alarm -- Operator and Supervisor Responsibility

14.1 Operator Responsibility

14.1.1 Notify the supervisor.

NOTE: If the supervisor cannot be located immediately, shut down the dust collector per information in Table 3, "Operator Emergency Shutdown." Emergency information is listed for each dust collector by number. Notify the supervisor of the dust collector shut down.

NOTE: Information contained in the Table 3 is posted on each dust collector control panel.

14.2 Supervisor Responsibility

14.2.1 If the dust collector is not shut down, shut the collector down per Table 3. Lock and tag "Out Of Service" the main exhauster motor per Section 8.3, NLO Health and Safety Manual.

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TABLE 3

OPERATOR EMERGENCY SHUTDOWN

Dust Collector Number	Shutdown Procedures
G-4-1 Wheelabrator	1. Notify the Drum Dumper operator to shut down operations. 2. Shut down the dust collector by pushing the exhauster "STOP" button.
G-4-2 Turner-Haws	1. Notify the No. 2 Packaging Station operator or the Panel Board operator to shut down operations. 2. Shut down the dust collector by pushing the exhauster "STOP" button.
G-4-4 Turner-Haws	1. Shut down G-4-9 dust collector. 2. Shut down the dust collector by pushing the exhauster "STOP" button.
G-4-5 Turner-Haws	1. Shut down the G-4-11 dust collector. 2. Shut down the dust collector by pushing the exhauster "STOP" button.
G-4-7 Turner-Haws	1. Notify the Panel Board operator to shut down operations. 2. Shut down the dust collector by pushing the exhauster "STOP" button.
G-4-9 Hoffman	1. Shut down Dust Collector G-4-4. 2. Shut down the dust collector by pushing the exhauster "STOP" button.
G-4-11 Hoffman	1. Shut down Dust Collector G-4-5. 2. Shut down the dust collector by pushing the exhauster "STOP" button.

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TABLE 3 (cont.)

OPERATOR EMERGENCY SHUTDOWN

Dust Collector Number	Shutdown Procedures
G-4-12 Mikro-Pulsaire	1. Notify the No. 3 Packaging Station operator to shut down operations. 2. Shut down the dust collector by pushing the exhauster "STOP" button.
G-4-13 Mikro-Pulsaire	1. Notify the Reactor operator to shut down operations. 2. Shut down the dust collector by pushing the exhauster "STOP" button.
G-4-14 Day	1. Notify the Dumping Station operator and the Packaging Station operator to shut down operations. 2. Shut down the dust collector by pushing the exhauster "STOP" button.
G-4-15 Mikro-Pulsaire	1. Notify the Enriched Drumming Station operator and the Panel Board operator to shut down operations. 2. Shut down the dust collector by pushing the exhauster "STOP" button.

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14. Stack Monitor Alarm (cont.)

14.2.2 Notify an Industrial Hygiene Technician.

14.2.2.1 Industrial Hygiene Technician Responsibility

14.2.2.1.1 Check the monitor for proper operation. If the monitor is operating properly, check it for a soiled filter. If the filter is changed, submit the soiled one for normal analysis.

14.2.2.1.2 Notify the supervisor of the filter condition.

14.2.2.1.3 Notify the supervisor of the soiled filter analysis.

14.2.3 Notify the Chemical Plants Superintendent of the condition of the soiled filter being analyzed.

14.2.4 Inspect the collector for evidence of dust, and if dust is present, determine the source.

14.2.5 Obtain the filter analysis and notify the Chemical Plants Superintendent.

NOTE: Do not restart the dust collector or operation(s) served by the dust collector until an analysis of the stack loss has been reported and approval to restart has been granted by the Chemical Plants Superintendent.

14.2.6 If the Chemical Plants Superintendent determines from filter analysis that there has been a dust loss, and the leak has not been located, initiate a fluorescein dye test to find the leak per paragraph 14.2.7.

14.2.7 Fluorescein Dye Test

14.2.7.1 Check that all dust collector bags are in place inside the baghouse.

14.2.7.2 If repairs have been completed, "Post-Maintenance Check Sheet," Form FMPC-PRO-2610 (See Figure 1) must be completed before proceeding with dye test.

14.2.7.3 Turn on the exhaust blower of the dust collector.

NOTE: High vacuum and blow ring units must be turned off during the dye test.

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14.2.7 Fluorescein Dye Test (cont.)

14.2.7.4 Add fluorescein dye to the dust collector system at the closest possible inlet to the baghouse so that the dye is routed through the baghouse.

NOTE: The amount of dye added to the system is determined by the amount of filtering area in the baghouse. Specifications require that 1 lb. dye/1000 sq. ft. of filter area be added to the system.

14.2.7.5 Allow the dust collector to run for 30 seconds after all of the fluorescein dye has been added to the system.

14.2.7.6 Lock and Tag "Out Of Service" the main exhaust blower and electrical controls prior to entering the baghouse per Section 8.3, NLO Health and Safety Manual.

14.2.7.7 Obtain all necessary equipment including required safety items as specified in "Industrial Health and Safety Requirements." Enter the baghouse with an ultraviolet light to the check bags.

NOTE: Do not enter the baghouse unless another operator is on standby outside of the baghouse enclosure.

14.2.7.8 Using the ultraviolet light, check the bags for fluorescein dye particles. Detailed inspection should be on the bag/flange connections, seams and flange/baghouse wall interfaces, and all surfaces of the bags.

14.2.7.9 Have the Industrial Hygiene Technician remove the stack sampler filter for ultraviolet light inspection.

14.2.8 If the leak source has been located, clean the collector and notify the maintenance supervisor to make repairs.

14.2.9 After repairs are completed, clean the collector and run a dye test, per paragraph 14.2.7.

14.2.10 At completion of the dye test, complete the Form FMPC-PRO-2610.

14.2.11 Notify the Chemical Plants Superintendent of the results of the dye test.

NOTE: The Chemical Plants Superintendent shall make the determination to restart the collector.

14.2.12 A "Minor Event" report is to be completed by the supervisor prior to the completion of the shift.

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116

15. Stack Sampler Filter - Inspection and/or Change (Stack sampler filters are checked and/or changed at regular intervals by an Industrial Hygiene Technician.)

15.1 Industrial Hygiene Technician Responsibility

15.1.1 Notify the supervisor of the filter inspection and/or change.

15.1.2 Notify the supervisor of the condition (soiled or unsoiled) of the filter.

15.1.3 If the filter is changed, submit the filter for normal analysis.

15.1.4 Notify the supervisor of the filter analysis.

15.2 Supervisor Responsibility

15.2.1 If the filter is changed but is not soiled, resume normal operation of the dust collector.

15.2.2 If the filter is soiled, shut down the dust collector per information in Table 3. Lock and tag "Out Of Service" the main exhaust motor per Lock and Tag procedure (Section 8.3, NLO Health and Safety Manual).

15.2.3 Notify the Chemical Plants Superintendent of the condition of the soiled filter being analyzed.

15.2.4 Inspect the dust collector for evidence of dust, and if dust is present, determine the source.

15.2.5 Obtain the filter analysis and notify the Chemical Plants Superintendent.

NOTE: Do not restart the dust collector or operation(s) served by the dust collector until an analysis of the stack loss has been reported and approval to restart has been granted by the Chemical Plants Superintendent.

15.2.6 If the Chemical Plants Superintendent determines from the filter analysis that there has been a dust loss, and the leak has not been located, run a dye test to find the leak per paragraph 14.2.7.

15.2.7 If the leak source has been located, clean the collector and notify the maintenance supervisor to make repairs.

15.2.8 After repairs are complete, clean the collector and run a dye test per paragraph 14.2.7.

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15. Stack Sampler Filter (cont.)

15.2.9 At completion of the dye test, complete a Form FMPC-PRO-2610.

15.2.10 Notify the Chemical Plants Superindent of the results of the dye test.

NOTE: The Chemical Plants Superintendent shall make a determination to restart collector.

15.2.11 A "Minor Event" report is to be completed by the supervisor prior to the completion of his shift.

16. Sounding of a Differential Pressure Alarm or Indications of High or Low Differential Pressure on the Recorder -- Operator and Supervisor Responsibility

16.1 Operator Responsibility

NOTE: If the supervisor cannot be located immediately, shut down the dust collector per information in Table 3, "Operator Emergency Shutdown." Emergency information is listed by number for each dust collector. Notify the supervisor of the dust collector shutdown.

NOTE: Information contained in Table 3, is posted on each dust collector control panel.

16.2 Supervisor Responsibility

16.2.1 If the dust collector is not shut down, shut it down per Table 3. Lock and tag "Out Of Service" the dust collector main exhaust motor per Lock and Tag procedure (Section 8.3, NLO Health and Safety Manual).

16.2.2 Notify an Industrial Hygiene Technician.

16.2.2.1 Industrial Hygiene Technician Responsibility

16.2.2.1.1 Check the monitor for proper operation. If the monitor is operating properly, check for a soiled sample filter and if the filter is changed, submit the soiled filter for normal analysis.

16.2.2.1.2 Notify the supervisor of filter condition.

16.2.2.1.3 Notify the supervisor of soiled filter analysis.

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116

16.2 Supervisor Responsibility (cont.)

16.2.3 If the Industrial Hygiene Technician reports the filter is not soiled and if the cause of low or high differential pressure cannot be determined, notify the Instrument Shop to service the differential pressure gage.

WARNING: THE CAUSE OF HIGH OR LOW DIFFERENTIAL PRESSURE MUST BE DETERMINED BEFORE CONSIDERATION CAN BE GIVEN TO RESTARTING THE COLLECTOR AND OPERATIONS SERVED BY THE COLLECTOR.

16.2.4 Notify the Chemical Plants Superintendent of condition of the soiled filter being analyzed, or if the filter was not soiled, what action has been taken.

16.2.5 Inspect the collector for evidence of dust, and if dust is present, determine the source.

16.2.6 If there is no visual evidence of a dust collector problem, initiate a fluorescein dye test per paragraph 14.2.7. Report the results of the dye test to the Chemical Plants Superintendent.

16.2.7 Obtain the filter analysis and notify the Chemical Plants Superintendent.

NOTE: Do not restart the dust collector or operation(s) served by the dust collector until an analysis of the stack loss has been reported and approval to restart has been granted by the Chemical Plants Superintendent.

16.2.8 If the Chemical Plants Superintendent determines from the filter analysis that there has been a dust loss, and the leak has not been located, run a dye test to find the leak per paragraph 14.2.7.

16.2.9 If a leak source has been located, clean the collector and notify the Maintenance Department to make repairs.

16.2.10 After repairs are complete, clean the collector and run a dye test, per paragraph 14.2.7.

16.2.11 At completion of the dye test, complete Form FMPC-PRO-2610.

16.2.12 Notify the Chemical Plants Superintendent of the results of the dye test.

NOTE: The Chemical Plants Superintendent shall make the determination to restart the collector.

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16. Sounding of a Differential Pressure Alarm... (cont.)

16.2.13 Check for the specified differential readings and record them once each hour.

16.2.14 A "Minor Event" report is to be completed by the supervisor prior to the completion of the shift.

17. Any Unusual Circumstance Not Covered By Paragraph 1 thru 16 Shall Be Considered As A Possible Failure Until Determined Otherwise and the Supervisor Shall Proceed As Follows:

17.1 Shut down the collector per Table 3. Lock and tag "Out Of Service" the main exhaust motor per Lock and Tag procedure (Section 8.3, NLO Health and Safety Manual.)

17.2 Notify the Chemical Plants Superintendent.

17.3 Request an Industrial Hygiene Technician to check the sampler filter.

17.4 Visually check the collector.

17.5 Initiate a fluorecein dye test per paragraph 14.2.7.

17.6 A "Minor Event" report is to be completed by the supervisor prior to the completion of the shift.

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TABLE 4

INSPECTION TROUBLESHOOTING GUIDE

Item No.	Problem	Condition And/Or Cause	Corrective Action
1.	Dust on the floor of the baghouse	Broken bag/ Loose bag connection	Notify the Mechanical Department to replace bag or repair connection.
2.	Dust on the blow rings	Broken bag/ Blow ring binding/ Loose bag connection	Notify the Mechanical Department to replace bag/repair blow ring/ tighten connection.
3.	Misalignment of the blow rings	Broken blow ring/ Loose bag	Notify the Mechanical Department to repair blow ring or bag connection.
4.	Blow ring chain drive or cable malfunction	Chain/ Cable broken	Notify the Mechanical Department to repair chain or cable.
5.	Reversing motor malfunction	Electrical problems	Notify the Mechanical Department to repair broken or loose hose.
6.	Blower hose leaking	Broken hose or loose connection	Notify the Mechanical Department.
7.	Damaged or Broken Bags	Bag installation/ Connection loose	Replace bag.
8.	Bag loose at the flange connections, top and bottom	Improper installation	Notify the Mechanical Department to tighten connections.
9.	Dye check - Leak indications	Bag installation/ Hose connections/ Bag damage	Check bag condition and connections/ hose connections. Inspect dust collector.

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TABLE 4

INSPECTION TROUBLESHOOTING GUIDE

Item No.	Problem	Condition And/Or Cause	Corrective Action
10.	Dust inside the Hoffman unit	Bag connections/ Bag damage	Notify the Mechanical Department to repair or replace bags. Inspect bag conditions and connections.
11.	Dust leaking around the bags	Bag connection/ Improper installation or bag damage	Notify the Mechanical Department to repair.
12.	High differential pressure	Blow ring drive "OFF"/reverse air "OFF"/blow ring or drive malfunction/air solenoid or bag shaker malfunction/ defective blowring hoses or connections.	Notify the Mechanical Department to repair.
13.	Low differential pressure	Defective connections/ damaged bags	Notify the Mechanial Department to repair.

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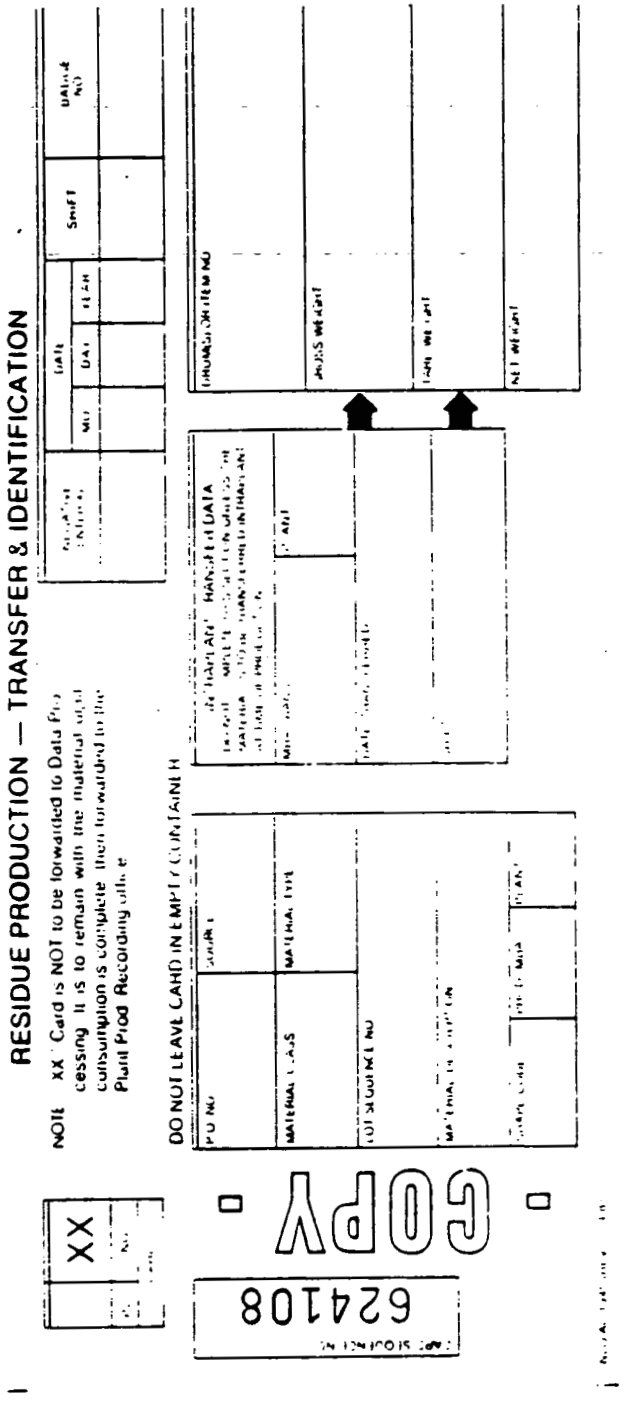

Residue Production - Transfer and Identification
FORM NLO-AC-1945
Figure 1 (Sheet 1 of 11)

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NLO, INC.

WORK PERMIT

Permit No. ____

NOTE: For [illegible] Suggested Check Points see reverse side.

GENERAL INFORMATION - SECTION A

BUILDING:	AREA:	EQUIPMENT

JOB DESCRIPTION:

STARTING DATE:	TIME:	ISSUED TO:	INITIATED BY:

Work complete, equipment requires testing. ☐ (Signature not required unless checked)

Signed ____ (FOREMAN) Date ____ Time ____

SECTION B	SECTION C
☐ FLAME & WELDING PERMIT	☐ CORROSIVE MATERIAL
☐ Suggested Check Points Followed.	☐ Acid ☐ Caustic ☐ Solvent
SPECIAL PRECAUTIONS:	☐ Suggested Check Points Followed.
	SPECIAL PRECAUTIONS:
PERMIT EXPIRES: / FIRE & SAFETY INSPECTOR:	
PERMIT EXTENSION: / FIRE & SAFETY INSPECTOR:	

INDUSTRIAL HYGIENE - SECTION D

☐ Radiation Evaluation Needed.

Respirator Required: ☐ Airline ☐ Chemical Cartridge Type ☐ Dust Type ☐ None

EVALUATION DATA	RE-EVALUATION DATA
EXTERNAL RADIATION (AT WORKING DISTANCE):	EXTERNAL RADIATION (AT WORKING DISTANCE):
β + γ ____ mrads/hr. γ ____ mr/hr.	β + γ ____ mrads/hr. γ ____ mr/hr.
RECOMMENDED TIME LIMIT (PER MAN, PER WEEK):	RECOMMENDED TIME LIMIT (PER MAN, PER WEEK):
EXPIRATION DATE: / IND. HYGIENE & RADIATION DEPT.	EXPIRATION DATE: / IND. HYGIENE & RADIATION DEPT.:

SPECIAL PRECAUTIONS:

SECTION E

☐ ACCESS PERMIT ☐ Suggested Check Points Followed.

Atmospheric Considerations: ☐ Toxic Gas or Vapor ☐ Oxygen Deficiency ☐ Flammable Gas or Vapor ☐ Not Applicable

SPECIAL PRECAUTIONS:

PERMIT EXPIRES:	FIRE & SAFETY INSPECTOR:	PERMIT EXTENSION:	FIRE & SAFETY INSPECTOR:

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3	Yellow - IH & R (RECORD COPY)

[X] Condition Applicable When Checked.

NLO-H&S-973 (REV. 10/25/85) REPLACES NLO-H&S-392, & NLO-H&S-556

WORK PERMIT
FORM NLO-H&S-973
Figure 1 (Sheet 2 of 11)

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NLO, INC.
PRODUCTION DIVISION - PLANT 4

DUST COLLECTOR AND HOPPER CONTROL DATA

Date _____

DUST COLLECTOR DATA

TIME	G4-7 D P	G4-7 FLOW	G4-7 TEMP	G4-8	G4-2	G4-12	G4-14
8 AM							
9							
10							
11							
12 NOON							
1 PM							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12 MID							
1 AM							
2							
3							
4							
5							
6							
7							

HOPPER CHANGE DATA

BANK NUMBER			1ST HOPPER NO	1ST HOPPER TIME	2ND HOPPER NO	2ND HOPPER TIME	3RD HOPPER NO	3RD HOPPER TIME	4TH HOPPER NO	4TH HOPPER TIME
7	TOP	ON								
		OFF								
	BOTTOM	ON								
		OFF								
8	TOP	ON								
		OFF								
	BOTTOM	ON								
		OFF								
9	TOP	ON								
		OFF								
	BOTTOM	ON								
		OFF								

OPERATORS

(1ST SHIFT) _____ (2ND SHIFT) _____ (3RD SHIFT) _____

REMARKS _____

NLO-PRO-880 (REV. 3/18/83)

Dust Collector and Hopper Control Data
FORM NLO-PRO-880
Figure 1 (Sheet 3 of 11)

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NLO-T-1028 (REV. 1/14/85)

NLO, INC.

PRODUCTION DIVISION - PLANT 4

DAILY CHECK OF DUST COLLECTORS

Name ____

Date ____

G4-1 Comments ____

G4-2

1	2	3	4
5	6	7	8
9	10	11	12

N

Comments ____

G4-3

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24

N

Comments ____

G4-4

1	2
3	4

N

Comments ____

G4-5

1	2
3	4

N

Comments ____

G4-6 Comments ____

G4-7

1	2	3	4
5	6	7	8
9	10	11	12

N

Comments ____

G4-8 Comments ____

G4-9 Comments ____

G4-10 Comments ____

G4-11 Comments ____

G4-12 Comments ____

G4-13 Comments ____

G4-14 Comments ____

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32

N

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Shift Foreman, - Plant 4 (RECORD COPY)

Daily Check of Dust Collectors
FORM NLO-PRO-1127
Figure 1 (Sheet 4 of 11)

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NLO, INC.
PRODUCTION DIVISION - PLANT 4

DUST COLLECTOR - STACK READINGS

DUST COLLECTOR

DATE	TIME	METER READING	RANGE	COUNTS/MINUTE	DIFFERENCE FROM PREVIOUS COUNTS/MINUTE

NLO PRO-1245 (7/31/86)

K • 1,000

DUST COLLECTOR - STACK READINGS
FORM NLO-PRO-1245
Figure 1 (Sheet 5 of 11)

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FMPC
PRODUCTION DIVISION

DUST COLLECTOR RADIATION STACK MONITOR READINGS

Date: _____

TIME	c/m	c/m	c/m	c/m	c/m	c/m	c/m	c/m	c/m	c/m	c/m	c/m	c/m
8 A.M.													
9													
10													
11													
12 NOON													
1 P.M.													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12 MID.													
1 A.M.													
2													
3													
4													
5													
6													
7													

OPERATORS:

_____ (FIRST SHIFT) _____ SECOND SHIFT _____ THIRD SHIFT

Remarks: _____

Dust Collector Radiation Stack Monitor Reading
FORM FMPC-PRO-2608
Figure 1 (Sheet 6 of 11)

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FMPC

DUST COLLECTOR INSPECTION CHECK SHEET

DUST COLLECTOR NUMBER: _____

SHIFT/DATE	OPERATOR INITIALS	DOOR GASKET & LATCHES	BAG CONDITION IN HOFFMAN UNIT	DUST IN HOFFMAN UNIT	BAG/FLANGE CONNECTIONS TOP & BOTTOM	BAG CONDITION	BLOWRING BLOWER HOSES	REVERSING MOTOR/LIMIT SWITCHES	CHAIN/CABLE FOR BLOWRING DRIVE	BLOWRING ALIGNMENT	DUST ON BLOWRINGS IN BAGHOUSE
1st											
2nd											
3rd											
1st											
2nd											
3rd											
1st											
2nd											
3rd											
1st											
2nd											
3rd											
1st											
2nd											
3rd											
1st											
2nd											
3rd											
1st											
2nd											
3rd											

Dust Collector Inspection Check Sheet
FORM FMPC-PRO-2609
Figure 1 (Sheet 7 of 11)

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FMPC
PRODUCTION DIVISION - PLANT

POST-MAINTENANCE CHECK SHEET - DUST COLLECTORS

Date: _____ Dust Collector Number: _____

ITEM	MAINTENANCE	PRODUCTION	COMMENTS
Blowring Alignment			
Chain/Cable Blowring Drive			
Reversing Motor Blowring Drive			
Blowring Blower Hose			
Bag Condition			
Bag/Flange Connections			
Blowring Limit Switches			
Door Gaskets and Latches			
Cleanliness (Tools & Debris Removed)			
Approved for Operation (Signature Required)			
Dye Test			
Repeat Dye Test (If Required)			

APPROVED:

Plant Superintendent: _____ Date: _____

NO.	DISTRIBUTION
1	Plants Superintendent
2	General Superintendent
3	Mechanical Superintendent

FMPC PRO 2610 (3/10/86)

Post Maintenance Check Sheet - Dust Collector
FORM FMPC-PRO-2610
Figure 1 (Sheet 8 of 11)

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FMPC

STACK SAMPLER CHECK SHEET

(Stack Sampler Prescribed Flow Rate - (SCF/H)

Dust Collector Number: ____

Date: ____

TIME	ACTUAL FLOW RATE	ADJUSTED TO	OPERATOR BADGE NUMBER	COMMENTS
8:00 a.m.				
9:00 a.m.				
10:00 a.m.				
11:00 a.m.				
12 Noon				
1:00 p.m.				
2:00 p.m.				
3:00 p.m.				
4:00 p.m.				
5:00 p.m.				
6:00 p.m.				
7:00 p.m.				
8:00 p.m.				
9:00 p.m.				
10:00 p.m.				
11:00 p.m.				
12 Midnight				
1:00 a.m.				
2:00 a.m.				
3:00 a.m.				
4:00 a.m.				
5:00 a.m.				
6:00 a.m.				
7:00 a.m.				

Supervisor's Remarks: ____

FMPC PRO-2612 (3/11/88)

Stack Sampler Check Sheet
FORM FMPC-PRO-2612
Figure 1 (Sheet 9 of 11)

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NLO-T-1026 (REV 1/14/88)

44

SHIFT _____ DUST COLLECTOR MANOMETER READINGS DATE _____

PLANT ____

COLLECTOR NUMBER	HOUR 1	HOUR 2	HOUR 3	HOUR 4	HOUR 5	HOUR 6	HOUR 7	HOUR 8

Dust Collector Manometer Readings
FORM FMPC-PRO-2617
Figure 1 (Sheet 10 of 11)

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NLO, Inc.
PRODUCTION DIVISION PLANT 4

DUST COLLECTOR DIFFERENTIAL PRESSURE CHECK SHEET

Date

TIME	HI DP	LOW DP	HI DP	LOW DP	HI DP	LOW DP	HI DP	LOW DP	HI DP	LOW DP	HI DP	LOW DP	HI DP	LOW DP	HI DP	LOW DP	HI DP	LOW DP	HI DP	LOW DP	HI DP	LOW DP	HI DP	LOW DP	HI DP	LOW DP	HI DP	LOW DP	HI DP	LOW DP	HI DP	LOW DP	HI DP	LOW DP	HI DP	LOW DP
8 A.M.																																				
9																																				
10																																				
11																																				
12 NOON																																				
1 P.M.																																				
2																																				
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10																																				
11																																				
12 MID																																				
1 A.M.																																				
2																																				
3																																				
4																																				
5																																				
6																																				
7																																				

OPERATORS:

(FIRST SHIFT) (SECOND SHIFT) (THIRD SHIFT)

Remarks:

FMPC-PRO-2623

DUST COLLECTOR DIFFERENTIAL CHECK SHEET
FORM FMPC-PRO-2623
Figure 1 (Sheet 11 of 11)

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NLO-T-1028 (REV. 1/14/86)

This SOP has been approved by the Chemical Plants Superintendent, Mechanical Department Superintendent, General Superintendent, Health, Safety and Environmental Division, and the Quality Control, Production Technology, and Materials Control and Accountability Departments.

AUTHORIZED BY:

ORIGINAL SIGNED BY ASSISTANT MANAGER/MANAGER, DATED 12-26-85.

SIGNATURE ON FILE IN QA/QC PROCEDURES GROUP OFFICE.

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RECORD OF REVISIONS

PAGE	DATE	DESCRIPTION AND AUTHORITY
1 thru 39	12-30-85	Procedure revised and reissued per SOP Change Request No. 1181, initiated by D. A. Nixon.

LIST OF EFFECTIVE PAGES

PAGE	DATE
1 thru 39	12-30-85

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ATTACHMENT II

AREA NO.: Plant Wide	QUALITY ASSURANCE CLASS: 1 [X] 2 [ ] 3 [ ]	NLO, INC. MECHANICAL DEPARTMENT MAINTENANCE STANDARD	TYPE: [X] Repetitive [ ] One Time	MAINT. STANDARD NO.: DC-4
BUILDING: ALL				
EQUIPMENT: Dust Collectors		DESCRIPTION: Periodic Inspection of Dust Collectors	PREPARED BY: C. Schmidt	DATE: 10-20-77
A.P.T. 1-M/W-60 1-E/L-60 1-I/M-90			APPROVED BY: A. J. Burns	DATE: Rev: 4-23-84

STEP NO.	JOB SEQUENCE	TOOLS AND MATERIAL	SAFETY REMINDERS, DRAWINGS, SPECIAL NOTES AND INSTRUCTIONS
1.	Notify Supervisor in the building of the dust collector inspection.	Dust Collector PM Check Sheet 20-A	FREQUENCY: Annual-Semiannual
1a.	Instrument check and calibration.	PM Check Sheets 13K and 13P for Instrumentation	Adhere to Lock & Tag Procedure as per Health & Safety Manual, Section 8.3, as per revision, 3-16-77
2.	Check housing platform and ladders for any deformation, corrosion and cracks.	Hand tools Flash light Gloves	
3.	Check dust bags for holes, ripped seams, dust build-up, bag tension and fasteners.	Ear Plugs Respirator	Adhere to repairs in dust collector bag housings procedu as per Health & Safety Manual, Section 16.3, page 16-16, excep for 16.3.3.
4.	Check blow ring assembly, alignment, sprockets, rollers, chains, guides, sheaves and drive.		
5.	Check hose and clamps, piping and fittings for deterioration and leaks.		Quality Assurance Plan Number, QAP-PROD-OG-5
6.	Check limit switches, blower motor, vacuum motor belt tension, electrical timers and safety devices.		Ear & Eye Protection as require and posted.
7.	List corrective action required.		
8.	Notify Supervisor of corrective action required.		
9.	Complete scheduled PM record card.	Scheduled PM record code card or PM record card	Maintenance Code Card No. Ø20
10.	Review and return PM Check Sheets to the PM Activity Clerk.	NLO-ENG-595	Monthly PM activity list

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1	Mechanical Superintendent (RECORD COPY)
2	Pertinent Area Supervisor
3	Pertinent Supervisor
4	Crafts Concerned

50

116

FMPC
MECHANICAL DEPARTMENT

116

PMP CHECK SHEET -
Foxboro Differential Bell Meter with Rotax Controller

MECH-PMP 13K

Equipment Name & Location:

Equipment Code Number:

Inspector					
Date					
Case & Door					
Body & Bell Housing					
Manifold, Valves, Piping, Damping Union					
Bearing Assembly					
Free Shaft Rotation					
Lubrication of Shaft					
Linkages & Index					
Pen & Chart					
Electrical Power Connection					
Fuses & Cut-Off Switches					
BELL METER					
Remove Bell Cover					
Leak, Dust in Housing					
Bell & Linkage					
Mercury Level & Cleanliness					
Open Drain Legs for Purge					
Calibration Check - 0, 40, 80, 100% of Chart					
ROTAX SWITCH					
Linkages					
Rotax Switch Movement					
Bush Tension					
Contact Surfaces					
Relay Action & Contacts					
Manometer Calibration of Switch Contact Points					
Foreman's Initials					

FMPC-MCH-2400 (REV 3/28/85)

51

FMPC
MECHANICAL DEPARTMENT

PMP CHECK SHEET - MANOMETER

MECH-PMP 13P

Equipment Name:
Equipment Code Number:
Location:

Inspector					
Date					
MOUNTING					
Alignment & Level					
Rigidity					
COVER & CASE					
Paint, Rust, Corrosion					
Dents, Broken Glass Cover					
Scale Legibility					
CLEANLINESS					
Scale					
Glass Cover					
Glass Tube					
Indicating Fluid					
Dust Traps					
Lighting					
TUBING					
Connections					
Tubing, Dents, Kinks					
Unrestricted Flow					
COCKS & VALVES					
Correct Settings					
Leaks					
Tight Shut Off					
CALIBRATION					
Blow Out Lines					
Correct Fluid					
Correct Zero					
Zero Adjustment					
Overflow Check Valve					
WINTER PREPARATION					
Anti-Freeze in Fluid					
Foreman's Initial					

FMPC
MAINTENANCE SECTION

MECH-PMP 20A 116

DUST COLLECTOR CHECK SHEET

EQUIPMENT NAME & LOCATION

EQUIPMENT I.D.	INSPECTED BY: (CLOCK NUMBER)	DATE:

(√) OK, (X) Adjustment made; (O) Needs further attention – see Remarks

ITEM	(√)	REMARKS
MECHANICAL INSPECTION		
HOUSING		
Paint		
Dents & Cracks		
Corrosion/Erosion		
Gaskets		
Doors/Latches/Fasteners		
Ladders		
Handrails/Platforms		
Hoppers		
Valves		
BAGS AND BAGHOUSE		
Dust Build-up		
Holes/Cracks		
Ripped Seams		
Bag Slack or Tension		
Bag Clamps - Springs		
Bag Fasteners - Top/Bottom		
No. of Bags Replaced/ Rehung		
BAG SHAKER MECHANISM		
BLOW RING ASSEMBLY		
Linkage		
Cable		
Roller Chain		
Sprockets & Chains (Inside)		
Sheaves		
Blow Ring		
Blow Ring Guides - Rollers		
Blow Ring Drive Mainshaft		
Blow Ring Coupling		
Blow Ring Bearings & Joints		
Blow Ring Alignment		
Blow Ring Adjust Mechanism		

ITEM	(√)	REMARKS
EXHAUSTER SYSTEM		
Belts/Coupling		
Shaft Bearings		
Sheaves		
Guards		
BLOW RING HOSE PIPING AND BLOWER		
Hose		
Hose Clamps		
Hose Suspension		
Hose Piping		
Hose Fittings		
Air Supply Blower		
Blower Filter		
Belts		
Guards		
Manometer Reading across Bags (to be under 5½"H_2O)		
ELECTRICAL INSPECTION		
Traveler Limit Switches		
Limit Switch & Push Rods		
Blow Ring Drive Motor		
Blower Motor		
Exhauster Motor		
Motor Belt Tension		
Rotary Limit Switch		
Electrical Controllers		
Electrical Timer		
Electrical Safety Devices		
Electrical Wiring		
Automatic Hand Selector Switch		
Start & Stop Switch		
Alarms/Lights		
Grounding		

Approved for continued service ☐ Yes ☐ No

COMMENTS:

HOURS _____
EACH PERSON

FMPC-PRO-2234 (REV. 4/22/86)

NLO - FMPC MANUFACTURING STANDARDS

TITLE	PROCEDURE NUMBER
SOP - CHANGING BAGS IN AMERICAN AIR FILTER (AMERJET) TYPE DUST COLLECTORS	43-C-7702

DIVISION & PLANT	SUPERSEDES	PREPARED BY	ISSUE DATE
Engr. 8 & 9	None	M. V. Carle Nelson Weichold	3-13-85
		REVISED BY	REVISION DATE
PAGE 1 REVISION DATE:		Lisa Tilney	5-21-85

REFERENCES: SOP 8-C-701
SOP 9-C-701

DESCRIPTION: This procedure is to be followed to change dust collector bags listed in Table 1.

TABLE 1

PLANT 8 AND 9 DUST COLLECTORS

Collector Number	Model	Location
G8-8021	9-8-80	Plant 8, 2nd Floor, Floor East
G8-8024	9-8-80	Plant 8, 2nd Floor, East
G8-8035	9-8-80	Plant 8, 2nd Floor, Floor Middle
G8-8057	128240	Plant 8, 2nd Floor, West
G9-N1-1039	B-21-45-2390	Plant 9, Outside South Pad

ENVIRONMENTAL CONSIDERATIONS

It is the intention of NLO, Inc. to achieve and maintain those levels of air and water quality which will protect health and promote welfare and safety. The responsibility for limiting the release of pollutants to tolerable quantities rests with all personnel, both management and operators. Strict compliance with these procedures will minimize the possibility of an accidental release of contaminated material to the environment.

INDUSTRIAL HEALTH AND SAFETY REQUIREMENTS

1. Notify the production supervisor of the work to be accomplished on the dust collector.

2. Ensure that the dust collector blower and blow ring drive mechanism is locked and tagged "Out Of Service" before beginning work inside the collector. The associated Hoffman high vacuum unit, if applicable, must also be locked and tagged "Out Of Service."

3. Keep track of time spent inside the dust collector enclosure so as not to exceed the recommended stay time as specified on the Work Permit.

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3.8 Install new bags, one at a time, as follows: (cont.)

3.8.2 Pull all of the excess fabric from under the snap spring that may have been folded under during installation.

3.8.3 Grasp the dust bag about two feet below the top and pull sharply downward two or three times. If the bag comes off, it indicates the presence of cloth folded under the snap spring.

3.8.4 Drop the bag through the corresponding hole in the blow ring platform.

R 3.8.5 Ensuring that the seam is straight, pull the bag over the lower thimble.

R 3.8.6 With the bag pulled down tight, install a hose clamp just
R below the flared portion on the thimble and tighten clamp.
R See Figure 1 for proper hose clamp installation. Measure
R the distance between the bottom of the bag (spring) and the
R tube sheet. If this distance is not between 1/2 inch and
R 2 inches, the bag is not the proper size and must not be used.

3.9 When all bags are installed, remove all tools and debris from the bag house.

3.10 Remove the safety wire from the blow ring drive chain and remove the safety lock and tag from the drive motor.

3.11 Run the blow ring drive through at least two complete cycles while inspecting for proper travel and smooth operation. Again check the limit switches for proper operation. Ensure that no bags were pulled loose during operation of the blow rings.

3.12 The Maintenance supervisor and Production supervisor will inspect the dust collector following completion of work in accordance with the dust collector Post-Maintenance Check Sheet (FMPC-PRO-2610) found in SOP 8-C-701 and 9-C-701. Both supervisors will sign the Check Sheet (FMPC-PRO-2610) indicating the dust collector is approved for operation.

3.13 Following inspection by Mechanical and Production supervisors, close the bag house and advise Production that work on the dust collector is complete. Remove locks and tags from the dust collector and the associated Hoffman high vacuum unit.

3.14 Sign the PM record card indicating that the bag change has been completed in accordance with this procedure.

NOTE: The Production Department will conduct a dye check for bag leakage prior to putting the dust collector in service following a bag change (Refer to SOP 8-C-701 and 9-C-701).

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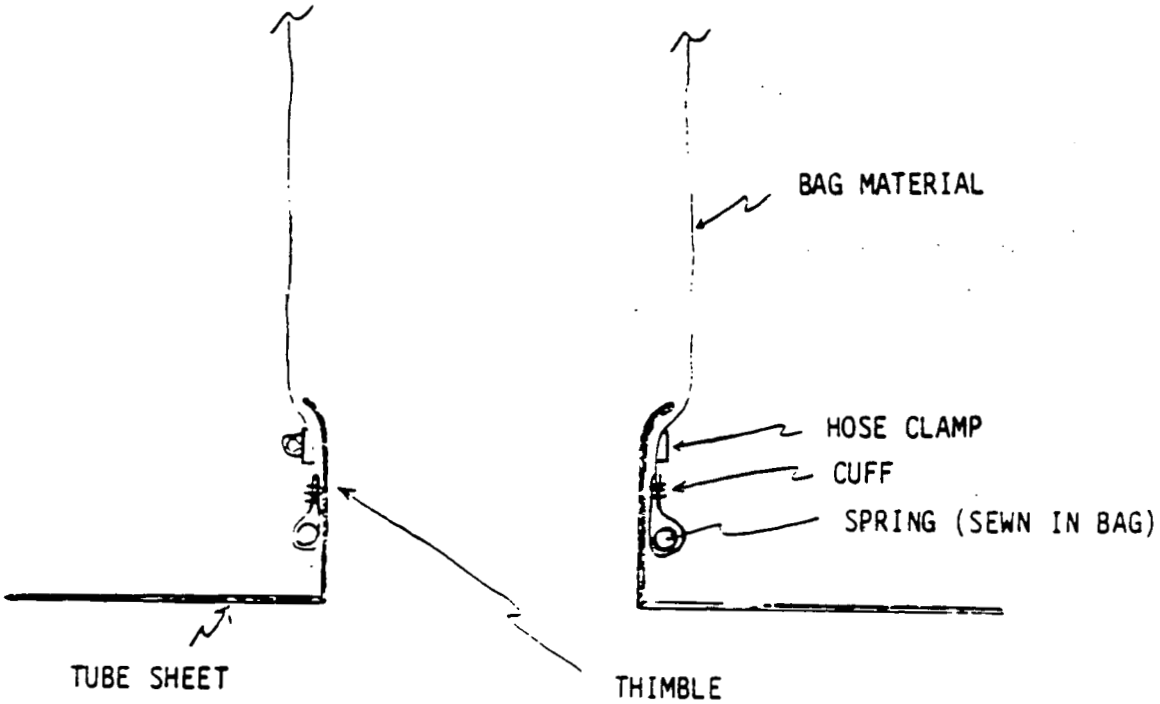

HOSE CLAMP INSTALLATION
Figure 1

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This SOP has been approved by the Mechanical Department Superintendent, Metals Plants Superintendent, Chemical Plants Superintendent, General Superintendent, Health, Safety and Environmental Division, Technical Group Director, and the Quality Assurance/Quality Control, and Nuclear Materials Control Departments.

AUTHORIZED BY:

Jack Fan for WTA 3-13-85

Assistant Manager Date

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RECORD OF REVISIONS

PAGE	DATE	DESCRIPTION AND AUTHORITY
1 thru 7	3-13-85	Request for new SOP for changing bags in American Air Filter (Amerjet) type dust collectors per SOP Request No. 1044, initiated by M. V. Carle.
5 thru 8	5-21-85	Revision to bag installation, clamping and measurement check for proper size bag per SOP Change Request No. 1141, initiated by M. V. Carle.

LIST OF EFFECTIVE PAGES

PAGE	DATE
1 thru 4	3-13-85
5 thru 8	5-21-85

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