RCRA Inspection Report

1) Inspector and Author of Report

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U.S. Environmental Protection Agency, Region 4
Enforcement and Compliance Assurance Division
Chemical Safety and Land Enforcement Branch
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2) Facility Information

PG Technologies
135 Technology Blvd
Ellisville Mississippi 39437

EPA ID # MSR000106203
NAICS # 332811 – Metal Heat Treating

3) Responsible Officials

James Pridgen
Plant Safety Manager

James.Pridgen@linde.com

4) Inspection Participants

Amy Conroy, Linde Regional Safety Professional-Americas,
James Pridgen, Linde, Plant Safety Manager
Hunter Bradley, Linde, Plant Safety Coordinator
Charles Kingdon, Linde, Plant Manager
Brad Justice, Mississippi Department of Environmental Quality (MDEQ)
Nereida Hernandez, USEPA Region 4

5) Date of Inspection

November 16, 2023

6) Applicable Regulations[1]

Resource Conservation and Recovery Act (RCRA) Sections 3002 (42 U.S. Code – Annotated U.S.C.A. 6925 and 6927), and 40 Code of Federal Regulation (C.F.R.) Parts 260 - 270, 273, 278,

& 279; Mississippi Code of 1972, Miss. Code Ann. § 17-17-1 et seq., and Mississippi Hazardous Waste Management Regulations, 11 Miss. Admin. Code Pt. 3, R. 1.1-1.24.

Pursuant to 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.17], a LQG may accumulate hazardous waste on-site for 90 days or less without a permit or without having interim status, as required by Section 17-17-27(4) of the Mississippi Code of 1972, Miss. Code Ann. § 17-17-27(4) [Section 3005 of RCRA, 42 U.S.C. § 6925], provided that the generator complies with the

[1] As the State's authorized hazardous waste program operates in lieu of the federal RCRA program, the citations of those authorized provisions will be to the authorized State program. However, for ease of reference, the federal citations will follow in brackets.

conditions listed in 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.17] (hereinafter referred to as the "LQG Permit Exemption").

Pursuant to 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.15(a)], a generator may accumulate as much as 55 gallons of non-acute hazardous waste in containers at or near the point of generation where wastes initially accumulate, which is under the control of the operator of the process generating the waste, without a permit or without having interim status, as required by Section 17-17-27(4) of the Mississippi Code of 1972, Miss. Code Ann. § 17-17-27(4) [Section 3005 of RCRA, 42 U.S.C. § 6925], and without complying with 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.16(b) or §262.17(a)], except as required in 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.15(a)(7) and (8)], provided that the generator complies with the satellite accumulation area conditions listed in 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.15(a)] (hereinafter referred to as the "SAA Permit Exemption").

Pursuant to 11 Miss. Admin. Code Pt. 3, R. 1.21 [40 C.F.R. § 273.9], a small quantity handler of universal waste (SQHUW) is a universal waste handler who does not accumulate 5,000 kilograms or more of universal waste (batteries, pesticides, mercury-containing equipment, lamps, or aerosol cans, calculated collectively) at any time.

7) Purpose of Inspection

The purpose of this inspection was to conduct an unannounced compliance evaluation inspection to determine PG Technologies compliance with the applicable requirements of RCRA and the corresponding Mississippi regulations. This was an EPA lead inspection supported by MDEQ.

8) Facility Description

PG Technologies (hereinafter referred as PGT or the facility) is in Ellisville, Mississippi. PGT occupies one building of approximately 300,000 square feet, starts operating in 2018, and employs approximately 180 employees. PGT operates three shifts, six days a week (Monday to Saturday). Access to the facility is restricted. Visitors must register at the main office and must be escorted by facility personnel.

PG Technologies, LLC, a joint venture between Praxair Surface Technologies, Inc. and GE Aviation, is involve in the development, support, and application of specialized coatings for GE Aviation's engine platforms. PG Technologies is a subsidiary of Linde PLC, which is one of the largest industrial gas companies in the world.

PG Technologies specializes in high-technology coatings that enable aerospace components to withstand higher temperatures and stresses in jet engines. The engine parts are coated using corrosive and thermal resistant substances. During the corrosive process, the parts are prepared with a grit blaster before coating. The coatings provide protection against aqueous corrosion and heat scaling, as well as erosion, abrasion, and wear. The thermal resistance process starts with the same grit blaster priming of parts. The parts are taken to a room for the platinum coating process. Then the parts are prepared for the second coating with platinum aluminate, which uses a gel to protect certain areas of the parts to be coated. The platinum

aluminide coatings, provide exceptional oxidation protection for high performance and low performance turbine airfoils where additional environmental protection is needed.

The most recent Hazardous Waste Generator Notification (EPA Form 8700-12) dated March 1, 2023, characterized the facility as a large quantity generator (LQG) of hazardous waste. Waste codes from the EPA Form 8700-12 include D001 (ignitable waste), D002 (corrosive), D005 (barium), D006 (cadmium), D007 (chromium), D008 (lead), D0035 (methyl ethyl ketone), D039 (tetrachloroethylene), D040 (trichloroethylene), F003, and F005 (spent non-halogenated solvents). The facility also generates used oil and universal waste.

The facility operates under Air Emissions Synthetic Minor Source Permit 1360-00158 (expires on November 30, 2026), Water Pollution Control Permit No. MSP092396 (expires on February 28, 2027), and Industrial Stormwater General Permit for Industrial Activity, Permit No. MSR00 2292 (expires on November 30, 2025).

9) Previous Inspection History

PGT has been inspected since 2016. The most recent inspection was conducted on January 23, 2020. No apparent violations were found.

10) Opening Conference

On November 16, 2023, EPA inspector, Nereida Hernandez Morales, accompanied by MEDQ inspector, Brad Justice, arrived at PGT at approximately 8:30 a.m. After checking-in in the security office, Mr. James Pridgen, Plant Safety Manager of PGT, received the inspectors. We were joined to the opening conference by Hunter Bradley-Plant Safety Coordinator, Charles Kingdon, Plant Manager, and Amy Conroy, Regional Safety Professional-Americas (by phone), all of them from Linde, PLC. The inspectors introduced themselves, showed their credentials and explained the purpose of the visit.

The inspectors described the anticipated use of equipment (digital camera) during the inspection and provided a list of records to be reviewed as part of the recordkeeping. The EPA inspector also discussed the company's ability, pursuant to 40 C.F.R. §2.203, to assert a business confidentiality claim for information submitted to EPA. The facility did not assert business confidentiality claim.

James Pridgen provided an overview of the facility's history and current operations during the opening conference. Mr. Pridgen also discussed health and safety protocols and the required personal protective equipment required for the inspection.

11) Inspection Observations

PGT manages one central accumulation area (CAA) and several satellite accumulation areas (SAAs) across the facility. All the waste in the SAAs is moved to a CAAs prior to shipment. Waste streams generated at the facility comes from the following processes: electron beam physical vapor deposition (EBPVD), slurry coatings, ABF stripping area, 3D printing station, vapor pressure area (VPA), and platinum aluminide plating area.

Slurry Area

The inspectors began the walk-through in the slurry coating areas (Slurry Area #1, Slurry Area #2, and Slurry Area#3). Three SAAs are managed in this area. We were joined by Mr. Al Keller, PGT, Team Leader, during the walk through. In this area, the engine parts received the final coating (with chrome) and are washed with water in a sink (#1, #2, and #3) to clean the parts. The sinks were labeled with the words "hazardous waste." The Waste stream D007 is generated in this area. The sink is connected to a 250-gallon tote. The totes have a yellow line to mark the 55-gallon. Once the liquid reaches this line, it is manually pumped out into a 55-gallon container (located next to the tote) and moved to the 90 days hazardous waste storage area. Photos #1, #2, and #3. The totes and the 55-gallon containers were labeled as slurry liquid waste, were observed to be closed, and labeled with the words "Hazardous Waste."

One 55-gallon container with solid (gloves, towels, etc.) was observed to be closed and labeled with the words "Hazardous Waste."

However, it was observed that the containers in the slurry area were not labeled or marked with the appropriate hazard indicator. Instead of having the "toxic" label, they were labeled with the Class 9 (miscellaneous) Department of Transportation (DOT) label. Recent guidance from the EPA (February 2023), states that the Class 9 DOT label, by itself, does not adequately indicate the hazard associated with the container's content. Photos #4 and Photo #5.

Pursuant to 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.15(a)(5)], A generator must mark or label its container with the following: (ii) An indication of the hazards of the contents (examples include, but are not limited to, the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic); hazard communication consistent with the Department of Transportation requirements at 49 CFR part 172 subpart E (labeling) or subpart F (placarding); a hazard statement or pictogram consistent with the Occupational Safety and Health Administration Hazard Communication Standard at 29 CFR 1910.1200; or a chemical hazard label consistent with the National Fire Protection Association code 704).

ABF – Stripping Area:

The inspectors visited the ABF stripping area that is used to remove the coatings form the defective parts. Corrosive waste is generated during the process. We were joined by Ms. Emma Everett, PGT Engineer, during the walk through.

One 55-gallon container with solid (filters, ammonium hydrogen difluoride) was observed to be closed and labeled with the words "Hazardous Waste" and with an indication of the hazards of the contents. Photos #6.

One 250-gallon tote is used to store aluminum fluoride. The tote has a line to mark the 55-gallon. Once the liquid reaches this line, it is pump out into a 55-gallon container (located next to the tote) and moved to the 90 days hazardous waste storage area. The tote was empty at time of the inspection, closed and labeled with the words "Hazardous Waste," and with an indication of the hazards of the contents. Photo #7.

3D Printing Station:
Small 3D engine parts are produced in this area and wash with alcohol for cleanliness. One 55-gallon container labeled as slurry liquid waste, was observed to be closed and labeled with the words "Hazardous Waste" and with an indication of the hazards of the contents. The container was located on a secondary containment. Photo #8.

Platinum Aluminide Plating:
The inspectors visited the platinum aluminide plating area. Mr. Ethan Small, PGT Engineering Technician, joined the walk through. This area consists of several plating lines with platinum, sodium, and ammonium hydroxide. Platinum aluminide coatings is applied via a diffusion process to provide oxidation protection. Per Mr. Small, no hazardous waste is generated during the process. The filters and DI water are disposed as non-hazardous. Three 55-gallon containers with DI water and two 55-gallon container with filters, and labeled as non-hazardous, were accumulated at time of the inspection.

VPA Area:
The inspectors visited the VPA area. Mr. Randy Barrow, Team Leader, joined the inspectors during the walk through. In this area, aluminide is used to cut the parts. Per Mr. Barrow, no hazardous waste is generated during the process and the rocks, with aluminide, are recycled. Three 55-gallon containers with aluminide rocks were accumulated at time of the inspection.

Electron Beam Physical Vapor Deposition (EBPVD):
The inspectors visited the EBPVD area. Mr. Cruz Hall, PGT Team Leader, join us during the walk through. The process consists of a high-performance thermal barrier coating for aeroengine turbine. Parts are put in a closed chamber at a very high temperature for coating. No hazardous waste is generated during the process.

Used Oil Storage Area:
One 55-gallon container and 250-gallon tote with a funnel with lid, were observed closed and label with the words "Used Oil" in a secondary containment. Photo # 9.

90 days Central Accumulation Area (CAA):
The CAA is located inside a building with labels that read "Warning Hazardous Material Storage Area," "Danger Hazardous Waste Storage Area Unauthorized Persons Keep Out," and "Danger No Smoking, No Open Flames, No Sparks." Photo #10.

One 250-gallon tote with ABF process solution (ammonium hydrogen difluoride) was observed to be closed and labeled with the words "Hazardous Waste," with an indication of the hazards of the contents, and dated October 26, 2023. Photo #11

Two 55-gallon containers with slurry liquid waste were observed to be closed and labeled with the words "Hazardous Waste," and dated October 30, 2023 and November 13, 2023. However, the indication of the hazards of the contents was missing on the containers.

Pursuant to 11 Miss Admin. Code Pt. 3, R. 10.3 [40 C.F.R. § 262.17(a)(5)(i)(B)], which is a condition of the LQG Permit Exemption, a generator must mark or label its containers with an indication of the hazards of the contents clearly visible for inspection on each container.

The CAA is equipped with an internal communications or alarm system capable of providing immediate emergency instruction to facility personnel; it is equipped with a device capable of summoning emergency assistance from local police departments, fire departments, or state or local emergency response teams; it is equipped with portable fire extinguishers, fire control equipment, spill control equipment, and it is equipped with water to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray system.

Universal Waste Storage Area:

PGT manages universal waste lamps and batteries in the CAA. The inspectors observed eight batteries with labels. Two batteries were dated September 9, 2022, exceeding the one-year period. Furthermore, three batteries were not marked with the accumulation starting date. Photo #12.

Pursuant to 11 Miss. Admin. Code Pt. 3, R. 1.21 [40 C.F.R. § 273.15(a) and (c)], a SQHUW may accumulate universal waste for no longer than one year from the date the universal waste is generated, or received from another handler, unless the requirements of paragraph (b) of this section are met. A small quantity handler of universal waste who accumulates universal waste must be able to demonstrate the length of time that the universal waste has been accumulated from the date it becomes a waste or is received.

Five boxes with 4-foot lamps and one box with bulbs were observed opened. The boxes were labeled "Universal Waste Lamps" and marked with the accumulation starting date. The oldest date observed was November 21, 2022. Photo #13.

Pursuant to 11 Miss. Admin. Code Pt. 3, R. 1.21 [40 C.F.R. § 273.3 (d)(1)], A SQHUW must contain any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps. Such containers and packages must remain closed and must lack evidence of leakage, spillage or damage that could cause leakage under reasonably foreseeable conditions.

12) <u>Records Review</u>:

After the walkthrough, the inspectors reviewed the following records:

Contingency Plan (CP) and Quick Reference Guide (QRG):

The facility maintains a CP that describes the actions that facility personnel must take in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste. The Contingency Plan was last revised on February 5, 2020. Due to personnel changed,

the Contingency Plan is under revision since May 2023. The plan does not include the QRG.

Pursuant to 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.17(a)(6)], which incorporates 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.262(a)], and is a condition of the LQG Permit Exemption, the LQG must submit a copy of the contingency plan and all revisions to all local emergency responders.

Pursuant to 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.17(a)(6)], which incorporates 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.262 (b)], and is a condition of the LQG Permit Exemption, a generator that first becomes subject to these provisions after May 30, 2017 or that is otherwise amending its contingency plan must at that time submit a quick reference guide of the contingency plan to the local emergency responders. The quick reference guide must include specific elements detailed in the regulation.

Pursuant to 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.263]: The contingency plan must be reviewed, and immediately amended, if necessary, whenever: (a) Applicable regulations are revised; (b) The plan fails in an emergency; (c) The generator facility changes - in its design, construction, operation, maintenance, or other circumstances - in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency; (d) The list of emergency coordinators changes; or (e) The list of emergency equipment changes.

Waste Manifest and Land Disposal Restriction (LDR) Records:

The inspectors reviewed hazardous waste manifest records from April 2021 to September 2023.

The facility uses Clean Harbor Environmental Services (MAD039322250) as transporter and Spring Grove Resource Recovery (OHD000816629) in Ohio, and Clean Harbor La Porte LLC (TXD982290140) in Texas are used for the disposal of their hazardous waste.

Waste Profiles:

The inspectors reviewed the waste profiles records for the purposes of hazardous waste determination. The last waste profiles were conducted on: March 6, 2019 (solid slurry waste), October 4, 2019 (Liquid waste M18 and B200), March 30, 2020 (3D printing waste-alcohol/photo resin), November 11, 2022 (sodium hydroxide outdated raw material), January 20, 2023 (ABF Stripping solution), March 15, 2023 (expired product), April 6, 2023 (liquid slurry from cleaning parts), and October 24, 2023 (filters ABF stripping solution).

Training Records:

Training records were available for review at the time of the inspection. The last hazardous waste training was provided on November 8, 2023. Job titles and description for each employee handling hazardous waste were not available for review.

Pursuant to 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.17(a)(7)(iv)], which is a condition of the LQG Permit Exemption, facility personnel the generator must maintain training records that include, among others: the job title for each position at the facility

related to hazardous waste management, and the name of the employee filling each job; a written job description for each position; a written description of the type and amount of both introductory and continuing training that will be given to each person filling a position; and records documenting that the required training has been given to and completed by Facility personnel.

Weekly Inspection Records:

The inspectors reviewed available records of inspections of the CAA from calendar year 2021 to calendar year 2023. The inspection log includes a checklist to record observations about leaking containers and deterioration of containers caused by corrosion or other factors. The inspection log includes a checklist to record observations about aisle space, visible container labels, complete container labels, closed lids, condition of containers, container stacking, container storage time, housekeeping, etc. The records include the date and time of the inspection and the name, signature and initials of the employee conducting the inspection. Per the information provided, no inspection weekly inspections were conducted for at least 33 weeks in 2021, 35 weeks in 2022, and 19 weeks in 2023.

Pursuant to 11 Miss. Admin. Code Pt. 3, R. 1.3 [40 C.F.R. § 262.17(a)(1)(v)], which is a condition of the LQG Permit Exemption, a generator is required to, at least weekly, inspect central accumulation areas looking for leaking containers and for deterioration of containers caused by corrosion or other factors.

Biennial Report Record:

The biennial/annual reports for the facility's hazardous waste activities in 2022 were available to review on-site. The biennial/annual reports were submitted to MEDQ on March 1, 2023.

Waste Minimization Plan:

The Waste Minimization Plan was no provided at time of the inspection.

Section 49-31-21 of the Mississippi Multimedia Pollution Prevention Act requires all Hazardous Waste Generators (large, small) and SARA Section 313 Toxic Chemical Release Inventory (TRI) Form R filers to develop a waste minimization plan and to file an annual waste minimization certified report, which is due by July 31 of each year.

Spill Prevention, Control & Countermeasure Plan (SPCC):

The SPCC plan was last updated in February 2020.

13) Closing Conference

After the inspection, the inspectors held a closing conference in attendance were Amy Conroy (by phone), James Pridgen, Hunter Bradley, and Charles Kingdon to discuss the observations made during the inspection and the inspection was concluded.

14) List of Attachments

Attachment 1 – Photo Log:

Photos taken on: November 16, 2023

Photos taken by: Nereida Hernandez Morales

Photos taken with: Canon Digital Camera PC 2275

15) Signed

NEREIDA HERNANDEZ MORALES

Digitally signed by NEREIDA HERNANDEZ MORALES
Date: 2024.01.30 10:38:01 -05'00'

Nereida Hernandez Morales
Life Scientist

16) Concurrence

ARACELI CHAVEZ

Digitally signed by ARACELI CHAVEZ
Date: 2024.01.31 17:05:44 -05'00'

Araceli B. Chavez
Chief
RCRA Enforcement Section

Appendix 1 – Photo Log

Photos taken on: November 16, 2023
Photos taken by: Nereida Hernandez Morales
Photos taken with: Canon PC 2275

Photo #1 Containers with slurry liquid waste

Photo #2 Tote with the yellow line mark

Photo #3 Sink in the slurry area to wash the parts

Photo #4 Class 9 Label

Photo # 5 (Slurry Area) Container with gloves, towels, etc.

Photo # 6 (ABF Stripping) Container solid waste filters

Photo # 7 (ABF Stripping) Empty tote

Photo # 8 (3D Printing) container labeled as slurry liquid waste

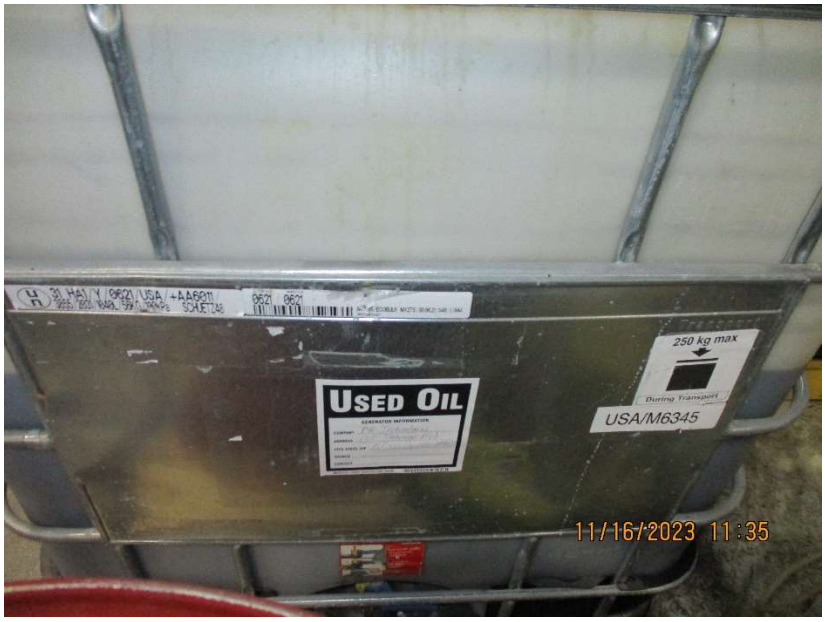

Photo # 9 Container with “Used Oil”

Photo # 10 Signage outside CAA building

Photo # 11 Tote in CAA building

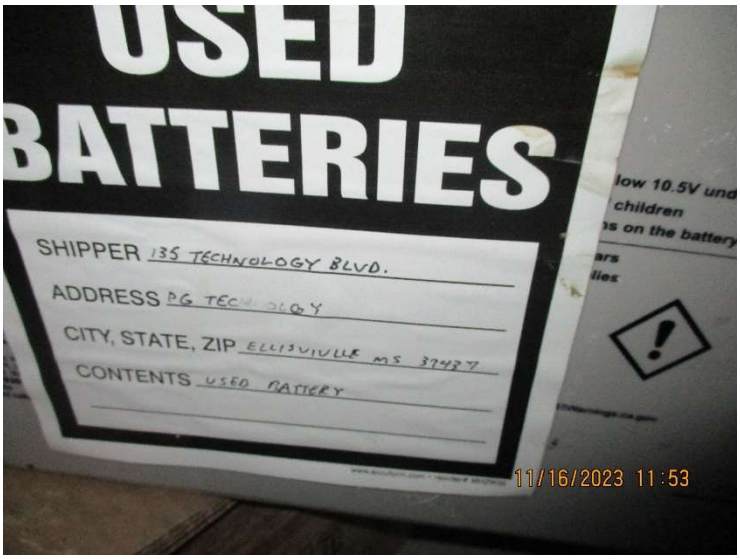

Photo # 12 Universal Waste Batteries

Photo # 13 Universal Waste Lamps