



DEPARTMENT OF HEALTH & HUMAN SERVICES

Phone: (304) 285-5751
Fax: (304) 285-5820

Public Health Service

Centers for Disease Control
and Prevention (CDC)
National Institute for Occupational
Safety and Health (NIOSH)
1095 Willowdale Road
Morgantown, WV 26505-2888

May 23, 2008
HETA 2008-0126
Interim Letter I

Mr. Eric Frumin
UNITE HERE
275 Seventh Avenue
New York, NY 10001

Dear Mr. Frumin:

In February 2008, the National Institute for Occupational Safety and Health (NIOSH) received a Health Hazard Evaluation request from the international union UNITE HERE to evaluate both the respiratory health and inhalation exposures of food preparation workers at Aramark – Goldman Sachs, 1 New York Plaza, New York, NY. The purpose of this letter is to report on the preliminary analysis of the data.

On February 26, 2008, the New York City Department of Health and Mental Hygiene upon NIOSH's request collected bulk samples of current-use cooking oils at another Aramark facility in New York City and sent them to NIOSH for analysis. Of the bulk samples collected, three were reported currently in use at 1 NY Plaza Aramark location: Sterling product #35025 (Aramark #6359566), Frymax product #35071 (Aramark #3185345), and Prep product #35041 (Aramark #8007759). We did not detect diacetyl using gas chromatography with mass spectrometry in these three bulk samples.

On March 11-12, 2008, we completed a walk-through visit of the 1 NY Plaza Aramark location where we interviewed current workers about their exposures and job duties, performed air sampling, evaluated the cooking area ventilation systems, collected bulk samples of current-use cooking oils, and reviewed material safety data sheets (MSDSs) and the Occupational Safety and Health Administration (OSHA) 300 log. We collected personal and general-area air samples for diacetyl and acetoin using the modified OSHA method PV2118 and general-area air samples for volatile organic compounds (VOCs) using NIOSH method 2549. We also performed real-time air sampling for total VOC concentrations using a programmable pocket photo-ionization detector (ToxiRAE, RAE Systems Inc., San Jose, CA); for airborne particle concentrations in the respirable size range using a particulate monitor (pDR-1000AN *personal*DataRAM, Thermo Scientific Corp., Franklin, MA); and for carbon monoxide (CO) concentrations using a single gas monitor (T82, Industrial Scientific Corp., Oakdale, PA). We used direct-reading indicator tubes to sample for nitrous fumes (NO_x) and nitrogen dioxide (NO₂). Additionally, we measured ventilation air flow, air temperature, and relative humidity.

We did not detect diacetyl, acetoin, NO_x, NO₂, or CO in any of the air samples; limits of detection were 0.02, 0.07, 0.5, 0.5, and 1.0 parts per million (ppm), respectively. General-area air samples (using NIOSH method 2549) and bulk oil samples for VOC screening collected during the survey are undergoing laboratory analysis and are not currently available.

Throughout the 4.5-hour morning sampling period, the only airborne VOCs detected by the real-time air sampler in the back kitchen area was a 1-minute 200 parts per billion (ppb) concentration. During a 15-minute sampling period, measurements of airborne VOCs at the action cooking and grill stations in the front public serving room were below detection limits. During the morning, all real-time particle concentrations (in the respirable size range) remained below 0.08 milligrams per cubic meter of air (mg/m³).

During the lunch cooking period, we placed real-time instruments in the front serving area adjacent to a panini press at the sandwiches station for approximately 3.25 hours. At this location we measured an average particle concentration of 5.59 mg/m³ (maximum of 13.32 mg/m³) and an average VOC concentration of 100 ppb (maximum of 500 ppb).

We observed a small amount of pan release oil being sprayed on the panini press surfaces prior to each sandwich being placed on the panini press, and occasionally noticed visible smoke while sandwiches were in the press, which was not located under a ventilation hood. We observed some employees handling cleaning agents without the proper eye and skin protection recommended in the MSDSs. Although we were shown boxes of gloves and goggles, they were not kept in an employee-accessible place, but rather have to be requested from the chef. Evidence of safety training being administered to employees (i.e., signed sheets of participation) was not available.

We visited again on March 31 and April 1, 2008, to perform a medical survey consisting of an interviewer-administered questionnaire and spirometry (lung function) testing. We performed spirometry following the American Thoracic Society guidelines. We used a dry rolling-seal spirometer interfaced to a personal computer and compared spirometry results to reference values based on U.S. population data from the Third National Health and Nutrition Examination Survey. We selected each participating worker's largest forced vital capacity (FVC) and forced expiratory volume in the first second of exhalation (FEV₁) for analysis. We defined obstruction as an FEV₁/FVC ratio and an FEV₁ below their respective lower limits of normal. An obstructive abnormality indicates that air is exhaled from the lungs more slowly than normal. This can be seen in certain lung conditions such as asthma, bronchitis, emphysema, or bronchiolitis obliterans. We defined borderline obstruction as an FEV₁/FVC ratio below the lower limit of normal with normal FEV₁ and FVC. A borderline obstructive abnormality may indicate early evidence of obstruction, which also requires a low FEV₁. We defined restriction as an FVC below the lower limit of normal with a normal FEV₁/FVC ratio. A restrictive abnormality indicates that the amount of air exhaled is smaller than normal. This can be seen in certain lung conditions, such as lung scarring or fibrosis, or in people who are considerably overweight. Restriction can also be seen in people who have a severe obstructive abnormality. We defined a mixed pattern (obstruction and restriction) as an FEV₁/FVC ratio, FEV₁, and FVC all below their respective lower limits of normal. Workers with evidence of airways obstruction were administered albuterol, a bronchodilator medication used to treat obstructive lung diseases

such as asthma, and were then re-tested after 10 minutes to see if the obstruction was reversible. We defined reversible obstruction (such as asthma) as an improvement in the FEV₁ of at least 12% and at least 200 milliliters after administration of albuterol. We defined fixed obstruction (such as bronchiolitis obliterans) as airways obstruction in which neither the FVC nor FEV₁ increased by 12% or more and at least 200 milliliters after the administration of albuterol.

Forty-five of 51 current employees participated in the medical survey. Of the 45 participants, 44 performed spirometry testing. One participant had medical contraindications and did not perform the spirometry testing. Thirty-three participants had spirometry test results within normal limits. Eight participants had breathing tests below the range of normal, of which five demonstrated a restrictive abnormality, one had an obstruction, one had a mixed pattern with moderately severe reduction in the FEV₁, and one had reduction in FEV₁ without clear cut restriction or obstruction. Three participants' tests were not entirely interpretable, but obstruction was ruled out. On May 1, 2008, we sent individual spirometry test results to each participant. In the cover letter accompanying the results, we recommended that each participant provide a copy of his/her spirometry results to his/her personal physician.

Interim Recommendations for Aramark Facility at 1 New York Plaza:

1. Use a ventilation hood for all cooking with an open-flame grill, flattop or ridged (marked) grill or griddle, panini press, or when sautéing or frying in a pan.
2. Personal protective equipment (PPE) such as gloves, goggles, and/or a respirator may be required for chemical cleaning of heated grills. Review and follow MSDS recommendations regarding PPE for cooking and cleaning products.
3. Ensure all workers, including temporary workers, receive initial and annual safety training regarding safe work practices. OSHA's Hazard Communication Standard, also known as the "Right to Know Law" (29 CFR 1910.1200 available at <http://www.osha.gov>), requires that employees are informed and trained of potential work hazards and associated safe practices, procedures, and protective measures. Training should be in Spanish for workers whose primary language is Spanish.

We appreciate the cooperation of UNITE HERE, Aramark, and employees during our surveys. We will continue to analyze the data from this facility and will provide you with a final report, including final recommendations, in the future. If you have any questions or concerns, please feel free to contact Dr. Yulia Iossifova at (304) 285-5778 or Chris Piacitelli at (304) 285-5835.

Sincerely,

Handwritten signature of Yulia Iossifova in black ink.

Yulia Iossifova, MD, PhD
Respiratory Disease Hazard Evaluation and
Technical Assistance Program
Field Studies Branch
Division of Respiratory Disease Studies

Handwritten signature of Chris Piacitelli in red ink.

Chris Piacitelli, MS, CIH
Commander, U.S. Public Health Service
Respiratory Disease Hazard Evaluation and
Technical Assistance Program
Field Studies Branch
Division of Respiratory Disease Studies

cc:

Bryce Cole, Aramark, 1 NY Plaza
Francisco "Tito" Garcia, UNITE-HERE, Local 100
Michael Keffer, Aramark
Susan Eisma, Aramark
OSHA, Region 2
New York State Department of Health