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# Montgomery County Fire and Rescue

## Post Incident Analysis

Second Alarm Building Fire  
Montgomery County Resource Recovery Facility  
21204 Martinsburg Road  
Dickerson, MD 20842

December 8, 2016  
Incident # 16-0152736



Submitted by: Assistant Chief Michael E. Nelson, Jr.

Battalion Chief Alan Butsch

## **Incident Overview**

*This Post Incident Analysis is based on incident audio recordings, unit reports and interviews with personnel who operated at the fire scene.*

On December 8, 2016, at 1828 hours, Montgomery County Fire and Rescue Service (MCFRS) and Frederick County Division of Fire and Rescue Services (FC DFRS) units responded to Box 14-08 for a reported building fire on the ground level of the incinerator plant located at 21204 Martinsburg Road Dickerson, Maryland. Weather conditions at the time of the incident were clear with temperatures in the 30s and gusting winds.

Units arrived on scene to find a 4-story incinerator with fire in the trash pit spreading to the structure. Tankers were added to the assignment due to the facility having issues with the fire pump supplying the hydrant and fire protection systems being shut down due to an unrelated oil sheen on the Potomac River near the pump intake.

Units went into the attack mode of operation and began to knock the visible fire on the tipping room floor. Paramedic Engine 714 established Command and advised they had a large volume of fire in the tipping room and it had extended up the outside wall on Side Alpha of the tipping room. Chief 914 arrived and assumed Command and requested the Rapid Intervention Dispatch (RID) along with a second alarm. Units confirmed that the hydrant system was operational.

The exterior fire was quickly knocked and the units applied water to the trash pile on the tipping room floor. Units advised command that all workers from the plant were accounted for. Command placed the second alarm units in service.

The Command Team worked to establish an action plan for the mitigation of the incident. The initial plan was to use the on-site water cannons to keep the trash pile fire in check, use the loaders to separate the burning trash from the unburnt trash on the tipping room floor, feed the burners with the grapple to dispose of the burning trash and reduce the smoke in the building.

The initial action plan had to be changed due to the heavy smoke conditions. The plant operator was unable to use the grapple to feed the burners due to zero visibility. Unmanned blitz fire lines were placed in service in an attempt to keep the fire in check and certified firefighter front end loader operators wearing self-contained breathing apparatus started separating unburnt trash piles from the burning materials.

Hot zones were established with a Rapid Intervention Team in place to monitor the loader operators. At 2300 hours, there were still deep seated fires in the trash piles and the plant operator was still unable to feed the boilers due to the smoke.

The decision was made to cease operations until the first light and to keep an engine company on-site with rotating crews to monitor the situation.

The next morning, December 9, it was determined that this would be a campaign event). A brief synopsis of actions follows below:

December 9 – 12: The objectives focused on ventilating the tipping room so that plant personnel could see to operate cranes and earth moving equipment to move trash into incinerators. On December 9, steel panels were cut off of Side Alpha and Side Charlie of the tipping room. Further openings were made on December 10. A roofing contractor retained by Covanta, the company operating the facility, made large openings in roof on December 10th and again on December 11th. Throughout this period, MCFRS personnel knocked down spot fires with water from master streams as needed with the area of most concern being the "A" pile up against the southwest wall of the tipping room. Plant personnel were able to make some limited headway on the trash pile but they were hampered by the almost complete lack of visibility for the crane operators.



MCFRS personnel work to open up corrugated metal walls of the tipping room 12/09.

December 13: With help from an industrial subject-matter expert from Williams Fire, MCFRS personnel and Covanta personnel worked to flow Class-A foam solution on the fires and to reshape trash piles so as to allow less air circulation to the fires within the piles. This effort generated enormous improvement in visibility within the T such that the crane operators were able to move the trash much more rapidly to the incinerators.



Tipping room after walls removed. Large volume of fire can be seen in Pile "A". 12/10

December 14 – 16: MCFRS maintained a presence of Incident Command staff and an engine company in case of flare ups, but MCFRS personnel were not needed for direct operations. Covanta personnel were able to continue to move trash into the incinerators.





Tipping room floor on or about 12/13

December 17 – 19: Incident Command staff remained on site to monitor conditions in case further resources were needed, but MCFRS personnel were not needed for direct operations. Covanta personnel removed trash from the tipping room floor down to the top of the pit into the incinerator. Following a conference call in the morning of December 19, MCFRS discontinued presence at the site.

### **Facility Information**

The Montgomery County Resource Recovery Facility (MCRRF) began commercial operation in August 1995. The facility processes an average of 1,500 tons per day of solid waste, generating up to 55 megawatts of renewable energy, enough power for 40,000 homes. All waste is first delivered to the Shady Grove Transfer Station in Derwood, compacted into intermodal steel waste containers and then loaded onto railcars with gantry cranes. Each day, CSX assembles the train cars and makes the 20-mile trip to the facility in Dickerson. There, the containers are off-loaded and trucked from the on-site railyard to the facility's enclosed refuse building. Residue that remains from the process is loaded into sealed containers and shipped by rail to a landfill located in Brunswick, Virginia. This unique rail system allows the County to virtually eliminate truck traffic

associated with the facility on the rural roads leading to the facility. The MCRRF is operated by Covanta Montgomery, Inc.

<http://nmwda.org/montgomery-county/>



Aerial view of the facility

## **Weather**

Weather data for Dickerson, MD from the weather station located at the Montgomery County Resource Recovery Facility for December 8, 2016.

### **Montgomery County Division of Solid Waste Services**

<b>Date/Time</b>	<b>Wind Speed (MPH)</b>	<b>Wind Direction</b>	<b>Temperature (F)</b>	<b>Relative Humidity (%)</b>	<b>Rain (Inches)</b>
12/08/2016 18:00	5.6	WNW	38.7	3.5	0.00
12/08/2016 19:00	6.5	NW	36.4	3.9	0.00
12/08/2016 20:00	4.9	NW	34.4	4.1	0.00
12/08/2016 21:00	8.1	NW	33.5	4.2	0.00
12/08/2016 22:00	5.7	NNW	32.8	4.4	0.00
12/08/2016 23:00	7.0	WNW	32.0	4.6	0.00

Date/Time	Wind Speed (MPH)	Wind Direction	Temperature (F)	Relative Humidity (%)	Rain (Inches)
End Of Data Display					

### **Fire Code History**

The Montgomery County Maryland Department of Permitting Services, Division of Fire Prevention and Code Compliance conducted an inspection of the MCRRF on Tuesday August 16, 2016. The inspection noted 14 violations of the Fire Safety Code and the facility management was given 30 days to make corrections. At the time of the fire on December 8, 2016, 9 of the 14 violations had been corrected.

### **Past Events**

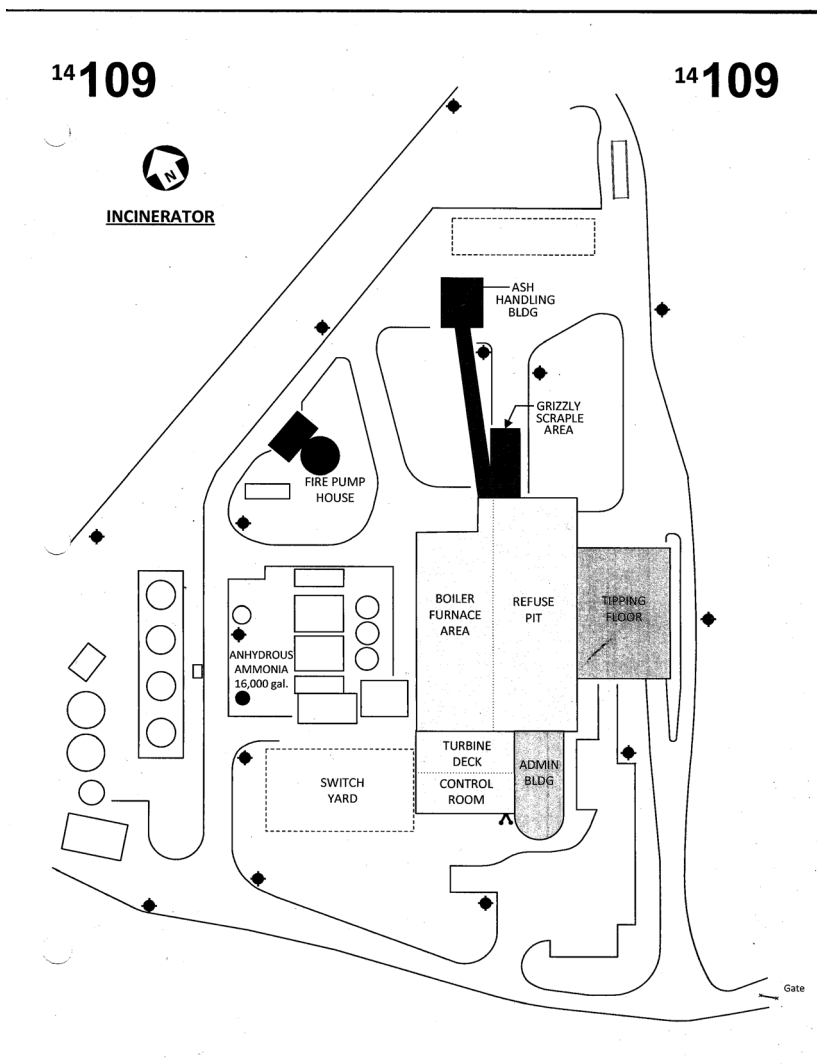
From January 1, 2015 until the event of December 8, 2016, MCFRS had dispatched units 11 times to the MCRRF:

- 1/13/2015 EMS Incident
- 1/23/2015 Building Fire (fire on the tipping floor)
- 3/04/2015 EMS Incident
- 5/05/2015 EMS Incident
- 5/20/2015 Hazmat Event (300 gallon spill of sulfuric acid) 1 injured
- 4/25/2016 EMS Incident
- 7/17/2016 Building Fire (fire in the pit in the tipping room)
- 7/18/2016 Building Fire (Hot spots from the previous incident)
- 8/19/2016 Building Fire (Fire on the tipping room floor)
- 10/19/2016 Building Fire (Fire on the tipping room floor)
- 11/6/2016 Assist with locating hot spots in the trash pile
- 12/8/2016 Building Fire

### **Pre-Emergency Planning**

- Fire Station 14's map 14-109 provides a detailed view of the facility.





### Initial On Scene Operations

- Paramedic Engine 714 was the first unit to arrive on scene. They established command in the attack mode and advised they had a large volume of fire in the tipping room and it had extended up the outside wall on Side Alpha of the tipping room.
- The response order was changed due to several of the Frederick County units failing to respond or responding under staffed.
- Battalion Chief 705 confirmed the status of the hydrant system with Paramedic Engine 714.

- Chief 914 arrived on scene and assumed Command on the Alpha/Delta corner. Paramedic Engine 714 was assigned as “Fire Attack”.
- Fire Attack advised that all workers are accounted for.

### **Units on the first alarm Talkgroup 7 Charlie**

Paramedic Engine 714	Medic 714
Engine 914 (failed)	Battalion Chief 705
Paramedic Rescue Engine 709	Battalion Chief 703
Engine 928 (with 2 personnel)	Safety 700
Paramedic Engine 735	Chief 914
Quint 914	Chief 714 Charlie
Aerial Tower 735	Duty Chief 700
Rescue Squad 729 (replaced Rescue Squad 914)	
Rescue Squad 914 (failed)	Paramedic Engine 729 (manpower for E928)
Tanker 714	
Truck 734 (added to updated initial assignment)	
Tanker 709	
Tanker 722	

### **Units on the Rapid Intervention Dispatch**

Truck 731  
Rescue Squad 903  
Medic 735

### **Units on the second alarm Talkgroup 7 Delta**

Paramedic Engine 734	Battalion Chief 901
Paramedic Engine 731	Command Post 700
Engine 925	Fire Marshall 720
Paramedic Engine 708	
Aerial Tower 923	
Paramedic Aerial Tower 708	
Ambulance 914	
Advanced Life Support 923	
Air Unit 904	
Canteen 714	

### **Command Functions**

- The incident was broken into the following Groups/Divisions:
  - Fire Attack

- Rapid Intervention Group (RIG)

### **Apparatus Access**

- There were no apparatus access issues reported.

### **Extended Operations (Campaign Event):**

#### **Logistics**

Logistics were handled by the on-site Incident Commander(s) in conjunction with support from within MCFRS. The Central Maintenance Facility (CMF) handled most automotive needs such as fuel, foam, and apparatus etc., Special Operations took care of Personal Protective Equipment (PPE) and the Decon unit, and Fire Station 14 handled the extra folding tank. Food for MCFRS personnel was provided by Covanta and by allowing personnel to go off site. Command Post 700 was brought to the scene on December 13 so that MCFRS personnel could have a place to stay that was out of the way of the plant personnel. The administrative portions of the MCRRF were unaffected by the fire so MCFRS personnel could use the bathrooms. MCFRS personnel did not have any facilities for bed rest.

#### **Health & Safety**

Contamination: Multiple MCFRS personnel soiled their gear due to wading through the combination of water and trash caused by the runoff from fire streams. This gear was rinsed off on the scene with hose streams, but this only removed the solids and did nothing to affect the liquids. A few days into the incident, Level B suits were provided that personnel could utilize instead of turnout gear, however this equipment came after a large quantity of gear was already soiled.

Respiratory: 4 gas meters were used to check the tipping room and galleries to assess the presence or absence of an Immediately Dangerous to Life or Health atmosphere (IDLH) and to adjust the level of PPE accordingly. Personnel used self contained breathing apparatus (SCBA) when in the presence of an IDLH. Personnel used N95 masks when an IDLH was not present, but particulate matter or unpleasant smells were.

#### **Demobilization**

Demobilization of equipment was handled by CMF and incident command staff and there were few issues encountered.

## **Lessons Learned**

### Incident Command & Control

Lines of authority: On December 9, when it was determined that this would be a campaign event, formal control of the facility reverted back to the Montgomery County Department of Environmental Protection (DEP) and its contractor, Covanta. MCFRS worked in a subsidiary role to support operations. MCFRS personnel worked hard to establish relationships with both DEP and Covanta supervisors with varying degrees of success. After some false starts, a series of morning and evening planning meetings were held to ensure all parties were on the same page. This led to improvements, but it was also clear that not all Covanta employees were on the same page or even respectful of basic safety requirements. In future campaign events, either MCFRS should retain command of the incident, or expectations should be formally communicated in writing between MCFRS, other agencies and/or private contractors.

Incident Management Team (IMT): The command staff for the early days of the campaign event was too small. This incident should have had a minimum of four people (Incident Command, Plans, Operations, and Safety) watching over it at all times. MCFRS was fortunate that early in the incident, an ad hoc personnel tracker form was created using Google docs. This greatly aided in incident documentation later on. MCFRS should consider the wisdom of an all or nothing approach to campaign events; i.e. if MCFRS is going to have “boots on the ground” for a multi-day operation, an IMT should be built out also.

Contamination: Level B suits and boots should have been made available much earlier into the incident so as to avoid soiling of turnout gear. When faced with unusual and long term incidents, MCFRS should make a conscious effort to think through long term effects and address the same by the provision of adequate substitute PPE – even if it is non-traditional or not addressed by policy.

Many lengths of soiled hose were returned to CMF. Clear expectations were not set as to whether this hose was to be cleaned or disposed of.

Facilities: In the first couple of days of the event, MCFRS personnel used the employee break room of the MCRRF as a combination office/crew rehab area. This area was not convenient, comfortable, or clean. Subsequently MCFRS utilized Command Post 700 for this purpose, but this vehicle proved to be too small and lacked the ability for personnel to adequately clean themselves or their footwear before entry. For campaign events MCFRS should consider temporary decon/offices/housing so that crews can have adequate rest and sanitation.

Degree of difficulty/expertise: This incident involved a deep-seated fire in a huge mound of trash. MCFRS has little to no experience in this type of firefighting. The decision was made to retain a consultant from Williams Fire to assist with

the planning of the operation. This was extremely beneficial to the outcome of this incident as the subject matter expert was able to advise both MCFRS on firefighting matters, as well as Covanta personnel on the best way to move and “sculpt” the trash so as to avoid flare-ups and smoke. MCFRS should consider retaining such experts more quickly in the future when faced with an unusual situation that is likely to result in a protracted operation.

### **Conclusion**

This was a fire event unusual in its scope, duration, and content. Valuable lessons were learned that will assist MCFRS in preparing for the next such type of event.