Incident Summary
21200 Martinsburg Road – Box 14-08
Dickerson Generating Station– November 11, 2013

Incident Number 13-0126517

Box Alarm:

Paramedic Engine714	Engine 914	Paramedic Engine 709
Engine 928	Engine Tanker 928	Quint 914
Tower 923	Tower 735	Rescue Squad 914
Tanker714	Tanker709	Tanker 722
Medic714	Battalion Chief 703	Battalion Chief 705
Chief 705	Chief 709	Chief 714
Chief 914 Bravo	Safety 700	Duty Chief 700

RID Units:

Truck 734	Rescue Squad729	Medic735

Task Force:

Paramedic Engine 729	Engine 912	Paramedic Engine734
Truck 731		

Supplemental Staffing:

Paramedic E735	Engine 923	Paramedic Engine 722

Background:

The **Dickerson Generating Station** is an electric generating plant owned by "NRG", who assumed operations from GenOn (formerly Mirant Services LLC), located approximately two miles west of Dickerson, Maryland. The facility consists of three coal-fired steam generating plants, two gas and oil-fired simple cycle combustion turbines, and one black start and peaking turbine. The three coal-fired units are base-loaded and went into operation in 1959, 1960, and 1962 respectively. Condenser cooling for these units is accomplished with once-through cooling water from the Potomac River at a rate of up to 400 million US gallons per day. Coal is delivered to the Dickerson Generating Station by CSX Transportation train. The two combustion turbines are General Electric Frame 7F gas turbines which went into operation in 1992 and 1993, and are normally fired with natural gas from a Consolidated Natural Gas company pipeline which traverses the Dickerson site.

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Synopsis:

At 1627 hours Montgomery and Frederick County Fire and Rescue units responded to the 7-story Dickerson Generating Station for a report of a building fire in the facility. After arriving and meeting with plant supervisors, Paramedic Engine 714 confirmed that the facility had an active fire in the Echo quadrant, basement level. The plant fire brigade had attempted extinguishment of the fire for over an hour with ABC and CO2 fire extinguishers prior to calling 911 for help. The fire reportedly started because of an explosion in the "volt room" after a 4160-volt circuit breaker tripped. The fire started in circuit unit 212 and spread to the adjacent 211 and 213 units. This fire spread triggered the plant to call outside fire units for assistance.

Plant personnel escorted Paramedic Engine 714 and Medic 714 deep within the structure to the volt room. The volt room is the size of a small classroom with two long rows of 4160-volt circuit breakers. Each row contained 28 circuit breakers. Each circuit breaker was the size of a small refrigerator. The 4160-volt circuit breakers worked in conjunction with a generator. The breakers controlled various functions of the generator (electric pumps, motors etc.). The plant floor supervisor and the control room supervisor confirmed the row involved in the fire had been de-energized. The row adjacent to the involved circuit breakers was energized and would take hours to de-energize by standard plant protocol.

The plant itself had a slight haze of smoke throughout the facility. No IDLH was present in proximity to the volt room. Inside the volt room was deemed an IDLH due to the electrical hazards and initial 4-gas atmospheric readings. Medic 714 established the stand-by crew outside of the volt room. Paramedic Engine 714 hooked to a plant standpipe connection and deployed a bundle pack to the affect area. The initial plan

was to keep the fire from extending outside the volt room and protect critical exposures.

The plant fire brigade used twenty portable ABC extinguishers and a 200-pound Ansul two-wheel industrial ABC extinguisher prior to Paramedic Engine714's arrival. Upon entry into the volt room Paramedic Engine714 discovered a high temperature fire fully involving four 4160-volt circuit breakers. The fire was described as a high intense jet blue flame. Working under the guidance of the plant floor supervisor, and approval from the control room supervisor, and after again confirming the row was de-energized, the use of a controlled and measured water application was authorized. Once the fire was controlled and confirmation that no extension outside the units involved, the hose line was backed out of the room and drained into a floor drain to prevent accidental water application in the high hazard area.

Once the fire in the volt room was stabilized, the process of cooling the superheated circuit breaker units started. After these units were cooled, they would repeatedly build up heat to a glowing orange. In total, 51 CO2 extinguishers, 15 portable ABC extinguishers, and two 200-pound Ansul 2 wheel ABC extinguishers were utilized to bring the incident under control. The extinguishing agents were sourced from the plant, on the response apparatus, and through a special deliver from CMF's Small Tools.

Atmospheric Readings:

Safety 700 and Battalion 705 continually monitored the volt room and the area outside the volt room. At no time did the 4-gas go into alarm. The following peak readings were recorded:
Oxygen – 20.9%
Carbon Monoxide – 4ppm
Lower Explosive Limit – 3%
Ozone – Negative (Using a meter from the plant)

Strategic and Tactical Objectives:

1. Ensure the safety and welfare of Fire Rescue personnel and the facility employees throughout the duration of the incident.
2. Confirm that equipment was de-energized and isolated in the immediate threat area.
3. Confirm Lock-out/Tag-out of immediate threat area.
4. Stabilize incident by isolating fire involvement to equipment of origin.
5. Apply extinguishing agents to cool effected units and to remove re-ignition threat. In order of importance:
    a. Use of CO2 extinguishers as a cooling agent.
    b. Use of ABC to interrupt chain reaction
    c. Re-application of water agent (last resort).
6. Maintain RIG capability
7. Ensure safety briefing for crews entering volt room.

Points to Reinforce:

1. **Officers and crews demonstrated patience and a level of professionalism required for a successful injury free outcome. This incident had low opportunities to save lives or protect property, and all personnel used appropriate low-risk, methodical actions.**
2. Good apparatus placement considering size and layout of the structure.
3. Effective Initial On-Scene Report (IOSR) by the officer of Paramedic Engine 714. It painted a strong picture, assured the 2-out was identified, and announced initial action plan.
4. The officer and crew were familiar with plant operation. All personnel should continuously strive to know their areas, particularly target hazards.
5. Responders effectively identified and used facility supervisors as subject matter experts.
6. Good communication between all power company employees and first responders. Plant employees were very helpful identifying hazards, safe areas, locations of standpipe risers
7. Immediate and continued knowledge of hazards and threats within the facility and a plan to manage each was required throughout the incident.
8. Good command presence and use of Liaison Officers to ensure effective communication with the plant supervisors. (in the Control Room)
9. Good crew integrity. Keeping the minimum personnel in the hot zone and limiting personnel exposed to potential hazards must be a consideration.
10. The use of two command platforms with VRS on opposing sides of the structure allowed for effective communication.

Challenges :

1. Identifying target hazards and adequate preparing for these types of threats through drills, pre-plans, and building familiarization is critical to success.
2. Maintaining current pre-plans on a facility of this size and complexity is paramount to a successful outcome.
3. Shortly after units began responding, Paramedic Engine 714 verified that hydrants were present on site and tankers wouldn't be necessary: Tanker 714 continued because they were part of the 4-person staffing for the engine. When tanker crews will be part of the first arriving complement, consider letting them continue in.
4. Identifying any location within large facilities like this is difficult at best. Without an escort most personnel would be quickly disoriented and lose their way.
5. Initial fire location was identified as the second level, which was then designated as Division 2. After the incident was stabilized, it was determined that the incident was actually on the basement level, in the area of the echo quadrant.
6. The layout of this facility requires good communication between on scene crews and the OIC and drivers. Aerial coverage must be a consideration and coordinated to allow good access.
7. All responding personnel must be attentive to radio communications. The assignments changed significantly from the initial dispatch.
8. The first arriving Command Officer was from another jurisdiction. While MCFRS recognizes Chiefs from adjacent jurisdictions, they will inherently be less familiar with our SOP's and common practices.
9. Several Mutual Aid units failed to respond or responded understaffed, which created confusion as to the revised running order. Best practices include asking ECC for the "running order" on a separate talk group in the incident block or by phone. Confirming that units know their updated position is critical, but can use up valuable radio time.
10. First arriving Unit Officers must identify non-SOP driven incidents quickly and effectively communicate inititial control actions to responding units.
11. In some instances, Unit Officers may have initial command for a prolonged period. Consider "passing" command to another Unit Officer.
12. Effective communication and feedback on a regulary basis is critical for command to understand and maintain a common operating picture.
13. The use of the in-house ventilation system provided positive pressure within the facility. This significantly improved visability and working conditions.