Agencies Mobilize after Crude Oil Train Derails

A Response to the Galena, Illinois Bakken Incident
The Incident

21 tank cars of a 105 car BNSF train derailed at milepost 171.6 of the Aurora Sub near Galena, Illinois. Each of the cars was carrying around 30,000 gallons of crude oil.
Initial Response

- 15:02 Light smoke a visible flame.
- 15:26 Pulled personnel back
- 17:08 Large explosion like failure

Fire Chief
Randy Beadle
Initial Evacuation Area

- 6 Homes / 4 Occupied
- 2 Evacuated and 7 refused
1 Hour

Oilfire Gas
Surface Dosage
07-Mar-15 10:00:00Z (12.000 hr)

<table>
<thead>
<tr>
<th>Type</th>
<th>mg-min/m³</th>
<th>In contour area (km²)</th>
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</thead>
<tbody>
<tr>
<td>Hazardous</td>
<td>360.72</td>
<td>2.03E-2</td>
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<tr>
<td>Very Unhealthy</td>
<td>216.72</td>
<td>4.34E-2</td>
</tr>
<tr>
<td>Unhealthy</td>
<td>94.32</td>
<td>0.144</td>
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12 Hours
Established by Illinois Terrorism Taskforce in 2005.

Type III All-Hazards Team deployed via the Illinois Emergency Management Agency.

3 Geographical Division within the nation’s 5th most populous state.

Comprised of first responders from various organizations.
IMT Challenges

- Credentialing/Accountability
- Site security/Safety
- Federal NIMS Integration
- Meeting/Working Space and Logistics
- Communication
- VIP Visits
Credentialing/Accountability
Federal Response

- US-EPA
- START Contractor
- OSHA
- US-DOT/FRA
- USCG
- US Fish and Wildlife

35 People
State and Local Response

- Jo Daviess County
- City of Galena
- IEMA
- ISP
- IEPA
- MABAS
- ILEAS
- IL-IMT
- SIRC
- ARC
- Out of State Mutual Aid

228 People
Illinois Mutual Aid Box Alarm System (MABAS)

- State-wide mutual aid
- USAR Team
- Equipment resource

Illinois-Specific – 102/102 Counties
MABAS Presence
69 Operating Divisions
1180+ Fire Agencies
38,000 Firefighters/EMT
2700+ Front-Line Engines
500+ Front-Line Ladder Trucks
960+ Water Tenders
1200+ Transport Ambulances

42 HazMat Teams
41 Technical Rescue Teams
16 Water Rescue Teams
25 Decontamination Vehicles
9 Compressor/Cascade Vehicles
8 Mobile Ventilation Units
7 Mobile Semitrailer Warehouses
3 Mission Support Vehicles
75 Incident Management Trailers
70 All Terrain Vehicles with Trailers
82 Generator Light Towers
1 EMS Mass Casualty Support Unit
69 Expedient Field Shelter Units with Trailers
10 Water Rescue Boat Systems
38,000 Standardized CBRNE PPE Masks
Illinois Law Enforcement Alarm System (ILEAS)

- Police mutual aid organization
- Mobile Field Force
Illinois State Incident Response Center

- Emergency Management Agency
- Illinois Commerce Commission
- Environmental Protection Agency
- State Police
- Emergency Service Management Association
- Department of Natural Resources
- MABAS
- ARC
- Illinois National Guard
- Department of Transportation
BNSF Railroad/Private Contractors

152 People
Personnel Accountability

- Largely a private corporation operation with detailed Federal Government oversight.
- BNSF Hazmat and Contractors
- BNSF Fire Trailers and Industrial Fire Fighters
- Hazmat Technicians
- Damage Assessment
- Vacuum truck
- Frac Tanks
Incident Command System

Public Safety ICS

- Incident Commander
- Safety
- PIO
- Operations
- Planning
- Logistics
- Finance

Railroad Incident Management

- Senior Transportation Officer
- Safety
- PIO

- Transportation
- Mechanical
- Engineering
- Risk Management

- HAZMAT/Dangerous Goods Group
- Environmental Group
- Law Enforcement
- Safety & Regulatory Affairs
- Risk Mitigation Group
- Public Affairs Group
- Damage Prevention and Freight Claims
Unified Command

Municipal Fire Chief

Senior Transportation Officer

Joint Safety

Joint PIO

Planning

Logistics

Operations

Finance

Railroad Branch

Fire Branch

Transportation

Mechanical

Engineering

Risk Management

Fire

Rescue
Security/Safety
Derailment Location
BNSF Railway Crude Oil Train Derailment Near Galena, Ill.
Initial Fire
Aftermath
Site Issues

- Fires Extinguished and track open on Day 4
- IL-IMT SO established with USCG and US-OSHA
- 100 Trains backed-up
- Contractor Check-in established on Day 4
- Traffic Plan Developed on Day 5
Federal NIMS Integration
GALENA TRAIN DERAILMENT

INCIDENT ACTION PLAN
Incident #: RT 7037663

OPERATIONAL PERIOD:
March 7, 2015 0830 HOURS
March 7, 2015 2030 HOURS

INCIDENT OBJECTIVES (ICS 202)
1. Incident Name: GALENA TRAIN DERAILMENT
2. Operational Period: Date From: 3/7/15 Date To: 3/7/15
   Time From: 0830 HRS Time To: 2030 HRS
3. Objective(s):
   SAFETY OF RESIDENTS & FIRST RESPONDERS
   GAIN ADDITIONAL SITUATIONAL AWARENESS
   PROTECT ENVIRONMENT BY CONTROLLING PRODUCT RUNOFF (BERMS & BOOMS)
   PROVIDE INFORMATION TO THE PUBLIC
   MAINTAIN FIRE SURVEILLANCE
   BUILD ACCESS ROAD
   UPRIGHT / MOVE UNDAMAGED CARS
   ESTABLISH INTEROPERABLE COMMUNICATIONS

4. Operational Period Command Emphasis:
   CONTINUE TO KEEP TANKS CARS COOL TANK AND EXTINGUISH FIRE AS NEEDED.
   MAINTAIN BERM AND BOOMS
   DEPLOY AND POSITION EQUIPMENT
   PERFORM DAYLIGHT ASSESSMENT

ILLINOIS EMERGENCY MANAGEMENT AGENCY SITUATION REPORT

DATE/TIME: 03/07/15 9:00 AM
SITREP NUMBER: 0305-002
INCIDENT NUMBER: None

INCIDENT TYPE/LOCATION: Galena Train Derailment

EOD ACTIVATION LEVEL: Level 3 - Partial Activation
EOD POC & POC CONTACT INFO:
Paul Rech (217) 685-3706

BLUF - BOTTOM LINE UPFRONT
At approximately 12:24 on Thursday, 05 March 2015, sixteen tank cars of a BNSF Railways train derailed in the area of milepost 171.8 of the Autoroute Sub in Jo Daviess County near Galena. A fire has started involving cars which are carrying Bakken crude oil. Local, County, State, Federal and Railroad personnel have responded to manage the event, focusing on the safety, incident stabilization, and the prevention of damage to the environment

CURRENT SITUATION
The ISCC activated at 1700 to coordinate state response efforts and assistance, and has been operating at all times.

EMA personnel are on scene in Galena with the Illinois Incident Management Team to assist. Both are located in the ICP and working with the Incident Commander, local officials and BNSF Railroad. The USCG is also on scene along with EPA and USDPA and several other state and federal agencies. BNSF reported 16 cars still in the hazard zone.
NIMS Integration and IAP Development Timeline

- IL-IMT Developed Day 2 & Day 3 IAPs and Sit-Rep with BNSF leading operations.
- Day 4 began integration with IL-IMT USEPA-ICS personnel and establishment of Unified Command structure with 24 Operational Periods.
- Day 5 IAP was developed by USEPA-ICS with IL-IMT personnel filling ICS roles.
- Day 6 Demob of IL-IMT.
Meeting/Workspace Needs and Logistics
Joint Incident Briefing

- BNSF
- IL-IMT
- USEPA
Illinois Mutual Aid Box Alarm System (MABAS)

- 1 - Mobile Support Unit
- 1 Western Shelter
- 4 Light Towers
- 4 Utility Vehicles
Communications
Communications

- COML Established/ILEAS
- 17 Initial Starcom Radios deployed and 36 additional ordered.
- Developed ICS 205
VIP Visits
Environmental Impact
Environmental

Air

Fixed @ 9 locations
3/5 – 3/11
VOCs & PM2.5
- 4300 readings recorded w/ no detections
- PM2.5 consistent w/ ambient readings

Grabs @ 5 locations
3/5 – 3/12
VOCs & PAHs
- 75 samples taken, no detections for crude above health guidelines

Benzene
Carbon Monoxide
Hydrogen Sulfide
PM 2.5 Particulates
Lower explosive limit
Nitrous Oxide
Sulfur Dioxide
Toluene
VOCs

Legend:
- FRT Station
- Source
- 1 mile buffer
- 5 mile buffer

0 1 2 3 4 Miles
Environmental

Surface Water

Field parameters:
(depth, flow, DO, ORP, temp, cond, pH)
VOCs
PNAs (SVOCs)
BTEX
TPHs
(DRO, GRO, ORO)

- No exceedances of Illinois EPA Surface Water Quality Standards
Area of Most Significant Impact – 12 cars
Environmental

Soils

- 143 samples from 35 borings screened
  39 samples to lab

PNAs n(0'-3', 4'-8')
BTEX
TPH (DRO, GRO, ERO)
Environmental

Remediation Activities

- Remove crude (mass balance)
- Sheet pile impacted area
- Excavate impacted soils
  - Disposed of atSubtitle D landfill
- Flush ballast / ramp & recover oil
  - Water Treatment
  - FOSC exercised NCP, CWA Sect. 311(c) & NPDES Section 122.3(d) authority to exempt NPDES permit until state issued permit
- Backfill & restoration (USACOE)
- Long term monitoring
Environmental

Timber Mats

[Images of timber mats and construction site]
# Environmental Metrics

<table>
<thead>
<tr>
<th>Product</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude Oil (recovered)</td>
<td>221,421 gal</td>
</tr>
<tr>
<td>Contact Water (treated)</td>
<td>1,700,000 gal (+)</td>
</tr>
<tr>
<td>Contaminated Soil</td>
<td>4,748 tons (+)</td>
</tr>
<tr>
<td>Tankers wrecked</td>
<td>12</td>
</tr>
</tbody>
</table>

[Images of environmental damage]
Cause
IMT Challenges

Credentialing/Accountability

- Start Credentialing and Accountability Early

Site security/Safety

- Secure the incident no matter how remote

Federal NIMS Integration

- Expand NIMS and IAP development as soon as you understand the scope of the incident.

Meeting/Working Space and Logistics

- Pre-determine large spaces

Communication

- Establish common communications

VIP Visits

- Don’t underestimate the impact of VIP visits
Contact Information

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Dennis Bingheim, IL-IMT  dbingheim@jwcc.edu

Pat Brady, BNSF  patrick.brady@bnsf.com