WHAT YOU NEED TO KNOW *About Closing a Coal-Fired Plant*

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2016 PHC

AEGIS

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2016 PHC

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CORPORATE OVERVIEW

Strength in Our Diversity and Scale

Regulated Distribution
- Ten operating companies serving 6,000,000 customers in six states

Regulated Transmission
- 24,000+ line miles*; one of the largest transmission systems in PJM market

Competitive Operations
- Diverse generation portfolio of 13,162 MW; hedged with retail sales

*Includes lines 23 kV and above

Regulated Distribution Overview

State	Op Co's	Customers	
Ohio	OE, CEI, TE	2,089,000	35%
Pennsylvania*	ME, PN, PP, WPP	2,030,000	34%
New Jersey	JCP&L	1,103,000	18%
West Virginia	MP, PE-WV	527,000	8%
Maryland	PE-MD	259,000	4%
Total		6,008,000	

* Includes 4k customers in New York

Focused on executing our regulated growth plans and conservative approach to our competitive business while continuing to evolve to meet the needs of our customers

PLANT CLOSURES *In the Last Four Years*

Plant	Closure Date	MW
Albright	9/1/12	292
Armstrong	9/1/12	356
Bay Shore 2-4	9/1/12	495
Burger	9/1/12	380
Mad River	9/1/12	60
R. Paul Smith 3-4	9/1/12	116
Rivesville	9/1/12	126
Willow Island	9/1/12	242
Hatfield's Ferry	10/9/13	1,710
Mitchell	10/9/13	288
Lake Shore 18	4/15/15	245
Eastlake 1-5	4/15/15	1,233
Ashtabula 5	4/15/15	244
Total		5,787

CLOSURE *Drivers*

- Mercury and Air Toxics Standards (MATS)
- Regional demand
- Power prices
- Costs

CLOSURE PLAN *Team*

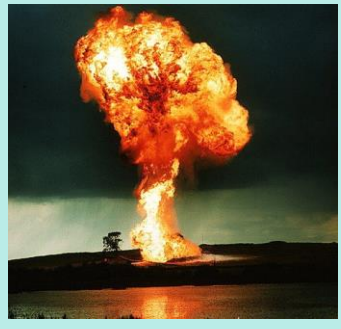
- Generation management
- Environmental
- Physical security / corporate security
- Plant personnel / investment recovery
- Insurance risk

RISK MANAGER'S *Role*

- Assist in identifying exposures
- Review effect on insurance program
- Enlist the help of industry partners
- Drive closure plan to include loss control best practices
- Balance the "hammers"
- Provide a voice of reason

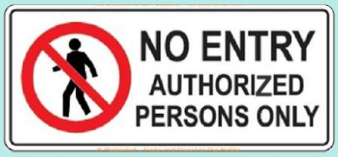
KEY *Exposures*

- Property exposures
  - Top priorities
    - Coal
    - Hydrogen
    - Fire suppression agents
  - Combustibles
    - Conveyor belts
    - Furniture
    - Documents
  - Early shut off of fire protection equipment
  - De-energized equipment and lines



KEY *Exposures*

- Liability
  - Plant access
    - Who still needs in the plant
    - Restriction of unauthorized entry
    - Lake or river access
    - On premises security
  - Hazards
    - Valuable property / attractive nuisance
    - Water retention areas
    - Below ground coal intakes
    - Confined space access



INSURANCE *Program Ramifications*

- Liability
  - Review for potential issues and exclusions
  - Advise of the project and the procedures
- Property
  - What is the value?
    - Is there a chance the unit will restart?
    - What equipment can be reused or sold?

WHAT YOU NEED TO KNOW *About Closing a Coal-Fired Plant*

JOSHUA FLEISCHER

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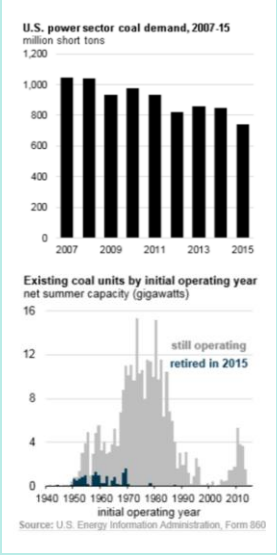
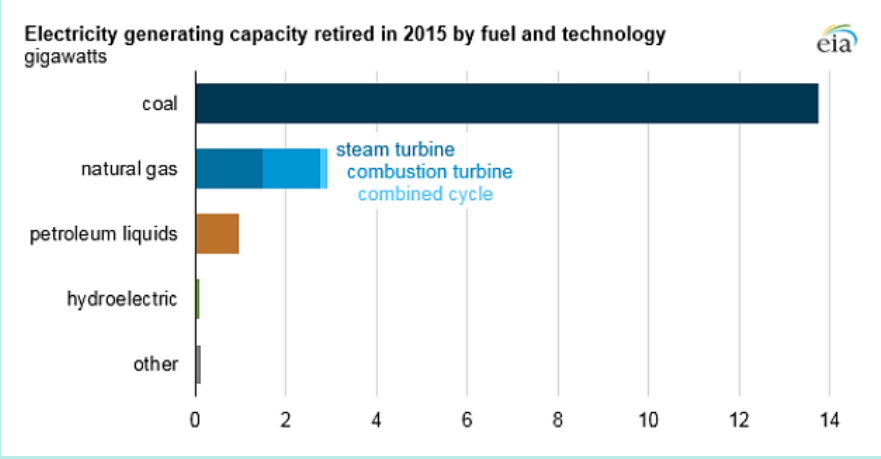
AGENDA

- Background
- The plan
- Risk concerns
- Strategies for protecting idle or vacant sites
  - Emergency planning
  - Supervision and security measures
  - Control of fuel and ignition sources
  - Fire protection features
  - Equipment decommissioning
  - Arson, vandalism, and sabotage
  - Administrative controls



EIA

BACKGROUND



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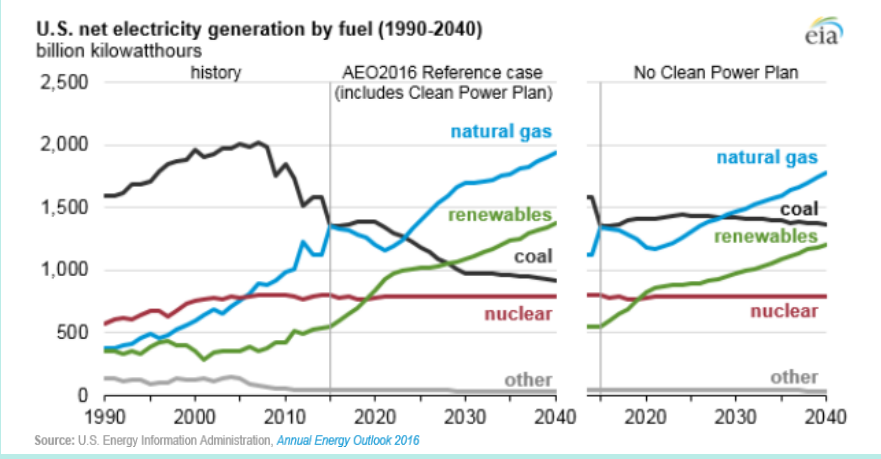

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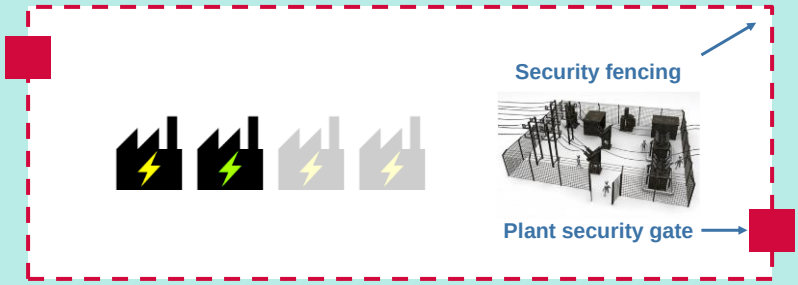
THE PLAN

- What is the existing and end condition for the facility?
  - Total shutdown of the entire facility?
  - Partial shutdown of the facility?
    - Are there operations that will remain (e.g., switchyards, other generation, etc.)
  - Future use of the facility?



RISK *Concerns*

- Liability
  - The risks have been eliminated, reduced, correct?
  - New risk issues to consider?
- Property
  - Values reduced?
  - The hazards should have been eliminated, reduced, correct?
  - Property protection systems do not need to remain?

RISK *Concerns*

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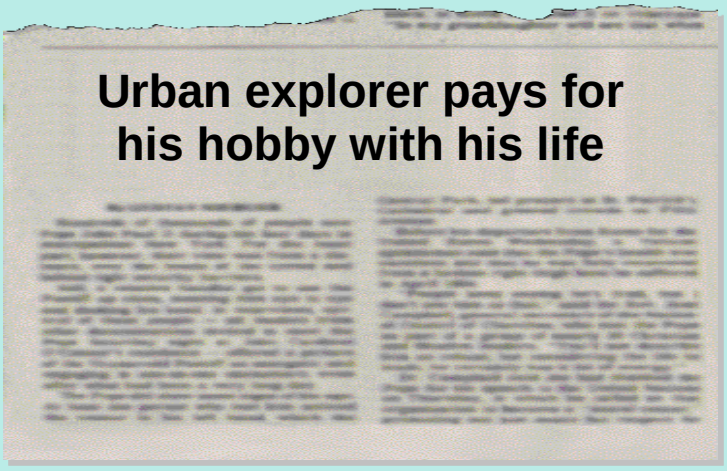

RISK *Concerns*

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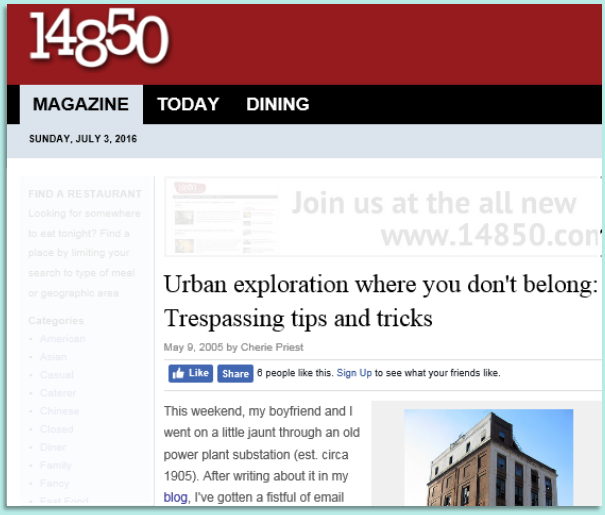
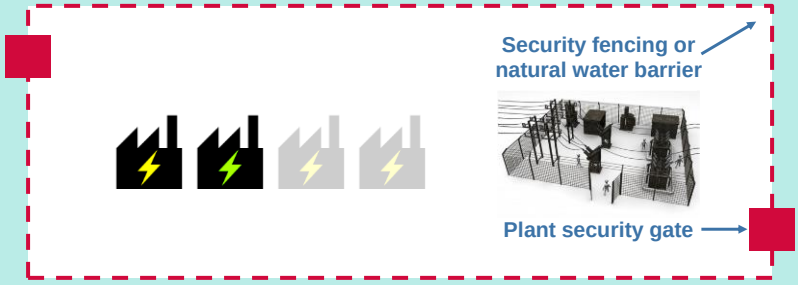


RISK *Concerns*

- What is the existing and end condition for the facility?
  - Total shutdown of the entire facility?
  - Partial shutdown of the facility?
    - Are there operations that will remain (e.g. switchyards, other generation, etc.)
  - Future use of the facility?
  - PERFORM A RISK ASSESSMENT!



STRATEGIES FOR PROTECTING *Idle or Vacant Sites*

- Based on the risk evaluation, execute the plan (BREEP)
  - Emergency plans
  - Maintain fire protection until hazards are removed / reduced
  - Housekeeping
  - Maintain utilities as needed
  - Supervision and security
  - Arson, theft, vandalism, and sabotage
  - Equipment decommissioning
  - Risk reduction
  - Review
  - Natural hazards

RISK *Concerns*

- Demolition concerns
  - Electrical / controls
  - Structural stability
  - Environmental
  - Vibration
  - Noise
  - Dust
  - Fire / explosion
  - Collapse
  - Endangered species
  - Natural hazards

RISK *Concerns*

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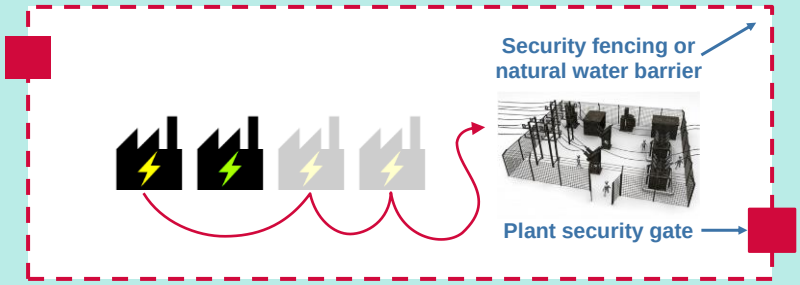

STRATEGIES FOR PROTECTING *Idle or Vacant Sites*

- Emergency planning *at all stages*
  - Risk assessment of the site's risks, threats, vulnerabilities and target areas, and the consequences of each
  - Ensure emergency plan is up to date in all phases of the closure
  - Define security objectives based on local demographics, condition of the site, values, hazards, etc.
  - Work with local fire and police departments to review facility closure plans
  - Many areas have local codes and ordinances which address vacant sites

STRATEGIES FOR PROTECTING *Idle or Vacant Sites*

- Fire protection features
  - Maintain adequate fire protection features until the hazards are reduced
  - Review current hazards, interim hazards and final facility status for potential hazards
- Housekeeping
- Utilities
  - Where needed, provide building heat, lighting, and power to critical systems such as fire protection
  - Building utilities should be shut off and secured with proper lock-out / tag-out procedures followed
  - Ensure that life safety measures are not compromised!

STRATEGIES FOR PROTECTING *Idle or Vacant Sites*

- Supervision and security measures
  - Perform a security survey
  - Control access to the site and buildings
  - Fencing, gates, boarding or securing accessible windows, doors, etc.
  - Climbing aids
  - Alarms – type and level of protection needed based upon the probability of loss and the loss expectancy
  - Facility inspections / security guard service?
  - Proper signage on plant access points to note no unauthorized entry and contact information

STRATEGIES FOR PROTECTING *Idle or Vacant Sites*

- Supervision and security measures
  - Adequate lighting maintained outside and inside
  - Maintain tight management controls on key or card access
  - Notify local law and fire officials as appropriate
- Arson, vandalism, theft, and sabotage
  - "Because it is there"
  - Increase security in areas where there is an increase in vandalism or suspicious activities
  - Post a written company statement or policy against any unauthorized activity that may be construed as sabotage or theft

STRATEGIES FOR PROTECTING *Idle or Vacant Sites*

- Equipment decommissioning
  - Detailed review of plant assets to determine future use or need – this will determine necessary lay-up measures and how ongoing PM's etc. are conducted
  - Flammable liquids, chemicals, and gases should be removed from laboratories, processes and tanks; tanks containing acids and caustics should be emptied and neutralized
  - Equipment with extremely high value, and equipment vulnerable to water damage, extreme temperatures, and dust or contamination should be relocated to another facility
  - Equipment components with a high "street value" and susceptibility to theft (e.g., precious metals and copper) should be relocated

STRATEGIES FOR PROTECTING *Idle or Vacant Sites*

- Equipment decommissioning
  - Pits, manholes, vessel hatches, etc., can be very attractive to children. Openings should be properly secured to prevent entrance and marked with signs indicating "Danger - Confined Space - Do Not Enter." Appropriate confined space entry procedures should be used when entering these areas.
  - If equipment enclosures are erected, they should be noncombustible. Wood, plastic, and tarpaulin enclosures should be avoided.
  - Process equipment and tanks should be cleaned and gas or vapor free. Where appropriate, equipment should be inert gas blanketed and kept opened (with manways screened to prevent entry of children).

STRATEGIES FOR PROTECTING *Idle or Vacant Sites*

- Risk reduction – fuel and ignition sources should be identified and eliminated if possible
  - Remove coal from bunkers / silos or other equipment
  - Remove oil from storage tanks, reservoirs, etc.
  - Eliminate combustible storage or trash inside buildings
  - Do not use as a warehouse unless properly protected
  - Maintain yard areas free of vegetation to reduce fire exposure to buildings and equipment
  - Minimize energized electrical equipment
  - Ensure all temporary wiring measures are controlled and properly performed
  - Control of hot work activities
  - Monitor and review all temporary heating sources for buildings and equipment

STRATEGIES FOR PROTECTING *Idle or Vacant Sites*

- Review facilities periodically
- Keep corporate insurance informed
- Keep local emergency responders informed
- Keep management informed
- Teamwork

FIRST ENERGY'S *Plan*

- Develop best practice procedure baseline
  - Remove ALL combustibles
    - Coal deposits, fuel oil, liquids, belts, etc…
  - Clean and clear out office areas
  - Limit access to the plant buildings to one entrance
  - Notify all local authorities
  - Increase entry barriers to the plant / grounds
  - Signage, signage, signage!
- Visit each site and develop an individualized plan based on unique plant characteristics
  - *Location*

CHALLENGES

- Permitting is an issue
- Ongoing electricity demands at the plant
- Energy delivery facilities within the plant
- Local authorities can dramatically affect your plans

INSURANCE PROGRAM *Changes*

- Liability
  - Allocations
- Property
  - Developed two buckets to group the plants
    - $100M aggregate for operating plants that were imminently closing
    - $10M debris removal only sublimit for closed facilities

FINAL THOUGHTS

- Be cautious of short term savings at the expense of long term risks
- Trespassing isn't just about mischief and theft anymore
- Communication between silos is important (and worth the extra effort!)
- The plan and process don't end once the gates are closed

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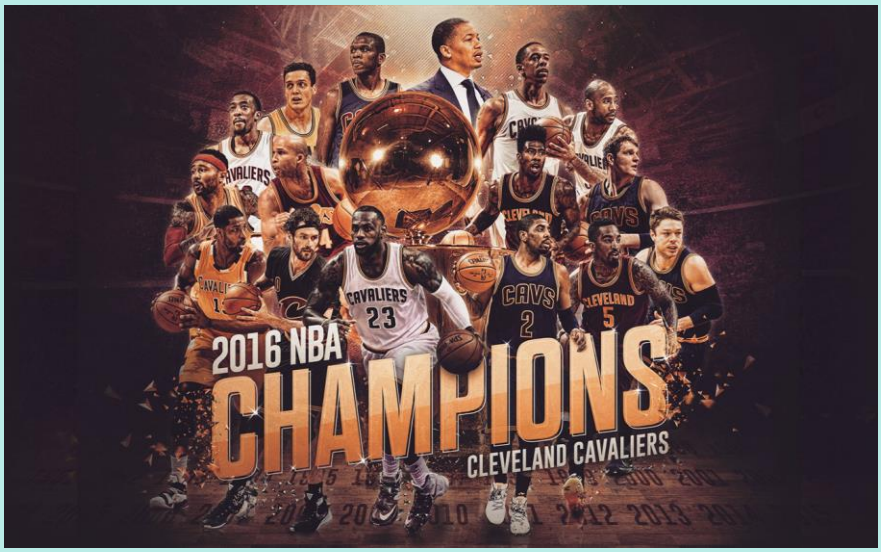
OHIO EDISON MAD RIVER POWER PLANT

2016 PHC AEGIS

...EVEN BEST LAID PLANS...

The former Ohio Edison Mad River Power Plant's 275-foot tower came down on Wednesday, but the blast knocked it the wrong direction. The tower was supposed to fall to the northeast, but ended up going to the south — knocking down several nearby power lines. The tower appears to have landed on some kind of small structure. Several small explosions were seen, probably from the fallen power lines.

QUESTIONS?



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Mission
Strategy
Financials
People
Products
Member support
AEGIS
Board support
Infrastructure