All Hands On Deck – Emergency Action Planning and Aftermath Following a Release

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R. Neil Davies, C.E.ng., MICE, P.E. Geosyntec Consultants Steven A. Burns, Partner, Balch & Bingham LLP







Agenda

- Emergency Action Planning the process
 - What is an EAP
 - Who needs to be involved
 - What are the steps involved
 - Preparedness
- Emergency Response
 - What happens when something goes wrong?
- Recovery
 - What happens in the "Aftermath"







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Emergency Action Planning and Aftermath Following a Release

Emergency Action Plan – Key Elements

- Actions the Owner will take to moderate or alleviate the problem
- Actions Owner will take regarding coordination with Emergency Management Authorities
- Early warning systems, notification, messages and procedures
- Identify critical infrastructure and population-atrisk. Identify sites that may require protective measures, warning, and evacuation planning
- Clear delineation of the responsibilities of all those involved in managing an incident or emergency and how the responsibilities should be coordinated





Federal Guidelines for Dam Safety treegency Actor Playing for Dams Truck of Jay 2013 FEMA



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Emergency Action Plan

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- But it all starts with "Planning".....
 - Can the "Event" be reasonably contemplated?
 - Review/Research past similar events and similar facilities
 - Conceptualization, brainstorming, white-boarding
 - Modeling (where appropriate)
 - Understand mitigation and control measures available
 - Have they been inspected, tested and known to be operational?
 - Don't reply on something that has not been tested for years
 - Redundancy of measures
 - Define the limits of the event
 - Examine the area affected
 - Desktop
 - Ground-truth/walkdown
 - Involve Stakeholders and Emergency Management Authorities











Can the "Event" be reasonably contemplated?



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- A facility constructed to contain fly ash and bottom ash
- Generally flat slopes (1:4 to 1:3)
- Typical issues of water management and maintenance
- Some limited slope instability issues, 2-3 truckloads of ash released

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Could this have been contemplated or conceptualized?

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[Photo: Tennessee Valley Authority / U.S. Environmental Protection Agency]













What Happens next?

- Emergency Response
 - A plan may not be in place, or only a "generic plan" to respond
 - Confusion and chaos who does what?
 - Emergency Response Authorities
 - Federal, State, and Local Authorities
- Other Factors
 - Media coverage who's to blame?
 - Impacted or concerned citizens
 - Activist groups
- Recovery

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Planned investigation, mitigation measures

Develop and implement recovery/remediation plan



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Legal standards governing disaster response

- First and foremost: SAFETY FIRST!
 - Take care of employees, neighbors, responders, etc.
 - Contain issue and mitigate damage ASAP
 - Call the lawyer when you can without compromising safety
- Basic principles to find common law liability:
 - An actor has a **DUTY** to specific people or general population
 - The actor **BREACHES** that duty
 - The breach is the CAUSE ...
 - Of a specific INJURY
 - INJURY is key no damage, no legal claims..

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Legal standards governing disaster response

- Assuming no intentional wrongdoing, issue is typically *NEGLIGENCE*
 - What would a reasonable person do?
 - May be determined with respect to statutory, regulatory, industry standards
- Two critical times negligence can manifest:
 - Preparation everything leading up to the event
 - Response how the event is managed and damage contained



Standards of care (what would a reasonable person do?)

- Statutes and regulations
 - CCR rule for ash ponds
 - Other regulations for other activities or operations
 - Reservoirs (and possibly ash ponds): Dam safety regs FERC, Corps, FEMA, etc.
 - Coal mining ponds: Office of Surface Mining Reclamation and Enforcement, etc.
 - Chemicals: EPCRA, RMP, DHS Chemical Facility Anti-Terrorism Standards, etc.
 - And so on, for each activity
- Industry standards
 - Such as NFPA 1600, Disaster/Emergency Management & Business Continuity
- Internal practices and procedures what's in your plan?











Example of High Hazard Dam - GA Note: No release/emergency since construction

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Example of Inundation Mapping

- Proof using Google Earth
- Ground-truthing/walkdown

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DETECTION OF DAM FAIL			EVENT	DAM FAILURE MECHANISM				EVALUATION OF FAILURE	CLASSIFICATION OF FAILURE MECHANISM	
DRAFT EMERCENCY PETIT LAKI			Unexpected Failure	Unknown				Dam unexpectedly and without warning begins to fail	Condition A	
EVENT Unexpected	• Unknown	Di	Major Flood/ Embankment	Overtonning of dam		Е	rosion and removal of the road and embankment occurring	Condition A		
Major Flood/ Embankment	Overtopping of dam	Erosi Flood pool	Overtopping		topping of tall		Flood pool rapidly approaching top of dam and embankment still intact Condi			
Global Earthquake or Seismic Activity	Settlement of dam crest Slope movement Evidence of seepage or piping		Global Earthquake or Seismic Activity					Settlement of more than a few inches	Condition A	
								Slope movement larger than the size of a car		
		Wet areas or				ent of dam crest		Flowing water from downstream face of dam		
		Measurable earti		Settle	ment of dar			Settlement of less than a few inches	Condition B	
Embankment Movement	Settlement of dam crest Slope movement			mic Activity • Evidence of seepage or piping		ient or piping		Slope movement of less that the size of a car		
		New cracks i				Wet area	Wet areas on downstream face of dam that continue to increase in size and intensity of flow			
Embankment Seepage	 Evidence of seepage or piping 	Flowing water Wet areas wit						earthquake felt or reported near the dam and dam appears to be stable.	Condition C	
Spillway Flow	 Spillway overflow Spillway erosion 	Spillway overflowing section o Spillw Normal flow	allway overflowing with an advancing lead cut that is threatening the control section or that is already flooding people downstream. Spillway overflowing with active gully erosion. Condition B							
Sinkholes	Observed sinkhole	Observation Observation	EVEN	EVENT IMPENDING FAILURE MEC			F DAM HANISM	PREPLANNED OPERATIONS IN PRIORITY ORDER		
Routine Instrumentation Readings	 Significant change in piezouseter readings Rapid decrease in lake level 	Increase in piezo:		Overtopping of o			1. Open sluice gate on the low level drain.			
		Rapid decrease in Increase in piezom Rapid decrease in 1 Piezometer readir	Major Flood/Embankment			ofdam	 Open the bypass valve on the water supply line to the water treatment plant (if available). If lake levels continue to rise dangerously close to top of the dam crest, excavate emergency channel in abutment area adjacent to concrete chute 			
Security Threat	Bomb threat	Detonated bon Verified bomb th appurten:	Overtopping				spillway. Also bring in emergency pumps and discharge outflow to spillway or directly into Petit Creek. Do not excavate channel on top of dam, or discharge pump outflow on face of dam			
Sabotage/ Vandalism	Damage to dam or appurtenances	Damage to dam or Damage to (Damage or modi								
Blocked culverts	Blockage	Debris is bl	ocking a spillway pipe, causing lake level t	to rise. Cor	ndition C			·		
move. This capie was	werey on a similar capie from the North	caronna pepartment of l	crimoninental quality, 2010.							

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Legal considerations during planning:

- Can you protect information?
 - Attorney-client communication: YES (for lawyer offering legal advice)
 - Attorney work product: **Probably NOT**
 - State audit protections: Depends on state law
- Your plan becomes a legal standard
 - Must meet "reasonable person" standard
 - Must comply with legal requirements
 - If it's in your plan, you must do it







Disaster happens – what do you do to limit liability?

- Safety first! And, follow your plan!
 - Immediate steps to protect persons, property and the environment
 - Don't wait for your lawyer to arrive or worry too much about CYA
- To protect information:
 - Involve your attorney early on and in any subsequent investigations
- Identify legal and regulatory obligations (reporting, notification, etc.)
- Tension between legal and communications roles
 - Publicizing information can increase legal risk
 - But withholding information creates public discontent
 - Which increases legal risk
 - Take enough time to ensure accurate communications

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Conclusions and Recommendations

- While not all conditions or events and be contemplated and/or conceptualized, most can be with sufficient forethought and preparation.
- Involve experts in the field, owners, operators, stakeholders, emergency response authorities, and appropriate agencies.
- Research similar facilities and past events but question the appropriateness of their approach
- Don't rely or be complacent about past or historic practices ... "we have always done it that way and never had a problem"
- Test and confirm operation of emergency mitigation measures (e.g., valves, pumps, sensors, monitors, alarms, etc.)
- Practice the Emergency response. Desktop and field verification

