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Remediation and Restoration Emergency Operations Center Checklist For:

A Wide Area, Urban Biological Agent Event

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Auspices

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Responsible Personnel	Action
Notification Phase	
Emergency management organization and law enforcement or other response and public health organizations	<input type="checkbox"/> Emergency manager and/or public health receives notification that: <ul style="list-style-type: none"> ○ A biological incident has been detected, or ○ A biological incident is suspected, or ○ Information about a developing threat is received from an agency or responsible person as the result of an active detection system (e.g., BioWatch), medical surveillance, or epidemiologic investigation.
	<input type="checkbox"/> Gather information and continue to assess incident credibility, incident status, potential effect on the facility/urban area, and the degree to which a response is needed.
	<input type="checkbox"/> Emergency manager and/or public health makes notification (s), as appropriate, by: <ul style="list-style-type: none"> ○ Following previously established notification protocol, tailored to specific triggers at each stage of a developing incident, and either alerting responders and agencies (Federal, state, and local) or acting on direction from them. ○ Disseminating information, including preliminary risk communication and public health directives.
	<input type="checkbox"/> Alert/consider standing up additional resources (e.g., JIC).

Responsible Personnel	Action	
First Response Phase		
Incident Commander (IC) or Emergency Manager	<input type="checkbox"/>	Activate, or coordinate with law enforcement and emergency operations personnel as needed: <ul style="list-style-type: none"> ○ Security personnel ○ FBI and/or local law enforcement (they will likely control the crime scene to protect evidence and commence forensic investigation) ○ Fire department personnel ○ Public health and medical personnel ○ Hazardous materials (HAZMAT) and/or other screening sampling teams ○ Local USEPA On Scene Coordinator ○ IMAAC modeling capabilities
	<input type="checkbox"/>	Initiate modeling capabilities to make preliminary estimates of contaminated areas using current environmental/meteorological conditions.
	<input type="checkbox"/>	Continue to inform responders and agencies (Federal, state, and local) about developing details related to the incident.
	<input type="checkbox"/>	Continue risk communication as necessary.
	<input type="checkbox"/>	Control access/egress to and/or isolate the affected areas, when known; contain the contamination, and establish initial hot/warm zones.
	<input type="checkbox"/>	Transition to a Unified Command (UC) as additional agencies and organizations respond following NIMS-ICS for roles and responsibilities.
	<input type="checkbox"/>	Prioritize potentially contaminated/affected areas and operations for response activities.
	<input type="checkbox"/>	Plan and conduct initial screening sampling and analysis of biothreat agent.
Centers for Disease Control and Prevention (CDC) and/or Local Public Health	<input type="checkbox"/>	Perform additional public health screening and laboratory analyses.
	<input type="checkbox"/>	If laboratory analysis yields a confirmed positive result, determine if there is a significant risk to public health.
	<input type="checkbox"/>	Gather new information, if necessary, to determine significant risk to public health. For example, antibiotic resistance, agent viability results, medical epidemiological surveillance, additional environmental sample analysis, modeling, and available intelligence information. <i>(If there is no risk to public health, continue those actions necessary to restore normal operations.)</i>
Planning Section: Environmental Unit	<input type="checkbox"/>	Update initial hot/warm zones.
IC or UC	<input type="checkbox"/>	Evacuate, shelter-in-place, rescue, and/or isolate affected persons and areas (considering special needs), as necessary.
	<input type="checkbox"/>	Control access routes and develop population movement plans.
	<input type="checkbox"/>	Mitigate any conditions posing immediate threat to human health, e.g., <ul style="list-style-type: none"> ○ Decon people and associated belongings. ○ Perform medical intervention including: <ul style="list-style-type: none"> <input type="checkbox"/> Prophylaxis to community <input type="checkbox"/> Large quarantine as needed <input type="checkbox"/> Increase medical surveillance ○ Establish temporary shelters. ○ Implement limited area/facility decontamination and source reduction measures. ○ Establish processes/surveillance for veterinary and agricultural interventions.
	<input type="checkbox"/>	Determine if any facility and/or area operations should be sustained, diverted, or suspended; implement considering continuity of operations, including procedures for providing emergency services in the hot zone.

Responsible Personnel		Action
Characterization Phase		
Planning Section: Situation Unit	<input type="checkbox"/>	Compile all analytical and observational data and reports that were created during the First Response Phase, and provide results to the Environmental Unit.
UC	<input type="checkbox"/>	Identify and prioritize areas, operations, and/or facilities for detailed characterization and remediation considering: <ul style="list-style-type: none"> ○ Critical facilities. ○ Population distribution. ○ Critical infrastructure. ○ Lifelines.
	<input type="checkbox"/>	Mobilize, as necessary, pre-identified resources for characterization activities, including: <ul style="list-style-type: none"> ○ Laboratory Response Network (LRN) and/or other CDC-approved laboratories. ○ Environmental sampling teams, decontamination and disposal resources, and personal protective equipment (PPE). ○ Data management and documentation specialists. ○ Air-dispersion modeling resources.
	<input type="checkbox"/>	Create or activate Technical Working Group (TWG) and Environmental Clearance Committee (ECC) if desired, and establish lines of authority and responsibilities.
	<input type="checkbox"/>	Begin notifying and deploying resources for pre-identified resources remediation, clearance, and waste management, as needed.
Safety Officer and Logistics Section: Medical Unit	<input type="checkbox"/>	Create and implement Health and Safety Plan (HASP) for response personnel.
	<input type="checkbox"/>	Vaccinate or provide antibiotics to appropriate response personnel, as needed.
Facility/Public Works and other applicable agencies	<input type="checkbox"/>	Provide detailed plans (e.g., HVAC systems) for affected facilities.
	<input type="checkbox"/>	Provide detailed maps and infrastructure information (e.g., sewer, power, water, natural resource maps) for affected region.
Planning Section: Environmental Unit	<input type="checkbox"/>	Recommend any additional agent containment and source reduction.
	<input type="checkbox"/>	Depending on actions completed during first response: <ul style="list-style-type: none"> ○ Assess potential contaminant transport outside the contained areas and/or facilities. (e.g., tracking, reaerosolization). <ul style="list-style-type: none"> <input type="checkbox"/> Evaluate the need for pre-characterization sampling. <input type="checkbox"/> Evaluate the need for air monitoring. <input type="checkbox"/> Evaluate the need for additional refinement of outdoor and/or indoor modeling. ○ Develop necessary implementation strategy.
Operations Section	<input type="checkbox"/>	Perform recommended actions to assess potential contaminant transport from above assessments.
	<input type="checkbox"/>	Implement any recommended agent containment and isolation actions.

Responsible Personnel	Action	
Characterization Phase (continued)		
Planning Section: Environmental Unit with input from TWG	<input type="checkbox"/>	Develop a characterization strategy to support remediation activities, including identifying current characteristics of the confirmed bioterror agent (e.g., has it remained viable, is it still toxic, can it reaerosolize). <ul style="list-style-type: none"> ○ Consider statistical and judgmental criteria. ○ Employ iterative modeling approach to optimize sampling.
	<input type="checkbox"/>	Write an incident-specific characterization sampling and analysis plan(s) (SAPs) in which all objectives are identified. <ul style="list-style-type: none"> ○ Organize the affected area into characterization zones. ○ Select sampling locations and methods. ○ Identify resource limitations and optimize use.
UC	<input type="checkbox"/>	Approve the characterization SAP(s).
Operations Section: Sampling Group	<input type="checkbox"/>	Implement the characterization SAP(s) according to area-specific priorities.
	<input type="checkbox"/>	Track implementation of characterization SAP(s) and make adjustments as needed as data becomes available.
Planning Section: Environmental Unit with input from TWG	<input type="checkbox"/>	Evaluate results of characterization activities and consult with the ECC, as appropriate. Recommend additional characterization activities, as needed, to the Operations Section.
	<input type="checkbox"/>	Conduct risk assessment
	<input type="checkbox"/>	Develop clearance goals for the affected area(s)
CDC or Public Health	<input type="checkbox"/>	Recommend any additional public health and/or medical options
UC with input from TWG	<input type="checkbox"/>	Approve clearance goals.
	<input type="checkbox"/>	Approve any additional CDC/public health recommendations.

Responsible Personnel	Action	
Decontamination Phase		
Planning Section: Environmental Unit with input from TWG	<input type="checkbox"/>	Review prioritization of areas/operations and/or facilities based on results of characterization.
	<input type="checkbox"/>	Evaluate and develop the specific decontamination strategies <ul style="list-style-type: none"> ○ For wide-area releases, it is expected that outdoor decontamination would be performed before indoor facility decontamination within each zone. ○ Include assessment of potential environmental impacts of remediation. ○ Determine if natural attenuation or active decontamination is necessary. ○ Determine whether to decontaminate <i>in situ</i> or remove based on available methods. <ul style="list-style-type: none"> <input type="checkbox"/> If removed, determine if disposal or recycling is appropriate
	<input type="checkbox"/>	Prepare the Remediation Action Plan(s) [RAP(s)] for multiple areas, including: <ul style="list-style-type: none"> ○ Areas to decontaminate and types of media/surfaces involved. ○ Materials, structures, and rolling stock to decontaminate in place or remove. ○ Packaging and transportation requirements for materials to be removed. ○ Decontamination technologies to use (e.g., reagent and delivery system). ○ Appropriate process parameters for the decontamination methods and the applicable decontamination process criteria to be used for verification. ○ Resource limitations and methods to optimize use. ○ Appropriate risk management for decontamination and disposal methods.
	<input type="checkbox"/>	Include Ambient Air Monitoring Plan (AAMP) in RAP for facility decontamination if fumigation is used.
	<input type="checkbox"/>	Include Outdoor Decontamination Monitoring Plan in RAP if hazardous chemicals are used.
	<input type="checkbox"/>	Prepare Clearance Sampling and Analysis Plan(s) [SAP(s)], including: <ul style="list-style-type: none"> ○ Identification of clearance zones. ○ Sampling approach(es) for each zone (e.g., targeted, biased, and random or statistical sampling). ○ Use of aggressive air sampling and/or forced reaerosolization, as necessary.
Operations Section: Decontamination Group	<input type="checkbox"/>	Review and finalize RAPs and SAPs.
UC	<input type="checkbox"/>	Approve the RAPs and SAPs with input from the ECC.
	<input type="checkbox"/>	Submit RAPs and SAPs to USEPA to obtain a crisis exemption(s) if using an unregistered product(s) for decontamination (i.e., one that is not an EPA-approved pesticide for the intended use).
Safety Officer and Logistics Section: Medical Unit	<input type="checkbox"/>	Review and modify HASP for remediation effort(s)
	<input type="checkbox"/>	Develop Emergency Response Plan(s) to address potential uncontrolled decontamination reagent releases (e.g., from explosion, fire, or hurricane).
Operations Section: Decontamination and Sampling Groups	<input type="checkbox"/>	Perform additional source reduction activities as identified from characterization phase.
	<input type="checkbox"/>	Perform all site preparations as specified in the RAPs.
Operations Section: Decontamination Group	<input type="checkbox"/>	Perform decontamination as specified in RAPs based on established priorities.
	<input type="checkbox"/>	Identify and communicate any potential general public remediation actions/options.
Environmental Unit with input from TWG and concurrence from UC	<input type="checkbox"/>	Evaluate whether decontamination process criteria are met, including: <ul style="list-style-type: none"> ○ Fumigation (e.g., biological indicators, concentration, temperature) ○ Indoor/limited outdoor surface decontamination (e.g., limited surface sampling, contact time, pH) ○ Wide-area outdoor decontamination (e.g., residence times, contact time) ○ Drinking water infrastructure and sources (e.g., monitoring, pH) Recommend additional decontamination activities, as necessary. Consult with ECC as appropriate.

Responsible Personnel	Action
Clearance Phase	
Planning Section: Environmental Unit with input from TWG	<input type="checkbox"/> Review, and revise as appropriate, the incident-specific clearance SAPs based on results of decontamination activities.
	<input type="checkbox"/> Review prioritization of areas/operations and/or facilities based on remediation status.
UC with input from ECC	<input type="checkbox"/> Approve the incident-specific clearance SAPs, if revised.
Operations Section: Sampling Group	<input type="checkbox"/> Perform clearance sampling as specified in the SAPs.
Planning Section: Environmental Unit with input from TWG	<input type="checkbox"/> Evaluate the clearance SAP results. Determine if cleanup goals have been met. Recommend additional remediation if necessary.
Planning Section: Environmental Unit	<input type="checkbox"/> Document final clearance results for each SAP: <ul style="list-style-type: none"> ○ Conduct final technical risk assessment. ○ Consider socioeconomic implications.
IC/UC with input from ECC	<input type="checkbox"/> Review final clearance results including final risk assessment. Make recommendations on whether zones (e.g., facilities, outdoor areas, items) have been effectively decontaminated.
IC/UC	<input type="checkbox"/> Make clearance decision: <ul style="list-style-type: none"> ○ Conduct reviews and confirm that regulatory and stakeholder needs are addressed. ○ Determine whether to reopen all or parts of the area or facility; or to initiate recovery and refurbishment activities. If none of the above, further decontamination may be warranted.
	<input type="checkbox"/> Determine any long-term environmental monitoring needs, and implement as necessary.
Restoration Phase	
UC in collaboration with facility and/or regional emergency managers	<input type="checkbox"/> Prepare and implement site-specific recovery plans: <ul style="list-style-type: none"> ○ Implement renovation, including refurbishment of removed and damaged items, system testing, and other required actions. ○ Determine whether phased-in reuse of areas and facilities is needed to support recovery operations. ○ Upgrade or enhance areas or facilities, as appropriate (e.g., mitigate biological vulnerability). ○ Implement risk communication strategy/plans.
	<input type="checkbox"/> Address special work activities as necessary under the reoccupancy (transitional) program, such as safety-based maintenance and housekeeping.
UC in collaboration with local public health and OSHA, where appropriate	<input type="checkbox"/> Continue long-term environmental and public health monitoring, if deemed appropriate.
	<input type="checkbox"/> Determine whether to permit tenants and employees to return for normal business. Address general industrial and/or residential safety issues.
UC	<input type="checkbox"/> Resume full operations for the public.