

# Appendix A: Smoke Readiness Plan (SRP) Checklists 1–4

## Checklist 1

Checklist 1: Planning and document gathering		
Factor	Actions	Notes
Weather and smoke data	Identify how to access outdoor PM <sub>2.5</sub> data from nearby stations.	
	Identify weather and/or smoke forecast information appropriate for the building.	
	Gather historical data on outdoor PM <sub>2.5</sub> from local air monitoring systems.	
	Collect data on indoor PM <sub>2.5</sub> using low-cost sensors to establish baselines indoors.	
Building design factors	Gather floor plans, architectural drawings, engineering drawings, and HVAC drawings for the building.	
	Gather documents that identify HVAC components, number of power outlets, power lines, power capacity, backup generator capacity, and water lines.	
	Conduct a building walk-through to observe features, assess conditions, and verify information in reports and design documents.	
	Identify areas that may require special attention such as cleaner air spaces, kitchens, labs, clean rooms, gyms, loading bays, etc.	
	Identify features of the building envelope that may cause air leakage and develop a plan to air seal the building if needed. Any changes should be highlighted for engineers in considering any ventilation changes.	
Engineering factors	Identify all ventilation system controls and gather user guides for switches and control panels.	
	Identify the type and number of filters in the HVAC systems. Determine which can be upgraded to higher-efficiency filters.	
	Gather records of blower door tests, commissioning reports (e.g., testing, adjusting, and balancing (TAB) reports), and equipment installation.	
	Gather documents on HVAC system validation reports, certification of filters, etc.	
	Identify documents and reports about any past maintenance on the building and HVAC system.	
	Gather information and documents about normal building operation. This could include policies or procedures that document ventilation settings.	
	Gather documentation of original control settings (e.g., switches, damper positions, and control relays).	

## Checklist 1: Planning and document gathering

Factor	Actions	Notes
	Document a preliminary approach for reducing ventilation while maintaining positive pressure and specify which filters will be upgraded for smoke-ready mode.	
<b>Administrative and occupant factors</b>	Review building occupancy levels (number of occupants, age groups, high-risk occupants), including time of day and seasonal fluctuations.	
	Identify indoor sources of PM <sub>2.5</sub> (e.g., kitchens, cleaning activities) that should be reduced or monitored during smoke-ready operations.	
	Review building uses during normal operations and during smoke/emergency events.	
	Evaluate the use of different building entrances to prioritize which to close/keep open.	
	Review the emergency management plans for the building with the team and consult with the public health unit about how to incorporate smoke-related measures.	
	Identify core team members and support staff to prepare and monitor the building during the smoke-ready state.	
	Identify core communication team members and existing emergency communication plans.	
	Review the financial capacity for upgrades or retrofitting in the building, including purchase of additional supplies (e.g., filters, PACs, PPE).	
	Determine where supplies for smoke-readiness will be stored, such as filters, PACs, and PPE.	
	Engage building occupants and users as necessary to gather complete information.	
Use the information to develop and document the SRP. Collate documentation, observations and records in one place, assign roles and responsibilities, establish decision-making thresholds or triggers for action, and plan for the delivery and continual improvement of the SRP.		

## Checklist 2

Checklist 2: Building preparation		
Factor	Actions	Notes
Building design factors	Verify that all doors and windows can be closed without air gaps. Repair or install new door/window seals where needed.	
	Evaluate whether vestibule entries can allow for staggered entry operation.	
	If applicable, install a dedicated air handling system for the vestibule entry.	
	Review building envelope openings such as exhaust, electrical, power, and plumbing for any leaks. Seal any opening to the building's air barrier.	
	Install physical curtains or air curtains at large openings like loading bays.	
	If applicable, modify entryways so that openings are protected from prevailing wind.	
Engineering factors	Review past HVAC system maintenance work reports, confirm that maintenance is up to date, and ensure any maintenance concerns have been corrected.	
	Identify which system modifications or upgrades are possible, such as changing from manual to automated system controls. If applicable, check whether the building automation system has sequence logic to implement a smoke-ready state.	
	Prepare to modify or upgrade filtration where possible. <ul style="list-style-type: none"> <li>▪ Test and confirm the system can use MERV 13 or higher throughout, if compatible with the HVAC system. In some cases, a minimum MERV 8 pre-filter may prolong the life of higher-efficiency filters.</li> <li>▪ Plan to add supplemental filtration at outside air intakes using a MERV 13 or higher filter where possible. Use temporary measures (e.g., tape) or consider installing permanent filter racks on the intake.</li> </ul>	
	Prepare to use HEPA filters for buildings/areas with highly sensitive occupants (e.g., hospitals or long-term care) if compatible with the HVAC system.	
	Install HVAC system pressure sensors to monitor pressure drops across filter housings.	
	Install PM <sub>2.5</sub> sensors and/or connected sensors to the HVAC system if possible. Multiple sensors with data logging capacity are ideal: <ul style="list-style-type: none"> <li>▪ Outside and away from any building exhausts</li> <li>▪ Inside in high occupancy or common areas to monitor occupant exposure</li> </ul>	

## Checklist 2: Building preparation

Factor	Actions	Notes
	<ul style="list-style-type: none"> <li>▪ Inside the return air vent to monitor the efficiency of the recirculating system and identify any indoor sources of PM<sub>2.5</sub></li> <li>▪ Inside cleaner air spaces or special needs rooms to protect these areas</li> </ul> <p>Establish indoor PM<sub>2.5</sub> trigger thresholds that will initiate or revert smoke-readiness modifications.</p>	
	Install or connect ambient pressure sensors or acquire handheld pressure sensors. Continuously monitor indoor and outdoor pressure if possible.	
	Establish and document methods to develop or maintain positive pressure inside compared with outside. <ul style="list-style-type: none"> <li>▪ Identify the minimum outdoor air intake needed for safe operation and to maintain positive pressure in the building relative to the outdoors.</li> <li>▪ Reduce outdoor air intake through outdoor air dampers or fans, heat recovery ventilators, or dedicated outdoor air systems.</li> <li>▪ Reduce outdoor air intake by closing air economizers and disabling demand-control ventilation.</li> </ul>	
	Establish and document methods to develop cascading pressure in the building by creating zonal pressure differences to force air from individual spaces to common areas if needed.	
	Observe measurements from indoor environmental sensors (e.g., temperature, humidity) when reducing outdoor air flows to ensure indoor conditions remain safe.	
	Install/connect fan motor power surge sensors or electricity overload sensors.	
	Verify the proper functioning of the fire and smoke detection system. Ensure that false alarms are not triggered due to smoke entry into the building.	
	Identify areas that may reach high indoor temperatures on hot days in smoke-ready mode and consider mitigation strategies.	
	If applicable or available, consider where activated carbon filters are needed in return air vents or in portable air cleaners (PACs) to control odors.	
	Record any changes to the HVAC system using notes, checklists, and photos.	
	Test and commission all the engineering factors before a smoke event. Place the building into smoke-ready mode to verify that it can safely operate at positive pressure.	

## Checklist 2: Building preparation

Factor	Actions	Notes
<b>Administrative factors</b>	Modify the building entry points or close/open selective entry points to the building to reduce direct outdoor air entry.	
	Provide training to building maintenance and support staff on the SRP. <ul style="list-style-type: none"> <li>▪ Establish a communications plan for building operators and support staff on roles/responsibilities related to the SRP, including operations and monitoring.</li> </ul>	
	Assign building modification tasks and monitoring tasks to staff.	
	Acquire sufficient supplies including replacement filters, PPE (e.g., N95 respirators), and PACs if needed.	
	Brief building occupants on the SRP and the impact of individual actions. <ul style="list-style-type: none"> <li>▪ Reduce indoor PM<sub>2.5</sub> (e.g., reduce use of kitchens, air fresheners, candles, painting, cleaning products and tobacco, and keep windows closed)</li> </ul>	
	Prepare communication materials such as signage, posters, and electronic communications in advance.	
	Communicate with building occupants about measures to promote building smoke-readiness, such as: <ul style="list-style-type: none"> <li>▪ Closure of gym/exercise areas, limited or modified entry-exits</li> <li>▪ Advice on when to run PACs</li> <li>▪ How to monitor symptoms and when to contact health care providers</li> <li>▪ When to leave the building and access cleaner air spaces elsewhere</li> <li>▪ How building management will share communications during an event</li> <li>▪ Posters/signage on modified building use and protective measures</li> </ul>	
<b>Occupant factors</b>	Remind occupants to review advice on the use and care of PACs in individual spaces.	
	Inform occupants about reducing activities that generate indoor PM <sub>2.5</sub> or could allow smoke into the building.	

## Checklist 3

Checklist 3: Implementation, operation, and monitoring		
Factor	Actions	Notes
<b>Building design factors</b>	Conduct regular building walk arounds to inspect the building envelope for areas where smoke could be entering or where equipment may have failed.	
<b>Engineering factors</b>	Reduce outdoor air intake into the ventilation system to maintain positive pressure and ensure outdoor air intake remains greater than exhaust air to avoid creating negative pressure.	
	Reduce air exhaust to the outside according to the SRP.	
	Maintain and monitor cascading positive pressure in the building, if applicable.	
	Monitor fan motors for overloading risk or power failure.	
	Install higher-efficiency filters where required.	
	Monitor the filter assembly through regular visual inspections or via pressure sensors where available to assess filter loading. Replace filters when visual inspection indicates a need, OR pressure across the filter housing drops twice the initial pressure OR replace filters regularly as per loading calculations.	
	Monitor indoor and outdoor PM <sub>2.5</sub> levels continuously to assess indoor smoke exposure and the effectiveness of smoke-readiness measures. Identify the cause of any unexpected increases in indoor PM <sub>2.5</sub> and take appropriate action to remedy them.	
Monitor regulatory sensors and WFS forecasting models to plan for continued smoke-readiness or return to normal in coming days.		
<b>Administrative factors</b>	Post signage and implement any procedures related to entrance/egress use to keep smoke out. Maintain two-way communication with all occupants as conditions evolve.	
	Provide information on identifying smoke exposure symptoms to occupants.	
	Keep and review records of daily activities and system monitoring data.	
<b>Occupant factors</b>	Ensure occupants are using PACs as per the guidance.	
	Ensure occupants are following advice on reducing indoor sources of PM <sub>2.5</sub> and preventing ingress of smoke.	

## Checklist 4

Checklist 4: Return to normal operation		
Factor	Actions	Notes
Building design factors	Conduct a thorough and professional inspection of the building envelope (inside and outside) if necessary to: <ul style="list-style-type: none"> <li>▪ Identify any hazards</li> <li>▪ Identify and report any damage and take steps to correct it</li> </ul>	
	Schedule repairs for any damage to the building structure or envelope.	
	Schedule repairs for any damage to the building interior.	
Engineering factors	Conduct a thorough inspection of the HVAC system and evaluate whether cleaning is required.	
	Revert changes to the building ventilation system outdoor air intakes.	
	Replace soiled air filters with new ones.	
	Air out the building via doors and windows. If necessary, activated carbon filters can assist in removing indoor odours and gases. Their use should be discussed with an HVAC specialist.	
	Check indoor and outdoor sensors used for PM <sub>2.5</sub> , pressure, temperature, humidity, etc., for proper functioning, and replace any damaged sensors.	
Administrative factors	Conduct a post-event debrief with all parties involved in the SRP.	
	Record and review any critical events occurring during the smoke event.	
	Record any issues with returning to normal due to building design and engineering factors.	
	Inform building occupants about the smoke event and the return to normal activities.	
	Take steps to remove PM <sub>2.5</sub> accumulated on surfaces by vacuuming with a HEPA vacuum cleaner or wet-mopping or wiping down surfaces with a wet cloth if they cannot be vacuumed.	
	Return smoke-readiness supplies to storage and order replacements, as needed.	
Occupant factors	Conduct a thorough inspection of individual spaces for a return to normal use.	
	Inform occupants about removing any accumulated PM <sub>2.5</sub> in personal use areas.	
	Gather comments and suggestions from individuals on the smoke event or SRP and provide these to administration as a part of the review and debrief.	