

August 2020

## COVID-19 and Use of Portable or Personal Fans in the Workplace

NOTE: A special thanks to the Savannah River Site for developing the information contained in this OPEX Awareness bulletin.

DOE employees returning to their workplaces during the COVID-19 Pandemic will need to consider different protocols to help prevent the spread of the virus. For example, the use of personal fans can act to spread virus particles throughout a shared workspace, and these devices are commonly used during the warmer months.

This [video](#), prepared by Savannah River Nuclear Solutions, illustrates how the use of personal fans can spread virus particles throughout a shared workspace.

Please keep the following principles in mind before using a personal fan at your workstation:

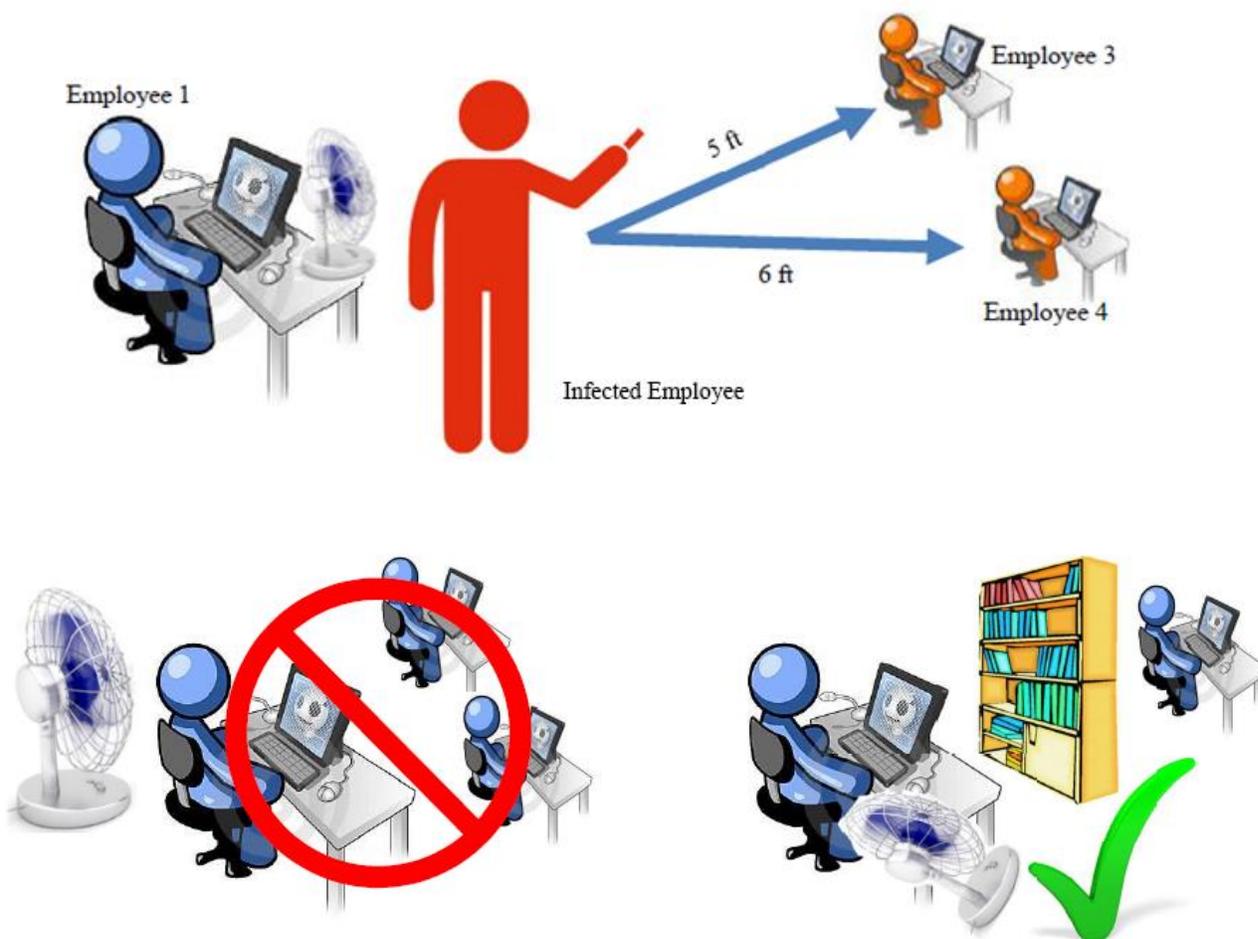
- 1) **Be mindful of the conditions of your work environment.**
- 2) **Don't use personal fans in shared offices that do not have barrier walls.**
- 3) **When using a fan, be aware of the direction of air flow and direct air upward when possible to keep germs from being propelled into a co-worker's breathing zone.**
- 4) **Don't congregate in front of fans or other cooling devices.**
- 5) **Throughout your day, think about the protocols we have in place and take action to prevent the transmission of COVID-19.**

After several workers sharing an office tested positive for the COVID-19 virus, the Savannah River National Laboratory (SRNL) conducted an evaluation to determine whether air flow patterns in an office, and in particular the use of personal fans, could contribute to spreading COVID-19 throughout a workspace. SRNL personnel used a smoke generator to produce simulated smoke, and staged fans in different positions and locations within the office where the infected employees had been working. Cameras and video footage were used to capture the air flows and to compare the eleven different scenarios that were tested.

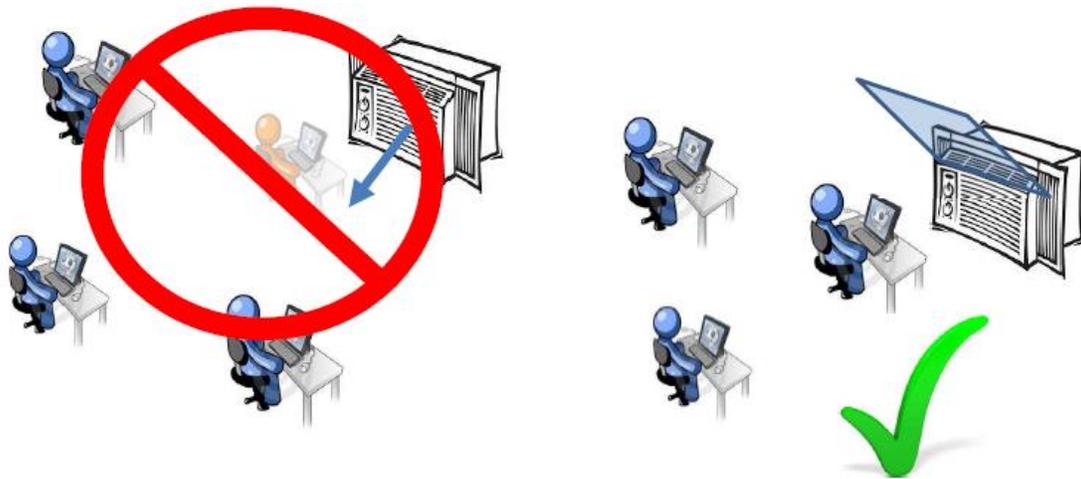
The SRNL review, *COVID-19 Virus and the Use of Personal Fans in the Workplace*, concluded that fans and air conditioners could contribute to spreading the virus within a workspace. The researchers recommend the following concluded that for shared office spaces with little to no internal ventilation:

- 1) Employees should wear a mask if staying in shared office space for long periods of time.
- 2) Employees should not use personal fans because it can spread aerosols from coughs or sneezes.
- 3) Air vents push air flow downward and throughout the entire room or workspace areas. Workers who sit directly in front of discharges should be relocated or the vents modified to redirect air up and away.

This review was conducted at the Savannah River Site. Two cases of COVID-19 transmissions were documented where “an infected employee” entered the office and completed multiple tasks. While standing at their workstation, a fan was blowing directly on them. The closest individual (Employee 1) did not test positive (the fan was not pointed toward that worker), however, two individuals (Employees 3 & 4) downwind of the fan later tested positive for COVID-19 (see diagram below).



Make every effort to eliminate co-occupancy of office space. Indoor fans in warehouses and large rooms (such as classrooms) should be pointed into the general area, such as into unoccupied space or up/overhead and not at specific workstations. In the interim, separate employees with barriers and eliminate desk fans (when the HVAC is working).



Air conditioners are important because they keep air circulating and maintain a comfortable environment; however, as necessary, relocate workers who sit directly in front of discharges or have the vents modified to redirect air up and away.

**Remember to:**

- **Limit the amount of time you are in close proximity to others.**
- **Maintain adequate social distancing of at least 6 feet or more between yourself and others.**
- **Use appropriate shielding when social distancing cannot be achieved (e.g., face masks and/or shields, partition walls, Plexiglas barriers).**

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