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*Firefighting with a Distance-Based Restriction*

In the classic version of the game of firefighter, on the first turn a fire breaks out on a vertex in a graph  $G$  and then  $k$  firefighters protect  $k$  vertices. On each subsequent turn, the fire spreads to the collective unburnt neighbourhood of all the burning vertices and the firefighters again protect  $k$  vertices. Once a vertex has been burnt or protected it remains that way for the rest of the game. A common objective with respect to some infinite graph  $G$  is to determine how many firefighters are necessary to stop the fire from spreading after a finite number of turns, commonly referred to as *containing* the fire. We introduce the concept of *distance-restricted firefighting* where the firefighters' movement is restricted so they can only move up to some fixed distance  $d$  per turn rather than being able to move without restriction. We establish some general properties of this new game in contrast to properties of the original game, and we investigate specific cases of the distance-restricted game on the infinite square, strong, and hexagonal grids.