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*The  $k$ -dominating graph*

Given a graph  $G$ , the  $k$ -dominating graph of  $G$ ,  $D_k(G)$ , is defined to be the graph whose vertices correspond to the dominating sets of  $G$  that have cardinality at most  $k$ . Two vertices in  $D_k(G)$  are adjacent if and only if the corresponding dominating sets of  $G$  differ by either adding or deleting a single vertex. The graph  $D_k(G)$  aids in studying the reconfiguration problem for dominating sets. A key question is determining when two dominating sets are in the same connected component of  $D_k(G)$ . We give conditions that ensure  $D_k(G)$  is connected.