A famous theorem of Petersen states that every bridgeless cubic graph contains a perfect matching, and hence a 2-factor. Then it is easy to see that such a graph has a 2-factor that covers all the 3-edge cuts. A recent paper of Kaiser and Skrekovski shows that every bridgeless cubic graph has a 2-factor that covers all the 3- and 4-edge cuts. In this talk, we provide an efficient algorithm to find such a 2-factor. The algorithm can be used as a preprocess of a simple 6/5-approximation algorithm for finding a minimum 2-edge-connected spanning subgraph in 3-edge-connected cubic graphs. (Received September 16, 2010)