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of routine discharges from nuclear power plants in the Florida peninsula on the radioxenon background in the northern Caribbean Sea

Previous studies on the trajectories of air masses from nuclear power plants in the Florida peninsula showed that they contribute to the radioxenon background in the northern Caribbean Sea when the center of the migrating anticyclone was in the Gulf of Mexico and Louisiana, North America.

The objective of this work is to determine whether the Turkey Point and Saint Lucie NPP discharges transit the northern Caribbean Sea for different synoptic configurations of the migratory anticyclone when its center is in North America. Therefore, the trajectories were simulated with the HYSPLIT trajectory model at an altitude of 500 m.

The simulations revealed that the air masses transited the northern Caribbean Sea when the centre of the anticyclone was in the centre of North America and in the state of Texas. However, when the centre of the anticyclone was located southeast of the United States and northeast of the Great Lakes, the air masses deviated toward the Gulf of Mexico. The southeastern states analyzed were Alabama, South Carolina, Florida, Georgia and Tennessee. These results indicate that the contribution of discharges from both facilities to the radioxenon background depends on the location of the centre of the migrating anticyclone in North America.

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