

West Medway II permit change requests on opacity and secondary fuel

Summary

- West Medway II (also known in Medway as the “Medway Peaker Project”) was fully constructed and began providing peaking power to the electric grid in early 2019.
- West Medway II’s commercial operations have been fueled entirely by natural gas, the facility’s primary fuel source.
- West Medway II’s backup fuel is a refined grade of oil, Ultra Low-Sulfur Diesel (ULSD).
- During test runs using ULSD, we experienced higher-than-expected opacity. Opacity is a measurement of reduced transparency of emissions at the stacks.
- All emissions of pollutants important to human health, like particulates, were well-below the facility’s permit limits that are protective of air quality and public health, during the secondary-fuel test runs.
- To improve opacity performance, we performed testing using a very similar refined grade of oil, Ultra-Low Sulfur Kerosene (ULSK), that was reported to have superior opacity performance over ULSD.
- Our test run verified that ULSK performance on opacity is superior to ULSD, marking a clear improvement.
- In order to run on ULSK, we still need to seek permit changes on opacity and the ability to use ULSK as a secondary fuel.
- These permit changes will not cause any additional air quality or health risks.

What permit changes is West Medway II seeking?

West Medway II has filed a request with Massachusetts permitting agencies to increase its operating opacity limit when running on oil, its secondary fuel source, from five percent to fifteen percent. This proposed operating opacity limit would be more in-line with opacity limits at other electric generation facilities in Massachusetts that use oil. West Medway II meets the five percent opacity limit when running on its primary fuel of natural gas. Five percent opacity is generally considered the threshold of when emissions become visible. We are also requesting the ability to use another refined grade of oil, ULSK, as a secondary fuel source, since it achieves lower opacity than ULSD.

How often would West Medway II operate on oil?

We expect West Medway II to run on ULSK around 240 hours per year (equivalent of 10 days). Our permit limit for running on oil is 720 hours per year (equivalent of 30 days) between the months of October to April. Of note, the facility must pay a fee to the Town of Medway when it operates on oil.

Why does the facility need to ever use oil, why can’t it always use natural gas?

The electric grid operator, ISO-NE, has encouraged new natural gas fueled generation facilities to also be able to utilize oil as a secondary fuel because of limited gas pipeline infrastructure in our region. During cold winter conditions the availability of natural gas for power plants can be constrained, posing a risk to electric reliability. If West Medway II was not able to utilize oil as a secondary fuel, it would provide less value to the electric grid as a peaking facility, thereby increasing regional emissions overall because older, less efficient and higher-emitting oil units at other facilities would run more often.

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What impact would the proposed permit changes have on air quality and public health?

The proposed permit changes will have no negative impact on air quality and public health. During the test runs on oil, emissions of pollutants important to human health like particulates were all well below the permitted limits. We commissioned Gradient, an environmental risk-assessment firm, to update their original Human Health Assessment of West Medway II to include current conditions and the proposed permit changes. Gradient concluded there would be no additional air quality or health risks posed by the permit changes. Particulate emission limits for West Medway II meet Federal air quality standards to protect public health and would also meet stricter federal air quality standards that were recently proposed (but not enacted).

To put the facility's emissions in perspective, Gradient determined that the maximum annual emissions exposure a nearby resident would experience from West Medway II, over the course of a day, is comparable to what they experience during a four-minute car ride. To mitigate the facility's emissions, we are providing funds to the Town to replace five older residential wood-burning stoves with new stoves, which will completely offset the small portion of ground-level particulates in Medway attributable to our facility.

How visible would the emission be when running on oil?

Opacity emissions during the test run on ULSK were generally in the ten to fifteen percent range and were somewhat visible at the stack, but the visible plume faded quickly and did not extend beyond our facility. During earlier test runs on ULSD, the visible plume was more noticeable, which is why we are seeking permission to use ULSK as our secondary fuel source.

Who will decide whether to approve these permit change requests?

The Massachusetts Department of Environmental Protection and the Massachusetts Energy Facilities Siting Board will review this request and make the decision.