August 30, 2022

Mr. Michael Krause
Assistant Deputy Executive Officer
Planning, Rule Development and Implementation
South Coast Air Quality Management District (SCAQMD)
21865 Copley Drive, Diamond Bar, CA 91765
Email: MKrause@aqmd.gov

SUBJECT: Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities

Dear Mr. Krause:

The Public Advocates Office (Cal Advocates) at the California Public Utilities Commission (CPUC) appreciates the opportunity to submit comments on the SCAQMD's ongoing effort to reduce and possibly eliminate diesel combustion engines on Santa Catalina Island (Catalina).[1] Cal Advocates operates as an independent branch of the CPUC and intervenes in CPUC proceedings related to utility services including electricity, gas, water, and communications. Our statutory mission is to achieve the lowest possible utility rates for residential and small commercial customers, consistent with the state's goals for safety, reliability, and environmental quality. Cal Advocates has intervened in Southern California Edison Company's (SCE) Application (A.) 21-10-005, which seeks to repower Catalina Island and is currently pending before the CPUC. Cal Advocates' staff attended SCAQMD's May 5 and August 4 2022 meetings on SCAQMD's Rule 1135 governing NOx emissions. Cal Advocates has also met with SCAQMD staff to share our analysis on a clean energy future for Catalina. Cal Advocates supports Rule 1135's current emissions limit and believes that the long-term limit of 13-tons per year is feasible.[2] We provide these comments in support of SCAQMD's response to SCE's July 15, 2022 letter on Rule 1135.[3]

The Prohibition on New Diesel Engine Installation

SCE proposes a delay of Rule 1135's prohibition on new diesel engines on Catalina from January 1, 2024 to January 1, 2025. Alternatively, SCE proposes to revise the current prohibition to allow for a Unit 15 replacement if the catalyst block modification fails to bring Unit 15 into compliance with Rule 1470.

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[1] See SCAQMD January 7, 2022 Meeting Materials, p.3.

[2] In this case, "emissions limits" is in reference to the annual NOx caps of 50 tons by 2024, 45 tons by 2025, and 13 tons by 2026 or 2029 using the 3-year extension provision.

[3] See SCAQMD Staff response here: http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1135/par-1135-2022-wgm-2-final.pdf?sfvrsn=14.

SCE states that Tier 4 diesel engines are still considered the best-available retrofit control technology (BARCT) and as a result, the utility should be allowed to install them "unless and until" a new BARCT standard is established.[4] Cal Advocates supports SCAQMD's affirmation that the prohibition on all new diesel generators will remain and that no changes are necessary at this time.[5] Allowing SCE to install diesel engines "unless and until" a new BARCT standard is established would enable SCE to install more diesel engines in the near term. If the BARCT standard is revised as a result of the SCAQMD staff assessment, and SCE then needs to reduce or eliminate operation of new diesel engines, it would result in extraneous and stranded costs for SCE's customers.

SCE states that the prohibition on new diesel engines should be revised because "without a mechanism to replace the remaining engines, it will be difficult to reduce the facility's NOx emissions significantly after the first two engines are replaced."[6] SCE states that it must rely on the remaining four engines at least until the projects from SCE's upcoming 2022 request for offers (RFO) for new clean resources on Catalina come online in September 2027.[7] However, SCE has a clear pathway forward to reduce the facility's NOx emissions after the first two engines are replaced. SCE will launch an RFO in 2022 that is specifically designed to procure clean resources to meet the balance of generation needs on Catalina, after replacing two to three diesel engines.[8] There is currently a settlement agreement[9] before the CPUC that includes a streamlined contract review process eliminating up to 18 months of typical review process. Thus, a September 2027 date is a highly conservative estimate for the estimated operational start for the projects selected from the RFO.

Cal Advocates agrees with SCAQMD staff that the facility mass emission limit will reduce the use and annual emissions of old engines, obviating any concerns that the diesel prohibition will result in an increase in emissions from continued use of existing generators.[10] SCAQMD staff provided a forecast of SCE's emissions profile after replacing Units 8 and 10 that demonstrates SCE can meet the existing facility emissions limit for 2024 and 2025 without the need to install additional replacement engines.[11] Similarly, Cal Advocates submitted evidence in the CPUC proceeding that demonstrates that SCE could achieve even lower annual emissions than SCAQMD's baseline case by maximizing the use of the replacements for Units 8 and 10.[12] Cal Advocates conducted an extensive NOx analysis on the implications of replacing even just two diesel engines and retiring

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[4] See SCE July 15 Letter to SCAQMD, page 3.

[5] Microsoft PowerPoint - PAR 1135 2022 WGM #2 Final Revised (aqmd.gov), Slide 7.

[6] See SCE July 15 Letter to SCAQMD, page 3.

[7] See SCE July 15 Letter to SCAQMD, page 3.

[8] This is a specific provision of a settlement agreement signed by SCE, Cal Advocates, and TURN. Per the settlement, the balance of generation "refers to the generation resources required to serve Catalina electricity needs after the installation of the initial 2-3 diesel units in Phase 1. The balance of generation must meet applicable state and federal air quality standards, independently and in combination with Phase 1 generation." Because this procurement must be able to meet applicable state and federal air quality standards, SCE has already committed to procuring the resources needed to achieve a 13-ton annual NOx limit, as this was and is the current applicable air quality standard on Catalina. See here: Microsoft Word - Motion and Settlement Agreement-Clean_edits_04292022_final.docx (ca.gov)

[9] SCE, TURN, and Cal Advocates signed the settlement agreement, which is unopposed and currently pending before the CPUC.

[10] par-1135-2022-wgm-2-final.pdf (aqmd.gov), Slide 7.

[11] par-1135-2022-wgm-2-final.pdf (aqmd.gov),, slide 13.

[12] Cal Advocates provided this testimony to SCAQMD staff via email on June 14, 2022.

Unit 15 if the catalyst block failed to achieve Unit i15's compliance with Rule 1470. Cal Advocates found that SCE could operate two diesel replacements in a similar manner to Unit 15 and reliably serve about 90% of forecasted load in 2025. Cal Advocates' analysis relies on historic operational data from Unit 15. Unit 15 achieved a capacity factor of 69.88% in 2020. Capacity factors are useful for understanding how much energy a generator produced relative to what it could produce if it always operated at peak capacity.[13] These percentages then become helpful benchmarks for understanding how new installations of the same technology could operate.[14] Cal Advocates created the following emissions table which assumes that replacements for Units 8 and 10 achieve a capacity factor just below that of Unit 15:

Estimated NOx Emissions with Two New U.S. EPA Tier 4 Final-Certified Engines At 90% Annual Energy Requirements and Unit 15 Retired[15]

	Projected Share of Gen Output by 1/1/2024	**Project Gen (kWh/year)**	**Estimated NOx Emissions (lbs/year)**	**Estimated NOx Emissions (tons/year)**
Unit 7 - existing	2%	598,267	3,109	1.6
Unit 8 - replaced	45%	13,461,003	15,241	7.6
Unit 10 - replaced	45%	13,461,003	15,241	7.6
Unit 12 - existing	4%	1,196,534	9,414	4.7
Unit 14 - existing	4%	1,196,534	6,403	3.2
Unit 15 - retired	0%	-	-	-
Total	**100%**	**29,913,340**	**49,408**	**24.7**

[13] As one additional example, nuclear power plants often achieve high capacity factors around 80-90% because they're always running at nameplate capacity unless they're down for scheduled maintenance or refueling.

[14] Since capacity factors are represented as percentages, it allows for easy comparison even if facilities have different nameplate capacities. This is important because Unit 15 has a nameplate capacity of 2.8 MW, and the proposed replacements for Units 8 and 10 each have a capacity of 2.25 MW. Despite the difference in nameplate capacities, the capacity factor for Unit 15 can be applied to new replacements with different capacities because it's only a benchmark of how much energy it produced relative to its maximum. Finally, even though the replacements have lower "prime" ratings compared to their nameplate capacities, SCE can still run them at their peak output. SCE confirmed this to the CPUC, explaining that the replacements can be run between 25% and 100% of their nameplate capacity. See SCE's amended testimony, provided to SCAQMD staff via email on May 5th, 2022.

[15] Assuming a 69.88% capacity factor for each 2.25 MW generator yields an annual production of 13,773,348 kWh, or 27,546,696 kWh total. This is 92% of Cal Advocates' Catalina Load Forecast for 2025. The table presented here shows both replacements carrying 90% of Catalina's 2025 load forecast, which means that this is still a bit conservative relative to expected performance of each replacement.

This table shows that SCE can meet the interim NOx limits without delaying implementation of the diesel prohibition until January 1, 2025.

The Feasibility of a 13-ton NOx Limit

While SCE states that additional analysis is needed to "confirm whether an annual NOx limit of 13 tons/year is possible,"[16] Cal Advocates agrees that SCAQMD's existing analysis demonstrates that 13 tons/year NOx is feasible. SCE's Catalina Feasibility Study (Feasibility Study) issued in 2020 provided nine scenarios achieving annual NOx emissions below 13 tons per year.[17] SCE's own load growth forecasts are lower than those used in the Feasibility Study, making these scenarios even more likely.

Finally, there are sufficient siting opportunities on Catalina to support a 60% renewable scenario. SCE's Feasibility Study identified enough sites on Catalina to accommodate a 60% renewable scenario and SCE has since noted that it would require 50% less land than previously projected to site the required solar.[18] Moreover, since SCE's most recent load forecasts are lower than those used in the Feasibility Study, less capacity is needed to meet forecasted load; thus, supporting sufficient renewable capacity would require less land than the amount considered in the Feasibility Study. Cal Advocates estimates that a 60% renewable scenario for Catalina would require 9-10 MW of solar, which would require between 26 and 30 acres. SCAQMD staff noted that the Catalina Island Conservancy is open to the possibility of leasing land to SCE. The Catalina Island Conservancy owns approximately 88% of the land on Catalina Island as well as eight sites that SCE identified as promising for solar PV installation. These eight sites total 45.72 acres and could support an estimated 12.784 MW/DC of solar,[19] more than necessary to meet a 60% renewable scenario. Accordingly, Cal Advocates supports SCAQMD's decision not to limit the BARCT assessment to the Pebbly Beach Generating Station. Cal Advocates' analysis that shows SCE can feasibly meet a 13-ton annual NOx limit if the project scope is expanded to encompass the entire island aligns with SCAQMD's assessment.

Conclusion

Thank you for your consideration of these comments. Cal Advocates supports SCAQMD's existing Rule 1135 as well as SCAQMD's response to SCE's comment letter. If you have any questions, please contact Jake McDermott at Jake.McDermott@cpuc.ca.gov.

Sincerely,

Karin Hieta
Supervisor, Climate Change Initiative, Public Advocates Office

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[16] See SCE July 15 Letter to SCAQMD, page 6.

[17] See p. 138: SantaCatalinaIslandRepower.pdf (sce.com)

[18] See SCE Rebuttal Testimony in A.21-10-005, p. 44.

[19] SCE Amended Workpapers, p.72, Section 4.2.2 (Site Selection Results). Available at: https://www.sce.com/sites/default/files/inline-files/SantaCatalinaIslandRepower.pdf