ASSISTANT ADMINISTRATOR FOR AIR AND RADIATION
WASHINGTON, D.C. 20460

September 2, 2025

Mr. Philip McNeely
Director
Maricopa County Air Quality Department
301 W. Jefferson Street, Suite 410
Phoenix, Arizona 85003

Dear Mr. McNeely,

Thank you for your letter dated August 1, 2025, requesting EPA's input on your assessment that the applicable laws of the Maricopa County Air Quality Department ("MCAQD") do not prohibit an initial phase of construction proposed by the TSMC Arizona Corporation ("TSMC") before obtaining a permit to construct a stationary source of air pollution. According to a July 15, 2025, letter addressed to you from TSMC, this company proposes to construct the core and shell of a building that will eventually house emission units without contemporaneously beginning construction on any semiconductor manufacturing equipment that could be classified as an emissions unit. TSMC also states that this phase of construction will not include air pollution capture or control equipment or foundations for any emission units.

Similar to EPA's regulations implementing the Clean Air Act (CAA) Nonattainment New Source Review (NSR) program at 40 C.F.R. § 51.165, MCAQD's regulations prohibit "beginning actual construction" of a major stationary source of air pollution prior to obtaining a permit from MCAQD. MCAQD's regulations define "begin actual construction" at Maricopa County Rule 100 § 200.25 as follows: "the initiation of physical on-site construction activities on an emissions unit, which are of a permanent nature. Such activities include, but are not limited to, installation of building supports and foundations, laying of underground pipework, and construction of permanent storage structures. . .".

In the July 15, 2025, letter from TSMC enclosed with your August 1, 2025, letter, TSMC states that it:

> builds [its] semiconductor manufacturing facilities in three stages: (1) core and shell building, which is simply the foundation, steel superstructure, and external walls and does not include any emissions units; (2) mechanical, electrical and process piping, which involves installing the systems that will support the operations of the fab, including the cleanroom and equipment in the cleanroom; and (3) tool hookup, which involves

installation of connection piping and electrical that will ultimately house the semiconductor manufacturing equipment.[1]

According to TSMC "[t]he core and shell itself is neither an emissions unit nor is it a capture device, as all of the emissions ultimately produced by the fab are captured through control devices and duct systems meticulously designed to maintain a cleanroom environment. As tool hookup completes, semiconductor manufacturing equipment can only then begin installation."[2] In your August 1, 2025, letter you state that "MCAQD is inclined to agree with TSMC that if a structure contains no emissions unit(s) it is not a 'source' subject to Clean Air Act permitting authorities because it does not emit or have the potential to emit pollutants."[3] TSMC's July 15, 2025, letter rests on a reading of the EPA regulations that EPA communicated in a March 15, 2020, draft guidance memorandum titled: "Interpretation of 'Begin Actual Construction' Under the New Source Review Preconstruction Permitting Regulations (March 2020 Draft Guidance)."[4] You observed that "the March 2020 Draft Guidance supports this conclusion with its focus on whether an emissions unit is being built."[5] You further observed that a March 28, 1986, EPA memorandum from Edward Reich (Reich memo)[6] "broadly implies that building 'any accommodating installation' begins actual construction. . .".

With regard to the March 2020 Draft Guidance, the EPA does not presently intend to issue a final version of the March 2020 Draft Guidance. The EPA's view at this time is that it can provide greater clarity on the construction activities that are permissible under the CAA prior to obtaining an NSR permit (or without such a permit) by revising the EPA's NSR regulations, including the definition of "begin actual construction," which EPA plans to propose and finalize in 2026. However, until that process is completed, the Agency may advise on these matters on a case-by-case basis.

Consistent with the views expressed in the March 2020 Draft Guidance, the EPA continues to recognize that the definition of the term "begin actual construction" in EPA's regulation prohibits "the initiation of physical on-site construction on an emissions unit"[7] and that this does not prohibit initiation of physical on-site construction of those parts of a facility that do not qualify as an emission unit. The EPA also continues to view the 1986 Reich memo to have adopted an overly broad reading of the term

[1] Letter from Robert Sandoval, TSMC Arizona Corporation Corporate Environmental Health and Safety Manager, to Phillip McNeely, Director of Maricopa County Air Quality Department, titled: "Clean Air Act: Request for Regulatory Interpretation Guidance on 'Begin Actual Construction'," July 15, 2025 (Page 4).
[2] *Id*.
[3] Letter from Phillip McNeely, Director of Maricopa County Air Quality Department, to Aaron Szabo, Assistant Administrator Office of Air and Radiation, titled: "Request for clarification of current EPA policy on 'begin actual construction'," August 1, 2025 Letter (Page 2).
[4] Draft Memorandum from Anne L. Idsal, Principal Deputy Administrator, Office of Air and Radiation, to the EPA Regional Air Division Directors, titled: "Interpretation of 'Begin Actual Construction' Under the New Source Review Preconstruction Permitting Regulations," March 15, 2020.
[5] August 1, 2025 Letter (Page 2).
[6] Memorandum from Edward E. Reich, Director of Stationary Source and Compliance Division, Office of Air Quality Planning and Standards, to Robert R. DeSpain, Chief Air Programs Branch, EPA Region VIII, titled: "Construction Activities Prior to Issuance of a PSD Permit with Respect to "Begin Actual Construction," March 28, 1986.
[7] 40 C.F.R. § 52.21(b)(11).

"emissions unit" to suggest that it includes installations necessary to accommodate an emissions unit. EPA intends to provide more clarity through rulemaking on how MCAQD and other permitting authorities may distinguish between emissions units and the other parts of a facility that are not an emissions unit or a part of an emissions unit.

After reviewing the provided information on TSMC's proposed project and the applicable MCAQD regulations, EPA believes that it is within MCAQD's discretion to interpret its existing regulations to allow TSMC to undertake, prior to obtaining an NSR permit, the activities listed under stage 1, the core and shell of a building, provided that the construction of this core and shell of a building does not involve the physical construction on an emission unit or the laying of underground piping or construction of supports and foundations that are part of any emissions unit. According to your August 1, 2025, letter, "TSMC states that the shells are not specifically configured for emissions units (e.g., there is no piping, ventilation ductwork or specific foundation work for any emissions units." TSMC may be allowed to undertake physical on-site construction activity, even if it is of a permanent nature, without having first obtained an NSR preconstruction permit, provided that the activity does not involve construction "on an emissions unit." In addition, the activities listed in the MCAQD definition may not be undertaken prior to obtaining an NSR permit if those activities involve construction "on an emissions unit." The EPA agrees with MCAQD's conclusion that requiring TSMC to obtain a permit before it starts building a structure that does not include an emission unit, or any component of an emission unit (including piping or a foundation specifically configured for an emissions unit) seems an overly broad reading of EPA's regulations and is supported by the reading of this regulation reflected in EPA's March 2020 Draft Guidance discussed in your August 1, 2025, letter, and in TSMC's July 15, 2025, letter.

The EPA view expressed here is based on the project-specific facts presented by TSMC and MCAQD. This communication of EPA's view is not a final agency action, and it does not itself create or alter any binding requirements on MCAQD, TSMC, or the public. Any construction activities undertaken by TSMC prior to issuance of an NSR air permit by MCAQD would be solely at TSMC's risk, as MCAQD would retain the discretion to deny any subsequent application to construct a stationary source of air pollution (including emissions units) if the applicable criteria are not met. If TSMC submits an application to construct under the MCAQD NSR air permitting program, MCAQD may not use TSMC's time and resources expended on construction prior to obtaining a permit (what EPA has called "equity in the ground") to justify MCAQD's decision on any applicable Best Available Control Technology (BACT) or Lowest Available Emissions Rate (LAER) determinations and/or to grant the air permit. Furthermore, if changes to TSMC's proposed emissions units design are necessary to meet this or any other requirements of the permitting process (such as demonstrating that emissions from the stationary source will not cause or contribute to violations of air quality standards), MCAQD may require TSMC to meet the requirements of such conditions in the final air permit, even if it means modifying or rebuilding structures that TSMC has begun building prior to obtaining a permit.

The EPA appreciates MCAQD's ongoing efforts to protect air quality in Maricopa County through preconstruction air permitting. Should you have any further questions or need additional clarification, please feel free to contact our office.

Sincerely,

Aaron Szabo
Assistant Administrator

cc: Office of Air Quality Planning and Standards Director
EPA Region 9 Administrator

August 1, 2025

The Honorable Aaron Szabo, Assistant Administrator
U.S. Environmental Protection Agency
Office of Air and Radiation, Mail Code 6101A
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Re: Request for clarification of current EPA policy on "begin actual construction"

Dear Assistant Administrator Szabo:

TSMC Arizona Corporation ("TSMC") has plans to build semiconductor fabrication facilities in Maricopa County. TSMC wants to accelerate bringing its facilities on-line by constructing building shells – which are the outer skins of buildings without any mechanical, electrical, or other services – in advance of permitting. TSMC states that the actual semiconductor fabrication lines are self-contained and fit within these outer building shells, which are not used for any air pollution control purpose. TSMC also states that the shells are not specifically configured for emissions units (e.g., there is no piping, ventilation ductwork or specific foundation work for any emissions units). TSMC argues that because the federal definition of "begin actual construction," found at 40 C.F.R. § 51.165(a)(1)(xv) only references work on an "emissions unit" and the structure is not an emissions unit, that TSMC should be able to begin construction of the building shells prior to obtaining a major or minor new source review permit.

TSMC cites a draft EPA guidance document issued in March 25, 2020, "Interpretation of 'Begin Actual Construction' Under the New Source Review Preconstruction Permitting Regulations," ("March 2020 Draft Guidance") in support of its contention:

> Under EPA's revised interpretation, a source owner or operator may, prior to obtaining an NSR permit, undertake physical on-site activities – including activities that may be costly, that may significantly alter the site, and/or are permanent in nature – ***provided*** that those activities do not constitute physical construction ***on an emissions unit***, as the term is defined in 40 CFR § 52.21(b)(7). Further, under this revised interpretation, and in contrast to the 1986 Reich Memorandum, an "installation necessary to accommodate" the emissions unit at issue is not considered part of that emissions unit, and construction activities that involve an "accommodating installation" may be undertaken in advance of the source owner or operator obtaining an NSR permit.

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301 W. Jefferson St., Suite 410
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A copy of the TSMC letter is attached for EPA's information. It is MCAQD's understanding that the EPA has not finalized the March 2020 Draft Guidance.

MCAQD's approved SIP adopts the federal definition of "begin actual construction." The Arizona Legislature has adopted the same definition, see A.R.S. § 49-401.01(7), but added to that definition some language that includes aspects of the EPA's guidance on "begin actual construction." The additional state law wording is dependent upon the meaning of the federal definition in 40 C.F.R. § 51.165(a)(1)(xv), such that if TSMC is correct that the federal definition does not apply to construction of a building shell without an emissions unit, consistent with the March 2020 guidance, the same would likely be true under the opening wording of the Arizona definition. Proper interpretation of the federal definition is thus critical.

MCAQD is inclined to agree with TSMC that if a structure contains no emissions unit(s) it is not a "source" subject to Clean Air Act permitting authorities because it does not emit or have the potential to emit pollutants. The March 2020 Draft Guidance supports this conclusion with its focus on whether an emissions unit is being built. On the other hand, the 1986 Reich memorandum broadly implies that building "any accommodating installation" begins actual construction but that statement is made in the context of a pending permit application including emission units. Under these circumstances, MCAQD believes that requiring TSMC to obtain a permit for a structure that does not include an emission unit or any component of an emission unit is inconsistent with the March 2020 Draft Guidance and seems an overly broad reading of the 1986 Reich memorandum.

Accordingly, MCAQD requests guidance from the EPA on whether the definition of "begin actual construction" prohibits construction of a building proposed to be built without any emissions units, air pollution capture or control equipment, or emission-unit specific foundations if the building could "accommodate" unspecified emission units in the future. MCAQD understands that it ultimately will need to reach its own conclusion based upon the EPA's response and applicable state law. MCAQD appreciates the EPA's guidance on this issue. Please feel free to contact me with any questions.

Sincerely,

DocuSigned by:
Philip McNeely
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Philip McNeely
Director

Enclosure: TSMC Permitting Guidance Request Letter

Cc: Scott Mathias, Director, Air Quality Policy Division, EPA

TSMC Arizona Corporation

July 15, 2025

Philip McNeely
Director
Maricopa County Air Quality Department
301 W Jefferson St, Suite 410
Phoenix, Arizona 85003

Re: Clean Air Act: Request for Regulatory Interpretation Guidance on "Begin Actual Construction"

Dear Mr. McNeely,

On behalf of TSMC Arizona Corporation (TSMC AZ), I am writing to request guidance from the Maricopa County Air Quality Department (MCAQD) regarding its interpretation of the regulatory language "begin actual construction" to allow a source owner or operator to undertake physical on-site activities prior to obtaining a major source permit under the Clean Air Act New Source Review (NSR) preconstruction permitting regulations as implemented by Maricopa County under the State of Arizona SIP rules which mirror the relevant EPA regulatory definitions, as long as those activities do not constitute physical construction on an emissions unit.

TSMC AZ is actively engaged in a multi-phase project involving the construction of several individual advanced semiconductor manufacturing facilities (fabs) at its campus in Phoenix, Arizona. TSMC AZ is committed to timely project success and compliance with applicable environmental laws and regulations. As explained in further detail below, in constructing its facilities, TSMC AZ constructs the core and shell of the building prior to adding any equipment or emissions units within the building which later constitute the fab. Specifically, TSMC AZ asks for confirmation that construction of the core and shell of a building as described herein does not constitute physical construction on an emissions unit, and therefore, does not constitute beginning actual construction without a permit.

I. EPA's Interpretation of "Begin Actual Construction" as Applied to Fabs

a. Relevant Legal Background

Pursuant to the Clean Air Act, a permit is required for "the construction and operation of [a] new or modified major stationary source[] anywhere in the nonattainment area." 42 U.S.C. § 7502(c)(5). The Nonattainment New Source Review (NSR) regulations further

provide that the phrase to "begin actual construction," requires a multi-part series of elements to be satisfied: the (1) "initiation of physical on-site construction activities [2] on an emissions unit [3] which are of a permanent nature." 40 C.F.R. § 51.165(a)(1)(xv). An "emissions unit," in turn, is defined as "any part of a stationary source that emits or would have the potential to emit a regulated [NSR] pollutant...." *Id*. § 51.165(a)(1)(vii). Thus, under the plain terms of the regulation, an owner or operator does not "begin actual construction" at a major stationary source until it initiates physical on-site construction "on an emissions unit"—the "part" of a building that actually emits pollutants.

Notwithstanding the plain regulatory language, there are interpretative EPA memoranda from the 1980's and 1990's that expand the definition of an emissions unit to include both the actual unit and the installations necessary to accommodate that unit, and certain activities of a permanent nature. The memoranda took a restrictive interpretive approach to prohibit all construction activities, including many preparatory activities, until after permit issuance. However, in response to many industry stakeholders attesting that the interpretation is overly and unnecessarily restrictive, EPA issued its guidance memorandum addressing the "Interpretation of 'Begin Actual Construction' Under the New Source Review Preconstruction Permitting Regulations" on March 25, 2020, clarifying its regulatory interpretation. The memorandum was addressed to all Regional Air Division Directors from the former Principal Deputy Assistant Administrator, Anne L. Idsal (Idsal Memo). (See Attachment 1).[1] However, the memorandum was issued as draft toward the end of the administration at the time and was not made final.

As detailed further below, TSMC AZ could construct its advanced semiconductor manufacturing projects, which are an economic and national security priority of the United States government, more efficiently and timely if MCAQD could provide its interpretation of the regulations consistent with the Idsal Memo to allow for construction to commence on the core and shell of a building (before the addition of an emissions unit) prior to an NSR air permit being finalized. Indeed, the core and shell does not involve any construction on an emissions unit or the complex systems of a fab that would constitute the emissions unit. Such interpretation would of course be subject to recognition that the risk is on the facility owner if the permit is not ultimately granted.

b. Permissible At-Risk Construction

[1] The Idsal Memo expressly notes that while it cites to the provisions in the federal Prevention of Significant Deterioration (PSD) regulations for simplicity, it applies equally to "the other major NSR rules in 40 CFR § 51.166, 40 CFR § 51.165, and Appendix S of 40 CFR part 51 [which] contain provisions that set forth essentially identical definitions of the term 'begin actual construction.'" (Idsal Memo, p. 1-2, n.2). Similarly, "EPA interprets the preconstruction review requirements in those regulations consistent with the requirements of [the PSD rules], and hence the statements in [the] memorandum apply to those provisions as well." (*Id.*).

The Idsal Memo clarifies that the definition of an emissions unit should not include construction activities involving an accommodating installation, and therefore allows a source to undertake physical on-site activities, "including activities that may be costly, that may significantly alter the site, and/or are permanent in nature." (Idsal Memo, p. 2-3) Specifically, the Idsal Memo rejected prior interpretations that blasting, excavation, backfilling, and building a retaining wall should be precluded prior to issuance of a permit, as they do not meet the regulatory definition of the term "construction" itself, because, as with building the core and shell of a building to later become a semiconductor facility, the construction does not result in a change in emissions.[2] In doing so, the Idsal Memo recognized the distinction the regulations draw between "a major stationary source" and an "emissions unit":

> Under EPA's revised interpretation, a source owner or operator may, prior to obtaining an NSR permit, undertake physical on-site activities – including activities that may be costly, that may significantly alter the site, and/or are permanent in nature – ***provided*** that those activities do not constitute physical construction ***on an emissions unit***, as the term is defined in 40 CFR § 52.21(b)(7). Further, under this revised interpretation, and in contrast to the 1986 Reich Memorandum, an "installation necessary to accommodate" the emissions unit at issue is not considered part of that emissions unit, and construction activities that involve an "accommodating installation" may be undertaken in advance of the source owner or operator obtaining an NSR permit.

(Idsal Memo, p. 2-3) (emphasis in original). Not only does this interpretation more closely align with the regulatory text, but as noted in the Idsal Memo, EPA's prior rationale for prohibiting pre-construction activities—to avoid compromising a permitting authority's discretion by allowing an owner or operator to place "equity in the ground" through costly and permanent on-site construction activities prior to receiving a permit—was also based on considerations of less concern today. Indeed, the Idsal Memo recognizes that EPA and state permitting authorities now have decades of experience in implementing the permitting program without allowing "their judgment to be compromised in making permitting decisions" by the preparatory activities an applicant may conduct on the site. (Idsal Memo, p. 18-19). Moreover, permit applicants understand that pre-permit construction does not alter or influence the required analyses involved in the permit process and that any construction would be undertaken at the applicant's risk. As such, any risks that formed EPA's rationale for its prior approach are now largely obsolete.

[2] Construction means "any physical change or change in the method of operation (including fabrication, erection, installation, demolition, or modification of an emissions unit) that would result in a change in emissions." 40 CFR § 51.165(a)(1)(xviii).

c. Construction on an Emissions Unit as Applied to a Semiconductor Fabrication Building

As relevant here, the Idsal Memo acknowledged that semiconductor fabs, by their nature, have several interconnected emissions units and systems that support those units:

> When EPA was asked whether certain state and local permitting authorities had acted properly in treating [a fab] as a single emissions unit for purposes of determining PSD applicability, the Agency responded that this "approach seems appropriate because of the interconnected nature of the tools in the fab," and given that the "systems that deliver materials to those tools and manage their discharges have also generally been treated as part of the emissions unit."

(Idsal Memo, p. 21). While the scope of an "emissions unit" for the purpose of determining whether a particular activity constitutes "construction . . . on an emissions unit" is a case-specific analysis, EPA expressly acknowledged that it would be contrary to the intent of EPA's interpretation of "begin actual construction" if the "permitting authority [were] to take an unduly broad or otherwise unreasonable view of the scope of an emissions unit that fails to recognize a distinction between an emissions unit and the major stationary source." (Idsal Memo, pp. 22). Under the regulatory guidance in the Idsal Memo, EPA would allow activities such as installation of building supports and foundations, laying of underground pipework and construction of permanent storage structures to be undertaken prior to permit issuance, as long as they do not constitute physical construction *on an emissions unit*. Given the distinction discussed below between the core and shell versus the fab, these activities would be allowed for the core and shell phase that does not constitute an emissions unit.

TSMC AZ builds our semiconductor manufacturing facilities in three stages: (1) core and shell building, which is simply the foundation, steel superstructure, and external walls and does not include any emissions units; (2) mechanical, electrical and process piping, which involves installing the systems that will support the operations of the fab, including the cleanroom and equipment in the cleanroom; and (3) tool hookup, which involves installation of connection piping and electrical that will ultimately house the semiconductor manufacturing equipment. The core and shell itself is neither an emissions unit nor is it a capture device, as all of the emissions ultimately produced by the fab are captured through control devices and duct systems meticulously designed to maintain a cleanroom environment. As tool hookup completes, semiconductor manufacturing equipment can only then begin installation. Based on this interpretation, the threshold for "physical construction on an emissions unit" would not be crossed until beginning construction of the mechanical, electrical and process piping that will connect the emissions unit. This threshold provides a clear line between construction on an accommodating installation and construction on an emissions unit. Further, treating a fab as a single emissions unit does not

affect the effectiveness of this threshold, as the focus of treating a fab as a single unit is for the purpose of treating the thousands of emissions units in the fab as one system. The core and shell of the building is constructed prior to the installation of those emissions units which ultimately constitute the fab. TSMC AZ would appreciate MCAQD's guidance confirming this understanding.

EPA provided that the Idsal Memo was being made "available as guidance for consideration by air agencies with SIP-approved programs. Depending on the particular regulatory context and wording of the applicable SIP, air agencies implementing a SIP-approved program may be able to apply this revised interpretation as well." (Idsal Memo, p. 22) In addition, EPA further stated that "a source or permitting authority would be acting contrary to the purpose and intent of EPA's interpretation of 'begin actual construction' set forth here were that source or permitting authority to take an unduly broad or otherwise unreasonable view of the scope of an emissions unit that fails to recognize a distinction between an emissions unit and the major stationary source." (Idsal Memo, p. 22).

The State of Arizona has issued SIP rules, implemented by Maricopa County, which mirror the relevant EPA regulatory definitions outlined above. (*See* Maricopa County Air Pollution Control Regulations (MCAPCR), Rule 200, §301 (prohibiting beginning actual construction without a permit); ARS 49-401.01(7) and MCAPCR Rule 100 §200.25 (defining "begin actual construction" to constitute activities "on an emissions unit"); MCAPCR Rule 100 §200.34 defining "construction"; MCAPCR Rule 100 §200.46 (defining "emissions unit"). Therefore, based on the discussion above related to EPA's interpretation of "begin actual construction" as defined in the federal regulations,[3] MCAQD's regulations mirroring those definitions support the interpretation in the Idsal Memo. Thus, MCAQD's interpretation related to construction solely of the core and shell as requested herein would be consistent with the Idsal Memo by recognizing a distinction between construction on a core and shell building that is not a capturing device and does not contain an emissions unit and construction on an emissions unit. TSMC AZ appreciates MCAQD's prompt consideration of this request.

Respectfully submitted,

Robert Sandoval
Corporate Environmental Health & Safety Manager
TSMC Arizona Corporation

[3] 40 C.F.R. § 51.165(a)(1)(xv), 40 CFR § 52.21(a)(2)(iii) and 40 CFR § 51.166(b)(11).