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**DEPARTMENT OF THE AIR FORCE
NEW SOURCE REVIEW PERMITTING GUIDE**

**GUIDE FOR PREVENTION OF SIGNIFICANT DETERIORATION AND
NONATTAINMENT NEW SOURCE REVIEW FOR
UNITED STATES DEPARTMENT OF THE AIR FORCE INSTALLATIONS**



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San Antonio, TX 78226

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April 2024

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SIGNIFICANT DETERIORATION
AND NONATTAINMENT NEW
SOURCE REVIEW FOR UNITED
STATES DEPARTMENT OF THE
AIR FORCE INSTALLATIONS**

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299 **ACRONYMS AND ABBREVIATIONS**

300	AQIA	Air Quality Impact Analysis
301	AQPD	Air Quality Policy Division
302	AQRV	Air Quality Related Value
303	BACT	Best Available Control Technology
304	BTU	British Thermal Unit
305	C6H6	Benzene
306	CAA	Clean Air Act
307	Cd	Cadmium
308	CEMS	Continuing Emissions Monitoring System
309	CFR	Code of Federal Regulations
310	CH ₄	Methane
311	CO	Carbon Monoxide
312	CO ₂	Carbon Dioxide
313	CPMS	Continuous Parameter Monitoring Systems
314	EPA	United States Environmental Protection Agency
315	EAB	Environmental Appeals Board
316	FIP	Federal Implementation Plan
317	FR	Federal Register
318	GHG	Greenhouse Gas
319	GP	General Permit
320	H ₂ S	Hydrogen Sulfide
321	H ₂ SO ₄	Sulfuric Acid Mist
322	HAP	Hazardous Air Pollutant
323	HFC	Hydro Fluorocarbon
324	Hg	Mercury
325	LAER	Lowest Achievable Emission Rate
326	MACT	Maximum Achievable Control Technology
327	MOU	Memorandum of Understanding
328	N ₂ O	Nitrous Oxide
329	NAAQS	National Ambient Air Quality Standards
330	NESHAP	National Emission Standard for Hazardous Air Pollutants
331	NO ₂	Nitrogen Dioxide
332	NAICS	North American Industry Classification System
333	NASA	National Aeronautics and Space Administration
334	NEPA	National Environmental Policy Act
335	NESHAP	National Emission Standards for Hazardous Air Pollutants
336	OCONUS	Outside Continental United States
337	PEMS	Predictive Emission Monitoring System
338	PTE	Potential-to-Emit

339		
340	RCRA	Resource Conservation and Recovery Act
341	SIC	Standard Industrial Classification
342	SIP	State Implementation Plan
343	SME	Subject Matter Expert
344	SO ₂	Sulfur Dioxide
345	SO _x	Sulfur Oxides
346	tpy	Tons-per-Year
347	DAF	United States Air Force
348	VOC	Volatile Organic Compound
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352 **1 INTRODUCTION**

353

354 **1.1 Purpose**

355

356 This document has been prepared by the Air Force Civil Engineer Center (AFCEC) Compliance
357 Technical Support Branch (CZTQ) to provide certain United States Department of the Air Force
358 (DAF) personnel (air program managers, technicians, etc.) with a basic understanding of key
359 requirements for complying with the Federal New Source Review (NSR) process.

360

361 This Guide is intended to be used solely as general guidance for navigating the complexities of
362 NSR and highlights important provisions regarding the subject matter. Due to the intricacy of
363 the NSR rules and related regulations, the guidance cannot be expected to encompass every type
364 of compliance situation. Furthermore, the information provided in this Guide, while current as
365 of the date on the front cover, is subject to change as regulatory authorities revise regulations,
366 policies, and forms, and as legal challenges to the rule(s) are adjudicated. Consequently, the
367 Code of Federal Regulations (CFRs), the Federal Register (FR), and/or the relevant air
368 permitting authority (e.g., EPA, State Environmental Agency) should be consulted regularly for
369 changes affecting the NSR regulations.

370

371 Citations to the regulatory text in the CFRs are used throughout this Guide for reference and to
372 assist the user in finding the appropriate regulatory sections. This guidance is not a law or
373 regulation, nor is it intended to replace or revise any underlying regulatory requirements,
374 including Federal, State, or local regulations. The information presented here is not legal advice
375 and the Guide must not be used as a legal resource. Although all reasonable efforts were made
376 to ensure that information provided is accurate at the time written, no representations or
377 warranties, implied or otherwise, can be made that this Guide is completely free from errors or
378 omissions.

379

380 **THIS GUIDE REPLACES AND SUPERSEDES PREVIOUS VERSIONS.**

381

382 Any questions concerning this document, and/or requests for additional information pertaining
383 to New Source Review, should be directed to the Air Quality Subject Matter Expert; AFCEC
384 Compliance Technical Support Branch (AFCEC/CZTQ); 250 Donald Goodrich Drive; Building
385 #1650; Lackland AFB, TX 78226.

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392 1.2 How to use this Guide

393
394 This Guide is structured to provide a step-by-step approach for NSR permitting. To facilitate
395 ease of use, the Guide is organized into five main sections:

- 396
- 397 • **Chapter 1 (Introduction)** - Includes the purpose and instructions for the Guide, a
398 fundamental summary of New Source Review, and essential information to assist with
399 compliance.
 - 400
 - 401 • **Chapter 2 (Prevention of Significant Deterioration Permitting)** - Covers the
402 applicability criteria and permitting process for major new or modified Stationary
403 Sources located in an attainment area.
 - 404
 - 405 • **Chapter 3 (Nonattainment New Source Review Permitting)** - Covers the applicability
406 criteria and permitting process for major new or modified Stationary Sources located in
407 a nonattainment area.
 - 408
 - 409 • **Chapter 4 (Alternative and Minor Source Air Permits)** - Provides a generalized
410 discussion of the air permit options that may be applicable to new or modified Stationary
411 Sources that are not major sources of air emissions. This chapter also includes a
412 discussion of alternatives to major source NSR permitting.
 - 413

414 1.3 National Ambient Air Quality Standards (NAAQS)

415
416 The New Source Review (NSR) program is one of many Clean Air Act (CAA) tools designed to
417 ensure that the air quality is better than the National Ambient Air Quality Standards (NAAQS).
418 Title I of the CAA requires states to develop State Implementation Plans (SIPs) to address
419 attainment and maintenance of the NAAQS. Additionally, Title I also requires a
420 preconstruction permitting program (NSR) for both major and minor sources.

421
422 Basically, a NAAQS is a threshold of pollutant concentration in the ambient (outdoor) air that
423 should not be exceeded and acts as an indicator of air quality in a geographic area.

424 Understanding the NAAQS is important for NSR because the type of analysis and permitting
425 required depends on the air quality for the area where the proposed project will take place:

- 426
- 427 • **Prevention of Significant Deterioration (PSD)** applies to the proposed construction or
428 modification of any “major emitting facility” taking place in an “attainment area” (an
429 area whose air quality meets the NAAQS or is unclassifiable). PSD is intended to allow
430 construction of new or modified sources of air pollution while not degrading air quality
431 in attainment areas. PSD permits are under Title I, Part C of the Clean Air Act (CAA),
432 Part D. [CAA §165(a), 42 USC §7465(a)]

433
434 • **Nonattainment New Source Review (NNSR)** applies to the proposed construction or
435 modification of “major Stationary Sources” (somewhat different from “major emitting
436 facilities”) taking place in “nonattainment areas” (an area whose air quality does not
437 meet the NAAQS). NNSR is intended to allow construction of new or modified sources
438 of air pollution in nonattainment areas while still making progress toward meeting the
439 NAAQS. NNSR permits are under CAA Title I, Part D. [CAA §172(b)(5), 42 USC
440 §7502 (b)(5)]
441

442 **NOTE:** It is important to recognize that an area is designated as nonattainment or attainment
443 for each NAAQS. For example, an area may be designated as nonattainment for Ozone, but
444 attainment for all of the other criteria pollutants. No area violates all the NAAQS; therefore, a
445 single project can trigger both PSD and NNSR. The PSD process applies to the “attainment” air
446 pollutants and NNSR process applies to the “nonattainment” air pollutants.
447

448 **1.3.1 Criteria Pollutants**

449
450 The driving force behind most CAA regulations, including NSR, is the enforcement and
451 maintenance of the NAAQS. NAAQS are health-based air quality standards set by the EPA
452 based on a review of available scientific information. There are two types of NAAQS, primary
453 and secondary:
454

- 455 • **Primary NAAQS** - Criteria pollutant standards are set at a level deemed necessary to
456 protect the public health with an adequate margin of safety.
457
- 458 • **Secondary NAAQS** - Criteria pollutant standards are established at levels found
459 necessary to protect the environment and public welfare. The secondary standard carries
460 no deadline for attainment and states have never been penalized for failing to meet the
461 standard.
462

463 A NAAQS has been established for each of the following six criteria pollutants (pollutants that
464 have been found by the EPA to be harmful to human health and the environment):
465

- 466 • **Ground Level Ozone (O₃)** - Ground level Ozone (frequently referred to simply as
467 “Ozone”) is one of the most far-reaching criteria pollutants; therefore, the Ozone
468 nonattainment and maintenance areas can be large and encompass multiple counties and
469 states. Most sources of air pollution are contributors to ozone pollution. Ozone is
470 formed by a complex chemical reaction involving a combination of solar radiation
471 (sunlight) and primarily the following “precursors”:
472
 - 473 ○ Volatile Organic Compounds (VOCs).
 - 474 ○ Nitrogen Oxides (NO_x).
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- **Particulate Matter (PM)** – Also referred to as particle pollution. Generally, PM are inhalable particles formed from a mixture of liquid droplets (e.g., mist, vapor) and small solids (e.g., dust, soot, pollen) in the ambient (outdoor) air. Some particles are large enough to be seen with the naked eye, while others are so tiny, they can only be seen with a microscope. PM is subdivided into two categories:
 - **PM₁₀** - PM that are 10 micrometers in aerodynamic diameter, and smaller.
 - **PM_{2.5}** - Also referred to as fine inhalable particles or fine PM. These are PM that are 2.5 micrometers and smaller in aerodynamic diameter.
- **Oxides of Nitrogen** – Also referred to as Nitrogen Oxides (NO_x). NO_x are a group of highly reactive gases that result from fuel combustion processes (e.g., power plants, generators, boilers, cars). NO_x also contributes to the formation of PM, Ozone, and acid rain. Nitrogen Dioxide (NO₂) is the component of NO_x that is of the most concern and is the easiest to measure, so it is used as the indicator for NO_x.
- **Sulfur Oxides (SO_x)** – SO_x are typically emitted from sources that burn fossil fuels (e.g., coal, oil). The area of direct health impact for SO_x is in the immediate vicinity of the emission source; therefore, the nonattainment and maintenance areas for this pollutant are typically small and centered around a power production station, chemical manufacturer, petroleum refinery, and mineral ore processing plant. Sulfur Dioxide (SO₂) is used as the indicator for SO_x because it has a major presence in the ambient air and is the easiest to measure.
- **Carbon Monoxide (CO)** – CO usually results from the incomplete combustion of fuels in sources such as cars. The highest potential for CO pollution is in urban areas with heavy, congested motor vehicle traffic. Most CO nonattainment and maintenance areas are small and centered around an emission source, such as a busy intersection with a traffic light surrounded by tall buildings.
- **Lead (Pb)** – The typical sources of Pb are coal plants, battery manufacturing plants, incineration of garbage containing lead, and transportation sources using leaded fuels (rare now due to removal of lead from gas).

512 1.3.2 Area Designations and Classifications

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517

The EPA designates a geographic area as nonattainment if the amount of air pollution in the area, as measured by ambient air quality monitors and certified to be correct, exceeds the NAAQS. The designation pertains to that particular NAAQS only. For example, an area can be designated nonattainment for ozone and attainment for the remaining criteria pollutants. The

518 states recommend area designation and boundaries to the EPA, but the EPA makes the final
519 decision. Besides “nonattainment”, other air quality designations include:

520

521 • **Attainment** - An area that meets the national primary or secondary ambient air quality
522 standard for the pollutant.

~~523~~
524

525 • **Unclassifiable** - An area that cannot be classified on the basis of available information
526 as meeting or not meeting the national primary or secondary ambient air quality standard
527 for the pollutant.

528

529 • **Maintenance** - A nonattainment area that attains the NAAQS. An EPA approved SIP
530 revision that provides measures to prevent future exceedances of the NAAQS is
531 required. Maintenance plans in a SIP encompass a twenty-year time frame divided into
532 two consecutive ten-year plans.

533

534 The EPA and air quality agencies work with each other to identify the boundaries of the
535 nonattainment areas. The nonattainment area’s boundaries may involve multiple counties
536 (and/or partial counties) and cross over state lines. The boundaries for partial counties
537 designated as nonattainment are more complex compared to whole counties. The emissions for
538 some criteria pollutants area (e.g., sulfur dioxide, lead) are localized around the source;
539 therefore, those nonattainment area boundaries are typically small and centered around a
540 processing facility or plant.

541

542 **NOTE:** Using area descriptions and mapping, AFCEC/CZTQ can assist with determining
543 whether a proposed DAF action is within the boundaries of one or more nonattainment and/or
544 maintenance areas.

545

546 **1.4 Stationary Source, Emissions Unit, and Project Definitions**

547

548 Although this topic will be discussed again elsewhere in this document, it is important to clearly
549 distinguish the difference between the terms “Stationary Source” and “emissions unit” as they
550 will be used in this Guide. There has been a considerable amount of confusion in determining
551 what constitutes a Stationary Source or an emissions unit. This confusion exists because
552 various air programs and regulations define the terms differently and will often use the terms
553 interchangeably (a “Stationary Source” can be a single emissions unit or a facility with multiple
554 emissions units). For clarity, the meaning of these terms used in this Guide will be consistent
555 with the definitions found in 40 CFR §52.21 - *Prevention of Significant Deterioration of Air*
556 *Quality*:

557

- 558 • **Stationary Source** [40 CFR 52.21(b)(5)]: Any building, structure, facility, or
559 installation which emits or may emit any air pollutant subject to regulation under the
560 Act.
- 561
- 562 • **Building, Structure, Facility, or Installation** [40 CFR 52.21(b)(6)(i)]: All of the
563 pollutant-emitting activities which belong to the same industrial grouping, are located on
564 one or more contiguous or adjacent properties, and are under the control of the same
565 person (or persons under common control) except the activities of any vessel. Pollutant
566 emitting activities shall be considered as part of the same industrial grouping if they
567 belong to the same Major Group (i.e., which have the same first two-digit code) as
568 described in the Standard Industrial Classification Manual.
- 569
- 570 • **Emissions Unit** [40 CFR 52.21(b)(7)]: Any part of a Stationary Source that emits or
571 would have the potential-to-emit any regulated NSR pollutant (includes an electric
572 utility steam generating unit).
- 573
- 574 ○ **A new emissions unit** [40 CFR 52.21(b)(7)(i)]: Any emissions unit that is (or will
575 be) newly constructed and that has existed for less than two years from the date such
576 emissions unit first operated.
- 577
- 578 ○ **An existing emissions unit** [40 CFR 52.21(b)(7)(ii)]: Any emissions unit that is not
579 new. A replacement unit is existing.
- 580
- 581 • **Project** [40 CFR 52.21(b)(52)]: A physical change in, or change in the method of
582 operation of, an existing major Stationary Source.
- 583

584 **To paraphrase the above definitions:**

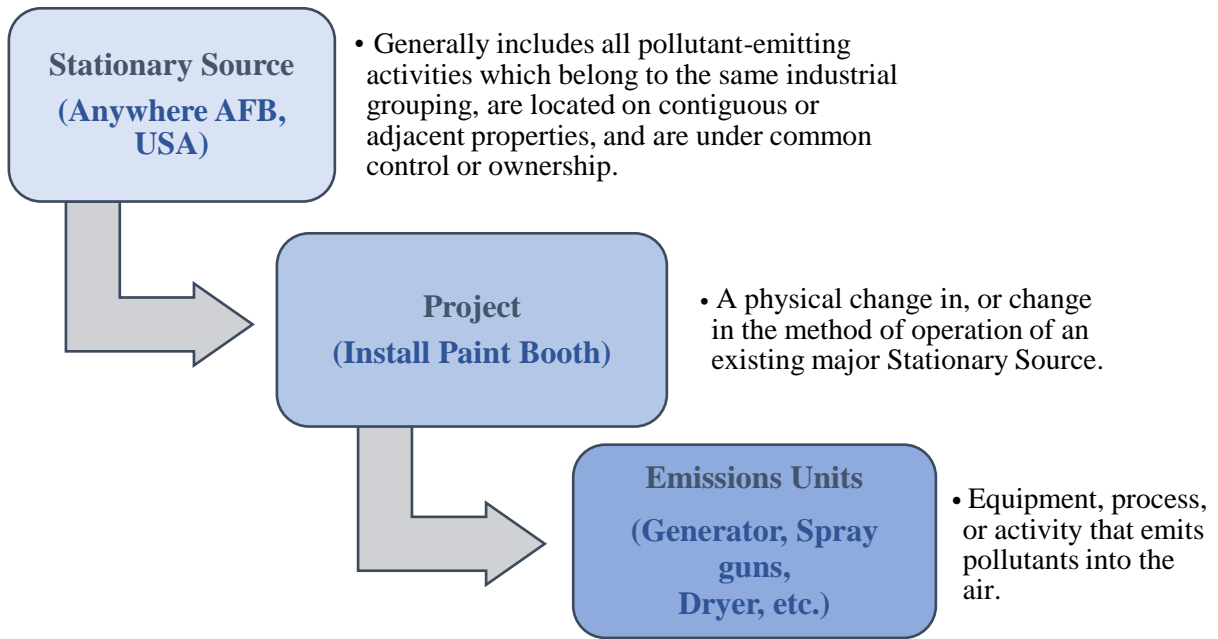
585

586 A Stationary Source (can be used interchangeably with “facility” or “installation”) is the
587 collection of all units, processes, operations, and/or activities that contribute to air pollution and
588 are contiguous (or adjacent), under common control, and belong to the same industrial
589 grouping. However, an emissions unit is a piece of equipment, process, or activity that emits
590 pollutants into the air. Examples of an emissions unit include a boiler, generator, paint booth, or
591 cooling tower. A project may include one or more emissions units. Each affected emissions
592 unit must be included in the NSR applicability determination for the project.

593

594 The following graphic illustrates how the terms are used in a generalized structure of a project
595 to install a paint booth:

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Figure 1-1. General Project Structure

600

1.5 Stationary Source Determination at Military Installations

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The very first step in NSR is to determine exactly what is the Stationary Source involved in the project. For NSR, 40 CFR 51.166(b)(5) and 40 CFR 52.21(b)(5) defines "Stationary Source" as "any building, structure, facility, or installation which emits or may emit a regulated NSR pollutant." 40 CFR 51.166(b)(6) further defines "building, structure, facility, or installation" to mean all the pollutant-emitting activities which:

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- 1) belong to the same industrial grouping (i.e., have the same two-digit code as described in the Standard Industrial Classification Manual),
- 2) are located on one or more contiguous or adjacent properties, and
- 3) are under the control of the same person (or persons under common control).

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618

A facility is not necessarily a single Stationary Source unless ALL three of the criteria are met. For NSR, if even one of these three criteria is not satisfied, that emissions unit must be separated out and considered a separate source for regulatory purposes. Military installations

619 have a wide range of functions and differing control arrangements that can make the Stationary
620 Source determination complicated. For example:

621

622 • **Criteria One: Belong to the same industrial grouping (i.e., have the same two-digit**
623 **code as described in the Standard Industrial Classification Manual).** The Standard
624 Industrial Classification (SIC) Code is based on the source's primary activity or product.
625 Each unique two-digit code represents a major group. The SIC Code Manual has
626 different divisions for activities such as real estate, manufacturing, wholesale trade, etc.

627

628 ○ Historically, most military installations have been aggregated under SIC Code 97,
629 *National Security and International Affairs*, for major source determinations. The
630 military has unique air emissions units that are not found in civilian facilities, such
631 as military tactical and combat vehicles, mobile utility support equipment, military
632 turbine engine test stands, open burning and detonation sites, military unique coating
633 operations, and ordnance firing and bombing activities. However, this grouping may
634 not be appropriate for the entire military installation because some activities on a
635 military installation have non-military equivalents (e.g., grocery store, gas stations)
636 which could possibly fall under different SIC Codes.

637

638 • **Criteria Two: Located on one or more contiguous or adjacent properties.** The
639 concepts of “contiguous” and “adjacent” are distinctly different from each other.
640 Contiguous means to be touching or to be connected throughout in an unbroken
641 sequence. Adjacent means nearby.

642

643 ○ Quite a few military installations meet the contiguous or adjacent property
644 definitions, but do not have common control. For example, a training range may
645 have a different command than a contiguous or adjacent military base.

646

647 • **Criteria Three: Under common control.** EPA has considered other factors, such as
648 support/dependency relationships, contract for service relationships, etc. when making
649 common control determinations.

650

651 ○ Pollutant-emitting emissions units and sources found on a military installation may
652 be owned by different entities (under different control), such as other DoD services,
653 non-DoD federal agencies, contractors, or leased commercial activities.

654

655 **1.5.1 EPA Guidance for Military Installation Stationary Source Determination**

656

657 Given the complexity of applying the three-factor Stationary Source criteria to a military
658 installation, the DoD requested the EPA's opinion. Consequently, EPA issued guidance, in the
659 form of a memorandum, to ensure equitable treatment for the regulation of military Stationary

660 Sources, “*Major Source Determinations for Military Installations under the Air Toxics, New*
661 *Source Review, and Title V Operating Permit Programs of the CAA.*” (2 August 1996, EPA
662 Office of Air Quality Planning and Standards).

663

664 Per the EPA’s guidance, the term "military installation" refers to a Stationary Source, or group
665 of Stationary Sources, located on one or more contiguous or adjacent properties that are owned,
666 operated, supervised, or controlled by one or more Department of Defense (DoD) components
667 which include the military services, the defense agencies, and the National Guard.

668 To briefly summarize the EPA’s Guidance:

669

670 • **Criteria One: Belong to the same industrial grouping.** Similar to nonmilitary
671 facilities, "industrial groupings" at a military installation can be assigned appropriate
672 SIC codes and classified into "primary" and "support" activities. The support activities
673 would then be aggregated with their associated primary military activity (even if they
674 have different SIC codes). An example of this is a military training school (primary
675 military activity) and cafeteria services for the trainees (support activity). However,
676 personnel-related activities such as those for active-duty service members, their
677 dependents, and retired service members located on military installations (e.g., shopping
678 centers, day care centers, dry cleaners) may be considered not to be support facilities to
679 the primary military activities. Though these emissions units may be located on military
680 installations and used by active-duty service members, they often are not essential to the
681 primary military activity of the installation. These activities could be disaggregated from
682 the primary military activities and considered separate sources. For example, some DAF
683 installations have been successful in “disaggregating” their AAFES gasoline stations as
684 a separate Stationary Source (sometimes resulting in a change to their major source
685 status).

686

687 • **Criteria Two: Located on one or more contiguous or adjacent properties.**
688 Generally, all activities on an installation that are under the control of each military
689 service (e.g., Army, Navy, Air Force, Marines, National Guard) or defense agency are
690 considered the same "source" based on being located on the same property or on
691 contiguous or adjacent properties. This is regardless of the actual proximity of the
692 pollutant-emitting activities at the military installation.

693

694 • **Criteria Three: Under common control.** When making major source determinations
695 at a military installation, the EPA considers pollutant-emitting activities that are under
696 the control of different military services not to be under common control. In other
697 words, the pollutant-emitting activities under the control of the DAF at a military
698 installation may be considered under separate control of the DAF and the pollutant-

699 emitting activities under the control of the Army at that same military installation may
 700 be considered under the separate control of the Army.

701

702 **Reminder:** ALL three of the criteria are required to be met to be considered a Stationary
 703 Source.

704

705 **1.5.2 Example of Military Installation Stationary Source Disaggregation**

706

707 Military installations interested in disaggregating or aggregating pollutant-emitting sources for
 708 air permitting purposes will need to consult and coordinate with their air pollution control
 709 agency or permitting authority. Source determinations for military installations require careful
 710 evaluation of the activities, interactions, and circumstances specific to that installation. The
 711 pros and cons of disaggregating or aggregating the military installation for permitting purposes
 712 should be carefully weighed. The air pollution control agency or the permitting authority could
 713 determine that the military installation is a single Stationary Source. The EPA clearly states in
 714 this guidance that an agency or permitting authority is not precluded from such a determination.
 715 Most air emissions units on a DAF installation can be (and are) grouped under the SIC code for
 716 National Security (SIC Code 97). However, the following is an example of how a DAF
 717 installation could be disaggregated (all major groupings are located on the same installation and
 718 are under control of the DAF base commander):

719

720

Table 1-1. DAF Disaggregated Permit Example

AIR PERMITS FOR ANYWHERE AFB, USA		
Permit Number	Stationary Source	SIC Code
#3001	Major Group – National Security	97
#3002	Major Group – Real Estate	65
#3003	Major Group – Health Services	80
#3004	Major Group – Special Warehousing and Storage	42

721

722 **NOTE:** States are not required to follow EPA guidance documents (such as memorandums).
 723 However, some air permitting agencies do not have EPA-approved major source NSR
 724 permitting programs and issue NSR permits under a delegation of authority from EPA [40 CFR
 725 52.21(u)]. Typically, as a condition of such delegation, the air permitting agency agrees to
 726 follow EPA permitting guidance. Thus, EPA expects these delegated air agencies to apply the
 727 interpretation described in their memorandums.

728

729

730

731 1.6 New Source Review Summary

732

733 New Source Review (NSR) is an air permitting process that requires a proposed new or
734 modified Stationary Source of air emissions to undergo a pre-construction analysis to determine
735 the appropriate air pollution controls.

736

737 1.6.1 What is New Source Review?

738

739 **NOTE:** For purposes of this Guide, major source NSR means the Federal permitting programs
740 found in 40 CFR 51.165, 40 CFR 51.166, 40 CFR 51 Appendix S, 40 CFR 52.21, or 40 CFR
741 52.24, and NOT the State specific NSR permitting programs (except in a very generalized
742 manner). However, many States' duplicate the Federal NSR program and this Guide is
743 designed to provide some assistance in those situations. *If a State does not have a PSD and/or*
744 *NNSR permitting program as an approved part of its State Implementation Plan (SIP), that*
745 *State may be delegated the authority to implement and enforce the Federal program(s).*

746

747 The basic goals of the NSR permitting programs are to:

748

- 749 • Ensure that economic growth will occur in harmony with the improvement
750 (nonattainment areas) or preservation (attainment areas) of air quality.
- 751
- 752 • Protect the public health and welfare from any adverse effects that might occur from
753 adding another source of air pollution (or modifying an existing source), even if the air
754 pollution levels in the area are better than the NAAQS.
- 755
- 756 • Protect air quality in Class I Areas (national parks and wilderness areas).

757

758 Prior to commencing construction of any project that triggers NSR, a permit must be obtained
759 from the appropriate air permitting authority. NSR includes three permitting programs:

760

- 761 • **Prevention of Significant Deterioration (PSD)** - PSD applies in attainment areas
762 where the air quality meets the National Ambient Air Quality Standards (NAAQS).
763 PSD review and permitting is intended to allow construction of new or modified sources
764 of air pollution in these areas while protecting existing air quality. The Federal
765 regulations, 40 CFR 51.166, contain the minimum requirements for the PSD program.
- 766
- 767 • **Nonattainment NSR (NNSR)** - NNSR applies in nonattainment areas where the air
768 quality does not meet the NAAQS for one or more criteria air pollutants. The program
769 is intended to allow construction of new or modified sources of air pollution in
770 nonattainment areas while still making progress toward improving air quality. The

771 Federal regulations, 40 CFR 51.165, contain the minimum requirements for the NNSR
772 program.

773

- 774 • **State Minor Source NSR/Permit** - If neither of the EPA’s Major NSR permitting
775 programs are required, the State’s “minor” source permitting program may still be
776 applicable. State and/or local regulations define the permit requirements for small
777 sources. States can customize the requirements for minor source permits, but their
778 program must meet minimum CAA requirements. Minor source permits are frequently
779 used to establish federally enforceable limits on potential-to-emit to avoid NSR
780 permitting (referred to as a “synthetic minor source” which is discussed in greater detail
781 elsewhere in this Guide). These air permitting programs vary widely in their scope,
782 structure, and requirements. *Due to the wide variability in State and/or local*
783 *permitting programs, minor source permitting will only be discussed in general terms*
784 *within this document.*

785



786

787

Figure 1-2. Flow Chart for New Source Review

788 **NOTE: A SINGLE PROJECT CAN TRIGGER BOTH PSD AND NNSR REVIEWS!**

789 NSR is pollutant-specific which means that a permit application may require both NNSR and
790 PSD reviews.

791

792 **1.6.2 New Source Review Applicability**

793

794 Three key criteria are considered to determine which permitting program applies to a proposed
795 new or modified source:

796

- 797 1) Whether the source is or will be located within a nonattainment area for a National
798 Ambient Air Quality Standard (NAAQS).

799

800 2) Whether the air emissions will cause the source to be considered a major Stationary
801 Source (i.e., exceeds one or more major source thresholds).

802

803 3) Whether significant amounts of specific air pollutants will be emitted (i.e., exceeds
804 significant emission rate thresholds).

805

806 **NOTE:** Many States adopted the EPA's NSR program and obtained approval to act as the
807 permitting authority. As the PSD permitting authority, States have the right to implement the
808 NSR program differently from federal regulations, so long as the program is consistent (or more
809 stringent) with the Federal regulations and has been approved by the EPA.

810

811 The primary criterion for PSD or NNSR applicability is whether the proposed project meets the
812 definition of a major Stationary Source or major modification to an existing Stationary Source.
813 Although the PSD and NNSR permit reviews are comparatively different, the steps involved in
814 the process are fundamentally similar. The general steps involved in assessing for PSD and
815 NNSR applicability and permitting requirements (if applicable) are briefly outlined below.
816 Each step will be discussed in much greater detail later in this document.

817

818 **STEP ONE – Identify Air Emission Sources.** Identify the Stationary Source and the
819 air emissions unit(s) included in the project.

820

821 **STEP TWO – Assess NAAQS Designation.** The second step is to determine the
822 attainment status of the area in which the project will take place.

823

824 **STEP THREE - Calculate Air Emissions.** NSR permitting applicability is based on
825 the project's "Potential-to-Emit" (PTE) or projected increase in air emissions. The
826 procedure for calculating air emissions increases depends on the emissions unit being
827 modified and whether the project involves new units or a modification to a minor or
828 major existing source (or a combination).

829

830 ○ **Construction/Installation of a New Emissions Unit (Does NOT include**
831 **replacement units)** - The emissions increase at a new unit is equal to the PTE of
832 the unit.

833

834 ○ **"Potential-to-Emit" (PTE)** – PTE is the maximum capacity of a Stationary
835 Source to emit a pollutant under its physical and operational design. Any
836 physical or operational limitation on the capacity of the source to emit a
837 pollutant, including air pollution control equipment and restrictions on hours
838 of operation or on the type or amount of material combusted, stored, or
839 processed, shall be treated as part of its design if the limitation or the effect it

840 would have on emissions is enforceable as a practical matter. Secondary
841 emissions do not count in determining the PTE of a Stationary Source.
842

- 843 ○ **Modification at an Existing Major Source** – Existing sources, even if they are
844 major, are not subject to PSD permitting unless they make a major modification
845 to the source. The emissions increase for a modification of an existing unit is
846 determined by calculating the difference between the projected actual emissions
847 (post change emissions) and the baseline actual emissions (pre-change
848 emissions) for that unit. This comparison is referred to as the “actual-to-
849 projected-actual applicability test.” The option to use PTE in place of projected
850 actual emissions is also available (possibly reduces future recordkeeping
851 requirements).
852
- 853 ○ **Modification at an Existing Minor Source** - The emissions increase from a
854 proposed modification at an existing minor Stationary Source, requires the
855 calculation of the PTE for the modified emissions unit(s). The calculations for
856 projected actual emissions and baseline actual emissions do not apply.
857
- 858 ○ **Projects that Include a Combination of New and Existing Emissions Units -**
859 If a project involves both the addition of a new emissions unit and a modification
860 to an existing emissions unit, each unit needs to be analyzed separately and the
861 increases added together to determine the total emissions increase from the
862 project. For example, that means for each new unit the emissions increase would
863 be calculated as the PTE of the new unit (unless the new unit is a replacement
864 unit). For each existing emissions unit involved in the project, calculate the air
865 emissions increase using the actual-to-projected-actual applicability test.
866
- 867 ○ **Replacing Existing Emissions Units with** - Replacement of existing units with
868 equivalent units. When replacing an existing unit with an equivalent unit, the
869 increase is calculated in the same manner as for modification of an existing unit,
870 provided the replaced unit is removed from the premises or rendered
871 permanently inoperable. If this is the case, then the emissions increase is the
872 difference between the projected actual emissions of the replacement unit and the
873 baseline actual emissions of the replaced unit. There is also the option of using
874 potential emissions in place of projected actual emissions.
875

876 **STEP FOUR – Major Source Determination.** Compare air emissions of all applicable
877 pollutants to the PSD or NNSR thresholds of “regulated NSR pollutants” (the thresholds
878 are discussed in greater detail within this Guide). A source is considered a major

879 Stationary Source if its PTE is greater than the established major source thresholds for
880 any regulated NSR pollutant.

881

882 ➤ **PSD Permitting Program** – Regulated PSD pollutants are criteria pollutants in
883 areas that are attainment with the NAAQS for that pollutant. The PSD permitting
884 program is also applicable for certain pollutants that are NOT criteria pollutants
885 (pollutants regulated by the EPA, but do not have a NAAQS).

886

887 ➤ **NNSR Permitting Program** – Regulated NNSR pollutants are criteria pollutants in
888 areas which are nonattainment with the NAAQS for that pollutant.

889

890 **NOTE:** If the project at an existing minor source increases the source’s PTE to above major
891 source levels, but the air emission increase attributable to the project will not exceed the major
892 source threshold on its own, a PSD or NNSR permit is not required. However, the source will
893 be considered a major Stationary Source in future permitting actions (e.g., may require a Title
894 V, *Federal Operating Permit*).

895

896 **Step Five – Schedule Preliminary Meeting with Air Permitting Authority.** If it
897 appears the project is a major source of air emissions, schedule a preliminary (i.e., pre-
898 application) meeting with the air permitting authority.

899

900 **Step Six – Air Pollution Control Technology Selection.** Select appropriate air
901 pollution control technologies. The selection should be causally (directly) related to the
902 process/unit and the air emissions of the pollutant being regulated.

903

904 **Step Seven – Complete Air Permit Application.** The contents of the air permit
905 application typically include the application form and a detailed Technical Support
906 Document. Most air permitting authorities will provide a checklist to ensure the
907 application is complete.

908

909 **Step Eight – Submit Air Permit Application.** The air permit application form and the
910 Technical Support Document are provided to the air permitting authority.

911

912 **Step Nine – Comply with Air Permit.** Review permit provisions carefully and ensure
913 that personnel responsible for compliance are aware of the requirements.

914

915 **1.6.3 Selection of Air Pollution Control Technology**

916

917 If major source NSR is applicable to the project, the selection of appropriate air pollution
918 control will be required to reduce air emissions. Typically, air pollution control refers to “end-
919 of-stack” techniques for capturing air pollutants that are formed during an upstream process

920 (usually involving the combustion of a fossil-fuel such as diesel or coal). However, the air
921 emission reductions can be achieved not only through installation of state-of-the-art air
922 pollution control equipment (e.g., filters), but also through adjusting work processes and
923 implementing work practice standards. Although the stringency of the air pollution controls
924 differs between PSD and NNSR, the general steps in the selection process are essentially the
925 same:
926

- 927 ➤ **Step 1** - Identify control technologies appropriate for the specific unit and pollutant.
- 928 ➤ **Step 2** - Eliminate technically infeasible options.
- 929 ➤ **Step 3** - Rank remaining technically feasible options.
- 930 ➤ **Step 4** - Evaluate remaining control technologies.
- 931 ➤ **Step 5** - Make final selection.

932
933 The level of air pollution control required depends on whether PSD or NNSR is applicable
934 (permit requirements are specific for each pollutant and for each unit):
935

- 936 • **Best Available Control Technology (BACT) for PSD** - The Federal NSR program
937 requires that BACT be used in major new sources and major modifications for
938 attainment air pollutants. BACT is a “top-down” analysis used to determine the best air
939 pollution control technology or technique available. “Top-down” means that the control
940 technology or technique with the highest degree of air pollutant reduction is considered
941 first. The BACT analysis contains both technical (e.g., control can be physically
942 installed) and economical (dollars per ton of air pollutant removed) considerations.
943 Feasible options are ranked from most to least effective for reducing emissions. If the
944 most effective control does not meet the criteria, it is eliminated and the next effective
945 control technology on the list is evaluated. The BACT analysis continues until the most
946 effective control option is not eliminated. The BACT selected must at least meet the
947 emission limitations of the new source performance standards.
948
- 949 • **Lowest Achievable Emission Rates (LAER) for NNSR** - The Federal NSR program
950 requires that LAER be used in major new sources and major modifications for
951 nonattainment air pollutants. LAER is an analysis that leads to the selection of the most
952 stringent air pollution controls to reduce nonattainment air pollutants. Unlike BACT, a
953 LAER analysis does not consider costs.
954

955 **BACT/LAER Resources:** Selecting suitable BACT and/or LAER takes considerable effort.
956 Research should include, at the very least, EPA’s BACT/ LAER Clearinghouse
957 (www.epa.gov/ttn/catc). Vendors for air pollution control technology and design engineers
958 frequently have detailed information available that can assist with the selection of the

959 appropriate technology and can also be included with the permit application to assist the
960 permitting authority with their review. Technical journals and reports are also common sources
961 of information for selecting appropriate air pollution controls. *Proposed BACT/LAER is*
962 *presented with the air permit application; however, the ultimate decision is made on a case-by-*
963 *case basis by the air permitting authority.*
964

965 **1.6.4 Major New Source Review Permit Alternatives**

966

967 There are options available for Stationary Sources to limit air emissions so that the NSR major
968 source permit process will not apply. There are many reasons why a Stationary Source may
969 want to prevent triggering a major source NSR permit. The reasons include, but are not limited
970 to, avoiding expensive add on air pollution control equipment and permitting burden/fees
971 associated with a major NSR air permit.
972

973 **1.6.4.1 Synthetic Minor Air Permit**

974 Many Stationary Sources elect to accept permit limits to avoid becoming subject to NSR. The
975 limits (e.g., work practices, design standards, throughput, operating time) proposed to the
976 permitting authority restricts the amount of an air contaminant emitted over time (e.g., pounds
977 per hour/day, tons per year). There will be monitoring, recordkeeping, and reporting required to
978 demonstrate compliance with the limit or restriction. Note there is more than one type of
979 synthetic minor source/permit (e.g., construction permit, operating permit, project-specific,
980 emissions unit specific):
981

- 982 • Projects that have an enforceable limit to keep the potential-to-emit below the NSR
983 applicability thresholds or significant thresholds are referred to as “synthetic minor.” A
984 minor NSR permit (e.g., Permit to Construct or Install) is used to establish the
985 enforceable limits to reduce the potential-to-emit for a project or a specific emissions
986 unit(s).
987
- 988 • A synthetic minor source is a Stationary Source which voluntarily agreed to an
989 enforceable limit in a permit so that the potential-to-emit for the entire source remains
990 below major source thresholds. This is usually done to “opt out” of Title V air
991 permitting requirements.
992

993 **1.6.4.2 Plantwide Applicability Limit Permit**

994 Stationary Sources willing to operate within strict source-wide air emission caps can consider a
995 Plantwide Applicability Limit (PAL) permit. The PAL permit allows the Stationary Source to
996 add or modify emissions units without undergoing traditional NSR requirements as long as the
997 PAL is not exceeded. PALs are pollutant specific, but multiple PALs can be incorporated into

998 one permit, which is valid for ten years. However, extensive monitoring, recordkeeping, and
999 reporting is required to ensure that the PAL is not exceeded. Also, State permits may still be
1000 required in some circumstances.
1001

1002 **1.6.5 Air Permitting Process** 1003

1004 After it is determined that major source NSR permitting is required, the owner or operator of the
1005 source must submit a permit application addressing the regulatory requirements that will apply
1006 to the source (consider all applicable Federal, state, and local requirements).
1007

1008 Federal regulations describe the air permit application requirements for new major Stationary
1009 Sources. *It is strongly recommended to schedule a project planning meeting and/or a pre-*
1010 *application meeting with the air permitting agency early in the process to facilitate a smooth*
1011 *permit application and approval (many air permitting authorities require one or more meetings*
1012 *during the permitting process). Generally, an air permit application will require at least the*
1013 following information:

- 1014
- 1015 ✓ Facility information (clearly identify the responsible official and representatives).
1016
 - 1017 ✓ Detailed description of facility, processes, and emission points (include flow-charts,
1018 maps, and diagrams).
1019
 - 1020 ✓ Applicability determination.
1021
 - 1022 ✓ Estimated quantities of each air pollutant (include calculations and citations).
1023
 - 1024 ✓ Description of proposed BACT/LAER and credible justification for selection.
1025
 - 1026 ✓ Discussion of other impacts (e.g., soils, vegetation, visibility).
1027
 - 1028 ✓ Monitoring, recordkeeping, and reporting needed to verify compliance.
1029
 - 1030 ✓ Permit Application Fee.
1031
1032

1033 The air permitting agency will review the application package for completeness and accuracy:
1034

- 1035 • If the application is deemed incomplete, it will likely be returned to the applicant for
1036 additional information.
1037
- 1038 • If the application receives preliminary approval, the air permitting authority will then
1039 draft an air permit for the applicant's review and comments.
1040

1041 **Public Review:** After the applicant's comments are addressed, a draft permit will be published
1042 for a 30-day public comment period. After addressing any public comments (and holding a
1043 public hearing if requested), the air permitting authority will make a final decision on the
1044 application.

1045

1.6.6 Compliance with New Source Review Permit

1046

1047

Carefully review the provisions of the permit and ensure all responsible personnel are aware of the requirements. The issued permit includes the Permit itself, the Technical Support Document, and the Comment/Response Document.

1050

1.6.7 Permitting after Project's Completion (Operating Permit)

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1118 2 PREVENTION OF SIGNIFICANT DETERIORATION

1119

1120 **Regulatory Reference:** 40 CFR §52.21 - *Prevention of significant deterioration of air quality.*

1121

1122 A permit usually is required before building or installing a new emissions unit or modifying an
1123 existing emissions unit. The permit must be obtained before construction begins (or the
1124 equipment is modified) and can only be obtained after the air permitting authority has
1125 determined that the permit applicant will be complying with all applicable air quality regulations.
1126 Prevention of Significant Deterioration (PSD) is an air permitting program that applies to
1127 “Major” Stationary Sources located in areas formally designated by the EPA as “attainment” or
1128 “unclassifiable” for any pollutant for which a NAAQS exists. Unless the new or modified
1129 Stationary Source is exempt or excluded, it is “Major” if the emissions increase for any regulated
1130 PSD pollutant is greater than the PSD threshold for that regulated pollutant. A PSD air permit is
1131 required prior to:

1132

- 1133 1) The construction of new major Stationary Sources.
- 1134 2) Any project at an existing major source if the modification is major.
- 1135 3) Any project at an existing minor source if the modification itself would constitute a major
1136 source.
- 1137
- 1138
- 1139

1140 **NOTE:** Some limited construction activities prior to permit issuance may be allowed.

1141 However, these activities are usually taken at risk and do not guarantee permit issuance.

1142

1143 **The following key definitions relate to PSD construction activities (40 CFR §52.21):**

1144

- 1145 • **Construction:** “Any physical change or change in the method of operation (including
1146 fabrication, erection, installation, demolition, or modification of an emissions unit) that
1147 would result in a change in emissions”
- 1148
- 1149 • **Begin Actual Construction:** “Initiation of physical on-site construction activities on an
1150 emissions unit which are of a permanent nature. Such activities include, but are not
1151 limited to, installation of building supports and foundations, laying underground
1152 pipework and construction of permanent storage structures. With respect to a change in
1153 method of operations, this term refers to those on-site activities other than preparatory
1154 activities which mark the initiation of the change.”
- 1155

1156 2.1 Purpose of Prevention of Significant Deterioration

1157

1158 The objective of the PSD program is to prevent air emissions in an attainment area from
1159 worsening due to a proposed new major source or major modification at an existing source by
1160 limiting allowable degradation of air quality to below levels that would be considered
1161 “significant.” The goals of the PSD regulations are:

- 1162
- 1163 • To ensure that economic growth will occur in harmony with the preservation of existing
1164 clean air resources.
- 1165
- 1166 • To protect the public health and welfare from any adverse effect which might occur even
1167 at air pollution levels better than the national ambient air quality standards (NAAQS).
- 1168
- 1169 • To preserve, protect, and enhance the air quality in areas of special natural recreational,
1170 scenic, or historic value, such as national parks and wilderness areas.
- 1171

1172 2.2 PSD Applicability

Reminder: Because NSR (which includes both PSD and NNSR) is pollutant-specific, it is important to note that a permit application may require both PSD and NNSR in an area that is nonattainment for any NAAQS. A source may be required to get one (or more) of three permit types under the NSR program: a PSD permit, an NNSR permit, and/or a minor source permit.

1173
1174 PSD is a preconstruction review and permitting program. An essential step in ascertaining
1175 applicability is determining whether the source and/or proposed project is “Major” or “Minor.”
1176 PSD permitting process is usually more complex and time-consuming than Minor Source
1177 permitting. To perform a PSD applicability determination, several pieces of information must be
1178 collected and considered. This can be a complex and sometimes confusing procedure. The
1179 following is a step-by-step approach to help simplify the process.

1180

1181 2.2.1 STEP ONE – Identify Air Emission Sources and Emissions Units

1182

- 1183 • **Stationary Source** - Before applicability can be determined, the Stationary Source must
1184 be defined. A discussion of what constitutes a Stationary Source for the military is
1185 discussed in more detail in Chapter One of this Guide. A Stationary Source generally
1186 includes all pollutant-emitting activities which belong to the same industrial
1187 classification, are located on contiguous or adjacent properties, and are under common
1188 control. In some cases, the entire DAF installation is the Stationary Source and
1189 sometimes the DAF installation is disaggregated into multiple Stationary Sources.
- 1190
- 1191 • **Emissions Unit/Project** – One of the first steps required for determining whether PSD
1192 permitting will apply is to identify all equipment and activities that is included in the

1193 project. From this list, ascertain the equipment that can potentially emit air pollution.
1194 The project could simply be the installation or construction of a single piece of air
1195 pollutant-emitting equipment, such as a generator, or an activity that contains numerous
1196 air pollutant-emitting equipment and activities. Identifying the emissions unit(s)
1197 involved in the project also requires identifying which air pollutants are emitted and in
1198 what quantities. Consult with the proponent or contractor, the equipment manufacturer,
1199 and the raw material supplier to determine if (and what) air pollutants can potentially be
1200 released. Review the Material Safety Data Sheet (MSDS) and other technical data
1201 associated with any of the equipment and/or activities involved in the project. setting of a
1202 project schedule. Some examples of the more common air pollutant-emitting emissions
1203 units (i.e., emissions unit) found on a DAF installation include:
1204
1205 - Boilers and steam generators.
1206 - Generators.
1207 - The process of mixing, blending, or processing solvents, adhesives, or coatings (e.g.,
1208 surface coating facilities or paint booths).
1209 - Operations creating dust or smoke or involving incineration.
1210

REVIEW THE PERMIT EXEMPTION/EXCLUSIONS: At this point, conduct a preliminary review of exemptions to determine if the emissions unit(s) or activity is exempt or excluded from permitting. A permit is not usually required for repair and maintenance or identical replacement. Conducting the exemption/exclusion review during various points in the applicability/permitting process will save time and effort.

1211

1212 **2.2.2 STEP TWO – Assess Area’s National Ambient Air Quality Standards Status**

1213

1214 The second step is, for each National Ambient Air Quality Standard (NAAQS), determine the
1215 attainment status of the area in which the project will take place. This status is important
1216 because the type of analysis and permitting required depends on the air quality for the area where
1217 the proposed project will take place. PSD will only apply to the attainment pollutants. The
1218 proposed project could be located in an attainment area for all NAAQS in which case, if a major
1219 Stationary Source, only PSD would apply. NAAQS are discussed in greater detail in the
1220 Introduction chapter of this Guide.

1221

1222

1223 **2.2.3 STEP THREE - Calculate Air Emissions and Compare to Thresholds**

1224

1225 NSR permitting applicability is based on the project's PTE or projected increase in air emissions.
1226 The procedure for calculating air emission increases depends on whether the project involves a
1227 new source or a modification to an existing minor or major existing source (or a combination).
1228 There is the very real possibility that it is already known if the DAF installation is a Major
1229 Source or not.

1230
1231 Accurately assessing the air emissions connected to the source and/or the project is essential to
1232 determining PSD applicability (whether the project is a new major source or a major
1233 modification at an existing source). The following will trigger PSD applicability:

- 1234
- 1235 • A new major source for a regulated PSD pollutant.
 - 1236
 - 1237 • Modifications at an existing major source, if the net emissions increase equals or
1238 exceeds the pollutant-specific significant emission rates (SER).
 - 1239
 - 1240 • Modifications at an existing minor source, if the project increase meets either the named
1241 or the unnamed major source threshold by itself.

1242 1243 **2.2.3.1 New and Existing Source Definitions**

1244
1245 The distinction between new and existing sources is important for PSD applicability, particularly
1246 when determining baseline emissions. For purposes of PSD:

- 1247
- 1248 • **New Source** - Proposed, under construction, or has not been operational for 24 months
1249 since the date of initial operation.
 - 1250
 - 1251 • **Existing Source** - Has been operating for more than 24 consecutive months since the
1252 date of initial operation.
 - 1253

1254 **Regulatory Reference:** 40 CFR §52.21(b)(7)(i) and (ii)

1255 1256 **2.2.3.2 PSD Major Source**

1257
1258 **NOTE:** The major source definition for the Federal Operating Permit Program (i.e., Title V) is
1259 different from that in the NSR regulations.

1260
1261 The PSD regulations define a "major Stationary Source" as one that has the potential-to-emit
1262 (PTE) any regulated air pollutant equal to or higher than 100 or 250 tpy, depending on the type
1263 of source. The following table, *PSD "Named Sources"*, lists the sources that are subject to the
1264 100 tpy major source threshold. All other new sources are subject to the 250 tpy major source
1265 threshold.

1266

1267

Table 2-1. PSD “Named Sources”

PREVENTION OF SIGNIFICANT DETERIORATION FOR MAJOR SOURCE APPLICABILITY	
Sources Subject to the 100 tons-per-year Threshold	
1. Coal cleaning plants (with thermal	15. Coke oven batteries
2. Kraft pulp mills	16. Sulfur recovery plants
3. Portland cement plants	17. Carbon black plants (furnace process)
4. Primary zinc smelters	18. Primary lead smelters
5. Iron and steel mills	19. Fuel conversion plants
6. Primary aluminum ore reduction plants	20. Sintering plants
7. Primary copper smelters	21. Secondary metal production plants
8. Municipal incinerators capable of discharging more than 250 tons of refuse per day	22. Chemical process plants
9. Hydrofluoric acid plants	23. Petroleum storage and transfer units with a total storage capacity exceeding 300,000
10. Sulfuric acid plants	24. Taconite ore processing plants
11. Nitric acid plants	25. Glass fiber processing plants
12. Petroleum refineries	26. Charcoal production plants
13. Lime plants	27. Fossil fuel-fired steam electric plants of more than 250 million British thermal units (BTU) per hour heat input
14. Phosphate rock processing plants	28. Fossil-fuel boilers (or combination thereof) totaling more than 250 million BTU per hour heat input

1268

1269

1270 2.2.3.3 PSD Regulated Pollutants and Significant Emission Rates

1271

1272 The regulated pollutants for PSD are the pollutants for which there is a NAAQS (criteria
 1273 pollutants), Greenhouse Gases (GHGs) in some cases, and other pollutants regulated under the
 1274 CAA, except for Hazardous Air Pollutants (HAPs). Regulated air pollutants are listed below,
 1275 with the Significant Emission Rate (SER) for each pollutant.

1276

1277

Table 2-2. PSD Regulated Pollutants

PSD REGULATED POLLUTANTS Major Source Modification Significant Emission Rates (SER) 40 CFR § 51.166(b)(23)	
Criteria Pollutant	SER (tpy)
Ozone (as Volatile Organic Compounds)	40
Ozone (as Nitrogen Oxides)	40
Carbon Monoxide (CO)	100
Nitrogen Oxides (NO _x)	40
Sulfur Dioxide (SO ₂)	40
Particulate Matter (PM)	25
PM ₁₀ (includes condensable emissions)	15
PM _{2.5} (includes condensable emissions)	10
Lead (Pb)	0.6
Non-Criteria Pollutant	SER (tpy)
Fluorides	3
Sulfuric acid mist	7
Hydrogen sulfide (H ₂ S)	10
Total reduced sulfur (including H ₂ S)	10
Reduced sulfur compounds (including H ₂ S)	10
Source Specific	SER (tpy)
Municipal waste combustor organics (measured as total tetra-through octa-chlorinated dibenzo-p-dioxins and dibenzofurans)	3.2 × 10 ⁻⁶ megagrams per year (3.5 × 10 ⁻⁶ tons per year)
Municipal waste combustor metals (measured as particulate matter)	14 megagrams per year (15 tons per year)
Municipal waste combustor acid gases (measured as sulfur dioxide and hydrogen chloride)	36 megagrams per year (40 tons per year)
Municipal solid waste landfill emissions (measured as nonmethane organic compounds)	45 megagrams per year (50 tons per year)

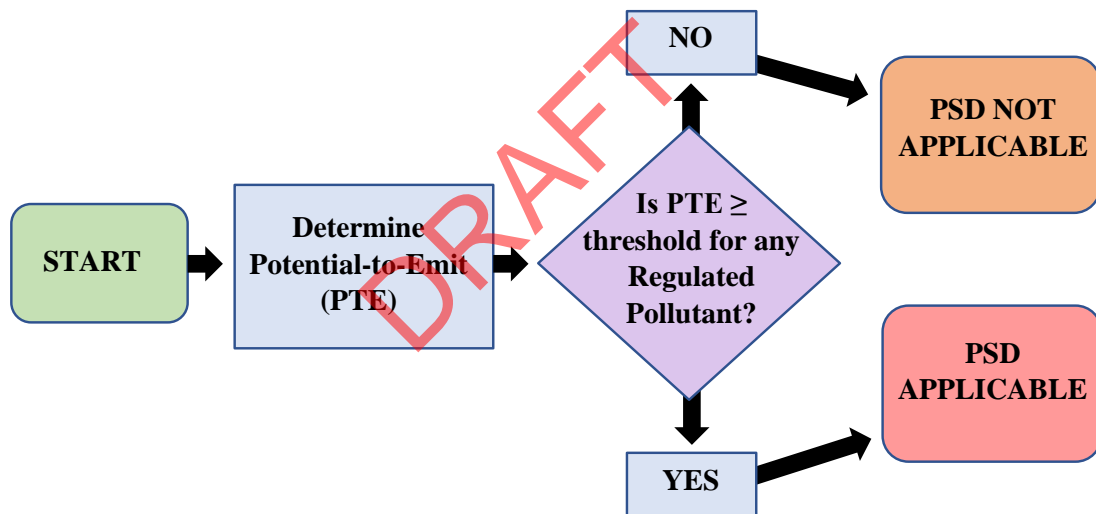
1278
1279

1280 **NOTE:** GHGs are “Subject to Regulation” only if air permitting is required due to another
 1281 pollutant (“anyway” sources) and if the new source/modification increases GHGs by 75,000
 1282 tons-per-year (tpy) of Carbon Dioxide Equivalents (CO_{2e}).
 1283

1284 **2.2.3.4 PSD Applicability for New Major Stationary Sources**

- 1285
- 1286 • **Construction of a New Stationary Source (also known as Greenfield):** The emissions
 1287 increase at a new source (e.g., DAF installation or facility) is equal to the PTE. The
 1288 baseline actual emission rate, for purposes of determining the emissions increase that will
 1289 result from the initial construction and operation of the facility, shall equal zero. If an
 1290 existing source has less than two years of operating history (from the date of initial
 1291 operation of the facility), the baseline actual emission rate may be taken as the allowable
 1292 emission rate, or the PTE, of the facility.

1293
 1294 The following flowchart demonstrates how to determine whether PSD permitting requirements
 1295 apply to a new Stationary Source:



1296
 1297 **Figure 2-1. Flow Chart for New Source PSD**

1298 **Regulatory Reference:** 40 CFR 51.165(a)(1)(iv), 40 CFR 51.166(b)(1)(i), and 40 CFR
 1299 52.21(b)(1)(i).

1301 **2.2.3.5 PSD Applicability for Existing Major Stationary Sources**

1302
 1303 EPA defines a major modification in 40 CFR 52.21(b)(2) (i)-(ii) as:
 1304

- 1305 (i)... any physical change in or change in the method of operation of a major Stationary Source
 1306 that would result in: a significant emissions increase (as defined in paragraph (b)(40) of this
 1307 section) of a regulated NSR pollutant (as defined in paragraph (b)(50) of this section); and a
 1308 significant net emission increase of that pollutant from the major Stationary Source.

1309
 1310 (ii) Any significant emissions increase (as defined at paragraph (b)(40) of this section) from
 1311 any emissions units or net emissions increase (as defined in paragraph (b)(3) of this section) at
 1312 a major Stationary Source that is significant for volatile organic compounds or NO, shall be
 1313 considered significant for ozone.

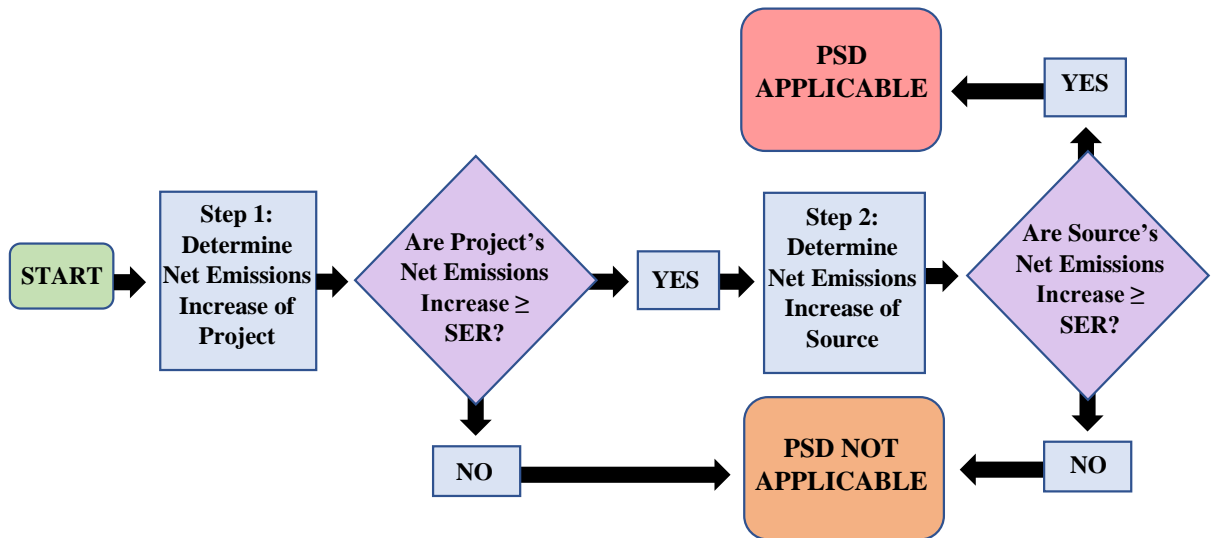
1314
 1315 In other words, an existing major Stationary Source triggers PSD permitting when it undergoes a
 1316 “major modification,” which occurs when a source undertakes a physical change or change in
 1317 method of operation (i.e., a “project”) that would result in:

- 1318
 1319 1) **Step One:** A significant net emissions increase from the project by itself (i.e., a project-
 1320 wide analysis that considers both creditable emission increases and decreases, also known
 1321 as Project Emissions Accounting, which is discussed in greater detail elsewhere in this
 1322 Guide), **and (optionally)**
 1323
 1324 2) **Step Two:** A significant net emissions increase from the source (i.e., a source-wide
 1325 “netting” analysis that considers creditable emission increases and decreases occurring at
 1326 the source as a result of another project).

“STEP TWO” IS OPTIONAL

It is important to point out that Step Two is an optional, additional step to avoid further PSD review if a project is a major modification based on potential-to-emit or projected actual emission calculations. Many times, the option to proceed with PSD air permitting is taken instead of continuing with the complexity of Step Two.

1327
 1328 The following flowchart demonstrates how to determine whether PSD permitting requirements
 1329 apply to an existing Stationary Source (if implementing Step Two of the process):



1330 **Figure 2-2. Flow Chart for Existing Source PSD**

1331
 1332 **Regulatory Reference;** 40 CFR 52.21(b)(2)(i) and 40 CFR 52.21(b).

1333 2.2.3.6 Project Emissions Accounting (“Project Netting”)

1334

1335 **NOTE:** The EPA made recent changes to Project Emissions Accounting (previously known as
1336 “project netting”) for determining if major modifications will trigger NSR permitting. This
1337 change is highly controversial and is prone to litigation, reversal, and/or revision.

1338

1339 On 22 October 2020, EPA signed the rule, *Prevention of Significant Deterioration (PSD) and*
1340 *Nonattainment New Source Review (NNSR): Project Emissions Accounting* (85 FR 7489085; 24
1341 November 2020), to clarify the process for evaluating whether the NSR permitting program
1342 would apply to proposed modifications at existing air pollution sources. The objective of the rule
1343 was to codify EPA’s interpretation of the two-step process for Project Emissions Accounting to
1344 determine if a “major modification” is subject to NSR. EPA revised Step 1 of the NSR analysis
1345 process to allow consideration of the “sum of the difference” in emissions stemming from the
1346 project instead of the “sum of the emissions increases.” In effect, this meant that “emissions
1347 increases and decreases can be considered in Step One of the NSR major modification
1348 applicability test.” Previously, only increases could be considered in Step One.

1349

1350 • **Current NSR Two-Step Analysis Process** - The two-step process to determine whether
1351 a modification (i.e., project) at an existing major Stationary Source will constitute a major
1352 modification subject to the major NSR permitting requirements:

1353

1354 ○ **Step One** - Requires a determination of whether the net air emissions resulting from
1355 the proposed project is expected to result in a significant emissions increase. Both air
1356 emission increases and decreases are considered in the analysis. The EPA refers to
1357 the consideration of emissions increases and decreases in Step One as Project
1358 Emissions Accounting (as opposed to “project netting”).

1359

1360 **Example:** The installation wants to replace four old boilers with more efficient
1361 boilers and finds the net increase in emissions causes the installation to emit less
1362 air pollution than the applicable NSR threshold; therefore, major NSR permitting
1363 is NOT required. At this stage, both the air emission increases and decreases
1364 resulting from the replacement of the old boilers was considered in the analysis.

1365

1366 ○ **Step Two (optional)** - Requires an evaluation of whether the project will result in a
1367 significant net emissions increase, considering any other increases and decreases in
1368 actual emissions at the Stationary Source that are contemporaneous with the proposed
1369 project. If the net result is a decrease in air emissions, major modification NSR
1370 permitting is avoided. If the net result is an increase in air emissions, major
1371 modification NSR permitting is required. For many Stationary Sources, this is an
1372 overwhelming undertaking; therefore, the Step Two option is seldom selected.

1373

1374 **Example:** Continuing with the boiler example from above, if the air emission
1375 increases and decreases resulting from the boiler replacement project (along with all
1376 the other air emission increases and decreases occurring at the Stationary Source
1377 during the same contemporaneous period) are considered, the net result could be a
1378 decrease in air emissions. At this stage, the air emission decreases from the removal
1379 of the old boilers can be counted, but all of the other air emission increases and
1380 decreases at the Stationary Source would also need to be included in the analysis.

1381

1382

1383 **2.2.3.7 Netting (“Stationary Source Netting”)**

1384

1385 Netting is an optional applicability step (i.e., Step Two) that is used to determine if a project is a
1386 major modification of an existing major source. If a project is a major modification of an
1387 existing major source, then PSD (and/or NNSR) is applicable to the pollutant(s) under review.

1388

1389 Netting is summing the emission increases from the proposed project with all creditable emission
1390 changes (both increases and decreases) within the contemporaneous period (also called netting
1391 window) that occurred at the Stationary Source (e.g., DAF installation).

1392

1393 The procedure for performing a netting analysis is as follows:

1394

- 1395 1. Identify the contemporaneous period. To be included in a netting analysis, the increases
1396 and decreases (i.e., change) must have occurred within five years of the beginning of
1397 construction on the proposed project or after the beginning of construction and before the
1398 initial operation of the proposed project (contemporaneous period).
- 1400 2. List each physical change or change in the method of operation that occurred (or will
1401 occur) during the contemporaneous period with a corresponding increase or decrease in
1402 actual emissions. Make sure the date of each change is verified and noted.
- 1404 3. Review each change to identify only those changes that are creditable. To be creditable, a
1405 contemporaneous emissions decrease must be federally enforceable on and after the date
1406 that construction begins on the proposed project. The emissions decrease must take place
1407 prior to the emissions increase with which it is being netted. The PTE for each
1408 creditable, contemporaneous change is used. The PTE can be determined by applicable
1409 requirements, permit limits, or by operation at the maximum design capacity.

1410

1411 **Clean Units** - Emission increases and decreases that occur at a Clean Unit are not
1412 creditable unless the reduction occurs prior to, or after expiration of, the effective date
1413 of the Clean Unit designation. There is an exception, however: reductions at Clean
1414 Units, or from implementation of a Pollution Control Project (PCP), may be
1415 creditable to the extent that the reductions exceed the level of reduction on which the

1416 Clean Unit designation, or PCP exclusion, was granted and the reductions are surplus,
1417 quantifiable, permanent, and enforceable.

1418

1419 4. List each creditable, contemporaneous change.

1420

1421 5. Calculate the Baseline Actual Emissions (BAE) for each creditable, contemporaneous
1422 change.

1423

1424 6. Identify the post-change potential emissions for each emissions unit affected by each
1425 creditable, contemporaneous change.

1426

1427 7. Calculate the emissions increase or decrease for each emissions unit. The degree of a
1428 creditable change is determined based on the difference between the post-change
1429 potential emissions and the pre-change BAE.

1430

1431 8. A netting analysis CANNOT be based on the decreases alone. ALL creditable
1432 contemporaneous emission increases and decreases for the specific pollutant must be
1433 used when conducting a netting analysis,

1434

1435 9. Sum all emission increases and decreases with the significant emissions increase from the
1436 proposed project.

1437

1438

1439 **2.2.3.8 Other Considerations for PSD**

1440

1441 **“Major for One, Major for All” Applicability for a New Source or Modified Source:** Once
1442 a source is major for one pollutant, the other regulated pollutants must also be considered in the
1443 PSD determination regardless of whether that pollutant exceeds the major source threshold. This
1444 is sometimes known as “Major for One, Major for All.”

1445

1446 **“Grandfathered” New or Modified Sources:** There are new or modified sources to which
1447 PSD does not apply. These sources may have been constructed before the PSD program was in
1448 effect and have not been modified since. Due to the age of these sources, very few exist.

1449

1450 **2.2.3.9 Resources for Air Emission Calculations**

1451 There are many resources available for emissions calculations. DAF’s AFCEC/CZTQ provides
1452 guidance for calculating emissions for most air emission sources commonly found on DAF
1453 installations. These guidance documents can be found in the Documents Repository page at
1454 AQhelp.com:

1455

- 1456 • **DAF Potential-to-emit (PTE) Guide** - The PTE Guide provides standardized guidance
1457 and methodologies for establishing base-level PTE estimates for major source
1458 determinations. The guide evaluates DAF sources for physical and/or operational

- 1459 limitations to establish DAF-specific PTEs for individual source categories based on the
1460 Environmental Protection Agency's historic guidance and methodologies.
1461
- 1462 • **Air Emissions Guide for DAF Stationary Sources** - The Air Emissions Guide to DAF
1463 Stationary Sources (Stationary Source Guide) provides guidance for estimating emissions
1464 for Stationary Sources of pollutant emissions commonly found at DAF installations. This
1465 guide provides updated emission factors and recommended calculation methodologies for
1466 these common sources associated with processes frequently occurring at DAF
1467 installations. The pollutants of concern addressed within this guide include criteria
1468 pollutants, Hazardous Air Pollutants (HAPs), Volatile Organic Compounds (VOCs), and
1469 greenhouse gases (GHGs).
1470
 - 1471 • **Air Emissions Guide for DAF Mobile Sources** - The Air Emissions Guide to DAF
1472 Mobile Sources (Mobile Source Guide) provides guidance for estimating emissions for
1473 mobile sources of pollutant emissions commonly found at DAF installations. This guide
1474 provides updated emission factors and recommended calculation methodologies for
1475 processes and sources such as flight operations, Aerospace Ground Equipment (AGE)
1476 use, and both non-road vehicles/equipment and on-road vehicle operation. The pollutants
1477 of concern addressed within this guide include criteria pollutants, Hazardous Air
1478 Pollutants (HAPs), Volatile Organic Compounds (VOCs), and greenhouse gases (GHGs).
1479
 - 1480 • **Air Emissions Guide for DAF Transitory Sources** - The Air Emissions Guide to DAF
1481 Transitory Sources (Transitory Source Guide) provides guidance for estimating emissions
1482 for transitory sources of pollutant emissions found at DAF installations. Transitory
1483 sources of emissions are those that are non-routine and/or seasonal sources (which may
1484 be stationary, mobile, or neither) that are short-term in nature. The sources included in
1485 this guide include bulk storage tank cleaning, seasonal equipment, fuel spills, hot mix
1486 asphalt plants, prescribed burns, wildfires, construction, site restoration/remediation, and
1487 land use changes. Transitory sources have historically been erroneously included in
1488 stationary or mobile source air emission inventories, though these sources should only be
1489 accounted for in evaluating potential air quality impacts of proposed actions under the
1490 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA);
1491 National Environmental Policy Act (NEPA); General Conformity; etc. The pollutants
1492 addressed within this guide include criteria pollutants, Hazardous Air Pollutants (HAPs),
1493 Volatile Organic Compounds (VOCs), and greenhouse gases (GHGs).
1494
- 1495 Many State and local agencies have air emission calculation tools and manufacturers may also be
1496 able to provide emissions data. Just be certain that the methodologies are consistent with DAF
1497 policies and procedures. Depending on the complexity of air permitting requirements, it may be
1498 necessary to engage the assistance of the DAF's AFCEC Air Quality Subject Matter Expert
1499
1500

1501 **2.2.3.10 Air Emission Calculations**

1502 The procedure for calculating air emissions increases depends on the emissions unit being
1503 modified and whether the project involves new units or a modification to a minor or major
1504 existing source (or a combination).

1505

1506 • **Construction/Installation of a New Emissions Unit or Source (Does NOT include**
1507 **replacement units)** - The emissions increase at a new emissions unit is equal to the PTE
1508 of the unit.

1509

1510 ○ **Actual to Potential Applicability Test** - For modifications that involve only the
1511 installation of new emissions units, the emissions increase is determined as the
1512 difference between the proposed potential emissions (after the modification) and the
1513 average annual actual emissions (before the modification). This must include all
1514 emissions units affected by a proposed modification.

1515

1516

1517

1518 ○ **"Potential-to-Emit" (PTE)** – PTE is the maximum capacity of a Stationary Source
1519 to emit a pollutant under its physical and operational design. Any physical or
1520 operational limitation on the capacity of the source to emit a pollutant, including air
1521 pollution control equipment and restrictions on hours of operation or on the type or
1522 amount of material combusted, stored, or processed, shall be treated as part of its
1523 design if the limitation or the effect it would have on emissions is enforceable as a
1524 practical matter. Secondary emissions do not count in determining the PTE of a
1525 Stationary Source.

1526

1527 • **Modification at an Existing Major Source** – Existing sources, even if they are major,
1528 are not subject to PSD permitting unless they make a major modification to the source.
1529 The emissions increase for a modification of an existing unit is determined by
1530 calculating the difference between the projected actual emissions (post change
1531 emissions) and the baseline actual emissions (pre-change emissions) for that unit. This
1532 comparison is referred to as the “actual-to-projected-actual applicability test.” The
1533 option to use PTE in place of projected actual emissions is also available (possibly
1534 reduces future recordkeeping requirements).

1535

1536 • **Modification at an Existing Minor Source** - The emissions increase from a proposed
1537 modification at an existing minor Stationary Source, requires the calculation of the PTE
1538 for the modified emissions unit(s). The calculations for projected actual emissions and
1539 baseline actual emissions do not apply.

1540

- 1541 • **Projects that Include a Combination of New and Existing Emissions Units** - If a
1542 project involves both the addition of a new emissions unit and a modification to an
1543 existing emissions unit, each unit needs to be analyzed separately and the increases
1544 added together to determine the total emissions increase from the project. For example,
1545 that means for each new unit the emissions increase would be calculated as the PTE of
1546 the new unit (unless the new unit is a replacement unit). For each existing emissions
1547 unit involved in the project, calculate the air emissions increase using the actual-to-
1548 projected-actual applicability test.
1549
- 1550 ○ **Replacing Existing Emissions Units with** - Replacement of existing units with
1551 equivalent units. When replacing an existing unit with an equivalent unit, the
1552 increase is calculated in the same manner as for modification of an existing unit,
1553 provided the replaced unit is removed from the premises or rendered
1554 permanently inoperable. If this is the case, then the emissions increase is the
1555 difference between the projected actual emissions of the replacement unit and the
1556 baseline actual emissions of the replaced unit. There is also the option of using
1557 potential emissions in place of projected actual emissions.

1558 **2.2.3.11 Emission Increase/Decrease Calculation Methodologies**

1559
1560 There are four different methods that may be used to determine the extent of an emissions increase
1561 from a proposed modification. The procedure for calculating emissions increases depends on the
1562 emissions unit being modified and whether or not the existing source is major:
1563

- 1564 1) **Actual to Potential Applicability Test** - For modifications that involve only the
1565 installation of new emissions units, the emissions increase is determined as the
1566 difference between the proposed potential emissions (after the modification) and the
1567 average annual actual emissions (before the modification). This must include all
1568 emissions units affected by a proposed modification.
1569
- 1570 2) **Actual to Projected Actual Applicability Test** - For modifications that involve only
1571 existing emissions units, the emissions increase is determined as the difference between
1572 the projected future actual emissions (after the modification) and the average annual
1573 actual emissions (before the modification). This method must include all emissions units
1574 affected by a proposed modification. For modified existing emissions units, the Actual
1575 to Potential Applicability Test may be used as an alternative. The full definition of
1576 “projected actual emissions” can be found at 40 CFR 52.21(b)(41).
1577
- 1578 3) **Hybrid Test** - The PSD regulations at 40 CFR 52.21(a)(2)(iv)(f) require use of a hybrid
1579 test for projects which involve both the addition of new emissions units and the
1580 modification of existing emissions units. The Hybrid Test involves using the appropriate

1581 applicability test as described above for each type of emissions unit and then adding
1582 together the emissions increases.

1583

1584 4) **Clean Unit Test** - For modifications that involve only Clean Units. For a proposed
1585 modification to a Clean Unit that will not cause it to lose its Clean Unit status, the
1586 emissions change is zero. The Clean Unit provision reduces NSR review requirements
1587 for changes to units that use the latest technology.

1588

1589 **2.2.3.12 PSD Exemptions and Exclusions**

1590

1591 A physical change or a change in the method of operation is not explicitly defined in the PSD
1592 regulations. Instead, the regulations specifically exclude certain changes (physical and
1593 operational) from being considered modifications. Therefore, except for the following specified
1594 exclusions, any physical change in, or change in the method of operation is considered a
1595 modification:

1596

1597 • Routine maintenance, repair, and replacement.

1598

1599 • Use of alternative fuels by reason of an order or rule of 42 United States Code §7425.

1600

1601 • An increase in the hours of operation or in the production rate (unless the change is
1602 prohibited under any federally enforceable permit condition that was established after 21
1603 December 1976).

1604

1605 • Any change in ownership.

1606

1607 • Certain qualifying clean coal projects (subject to certain criteria and conditions).

1608

1609 **2.2.3.12.1 Routine Maintenance, Repair, and Replacement**

1610

1611 As mentioned above, PSD permitting does not apply for projects that are “routine maintenance,
1612 repair and replacement” (“RMRR”). Make note that the term “routine” in this exemption
1613 applies across all three activities. Basically, the maintenance, repair, or replacement must be
1614 routine. Typically, maintenance and repair are more likely to be deemed routine than
1615 replacements. Evaluated on a case-by-case basis, RMRR includes, but is not limited to, the
1616 replacement of any component of a process unit:

1617

1618 1) With an identical or functionally equivalent component(s), and

1619

1620 2) Maintenance and repair activities that are part of the replacement activity, provided that
1621 the following conditions are met.

1622

1623 a) Does not exceed the capital cost threshold for equipment replacement.

- 1624
- 1625 b) The replacement does not change the basic design parameter(s) of the process unit to
- 1626 which the activity pertains.
- 1627
- 1628 c) The replacement activity does not cause the process unit to exceed any emission
- 1629 limitation, or operational limitation that has the effect of constraining emissions, that
- 1630 applies to the process unit and that is legally enforceable.
- 1631

1632 **Regulatory Reference:** 40 CFR 52.21(b)(2)(iii)(a through k)

1633

1634 **2.2.4 STEP FOUR – Major Source Determination**

1635

1636 Compare air emissions of all applicable pollutants to the PSD or NNSR thresholds of “regulated

1637 NSR pollutants”. A source is considered a major Stationary Source if its PTE is greater than the

1638 established major source thresholds for any regulated NSR pollutant.

1639

1640

1641 **2.2.5 STEP FIVE – Schedule Preliminary Meeting with Air Permitting Authority**

1642

1643 If it appears the project is a Major Source of air emissions, schedule a preliminary (i.e., pre-

1644 application) meeting with the air permitting authority. For some air permitting authorities, this

1645 meeting is mandatory. The meeting is a vital step in the air permitting process and can help

1646 permit applicants to:

1647

- 1648 • Fully explain proposed projects and discuss timeframes in detail.
- 1649 • Submit accurate and complete applications.
- 1650 • Evaluate compliance options and understand the air permitting authority’s expectations.
- 1651 • Provide an opportunity to discuss permit requirements (e.g., BACT determinations,
- 1652 public noticing).
- 1653 • Understand the permitting schedule and how it will line up with the project’s timeline.
- 1654 • Review a preliminary permit application and identify/correct any gaps.
- 1655 • Facilitate a smooth and uneventful permitting process with no or few surprises. A
- 1656 complete and well-prepared permit application will minimize the air permitting
- 1657 authority’s review time.
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1665 Some air permitting authorities prefer to schedule the meeting at the earliest stages of the

1666 permitting process. While others will require a mostly completed application (e.g., 80%

1667 complete) at the first meeting. The ultimate goal for the meeting is the preparation of an

1668 accurate, relevant, and complete application to expedite the approval of a suitable pre-

1669 construction permit. Most air permitting authorities developed a permitting checklist which can
1670 provide guidance in determining the specific permitting and notification requirements for the
1671 project.
1672

1673 **2.2.6 STEP SIX – Air Pollution Control Technology Selection**

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1675 Each new source or modified emissions unit subject to PSD permitting is required to undergo a
1676 Best Available Control Technology (BACT) review. The selection should be causally (directly)
1677 related to the process/unit and the air emissions of the pollutant being regulated.
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1679

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1680 **2.2.6.1 Best Available Control Technology (BACT)**

The BACT limit that will be incorporated in the permit is NOT a specified pollution control technology.

The limit is the emission rate and averaging times that is projected from implementing the selected control option. For example, a BACT for Carbon Monoxide (based on good combustion practices) may look like this in the actual permit:

BACT for Carbon Monoxide is 0.17 lb/MMBtu, thirty day rolling average, including periods of startup and shutdown.

1681

1682 *Proposed BACT is presented with the air permit application; however, the ultimate decision is*
1683 *made on a case-by-case basis by the air permitting authority.*

1684

1685 BACT is a pollutant specific emissions limit, set for each source on a case-by-case basis:
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- The determination of BACT considers energy, environmental, or economic impacts.

1688

1689

- The emissions limit must be at least as stringent as other applicable standards such as New Source Performance Standards (NSPS) and/or National Emission Standard for Hazardous Air Pollutants (NESHAP).

1690

1691

1692

1693 **BACT Analysis:** The appropriate BACT is selected by a “Top Down” BACT analysis in
1694 which all available control technologies are identified and then technically infeasible control
1695 options are eliminated. The remaining control technologies are ranked by their effectiveness
1696 then, the most effective controls are evaluated, and the results documented. The key concepts
1697 for the BACT analysis include the following:
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- A BACT analysis is performed for each regulated PSD pollutant. The BACT analysis will result in the selection of the emissions control option which results in the maximum degree of reduction achievable for each pollutant under PSD review.
 - BACT analyses must be performed for each emissions unit in the project emitting the PSD pollutant under review.
 - A BACT analysis for opacity is required for any pollutant that could result in visible emissions.
 - Work practices are acceptable in lieu of a numerical emission limit if it is technically impractical to establish or ensure compliance with a numerical limit.

1712 **The five-steps of the BACT analysis are:**

1713

1714

1715 **Step 1: Identify all available control technologies** (this usually involves researching control methods used for similar emissions units/sources) including, but not limited to:

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- Processes and designs that lower emissions (not required to include options that “fundamentally redefine the nature of the source”).
 - Clean fuels unless they redefine the source. EPA noted in the PSD and Title V Permitting Guidance for Greenhouse Gases that certain types of biomass fuel can be considered BACT as determined on a case-by-case basis.
 - Innovative control technology. EPA will consider granting waivers if needed [See 40 CFR 52.21(b)(19)].

1730 Available control options are control technologies or techniques that are practical and that will reduce the regulated PSD pollutant under review. Be careful not to redefine the equipment, activity, or process for which the permit is being sought (e.g., significantly change raw materials).

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1735 **Step 2: Eliminate technically infeasible options** (need to show the technology is infeasible based on physical, chemical, or engineering principles). Each option that has been successfully installed and operated on a comparable emissions unit or source is considered feasible. Additionally, the control is not technically infeasible just because the emissions unit/source needs to be modified to make the control compatible. EPA guidance also states that lack of vendor guarantees is not sufficient to eliminate an option.

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1743 **Step 3: Evaluate and rank remaining control technologies based on environmental**
1744 **effectiveness.** The remaining control options are ranked from the most to the
1745 least effective based on emission reduction potential. EPA suggests using
1746 efficiency-based control effectiveness to ensure that the best controls are, in
1747 fact, listed first.

1748
1749 **Step 4: Evaluate cost effectiveness of controls and energy and other environmental**
1750 **impacts.** If there is proper justification that adverse energy, environmental or
1751 economic impacts exist, then the control option may be eliminated and the next
1752 option evaluated. This continues until a control option can no longer be
1753 eliminated. Historically, economic considerations were the primary focus, but
1754 EPA guidance suggests other impacts are more significant for BACT.

- 1755 - Economics: evaluate direct impacts in dollars per ton.
- 1756 - Energy: evaluate direct energy consumption.
- 1757 - Environmental: evaluate indirect or collateral impacts.

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1762 **Step 5: Select the BACT** (The most effective control option not eliminated is proposed
1763 as BACT in the permit application). All assumptions and data used in making
1764 the BACT determination must be properly documented in the permit
1765 application. Furthermore, compliance with the emission limit (or work
1766 practice) resulting from the selected BACT must be verifiable at all times the
1767 emissions unit is operating.

1768
1769 **BACT Resources:** Selecting suitable BACT takes considerable effort. Research should
1770 include, at the very least, EPA's BACT Clearinghouse (www.epa.gov/ttn/catc). Vendors for air
1771 pollution control technology and design engineers frequently have detailed information
1772 available that can assist with the selection of the appropriate technology and can also be
1773 included with the permit application to assist the permitting authority with their review.
1774 Technical journals and reports are also common sources of information for selecting appropriate
1775 air pollution controls.

1776

1777 **2.2.7 STEP SEVEN – Complete PSD Permit Application**

1778 PSD Air Permits are legal documents that contain a description of the project and specifies the
1779 standards and limits that apply to each air emissions unit. Once it has been determined that a
1780 PSD air permit is required, it is important to acquire the proper application form(s) from the air
1781 permitting authority. Ideally, the application form will lead the permit applicant to provide all
1782 required information. Permit applications must be submitted to obtain the necessary permits
1783 and must contain all information necessary for the air permitting authority to determine
1784 compliance with the requirements of all applicable air quality related regulations.

1785

1786

1787 2.2.7.1 PSD Permit Application Contents

1788

1789 The contents of the PSD permit application typically include the application form, supporting
1790 material, and a detailed Technical Support Document. At the very minimum, a PSD permit
1791 application package will likely include the following items:

1792

1793

1. All permit application forms.

1794

2. A detailed description of the proposed project including site diagrams, process and/or
1795 equipment descriptions, and technical specifications.

1796

3. A written section addressing PSD applicability, including documentation supporting
1797 emission calculations.

1798

4. Technical Support Document.

1799

5. A summary of state and Federal rule applicability including a listing of any New Source
1800 Performance Standards (NSPS, see 40 CFR 60) and National Emission Standards for
1801 Hazardous Air Pollutants (NESHAP, see 40 CFR 63) subparts that apply.

1802

6. BACT analysis.

1803

7. A statement addressing any required modeling analysis with a complete method
1804 description.

1805

8. The permit filing fee.

1806

1807 2.2.7.2 Technical Support Document

1808

1809 Nearly all PSD permit applications include a Technical Support Document (TSD). The
1810 document typically includes detailed calculations, tables, and technical information to support
1811 the application. The elements required to be covered include:

1812

1813

- **Air Quality Analysis** - PSD permit applications require an air quality analysis to
1814 demonstrate that emissions of subject pollutants from a project will not cause or
1815 contribute to a violation of a NAAQS or applicable PSD increments. Increments are
1816 limits on degradation of air quality for certain pollutants set by the PSD program and
1817 may, in practice, be more restrictive than the NAAQS.

1818

1819

- **Discussion of Selected BACT** – The BACT analysis and a detailed discussion of the
1820 selection are considered on a case-by-case basis, by the permitting authority. A
1821 defensible discussion of the BACT selected will facilitate the approval.

1822

1823

- **Class I Area Impact Analysis** - Class I Areas are areas reserved for special air quality
1824 protection, usually national parks and wilderness areas.

1825

- 1826 • **Other Impacts Analysis** - Examination of impacts the project will have on visibility,
1827 soils, vegetation, and growth.

1828

1829 **2.2.7.3 Air Quality Impact Analysis (AQIA)**

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1831 If the proposed project will emit any pollutant above the PSD SER thresholds, the permit
1832 application must include an Air Quality Impact Analysis (AQIA). The analysis will use
1833 ambient air monitoring data and air quality dispersion modeling results to assess the existing
1834 air quality and predict ambient concentration levels that would result from the proposed project
1835 and future growth associated with the project. Largely, the purpose of the analysis is to
1836 determine if new emissions from the project (plus existing emissions) will cause or contribute
1837 to a violation of a NAAQS and/or the PSD increment for a pollutant. The AQIA is a pollutant
1838 specific analysis that includes:

1839

- 1840 • A modeled estimate of ambient concentrations from the proposed project and future
1841 growth associated with the project, and
1842
- 1843 • An assessment of existing air quality.

1844

1845 To determine if a full impact model analysis and/or ambient air monitoring is necessary, a
1846 preliminary modeling analysis is required. The preliminary analysis includes only the
1847 proposed source or modification so it can be established if a significant modeled impact will
1848 take place. For each pollutant that the model predicts the concentration to be below the
1849 significant impact level (SIL) threshold, no further analysis is necessary for that pollutant.
1850 Prior to commencing a refined modeling or PSD modeling analysis, it is usually required to
1851 submit the modeling protocol to the air permitting authority for approval.

1852

1853 Computer modeling for the PSD Source Impact Analysis is rarely necessary for DAF
1854 Installation projects. Furthermore, it is difficult and requires specialized skills as well as a
1855 strong familiarity with the process. The procedures for modeling are included in EPA's
1856 *Guideline on Air Quality Models*. Appendix W to 40 CFR, Part 51 governs the choice of
1857 computer modeling program for the PSD Source Impact Analysis. The models that EPA has
1858 approved are listed in Appendix A of EPA's *Guideline on Air Quality Models*. Generally,
1859 EPA's approved models include American Meteorological Society (AMS)/EPA Regulatory
1860 Model (AERMOD) for near-field (less than 50 kilometers or approximately 31 miles from the
1861 source) dispersion modeling and California Puff Model (CALPUFF) for long-range transport
1862 (beyond 50 kilometers or approximately 31 miles from the source). AERMOD, in particular,
1863 can be used in a wide range of situations and is often the primary model used for refined
1864 modeling.

1865

1866

1867 **2.2.7.4 Class I Area Impact Analysis**

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1869 The CAA gives special air quality and visibility protection to national parks larger than 6,000
1870 acres and national wilderness areas larger than 5,000 acres that were in existence when it was
1871 amended in 1977. These are called “Class I” areas. The Class I Area Impact Analysis is an
1872 evaluation of the impact a major source’s emissions may have on a Class I area NAAQS, PSD
1873 increments, and Air Quality Related Values (AQRVs). AQRVs are the feature or property of a
1874 Class I Area that may be affected by a change in air quality. These are different for each Class I
1875 area. For example, for some Class I areas, the AQRV is visibility. The ability to see the Class I
1876 area (e.g., Big Bend National Park, Grand Canyon) is an AQRV that may be affected by the fine
1877 particles emitting from an emissions source. The assessment of AQRVs is generally performed
1878 for proposed projects located within 100 km (approximately 62 miles) of a Class I area, but this
1879 also varies.

1880

1881

1882 **2.2.7.5 Additional Impact Analysis**

1883

1884 For Air Quality, the Additional Impacts Analysis assesses the impacts of the project on
1885 visibility, vegetation, and soils caused by any increase in emissions from the source or
1886 modification under review, and associated growth that is expected to occur in the area due to the
1887 source. This analysis is pollutant specific and must be performed within the impact area of the
1888 proposed project. The PSD air quality application should address each area and assure the
1889 public that the project’s impacts to the environment are minimal.

1890

1891 **2.2.7.5.1 Visibility Impacts**

1892 This visibility analysis is distinctly different from the Class I area analysis. The suggested
1893 elements of a good visibility impairment analysis are a determination of the visual quality of the
1894 area, and then an initial screening of emission sources to assess the possibility of visibility
1895 impairment. All local areas of scenic importance will need to be evaluated (e.g., parks, scenic
1896 overlooks).

1897

1898 The visibility analysis should be performed using the methodology described in EPA’s
1899 “Workbook for Plume Visual Screening and Analysis (Revised)” October 1992 (EPA-454/R-
1900 92-023). The VISCREEN model is recommended for the first level (Level 1) screening. If
1901 calculated values from the VISCREEN model are greater than the standardized screening
1902 values, the emissions potentially affect visibility. If the screening model indicates it is needed, a
1903 more in-depth analysis may be done.

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2.2.7.5.2 Soils and Vegetation impacts

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The Soils and Vegetation impact analysis is based on an inventory of soil and vegetation types found in the area of impact. The analysis requires that sensitive crops and soils be identified for each pollutant the project emits. This inventory must include all vegetation with any commercial or recreational value.

2.2.7.5.3 Secondary Growth Analysis

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The Secondary Growth Analysis (sometimes simply stated as “Growth Analysis”) involves evaluating what industrial, commercial, and residential growth may occur due to the project. The analysis includes an estimate of air emissions from this growth. The associated growth emissions do not count towards the project’s total pollutant emissions unless it is determined that an associated source qualifies as a supporting facility.

2.2.8 STEP EIGHT – Submit Permit Application

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The completed air permit application package, including all forms, supporting material, and the Technical Support Document are provided to the air permitting authority in the form requested (e.g., electronic, mailed). More than one copy may be required to be submitted.

The permitting process can be extraordinarily complex and time consuming; especially considering the time needed for public participation and air dispersion modeling. The process can take from three months to one year to obtain. Therefore, plan to submit the application well before the proposed installation and projected start-up date.

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The air permitting authority will review the application package to determine completeness. This is done on a case-by-case basis. If needed, the air permitting authority may require additional information, even if the application package contained all the required components. If the application is incomplete, the applicant will be notified of the deficiencies. If the application is deemed incomplete, the applicant normally has 90 days to submit the requested additional information (additional time can usually be requested if needed). Once the application is deemed complete, the technical review will begin.

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After the technical review, the air permitting authority will submit the draft permit for a 30-day public comment period or deny the permit. The air permitting authorities generally publish a notice to inform the public of the public comment period and the deadline for requesting a public hearing on the draft permit. Some air permitting authorities will provide the public notice package to the permit applicant with detailed instructions. The public notice packet usually includes the newspaper publication example, sign posting example (if applicable),

1947 checklist, instructions and additional forms if needed. The notice can be published in a
1948 newspaper of general circulation in the area where the source is located or in a State publication,
1949 like a State register. Many air permitting agencies also post the public notice and draft permit
1950 on their web site.

1951

1952 After the public comment period is over, decide whether to revise the draft permit based on the
1953 comments received. If the draft permit is substantially revised due to public comments, the
1954 permitting authority will issue a revised draft permit and require another public notice.

1955

1956 If the draft permit is not substantially revised and no hearing is requested, the final permit
1957 decision is issued promptly following close of the public comment period. If the permit is
1958 approved and there are no complications, the final permit is issued soon afterwards.

1959

1960 **2.2.9 STEP NINE – Comply with Air Permit**

1961

1962 Construction or installation may begin after the final permit is issued. Be proactive in assuring
1963 compliance with the permit. Review permit provisions carefully and ensure that personnel
1964 responsible for compliance are aware of the requirements. The permit will often require testing,
1965 monitoring, maintenance logs, recordkeeping, and reporting to prove compliance. Be careful,
1966 these requirements may be directly listed in the permit or within the regulations that are
1967 referenced.

1968

1969 **NOTE:** PSD permits usually become invalid if construction is not commenced within 18
1970 months of the permit's issuance. The air permitting authority may extend the 18-month period
1971 upon a reasonable explanation that an extension is justified.

Reminder: Because NSR (which includes both PSD and NNSR) is pollutant-specific, it is important to note that a permit application may require both PSD and NNSR in an area that is nonattainment for any NAAQS. A source may be required to get one (or more) of three permit types under the NSR program: a PSD permit, an NNSR permit, and/or a minor source permit.

1972

1973 **2.3 Measurements in Air Permits**

1974

1975 Measurements for air permitting are typically expressed by the averaging time in accordance
1976 with requirements of the applicable emission limit or standard (e.g., New Source Performance
1977 Standards). However, most importantly, they must be stated in terms that enable the limitation
1978 and/or permit requirement to be effectively monitored and practically enforced. Also, the
1979 measurements need to be understandable to the operator(s) of the emissions units, the air quality
1980 personnel at the installation, and the regulatory inspectors (e.g., EPA, State Department of

1981 Environmental Quality). Measurements in an air permit may take a variety of forms, including
1982 the following:

1983

1984 - Pounds per hour.

1985

1986 - Tons per year (tons per year is calculated as the sum of each consecutive 12-month
1987 period).

1988

1989 - Grains per dry standard cubic foot.

1990

1991 - Usage or throughput rates (e.g., gallons of hour, gallons per square foot).

1992

1993 For example, in a permit, the emission calculations for a boiler might use pounds (lbs) per one
1994 million British Thermal Units (MMBtu) of heat input, lb per gallons of fuel, or lb per ton of
1995 fuel.

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2031 **3 NONATTAINMENT NEW SOURCE REVIEW**

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2033 **Regulatory Reference:** 40 CFR 51.100, 40 CFR 51.165, and 40 CFR 52.24.

2034 **NOTE:** Many of the elements for Nonattainment New Source Review (NNSR) are identical or
2035 similar to those of PSD. Additionally, there are no areas in the United States that are
2036 nonattainment for every NAAQS; therefore, PSD will also be applicable. For that reason, it is
2037 important to become familiar with the PSD regulations in Chapter Two of this Guide.
2038 Regardless, there are key differences between NNSR and PSD such as:

- 2039 • The pollutants that must be evaluated (i.e., regulated pollutants).
- 2040
- 2041 • Different applicability thresholds.
- 2042
- 2043 • NNSR requires the Lowest Achievable Emission Rate (LAER) which is more stringent
- 2044 than the Best Available Control Technology (BACT) required in attainment areas.
- 2045
- 2046 • Offsets are available in nonattainment areas to counter the emissions increase from the
- 2047 new source or modification.
- 2048

2049 NNSR applies in areas formally designated by the EPA as "nonattainment" for any pollutant for
2050 which a NAAQS exists. Nonattainment areas indicate where the air is deemed unhealthy.
2051 Unless the new or modified Stationary Source is exempt, it is major if the emissions increase is
2052 greater than the threshold for NNSR regulated pollutants. An NNSR air permit is required prior
2053 to:

- 2054 • The construction of new major Stationary Sources.
- 2055
- 2056 • Any project at an existing major source if the modification is major.
- 2057
- 2058 • Any project at an existing minor source if the modification itself would
- 2059 constitute a major source.
- 2060

2061 **3.1 Purpose of Nonattainment New Source Review**

2062

2063 The objective of the NNSR program is to allow construction of a new or modified source of air
2064 emissions while allowing the area to make progress towards meeting the NAAQS. The goals of
2065 the NNSR regulations are to:

2066

- 2067 • Ensure that sources will not contribute more pollution in areas that are already not
- 2068 meeting the NAAQS.
- 2069
- 2070 • Allow construction of new or modified sources of air pollution in nonattainment areas
- 2071 while not interfering with the area's progress towards attaining the NAAQS.
- 2072

- 2073 • To preserve, protect, and enhance the air quality in areas of special natural recreational,
2074 scenic, or historic value, such as national parks and wilderness areas.
2075

2076 **3.2 NNSR Applicability**

Reminder: Because NSR (which includes both PSD and NNSR) is pollutant-specific, it is important to note that a permit application may require both PSD and NNSR in an area that is nonattainment for any NAAQS. A source may be required to get one (or more) of three permit types under the NSR program: a PSD permit, an NNSR permit, and/or a minor source permit.

2077

2078 **Regulatory Reference:** *The provisions of 40 CFR 51.165(a)(2)(ii)(A) through (F) are used to*
2079 *determine if a proposed project will result in a new major Stationary Source or a major*
2080 *modification to an existing Stationary Source.*

2081 NNSR only applies in areas designated as nonattainment and only to major sources.
2082 Additionally, NNSR applicability only applies to the extent that the proposed source's air
2083 emissions would contribute to nonattainment of a NAAQS. For instance, if the proposed source
2084 is expected to emit three pollutants and the area violates the NAAQS for only one, NNSR
2085 applies only for the nonattainment pollutant and PSD applies to the others.

2086

2087 **3.2.1 STEP ONE – Identify Air Emission Sources**

2088

2089 Identify the Stationary Source and the air emissions units included in the project. The process
2090 for identifying the Stationary Source and emissions units for the project are identical to PSD.
2091 Refer to Step One in Chapter Two for instructions.
2092

2093 **3.2.2 STEP TWO – Assess NAAQS Designation**

2094

2095 The process for assessing the area's attainment status for the NAAQS are identical to those in
2096 PSD. Refer to Step Two in Chapter Two for instructions. Additional information regarding the
2097 NAAQS is also in Chapter One.
2098

2099 **3.2.3 STEP THREE – Calculate Air Emissions and Compare to Thresholds**

2100

2101 Although the process to calculate air emissions for NNSR are essentially the same as for PSD,
2102 the thresholds for determining if a new source or a modification is existing are different. There
2103 are no "named sources" for NNSR.
2104

2105 **3.2.3.1 Major Source Applicability Thresholds for NNSR**
 2106

2107 **Regulatory Reference:** 40 CFR §§ 51.165 (a)(1)(iv)(A), 51.165 (a)(1)(x)(A), 51.165(a)(9),
 2108 51.165(a)(10).
 2109

2110 In general, a source is “Major” under NNSR if it has PTE 100 tpy or greater of a criteria
 2111 pollutant (applies for only the nonattainment pollutant and precursor emissions). Lower
 2112 thresholds may apply depending on the nonattainment severity classification of an area.

2113 A new source/modification is Major and will be subject to NNSR if:

- 2114 1) Will actually emit or have the PTE 100 tpy (or lower, depending on classification) of
 2115 any criteria pollutant (or precursor) for which the area is designated as nonattainment
 2116 (Table 3.1 below).

2117 **OR**
 2118

- 2119 2) A modification (physical or operational change) results in a significant increase in
 2120 emissions of a pollutant for which the source is major and the area is designated
 2121 nonattainment (Table 3.2 below).
 2122

2123 **Table 3-1. NNSR Major Source Thresholds**

NONATTAINMENT NEW SOURCE REVIEW MAJOR SOURCE THRESHOLDS FOR NEW SOURCES OR MODIFICATIONS AT EXISTING MINOR SOURCES*						
Criteria Pollutant	Classification					
	None/Basic	Marginal	Moderate	Serious	Severe	Extreme
Ozone (NO _x and VOCs are precursors)	---	100	100	50	25	10
Carbon Monoxide	100	---	---	---	---	---
Nitrogen Dioxide	100	---	---	---	---	---
Sulfur Dioxide	100	---	---	---	---	---
Lead	25	---	---	---	---	---
Particulate Matter 10	---	---	100	70	---	---
Particulate Matter 2.5 (NO _x and SO ₂ are precursors)	---	---	100	100	---	---

*Tons-per-year. Note that when two standards apply in a nonattainment area, the most stringent is used.

2124

2125

Table 3-2. NNSR Significance Levels

NONATTAINMENT NEW SOURCE REVIEW SIGNIFICANCE LEVELS FOR MODIFICATIONS AT EXISTING MAJOR SOURCES*						
Criteria Pollutant	Classification					
	None/Basic	Marginal	Moderate	Serious	Severe	Extreme
Ozone (NO_x and VOCs are precursors)	---	40	40	25	25	ANY
Carbon Monoxide	100	---	---	---	---	---
Nitrogen Dioxide	40	---	---	---	---	---
Sulfur Dioxide	40	---	---	---	---	---
Lead	.60	---	---	---	---	---
Particulate Matter 10	---	---	15	15	---	---
Particulate Matter 2.5 (NO_x and SO₂ are precursors)	---	---	10	10	---	---

*Tons-per-year. Note that when two standards apply in a nonattainment area, the most stringent is used.

2126

2127

2128 3.2.3.2 Air Emission Calculations for NNSR

2129

2130 Refer to Chapter Two. The emission calculation methods for PSD in Chapter Two are also used
2131 for calculating emissions for NNSR. The most significant difference between the two
2132 permitting programs are the major source thresholds and the availability of “offsets.”

2133

2134

2135 3.2.3.3 Offsets for NNSR

2136

2137 If the facility’s PTE is over one or more of the major source thresholds, then it will be subject to
2138 offset requirements for any new source or modification that will increase emissions of the
2139 pollutant(s) for which the threshold is exceeded. The offset requirement applies to each
2140 pollutant that caused NNSR applicability. For example, a permit for a proposed project located

2141 in a nonattainment area for sulfur dioxide that will emit more than 100 tpy of sulfur dioxide is
 2142 required to obtain offsetting emissions reductions of sulfur dioxide.

2143
 2144 An emissions offset is a reduction in pollution from an existing source of air pollution within
 2145 the same area. When emissions are offset, the total allowable emissions from the proposed
 2146 source and the existing sources will be less than the total emissions. So, essentially, the offsets
 2147 produce a net air quality benefit for the area impacted by the new or modified source of air
 2148 emissions.

2149
 2150 The offsets must be creditable, quantifiable, practically enforceable, and permanent. Emission
 2151 reductions validly "banked" under an approved State Implementation Plan may be used as
 2152 offsets. However, emissions reductions already used for major modification "netting" cannot be
 2153 used as offsets ("double counting").

2154
 2155 Generally, the offsets are not a one-to-one trade. Offset ratios for most criteria pollutants (and
 2156 precursors) are 1.1:1. However, for Ozone, the offset ratio depends on the nonattainment
 2157 classification:

2158 **Table 3-3. NNSR Ozone Offset Ratios**

Nonattainment New Source Review Ozone Offset Ratios	
Ozone nonattainment area classification	Offset Ratios
Marginal	1.1:1
Moderate	1.15:1
Serious	1.2:1
Severe	1.3:1
Extreme	1.5:1
Ozone transport region	1.15:1*
*Unless subject to serious, severe, or extreme ratios	

2160
 2161

2162 **3.2.4 STEP FOUR – Major Source Determination**

2163
 2164 Compare air emissions of all applicable pollutants to the PSD or NNSR thresholds of “regulated
 2165 NSR pollutants”. A source is considered a major Stationary Source if its PTE is greater than the
 2166 established major source thresholds for any regulated NSR pollutant.

2167

2168 3.2.5 STEP FIVE – Schedule Preliminary Meeting with Air Permitting Authority

2169

2170 Refer to Chapter Two. For NNSR, the preliminary (pre-application) meeting with the air
 2171 permitting authority may be even more important considering the air quality problems in the area.
 2172 However, the meeting process and expectations hold true for NNSR as PSD.

2173

2174 3.2.6 STEP SIX – Air Pollution Control Technology Selection

2175

2176 Lowest Achievable Emissions Rate (LAER) is the most stringent emission limitation in a state's
 2177 implementation plan or that can be possibly achieved in practice.

2178

2179 **The LAER limit that will be incorporated in the permit is NOT a specified pollution**
 2180 **control technology.**

2181

2182 The limit is the emission rate and averaging times that is projected from implementing the
 2183 selected control option. For example, a LAER for Nitrogen Oxides (based on compliance with
 2184 the NSPS) may look like the one in Table 3.3 in the actual permit. Even though the LAER
 2185 technique/controls are mentioned, the LAER is actually the limit.

2186

2187

Table 3-4. LAER Example

LOWEST ACHIEVABLE EMISSION RATE EXAMPLE			
Emissions Unit	Control Technology	Proposed NO _x LAER Limit (Averaging Period)	Compliance Method
Emergency Firewater Pump Diesel Engine	Compliance with NSPS Subpart III; Limits on hours of operation to less than 100 hours per year (excluding emergencies)	3.0 g/bhp-hr. including NO _x and non-methane hydrocarbons (NMHC) by design	Diesel Engine certification

2188

2189 The permitting authority will review and approve the proposed LAER on a case-by-case basis.
 2190 Each new source or modified emissions unit subject to NNSR is required to undergo a LAER
 2191 analysis. The selection of LAER should be causally (directly) related to the process/unit and the
 2192 air emissions of the pollutant being regulated.

2193

2194 For any emissions unit, the LAER is the more stringent rate of emissions (that is technologically
 2195 feasible) based on:

- 2196
- 2197 • The most stringent emissions limitation which is contained in the implementation
- 2198 plan of any state for the class or category of Stationary Source, unless the owner or
- 2199 operator of the proposed Stationary Source demonstrates that these limitations are
- 2200 not achievable; or
- 2201
- 2202 • The most stringent emissions limitation which is achieved in practice by the class or
- 2203 category of Stationary Sources, with this limitation, when applied to a modification,
- 2204 meaning the lowest achievable emissions rate for the new or modified emissions
- 2205 units within the Stationary Source.
- 2206
- 2207 **Technically Feasible** - A specific control technology may not be required as LAER if it can be
- 2208 demonstrated that the control is not technically feasible to install and operate to meet an explicit
- 2209 LAER emission limitation in a specific permitting situation.
- 2210
- 2211 **Equipment Modifications** – Sometimes it is difficult to retrofit existing equipment (subject to
- 2212 NNSR due to the modification) with LAER when compared to a new emissions unit/source.
- 2213 For example, there may be space restrictions that prevent installation of some add-on control
- 2214 technology. The equipment being modified may not be comparable with past LAER
- 2215 determinations that specify a particular process type. Allowances may be made in this situation.
- 2216
- 2217 **Consideration for Cost of Control** - EPA guidelines state that LAER is not considered
- 2218 achievable if the cost of control is so great that a new source could not be built or operated with
- 2219 a particular control technology. However, if a facility in the same or comparable industry
- 2220 already uses the control technology, then such use is evidence that the cost to the industry is not
- 2221 prohibitive.
- 2222
- 2223 **Monitoring and Testing** - To ensure that the LAER selection continues to meet the initial
- 2224 emission and efficiency standards, periodic or continuous parameter monitoring and testing
- 2225 requirements may be required during the permitting process.
- 2226
- 2227 **LAER Selection Resources** - Selecting suitable LAER takes considerable effort. Research
- 2228 should include, at the very least, EPA’s LAER Clearinghouse (www.epa.gov/ttn/catc). Vendors
- 2229 for air pollution control technology and design engineers frequently have detailed information
- 2230 available that can assist with the selection of the appropriate technology and can also be
- 2231 included with the permit application to assist the permitting authority with their review.
- 2232 Technical journals and reports are also common sources of information for selecting appropriate
- 2233 air pollution controls.
- 2234
- 2235
- 2236

2237 3.2.7 STEP SEVEN – Complete NNSR Permit Application

2238

2239 Although more detailed and complicated considering the air quality problems in the area, the
2240 process for completing an NNSR permit application is basically the same as for a PSD permit.
2241 Refer to Chapter Two for more details.

2242

2243 3.2.8 STEP EIGHT – Submit Air Permit Application

2244

2245 Submitting an air permit application for NNSR is the same process as for a PSD permit. Refer
2246 to Chapter Two for details.

2247

2248 3.2.9 STEP NINE – Comply with Air Permit

2249

2250 To ensure compliance, review permit provisions carefully and ensure that personnel responsible
2251 for compliance are aware of the requirements. Although there may be more requirements,
2252 complying with the NNSR permit is the same as for PSD. Refer to Chapter Two for details.

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2275 4 ALTERNATIVE AND MINOR SOURCE NSR PERMITS

2276

2277 Although the focus of this guide is on traditional NSR permitting for major sources of air
2278 emissions, a general discussion of major source NSR permit alternatives and minor source NSR
2279 permitting is warranted. There are many motives behind a Stationary Source avoiding the
2280 necessity for a major source NSR permit. The reasons include, but are not limited to, avoiding
2281 expensive add on air pollution control equipment and the permitting burden/fees associated with
2282 a major NSR air permit.
2283

2284 4.1 New Source Review Permit Alternatives

2285

2286 Alternatives are available for Stationary Sources that are willing, and able to comply with,
2287 limiting air emissions so that the NSR major source permit process will not apply. *Before*
2288 *applying for any permit with limits, carefully consider whether the limits are achievable and if*
2289 *they would cause an undue hardship for construction and operations.* Noncompliance could
2290 result in one or any combination of the following: enforcement action (e.g., notification, fines,
2291 imprisonment), permit termination or revocation, and permit renewal denial.
2292

2293 4.1.1 Synthetic Minor Source Permits

2294

2295 Synthetic minor sources have the potential-to-emit regulated NSR pollutants at or above the
2296 major source thresholds, but have voluntarily agreed on enforceable limits to restrict their
2297 potential-to-emit below the thresholds. The limits (e.g., work practices, design standards,
2298 throughput, operating time) restrict the amount of a regulated air pollutant emitted over time
2299 (e.g., pounds per hour/day, tons per year). Consequently, the major source classification (and
2300 major source permitting requirements) is avoided by creating a synthetic minor source.
2301 Generally, the limits are made enforceable by incorporating them into a minor source permit.
2302

2303 For instance, if the project is planned to take place at a major NSR facility, consider restricting
2304 the emissions from the modification to a level below what constitutes a major modification under
2305 the NSR regulations. As an example, Anywhere AFB is located in a moderate ozone
2306 nonattainment area and is a major source for NO_x. The base wants to install an oil-fired boiler
2307 with potential-to-emit emissions of 115 tons per year of NO_x, which would cause the project to
2308 be subject to NSR review as a major source. However, if the source accepts limits to reduce the
2309 uncontrolled emissions below the significance thresholds, then the project would not be subject
2310 to major source NSR.

2311

2312 The minor NSR program is used to establish the enforceable limits. A vague statement in the
2313 permit, such as "do not exceed 100 tons per year" is too ill-defined to be enforceable. The limits
2314 must apply to some aspect that can be readily measured. The limits to become a synthetic minor

2315 source may include restrictions on operating hours, limits on fuel throughput, or a combination
2316 of methods. There also needs to be a time period associated with the limit (e.g., no more than 50
2317 hours of operation per calendar year). Testing, monitoring, recordkeeping, and reporting
2318 requirements are typically used to demonstrate and assure compliance.

2319
2320 Be aware that there have been many court challenges regarding “enforceable” permit
2321 conditions/limits. EPA has stated in guidance documents that "federally enforceable" in the
2322 regulations should be interpreted to mean "federally enforceable or legally and practicably
2323 enforceable by a state or local pollution control agency" (*Release of Interim Policy on Federal*
2324 *Enforceability of Limitations on Potential-to-emit*; 22 January 1996, John S. Seitz). The
2325 definition is pending future rulemaking by EPA. Accordingly, some States have eliminated the
2326 requirement that a synthetic minor limit be “federally enforceable” and allows such limits to be
2327 “legally and practically enforceable.”

2328
2329 **A synthetic minor is subject to all applicable Federal, State, and local rules, regulations,**
2330 **and other requirements.**

2331
2332 **NOTE:** Do not attempt to circumvent major source NSR by artificially or improperly separating
2333 projects or project activities (unreasonable for the source to consider them to be separate) to
2334 obtain multiple minor source NSR permits.

2335

2336 **4.1.2 Plantwide Applicability Limit Permits**

2337

2338 A product of the EPA’s 2002 New Source Review Reform (67 FR 80186), a Plantwide
2339 Applicability Limit (PAL) permit provides an alternative to traditional air permitting.
2340 Essentially, a PAL is a facility-wide annual emission limit that serves as a “safe-harbor” for
2341 designated regulated NSR pollutants. Without a PAL, each non-exempt project at a major
2342 stationary source must undergo an applicability review for major NSR permitting.

2343 PALs are pollutant-specific (i.e., a facility may accept a PAL for a single NSR regulated
2344 pollutant or for multiple NSR regulated pollutants). Generally, each PAL is established based on
2345 the average annual (e.g., baseline) emission rate for a 24-month consecutive period during the
2346 prior ten years of facility operation. The NSR (PSD or NNSR) significant increase threshold for
2347 the regulated NSR pollutant is then added to the baseline actual emission rate to set the PAL.
2348 Provided that the facility complies with the PAL, it has the flexibility to make changes in
2349 operations or equipment without triggering a project-by-project NSR applicability analysis.
2350 However, in contrast, traditional air permitting imposes emission limits and requirements on
2351 individual emissions units.

2352

2353 While a PAL is beneficial in concept, extensive unit-specific emissions monitoring, testing,
2354 recordkeeping, and reporting are required to ensure compliance with the limit. Additionally,
2355 there are several disadvantages to a PAL permit that discourages sources from considering the
2356 program (there are fewer than 75 PAL permits nationwide as of February 2019), including:

- 2357 • A facility that commits to a PAL permit cannot return to “pre-PAL” conditions (e.g.,
2358 minor source limits). States can decide to remove previous synthetic minor limits.
2359 However, previous limits may need to remain in order to make the PAL enforceable.
2360
- 2361 • State construction or installation permits may still be required.
2362
- 2363 • The requirement for a ten-year commitment to historical emission rates.
2364
- 2365 • Extensive requirements to monitor and calculate emissions for every unit that emits a
2366 PAL regulated pollutant.
2367
- 2368 • Emissions unit specific requirements (e.g., New Source Performance Standards) remain
2369 applicable under a PAL permit.
2370
- 2371 • There are provisions that allow a PAL to be increased if needed, but the rule is written to
2372 discourage PAL increases.
2373
- 2374 • Obtaining a PAL requires a permit action, including with a public notice and EPA review
2375 period.
2376
- 2377 • Where applicable, it is required to demonstrate that the PAL will not cause or contribute
2378 to an exceedance of a PSD increment or adversely impact visibility or an Air Quality
2379 Related Value in a Class I area
2380
- 2381 • PAL renewals or termination are often complicated.
2382

2383 To address ongoing concerns with PAL permits, the EPA finalized the memorandum, *Guidance*
2384 *on Plantwide Applicability Limitation Provisions Under the New Source Review Regulations*
2385 (Anne L. Austin; 4 August 2020), to emphasize the benefits of PAL permits and to clarify some
2386 aspects of a PAL. The following are some key aspects of the memorandum:

- 2387 • The PAL rules do not include provisions for terminating PAL permits. EPA upheld
2388 previous guidance that PAL termination be handled on a case-by-case basis.
2389
- 2390 • If a facility with a PAL decides not to renew the PAL, the PAL level is to be allocated
2391 among existing emissions units at the facility. The EPA clarified that there is some
2392 flexibility for the PAL distribution.
2393

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- The PAL regulations require the permit authority to “consider lowering” the PAL at renewal if the baseline actual emissions plus the significant emission rate are lower than 80 percent of the PAL. The EPA confirmed that the facility is required to propose a new PAL level in the renewal application, but this “provision does not preclude renewing the PAL at the current level or at a level higher than baseline actuals plus the significant level.” EPA also stressed that permit authorities should exercise restraint in lowering PALs to avoid penalizing sources for reducing emissions.
 - The PAL regulations require monitoring of each PAL pollutant. Each PAL level is based on a 12-month rolling total, expressed in tons of pollutant per year. When monitoring data is missing, the PAL regulations require that maximum allowable emissions be used unless the PAL permit provides missing data procedures. The EPA provided examples of missing data procedures that could be included in a PAL application or renewal application.
 - The definition of a “replacement unit” in NSR is meant to ensure it is similar in design and operation to the unit being replaced. If an emissions unit meets the replacement unit definition, it is treated as “existing” in determining NSR applicability (i.e., it has baseline actual emissions that could be included in the PAL). EPA clarified that the treatment of replacement units for NSR applicability is also applicable to establishing or renewing PALs.
- Provisions for PALs are codified in the Federal regulations at 40 CFR §52.21(aa), §51.165(f), and Appendix S to Part 51 – *Emission Offset Interpretative Ruling*. Each State can have their own PAL program based on the Federal program, or the State can be delegated to issue PAL permits under the Federal PAL program. Most State NSR programs include PAL provisions. Furthermore, many States have air permitting programs that incorporate PALs or are very similar to PALs (e.g., Flexible Permit offered in Texas).
- In summary, there are advantages in obtaining a PAL permit if it is a good fit. PAL permits are a formidable, but legitimate, strategy to avoid the requirements of major source NSR. Nevertheless, if a DAF installation is interested in a PAL permit, the potential benefits and ramifications for committing to a PAL must be carefully evaluated. Any modifications resulting in air emissions exceeding the PAL will need to undergo the appropriate NSR review and the PAL may need to be increased to reflect any newly authorized emission rates.

2429 **4.2 Minor NSR Permits**

2430

2431 Projects that do not trigger major source NSR permitting may be subject to minor NSR
2432 permitting. Air permits may not be required at all for an emissions unit or a project that emits

2433 tiny amounts of regulated air pollutants. However, registrations or some type of State or local
2434 permit may be required for an emissions unit or a project that emit below major source
2435 thresholds, but above a certain threshold of regulated pollutants (thresholds vary per permitting
2436 program). There is a large array of minor NSR permit options available depending on factors
2437 such as the type and location of the emissions unit or project, air quality in the area, operational
2438 flexibility required, and whether additional voluntary restrictions need to be included in the
2439 permit. The majority of minor NSR permits are fragmented; they cover one or more emissions
2440 units or affected facilities at a source but do not cover the entire source. Many DAF installations
2441 have numerous air permits open at any given time.

2442
2443 The Minor NSR permitting program applies to non-major sources and minor modifications to
2444 major sources. Minor NSR is for pollutants from stationary air emission sources that do not
2445 require PSD or nonattainment NSR permits. One of the purposes of Minor NSR permits is to
2446 prevent the construction of sources that would interfere with attainment or maintenance of a
2447 NAAQS or violate the control strategy in nonattainment areas. Also, Minor NSR permits often
2448 contain permit conditions to limit the sources emissions to avoid PSD or nonattainment NSR.

2449
2450 States can customize the requirements of the Minor NSR program as long as their program meets
2451 minimum CAA requirements. State and local air permitting programs are generally structured
2452 differently from each other and offer various types of minor source construction permits. There
2453 are several different types of air quality permits depending on the type of activity and emission
2454 rates of air pollutants. For example, Minor and De Minimis permits, General Permits, Portable
2455 Relocation Permits, Installation Permit, Construction Permit, Authorization to Construct,
2456 Temporary Permits, and Permits-by-Rule.

2457
2458 Although the names and criteria can vary from State to State, the following is a generalized
2459 discussion of the types of pre-construction permits that may be available for minor sources:

- 2460
- 2461 • **Minor New Source Review (NSR) Permit** – These permits authorize the construction or
2462 modification of any minor Stationary Source (i.e., PTE less than the applicable
2463 PSD/NNSR major source thresholds). Minor NSR Permits are evaluated on a case-by-
2464 case basis and often include controls and substantive requirements. May include
2465 modeling, source testing, and/or monitoring.
 - 2466
 - 2467 • **Site-Specific Permits** - A site-specific permit is a case-by-case determination of the
2468 source emissions limits and control technology requirements.
 - 2469
 - 2470 • **General Permits** - A general permit is a pre-approved permit that covers a specific
2471 source or a class of sources. A general permit differs from an individual permit in that it
2472 can often be applied to more than one source. After a general permit has been developed

2473 by the air permitting authority and approved (which usually requires public review and
2474 comment), sources may apply for the general permit instead of obtaining individual
2475 permits. Applicants covered by the general permit will not be required to go through a
2476 public notice and public hearing because the air permitting authority has already gone
2477 through that process. The permit may have a dual purpose (authority to construct/install
2478 and then to operate).

2479

2480 • **Permit-by-Rule (PBR)** - A PBR is similar to a general permit. The permit is a
2481 standardized document that applies to multiple Stationary Sources with similar emission
2482 related requirements. The process for a PBR is more streamlined than for a General
2483 Permit. Usually, the applicant notifies the air permitting authority that it meets the
2484 eligibility criteria for the permit without having to submit a completed application for
2485 review and approval.

2486

2487 • **Registration Permit** - Registration Permits are a single permit (the construction and
2488 operating permits are combined) issued for air pollutant-emitting equipment and activities
2489 where equipment similarities eliminate the need for a review. The permit conditions are
2490 standardized for that source category.

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2512 5 BEGIN ACTUAL CONSTRUCTION

2513 The objective of this chapter is to highlight and increase awareness of the term “begin actual
2514 construction.” As discussed in previous chapters, all new major stationary sources and major
2515 modifications to existing major stationary sources are required to obtain a NSR permit prior to
2516 beginning construction. The Federal NSR program is administered either:

- 2517
- 2518 – Directly by the EPA,
- 2519 – through an EPA approved State Implementation Plan (SIP), or
- 2520 – through EPA delegated authority by the State and/or local permitting authority.

2521

2522 These NSR programs do not allow construction to begin until the appropriate permit is issued.

2523 The key is knowing what pre-permitting activities are allowed before the project meets the
2524 “begin actual construction” definition in the applicable Federal, State, or local permitting rules.

2525 The definition of “begin actual construction” per the NSR regulations and adopted by many
2526 States and/or local permitting authorities is:

2527

2528 “...in general, initiation of physical on-site construction activities on an emissions unit
2529 which are of a permanent nature. Such activities include, but are not limited to, installation
2530 of building supports and foundations, laying of underground pipework, and construction
2531 of permanent storage structures. With respect to a change in method of operating this term
2532 refers to those on-site activities other than preparatory activities which mark the initiation
2533 of the change.”

2534

2535 Reference 40 CFR 51.165(a)(1)(xv); 40 CFR 51.166(b)(11); and 40 CFR 52.21(b)(11).

2536

2537 Since 1986, the EPA and most State and local agencies have interpreted the definition of “begin
2538 actual construction” to include nearly every physical on-site construction activity that is of a
2539 permanent nature. Caution, this can apply even if that activity does not involve construction on
2540 an emissions unit!

2541

2542 There are some preparatory activities that can be undertaken prior to obtaining a final permit that
2543 are generally excluded from the definition of begin actual construction, such as:

- 2544
- 2545 – Planning the project.
- 2546 – Clearing the site of existing vegetation.
- 2547 – Grading the land.
- 2548 – Stockpiling topsoil.
- 2549 – On-site temporary storage facilities for equipment and supplies.

2550

2551 For additional information, refer to EPA’s 18 December 1978 Memorandum, *Interpretation of*
2552 *"Constructed" as it Applies to Activities Undertaken Prior to Issuance of a PSD Permit*, and

2553 EPA's 28 March 1986 Memorandum, *Construction Activities Prior to Issuance of a PSD Permit*
2554 *with Respect to "Begin Actual Construction."*

2555
2556 Additionally, the EPA has issued various letters and memorandums regarding the types of
2557 construction activities that are allowed before obtaining a permit. These documents are available
2558 through EPA's website "Begin Actual Construction" at [https://www.epa.gov/nsr/begin-actual-](https://www.epa.gov/nsr/begin-actual-construction-0)
2559 [construction-0](https://www.epa.gov/nsr/begin-actual-construction-0). The most significant of these documents are listed below for reference:

- 2560
- 2561 - *Interpretation of "Constructed" as it Applies to Activities Undertaken Prior to Issuance*
2562 *of a PSD Permit* (18 December 1978).
- 2563 - *Construction Activities Prior to Issuance of a PSD Permit with Respect to "Begin Actual*
2564 *Construction"* (28 March 1986).
- 2565 - *Construction Activities at Georgia Pacific* (13 May 1993).
- 2566

2567 States with approved NSR programs in their SIPs may have some flexibility in what activities
2568 are allowed before obtaining a construction permit; however, these programs are under EPA
2569 oversight and cannot be less stringent than the Federal regulations. Beginning construction prior
2570 to obtaining a permit is not advised and is considered "at-risk":

- 2571
- 2572 - There is no guarantee that a permit will be issued.
- 2573 - Can result in a Notice of Violation or other enforcement action if pre-permit activities are
2574 deemed prohibited.
- 2575

2576 Some states allow additional pre-permit activities under explicit conditions and restrictions for
2577 minor source permitting (e.g., completed permit application has been submitted, project is not a
2578 major modification or occurring at a major stationary source). As with all air permitting actions,
2579 use extreme caution that all conditions are clearly understood and work closely with the air
2580 permitting authority.

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2593 6 NEW SOURCE REVIEW REFORM AND REGULATORY CHANGES

2594

2595 The landscape of NSR permitting is continually evolving. The NSR permitting program is
2596 considered by many to be the Clean Air Act’s most complex and precarious set of regulations.
2597 From the regulatory perspective, rule makers have a conflicting motivation to reduce regulatory
2598 restrictions and processes that discourage or delay economically and environmentally beneficial
2599 projects, yet advance environmental protection and transparency. Adding to the quandary, the
2600 EPA’s NSR regulations and guidance under one administration are often revised or rescinded by
2601 the subsequent administration. Furthermore, Court decisions also affect NSR policy, guidance,
2602 and regulations. These challenges will have an ongoing impact on the implementation of the
2603 NSR program for the foreseeable future.

2604 The following is a rundown of recent events that may affect the NSR permitting program. This
2605 list should not be construed as definitive or exhaustive; it is simply a summary of recent or
2606 pending NSR related developments that necessitate awareness, particularly if contemplating a
2607 project that could be affected by any of these changes.

2608 • **Fugitive Emissions:** EPA published *The Reconsideration of the Fugitive Emissions Rule*
2609 on 14 October 2022 (87 FR 62322). The comment period for this proposed rule ended on
2610 14 February 2023 and EPA is expected to finalize the rule during 2024.

2611 Per the definition in 40 CFR 52.21(b)(20), “Fugitive Emissions” are emissions that could
2612 not reasonably pass through a stack, chimney, vent, or other functionally equivalent
2613 opening. Examples of Fugitive Emissions include dust from unpaved roads, storage piles,
2614 and construction sites. Historically, these emissions are counted toward initial major
2615 source threshold determinations for only 28 specific source categories listed in the
2616 regulations (such as petroleum refineries, portland cement plants, and iron/steel mills).
2617 For NSR, the proposed Fugitive Emissions Rule would clarify that fugitive emissions
2618 increases will be counted toward significance thresholds in major modification
2619 determinations for all source categories. The Fugitive Emissions Rule would also
2620 remove a longstanding exemption for circumstances in which NSR would be triggered
2621 “only if fugitive emissions, to the extent quantifiable, are considered in calculating the
2622 potential to emit...” [refer to 40 CFR 52.21(i)(1)(vii)].

2623 If the Rule is finalized as proposed, all existing major stationary sources will be required
2624 to include Fugitive Emissions when determining whether a project qualifies as a major
2625 modification. Typically, Fugitive Emissions are more difficult to quantify and they are
2626 often overestimated. Additionally, the BACT review for Fugitive Emissions is often a
2627 challenge because capture and control technologies are difficult to implement due to the
2628 character of these emissions.

2629 • **Applicable Requirements:** On 9 January 2024, the EPA published a proposed rule
2630 Clarifying the Scope of “Applicable Requirements” under State Operating Permit
2631 Programs and the Federal Operating Permit Program (89 FR 1150). Although the

2632 requirements of the proposed rule, if finalized, will not directly impact NSR requirements
2633 and applicability, the proposed rule does intend to clarify the extent to which NSR
2634 requirements fall within the definition of “applicable requirement” within the Title V
2635 operating permit program. Title V operating permits consolidate all Federal, State, and
2636 local requirements that apply to a Major Stationary Source into one permit, including
2637 conditions in underlying NSR permits. This proposed rule addresses the extent to which
2638 requirements, including NSR requirements, may be reviewable, implemented, and/or
2639 modified through the Title V permitting and petition process. This proposed rule clarifies
2640 that EPA will not revisit NSR permitting decisions in the context of its Title V review
2641 authority or in response to Petitions to Object filed by third parties under the Title V
2642 permitting review process. The rule is expected to be finalized during the summer of
2643 2024.

- 2644 • **Potential-to-Emit (PTE):** PTE is crucial to the definition of major and area sources.
2645 PTE is a speculative calculation used to determine if a source is major (usually higher
2646 than the source’s actual emissions).

2647 Per EPA's 1996 guidance the terms “federally enforceable” or “enforceable” as used in
2648 general definitions of PTE and related terms should be read to mean “federally
2649 enforceable or legally and practicably enforceable by a state or local air pollution control
2650 agency (John Seitz and Robert Van Heuvelen, “*Release of Interim Policy on Federal*
2651 *Enforceability of Limitations on Potential to Emit*”; 22 January 1996). Nevertheless,
2652 historically, the EPA’s interpretation and use of the terms “federally enforceable,”
2653 “enforceable as a practical matter,” and “legally and practicably enforceable” can vary
2654 considerably.

2655 On 19 November 19, 2020, the EPA issue a Final Rule titled “*Reclassification of Major*
2656 *Sources as Area Sources Under Section 112 of the Clean Air Act*,” in which the EPA
2657 removed the word “federally” from the phrase “federally enforceable” that was in the 40
2658 CFR 63.2 definition of “potential to emit” (85 FR 73854). The EPA noted at the time, the
2659 revisions did not represent a final decision by the EPA or signal any direction that the
2660 EPA is intending to take in a future final action. The Rule became effective on 19
2661 January 2021.

2662 On 27 September 2023, the EPA published a review of the 2020 Reclassification Rule.
2663 Amongst other items, the EPA specifically proposed to require PTE limits for reclassified
2664 Stationary Sources (i.e., a major source that becomes an area source by accepting limits)
2665 to be federally enforceable as a condition of the reclassification. The EPA proposed to
2666 add this condition as a separate paragraph and make no changes to the general definition
2667 of PTE under 40 CFR 63.2. However, in the EPA’s review of the 2020 Reclassification
2668 Rule, the EPA clearly stated that they plan to address the definition of PTE for NSR (and
2669 other regulations and programs) in separate rulemakings or guidance.

- 2670 • **Project Emission Accounting Rule:** On 22 February 2024, the EPA signed a Proposed
2671 Rule to make significant revisions to regulations related to Project Emissions Accounting.

2672 The proposed rule specifically targets the “netting” process for evaluating whether NSR
2673 permitting applies to a proposed project (i.e., modification) at an existing major source.
2674 The EPA intends to:

- 2675 – Clarify the definition of the term “project” to include criteria for determining the
2676 scope of a project that may be subject to the major NSR regulations.

2677 The EPA is proposing to change the definition of the term “project” from “a
2678 physical change in, or change in the method of operation of, an existing major
2679 stationary source” to “Project means a discrete physical change in, or change in
2680 the method of operation of, an existing major stationary source, or a discrete
2681 group of such changes (occurring contemporaneously at the same major stationary
2682 source) that are substantially related to each other. Such changes are substantially
2683 related if they are dependent on each other to be economically or technically
2684 viable.” The definition of a project is included 40 CFR 51.165(a)(1)(xxxix); 40
2685 CFR 51.166(b)(51); 40 CFR 51, Appendix S, Section II.A.33; and 40 CFR
2686 52.21(b)(52).

- 2687 – Strengthen the monitoring, recordkeeping and reporting provisions in the NSR
2688 regulations to improve compliance with, and enforcement of, the NSR
2689 applicability process.

2690 The EPA is proposing to significantly strengthen the monitoring, recordkeeping
2691 and reporting requirements in the NSR regulations if Project Emissions
2692 Accounting is used to evaluate a project for NSR applicability. To achieve this,
2693 the EPA wants to expand the applicability of the “Reasonable Possibility”
2694 provisions under 40 CFR 51.166(r)(6) or 40 CFR 52.21(r)(6) to projects if the
2695 applicant uses project emissions accounting to take credit for a decrease in
2696 emissions in Step 1. These provisions would requires monitoring, recordkeeping,
2697 and reporting of actual emissions for at least five years after a project is
2698 completed (ten years if the change increases the design capacity or PTE of the
2699 emissions unit).

- 2700 – Require that emissions decreases included in the Step 1 of the Project Emissions
2701 Accounting process (i.e., “netting”) to determine if NSR applies to a project be
2702 enforceable.

2703 EPA is proposing that emissions decreases included in Step 1 of the Project
2704 Emissions Accounting process must be legally and practicably enforceable prior
2705 to the commencement of construction to ensure that the emission reductions are
2706 realized and maintained.

2707 The EPA also solicited comments on revising Project Emission Accounting provisions so
2708 that ONLY emissions increases can be considered under Step 1 (essentially prohibiting
2709 netting of the emission increases and decreases).

2710 • **Interpollutant Trading:** EPA’s provisions allowing interpollutant trading of offsets for
2711 Ozone precursors were vacated due to a 2021 court decision (*Sierra Club v. EPA*, 21
2712 F.4th 815, D.C. Circuit). As a result, owners/operators of new or modified major sources
2713 of Ozone precursors will have limited options when pursuing emission offsets.

2714 The Clean Air Act requires major sources of Ozone precursors, Volatile Organic
2715 Compounds (VOCs) and Nitrogen Oxides (NOx), in Ozone nonattainment areas to obtain
2716 offsets for those emissions from the same or other sources in the same nonattainment area
2717 prior to construction or modification. The Implementation Rules for the 2008 and 2015
2718 Ozone NAAQS allowed the use of interpollutant trading of precursors to be used for
2719 offsets (83 FR 62998). The EPA had inferred that the language in the CAA allowed
2720 owners and operators of Stationary Sources located in Ozone nonattainment areas to trade
2721 offsets for NOx emissions through reductions in VOCs (and vice versa). However, the
2722 Court found that the EPA’s interpretation was erroneous, and the Clean Air Act’s
2723 instructions were clear; precursor offsets are not interchangeable.

2724 • **Environmental Justice (EJ) in NSR Air Permitting:** EJ has been a hot topic for air
2725 permitting at the Federal, State, and local levels. EPA defines EJ as “the fair treatment
2726 and meaningful involvement of all people regardless of race, color, national origin, or
2727 income, with respect to the development, implementation, and enforcement of
2728 environmental laws, regulations, and policies.

2729
2730 EPA has published multiple guidance and memorandums that address EJ concerns for
2731 permitting actions that impact EJ communities or low income neighborhoods. As a
2732 result, several States finalized or initiated rulemaking and policies for considering EJ in
2733 their permitting programs. Examples of requirements that address EJ concerns in air
2734 permitting include air dispersion modeling, cumulative impact analyses, fence line
2735 monitoring, additional pollution controls, and enhanced public involvement.

2736
2737 Due to the instability of EJ in air permitting and ongoing litigation, compliance with
2738 addressing EJ in air permits is not addressed in this DAF Guide, but may be included in
2739 future versions as the regulations mature. However, it is imperative that Federal, State,
2740 and local regulations and guidance are carefully monitored for regulatory EJ
2741 developments that will or will potentially impact the installation’s proposed projects and
2742 air permits.

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