

Module 15 Variances

- What is the purpose of a WQS variance policy ?
- What analyses must be done to support a variance?
- How do variances relate to other WQS flexibilities ?
- What things do I need to be careful of ?

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Although the term “variances” is taken directly from the water quality standards regulation, there is often confusion about the term, because the *concept* also shows up in other parts of the Clean Water Act.

⇒ 301(h) - Procedures for waivers for coastal POTWs

⇒ 301(n) - Procedures for waivers for industrial dischargers based on “fundamentally different factors”

⇒ There are other Section 301 waivers, but we will not be discussing these here.



Variance: Definition

- **A temporary modification to the designated use and associated water quality criteria that would otherwise apply**
 - based on a use attainability demonstration
 - targets achievement of the highest attainable use and associated criteria during the variance period

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WQS Handbook also uses the term “time limited”

“A variance is a time-limited change in the water quality standards, typically of three-to five-year duration, with renewals possible (*Guidance : Coordinating CSO Long-Term Planning with Water Quality Standards Reviews* EPA833-R-01-002 July 1, 2001)

“A short-term exemption from meeting certain otherwise applicable water quality standards (ANPRM, 63 FR 36759, July 7, 1998)”

Not all states / tribes grant variances. In a 1990 assessment of state variance procedures, it was found that only 16 of 57 States/Territories had granted variances, and some of those had done so infrequently. (National Assessment of State Variance Procedures; Report. Criteria and Standards Division, Office of Water Regulation and Standards, November 1990).

Available at: <http://www.epa.gov/waterscience/library/wqstandards/>



Variance: Purpose

- **Allows the state or tribe to limit the applicability of a specific criterion and to identify an alternative designated use and associated criteria to be met during the term of the variance**
- **May be written to address a specified geographical coverage, a specified pollutant or pollutants, and/or a specified pollutant source**
 - **All other applicable water quality standards not specifically modified by the variance remain applicable**

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Historically, the intent of the variance provision has been to:

- Provide a mechanism by which permits can be written to meet a modified standard where discharger compliance with the underlying water quality standard is demonstrated to be infeasible within the meaning of 40 CFR 131.10(g) *at the present time* (emphasis added).
- Encourage maintenance of the original standards as goals rather than removing uses that may be *ultimately* attainable (emphasis added)
- Ensure the highest level of water quality achievable during the term of the variance (ANPRM, 63 FR 36759, July 7, 1998)

A variance provides a “bridge” if additional data or analyses are needed before the state or tribe can make a determination that the designated use is not attainable and adopts an alternative use (*Guidance : Coordinating CSO Long-Term Planning with Water Quality Standards Reviews* EPA833-R-01-002 July 1, 2001)

Comment: A variance recognizes in Standards that “things change” Technology improves and can lower costs; economic scenarios can change; what is not “affordable” in the short term may be affordable over a longer term.



Variance: Purpose


- **Appropriate when a designated use is not attainable in the short-term, but might be attainable in the long-term**
 - Effective means of retaining an underlying designated use in the long term while addressing specific challenges that affect attainability in the near term

- **Variances may be utilized to:**
 - Recognize that Limiting Conditions May Change
 - Implement Controls to Make Feasible Progress
 - Conduct Additional Studies

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Variance: Basis

- 40 CFR 131.13: " States may, at their discretion, include in their state standards policies generally affecting their application and implementation, such as mixing zones, low flows and variances. Such policies are subject to EPA review and approval"

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This all that the regulations themselves say about variances...

40 CFR 131.13 "General Policies" paragraph



Factors Supporting Variances

- **Naturally occurring pollutant concentrations prevent attainment**
- **Natural, ephemeral, intermittent or low flow conditions or water levels prevent attainment, unless these conditions may be compensated...**
- **Human caused conditions prevent attainment of the use and cannot be remedied...**

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The preamble to the 1983 Water Quality Standards Regulation (48 FR 51403, November 8, 1983) revision suggested that substantial and widespread economic and social impact, the sixth element for use removal under 131.10 (g), is an important and appropriate test that, if met, could be used as the basis for granting a variance. Subsequently, on March 15, 1985, EPA issued further guidance on the conditions under which a variance might be granted. The 1985 EPA Office of Water guidance explained that it would be appropriate to grant short-term variances to individual dischargers based on any of the six factors for removing a designated use as listed at Sec. 131.10(g). As variances represent a temporary downgrade in the water quality standards, EPA reasoned that more stringent treatment of variances than permanent downgrades would not be appropriate. In practice, however, the only factor that is commonly used to grant a discharger-specific variance is the economic test (40 CFR 131.10 (g) (6). (ANPRM, 63 FR 36759, July 7, 1998) The “substantial and widespread economic impact test is discussed in detail in the “Economics” module.

There are also possibilities for the use of 40 CFR 131.10(g)(3) (“Human caused conditions prevent attainment...”) to use as a basis for justifying a variance




Factors Supporting Variances (Continued)

- Dams, diversions or other types of hydrological modifications preclude attainment of the use, and it is not feasible to restore the waterbody ...or operate such modification in a way that would result in attainment...
- Physical conditions related to natural features of the waterbody and unrelated to water quality preclude attainment of aquatic life protection uses
- Controls more stringent than those required by Sections 301 (b) and 306... would result in substantial and widespread economic and social impact

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Variances: Approvability

- EPA has approved individual variances when they are:
 - Included in the WQS
 - Demonstrate that standard is unattainable by 131.10
 - Subject to public notice and opportunity for comment
 - Protective of existing uses
 - Demonstrate that advanced treatment and alternative effluent control technologies have been considered
 - Secure the highest attainable level of water quality, short of achieving the standard
 - Do not exempt technology based requirements


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ANPRM, 63 FR 36759, July 7, 1998 column 2

Advance Treatment: treatment more advanced than that required by sec 303©(2)(a), (b) was considered

The State or Tribe must provide an opportunity for a public hearing, and the proposed revisions and supporting analysis will be made available to the public prior to the meeting. 40 CFR 131.20(b)

see also: WQS Handbook, 2nd ed. EPA 823B94005a August 1994




Variations: Guidance

- **Variance Polices and individual variations should:**
 - Ensure existing criterion is binding on discharges not covered by the variance
 - Ensure other applicable criteria will be met
 - Be for a specific time and reviewed every 3 years
 - Be established as close to original criteria as possible
 - Ensure reasonable progress is made toward meeting the standard
 - Ensure that upon expiration, original criteria have full effect

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ANPRM, 63 FR 36759, July 7, 1998 column 1

also: WQS Handbook, 2nd ed. EPA 823B94005a August 1994



Variance “Cautions”

- Same term used in other laws and regulations, but not the same meaning
- Must provide an opportunity for a public hearing
 - CAN be linked to an NPDES permit action
- Must be identifiable in standards
- Are not the basis of attainment decisions under 303(d)

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What we are discussing in this module is limited to variances to requirements of Section 303 of the Clean Water Act, as allowed by 40 CFR 131.12

State laws and regulations (especially) use the same term (“variance”) to mean the different thing (and perhaps different terms to mean the same thing...)

People often use the term “variance” when referring to the “modification” of secondary treatment requirements for POTWs discharging into marine waters (see section 301(h) of the Clean Water Act) and for certain industrial discharges related to BOD and pH to deep waters of the territorial seas (Section 301(m) of the CWA and for modifications to the national effluent guidelines based on the fact that a discharging facility is “fundamentally different” than the facilities considered in establishing the guidelines (Section 301(n)

- The public should be able to go to the standards and find the variance policy AND individual variances




Variations And Other "Tools"

- **Compliance Schedules**
 - Must be authorized in WQS for use in NPDES permits
 - Timetable in permit to meet criteria
- **Variations**
 - Short term change in Designated Use
 - Short term change in accompanying criterion
- **Site Specific Criterion**
 - No change in Designated Use
 - Permanent change in Criterion
- **Use Reclassification**
 - Permanent change in Designated Use
 - Criteria also change to protect use

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Variances Case Study: GLI

- Discharger and pollutant specific
- Does not apply to new dischargers
- Cannot “likely jeopardize” listed species
- 5 year maximum
- Based on any 40 CFR 131.10(g) factor
- Demonstration that variance complies with state/tribal antidegradation requirements
- Demonstration that any increased risks to human health/environment are consistent with protection of public health, safety and welfare
- Detailed review and approval procedures

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40 CFR 132 Appendix F. Procedure 2: Variances from Water Quality Standards for Point Sources

Final Water Quality Guidance for the Great Lakes System: Supplementary Information Document (SID) EPA-820-B-95-001, Section VIII.B




Variance Case Study: Ohio Mercury (Hg)

- **Potentially applicable to all Ohio Hg dischargers**
- **Basis: “substantial and widespread economic and social impact”**
- **Discharger application for coverage:**
 - Hg control measures to date
 - Study plan to identify and control sources of Hg
 - demonstration that end-of pipe treatment only viable option
- **Permit Conditions**
 - meet criteria as a yearly average
 - implement pollution prevention plan

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Ohio has developed a statewide mercury variance that is potentially applicable to all point-source dischargers in the State upon the dischargers' fulfillment of several criteria. That is, Ohio has adopted, and EPA has approved, a rule that grants a variance to human health or wildlife mercury criteria on the basis that requiring the construction of end-of-pipe controls to attain such standards would result in adverse substantial and widespread social and economic impact. An average cost of over ten million dollars per pound of mercury removed is cited by the State to reduce mercury at the end of the pipe to below the applicable criterion of less than 12 ng/L total mercury. In order for a discharger to qualify for coverage under this variance, the permittee would first have to submit an application containing a written request for individual coverage under this group variance and a description of mercury control measures taken to date. The application would also need to include a plan of study intended to identify and control sources of mercury. The plan of study must provide documentation of mercury information including, at a minimum: data of the facility's current influent and effluent concentration, identification of all known sources, a description of how known sources will be reduced or eliminated, other potential sources, and a proposed schedule for evaluating potential sources and control methods. Finally, the application would need to include an explanation of the permittee's basis for concluding that there are no readily available means of complying with applicable WQBEL without resorting to end-of-pipe treatment. Because Ohio has already demonstrated the social and economic impacts from complying with the State's mercury criterion, Ohio's multiple discharger variance relieves individual dischargers of this responsibility. Note that individual dischargers must still demonstrate that end-of-pipe treatment is the only viable compliance option. Once the discharger is granted conditional coverage, a baseline set of requirements, as described in Ohio's water quality standards, are then incorporated into its NPDES permit. The conditions incorporated into the permit include requirements that the discharger's average mercury effluent concentration must remain less than or equal to the compliance limit of 12 ng/L (a limit that an estimated 98% of dischargers can reach on a yearly average) and the permittee must implement a Pollutant Minimization Plan (PMP), which is intended to serve as a pollution prevention measure. If the discharger still cannot meet the standard following completion of actions addressed in the plan of study and in the PMP, Ohio may take action (through permit modification or permit reissuance) to delete the variance or impose additional pollutant minimization steps (after consideration of public comment). Ohio also retains the right to request that a discharger submit an individual variance application. SOURCE: O.R.C 3745-33-07(D)(9); DRAFT *Guidance on Mercury Criteria Implementation*




Variances Case Study: Charles River Combined Sewer Overflows

- Based on finding that meeting recreational use at all times in all areas would cause “substantial and widespread economic and social impact” (131.10(g)(6))
- Applies only to CSO discharges
- Dischargers:
 - Implement all CSO control actions in approved Plan
 - Obtain information necessary to determine appropriate WQS, based on relative costs and benefits of additional controls
- Eventual designation as Class B (CSO)

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From: Variance for the MWRA CSO Control Plan in the Charles River Basin
FINAL (9/2/98) Massachusetts Department of Environmental Protection



Variances: Take Home

- **Short-term**
- **Generally pollutant-specific**
- **Provide an alternative to use removal**
- **Basis for enforceable permit limits**
- **Established by States/Tribes**
- **Approved/Disapproved by EPA**
- **Subject to public review**
- **Incorporated into Water Quality Standards**
 - **Authorizing provision**
 - **Individual variances identified**
- **Analysis similar to UAAs (see 131.10(g))**

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From the original module

To review, a variance is a short-term modification to applicable water quality standards granted to an individual discharger.

Variances are temporary in nature and provide an alternative to downgrading standards. They control permit limits for a specific discharger. Variances are provided for in 40 CFR 131.13 of the Water Quality Standards Regulation. They do not replace the basic water quality standards. States and Tribes adopt standards but EPA reviews and approves/disapproves them. In addition, before granting a variance, the opportunity for public review must be provided. Once granted, a variance becomes legally enforceable.