NeR chapter 1

Application of the NeR: the NeR in 8 steps

1 Application of the NeR: the NeR in 8 steps

Introduction

This chapter explains the NeR system and how you must apply the NeR in issuing permits.

The Netherlands Emission Guidelines for Air (Nederlandse emissierichtlijnen lucht, NeR) are based on a well-considered approach. In the past there were cases in which the NeR standards were included in environmental permits without further consideration. When the Council of State reviewed such a permit, it usually rejected the approach used. For, a proper application of the NeR requires tailor-made work and making conscious choices. This chapter advises you on how to take the proper steps in using the NeR.

To obtain a good understanding of the NeR, it is useful to know the background of the Guidelines. That is why we shall deal with that first. Thereafter we shall consider the method of applying the NeR. To apply the NeR, you need good information. You can often obtain this information during the preliminary consultation concerning a permit application. It is therefore advisable to begin using this phased approach at that early stage.

The underlying notion

The NeR was set up in order to harmonise the issuing of permits. What it intends to achieve is that different municipalities and provinces include similar emission standards in permits issued to similar companies and in similar situations. The NeR also aims to restrict the total amount of emissions released into the atmosphere ('emission load reduction') by applying measures in accordance with Best Available Control Technology.

Best Available Control Technology
In the NeR the term Best Available Control Technology (BACT) refers to technical measures which, in an effort to protect the environment, have been applied successfully to reduce emissions from a source, whether on a process-integrated basis or in the form of end-of-pipe technology, in an average financially-sound enterprise (installation) belonging to the industry in question at home or abroad, or to measures which it would be possible to apply to the source in question in accordance with technical principles employed in other processes or in the light of the results of successful demonstration projects set up on an industrial scale.

It therefore concerns measures that best represent what is technically and economically feasible.
(A list of definitions of the terms used is given in Appendix 4.2.)
The Dutch term for this in the NeR is *Stand der Techniek*, which is not completely comparable to the term Best Available Techniques that is used at the European level. The European definition of BAT may be found in Art. 2 of the European IPPC Directive (96/61/EC). The European BAT reference documents (BREFs) give descriptions of measures designated as BAT for various industrial sectors.

A third objective is to simplify the process of issuing permits by supplying information that may be of use therein.
These objectives have resulted in a guideline which on the one hand contains as many general standards as possible with a view to harmonisation and on the other contains exclusion provisions for specific cases in the form of special regulations with a view to application of Best Available Control Technology. In short, the NeR strives for uniformity where possible, but also offers the opportunity for tailor-made work where desired.

Step 1 When do you use the NeR?

In practice, the first question that you must answer is whether to use the NeR in the situation at hand. The most appropriate time to determine that is during the preliminary consultation concerning a permit application or when preparing an update of a permit. To determine whether the NeR is applicable, you need certain information which you can obtain in this phase.

'Use' and 'applicable'
By using the NeR, you can determine if it is applicable. The term applicable means that emission standards must actually be imposed on the grounds of the NeR. So, in a situation in which the NeR does not require the imposing of emission standards (because the amount of emission is too small for example) the NeR does not apply. In that case you use the NeR but conclude that the NeR standards do not apply.

The first thing you must determine is whether the activity concerned could result in emissions to the air. That question is usually answered quickly, for instance, because of the presence of a ventilation grille or chimney-stack. If there are no significant amounts of emission to the air, the NeR does not apply. If there are significant amounts of emission, the NeR may apply. That depends first of all on whether another regulation has precedence over the NeR. So, even if there are significant amounts of emission, the NeR does not always apply. In this step you do not yet check emissions against the NeR, but only determine whether another regulation or policy must be complied with.

Step 2 Does another policy have precedence over the NeR?

Legal regulations such as general administrative orders or central agreements have precedence over the NeR. That is why in step 2 you must determine whether that is the case. If a law, general administrative order or central agreement applies, you do not have to use the NeR unless explicit reference is made to it. Central agreements may relate to the installation as a whole or its parts. If the emissions are so large that they pose an environmental threat, you use the NeR for those emissions for which no agreements or regulations have been made. It is also possible that a number of different regulations apply at the same time. Furthermore, it is possible that other regulations refer to the NeR as supplementary policy. In those cases you also use the NeR.

Overlap of regulations
In various situations it may happen that several different regulations apply at the same time. In that case the Decree on emission standards for combustion plants (*Besluit emissie-eisen stookinstallaties,* BEES) applies for example, though this Decree does not regulate all aspects of a situation. With respect to emissions not regulated by the BEES, such as those of heavy metals, the NeR may be applied. In such a case, for example when a combustion plant burns a regular fuel containing many heavy metals, the BEES applies to NO_x, SO_x and particulate matter and the NeR to heavy metals. It is important here that the standards imposed are compatible. For example, a very stringent standard on metals does not go together very well with a flexible standard on particulate matter. That is because the one standard leads to rigorous filtering of particulate matter and the other to less rigorous filters.

Furthermore, it is possible that other regulations refer to the NeR as supplementary policy. In those cases, you also use the NeR.

In practice, you must take into account the following regulations in particular (see also §2.2):

- Regulations imposing emission standards on installations: BEES A, BEES B, the Decree on air emissions from waste incineration (*Besluit luchtemissies afvalverbranding*, BLA, the Regulation governing the incineration of hazardous wastes and the Solvents Decree in accordance with EC-VOC directive, Environmental Protection (Bulletin of Acts, Orders and Decrees (*Staatsblad*) 2001, no. 261). See also §2.8.
- Regulations governing the entire installation (8.40 general administrative orders).
- General administrative orders imposing requirements on products and fuels.
- Covenants on the basis of target group policy.
- General administrative orders on air quality.
- European BAT reference documents (BREFS). See also §2.12

You must review the limit values for air quality set down in the general administrative orders in the situation that is reached after the NeR has been applied. In step 7 of this chapter this is further explained.

If the first two steps show that the NeR must be used, go to step 3, in which you determine which emissions are relevant and which sections of the NeR apply to them.

General administrative orders (GAOs) (see also §2.2 and Appendix 4.9)
It is important that the NeR always functions via an environmental permit. There are, however, many companies for which general administrative orders apply. When they apply to a company's total activity (general administrative orders on the grounds of Art. 8.40 Environmental Protection Act for specific industries) the obligation to have a permit is cancelled. The NeR no longer applies then, unless additional standards can be set on air emissions. In that case, the NeR could serve as a guideline.
General administrative orders may also apply to specific parts of an installation (Art. 8.44 Environmental Protection Act). Familiar examples of general administrative orders for specific activities are the Decrees on emission standards for combustion plants (BEES A and BEES B). These Decrees impose standards on emissions resulting from the production of heat in combustion plants. They apply to boilers and process furnaces, gas turbines and gas engines, even if this equipment is part of an installation to which an environmental permit also applies. The NeR does not apply to those parts of the installation, so that you may not set down rules for them in the permit.
In assessing the emissions, you must also take into account the general administrative orders that specify limit values for air quality.

Covenants (see also §2.2)
A company may be subject to a covenant in which measures have been agreed which are further explained in workbooks. In general, such an agreement also specifies the relationship to the NeR.

Step 3 Does a special regulation apply?

The NeR contains general standards and several dozen special regulations for specific industries or situations. When the NeR must be used, the first question that arises is whether a special regulation applies. If not, the general standards apply.

The special regulations given in Chapter 3 of the NeR relate to processes or circumstances that are so different from what is commonly encountered that the general approach cannot be used. On the one hand it concerns rules for diffuse particulate emissions (see §3.8) and situations that depart from the normal pattern. On the other hand there are rules for specific processes, for controlling odour nuisance and for reducing emissions of volatile organic compounds (VOCs). By going through the list of processes in the table of contents of Chapter 3, you can quickly see if there is a special regulation for a particular activity.

Odour nuisance
The NeR regulates odour in a different way. The approach to odour differs fundamentally from the general system. You will find it discussed in §2.9 and §3.6.

Volatile organic compounds (VOCs)
For measures of reducing VOC emissions, the NeR contains a separate group of special regulations (§3.4). These regulations are derived from the agreements made in the context of the KWS2000 hydrocarbon project. They are primarily aimed at the prevention of VOC emissions through applying measures at the source. This may involve the replacement of raw materials or additives by low-VOC products or an adaptation of the process. The manner in which you apply the regulations when issuing permits is described in §2.8.4.

What you still have to do is to determine whether the activity complies with the conditions set by the special regulation. This relates to, for instance, the nature and scale of the activity. It is therefore important to determine whether the special regulation sufficiently covers all relevant emissions or whether it is necessary to use the general standards for certain aspects. The way in which the special regulations are applied is explained in §2.6. If no special regulation applies, you use the general standards, which are considered in the next step.

Step 4 How do the general standards function?

To determine if the general standards apply, go through steps 4, 5 and 6.

Determination of relevant emissions (see also §2.3)
Which substances are capable of producing relevant emissions? To determine that, you must compare the total mass flow with the mass flow limit of the relevant substance classes. To do that you need information on the nature and scale of the emission: which substances may be released and in what amounts? Usually you will be able to gain some idea of that on the basis of the raw materials used or the properties of the process. By checking the information on the total mass flow against the mass flow limit, you can determine which emissions are relevant from the standpoint of environmental protection.

Classification into substance categories and classes (refer to §2.3)
The NeR distinguishes six categories of chemical substances, subdivided into classes (refer to §3.2). For eacht substance categorie and class there is a mass flow limit and a concentration standard. The different values for the mass flow limit in the distinctive substance categories depend mainly on the harmfulness of the substances. When the emission of a substance that may occur in a process is such that the mass flow limit may be exceeded, it is (under normal circumstances) reasonable to set emission standards.

The idea underlying the mass flow limit is simply that it would be pointless to make a great effort to tackle small amounts of emission. The NeR therefore gives threshold values (called the 'mass flow limit') which mark the boundary between 'tackling is worthwhile' and 'tackling is pointless'. If the scale of the emission (load) of a particular substance is greater than the mass flow limit value, you must regard the emission as relevant from the standpoint of environmental protection and that measures must be taken. If the scale of the load is smaller, nothing needs to be done. Exceptions are particulates and emissions that are subject to compulsory minimisation (see §2.3 and §3.2).
When checking an emission against the mass flow limit, it concerns the highest value the emission can have averaged over an hour. You must not average the emission over more than an hour before checking it against the mass flow limit. For, long averaging times may result in values that are too low for the maximum emission and that may involve a loosening of the standards. This would be contrary to the essence of the NeR, which is to reduce the emission load as much as possible.

More than one emission point
An installation may have a number of emission points. The NeR takes this into account as well. In those cases, emissions from a number of sources are combined for checking against the mass flow limit. In that case, you must in principle include all sources (also the small ones).

Several substances released simultaneously
If several substances are released simultaneously, you must add up the emissions per substance class or category and check them against the mass flow limit, taking the cumulation rule into account. Exceptions are gaseous inorganic compounds (category gA), which must be assessed per substance.

Cumulation rule (see also §2.3)
If several substances are released simultaneously from a source, the cumulation rule may apply. This means that you must add up the emissions of different substances per substance category or class. You must then check the total emission against the mass flow limit to determine whether the total emission is relevant. The cumulation rule only applies to emissions that occur simultaneously and to emissions that come from different sources within a single installation. The main reason for adding up the sources is that many small emissions make up one large emission and that it is easier to control a large source.

Emission trends
Emission trends over time may be of significance. §2.4 describes the significance of the emission trends in relation to the standards. If the NeR applies to the emission, the general standards apply. In certain situations a reasoned departure from the general standards is required. With respect to a number of frequently occurring situations, the NeR contains instructions on when and how you may depart from the general standards.

Emissions which only occur for a short period of time may be exempted from application of the emission standards (see §2.4). Emissions which, due to their trend over time, cannot be properly regulated by the general standards, may if necessary be averaged over a longer time period than the usual one (see §2.4). Other examples of situations in which a departure from the general standards is possible, are small sources to which an exclusion provision applies (see §2.4) and when process-integrated measures have been applied (see §2.7).

When you have completed the route described above, you will obtain an inventory of the emissions and their scale. If no emissions of a substance or group of substances exceed the mass flow limit, the NeR does not apply. If there are emissions that exceed the mass flow limit, standards may be set in conformance with the NeR.

The inventory of emissions still reveals nothing about the actual standards to be imposed, but only indicates points for special attention. It is therefore advisable to keep the effort needed to prepare the inventory within reasonable limits.

Effort made to determine the emission load
The only reason why you determine if the emission load exceeds the mass flow limit is to find out whether the standards apply.
It usually suffices when you make an estimate of the load: is the emission small, average or large in relation to the mass flow limit? Only in cases of doubt must you carry out an extensive calculation or even a measurement to determine the scale of emission load.

In cases in which no emission limit values are imposed, the competent authority may still, however, include requirements for checking the emissions, either through direct measurement or use of emission relevant parameters (ERPs, see also §2.5 and §3.7).

Step 5 Which concentration standard do you apply?

By checking against the mass flow limit, you have determined whether or not the NeR applies. It is now clear on which emissions you must set standards. The standards in the NeR represent as much as possible the Best Available Techniques. These are normally imposed, but there are exceptions. In special circumstances you may depart from the standards by applying more lenient or more stringent requirements (departure from the NeR on duly stated grounds).

Reasoned departure (see also §2.1)
When you have determined that the NeR applies, you may in certain cases impose other standards than those in the NeR on the grounds of the ALARA principle. You may depart from the NeR in a more lenient (broader standards) or a more stringent way (stricter standards). What is important here is that in the preamble of a permit you give the reason for departing from the NeR.

The emission values considered feasible through emission abatement measures that are in accordance with the Best Available Control Technology, are indicated in §3.2 (per substance class) and expressed in concentrations. These concentrations are the emission values used in assessing the installation. These values can be included as performance specifications in the permit. If there are reasons to include means specifications instead of performance specifications in the permit, these limit values can serve as reference points in the design of the measures to be applied.

Process-integrated measures (see also §2.7)
With a view to complying with concentration standards or achieving load reduction, process-integrated measures are to be preferred over end-of-pipe technology. It is important to realise that the emission concentration figures in the NeR are not absolute figures. They are only indicators of the performance an emission abatement technique must deliver. When process-integrated measures are applied, the concentration of contaminants in the waste gas flow may sometimes increase while the total amount (the load) of the emission declines. In such a situation, maintaining the concentration standard would be unreasonable; you may than depart from the NeR on duly stated grounds. If source measures reduce the load, it may be useful to permit higher concentrations than those imposed by the general standards. However, it is important that the ultimate load reduction is similar to the reduction that would be achieved through the application of end-of-pipe technology in a situation without process adaptations.
For systematically assessing process-integrated measures, a step-by-step plan has been included in §2.7.4.

Compulsory minimisation (see also §2.3)
A singular aspect of issuing permits is the manner in which a possible compulsory minimisation must be dealt with. Emissions of very hazardous substances require a company and the licensing authority to look extra carefully for possibilities to restrict the emissions. Even after a permit has been granted, the standards on these substances must be reviewed on a fairly regular basis and made more stringent if necessary.
To determine the substances that are subject to compulsory minimisation, linkage has been made with the chemicals policy adopted by the cabinet: Strategie Omgaan met Stoffen (Strategy on Management of Substances, SOMS).

Step 6 What about ALARA?

An important question associated with the application of the NeR is: what about the ALARA principle? In general it may be assumed that the NeR standards represent Best Available Control Technology and that after consideration of a number of factors (mentioned in §2.1) one also uses the ALARA principle. The imposing of these standards then automatically corresponds with use of the ALARA principle. It special cases complying with the NeR standards may lead to a company having to make unreasonably heavy efforts. If so, the NeR need not be fully applied. These are situations in which a 'departure on duly stated grounds' is possible in the form of flexibilisation of the standards. In some cases more stringent standards than those in the NeR may also be imposed within the limitations of the ALARA principle. In these cases, too, in which emissions can be greatly reduced as a result of relatively little effort, one may also depart from the standards but then by making them more rigorous.

The question about the reasonableness of measures is sometimes difficult to answer. It usually involves the costs. It is conceivable that the application of measures could have serious consequences for the business economic situation of a company. In such a case, the competent authority may assess this as being unacceptable. The requirements may then be imposed in phases. It is also possible to apply less stringent requirements. However, this may only be done after an extensive pollution control test.

That environmental measures cost money does not necessarily have to be regarded as a 'serious consequence'. If an average company in the industry in question can afford the costs of measures, they may be regarded as measures that can 'reasonably be required'. To clarify that obligation a method has been developed to determine the cost effectiveness of measures. This is a method to weigh the costs of measures against the environmental benefits (see §2.1.5).

Step 7 Which permit requirements?

In the previous steps the basis was laid for the permit. The permit must now be drawn up.

Refusing or granting of permit
In the first six steps you have determined whether the NeR applies and which standards you may impose in accordance with Best Available Control Technology after checking against the ALARA principle. If this leads to sufficient protection of the environment, the permit may be granted. If it is not possible to protect the environment sufficiently within the potentials of Best Available Control Technology and within the reasonable limits of the ALARA principle, the permit must be refused.

The air quality standards are important criteria for assessing the measures needed to protect the environment. If the NeR standards are complied with, it does not automatically mean that the air quality standards are also complied with. Usually there will not be a problem, but in the case of a high background concentration a limited increase in emissions may already lead to negative consequences. An unfavourable location in a residential area may also lead to undesirable situations. Because the NeR sets no limit on the total emission load per installation, a company that does comply with the concentration standard could still produce an excessive immission concentration of a particular substance in the area if there is a high emission load. The immission concentration that is reached when the NeR is applied must therefore be checked against the air quality limit values. This test is further unrelated to the NeR. If the statutory limit values for air quality are being exceeded, you must make the requirements more stringent. If the ALARA principle does not allow that, the permit may not be granted.

Appendix 4.3 of the NeR lists the limits values for air quality, both the values that are already legally binding and the values at the drafting stage.

Means specifications or performance specifications

In drawing up the permit standards, the choice between means specifications and performance specifications is crucial. The NeR specifies emission standards that can best be translated into performance specifications (see also §2.5). However, in the NeR system it is also possible on the basis of the emission limit values to prescribe specific techniques to be applied (means specifications) with which the limit values can be complied with. In addition to this, various special regulations, in particular those for odour, specify specific implementation measures to be applied. In those cases you must use means specifications.

Monitoring of emissions

Monitoring of emissions is of fundamental importance. The permit must also offer the necessary clarity about monitoring. This can be done by including an inspection regime in the permit, in which you indicate, for instance, how and when the inspection must be carried out and by whom. In §3.7 the NeR gives an inspection regime system. This system has five different inspection levels (from simple to complex) depending on the scale of emissions.

Inspection regime (also see §2.5 and §3.7)
The inspection regime to be applied depends on the scale of emissions when the measures taken have failed. This is referred to as failure emission. For, the larger the amount of emission in the event of failure of the emission abating technique, the greater is the importance of good inspection. Determining what inspection system must to be used is therefore linked to the failure emission load. This emission is expressed as a multiple of the mass flow check value. In the case of large amounts of failure emission, when the load is over 1000 times the mass flow check value, the emission and hence also the proper functioning of the equipment must be monitored continuously. In the case of small amounts of failure emission below the mass flow check value, only the obligation to check the functioning of the treatment technique applies. As for amounts of emission lying between these values, an intermediate regime applies.

However, sometimes it is possible to deduce from the process or the treatment technique whether the emission standard is being complied with. You can then determine a so-called 'emission relevant parameter' or ERP, which indicates whether the standard is being achieved or not (see also §2.5 and §3.7).

Checking the measuring result
You check the inspection results against the emission standards included in the permit. When checking, you assess the error margin of the measuring method to the advantage of the permit holder. The NeR values apply as half-hour averages.

Other aspects

When you have determined which standards can be applied, a number of choices still remain. These are usually not specific NeR matters but more general aspects of licensing, such as the enforceability of the permit. You must of course specify the standards in such a way that they can be enforced. This means that permit requirements must indicate exactly which standards apply, such as the limit values to be maintained, the measuring obligations and the time periods for realising adjustments. That is because the Council of State consistently nullifies open formulations such as 'the concentrations must comply with the NeR'. You must therefore lay down the requirements as specifically as possible. The NeR does not, however, make concrete recommendations on how to specify the requirements. The same applies to the measuring obligation; phrasing such as 'measurement in accordance with the NeR' is insufficient. The permit or the measuring programme added later must make explicitly clear which requirements apply to measurements.

Step 8 What to include in the preamble?

The quality of a permit is also determined by the considerations made. When it really matters, that is, in an appeal procedure, a good preamble appears to give the permit more solidity. It is therefore advisable to clarify in the considerations of the permit how the NeR is incorporated in the permit. It is essential that you describe the pursued line of thought, including the choices and considerations made. You must make clear why the NeR is deemed applicable. You must also indicate the grounds of the considerations used to determine the standards: which substances are released; are the emissions above or below the mass flow limit; which emission standards apply? In addition to this, it may sometimes be necessary to indicate why the NeR was not departed from. If the NeR was departed from, the reason for this must always be explained.