Environment Agency permitting decisions

Variation

We have decided to issue the variation for Tunstead Quarry operated by Lafarge Tarmac Trading Limited.

The variation number is EPR/XP3534UY/V010

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account
- justifies the specific conditions in the permit other than those in our generic permit template.

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Structure of this document

- Key issues
- Annex 1 the decision checklist
- Annex 2 the consultation and web publicising responses

Key issues of the decision

Fuels –Waste Derived Fuels (WDFs)

Cement Installations have been permitted to use WDFs within their clinker manufacturing processes for many years. Their use has saved operators money, comparable to the use of virgin fossil fuels. At the same time, using AWDFs may move the treatment of wastes up the waste hierarchy, and some Installations have made demonstrable reductions in their emissions released to air – associated to their use.

Chapter IV of the Industrial Emissions Directive (IED), which has superseded the Waste Incineration Directive, sets many controls for installations which co-incinerate waste (use as a fuel). These controls include mandatory maximum Emission Limit Values (ELVs), monitoring requirements, and operating techniques. In addition to these, installations also have to comply with the other relevant requirements of the Environmental Permitting Regulations, including for cement kilns compliance with Chapter II of the IED (previously the IPPC Directive), which may impose stricter requirements in some cases.

Operators within the cement sector have demonstrated that compliance with such conditions can be achieved.

Raw Materials – Alternative Raw Materials (ARMs)

In addition to the use of WDFs, operators have also been using waste derived alternative raw materials (ARMs), as partial substitutes for virgin raw materials, in the manufacture of cement from clinker. For example, calcium-based reaction wastes from de-sulphurisation plant can replace quarried gypsum.

Here cost savings maybe achieved not only from the displacement of raw materials, but also through reductions in energy usage. For example, some ARMs may displace some clinker content, reducing the reliance on clinker production levels, or may replace raw materials which would otherwise require required significant milling / grinding operations.

The impact of using new WDF/ARM on sites

Since the first requests to use WDFs/ARMs, operators have been required to complete trials, comply with protocols, or carry out technical evaluations for their use. In addition to this, permit variations have been required for each new fuel.

This variation, incorporating an agreed ‘Code of Practice’, seeks to make the process of introducing a new WDF/ARM to a plant more efficient, by providing flexibility to operators. The operators can self assess the risks (according to the Code of Practice methodology) and proceed without a permit variation for

use of a WDF/ARM listed in the CoP where it is deemed 'low risk' i.e. it will not cause a negative effect.

Although this approach provides flexibility to the Operator, the Environment Agency will retain regulatory powers and will audit risk assessments, assessing compliance with the Code of Practice. Such powers may include the requirement of an operator to submit an application (for variation), or for the Environment Agency to remove permit conditions (such as the code of practice).

Code of Practice (dated October 2014)

The MPA Code of Practice includes a list of wastes which are already proven for use at cement and dolomitic lime plants in England. The document specifies a mandatory risk assessment process for any proposed ARM/WDF which is not already used at a particular site and is on the CoP list. This risk assessment methodology has been produced by operators (and their trade association group) and submitted to the Environment Agency for approval. Where the risk assessment identifies limited risks, for example a material of similar properties and risk factors to one which is already used on site, and the operator does not need to make significant changes to its operations, then the operator may use the new material without applying for a variation. The main consideration here is that there is no change to ELVs, and no worsening of environmental impacts. An operator will need to apply for a variation if they wish to use a waste NOT on the list, and additional trials may be required.

Alternatively, where the risk assessment identifies that more significant changes are required, such as changes to infrastructure, or if the material properties/risks are not similar to those materials/fuels currently permitted, then the operator must apply for a variation. This concept applies the Environment Agency's risk-based permitting strategy. The Environment Agency will be notified where risk assessments are carried out and can intervene if appropriate.

The risk assessment process for the operator has been reviewed by the Environment Agency to ensure that all aspects described in the Code of Practice are included. This risk assessment includes mathematical modelling of the fates of materials entering the kiln. This model will be verified on a regular basis using a mass balance and supported with extractive sampling results.

When a new WDF or ARM is being considered, the permit will require the operator to follow the Code of Practice and a waste stream specific risk assessment is completed. The waste stream would be defined by the EWC code, description, compositional analysis and supplier. If any of these aspects change significantly another risk assessment would be completed.

This variation will also standardise the names used for the WDFs/ARMs in order to remove any ambiguity that may exist with differing trade names being used by different companies, for what is essentially the same fuel/material.

Within this variation we are removing the requirement to sample for Group 3 metals within the waste fuels received at the installation. Over 90% of the group 3 metals entering the kiln system come from the raw materials. Only limited control of the environmental outputs can be gained by manipulating the contribution from the fuels, and we therefore consider this requirement to be disproportionate regulation as there are emission limits in place for Group 3 metals emissions to air from kilns.

We justify the removal of this requirement in conjunction with the application of the following two controls:-

i. The risk assessment process includes a mass balance and fate analysis model that predicts the impact of changes in emissions caused by new WDFs or ARMs.
ii. The operator must carry out extractive sampling of emissions to air every six months, to confirm compliance with the ELVs, and to validate the mass balance and fate analysis.

The variation will include waste codes for WDFs and ARMs that the Environment Agency has considered appropriate for use within the sector, and which are already permitted at some existing installations. The introduction at a site will be subject to the site specific risk assessment being successfully completed. Any subsequent wastes identified after this variation which aren't included within the list of waste codes (and not used at other sites) will require a permit specific risk assessment, and will not form part of this 'Code of Practice'. These requests will be subject to the Environment Agency application for variation process.

Quarterly reporting of the types of WDF fuels being utilised, their % replacement rate and the point of firing in the kiln system will be required an provides a clear view as to the range and scope of wastes being used on the site.

Hazardous WDFs at Tunstead Quarry,

The Tunstead Quarry Installation is not currently permitted to burn hazardous wastes (as Waste Derived Fuels), and so we have not included the following hazardous waste fuels that are listed in the MPA Code of Practice:

050603* Other tars

130701* Fuel oil and diesel

190208* Liquid combustible waste containing dangerous substances.

Conditions 2.3.8 and 2.3.9,

The operator has requested that the following conditions are amended to remove reference to “new waste” and replace it with “Any waste not listed in table S2.1”, in order to clarify the conditions. Whilst we understand their reasoning we have agreed with the operator, to keep the wording in order to be consistent with the rest of the sector. To clarify, the meaning of “new” in these conditions does indeed mean any waste which is not listed in table S2.1 and is therefore “new” to the permit (not new to the process)

2.3.8 No new waste derived fuels shall be used for the purposes of carrying out a feasibility trial without obtaining the Environment Agency's prior written approval in each case. Any such feasibility trials will be limited to a maximum of 100 tonnes of the fuel and a maximum duration of 14 days.

2.3.9 No new waste materials shall be used as raw materials in the process except with the prior written approval of the Environment Agency, and shall be subject to the specification in table S2.1 of schedule 2 or otherwise agreed in writing with the Environment Agency.

Annex 1: decision checklist

This document should be read in conjunction with the Duly Making checklist, the application and supporting information and permit/ notice.

Aspect considered	Justification / Detail	Criteria met Yes
Consultation		
Scope of consultation	The consultation requirements were identified and implemented. The decision was taken in accordance with RGN 6 High Profile Sites, our Public Participation Statement and our Working Together Agreements. The proposed variation was communicated by Lafarge Tarmac Cement and Lime Ltd at the Tunstead liaison committee in Thursday 20th March 2014. We have decided to conduct a normal consultation exercise on this application due to as this is part of a wider number of applications in this sector for similar changes. Although this application will not change ELV;s it was considered appropriate to make members of the public aware of the altered approach. We consulted with the following bodies: Local authority environmental protection department Food Standards Agency (FSA) Public Health England (PHE) Health and Safety Executive	✓
Responses to consultation, web publicising	The web publicising, and consultation) responses (Annex 2) were taken into account in the decision. The decision was taken in accordance with our guidance.	✓
Operator		
Control of the facility	We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with EPR RGN 1 Understanding the meaning of operator. There is no change in control of the facility with this	✓

Aspect considered	Justification / Detail	Criteria met Yes
	application	
European Directives		
Applicable directives	All applicable European directives have been considered in the determination of the application. Industrial Emission Directive (IED) - The relevant chapters for this variation, are both Chapters II (IPPC) and IV (waste incineration) of the IED. As wastes are already burned, the ELVs required by the IED will not change as a result of this variation.	✓
The site		
Extent of the site of the facility	There are no changes to the extent of the site as part of this variation	✓
Site condition report	The Code of Practice dated October 2014 requires that when new materials are brought onto the site a risk of contamination must be considered and recorded as part of the risk assessment process. These risk assessments will be made available to the site inspector upon request and maintained for the life of the installation.	✓
Biodiversity, Heritage, Landscape and Nature Conservation	The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat . A full assessment of the application and its potential to affect the sites has been already been carried out as part of earlier permit determinations. As part of this application, the emission limit values and the local impact assessment will not change as there are no changes to point source emissions. Any local impact such as fugitive impacts of storage (fugitive emission) must be considered and recorded as part of the risk assessment. As part of the code of practice when new materials are brought onto the site they will have to consider possible impacts of the storage, use and emissions must be	✓

Aspect considered	Justification / Detail	Criteria met Yes
	considered and recorded as part of the risk assessment process. These risk assessment will be made available to the Environment Agency upon request and maintained for the life of the installation.	
Environmental Risk Assessment and operating techniques		
Environmental risk	We have reviewed the operator's assessment of the environmental risk from the facility. The operator's risk assessment is satisfactory. The operator has proposed a change to the existing Environmental Management system in line with the Code of Practice. As part of the Code of Practice when new materials are brought onto the site the operator will have to consider possible impacts from the storage, use and emissions. These impacts will be recorded as part of the risk assessment process. The risk assessments will be made available to the Environment Agency upon request and maintained for the life of the installation.	✓
Operating techniques	There are no direct changes to the operating techniques (i.e. the mechanical techniques employed) as a result of this variation. However, as the code of practice will be adopted into the Environmental management system future adoption of alternative waste derived fuels or Alternative Raw Materials (ARM) may include physical changes to plant on the site. These changes will be subject to a risk assessment process and where appropriate may include a variation to take account of the onsite changes. These changes will be assessed as part of the risk assessment process, noted and be available for inspection by Environment Agency. The risk assessment process for the company has been reviewed by the Environment Agency to ensure that all aspects described in the code of practice are included. This review also included inspection of a mass balance model that predicts the fate of materials entering the kiln system. This model will be verified on a regular basis using a mass balance and supported with extractive sampling results.	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
	When a new ARM or waste derived fuel is considered for use at the installation the code of practice is followed and a waste stream specific risk assessment is completed. The waste stream would be defined by the waste code, description, compositional analysis and supplier. If any of these aspects change significantly another risk assessment would be completed. **Removal of Group 3 metals limits from Alternative fuels** Table S2.1 includes a specification for waste derived fuels. The specification for group 3 metals has been removed from the permit. The BREF and BATC include reference to controlling the inputs of metals to the kiln system. The risk assessment includes a fate analysis of the metal inputs and outputs. The basis for this control is the volatility of metals and their fate, typically as a constituent of clinker, cement kiln dust or to atmosphere through the main stack. Evidence has been provided to show that the majority of group 3 metals are sourced from the raw materials and not from the fuels. As such controlling emissions by controlling inputs of fuel composition is limited. The very volatile metals such as mercury, cadmium and thallium will continue to be controlled as an input as the temperature profile of the kilns mean the fate of these materials are more likely to be the stack exhaust. Typically over 90% of the group 3 metals will be sourced from the raw materials and over 99% retained within the clinker. These proportions indicate the controls on the fuel inputs are of limited effect in controlling emissions to air. The Emission limits for metals to atmosphere are not changing as a result of this variation and are in compliance with the requirements of the IED (Chapter iv - ex WID conditions). As extractive sampling takes place every 6 months the mass balance and fate analysis provide an better control mechanism for metal.	

Aspect considered	Justification / Detail	Criteria met Yes
The permit conditions		
Use of conditions other than those from the template	Based on the information in the application, we consider that we need to impose conditions other than those in our permit template, which was developed in consultation with industry having regard to the relevant legislation. Condition 1.1.4 has been added to ensure there is adherence to the MPA Code of Practice dated October 2014. Condition 2.3.6 has been replaced and the related table S2.2 has been removed. The previous condition has been replaced with:- "2.3.6 "No conditions applies." The condition has been replaced as it is no longer compatible with the use of the code of Practice. Condition 4.2.6 - *"Within 1 month of the end of each quarter, the operator shall submit to the Environment Agency, using the form specified by the Environment Agency for the purpose, the information specified on the form, relating to the types of waste Alternative Raw Materials and waste-derived fuels that the Operator has used in that quarter."* This condition has been added to the permit. The purpose is to maintain a list of ARM and WDF that are used at the installation. The form includes which material has been subject to a risk assessment as part of the code of practice, where fuels are to be burned, the thermal replacement rate, and the date the risk assessment has been completed.	✓
Odour alternative conditions	As part of the Code of Practice when new materials are brought onto the site the operator will have to consider possible impacts from the storage, use and emissions. These impacts will be recorded as part of the risk assessment process. The risk assessments will be made available to the Environment Agency upon request and maintained for the life of the installation.	✓
Noise alternative	As part of the Code of Practice when new materials are brought onto the site the operator will have to consider	✓

Aspect considered	Justification / Detail	Criteria met Yes
conditions	possible impacts of the storage, use and emissions. These impacts will be recorded as part of the risk assessment process. The risk assessments will be made available to the Environment Agency upon request and maintained for the life of the installation.	
Raw materials	We have specified limits and controls on the use of raw materials and fuels. Standardise fuel types - The variation will standardise the names of the fuel types removing the trade names such as Calfuel 1 and 2. No changes to existing controls needed As part of the code of practice when new materials are brought onto the site they will have to consider possible impacts of the storage, use and emissions must be considered and recorded as part of the risk assessment process. These risk assessment will be made available to the site inspector upon request and maintained for the life of the installation. Note the variation will include Alternative Raw materials in a list (as outlined in the code of practice). However, as these are defined as wastes under the waste code justification is included in the next section.	✓
Waste types	We have specified the permitted waste types, descriptions and quantities, which can be accepted at the regulated facility. We are satisfied that the operator can accept these wastes for the following reasons: List of waste codes The list of wastes, presented in appendix 2 of the supporting information for the variation application, have been reviewed to ensure that they are suitable, in principle, for use within the clinker manufacturing process either as an alternative raw material or as a fuel. The list of wastes to be used as fuels have all previously	✓

Aspect considered	Justification / Detail	Criteria met Yes
	been authorised at one or more the cement installations in England. Experience at these installations have shown the fuel type can considered BAT. Introduction of the fuel to the kiln system will only follow once a completed risk assessment has shown that it can be introduced without causing a negative impact or a significant risk of a permit condition non compliance. The risk assessment process will also include an implementation plan that will lay out the steps taken to ramp up the use and the testing programme to ensure compliance with the risk assessment. The installation is not permitted to accept hazardous waste fuels as discussed in the key issues section of this document. There will be no changes to Emission limit values,(or resultant impacts for point sources) frequency of extractive sampling or use of continuous emissions monitors. Possible Alternative Raw Materials are listed in Schedule 2 of the permit. This list includes materials that, in principle, are suitable alternatives to traditional materials used to make raw meal for the clinker process. The list has been reviewed by the Environment Agency and the materials considered to have the potential to replace raw materials currently utilised. As with the fuels, each ARM waste stream will be considered on its own merits and risk assessment. Consideration will include the fate of the materials, supplier, storage and transportation. If any of the key facets of the waste stream change then an additional risk assessment must be completed.	
Incorporating the application	We have specified that the applicant must operate the permit in accordance with descriptions in the application, including all additional information received as part of the determination process. These descriptions are specified in the Operating	✓

Aspect considered	Justification / Detail	Criteria met Yes
	Techniques table in the permit. The operator is also required to follow the MPA Code of Practice via permit condition 1.1.4. Schedule 6 has been amended to include a definition of the MPA Code of Practice:	
Emission limits	There are no changes to these limits as a result of this variation.	✓
Monitoring	We have previously decided that monitoring should be carried out for the parameters listed in the permit, using the methods detailed and to the frequencies specified. There are two changes to monitoring requirements: 1. there is no longer a requirement to monitor the group 3 metals specification of the waste fuels (see above). 2. the addition of the requirement for periodic monitoring to be carried out at least once every 5 years for groundwater and 10 years for soil, which is a requirement for all installations under chapter II of the IED.	✓
Reporting	We have specified reporting in the permit. Condition 4.2.6 has been added to the permit requiring "*Within 1 month of the end of each quarter, the operator shall submit to the Environment Agency, using the form specified by the Environment Agency for the purpose, the information specified on the form, relating to the types of waste Alternative Raw Materials and waste-derived fuels that the Operator has used in that quarter."* The purpose is to maintain a list of ARM and WDF that are used at the installation and to inform us of any newly introduced WDFs and ARMs. The form includes which material has been subject to a risk assessment as part of the code of practice, where fuels are to be burned, the thermal replacement rate, and the date the risk assessment has been completed.	✓

Aspect considered	Justification / Detail	Criteria met Yes
	Table S4.3 has also been updated to include a requirement for a reporting form for the quarterly reporting of waste fuels and ARMs usage.	
Operator Competence		
Environment management system	There is no known reason to consider that the operator will not have the management systems to enable it to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence. The operator has stated that "The approach set out in the MPA Code of Practice will be incorporated into the existing Environment Management System." We have also assessed on site, the operator's risk assessment process and are content that it is in line with the code of practice requirements.	✓
Financial provision	There is no known reason to consider that the operator will not be financially able to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence.	✓

Annex 2: Consultation, and web publicising advertising responses

Summary of responses to consultation, and web publication and the way in which we have taken these into account in the determination process.

Response received from
Director of Public Health at Derbyshire County Council (email dated 12/12/14)
Brief summary of issues raised
Confirmed that they had no comments to make
Summary of actions taken or show how this has been covered
N/A

Response received from
Public Health England (emailed letter dated 30/12/14)
Brief summary of issues raised
Provided the regulator is satisfied that the change will not result in a significant change to any emissions at this plant and that the operator has sufficient controls and monitoring in place, then based on the information contained in the application supplied to us, Public Health England has no significant concerns regarding the risk to the health of the local population from the installation. This consultation response is based on the assumption that the permit holder shall take all appropriate measures to prevent or control pollution, in accordance with the relevant sector guidance and industry best practice.
Summary of actions taken or show how this has been covered
We are satisfied that the change will not result in a significant change to any emissions at this plant, and no emission limits will change as a result of this variation. As discussed in the operating techniques section of this document, there are no direct changes to the operating techniques (i.e. the mechanical techniques employed) as a result of this variation. Appropriate measures for the current site were assessed when the permit was issued, and during the 2010 permit review.