



Validation opinion

Revision of the monitoring plan

Title of project activity:		
Catalytic N ₂ O destruction project in the tail gas of three Nitric Acid Plants at Hu-Chems Fine Chemical Corp.		
CDM reference number:		DNV project No.:
0765		49210118
Type of revision:	<input checked="" type="checkbox"/> Proposed revision only includes the request by the CDM EB <input type="checkbox"/> Proposed revision includes not only the request by the CDM EB but also additional revisions proposed by the PP/DOE <input type="checkbox"/> Proposed Revision includes revisions proposed by the PP/DOE	
Date	Work carried out by:	Work verified by:
16 November 2009	Trine Kopperud	Rafi-ud-Din Khawaja

1 Description of the changes to the monitoring plan

Following the request for review the project proponent (PP) was requested to revise the monitoring plan (please refer to EB50 paragraph 71e) to include the established routine of checking the N₂O concentration by periodic sampling using gas chromatography. The PP has revised the monitoring plan to include the requested requirement. It has been included in section D.2.1.1 for parameter ID numbers P9, P23, & P 37 (i.e. CO_N2O,i ,II; CO_N2O,i ,III; & CO_N2O,i ,IV) and section D.2.1.2 for parameter ID numbers B3, B22, & B36 (i.e. CI_N2O,I,II; CI_N2O,I,III; & CI_N2O,I,IV) that the source of the data is non-dispersive infrared photometry analyser and that the plausibility check would be performed by gas chromatography with corresponding changes in Annex 4 of the revised monitoring plan. Please also refer to the request for review responses submitted for the request for issuance of CERs covering the monitoring period from 1 October 2008 to 28 February 2009 for the project activity.

2 Assessment of the revision of the monitoring plan

The proposed revision of the monitoring plan ensures that the level of accuracy in the monitoring and verification process is not reduced as a result of the revision. The N₂O concentration is continuously measured by a non dispersive infrared (NDIR) analyser, and periodic sampling using gas chromatography is performed in addition as a plausibility check.

International recognised standards, such as the VDI 2469, Part 2 (“*Gaseous emission measurement - Measurement of nitrous oxide*”; issued in February 2005), stipulates the NDIR principle as the state of the art technology for continuous measurement of N₂O, whereas gas chromatography is mentioned (Part 1) as reference method for singular, non-continuous measurement. Also, later standards (i.e. ISO 21258 “*Stationary source emissions – Determination of the mass concentration of dinitrogen monoxide (N₂O) – Reference method: Non-dispersive infrared method*”) state NDIR as the preferred reference method and substantiate, that NDIR was and still is the best available technology applicable for continuous N₂O measurement.

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As per the requirements of para 9(a) Annex 28 of EB 49, since the revisions to the monitoring plan are related to including the established routine of checking the N₂O concentration by periodic sampling using gas chromatography as per the requirements of the methodology AM0028, version 1 (that was not previously included in the monitoring plan), DNV confirms that the proposed revisions of the monitoring plan ensures that the level of accuracy or completeness in the monitoring and verification process is not reduced as a result of the revisions.

Since the concentration values monitored continuously by the NDIR analyzer would still be used for the calculation of emission reductions and the periodic sampling using gas chromatography is being added to the monitoring plan to meet the requirements of the methodology as per EB50 paragraph 71e, DNV is of the opinion that the frequency of measurements, and the quality of monitoring equipment (e.g. calibration requirements, and the quality assurance and quality control procedures) would not be affected by the proposed revisions.

As per the requirements of para 9 (b) Annex 28 of EB 49, it is DNV's opinion that the above revision to the monitoring plan are as per the requirements of the methodology AM0028 version 1, and as per EB50 paragraph 71e. Further DNV confirms that the proposed revision of the monitoring plan ensures the conservativeness of the emission reductions calculation.

As per the requirements of para 9(c) Annex 28 of EB 49, DNV also confirms that the finding of the previous verification reports have been taken into account since following the request for review the project proponent (PP) was requested to revise the monitoring plan as referred in EB50 paragraph 71e.

Thus, DNV recommends the approval of the revised monitoring plan submitted by the project participants.

We sincerely hope that the Board find our elaboration on the above satisfactory.

Yours faithfully
for DET NORSKE VERITAS CERTIFICATION AS



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