DRAGON PRODUCTS COMPANY
Box 191, U.S. Route 1 • Thomaston, Maine 04861

October 1, 2010

ATTN: Mr. Marc Cone
Air Bureau Office–Tyson Building
Maine Department of Environmental Protection
17 State House Station
Augusta, ME 04333-0017

RE: *Dragon Products Company, LLC – Comments on DRAFT Best Available Retrofit Technology (BART) Air Emission License Revision No. A-326-70-A-I and Responses to Related U.S. EPA and U.S. DOI Comments*

Dear Mr. Cone:

Thank you for the additional opportunity to review DRAFT Air Emission License (AEL) Revision No. A-326-70-A-I, which was provided to Dragon by the Maine Department of Environmental Protection (MEDEP) on September 16, 2010 via email from Ms. Kathy Tarbuck of the MEDEP. Dragon submitted an initial Best Available Retrofit Technology (BART) analysis to MEDEP on September 14, 2009 and supplemental information pertaining to Dragon's NO_X BART analysis at the request of MEDEP on December 3, 2009. Dragon's BART analysis included a five-step BART review of the technical feasibility and cost of compliance, the energy and non-air quality impacts of compliance, existing air pollution control technology in use at the source, the remaining useful life of the source, and the degree of visibility improvement anticipated from the use of BART. A CALPUFF Version 5.8 modeling study was performed by Dragon and included in the analysis.

Please note that Dragon was provided an initial version of DRAFT AEL Revision No. A-326-70-A-I via email from Ms. Kathy Tarbuck on March 29, 2010, and was solicited for comment. Dragon submitted an initial comment letter to MEDEP on May 5, 2010. However, Dragon has not yet received a response, or any type of acknowledgement that MEDEP (1) has received and reviewed Dragon's initial May 5, 2010 comment letter, (2) has any responses to Dragon's comments, or (3) has any intention of revising DRAFT AEL Revision No. A-326-70-A-I in accordance with Dragon's comments. Dragon requests that MEDEP issue a response to Dragon's initial May 5, 2010 comment letter to address the technical concerns that were raised pertaining to the NO_X and SO_2 BART requirements of DRAFT AEL Revision No. A-326-70-A-I.

As requested, Dragon has again reviewed DRAFT AEL Revision No. A-326-70-A-I, and the subsequent U.S. EPA and U.S. DOI comments, and is providing further comments herein. This comment document includes the following:

- General BART Applicability Comments.
- Comments on DRAFT AEL Revision No. A-326-70-A-I.
- Responses to U.S. EPA Comments.
- Responses to U.S. DOI Comments.

General BART Applicability Comments

BART Applicability to the U804 – Kiln System:

In a Departmental Findings of Fact and Order–Regional Haze BART Determination issued on April 3, 2007, MEDEP determined that the Dragon Facility, specifically the U804–Kiln System, is subject to the Regional Haze Rule/BART requirements codified in 40 CFR Part 51, Subpart P, Protection of Visibility. MEDEP determined that the Dragon Facility met the three criteria for eligibility. Specifically, (1) the U804–Kiln System was originally constructed between 1962 and 1977, in 1970; (2) as a Portland cement manufacturing facility, the Dragon Facility is one of the 26 major source categories listed in the Regional Haze rules; and (3) the U804 – Kiln System emissions of at least one of the visibility impairing pollutants (VIP) exceeds 250 tons per year (tpy). In order for a source to be considered BART eligible, all three of the above specified criteria must be met.

As a Portland cement manufacturing facility, the Dragon Facility is indeed one of the 26 major source categories listed in the Regional Haze rules, the U804–Kiln System does emit at least one VIP in excess of 250 tons per year, and a Portland cement kiln previously operated by Dragon was installed between 1962 and 1977, in 1970. However, the U804 – Kiln System as currently configured and operated was <u>not</u> originally constructed between 1962 and 1977. As MEDEP is aware, the Dragon Facility underwent a major kiln modification between 2003 and 2004 during which the U804 – Kiln System was completely reconfigured. Originally a long, wet-process Portland cement kiln without an inline raw mill, the U804 – Kiln System was modernized and reconfigured to a four stage preheater/precalciner, dry-process Portland cement kiln with an inline raw mill. The U804 – Kiln System modernization and reconfiguration amounted to a complete re-building and reconstruction of Dragon's kiln system, using a completely different technology and design. In fact, the only components that still remain from the original long, wet-process kiln are approximately one third of the cylindrical steel kiln shell and the associated concrete support footings. All other equipment comprising the original long, wet-process kiln system was removed and/or replaced, including the refractory brick kiln lining, raw mill, fuel and raw material delivery systems, the associated kiln control devices (i.e., fabric filter dust collector, selective non-catalytic reduction system, and dry lime injection system), and all ductwork, exhaust, and conveyor belts associated with the kiln system. Most of the kiln was replaced with a preheater/precalciner tower. Essentially, Dragon constructed a new kiln system and incorporated a piece of the old kiln in that system.

The impact of the remaining one third of the cylindrical steel kiln shell and the associated concrete support footings on the emission formation mechanisms of the U804 – Kiln System is negligible at best and likely nonexistent. The differences between the original long, wet-process kiln system and the modernized and reconfigured four stage preheater/precalciner dry-process U804 – Kiln System, including emission formation mechanisms, kiln emission profiles, kiln

process operation, kiln fuel and material delivery and handling systems, and associated kiln control technologies, are so great that Dragon considers the old and new kiln system configurations to be completely unrelated. Also, and most significantly for determining BART-eligibility, the modernized and reconfigured U804 – Kiln System was considered a new or reconstructed source with regard to determining applicability to the requirements of the relevant Standards of Performance of New Stationary Sources (NSPS), Prevention of Significant Deterioration (PSD), and New Source Review (NSR) rules, and was treated as such in the kiln modernization and reconfiguration application and subsequent Air Emission License (AEL). Dragon believes that the determination that the U804–Kiln System was a new or reconstructed source as of 2004 precludes application of the Regional Haze Rule/BART requirements. It is obvious that BART was intended to apply to facilities that were not required to comply with NSPS or undergo NSR because they were constructed prior to 1977. The currently existing kiln system is a five year old source subject to NSPS and BACT requirements. It would be ludicrous to subject such a source to additional BART requirements. As a result, the U804–Kiln System is not subject to the Regional Haze Rule/BART requirements codified in 40 CFR Part 51.

U804 – Kiln System Control Technologies – BACT as BART:

Even if BART requirements did apply, which they do not, Dragon is already in compliance with standards which are equivalent to BART. As MEDEP is aware, the U804 – Kiln System modernization and reconfiguration application included a top-down best available control technology analysis (BACT) for the U804–Kiln System, and the associated ancillary equipment, consistent with Maine's Best Practical Treatment (BPT) requirements codified in Chapter 100 of Maine's State Air Regulations. In AEL No. A-326-71-U-A/R, MEDEP determined that:

> *"In the application dated June 2002, as well as in a supplement to the application dated July 29, 2002, Dragon demonstrated that the application of the following control technologies are BACT consistent with MEDEP requirements."*

MEDEP later determined that the use of control technologies that met the requirements of BACT and BPT were appropriate for meeting the requirements of BART in a revision to Dragon's AEL No. A-326-77-1-A, wherein MEDEP determined that:

> *"The license modification for the converted kiln system included a BACT analysis. The BACT findings for the new dry process have been determined to be appropriate BART requirements for the kiln system at Dragon."*
>
> *For the new cement kiln system:*
>
> 1. *For NO_X emissions, BACT is staged combustion with a thermally efficient, inline, low-NO_X type calciner.*
> 2. *For VOC and CO emissions, BACT is good combustion practice.*
> 3. *For PM/PM_{10}, BACT is a fabric filter (baghouse).*
> 4. *For SO_2 emissions, BACT is inherent process scrubbing.*

MEDEP also determined in AEL No. A-326-77-1-A that:

> *"The BART determination for the Kiln is currently required in existing Air Emission Licenses. No further implementation is required. The Department hereby finds that Dragon Products Company, Inc. is meeting the requirements of 40 CFR, Part 51 as currently licensed."*

Furthermore, on June 7, 2005, in the preamble to the Regional Haze Rule published in the Federal Register, Vol. 70, No. 128, the U.S. EPA stated that:

> *"...the [BART] review process will take into account the controls already in place and the State may find that these controls are consistent with BART."*

As requested by MEDEP in a letter dated March 23, 2009, Dragon performed a new BART analysis in accordance with 40 CFR Part 51, Appendix Y, which included consideration of the following:

1. Technical feasibility and the cost of compliance;
2. The energy and non-air quality impacts of compliance;
3. Any existing air pollution control technology in use at the source;
4. The remaining useful life of the source (if applicable); and
5. The degree of visibility improvement which may reasonably be anticipated from the use of BART.

The results of this analysis indicated that the use of the existing air pollution controls in place at the Dragon Facility still represented BART. This determination was made based on the fact that any other potential add-on controls or operational controls would either be technically infeasible, not cost effective, or would not result in a significant improvement in visibility.

Given that the U.S. EPA has allowed for States to determine that existing control technologies are consistent with the requirements of BART, MEDEP has previously determined that the existing control technologies currently applied to the U804–Kiln System meet the requirements of Maine's BPT and Federal BACT, and MEDEP has previously determined that the existing control technologies currently applied to the U804–Kiln System meet the requirements of BART by virtue of meeting the requirements of BACT, Dragon objects to MEDEP's BART determinations included in DRAFT AEL Revision No. A-326-70-A-I. Dragon specifically questions the more stringent SO_2 emission limit (i.e., 200 ton/yr on a 12-month rolling basis), and 45% NO_X control efficiency limitation. Dragon believes that the existing control technologies currently applied to the U804–Kiln System are more than sufficient to meet the requirements of BART based on the results of the BART analysis that was performed in accordance with 40 CFR Part 51, Appendix Y, and requests that MEDEP reevaluate the BART determination included in DRAFT AEL Revision No. A-326-70-A-I, taking into account its own previous BART determination at the Dragon Facility.

Comments on DRAFT AEL Revision No. A-326-70-A-I

Dragon is also providing specific comments on DRAFT AEL Revision No. A-326-70-A-I, as requested. The structure of the following comments parallels the structure of MEDEP's DRAFT AEL Revision No. A-326-70-A-I. For sections where Dragon has provided comments, the affected portion of the AEL is listed along with suggested revisions, as appropriate. Where necessary, Dragon has included a justification for the proposed revisions. Notes indicating that no comment is necessary have been included for sections where Dragon is providing no specific comment.

I. Registration, A. Introduction:

Dragon has no specific comment for section I. Registration, A. Introduction.

I. Registration, B. Amendment Description:

Dragon has no specific comment for section I. Registration, B. Amendment Description.

I. Registration, C. Application Classification:

Dragon has no specific comment for section I. Registration, C. Application Classification.

II. Best Available Retrofit Technology, A. Background:

Dragon has no specific comment for section II. Best Available Retrofit Technology, A. Background.

II. Best Available Retrofit Technology, B. BART Analysis Summary, PM:

Dragon has no specific comment for the particulate matter (PM) portion of section II. Best Available Retrofit Technology, B. BART Analysis Summary.

II. Best Available Retrofit Technology, B. BART Analysis Summary, SO_2:

Dragon has no specific comment for the sulfur dioxide (SO_2) portion of section II. Best Available Retrofit Technology, B. BART Analysis Summary.

II. Best Available Retrofit Technology, B. BART Analysis Summary, NO_X:

Current Language:
Dragon proposed no increased reagent reaction rate due to additional cost, additional ammonia slip, and no perceptible change in visibility at the nearest class I area (Acadia National Park). However, the Department is setting a 45% removal efficiency requirement to further reduce NO_X.

Comment:

Dragon proposes to remove section II. B. BART Analysis Summary, NO_X in its entirety from DRAFT AEL Revision No. A-326-70-A-I. DRAFT AEL Revision No. A-326-70-A-I does not include a technical discussion explaining how MEDEP arrived at a proposed NO_X control removal efficiency of 45% for the U804 – Kiln System. Dragon understands that U.S. EPA has stated, in the preamble to the June 18, 2008 proposed NESHAP for Portland Cement kilns, that "a 50% NO_X emission reduction represents a reasonable level of performance for an SNCR (control unit) with optimal injection configuration and reagent injection rate over the long term." However, there is no data indicating that Dragon's existing SNCR control unit is continuously capable of achieving a NO_X control level of 45-50% as currently configured. Dragon's SNCR unit is a retrofitted unit designed to achieve compliance with existing permit limits. Dragon has never operated at a control efficiency approaching 45-50%, and in fact normally operates at control efficiencies, between 18%-22%, as noted by MEDEP in DRAFT AEL Revision No. A-326-70-A-I. Accordingly, there is no basis for assuming that Dragon's existing SNCR unit is capable of consistently achieving a 45-50% control efficiency.

Both Dragon's September 14, 2009 BART analysis and the December 3, 2009 NO_X BART supplemental submittal were performed in accordance with the U.S. EPA BART determination guidelines presented in 40 CFR Part 51, Subpart P and Appendix Y. In the September 14, 2009 BART analysis and December 3, 2009 NO_X BART supplemental submittal, Dragon determined that no additional NO_X control was necessary in order for the U804 – Kiln System to meet the BART requirements pursuant to 40 CFR Part 51, Subpart P and Appendix Y. No additional control is necessary in order for the U804 – Kiln System to meet the BART requirements.

Dragon also maintains that an increase in the operating costs of the existing U804 – Kiln System SNCR control unit that does not result in a perceptible improvement in visibility[1] at the nearest Class I area to the Dragon Facility (i.e., Acadia National Park) is not economically justifiable nor warranted. As presented in Dragon's December 3, 2009 NO_X BART supplemental submittal, even if increasing the reagent injection rate of the existing U804 – Kiln System SNCR control unit has the potential to increase the NO_X control efficiency of the SNCR control unit from 18% to 50%; which is unproven and may not be feasible, the resulting visibility impact is an imperceptible 0.2 dv on the nearest Class I area (i.e., Acadia National Park) and is therefore minor[1]. Increasing the NO_X control efficiency of the SNCR control unit from 18% to 45%, as proposed by MEDEP, also may not be feasible and would result in an even smaller effect. Further, since there are so many factors that contribute to the formation of NO_X in cement kilns, an SNCR control efficiency requirement does not guarantee that any particular level of NO_X emissions will be achieved.

Dragon proposes to remove the references to a NO_X control efficiency requirement of 45% from sections II. B. BART Analysis Summary, NO_X, II. C. BART Determination, and ORDER, (1) Cement Kiln – BART C, since there appears to be no technical basis or supporting emissions test

[1] Malm and Pitchford (*Development and Applications of a Standard Visual Index – 1994*) identified that a 1 dv change in visibility is just noticeable to a human observer. Therefore, a dv change below 1 dv is imperceptible to the human eye.

data upon which to base a 45% NO_X control efficiency requirement at the Dragon Facility, and because Dragon has determined that no additional NO_X controls are necessary to meet the requirements of BART pursuant to 40 CFR Part 51, Subpart P and Appendix Y. Dragon also proposes that any reference to a control efficiency compliance demonstration requirement be averaged over a 30-day rolling period, which, given the inherent variability of NO_X formation in Portland cement kilns, is much more reflective of the actual performance of the SNCR unit.

In order to demonstrate compliance with a 45% NO_X control efficiency requirement, Dragon would need to install an additional continuous emission monitoring system (CEMS) prior to the SNCR system operated in tandem with the existing post SNCR system CEMS unit in order to correlate a continuous NO_X control efficiency for comparison to the control efficiency requirement. The initial and annualized costs of installing, certifying, maintaining, and operating a second CEMS unit was not considered in the supplemental NO_X BART analysis that was submitted to MEDEP on December 3, 2009. For purposes of completeness, Dragon has included a revised SNCR control cost analysis as Table A-1 of Attachment A.

As was concluded in the December 3, 2009 supplemental NO_X BART submittal, Dragon believes that any increase in the operational cost of the existing U804 – Kiln System SNCR control unit that does not result in a perceptible change in visibility at the nearest Class I area to the Dragon Facility (i.e., Acadia National Park) is not economically justifiable. While increasing the reagent injection rate of the existing U804 – Kiln System SNCR control unit has the potential to increase the NO_X control efficiency of the SNCR control unit from 18% to 50%, the resulting visibility impact of 0.2 dv on the nearest Class I area (i.e., Acadia National Park) is imperceptible and therefore minor. Since the change in visibility associated with increasing the reagent injection rate of the existing U804 – Kiln System SNCR control unit is imperceptible (i.e., 0.2 dv), Dragon's BART determination for NO_X from the U804 – Kiln System remains no additional NO_X control, no operational changes to the existing U804 – Kiln System SNCR control unit, and the continued use of all NO_X minimization techniques that are currently in place.

II. Best Available Retrofit Technology, C. BART Determination, SO_2:

Current Language:
SO2: Dragon shall limit SO_2 emissions from the kiln system to 70.0 lb/hr on a 90-day rolling average and 200 tons/year on a 12-month rolling total basis.

Proposed Language:
SO2: Dragon shall limit SO_2 emissions from the kiln system to 70.0 lb/hr on a 90-day rolling average and 306.6 tons/year on a 12-month rolling total basis.

Comment:
Dragon proposes to revise the language of II. Best Available Retrofit Technology, C. BART Analysis Summary, SO_2. Dragon questions the technical basis MEDEP used to lower the 90-day rolling average SO_2 emissions limit from 306.6 ton/yr to 200 ton/yr. DRAFT AEL Revision No. A-326-70-A-I does not include a technical discussion of how MEDEP arrived at a proposed

ton/yr SO_2 emission limit of 200 ton/yr for the U804 – Kiln System. Dragon understands that recent 90-day rolling average SO_2 ton/yr emissions from the U804 – Kiln System have been approximately 25-30% of the proposed SO_2 ton/yr emission limit of 200 ton/yr. However, recent SO_2 emissions represent clinker production that has been at an all-time low for the Dragon Facility. Accordingly, recent SO_2 emissions are not representative of normal production or normal demand for cement, but rather are the result of severely depressed market conditions.

Dragon does not consider the years immediately preceding the submission of the September 14, 2009 BART analysis to be representative of normal source operations for the Dragon Facility. Dragon has observed a decrease in nation-wide demand for cement and cement products in the last three years. As a result, Dragon has adjusted facility-wide clinker production as the national demand for cement and cement products dictates. Facility-wide clinker production has been decreased at the Dragon Facility to the point where the U804 – Kiln System is not producing clinker for months at a time. The decrease in facility-wide clinker production incurred by the Dragon Facility, when observed within the larger context of Dragon's historical clinker production, demonstrates that the Dragon Facility production during the five to ten years immediately preceding the submission of the September 14, 2009 BART analysis is not representative of normal U804 – Kiln System operation. Therefore, decreasing the 90-day U804 – Kiln System ton/yr SO_2 emission limit based on cement production needed during the current "leaner" production years would unnecessarily restrict clinker production in the future as demand for cement and cement products recovers.

Furthermore, while current U804 – Kiln System operations would not require additional control to meet the proposed lowered ton/yr SO_2 emission limit of 200 ton/yr, additional control would be required in the future as U804 – Kiln System clinker production increases. In the September 14, 2009 BART analysis, Dragon determined that no additional SO_2 control was necessary in order for the U804 – Kiln System to meet the BART requirements pursuant to 40 CFR Part 51, Subpart P and Appendix Y. Dragon maintains that no additional control or changes to Dragon's current AEL are necessary in order for the U804 – Kiln System to meet the BART requirements.

Dragon also demonstrated that any increase in the operational cost of the existing U804 – Kiln System or change to Dragon's existing AEL that does not result in a perceptible change in visibility at the nearest Class I area to the Dragon Facility (i.e., Acadia National Park) is not economically justifiable nor warranted. As presented in Dragon's September 14, 2009 BART analysis SO_2 only contributes a very minor portion of Dragon's total visibility impact to the nearest Class I area even on the worst case day. For these reasons Dragon does not believe the level of visibility improvement justifies the future addition of add-on controls that would become necessary in order to comply with a more restrictive lowered ton/yr SO_2 emission limit.

Dragon proposes to revise the language of II. Best Available Retrofit Technology, C. BART Analysis Summary, SO_2 because there appears to be no technical basis upon which to propose a lowered ton/yr SO_2 emission limit, lowering Dragon's current ton/yr SO_2 emission limit would unnecessarily restrict future production, and SO_2 only contributes a minor portion of its total visibility impact to the nearest Class I area on the worst case day and has little to no impact on visibility.

II. Best Available Retrofit Technology, C. BART Determination, NO_X:

Current Language:
NO_X: Dragon shall operate an SNCR (Selective Non-Catalytic Reduction) system to reduce NO_X emissions from the calciner to achieve a 45% control efficiency. NO_X emission from the kiln system shall be limited to 350.0 lb/hr on a 90-day rolling average and 1,533.0 tons/yr on a 12-month rolling total basis.

Proposed Language:
Dragon shall limit NO_X emission from the kiln system shall be limited to 350.0 lb/hr on a 90-day rolling average and 1,533.0 tons/yr on a 12-month rolling total basis.

Comment:
As discussed above, Dragon proposes to remove all references to a NO_X control efficiency requirement of 45%, since there appears to be no technical basis or supporting emissions test data upon which to base a 45% NO_X control efficiency requirement at the Dragon Facility, and because Dragon has determined that no additional NO_X controls are necessary to meet the requirements of BART pursuant to 40 CFR Part 51, Subpart P and Appendix Y.

ORDER, (1) Cement Kiln – BART B:

Current Language:
Dragon shall limit SO_2 emissions from the kiln system to 70.0 lb/hr on a 90-day rolling average and 200 tons/year on a 12-month rolling total.

Proposed Language:
Dragon shall limit SO_2 emissions from the kiln system to 70.0 lb/hr on a 90-day rolling average and 306.6 tons/year on a 12-month rolling total.

Comment:
As discussed above, Dragon proposes to revise the language of II. Best Available Retrofit Technology, C. BART Analysis Summary, SO_2 since there is no technical basis for a lower ton/yr SO_2 emission limit, lowering Dragon's current ton/yr SO_2 emission limit would unnecessarily restrict future production and impair the economic viability of the Dragon Facility, and SO_2 contributes little to the total visibility impact on the nearest Class I area on the worst case day and thus has little or no impact on visibility.

ORDER, (1) Cement Kiln – BART C:

Current Language:
Dragon shall operate the SNCR (Selective Non-Catalytic Reduction) system to maintain a 45% NO_X control efficiency. Compliance with the 45% control efficiency shall be determined on a 24-hour basis using CEM data and/or other methods approved by the Department.

Comment:
As discussed above, Dragon proposes to remove all references to a NO_X control efficiency requirement of 45%, since there appears to be no technical basis or supporting emissions test data upon which to base a 45% NO_X control efficiency requirement at the Dragon Facility, and because Dragon has determined that no additional NO_X controls are necessary to meet the requirements of BART pursuant to 40 CFR Part 51, Subpart P and Appendix Y. Also as previously stated, a 24-hour averaging period is inappropriate for Dragon's existing U804 – Kiln System SNCR control system because of the inherent variability of NO_X formation in a cement kiln.

Responses to U.S. EPA Comments on DRAFT AEL Revision No. A-326-70-A-I
U.S. EPA provided comments to MEDEP's initial BART determination for the Dragon Facility. Dragon is providing comment to U.S. EPA's responses where appropriate. For U.S. EPA responses to which Dragon has provided comment, U.S. EPA's response is listed followed by Dragon's comment. Notes indicating that no comment is necessary have been included for responses where Dragon is providing no specific comment.

U.S. EPA Commente No. 1 (Overall Comment No. 4 in U.S. EPA's comment letter):
4) Page 106–When undertaking the five factor BART analysis, Dragon products used a potential SO2 Emission Rate of 49.0 tons/yr. Based on this emission limit, Dragon products determined that it was not cost effective to operate the existing dry scrubber ($2,254,468/deciview). However, the proposed BART license limit for SO_2 emissions from the kiln system is 200 tons/yr on a 12 month rolling total basis. It is not clear why the proposed cap is so much higher than the level in the facility's analysis.

Dragon's Response:
The 49.0 ton/yr emission rate was developed using maximum 24-hr average emission rates from the U804 – Kiln System calculated via CEMS data from calendar year 2008 in accordance with the guidance provided in 40 CFR Part 51, Appendix Y. However, while Dragon correctly followed U.S. EPA's guidance, as stated above, recent SO_2 ton/yr emissions from the U804 – Kiln System have been approximately 25-30% of the proposed SO_2 ton/yr emission limit of 200 ton/yr. Recent SO_2 emissions represent clinker production that has been at an all-time low for the Dragon Facility. Accordingly, recent SO_2 emissions are not representative of normal production or normal demand for cement, but rather are the result of severely depressed market conditions.

Dragon does not consider the years immediately preceding the submission of the September 14, 2009 BART analysis to be representative of normal source operations for the Dragon Facility. Dragon has observed a decrease in nation-wide demand for cement and cement products in the last three years. As a result, Dragon has adjusted facility-wide clinker production as the national demand for cement and cement products dictates. Facility-wide clinker production has been decreased at the Dragon Facility to the point where the U804 – Kiln System is not producing clinker for months at a time. The decrease in facility-wide clinker production incurred by the Dragon Facility, when observed within the larger context of Dragon's historical clinker production, demonstrates that the Dragon Facility production during the five to ten years

immediately preceding the submission of the September 14, 2009 BART analysis is not representative of normal U804 – Kiln System operation. Therefore, decreasing the 90-day U804 – Kiln System ton/yr SO_2 emission limit based on cement production needed during the current "leaner" production years would unnecessarily restrict clinker production in the future as nation-wide demand for cement and cement products recovers.

U.S. EPA Comment No. 2 (Overall Response No. 5 in U.S. EPA's comment letter):
5) Page 108 – Maine DEP has indicated that NO_X BART control for the kiln is 45% control efficiency on a 24-hour basis as opposed to the current recorded 18-22% average control efficiency. However, Maine is proposing that the current 90-day rolling average emission limit and existing 12-month rolling average emission limit are sufficient for the BART emission limit. Why isn't the emission limit being reduced to reflect the required increase in control efficiency?

Dragon's Response:
The 90-day rolling average and 12-month rolling average emission limits (i.e., 350.0 lb/hr and 1,533 ton/yr, respectively) currently included in AEL No. A-326-71-U-A/R and the subsequent revision to AEL No. A-326-77-1-A, arose as a result of PSD netting analysis performed by Dragon during the kiln modernization reconfiguration project and accepted by MEDEP. MEDEP determined that the 90-day rolling average and 12-month rolling average emission limits were representative of BACT for the U804 – Kiln System and therefore, per Dragon's General BART Applicability Comments presented above, appropriate for BART. The existing 90-day rolling average and 12-month rolling average emission limits were set prior to and independently of the installation and operation of the U804 – Kiln System SNCR control system and therefore there is no correlative relationship between the two. The SNCR system was installed after the kiln modernization and reconfiguration project was completed. The SNCR control system was installed for the sole purpose of maintaining NO_X emissions from the U804 – Kiln system below these limits. However, the SNCR control system did not dictate these limits.

U.S. EPA Comment No. 3 (Overall Response No. 6 in U.S. EPA's comment letter):

No specific response is required from Dragon on U.S. EPA Comment No. 3.

U.S. EPA Comment No. 4 (Overall Response No. 7 in U.S. EPA's comment letter):
7) Draft license – The license should be updated to reflect amendments to the "National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry" (40 CFR Part 63, Subpart LLL) promulgated on September 9, 2010. See 75 FR 54970. Specifically, the discussion of the BART PM emission limit for Dragon Products should be revised to reference the 0.04 pounds per ton of clinker emission limit required by the amendments to be met by all existing kilns by September 9, 2013.

Dragon's Response:
While U.S. EPA is correct in their assertion that the Dragon Facility will be subject to the new 0.04 pounds per ton of clinker PM emission limit in the future, Dragon believes that it is premature at this point to include this limit in DRAFT AEL Revision No. A-326-70-A-I since Dragon will not be required to operate in compliance with this emission limit until September 9,

2013. Including this emission limit in DRAFT AEL Revision No. A-326-70-A-I almost three years before the applicable compliance date is inappropriate.

Responses to U.S. DOI Comments on DRAFT AEL Revision No. A-326-70-A-I

No specific response is required from Dragon on the U.S. DOI comments.

Dragon appreciates MEDEP's consideration of the above general BART applicability comments, Dragon's comments on DRAFT AEL Revision No. A-326-70-A-I, and Dragon's responses to U.S. EPA's comments on DRAFT AEL Revision No. A-326-70-A-I. If possible, Dragon would welcome the opportunity to review MEDEP's responses to U.S. EPA's comments prior to submitting. If you have any questions or need additional assistance please feel free to contact me at (207) 593-0147.

Sincerely,

Michael Martunas
Environmental Manager
Dragon Products Company, LLC

cc: R.Harding
All4 Inc.
2393 Kimberton Road
Kimberton, PA 19442

ATTACHMENT A
REVISED CAPITAL AND ANNUALIZED COSTS FOR INCREASING THE INJECTION RATE OF THE EXISTING U804 - KILN SYSTEM SNCR CONTROL UNIT TO ACHIEVE 50% CONTROL EFFICIENCY

TABLE A-1

REVISED CAPITAL AND ANNUALIZED COSTS FOR INCREASING THE INJECTION RATE OF THE EXISTING U804 - KILN SYSTEM SNCR CONTROL UNIT TO ACHIEVE 50% CONTROL EFFICIENCY

DRAGON PRODUCTS COMPANY, LLC - THOMASTON, MAINE FACILITY

CAPITAL COSTS[a]

COST ITEM			COST ($)
Direct Costs			
Direct Capital Costs			
NO_x Removal Efficiency	η_{NOx}		50%
Additional NO_x CEMS Installation[b]:			$134,647
Planning			*$3,482*
Select Equipment			*$14,065*
Support Facilities			*$28,265*
Purchase CEMS Hardware			*$44,138*
Install and Check CEMS			*$15,813*
Performance Specification Tests			*$13,640*
QA/QC Plan			*$15,244*
Cost Year	2010		
Total Direct Capital Costs	A		***$134,647***
Indirect Costs			
Indirect Installation Costs			
General Facilities	0.05	A	$6,732
Engineering and Home Office Fees	0.10	A	$13,465
Process Contingency	0.05	A	$6,732
Total Indirect Installation Costs		B	***$26,929***
Project Contingency (C)	0.15	(A+B)	$24,236
Other Costs			
Total Plant Cost (D)	1.00	(A+B+C)	$185,813
Allowance for Funds During Construction (E)	0.00		$0
Royalty Allowance (F)	0.00		$0
Preproduction Cost (G)	0.02	(D+E)	$3,716
Inventory Capital (H)	1.00	Vol_{reag} x $Cost_{reag}$	$0
Initial Catalyst and Chemicals (I)	0.00		$0
Total Capital Investment (TCI) (D+E+F+G+H+I) [f]			***$375,341***

ANNUALIZED COSTS

COST ITEM	COST FACTOR	RATE	COST ($)
Direct Annual Costs			
Additional NO_x CEMS[b]:			
Day-to-Day Activities			$6,532
Annual RATA			$11,914
Cylinder Gas Audits (ACA/SVA for PM)			$2,209
Recordkeeping and Reporting			$1,413
Annual QA & O&M Review and Update			$3,398
Capital Recovery			$19,174
Operating Labor			
Operator, two (2) employees[c]	1 hours/shift	$20.00 per hour[d]	$43,800
General Maintenance[c]	1 hours/shift	$16.00 per hour[d]	$35,040
Supervisor	15% of operator labor		$6,570
Maintenance			
Maintenance Labor	0.5 hours/shift	$16.00 per hour[d]	$8,760
Material	1.5% of TCI		$28,130
Reagent Consumption			
Aqueous reagent volume flow rate, q_{sol}	1.46 gpm[e]	$0.89 per gal[f]	$881,220
Utilities			
Electricity	250 kW[g]	$0.0725 per kWh[h]	$158,775
Total Direct Annual Costs			***$1,206,935***
Indirect Annual Costs			
Overhead	60% of Operating labor and maintenance		$73,380
Property taxes	1% of TCI		$18,753
Insurance	1% of TCI		$18,753
Administrative charges	2% of TCI		$37,507
Capital recovery	0.131474 x TCI		$246,558
	Life of the control: 15 years at	10.0% interest	
Total Indirect Annual Costs			***$394,952***
Total Annual Costs (Direct Costs + Indirect Costs)			***$1,601,887***

Cost Effectiveness ($/ton)			
NO_x Control Efficiency	50% [i]		
Uncontrolled NO_x Emissions	1,130.6 tpy	Total Annual Costs/Controlled NO_x Emissions:	
Controlled NO_x Emissions	361.8 tons of NO_x removed annually[k]		***$4,427.52*** [l]

[a] A Selective Non-Catalytic Reduction (SNCR) control unit is currently installed on the U804 – Kiln System; however, Dragon is only required to operate the control at a level that demonstrates compliance with the U804 - Kiln system NO_x emission limit. Therefore, no Total Capital Investment (TCI) has been provided.

[b] The costs associated with the installation of an additional post-SNCR NO_x CEMS were developed using the U.S. EPA's CEMS Cost Model, Version 3.0 in accordance with the U.S. EPA's Air Pollution Control Cost Manual.

[c] Based on 8,760 hours of operation per year.

[d] Client specific cost. Represents labor costs associated with potential monitoring, recordkeeping, and work practice standard activities related to operating the existing U804 - Kiln System SNCR control unit should the BART determination from MEDEP require Dragon to operate the system at a specific control efficiency.

[e] Reagent consumption based upon increasing the molar ratio of ammonia to NO_x from 0.36:1 to 1:1.

[f] Reagent per gallon cost is based upon the 2009 dollar per ton cost of ammonia (i.e., $ 1,220.18/ton), and assumes that there are 1.47 lb of ammonia per gallon of 19% aqueous solution.

[g] Electrical consumption based on an estimate provided by the facility.

[h] Utility costs for electricity represent increased electrical consumption of the existing SNCR and other ancillary equipment.

[i] There is no TCI provided; however, Indirect Annual Costs (i.e., property taxes, insurance, administrative charges, and capital recovery) have been calculated assuming a TCI of $1,500,000.

[j] Control efficiency of NO_x emissions from increasing the reagent injection rate of the existing SNCR control unit is understood to be 50 percent.

[k] Controlled NO_x emissions represent the expected emission reductions from increasing the control efficiency of the existing SNCR control unit from a baseline control efficiency of 18% to a control efficiency of 50%.

[l] The increased $/ton cost effectiveness figures resulting from including the cost of an additional NO_x CEMS in this control cost spreadsheet also impact the $/dectview figures for the NO_x BART analysis, as follows:

Total Capital Investment: $375,341

Total Annualized Cost: $1,601,877

Average Cost Effectiveness: $4,427.52/ton

Average Cost Effectiveness per dv: $8,009,385/dv