CCNPP3COLA PEmails

From: Lutchenkov, Dimitri [dimitri.lutchenkov@unistarnuclear.com]
Sent: Monday, February 14, 2011 4:31 PM
To: Quinn, Laura
Cc: Gibson, Gregory T
Subject: Advance Electronic Copy of UN#11-013
Attachments: UN#11-013 - RAI 1016 - Air Conformity.pdf

Laura,

Attached please find an advance electronic copy of UniStar letter UN#11-013 which provides the response to RAI 1016 – Air Conformity.

Please advise if you have any questions.

Regards,

Dimitri Lutchenkov

Director | Environmental Affairs |
UniStar Nuclear Energy
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Hearing Identifier: CalvertCliffs_Unit3Cola_Public_EX
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From: Lutchenkov, Dimitri

Created By: dimitri.lutchenkov@unistarnuclear.com

Recipients:
"Gibson, Gregory T" <Greg.Gibson@unistarnuclear.com>
Tracking Status: None
"Quinn, Laura" <Laura.Quinn@nrc.gov>
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Greg Gibson
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UniStar NUCLEAR ENERGY

10 CFR 50.4
10 CFR 52.79

February 14, 2011

UN#11-013

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: UniStar Nuclear Energy, NRC Docket No. 52-016
Calvert Cliffs Nuclear Power Plant, Unit 3
Responses to RAI 1016 - Air Conformity

Reference:

1) Laura Quinn (NRC) to Greg Gibson (UniStar Nuclear Energy), "Request for Additional Information Related to the Environmental Review for the Calvert Cliffs Combined License Application - Ozone Air Emission Mitigation and Offset for Air Conformity Analysis," dated November 10, 2010.

2) Greg Gibson (UniStar Nuclear Energy) to Document Control Desk (NRC), "Response to Request for Additional Information for the Calvert Cliffs Nuclear Power Plant, Unit 3, RAI No. 1016, Air Conformity," dated January 31, 2011.

3) NUREG 1936, "Draft Environmental Impact Statement for the Combined License (COL) for Calvert Cliffs Nuclear Power Plant Unit 3," dated April 2010.

The purpose of this letter is to respond to the request for additional information (RAI) identified in the NRC letter to UniStar Nuclear Energy, dated November 10, 2010 (Reference 1). In Reference 2, UniStar indicated that a response would be provided by February 16, 2011. This RAI addresses Air Conformity.

Enclosure

Response to NRC Request for Additional Information
RAI No. 1016
Calvert Cliffs Nuclear Power Plant Unit 3

RAI No. 1016

Question 1:

For each calendar year for which all projected ozone precursor direct and indirect emissions exceed applicable thresholds in 40 CFR 93.153, describe specific *mitigation measures*, as that term is defined in 40 CFR 93.152, that will support a finding of conformity, as follows:

a. Describe each *mitigation measure*, the schedule for application of these *mitigation measures*, and the specific equipment or equipment types to which *mitigation measures* will be applied. For example, for each year that the applicable thresholds of 40 CFR 93.153 are exceeded, identify specific classes of equipment that will meet EPA non-road standards that are more stringent than those currently required.

b. In the description of *mitigation measures*, provide sufficient detail such that NRC can meet the requirements of 40 CFR 93.160. Also, provide a written commitment to implement the proposed *mitigation measures*.

c. Identify instances, if any, in which direct and indirect emissions reductions achieved using *mitigation measures* will not occur during the same calendar year as the direct and indirect emission increases resulting from the federal action. In accordance with 40 CFR 93.163, provide documentation of the State of Maryland's approval in instances in which direct and indirect emissions reductions do not occur in the same year as the emissions increases.

d. Provide a revised estimate of direct and indirect emissions calculated both before and after *mitigation measures* are applied, with due consideration of the most current available construction schedule.

Response

The emission estimates previously provided in the Conformity Analysis forwarded by UniStar letter UN#10-099 (Reference 1) dated April 7, 2010 (ML101020174), assume that the construction fleet engines in most equipment categories will be Tier 3 or higher and, to be more conservative in calculating emissions, are assumed to be “fully deteriorated” versus new and performing at optimal design. Note that specific equipment age for every piece of equipment used during construction cannot be ascertained at this time since the contractor has not yet been chosen for construction. Additionally, the list of equipment for construction used in the Conformity Analysis is a “reasonably foreseeable” inventory based on the level of detail known at this time. As such, it may be subject to change based on the contractor chosen. However, as indicated in UniStar letter UN#10-126 (Reference 2), dated April 30, 2010 (ML101230614), the project will continue to seek opportunities to reduce and mitigate the on-site specific projected emissions through efficient construction planning, use of lower-emitting recent vintage equipment and other available means. UniStar intends that Tier 3 and Tier 4 equipment be utilized to the maximum extent practicable for the construction of Calvert Cliffs Nuclear Power Plant Unit 3.

Tables 1 and 2 (attached) demonstrate the mitigating effect of using lower-emitting recent vintage construction fleet engines versus using earlier vintage engines, respectively. Emissions in Table 1[1] were calculated based on utilizing engines commensurate with the manufacturer's compliance schedule to EPA emission standards (or Tiers) when equipment is placed into service. As of the start of 2011, EPA emissions standards require all engines in any horsepower category to be manufactured Tier 3 or greater. Thus, the likelihood of engines placed into service during or after 2011 being Tier 3 or greater is increased. Emissions in Table 2, representing a condition where earlier Tier engines are specified, were calculated based on the assumption that engines above 50 hp used in the project only meet Tier 1 standards, while engines below 50 hp would only meet Tier 2 standards.

The emissions in these Tables demonstrate that use of typical construction fleet engines that meet Tier 3 or greater standards will reduce the maximum NOx emissions from 476 tons per year (tpy) down to 242 tpy for calendar year 2015 and the maximum Volatile Organic Compound (VOC) emissions will be reduced from 58 tpy down to 47 tpy for calendar year 2014. The resulting lower emissions of NOx (the pollutant exceeding the conformity threshold) will be offset through the purchase of certified emission reduction credits (ERCs) so that there is no net increase in emissions of that pollutant (per 40 CFR 93.158 (a)(2)). UniStar has indicated this in letter UN#10-126 (Reference 2), dated April 30, 2010, and understands that the purchase of the ERCs prior to start of construction of agency-authorized activities will be a condition of the COLA.

The construction schedule upon which these values are based is the most current one; however, it is anticipated that the schedule will be revised as the project matures. Neither direct nor indirect emissions are expected to be impacted by future changes in the construction schedule.

References cited in this Response:

1. Greg Gibson (UniStar Nuclear Energy) to Document Control Desk (NRC), Revised NO_x and Volatile Organic Compound (VOC) Emissions and Air Conformity Report, dated April 7, 2010.
2. Greg Gibson (UniStar Nuclear Energy) to Document Control Desk (NRC), Calvert Cliffs NOx Emissions Commitment Closure, Dated April 30, 2010.

COLA Impact

The COLA will not be revised as a result of this response.

[1] The same as those presented in the Conformity Analysis forwarded by UniStar letter UN#10-099 dated April 7, 2010.

Table1 – "Post-mitigation" direct and indirect NOx and VOC emissions

Year	Off-Road Diesel VOC	Off-Road Gasoline VOC	On-Road Vehicles VOC	Marine VOC	Boiler VOC	VOC (Tons)	Exceeds Conformity Threshold (Yes/No)	Off-Road Diesel NOx	Off-Road Gasoline NOx	On-Road Vehicles NOx	Marine NOx	Boiler NOx	NOx (Tons)	Exceeds Conformity Threshold (Yes/No)
2010	2.6	1.6	3.9	0	0	8.2	No	36.4	0.12	4.0	0	0	40.5	No
2011	9.9	5.2	17.3	0.34	0	32.7	No	138.1	0.5	20.6	6.8	0	166.0	Yes
2012	3.3	1.1	19.9	0.11	0.02	24.4	No	48.1	0.4	24.3	2.1	1.5	76.5	No
2013	9.9	3.8	26.8	0.11	0.05	40.7	No	150.9	1.8	34.4	2.1	4.6	193.8	Yes
2014	12.4	4.8	29.5	0.11	0.05	46.8	No	188.8	2.4	43.1	2.1	4.6	241.0	Yes
2015	12.7	4.8	25.8	0.11	0.05	43.4	No	193.0	2.4	39.8	2.1	4.6	242.0	Yes
2016	11.3	4.6	21.2	0.11	0.03	37.3	No	170.9	2.3	29.3	2.1	3.1	207.8	Yes
2017	6.7	4.5	10.0	0	0	21.2	No	101.3	2.2	14.5	0	0	118.0	Yes
2018	1.3	1.3	3.5	0	0	6.2	No	19.4	0.9	4.1	0	0	24.4	No

Table 2 – "Pre-mitigation" direct and indirect NOx and VOC emissions

Year	Off-Road Diesel VOC	Off-Road Gasoline VOC	On-Road Vehicles VOC	Marine VOC	Boiler VOC	VOC (Tons)	Exceeds Conformity Threshold (Yes/No)	Off-Road Diesel NOx	Off-Road Gasoline NOx	On-Road Vehicles NOx	Marine NOx	Boiler NOx	NOx (Tons)	Exceeds Conformity Threshold (Yes/No)
2010	3.7	1.6	3.9	0	0	9.2	No	79.8	0.12	4.0	0	0	83.9	No
2011	13.8	5.2	17.3	0.34	0	36.6	No	303.4	0.5	20.6	6.8	0	331.2	Yes
2012	5.2	1.2	19.9	0.11	0.02	26.4	No	106.1	0.5	24.3	2.1	1.5	134.5	Yes
2013	17.8	4.4	26.8	0.11	0.05	49.2	No	334.7	2.3	34.4	2.1	4.6	378.2	Yes
2014	22.5	5.6	29.5	0.11	0.05	57.7	Yes	417.5	3.1	43.1	2.1	4.6	470.5	Yes
2015	23.4	5.6	25.8	0.11	0.05	54.9	Yes	426.1	3.1	39.8	2.1	4.6	475.7	Yes
2016	21.3	5.4	21.2	0.11	0.03	48.1	No	378.2	3.0	29.3	2.1	3.1	415.8	Yes
2017	12.8	5.3	10.0	0	0	28.1	No	219.7	2.9	14.5	0	0	237.1	Yes
2018	2.6	1.6	3.5	0	0	7.7	No	39.1	1.2	4.1	0	0	44.4	No

RAI No. 1016

Question 2:

For each calendar year for which all projected ozone precursor direct and indirect emissions exceed applicable thresholds in 40 CFR 93.153, provide documentation that demonstrates that required emission offsets, as that term is defined in 40 CFR 93.152 (i.e., certified emission reduction credits), for 8-hour ozone precursors are, or will be, available either within the applicable air quality control region (AQCR) or from nearby AQCRs of equal or higher classification, in accordance with 40 CFR 93.158(a)(2). Identify instances, if any, in which emissions reductions achieved using emission offsets will not occur during the same calendar year as the emission increases from the federal action. Pursuant to 40 CFR 93.163(a), provide documentation of the State of Maryland's approval in instances in which emissions reductions do not occur in the same year as the increases.

Response

UniStar is proposing to use emission reduction credits (ERCs) from the adjacent Baltimore ozone nonattainment area to fully offset emission increases from construction of the CC3 project under the auspices of §93.158(a)(2). The revisions to the General Conformity Regulations 40 CFR 93.158(a)(2), published in the April 5, 2010 Federal Register (75 FR 17254), specifically allow the use of emission reduction credits from nonattainment areas outside of the area within which the federal action is occurring provided the following conditions are met; 1) the nearby nonattainment or maintenance areas are of equal or higher classification and 2) emissions from that area contribute to the violations, or have contributed to violations in the past, in the area where the Federal action is proposed to occur (see 40 CFR 93.158(a)(2)). UniStar will demonstrate that the proposed ERCs from the Baltimore ozone nonattainment area satisfy both of these conditions.

UniStar requested and obtained ERC information from the Maryland Department of the Environment (MDE) in accordance to instructions on the MDE web site (http://www.mde.maryland.gov/programs/air/pages/ercs.aspx). These ERCs have been certified by MDE. The information provided by MDE identified over 700 tons of certified NOx ERCs currently available. In addition, UniStar has also identified an additional ~1500 tons of certified NOx ERCs available from another source. As identified in UniStar letter UN#10-099 (Reference 1) [ML101020174], the maximum cumulative (direct plus indirect) NOx emissions during any of the constructions years analyzed is ~250 tons. As such, there is a sufficient amount of certified NOx ERCs available for the project to utilize for mitigation. As identified in UniStar letter UN#10-126 (Reference 2) [ML101230614], these ERCs will be secured in a timely manner and in sufficient quantity, as required by regulations, prior to the start of construction associated with any federal action. Furthermore, the ERCs secured will be sufficient to offset NOx emissions for any year of the entire construction period (preconstruction and construction as defined by NRC). It should be noted that the ERCs secured will meet the requirements of the maximum year and will effectively be over-offsetting emissions for all other years.

There are not expected to be instances in which emissions offsets are not in the same calendar year as the emission increase. As stated in the previous paragraph, UniStar is currently planning to purchase sufficient permanent ERCs to offset the peak calendar year emissions at the outset of construction.

References cited in this Response:

1. Greg Gibson (UniStar Nuclear Energy) to Document Control Desk (NRC), Revised NO_x and Volatile Organic Compound (VOC) Emissions and Air Conformity Report, dated April 7, 2010.
2. Greg Gibson (UniStar Nuclear Energy) to Document Control Desk (NRC), Calvert Cliffs NOx Emissions Commitment Closure, Dated April 30, 2010.

COLA Impact

The COLA will not be revised as a result of this response.

Question 3:

In accordance with 40 CFR 93.158(c), explain how the total of all direct and indirect emissions from the proposed federal action is in compliance or consistent with all relevant requirements and milestones contained in the applicable 1-hour ozone Maryland State Implementation Plan[2], such as elements identified as part of the reasonable further progress schedules, assumptions specified in the attainment or maintenance demonstration, prohibitions, numerical emission limits, and work practice requirements.

Response

Requirements of the currently EPA-approved 1-hour ozone Maryland State Implementation Plan (SIP) include State regulations which apply generally within the State (e.g.., motor vehicle inspection, clean fuel fleets), State regulations that apply more specifically to certain activities (e.g., open burning prohibition, or stationary engine requirements), as well as federal regulations that would indirectly affect project emissions (e.g., emission standards for manufacturers of heavy duty non-road diesel engines and marine vessel engines).

For many generally applicable requirements within the 1-hour ozone SIP, compliance is the responsibility of other parties, such as the engine/vehicle manufacturer, not the Applicant. Therefore, it is assumed that the Project would be in compliance with these regulations. For others UniStar will comply with the applicable regulations and Maryland Department of Environment (MDE) has the authority to inspect and enforce compliance with the requirements. UniStar intends to indicate in contract terms and conditions that contractors working on site will comply with applicable federal and state regulations.

COLA Impact

The COLA will not be revised as a result of this response.

[2] EPA has not yet accepted the one-hour ozone SIP submitted by Maryland on June 15, 2007.