



PUBLIC MEETING



AIR CONFORMITY DETERMINATION FOR THE CALVERT CLIFFS NUCLEAR POWER PLANT UNIT 3 COMBINED LICENSE APPLICATION

Robert Schaaf, Branch Chief
Laura Quinn, Environmental Project Manager
David Brown, Technical Reviewer for Air Quality

Purposes of this meeting



- Briefly describe the Nuclear Regulatory Commission's (NRC) air conformity analysis process.
- Discuss clarifications regarding the air emission estimates submitted by UniStar.
- Determine a path forward to complete the NRC's air conformity analysis.

Background



○ Clean Air Act

- ❖ The Clean Air Act requires all Federal actions in designated nonattainment and maintenance areas for any particular national ambient air quality standard (NAAQS) that is not contained in an approved State Implementation Plan (SIP) to complete an air conformity evaluation.
- ❖ Title 40 of the Code of Federal Regulations (CFR) Part 93 contains the Environmental Protection Agency's implementing regulations on air conformity.

Background (con't)



- 40 CFR Part 93 defines:
 - ❖ **Conformity Determination** as “the evaluation (made after an applicability analysis is completed) that a Federal action conforms to the applicable implementation plan and meets the requirements of 40 CFR Part 93 Subpart B”.
 - ❖ **Federal Actions** as “any activity engaged in by a department, agency, or instrumentality of the Federal government supports in any way, provides financial assistance for, licenses, permits or approves other than activities related to transportation plans, programs and projects developed, funded or approved under Title 23 U.S.C. or the Federal Transit Act (49 U.S.C. 1601 *et seq.*). ***Where the Federal action is a permit, license, or other approval for some aspect of a non-Federal undertaking, the relevant activity is the part, portion or phase of the non-Federal undertaking that requires the Federal permit, license, or approval***” (*emphasis added*).
 - ❖ **Criteria pollutant or standard** as “any pollutant for which there is established a National Ambient Air Quality Standard at 40 CFR Part 50”.

Background (con't)



- 40 CFR Part 93 defines:

- ❖ **Direct Emission** as “those emissions of a criteria pollutant or its precursors that are caused or initiated by the Federal action and originate in a nonattainment or maintenance area and occur at the same time and place as the action and are reasonably foreseeable”.

- ❖ **Indirect Emission** as “those emissions of a criteria pollutant or its precursors:

- 1) That are caused or initiated by the Federal action and originate in the same nonattainment or maintenance area but occur at a different time or place as the action
- 2) That are reasonably foreseeable
- 3) ***That the agency can practically control;*** and
- 4) ***For which the agency has continuing program responsibility.***

For the purposes of this definition, ***even if a Federal licensing, rulemaking or other approving action is a required initial step for a subsequent activity that causes emissions, such initial steps do not mean that a Federal agency can practically control any resulting emissions” (emphasis added).***

NRC's Conformity Process



○ Major Steps

- ❖ Determine if proposed action is in a nonattainment or maintenance area.
 - For the Calvert Cliffs proposed new unit the action will take place in a nonattainment area for 8-hr ozone.
- ❖ Receive air emission estimates from applicant and confirm the estimates are reasonable.
- ❖ Determine the emissions to consider per the definition of Federal action (look at those emissions that are caused by activities that require an NRC license).
- ❖ Complete applicability analysis to determine if for any year the emissions are over the threshold in 40 CFR Part 93.153(b).
- ❖ If the emissions are over the threshold then the NRC will complete a conformity determination.
- ❖ Issue draft conformity determination for public comment (30-day period).
- ❖ Issue final conformity determination (with responses to comments received on the draft conformity determination).

UniStar's Air Emissions Submittals



- UniStar's submittals to date:
 - ❖ NRC issued a request for additional information (#1014) to UniStar on 8/27/2009 requesting air emission estimates (ML092260454).
 - ❖ UniStar submitted response on 12/8/2009 with a committal date of providing proposed mitigation measures by 3/31/2010 (ML093491087).
 - ❖ UniStar submitted updated emissions on 4/7/2010 and on 4/30/2010 sent a letter on proposed mitigation (ML101020177 and ML101230614).

UniStar's Air Emission Estimates



- 40 CFR 93.159 states that the analysis required under this subpart must be based on the latest and most accurate emission estimation techniques available.
- December 2009 NO_x and VOC report
 - ❖ Use of broad categories of types of equipment to separate pre-construction emissions from construction emissions
- April 2010 (Rev. 1) NO_x and VOC report
 - ❖ Use of labor hours to separate pre-construction emissions from construction emissions

UniStar's Air Emission Estimates (Con't)



- NRC questions:
 - ❖ Could UniStar more accurately estimate pre-construction and construction-related emissions using operating hours of construction equipment on a facility by facility basis?
 - ❖ Could the mass of construction materials (e.g., concrete) in safety-related vs. non-safety related structures be used as an alternative means to more accurately apportion total emissions into pre-construction and construction-related emissions?

Example Air Emissions Estimate Table



For Year 2012	Clearing, Grubbing, Earthmoving & Excavation	Filling and Compaction	Cranes & other lifts	Concrete Work	Generators	Compressors	Small Capital Equipment
Tech. Basis for Apportioning Emissions	<i>Engine hours</i>	<i>Engine hours</i>	<i>Engine hours</i>	<i>Tons of Concrete</i>	<i>Engine hours</i>	<i>Engine hours</i>	<i>Engine hours</i>
Emergency Power Generating Buildings (UBP)							
Fuel Building (UFA)							
Reactor Building (UJA)							
Safeguard Building Mechanical (UJH)							
Safeguard Building Electrical (UJK)							
Nuclear Auxiliary Building (UKA)							
Radioactive Waste Processing Building (UKS)							
Turbine Building (UMA)							
Essential Service Water Pump Building (UQB)							
Essential Service Water Cooling Tower Structure (URB)							
Fire Protection Storage Tanks and Building (USG)							
Switchyard (UAA)							

Example Air Emissions Estimate Table (con't)



For Year 2012	Clearing, Grubbing, Earthmoving & Excavation	Filling and Compaction	Cranes & other lifts	Concrete Work	Generators	Compressors	Small Capital Equipment
Tech. Basis for Apportioning Emissions	<i>Engine hours</i>	<i>Engine hours</i>	<i>Engine hours</i>	<i>Tons of Concrete</i>	<i>Engine hours</i>	<i>Engine hours</i>	<i>Engine hours</i>
Switchyard Building (UBA)							
Auxiliary power transformer areas (UBE)							
Generator transformer areas (UBF)							
Access Building (UKE)							
Circulating Water Intake Structure (UPC)							
Cooling Tower Makeup Intake Structure (UPF)							
Water Treatment Building (UPQ)							
Circulating Water Pump building (UQA)							
Cooling Tower Structure (URA)							
Workshop and Warehouse Building (UST)							
Office and staff amenities building (UYA)							
Security access building (UYF)							
Simulator building (UYH)							

Mitigation Measures



○ § 93.160 Mitigation of air quality impacts.

- ❖ Any measures that are intended to mitigate air quality impacts must be identified and the process for implementation and enforcement of such measures must be described, including an implementation schedule containing explicit timelines for implementation.
- ❖ Prior to determining that a Federal action is in conformity, the Federal agency making the conformity determination must obtain written commitments from the appropriate persons or agencies to implement any mitigation measures which are identified as conditions for making conformity determinations.
- ❖ Persons or agencies voluntarily committing to mitigation measures to facilitate positive conformity determinations must comply with the obligations of such commitments.
- ❖ In instances where the Federal agency is licensing, permitting or otherwise approving the action of another governmental or private entity, approval by the Federal agency must be conditioned on the other entity meeting the mitigation measures set forth in the conformity determination.

Mitigation Measures (con't)



- ❖ When necessary because of changed circumstances, mitigation measures may be modified so long as the new mitigation measures continue to support the conformity determination. Any proposed change in the mitigation measures is subject to the reporting requirements of §93.156 and the public participation requirements of §93.157.
- ❖ Written commitments to mitigation measures must be obtained prior to a positive conformity determination and such commitments must be fulfilled.
- ❖ After a State or Tribe revises its SIP or TIP and EPA approves that SIP revision, any agreements, including mitigation measures, necessary for a conformity determination will be both State or tribal and federally enforceable. Enforceability through the applicable SIP or TIP will apply to all persons who agree to mitigate direct and indirect emissions associated with a Federal action for a conformity determination.

Timing of Offsets and Mitigation Measures



○ **40 CFR 93.163 states**

- ❖ The emissions reductions from an offset or mitigation measure used to demonstrate conformity must occur during the same calendar year as the emission increases from the action except, as provided in paragraph (b) of this section.
- ❖ The State or Tribe may approve emissions reductions in other years provided:
 - The reductions are greater than the emission increases by the following ratios:
 - (i) Extreme nonattainment areas 1.5:1
 - (ii) Severe nonattainment areas 1.3:1
 - (iii) Serious nonattainment areas 1.2:1
 - (iv) Moderate nonattainment areas 1.15:1
 - (v) All other areas 1.1:1
 - The time period for completing the emissions reductions must not exceed twice the period of the emissions.

Timing of Offsets and Mitigation Measures (con't)



- The offset or mitigation measure with emissions reductions in another year will not:
 - (i) Cause or contribute to a new violation of any air quality standard,
 - (ii) Increase the frequency or severity of any existing violation of any air quality standard; or
 - (iii) Delay the timely attainment of any standard or any interim emissions reductions or other milestones in any area.
- ❖ The approval by the State or Tribe of an offset or mitigation measure with emissions reductions in another year does not relieve the State or Tribe of any obligation to meet any SIP or Clean Air Act milestone or deadline. The approval of an alternate schedule for mitigation measures is at the discretion of the State or Tribe, and they are not required to approve an alternate schedule.
- **40 CFR Part 93.164 Inter-precursor mitigation measures and offsets.**
- **40 CFR Part 93.165 Early emission reduction credit programs at Federal facilities and installation subject to Federal oversight.**