



November 19, 2010

UN#10-293

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U.S. Army Corps of Engineers – Baltimore District
10 S. Howard Street
Baltimore, Maryland 21201

Subject: UniStar Response to Selected Comments on the Calvert Cliffs Nuclear Power Plant, Unit 3 Draft Environmental Impact Statement (EIS)

The purpose of this letter is to respond to selected comments submitted to the Nuclear Regulatory Commission (NRC) and the U.S. Army Corps of Engineers (ACOE) relating to the Calvert Cliffs Nuclear Power Plant (CCNPP), Unit 3, Draft Environmental Impact Statement (Draft EIS) published by the NRC in April, 2010.

Geologic

A comment was submitted that Dr. Susan Kidwell and Dr. Thomas Vogt suggest that additional geologic studies should have been performed. This comment is apparently related to the Safety Evaluation Report (SER) portion of the Combined License Application (COLA) and not to the Environmental Report (ER) portion of the COLA. As such, the comment is not related to environmental impacts of either the issuance of a Combined Operating License or a Wetlands Permit. Rather, the comment is a "safety" comment as addressed by the Nuclear Regulatory Commission as stated in the Draft EIS, Sect. 2.8:

'Considering the geological characteristics of the site and vicinity are essential to the safe design and operation of the plant, but building and operating the plant does not have a significant environmental impact on geological resources. . . .'

Draft EIS, § 2.8 at 2-131.

Notwithstanding the above, UniStar notes that the statements of both Dr. Kidwell and Dr. Vogt were that the geologic study could have been broader in scope. UniStar notes that the site characterizations performed met or exceeded all requirements in applicable Federal requirements, including NRC Regulatory Guide, 1.206 and the NRC Standard Review Plan, NUREG-0800.

As stated in the Draft EIS, a detailed description of the geological, seismological and geotechnical conditions at the CCNPP site was provided in Section 2.5 of the UniStar Final Safety Analysis Report (FSAR) (*Draft EIS, Sect. 2.8*). As stated in the FSAR, as part of the

comprehensive site investigations performed, UniStar engaged Bechtel to conduct a review of previously published reports on geology and seismology with respect to the Calvert Cliffs site, including published geologic literature which updates the existing geological and seismological information and unpublished geologic literature, studies and projects identified through the U.S. Geological Survey.

UniStar also engaged the nationally respected William Lettis and Associates to conduct field investigations of regional and site tectonics and structural geology, which included field reconnaissance of the site and within a 25 mile radius. Geologists in teams of two or more visited the site in late summer and autumn 2006 and focused on exposed portions of the Calvert Cliffs, other cliff exposures along the west shore of the Chesapeake Bay and roads traversing the site within a 5 mile radius. Aerial reconnaissance within a 25 mile radius of the site was conducted by two geologists in 2007, to determine the geomorphology of the Chesapeake Bay area and to target numerous previously mapped geologic features and potential seismic sources within a 200 mile radius of the CCNPP site (e.g., Mountain Run fault zone, Stafford fault system, Brandywine fault zone, Port Royal fault zone and Skinkers Neck anticline). *FSAR, Sect. 2.5, at 2-1051 - 1052.*

Dr. Kidwell was interviewed by John Baldwin of William Lettis and Associates, during which she discussed her theory of “the **postulated** fault at Moran Landing and possible structural control of drainage patters in Southern Maryland.” [emphasis added] (*Testimony of Dr. Susan Kidwell, Maryland Public Service Commission, Case No. 9218, April 19, 2010, p. 103 (line 15) – p. 104 (line 21)*). Accordingly, input from Dr. Kidwell and Dr. Vogt was formally evaluated and considered by William Lettis and Associates and Bechtel during the investigative and analytical phases of the site characterizations. However, no confirmatory evidence of a postulated fault was identified from the detailed site reconnaissance, despite repeated attempts.

In summary, UniStar concludes the Draft EIS is complete and accurate, and appropriately concludes that the construction and operation of CCNPP Unit 3 will not impact geological resources.

Water Resources

A concern apparently has been made that authorization by the Maryland Public Service Commission (MPSC) to utilize groundwater from the Aquia aquifer could cause residential wells to “run dry” and that excessive draw down of the aquifer could exacerbate the arsenic levels that have been detected in the aquifer. UniStar conducted detailed utilization studies of groundwater which were evaluated in depth during the original MPSC proceedings, and resulted in the MPSC issuing a Certificate of Public Convenience and Necessity (CPCN) specifically authorizing groundwater withdrawal.

Under Maryland law, the MPSC has exclusive authority to authorize groundwater use by proposed electric generating stations, but it does so in consultation with the Power Plant Research Program (PPRP) of the Maryland Department of Natural Resources and the Maryland Department of the Environment. *Md. Code, Public Utilities Commission § Art. 7-208(h)(1); See also Env't. Art. 5-502(e); Nat. Res. 3-306(a).*

The Environmental Review Document submitted in the MPSC proceedings by PPRP specifically concluded that UniStar's proposed withdrawal will result in very small drawdown amounts (15 – 17.3 feet at distances up to 3.5 miles, 5 years into usage) as compared to the available drawdown calculated pursuant to Maryland regulations (254 feet). On that basis, the state authorities concluded that “the drawdown in the Aquia will not cause an unreasonable impact to

the nearby users for the limited five year period of construction for Unit 3." Environmental Review Document at 6-23, MPSC Case No. 9127, July 2008.

On the basis of the minimal projected drawdown, UniStar agrees with the NRC conclusion in the Draft Environmental Impact Statement that UniStar's use of groundwater would have no significant impact. *Draft EIS*, § 5.2.2.2 at 5-5, and § 5.2.3.2 at 5-7.

Air Impacts

Comments have apparently been made that water from the Chesapeake Bay has been tested for salinity and at times had Total Dissolved Solids (TDS) (primarily salt) at levels as high as 20,000 ppm, but the annual emissions of particulates were based on an assumed salinity level of 17,500 ppm. As PPRP pointed out in its Environmental Review Document submitted in the original proceedings, and relied upon by the MPSC in its issuance of a Certificate of Public Convenience and Necessity, salinity will be controlled by UniStar by controlling the "cycles of concentration" of the intake water.

The final conditions of the CPCN allow up to 35,000 ppm TDS, which would result if the intake water contained 17,500 ppm of TDS and went through two cycles, thus becoming doubly concentrated with TDS. If the TDS concentration of the intake water were lower, more cycles of concentration could potentially occur without exceeding the 35,000 ppm TDS level. Similarly, if the intake water had a higher concentration than the assumed 17,500, UniStar could control the final concentration by managing the cycles of concentration. Thus, it does not matter whether the Chesapeake Bay water sometimes has TDS concentrations higher than 17,500 ppm so long as the emissions limit is met by managing the cycles of concentration.

Importantly, an emission limit is set in CPCN Condition 77, which establishes maximum daily and annual emissions of particulate matter (PM, PM10 and PM 2.5). The CPCN does not set a maximum TDS concentration, but rather allows UniStar to manage to the concentration that assures the PM limit is met.

UniStar notes the MPSC has exclusive authority to issue air emissions approvals pursuant to the Federal Clean Air Act, Prevention of Significant Deterioration (PSD) permit program. *Baltimore Gas and Electric Co. v. Dept. of Health and Mental Hygiene*, 284 Md. 216, 231 (1979) ("The overall [regulatory scheme] is for the Public Service Commission to be vested with the sole power and authority to approve on behalf of the State of Maryland the erection of electric generating stations. This approval includes all matters involving or concerned with environmental impact.")(emphasis added). The CPCN statute provides that the grant of a CPCN "constitutes . . . registration and a permit to construct, as required under Title 2, Subtitle 4 of the Environment Article." *Md. PUC Art. 7-208(h)(2)*. Accordingly, the CPCN serves also as the construction permit required under the Federal New Source Review program. *47 Fed. Reg. 7834, Approval of Revision of the Maryland State Implementation Plan (February 23, 1982)*. PSD approvals have been determined to be the "functional equivalent" of National Environmental Policy Act (NEPA) review by the federal courts. *Portland Cement Association v. Ruckelshaus*, 486 F.2d 375 (DC Cir. 1973). Thus, in the DEIS the NRC relied on the extensive review of the air quality impacts of operation of the proposed Unit 3 that were conducted by PPRP to conclude that the air impacts from operation of Unit 3 would be minimal.

Noise

Comments have apparently been made regarding UniStar noise studies because they considered a "leaf off" scenario, but not a "cleared" scenario, and because the study centered around the cooling tower for the plant.

UniStar conducted significant studies of projected noise from the Project. The studies were conducted by a noise specialist, Hessler Associates. The noise assessment consisted of measuring and documenting baseline or existing conditions, predicting noise emissions from the existing and planned facilities, assessing any potential impact during construction and operation of the planned expansion and demonstrating compliance with the state regulatory limits for noise. The studies considered seven potentially sensitive residential receptor locations.

Hessler predicted operational noise emissions on the basis of computer noise modeling for the plume-abated cooling tower, which it determined would be the major acoustic source from the planned Project. Hessler concluded that the project at the Calvert Cliffs site can and will be acoustically designed to comply with the requirements of Maryland law regulating industrial noise emissions. Further, construction and operational noise from the project will meet all applicable regulations without restrictions or exceptions. Preliminary Environmental Noise Assessment, Hessler Associates, Inc. May 2008. See MPSC Case No. 9127, Technical Report, Appendix A, Volume 8, July 2008.

On the basis of the above studies, the Power Plant Research Program determined that the Project would meet applicable noise requirements. UniStar agrees with the PPRP conclusion because the "leaf off" scenario is comparable to a "cleared scenario" and because, in noise studies, the dominant noise source controls the projected noise level. Therefore, not modeling the smaller, less significant sources of noise besides the cooling tower, is unlikely to affect the outcome. As the PPRP explained in its Environmental Review Document, Section 3.6.1, filed in the MPSC proceedings:

'Because sound levels are expressed as relative intensities, multiple sound sources are not directly additive. Rather, the total noise is primarily a result of the source of highest intensity. For example, two sources, each having a noise rating of 50 dBA, will together be heard as 53 dBA; a source of 65 dBA combined with a source of 85 dBA will result in a noise level of 85.1 dBA. As the intensity difference between the two sources increases, the effects of the lower sound sources become negligible.'

In addition, PPRP conducted an independent analysis of potential noise impacts from both construction and operation of the proposed Calvert Cliffs Unit 3 and concluded that regulatory requirements for noise would be met. Specifically, Section 7.4 of the Environmental Review Document states:

'There is a large buffer distance available between the areas of disturbance during construction and the property boundaries where potential noise receptors are located. As a result, the construction noise is projected to comply with State regulatory limits for allowable noise at the site boundary, and no adverse impacts to the community are anticipated.'

Continuous noise at the facility during operation will be significantly less than during peak construction. The primary noise source will be the hybrid mechanical cooling tower, but due to the distance buffer between the noise

source and the nearest receptors, the cooling tower is projected to comply with all applicable noise limits. To ensure that noise impacts from the cooling tower are acceptable, PPRP is recommending a licensing condition that requires UniStar to conduct noise monitoring after the plant becomes operational, at the plant boundaries in locations of closest proximity to residentially zoned land.'

In addition, UniStar will be required by Condition 55 of the final CPCN to conduct post-construction noise testing to demonstrate compliance with State regulatory limits.

Summary

UniStar is pleased to provide this discussion of the facts and circumstances of selected concerns about the Draft EIS to the U.S. Army Corps of Engineers – Baltimore District. UniStar has diligently met the regulatory requirements and guidance for carefully and thoroughly characterizing and evaluating all aspects of the proposed project, including but not limited to, the geological, seismic, hydrological, water quality, air emissions, and noise impacts. UniStar supports and concurs with the independent evaluation and conclusions of the U.S. Nuclear Regulatory Commission in the Draft EIS.

If you have any questions concerning the attached document, please call Mr. Dimitri Lutchenkov at (410) 470-5524.

Sincerely,

A handwritten signature in black ink, appearing to read 'Greg Gibson', with a long horizontal line extending to the right.

Greg Gibson

cc: Susan Gray – Power Plant Research Program
Laura Quinn – NRC