

IN THE MATTER OF THE APPLICATION
OF UNISTAR NUCLEAR ENERGY, LLC
AND UNISTAR NUCLEAR OPERATING
SERVICES, LLC FOR A CERTIFICATE
OF PUBLIC CONVENIENCE AND NECES-
SITY TO CONSTRUCT A NUCLEAR
POWER PLANT AT CALVERT CLIFFS IN
CALVERT COUNTY, MARYLAND.

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BEFORE THE
PUBLIC SERVICE COMMISSION
OF MARYLAND

CASE NO. 9127

PROPOSED ORDER OF HEARING EXAMINER

Joel M. Bright
Chief Hearing Examiner

Filed: April 28, 2009

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APPEARANCES :

Charles O. Monk, II, Deborah E. Jennings, and Lisa Decker, for Calvert Cliffs III Nuclear Project, LLC, and UniStar Nuclear Operating Services, LLC.

Curtis B. Cooper and Terry J. Harris, for Maryland Public Interest Research Group, Nuclear Information and Resource Service, Public Citizen, and Beyond Nuclear at Nuclear Policy Research Institute.

Peter Saar and Ronald Herzfeld, for the Maryland Office of People's Counsel.

Michael A. Dean, for the Staff of the Public Service Commission of Maryland.

M. Brent Hare, Brent A. Bolea, and Adam Snyder, for the Power Plant Research Program of the Maryland Department of Natural Resources.

I. BACKGROUND

On November 13, 2007, UniStar Nuclear Energy, LLC and UniStar Nuclear Operating Services, LLC filed with the Public Service Commission ("PSC" or "Commission") an application for a Certificate of Public Convenience and Necessity ("CPCN") to construct a nominal 1710 megawatt ("MW") nuclear power generation station and associated overhead transmission lines at the site of the existing Calvert Cliffs Nuclear Power Plant site in Calvert County, Maryland.¹ The application was filed pursuant to the provisions of Sections 7-207 and 7-208 of the Maryland Public Utility Companies ("PUC") Article and Title 20, Subtitle 79 of the Code of Maryland Regulations ("COMAR"), and proposed construction of a third nuclear power generating station at the existing Calvert Cliffs site which proposed generation station and facilities are referred to as "Calvert Cliffs Unit 3."

The application notes the purpose of Calvert Cliffs Unit 3 is to generate electricity for sale at wholesale, with the proposed plant being a U.S. Evolutionary Power Reactor ("U.S. EPR") designed by AREVA NP, Inc. ("AREVA"). The U.S. EPR is a Generation III nuclear power plant of the pressurized water reactor type, with the application stating Generation III reactors are advanced reactors, the first few of which are in operation in

¹ During the course of this proceeding, co-Applicant UniStar Nuclear Energy, LLC has been replaced by Calvert Cliffs 3 Nuclear Project, LLC, so that the co-Applicants at the conclusion of the proceeding are UniStar Nuclear Operating Services, LLC and Calvert Cliffs 3 Nuclear Project, LLC, who are collectively referred to as the "Co-Applicants" or "Company" in this proceeding and in this order.

Japan. Furthermore, the application states the design builds on 40 years of experience with construction and operation of nuclear reactors, with the key difference between Generation II and Generation III reactors the enhanced safety features incorporated in the new design. Calvert Cliffs Unit 3 will be the first of this new standardized reactor design proposed by the Co-Applicants, and therefore if constructed will be the reference point for all subsequent U.S. EPR plants. Among the safety features are four independent separate safety systems, a leak-tight containment structure around the reactor, a passive emergency post-accident debris collection area, and a two-layer outer shell made of reinforced concrete to protect against external hazards. Furthermore, the application states the design increases performance efficiency and operability, and is designed to operate for 60 years rather than the statutory limit of 40 years which term will be sought in the initial license from the Nuclear Regulatory Commission ("NRC"). Further efficiencies are expected to reduce generation costs at least 10 percent lower than other operating nuclear plants, reduce uranium consumption by 17 percent per megawatt-hour as well as permitting recycling of spent fuel assemblies, and reach an average 95 percent availability (capacity) factor over the increased 60-year design lifetime obtained through longer irradiation cycles, shorter re-fueling outages, and in-operation maintenance.

The application further notes that the proposed Calvert Cliffs Unit 3 project will require several approvals in addition to the Commission. The application notes that the Company will seek a

Combined License ("COL")² from the NRC for construction and operation of the unit, which approval process is expected to take three or four years, with AREVA further seeking a standard design certification from the NRC for the U.S. EPR design technology. Furthermore, the potential nuclear safety and radiological impacts associated with construction and operation of the unit will be addressed in the COL application, which would include a Final Safety Analysis Report, Probabilistic Risk Assessment, Environmental Report, Security Plan, Emergency Preparedness Plan, and Quality Assurance Program description. Also, as part of the NRC process, the public will be provided an opportunity to participate in administrative hearings associated with the application. Upon receipt of the Combined Operating License, the Co-Applicants can begin construction of the safety-related portions of the facility, with the NRC verifying the licensee has performed all required inspections, tests, and analyses.

The application further states that the Co-Applicants will present the project to the Chesapeake Bay Critical Area Commission as the project entails performing some construction activities within the 1,000 foot setback from the Chesapeake Bay. Also, a permit from the United States Army Corps of Engineers to impact certain wetlands will be sought as well. The application

² In this case, parties have referred to the NRC license as either a "Combined License" or "Combined Operating License," with the term used interchangeably.

The application states that a partial COL application was submitted to the NRC on July 13, 2007. For persons who may be interested in the NRC proceedings, the application can be found in NRC Docket 52-016.

desires a granting of the CPCN by December 2008 and the COL from the NRC by March 2011, with the goal to begin site clearing and pre-construction site preparation by early 2009 with commercial operation in December 2015.

By Order No. 81745, issued on December 6, 2007, the Commission instituted Case No. 91 27 to consider the application while delegating certain motions and discovery matters to the Hearing Examiner Division.³ A pre-hearing conference was held on January 4, 2008, notice of which was published in newspapers of general circulation throughout Calvert County as well as the Baltimore-Washington area.⁴ At the pre-hearing conference, petitions for intervention were granted to various parties and a procedural schedule was established including filing of testimony and rebuttal with hearings scheduled for August 2008. In addition to the Co-Applicants noted above, the admitted parties are the Office of People's Counsel ("OPC"), which represents residential and non-commercial customers of utility services in Maryland pursuant to Sections 2-204 and 2-205 of the PUC Article; the Technical Staff of the Commission ("Staff"), who participated as a party pursuant to Section 3-104(e) of the PUC Article; and the Power Plant Research Program of the Maryland Department of Natural Resources ("PPRP"), which coordinates the review of the proposed project by various State agencies in accordance with Sections 3-304 and 3-306 of the

³ By letter dated January 28, 2008, the conduct of the entire proceeding was delegated to the Hearing Examiner Division.

⁴ Notice was published in *The Calvert Independent*, *The Calvert Recorder*, *The Baltimore Sun*, and *The Washington Post*.

Natural Resources Article.⁵ Also granted intervention as parties in this proceeding are the following petitioners that are concerned with nuclear generation and the proposed project and participated through joint counsel in this case: Maryland Public Interest Research Group, Nuclear Information and Research Service, Public Citizen, and Beyond Nuclear at Nuclear Policy Research Institute ("NPRI") (collectively, "Joint Intervenors").

Pursuant to the procedural schedule,⁶ evidentiary hearings were held on August 11 and 12, 2008 in Dowell, Maryland, while the evening hearings for receipt of public comment were held on August 4, 11, and 19, 2008 in Solomons, Maryland, notice of which were published in *The Baltimore Sun*, *The Washington Post*, *The Calvert Independent*, and *The Calvert Recorder*.⁷ In addition, following the recommendation of the PPRP to grant the application subject to various licensing conditions, an additional evening hearing for further public comment on the Air Permit aspects of the application was held on March 9, 2009, at the Solomons, Maryland

⁵ In addition to the Department of Natural Resources ("DNR"), PPRP coordinates review of the project by the Departments of Agriculture, Business and Economic Development, Environment, Planning, and Transportation, as well as the Maryland Energy Administration.

⁶ At a status conference held on May 29, 2008, revised procedural dates were established, with the hearings remaining for August which included three evening hearings for receipt of public comment.

⁷ The locations of both the evidentiary and evening hearings were held in meeting rooms of local hotels in very close proximity to one another, both of which locations are located in Calvert County, Maryland near the Calvert Cliffs site.

location of the prior evening hearings, notice of which was also published in the same newspapers.⁸

A. Testimony of Witnesses

1. Co-Applicants Witnesses

During the course of the evidentiary hearings, the Co-Applicants presented the testimony of six witnesses in support of the application. Michael J. Wallace, Chief Executive Officer of Constellation Energy Nuclear Group, LLC, and Chairman of UniStar Nuclear Energy, LLC, presented initial testimony regarding the proposed Calvert Cliffs Unit 3 power station and relationships between the various ownership entities. Mr. Wallace noted that there are two units currently operating at Calvert Cliffs which came on line in the mid-1970s, and the application proposes a third unit at that site. He stated new nuclear power plants can contrib-

⁸ The March 9, 2009 hearing on the Air Permit was granted following published notice to the public of the PPRP recommendation to grant the application subject to various licensing conditions, which recommendation was made after review of revised air emission information submitted during the course of this case.

After the Air Permit hearing held on March 9, 2009, several members of the public requested by letters in late March that an additional public hearing on water quality also be held. However, the record for public comment was actually closed in August 2008, and re-opened solely for comments with respect to the Air Permit, which Air Permit public comment period was then closed at the hearing held on March 9, 2009. Therefore, the letters in late March seeking further comment on water quality are untimely. However, they have been reviewed, and the materials submitted with these requests do not raise any new issues or information that could not have been submitted earlier at the three hearings for public comment held in August 2008. For example, the most detailed request appears to be based in part upon disagreement with a 2006 Cove Point LNG Terminal Expansion Risk Study, which study is not part of this case and was clearly performed prior to the commencement of this application. A review of the material submitted and the evidence on the record with respect to water quality do not present any grounds for re-opening the record and conducting further hearing on this issue. Accordingly, the request for an additional hearing on water quality is denied.

ute to the fuel and technology diversity as the core strength of the U.S. electric supply, and can play a strategic role in meeting clean air goals while addressing concerns over adverse impacts of greenhouse gas emissions. In this regard, nuclear power is an attractive alternative to the deployment of additional fossil fuel power plants as nuclear power plants produce electricity without carbon emissions, and changes in procedures before the NRC now allow an applicant to receive a combined license to both construct and operate a new nuclear reactor compared to prior procedures which required separate and lengthy proceedings to receive each license.

Mr. Wallace noted other federal policies designed to encourage nuclear power, citing the Energy Policy Act of 2005 which provides benefits to companies seeking to build a new advanced nuclear power plant, including a production tax credit of 1.8 cents per kWh of electricity produced and sold during the first eight years of plant operation. He further noted a stand-by support program known as Federal Risk Insurance, and a loan guarantee program established for eligible projects including nuclear energy facilities that avoid, reduce, or sequester air pollutants or significantly improve technologies compared to commercial technologies currently in service.

Mr. Wallace stated that the Company anticipates up to 80 percent of total project costs will be funded by senior debt from either the Federal Finance Bank or commercial lenders. Also low-cost financing may be obtained through COFACE, the French

export credit agency, as a joint venture partner in the project is the French company Electricité de France, the largest nuclear power plant owner and most experienced nuclear operator in the world. It is the largest utility in France where nuclear power provides approximately 80 percent of the nation's electricity. Mr. Wallace noted that while the project is a joint venture, Constellation Energy Nuclear Group will have ultimate control over all safety-related issues, regulatory decisions, and key corporate control and budgetary measures.

Mr. Wallace further noted that AREVA NP, Inc. and Bechtel Power Company have been engaged to begin development of the design engineering that will form the basis of the proposed fleet of advanced nuclear power plants in the United States, with the Co-Applicants seeking to build and operate Calvert Cliffs Unit 3 utilizing an advanced nuclear power reactor design known as the "U.S. Evolutionary Power Reactor" (U.S. EPR). The new unit will be situated southwest of the existing two reactors at the Calvert Cliffs nuclear site, with gross electrical output of 1710 MW resulting in net output of approximately 1600 MW. A one-mile transmission facility will be constructed on site to interconnect the unit to the bulk power system, and therefore there is no need to condemn any additional property to support this new unit or associated transmission facilities. Mr. Wallace states the U.S. EPR design is a pressurized water reactor which is the same basic technology used at Calvert Cliffs Units 1 and 2 for 30 years, but is a larger, safer, and more efficient design, and is in fact the

safest, most secure, advanced nuclear plant technology available. After the plant is constructed, it will be the largest nuclear power plant in operation in the United States. He states it is a Generation III+ reactor, with the primary difference between Generation II reactors the enhanced safety features incorporated in the new design, with advanced Generation III reactors operating in Japan and this design a further extension of Generation III. He noted the proposed design must be approved by the NRC with AREVA NP submitting the design certification request on December 11, 2007.

Mr. Wallace cited benefits of the project include output of power sufficient to meet the needs of up to 1.6 million households, significant employment including up to 4,000 workers during the temporary construction phase and 360 full-time jobs during operation of the new plant, and tax benefits to the local government and State that will also result from the project.

In response to testimony by other parties in this proceeding, Mr. Wallace states that as Calvert Cliffs Unit 3 is a merchant power plant, the risks for recovering costs rests solely with the Company's investors, not with utility ratepayers as implied by certain opponents of the project. He further noted that waste disposal safety is controlled and regulated by the NRC and U.S. Department of Transportation, and the Company intends to comply with all applicable regulations and directives that control handling, transportation, and storage of new plants' spent nuclear fuel. Furthermore, spent fuel handling and storage at the site are addressed in the application for a combined license from the NRC

and will be reviewed during that process. He also claimed that concerns expressed regarding the single purpose entity ownership of the plant are also controlled exclusively by the NRC, while noting that over 40 of the nation's 104 operating nuclear power stations are held by limited liability corporations and have been for some time. He further believes that the NRC will conclude the application meets all applicable comprehensive financial regulations and requirements of the NRC, including meeting NRC requirements as to decommissioning, funding, and nuclear liability insurance.

In further response to other parties' positions in this case, Mr. Wallace contended that certain proposed conditions must be modified or eliminated so as not to unduly restrict the plant's operations, conflict with federal regulations, or adversely impact the ability of the Co-Applicants to seek and obtain necessary financing for the project. Specifically, he states that the short duration of certain proposed conditions recommended by reviewing State agencies may cause problems with respect to obtaining financing for the project unless certain permits are valid and in effect throughout the course of the plant's construction and operation, which differences in conditions is discussed in more detail below.

George Vanderheyden, President and Chief Executive Officer of UniStar Nuclear Energy, LLC, also testified in support of the application, including testimony regarding the specified statutory criteria noted in Section 7-207(e) of the PUC Article

regarding applications for a CPCN .⁹ Mr. Vanderheyden presented testimony regarding the project's site and impacts there as well as the water needs of the plant. In this regard, his testimony indicates that aquifers will not be affected by operation of Unit 3 as the design relies on desalinated water from the Chesapeake Bay rather than groundwater for its fresh water needs. ¹⁰ Also, while Unit 3 will require water from the Bay for cooling and operational purposes, it will use much less water and at lower velocity than required by Units 1 and 2. Mr. Vanderheyden also provided information regarding the interconnection requirements, noting that there will be no need for new off-site transmission corridors to support Unit 3 as transmission lines are already in place, while upgrades will become necessary at certain substations which upgraded costs will be paid by the Co-Applicants pursuant to PJM tariffs. On-site new transmission lines of approximately one mile in length will be installed, but no portion of the new transmission corridor will lie outside the Calvert Cliffs campus boundaries. Mr. Vanderheyden further stated that PJM has determined, following study, that the addition of Unit 3 would not adversely impact the stability of the

⁹ Mr. Vanderheyden provided overview and summary testimony regarding the project site, effect on water quality and appropriations, interconnection (including effect on system stability and reliability) aesthetics, community support (including support of the local governing body), historic sites, noise, compliance with aviation safety, waste, and construction timing.

¹⁰ The Co-Applicants initially proposed to use water from the appropriations already granted to Units 1 and 2 for the water needs of Unit 3 during the construction phase of Unit 3. During the course of this case, the Co-Applicants have changed their proposal to allow withdrawal of groundwater from up to two new wells during construction, which groundwater withdrawal would be subject to defined limits under conditions proposed by PPRP.

electric grid; rather, the addition of 1600 MW will enhance the reliability of the grid. He further noted that the plant should have the beneficial effect to reduce future congestion charges, but such amount cannot be quantified at this time.

Mr. Vanderheyden noted that the site selection of the project at the Calvert Cliffs property was chosen in part to minimize esthetic impacts, and no structure will be located closer than 2400 feet to the nearest residential property line or within 3000 feet from the nearest residential dwelling. Structures most visible from the Chesapeake Bay (such as the intake structure, pump house, and discharge piping) will be located near existing structures associated with Units 1 and 2 to minimize visual impacts of the site location from the water, and the hybrid cooling tower selected will significantly minimize the visual impact of the plume, although it will increase the long-term costs for operation of the plant. He further noted that Calvert County supports the siting of the proposed location, including prior support for re-licensing Units 1 and 2 in 2000, as well as an agreement for payments in lieu of taxes by Units 1 and 2 with the County. He presented a letter dated August 14, 2007 expressing unanimous support of the Calvert County Board of Commissioners for expansion at Calvert Cliffs.

Mr. Vanderheyden further noted efforts made by the Company with respect to identifying archaeological sites, including discussions with State agencies as to mitigation. Noise impacts have been identified by consultant Hessler Associates, Inc., with

Mr. Vanderheyden stating the Company intends to comply with applicable State regulations with respect to construction activities. As to aviation safety, he noted that no building associated with the project lies within three nautical miles of a public use airport, although the reactor building event stack will exceed 200 feet and therefore the project will request a determination of no hazard to air navigation from the Aviation Administration.

Mr. Vanderheyden also presented testimony regarding the waste disposal plans of the project, noting the Maryland Department of the Environment ("MDE") regulates low level radioactive waste disposal, while mixed waste (waste containing hazardous waste and low level radioactive sources, special nuclear material, or by-product material) will be handled in the same manner as Units 1 and 2 waste pursuant to a Memorandum of Understanding with the MDE. Solid waste management practices will be similar, if not the same, as that implemented for Units 1 and 2. To ensure waste handling and disposal practices will comply with applicable regulations, the Co-Applicants are also seeking necessary permits to transport low-level radioactive waste and will prepare plans to minimize waste and provide guidance for response to on-site incidents.

As to the timeline of the project, Mr. Vanderheyden noted that upon issuance of the CPCN, the Co-Applicants anticipate initiation of non-safety-related construction activities. Also, once the NRC approves the U.S. EPR design, any applicant may select that design for use at a specific location. In addition, the Co-Applicants will seek a permit from the United States Army Corps

of Engineers to impact certain wetlands. Furthermore, the Company's schedule anticipates issuance of the Combined Operating License in March 2011, with full plant construction beginning in April 2011 so that construction would be completed in July 2015 and in operation by December 2015.

In his rebuttal testimony, Mr. Vanderheyden expressed the Co-Applicant's concerns with various conditions proposed by the Power Plant Research Program witnesses stating certain proposed conditions do not allow sufficient certainty for the uninterrupted construction and operation of Unit 3, and may jeopardize the ability to obtain financing for a baseload project of this size. In final positions of the Company and PPRP, the differences in their recommended conditions generally involve disputes with respect to specific water supply conditions involving time limits, renewal, and jurisdictional disputes including whether future authority and extensions should be under the ultimate authority of the Public Service Commission (as argued by the Company) or subject to authority of the Maryland Department of the Environment-Water Management Administration ("MDE-WMA"), as argued by PPRP. These final differences between these parties with respect to the disputed conditions is discussed in further detail below in this Order.

Robert M. Iwanchuk, a Certified Consulting Meteorologist with ENSR, testified on behalf of the Co-Applicants with respect to air impacts and requirements associated with the construction and operation of the project. He noted that he manages the Air Quality

Engineering & Studies Department of his company, which is a group of 20 air quality engineers and meteorologists involved in air quality permitting and compliance studies for a variety of industrial clients. Mr. Iwanchuk testified that the project's air emissions will not adversely impact air quality and will comply with all applicable air standards, regulations, and requirements under federal and State law. In this regard, he states the emissions will not cause or contribute to an exceedance of the National Ambient Air Quality Standards ("NAAQS"), and the project will comply with applicable New Source Review/Prevention of Significant Deterioration ("NSR/PSD") permit requirements. He noted, however, that the project will trigger PSD review for Particulate Matter ("PM", of which PM₁₀ and PM_{2.5} are subsets), but will be insignificant with respect to other PSD pollutants and for Non-attainment New Source Review. In this regard, he noted that the Particulate Matter involved was actually salt from the brackish water near the plant site. The further review triggered for Particulate Matter resulted in conclusions that the Best Available Control Technology ("BACT") for the PSD-applicable pollutant (Particulate Matter), has been identified as installation and use of a high-efficiency drift eliminator with a control efficiency of 0.0005 percent drift loss for the Circulating Water System ("CWS") cooling tower, which facility is by far the largest emitter of PM in the new unit.

Mr. Iwanchuk further testified with respect to proposed initial conditions regarding air emissions presented by PPRP. He

also noted consistency with certain conditions proposed by PPRP, stating the Co-Applicants proposed conditions limiting emission rates for the station blackout generators and emergency diesel generators would be met by use of low-sulfur diesel fuels and such limits proposed by the Company are consistent with those proposed by PPRP.¹¹ Mr. Iwanchuk concludes that the project's air emissions will not adversely impact air quality and will comply with all applicable ambient air standards, the project's emissions will not cause or contribute to exceedance of NAAQS, and construction impacts will be managed through use of Best Construction Practices to control fugitive emissions. Based on the project's projected impacts on air emissions, Mr. Iwanchuk states that a Prevention of Significant Deterioration ("PSD") permit should be issued for the project as part of the CPCN in this proceeding. He also notes that all projected impacts for sulfur dioxide ("SO₂"), nitrogen oxides ("NO_x"), and carbon monoxide ("CO") will be well below thresholds noted in Environmental Protection Agency ("EPA") guidance for screening impacts, and the Co-Applicants also conclude that the project emissions will have an imperceptible visibility impact

¹¹ One difference initially noted between PPRP and the Company concerns the Co-Applicants' proposal of a daily emission limit for the cooling tower wherein PPRP proposed a monthly limit, with the Co-Applicants stating that the daily limit proposed by them will assure that Unit 3 does not cause or contribute to a violation of ambient air quality standards. In final positions, it appears that the Co-Applicants and PPRP are in agreement as to emissions limits on the cooling towers and diesel generators, with the agreed final conditions and limits filed on March 19, 2009, including both short-term and long-term emission limits as contained in revised Conditions 75-78.

locally and at distant Class I areas.¹² He concludes that construction of Unit 3 will not cause or contribute to a violation of either NAAQS or Maryland Ambient Air Quality Standards for any pollutant, nor will PM₁₀ PSD increments be threatened, as the project will satisfy applicable requirements for authorization under the PSD program.

Kreg K. McCollum, Director in the Energy Practice of Navigant Consulting, Inc., testified regarding the anticipated aesthetic and socioeconomic impacts created by the construction and operation of the proposed plant. He stated his testimony is based upon the research of Dr. Gregory Poremba, who was retained to perform a socioeconomic analysis of the proposed Calvert Cliffs Unit 3, but subsequently became unavailable to participate in the project.

Mr. McCollum noted that projected esthetic impacts of construction are expected to be minor as the construction site is set back and largely screened from publicly accessible areas, and during operation the plant will not generally be visible from publicly accessible points north, south, and west of the site boundary as the area is large and heavily wooded. Also, most recreational users of the Chesapeake Bay to the east will be unable to view most of the Unit 3 due to its elevation and setback from the shoreline.

¹² Class I federal lands include pristine areas such as national parks, which are granted special air quality protections under the federal Clean Air Act. The nearest Class I area is Shenandoah National Park, located approximately 160 kilometers west of the project site in Virginia, according to the record.

Construction will employ approximately 3,950 workers at its peak , while operation is anticipated to require approximately 363 on-site employees, most of whom will reside in Calvert and St. Mary's Counties. Mr. McCollum noted that it is unlikely that the value of area properties would be significantly altered by the presence of a third reactor, and impacts to land values traceable to the presence of a third nuclear reactor are anticipated to be minimal. He noted that the unit will be a significant payer of real and personal property taxes, and Calvert County and St. Mary's County will receive increases in annual income which could approach \$66.5 million for Calvert County and \$22.5 million for St. Mary's County, as well as real and personal property taxes paid by the unit.¹³

Mr. McCollum concludes that the projected physical and esthetic impacts of construction and operation of Unit 3 are expected to be minor as the proposed site is on a large heavily wooded property that is elevated and set back from the shoreline, with relatively small projected in-migration to the area to meet the workforce needs so that the unit will not place significant additional burdens on public facilities in the area. However, the region will benefit from the increased annual income taxes and substantial real and personal property taxes paid by the unit.

Paul C. Myers, a Senior Environmental Scientist with TetraTech NUS, testified on behalf of the Co-Applicants with

¹³ The Co-Applicants consider their projection of the estimated real estate tax effect to be confidential, as such figures would allow vendors with whom the Company is negotiating to obtain information regarding the proposed value of the plant.

respect to wetlands delineation, site ecology, and project impacts on site ecology. He also adopted testimony of J. Peyton Doub, a Senior Environmental Scientist who formerly was with Tetra Tech but has since left the consulting firm for employment with the federal government. Mr. Myers also testified as part of a panel with Richard Harmon, Research Scientist/Natural Resource Project Manager with MACTEC Engineering and Consulting, Inc., with respect to the wetland impacts of the project. The testimony of these witnesses note that wetlands law requires mitigation of the wetlands impacts, and the Company therefore proposes to create or enhance acreage as mitigation for impacts that may result from the project.

Mr. Harmon states that the initial site's specific layout sought to minimize wetland impacts, and site evaluations indicate that no impacts to federally listed and wetland/stream dependant wildlife species are expected. As mitigation, he notes that approximately five acres of forested wetlands will be created in the area of a stormwater retention basin, and approximately 20 acres of bottom land hardwood forest associated with Johns Creek will be enhanced as well as approximately five acres of herbaceous wetland enhancement. Also, if mitigation acreage requirements are not met on site, up to five acres of additional off-site forested wetland restoration will be provided. Impacts to surface water quality downstream of the construction site are expected to be minimal due to the use of Best Management Practices according to State standards.

Mr. Myers and Mr. Harmon also presented testimony in response to proposed conditions by PPRP, with their final position indicating that the project will impact 11.72 acres of non-tidal wetlands which will be mitigated by 6.8 acres of forested wetlands creation, 1.3 acres of emergent marsh wetlands creation, 0.9 acres of open water habitat, as well as 18.1 acres of wetland enhancement. Mr. Harmon notes that this mitigation plan would create more acres of wetlands than will be impacted by the project, while Mr. Myers concludes that the project's ecological impacts are reasonable, justified, and properly mitigated.

2. Reviewing State Agencies Witnesses

The Power Plant Research Program of the Department of Natural Resources presented a comprehensive review of the project, with testimony by nine witnesses in this proceeding on behalf of the reviewing State agencies. Susan Gray, the Project Manager for PPRP, presented overview testimony of the State agencies review in which the agencies conclude that the project may be granted subject to numerous proposed conditions. Ms. Gray notes that PPRP is responsible for coordinating the review of the project, which review involves the Departments of Natural Resources, Environment, Agriculture, Business and Economic Development, Planning, Transportation, and the Maryland Energy Administration. The State agency review encompasses environmental and socioeconomic impacts of the project, and includes exhibits regarding the State agencies analysis which show that the project will comply with all appli-

cable regulatory standards provided that the Co- Applicants comply with license conditions recommended by the State, according to Ms. Gray. However, she also noted that the State review did not address those impacts related to radiological health and safety, which are under the jurisdiction of the U.S. Nuclear Regulatory Commission. In this regard she noted that the Co-Applicants have applied for a Combined Operating License before the NRC and stated the NRC plans to issue a draft Environmental Impact Statement in 2009, after which there will be an opportunity for public review and comment before the NRC issues a final Environmental Impact Statement, with the decision by NRC projected to occur in 2011. She also noted certain other approvals that will be necessary from various entities, noting that PPRP will continue its coordination efforts with various agencies to track UniStar's progress towards these milestones.¹⁴ In her supplemental testimony filed on October 24, 2008 (DNR Exhibit No. 17), Ms. Gray presented updated sections of the PPRP Environmental Review Document ("ERD"), including updated revisions on Air Impacts (DNR Exhibit No. 19) and Water Supply (DNR Exhibit No. 20).

John Grace, Chief of the Source Protection and Appropriations Division of the Maryland Department of the Environment Water Management Administration, and Robert W. Keating, a hydrogeologist with Environmental Resources Management, Inc.,

¹⁴ Among other approvals needed, Ms. Gray noted that the Chesapeake Bay Critical Area Commission must give approval prior to site disturbance activity that would affect the critical area, and she presented a letter from the Critical Area Commission as an exhibit.

which consulting company is the Environmental Engineering Integrator for PPRP, testified as a water appropriation panel on behalf of PPRP. Mr. Grace's testimony discussed the water supply and the Co-Applicant's request for water appropriation, in which he has reviewed water needs during both the construction phase and operation phase of the project. Mr. Keating presented an analysis of groundwater impacts from the project, especially during the construction phase of the project as the desalination plant using Bay water will be constructed and available after several years and supply water for the operations of the plant. Both Mr. Keating and Mr. Grace testified that the proposed water usage during construction will not cause unreasonable impact to the aquifer (Aquia aquifer) or nearby users for the limited period of groundwater withdrawal during construction.

Mr. Grace also notes that the Company seeks to utilize a daily average of 63 million gallons/day and a maximum daily withdrawal of 72 million gallons/day of surface water on a yearly basis during operation of the plant, with over 92 percent of surface water used to provide cooling water for the turbine condensor and make-up water for the closed loop cooling tower. He stated that withdrawal of such amount from the Chesapeake Bay will not adversely impact the recreational use of the bay or aquatic life as this amount is very small compared to both the amount of water in the Bay in the vicinity of the power plant as well as the 3.5 billion gallons/day that Calvert Cliffs Nuclear Power Plant is currently authorized to withdraw from the Bay for process cooling.

He therefore supports proposed license conditions to reflect the revised appropriation request of surface water at a daily average of 63 million gallons with maximum daily use of 72 million gallons, which authorized amounts of withdrawal are noted in Condition 6.

Mr. Grace also testified as to extending the initiation of withdrawal after issuance of the CPCN for consistency with the Co-Applicants' proposal to use water from the desalination plant in the latter part of the construction period.¹⁵ However, he notes the Company is proposing the initiation of the withdrawal be extended to 15 years after issuance of the CPCN, which Mr. Grace claims is not consistent with the construction schedule provided by the Company in this matter and is also inconsistent with State water appropriation laws and regulation. He notes that the State's proposed condition also allows for an extension of the initial authorization period for good cause after submission of a written request, which request is typically in the form of a brief letter.

Mr. Grace provided further information regarding PPRP's position on various proposed license conditions regarding water usage which have been contested by the Co-Applicants. The conditions which remain contested in the final positions of the parties generally involve timing and jurisdictional issues and are discussed later in this Order.

¹⁵ In supplemental testimony, Susan Gray of PPRP supported extension of the initiation of withdrawal to seven years to reflect the construction schedule and review period by the NRC.

Mr. Keating testified as to evaluation of potential impacts associated with construction de-watering on shallow groundwater and evaluating impacts associated with groundwater withdrawals during construction and on local users of the aquifer. He noted certain conditions relate to ensuring that preventive measures are implemented to protect groundwater and surface water quality, and any impacts from de-watering for construction excavations will be temporary as they should be completed within two years. With respect to the impact on the aquifer, he noted the Company's proposed use of groundwater during construction will reflect a new use, but the calculated drawdown amounts are small when compared to the 254 feet of available drawdown in the Aquia aquifer at Calvert Cliffs. He therefore concludes that drawdown will not cause an unreasonable impact on nearby users for the limited eight-year period of construction of Unit 3.¹⁶ Furthermore, the PPRP Environmental Review Document, including its final conclusions submitted on October 24, 2008, supports this same conclusion.¹⁷

PPRP presented three witnesses as an air panel, which discussed their review with respect to the air quality impacts and

¹⁶ In supplemental testimony, Susan Gray of PPRP notes that further information would be necessary with respect to requests for emergency back-up water needs in the event the desalination water supply is interrupted, and Condition 16 requires further analysis of emergency back-up supply for the desalination plant.

¹⁷ See DNR Exhibit 20, at pp. 6-23 to 6-29. With respect to the impact on the Aquia aquifer during construction, Condition No. 17 would limit groundwater withdrawal to a daily average of 100,000 gallons on a yearly basis and a daily average of 180,000 gallons for the month of maximum use. Condition No. 28 contains limits on groundwater withdrawal from the surficial aquifer for construction dewatering.

permitting of the project. The panel consisted of William V. Paul, Chief of the Combustion and Metallurgical Division of the Air and Radiation Management Administration of the MDE; Julia B. Ross, Senior Air Quality Professional at Environmental Resources Management, Inc. ("ERM"); and Mark E. Garrison, Air Quality Meteorologist with ERM. Mr. Paul reviewed the project with respect to air emissions increases and impacts, emissions control options, and determination of Best Available Control Technology ("BACT"). He noted his review includes analysis of the impacts from the cooling towers, emergency diesel generators, and station blackout generators, which is the plant equipment that will produce emissions. He noted, however, that the nuclear reactor and related fuel and waste handling systems are regulated by the NRC and are not regulated by the State, so that the State's environmental review addresses only the non-NRC-regulated emissions sources that are part of the Unit 3 project.

Mr. Paul noted that the State evaluated emissions of "criteria pollutants" including carbon monoxide ("CO"), nitrogen dioxide ("NO₂"), sulfur dioxide ("SO₂"), Particulate Matter ("PM," "PM₁₀," and "PM_{2.5}"), lead ("Pb"), ozone precursors (No_x and Volatile Organic Compounds ("VOC")), ¹⁸ as well as hazardous and toxic air pollutants. Mr. Paul stated the federal Environmental Protection Agency has established allowable ambient concentration levels for

¹⁸ With respect to ozone, it is not emitted directly by sources of air pollution but is instead formed in the atmosphere from precursor pollutants including volatile organic compounds ("VOC") and Nitrous Oxides ("NO_x").

the criteria pollutants (i.e., the NAAQS), which standards are designed to protect public health and welfare with an adequate margin of safety. He further stated the air quality in Calvert County in the vicinity of the proposed Unit 3 project is in attainment for all pollutants with the exception of ozone, for which the County has been designated a "moderate" ozone non-attainment area due to relatively high levels of ozone historically found in Calvert County during the ozone season of May to October. From the evaluation, Mr. Paul states the project and potential emissions will result in a "significant" emissions increase only in Particulate Matter and thus is subject to "Prevention of Significant Deterioration (PSD)" review for this pollutant. Therefore, the Best Available Control Technology must be used for sources emitting PM so that the source does not cause or contribute to a violation of NAAQS. As to ozone, the sole pollutant for which the area is not in attainment, projected maximum emissions of ozone precursors from the project are less than significance thresholds and therefore do not trigger Non-Attainment New Source Review ("NA-NSR").

According to Mr. Paul, all emission units that are part of the project that have potential to emit Particulate Matter are subject to BACT review, including the cooling towers and emergency diesel engines, and station blackout generators. He notes the Co-Applicants' proposed controlling PM from the cooling towers through installation and operation of high-efficiency drift eliminators, with different efficiencies for the circulating water

system ("CWS") cooling tower (the largest source of PM) and the four smaller essential service water system ("ESWS") cooling towers. Mr. Paul states he concurs with the Company's conclusions regarding the use of their proposed high-efficiency drift eliminators as constituting the Best Available Control Technology for the cooling towers, and considers good combustion practices, exclusive use of low-sulfur fuels, and limits on hours of operations as the BACT for the emergency diesel generators. Similar practices and controls for the station blackout units are also recommended as constituting BACT, with use of ultra-low sulfur fuel and a lower limit on hours of operation for these units compared to the emergency diesel generators.¹⁹

Mr. Paul stated that PPRP and MDE-ARMA conclude that the emissions from the proposed project will not adversely affect the NAAQS or PSD increments for CO, NO_x, SO₂, and PM₁₀, and impacts from emissions from the proposed project will be acceptable. He further concludes that emissions will have minimal effects on soils, vegetation, wildlife, and local visibility, with such relatively low impacts due to the considerable distance between the Calvert Cliffs facility and the surrounding Class I areas as well as relatively low emissions of NO_x, SO₂, and PM₁₀ from the proposed project. While ozone is of particular concern in Maryland due to

¹⁹ While proposed BACT recommended by Mr. Paul includes limits on hours of operation for generators, he notes that exception may be necessary in the unlikely occurrence of an emergency event. In PPRP's final position, PPRP acknowledges that the NRC requires flexibility for the emergency generators and blackout generators, so that the limits on hours of operations are included as estimates of reasonable worst-case hours of operation.

the area's non-attainment status, Mr. Paul states that the nuclear plant project is a much lower emitter of nitrous oxides (which contribute to ozone formation) compared to gas- or coal-fired plants, while further noting that particulate matter is roughly equivalent between gas-fired and nuclear plants.

Ms. Ross testified that she was responsible for ERM's evaluation of the air quality regulatory and permitting requirements and control technology assessments associated with the project on behalf of PPRP. She further directed and participated in writing the results of these evaluations and the PPRP Environmental Review Document ("ERD") submitted in this proceeding. Ms. Ross' review was in accord with Mr. Paul's testimony that the Company's proposals constitute BACT for the cooling towers and generators involved, subject to limitations on hours applicable to operations, except during emergency events.

Mr. Garrison noted that he was responsible for all of the dispersion modeling reviews and analyses related to project impacts on the NAAQS and PSD increments and on Class I air quality related values. He also concluded that the criteria pollutant impacts for the Unit 3 project will not adversely affect the NAAQS or PSD increments for PM_{10} , which was the only pollutant for which further study was required as a significant impact level threshold was observed. He further agreed with the analysis of the Co-Applicants that impacts from the project will not cause harmful effects on local soils and vegetation, and that growth associated

with the project will not have a significant effect on air quality. Also, no significant Class I impacts were demonstrated.

Dr. Peter Hall, President of Metametrics, Inc., a consulting economist to PPRP, testified with respect to the regional economics and socioeconomic impact of the project as well as traffic impacts. He concluded that employment and income impacts from construction of the proposed facility would be sizable, although he notes that many economic benefits from operating the facility concern operation and maintenance expenditures that were not disclosed by the Co-Applicants. He noted that construction activities would result in increases in traffic on major roads leading to the construction site, particularly at shift changes during peak construction periods, whereas the projected operational workforce is much smaller and traffic impacts are expected to be minor. He states that the State Highway Administration ("SHA") has committed to working with UniStar and other agencies to coordinate continued reviews of revised traffic study reports, engineering plans, calculations and supporting documentation necessary to obtain SHA approval for an access permit. Also, he notes the intake and discharge structures and part of the heavy haul road from the barge slip are located in the Chesapeake Bay critical area, including some within the critical area buffer, and therefore UniStar must obtain approval from the Critical Area Commission. With respect to property values, due to the location within the interior of the existing nuclear plant site, risk from proximity to a facility that has been in operation since the 1970s may be

discounted or not perceived by nearby property owners as to property value impacts. In addition, Dr. Hall notes most construction activities would not be visible from outside the site boundary.

Frederick Kelley, an environmental consultant with Versar, Inc., and Stephen Schreiner, Senior Scientist and Program Manager with Versar, Inc., testified as a panel with respect to potential impacts to terrestrial and fresh water species and their environments.²⁰ Mr. Kelley testified as to impacts to environmental resources and recommended mitigation measures for such impacts covering terrestrial resources, such as forests, wetlands and streams; wildlife; resources of the Chesapeake Bay Critical Area; and aquatic life resources. Mr. Schreiner's testimony discussed surface water and ecological impacts, with the witnesses noting that although there is a thermal plume from operation of the nuclear plants at Calvert Cliffs, there are no major biological impacts resulting from the thermal plume at the site. Also, there are no significant radiation impacts to the bay area in the vicinity of the power plants.

3. Staff Testimony

Craig Taborsky, an Electric Generation and Transmission Engineer with the Commission's Engineering Division, testified as to the proposed plant's effect on the reliability and stability of

²⁰ Versar is a contractor to PPRP as an environmental consultant.

the electric system in the State of Maryland. Mr. Taborsky concluded that the project will be a beneficial source of power for Maryland, providing it meets requirements of PJM's impact studies and interconnection service agreement. He recommended two conditions, the first regarding the list of transmission system improvements required by PJM prior to putting that portion of the project in service, and certification that such improvements have been completed. His second proposed condition involves a list of interconnection requirements of the interconnecting transmission line owner prior to putting that portion of the project in service with certification such requirements have been met.

Mr. Taborsky notes construction of Unit 3 will use approximately 428 acres of the 2,070 acre Calvert Cliffs campus during construction, with 281 acres permanently used by Unit 3 and its supporting facility. He states the proposed plant is designed to operate with a capacity factor of 95 percent (annualized) and is expected to be licensed for 40 years with a design operating life of 60 years. He states the project should have a positive effect on reliability and stability of the electric system in Maryland if it complies with all PJM requirements as the additional power supplied by the plant will be a beneficial source for Maryland and the grid in general. Mr. Taborsky also notes the plant will provide power with an alternate source, nuclear power, which lessens Maryland's dependence on fossil fuels such as coal, oil, and gas. He also states the plant would be beneficial in reducing

the State's dependence on imported electricity, as Maryland imported approximately 30 percent of its electric power in 2006.

Mr. Taborsky further noted that Maryland may face a shortage of electricity in coming years, perhaps by the year 2011 or 2012, and wholesale prices continue to increase due to congestion, especially in central Maryland. Therefore, the new nuclear plant at Calvert Cliffs will be a welcome source of baseload power designed to run continuously, which is expected to reduce peak period congestion on transmission lines within the state of Maryland and reduce the need for imported power. With respect to safety concerns, Mr. Taborsky confirmed that the NRC regulates construction and operation of nuclear power facilities with potential radiological impacts associated with construction and operation subject exclusively to NRC regulatory jurisdiction.

4. Joint Intervenors' Testimony

The Joint Intervenors in this proceeding presented one witness in opposition to the application. David A. Schlissel, Senior Consultant at Synapse Energy Economics, Inc., a research and consulting firm, testified in opposition to the project with respect to the economic and financial commitment involved, which the Joint Intervenors consider part of the economic analysis of the proposed project. Mr. Schlissel cites the cost of the project, the corporate structure involved, and the plant design of an EPR as grounds for his opposition and his recommendation to deny the application.

Mr. Schlissel notes the Company witnesses do not provide a cost estimate for the proposed plant, and he states construction costs estimates for new nuclear power plants are uncertain and have increased significantly in recent years, and are now in a range of \$5,500.00 per kilowatt to \$8,100.00 per kilowatt. He therefore concludes that the estimated costs for the proposed 1600 MW unit could be expected to cost in the range of \$7 billion to \$9 billion, exclusive of financing costs which costs could increase these estimated costs by several billion dollars. Furthermore, it is reasonable to believe that the costs for building new power plants will be even higher than the industry is now projecting, as he notes the average cost overrun for 75 existing nuclear power plants in the United States exceeded the initially estimated costs by over 200 percent. He states that only half of the nuclear power plants that were proposed were actually built, and ratepayers frequently had to bear millions of dollars of sunk costs for abandoned projects. Also, the cost of completed nuclear power plants became much more expensive for ratepayers than proponents had claimed. In addition, rising nuclear power plant costs have led to billions of dollars of write-offs and cost disallowances from utility ratebases.

Mr. Schlissel also notes that the current EPR design proposed for the Calvert Cliffs 3 unit is not currently in operation in the United States or elsewhere in the world, with an EPR design plant in Finland experiencing problems during construction, according to the witness. He states it is reported that

completion of the plant is currently two years behind schedule with the estimated cost of the plant increasing between one-third and 50 percent, or about \$2 billion. He also notes that construction of an EPR-designed nuclear plant in France began in December 2007, but claims recent reports indicate construction was temporarily halted in May 2008 due to quality concerns. Mr. Schlissel further contends that the proposed online date of December 2015 for Calvert Cliffs Unit 3 is much too optimistic as the NRC has not yet certified the standardized EPR design, and he questions the specific schedule as to when a new nuclear power plant will come online in the United States.

Mr. Schlissel further expresses concerns regarding the limited liability ownership structure that will be established for purposes of owning the unit, as he claims such a structure would be effective for transferring profits to the parent owner while avoiding tax payments and providing a financial shield for the parent owner if an accident or failure creates a large unanticipated cost. He believes such limited liability companies are relatively new business structures that can enhance a parent corporations' ability to transfer funds from its subsidiaries and to shield assets from liability for financial risks, while use of a holding company structure can reduce the assets that would be available for safe operation and decommissioning of a nuclear power plant.

Mr. Schlissel also presents concerns regarding federal loan guarantees and other subsidies for the nuclear power plants included in the Energy Policy Act of 2005, as he contends such

subsidies and loan guarantees do not reduce the risk associated with new nuclear power plants but transfer risks from the companies to the federal government and its taxpayers. He states that there are more than 20 proposals for nuclear power plants being advanced by companies, and therefore it is uncertain what incentives or federal loan guarantees any single builder, including the Co-Applicants, will actually receive. He concludes that taxpayers may be at risk if nuclear plant-owning subsidiaries are unable to continue making safety related or decommissioning expenditures or pay Price-Anderson Act²¹ premiums, and he recommends that the Commission ensure that the Co-Applicants cannot simply avoid operating and/or decommissioning liabilities for proposed Unit 3 and transfer such liabilities to the State of Maryland, its taxpayers and ratepayers, by having the plant's single asset owner declare bankruptcy.²²

B. Public Comment

In addition to the witnesses on behalf of the parties noted above who testified at the evidentiary hearings held in this

²¹ The Price Anderson Act is a federal law which governs liability-related issues for nuclear facilities constructed in the United States, the purpose of which is to partially indemnify the nuclear industry against liability claims arising from nuclear incidents while ensuring compensation coverage for the general public.

²² In pre-filed testimony, Mr. Schlissel also proposed certain recommendations and criticisms of the NRC review of financial qualifications of new nuclear power plant owners and their adequacy to assure plants are operated and decommissioned safely. Upon granting in part of a Motion to Strike, these criticisms of NRC reviews and NRC financial qualifications were stricken from Mr. Schlissel's pre-filed direct testimony, Joint Intervenors' Exhibit No. 1, as being more properly brought before proceedings conducted by the NRC.

matter, three evening hearings for the purpose of receiving public comment on the application were also conducted in August 2008 near the location of the plant in Calvert County. These hearings were very well attended, with numerous speakers both in support and in opposition to the application and construction of a third nuclear power plant. In addition, written public comment has also been submitted both in support and in opposition to the application. Also, a fourth public evening hearing was held in March 2009 for further comment on the Air Permit aspects of the application.

At the public hearings, the President of the local governing body involved, the Calvert County Board of County Commissioners, attended each of the evening hearings and commented in strong support of the project, and has also submitted a letter by the County Board in support of the project. In the letter, dated August 12, 2008, the Calvert County Board states it concurs with the environmental report that there will be minimal impact from the construction and operation of a new nuclear reactor, specifically noting that the hybrid cooling tower design will take in 98 percent less water from the Chesapeake Bay than existing Calvert Cliffs Units 1 and 2, and the proposed use of a desalination plant eliminates the need for using area groundwater sources for operations once the plant is operational. The County Board further notes nuclear generation reduces emissions of air pollutants, and the transmission grid is already in place at Calvert Cliffs so construction of new large transmission lines will be avoided. The Board concludes that Calvert Cliffs has proven to be

a caring and committed corporate citizen in the County and demonstrated dedication to public safety so that the Board supports this potential expansion of the nuclear plant facility.

In addition to the local governing body, the vast majority of speakers at the evening public hearings also expressed support for the application, as speakers who commented at the three August evening hearings supported the application by a consistent ratio of approximately three to one at each of the three August evening hearings. Furthermore, speakers who identified themselves as from Calvert County also expressed clear support for the proposed plant by the overwhelming majority of such local comment, as the supporters of the plant noted the long-time successful and safe operations of the existing facilities and expressed support for the economic impact, including jobs and revenues, and also support for an additional baseload source of energy that would not contribute to greenhouse gas emissions. At the fourth public evening hearing held in March 2009 at the specific request of opponents for additional comment on the Air Permit, the majority of speakers who commented actually expressed support for the application, with concerns expressed by the opponents regarding the air modeling, air monitoring, and cumulative effects of emissions.

Of those speakers who are opposed the plant, as well as written comment in opposition, many such opponents expressed support for renewable sources of energy while expressing concerns and/or opposition to nuclear power as a source for generation. Specific concerns expressed by the commenters involved nuclear

waste storage and disposal, and also nuclear safety issues concerning possible radiological effects and emergency evacuation plans in the event of a nuclear disaster. Questions have also been raised regarding the cumulative environmental impact of the proposed plant, as the area has the two existing nuclear plants as well as the Cove Point LNG facility. Also, some questions or concerns were raised regarding the French ownership interests in the plant and the EPR plant design, with certain comments also raising issues of financial risk to ratepayers and taxpayers that may result from the project. The comments in opposition to the plant clearly expressed strong preference for alternative sources of energy, such as use of wind or solar power for future energy needs, as well as advocating conservation measures to avoid construction of the power plant.²³

C. Briefs and Final Positions of the Parties

Following the August hearings, briefs and reply briefs were submitted by the parties, with reply briefs filed on December 8, 2008. In these briefs, the parties reiterate their basic positions, with opposition to granting the application noted only by the Joint Intervenors. The Joint Intervenors remain opposed to the application, claiming the EPR (Evolutionary Power Reactor)

²³ Among the comments in opposition, a group called the "Chesapeake Safe Energy Coalition" has submitted numerous form postcards expressing opposition to the plant, with such postcards favoring the conservation goals of the EmPower Maryland program. These form postcards constitute the largest number of written comments received, so that the majority of written comments received are in opposition to the application.

design is untested and further claiming it will cause negative effects to the stability and reliability of the electric system, while also stating the proposed plant presents economic risks. They also argue it would fail to address Maryland's pressing short-term energy needs which will exist in the 2010-2011 timeframe prior to operation of the plant. However, in their final position on brief, the Joint Intervenors state that in the event that the application is approved, the Commission should condition any CPCN on additional investment in energy conservation, solar power, and wind power as they propose the Co-Applicants be required to invest 25 percent of the capacity of Calvert Cliffs, or 400 MW, in renewable energy resources that can be used by Maryland ratepayers. The other parties to this proceeding, that is the Co-Applicants, PPRP, OPC,²⁴ and Staff, all conclude that the application may be granted subject to recommended licensing conditions, with these parties indicating that adoption of their respective conditions would satisfy applicable requirements and support a finding that the proposed project will be in the public interest.

While the Co-Applicants and PPRP both support grant of the application, their final positions indicate differences as to certain specific conditions that should be incorporated with the Certificate. These differences concern conditions relating to the starting date and duration of the Water Appropriation Permits, and

²⁴ OPC, which did not present any witnesses, has not indicated explicit support or opposition to the application, but has suggested two proposed conditions to a grant of the application.

also jurisdictional issues regarding the authority of the Maryland Department of the Environment to review, revise, and modify the terms of those permits, which disputed conditions are discussed below in this Order. In addition, the Co-Applicants have expressed opposition to a condition proposed by the Office of People's Counsel establishing a three-year dormancy period for expiration of the CPCN, stating such a proposed condition will create additional regulatory uncertainty. The Co-Applicants also oppose the proposal of the Joint Intervenors that, in the event that the application is granted with conditions, the Co-Applicants should also be required to provide a certain percentage of power by alternative renewable resources.

In light of the dispute regarding conditions, especially between the Co-Applicants and PPRP, the Co-Applicants filed a Motion to File a Surreply Brief in response to the conditions in dispute, which Motion was not opposed, and accordingly the December 19, 2008 Surreply Brief is accepted into the record.

In their final position, the Co-Applicants have also requested a waiver of the two-year period prior to commencement of construction provided in Section 7-208 of the PUC Article, while further seeking to have an expedited appeal period in this proceeding.

As noted above, following the filing of briefs, the record was re-opened for additional comment on the Air Permit aspects of the application, including the evening public hearing held on March 9, 2009. Following this hearing, the Co-Applicants

and PPRP filed further information, which will be considered as responsive comments to the public comments, addressing the concerns expressed at the final Air Permit public hearing, including information regarding air modeling and air monitoring. PPRP also filed its final recommended licensing conditions on March 19, 2008, and a further letter on April 3, 2009 clarifying its position on certain comments.

All the testimony and evidence on the record, as well as all comments expressed at the hearings and submitted in writing, and the parties arguments on brief, have been reviewed and considered in rendering a decision in this matter.

II. DISCUSSION AND ANALYSIS

A. Issuance of CPCN

As noted above, this case concerns the application by Co-Applicants UniStar Nuclear Operating Services, LLC and Calvert Cliffs 3 Nuclear Project, LLC for a Certificate of Public Convenience and Necessity to build a new power plant of 1 710 MW nominal capacity and 1600 MW output on the existing Calvert Cliffs campus. This project has undergone extensive review by various State agencies under coordination by the Power Plant Research Program, and it has been the subject of extensive hearings in this matter as noted above. The record shows that the Co-Applicants, PPRP, and Staff support grant of the CPCN subject to various conditions, with disputes as to certain conditions primarily

regarding jurisdictional authority issues concerning wetlands and water appropriations and future modifications of such conditions. Also, dispute has arisen with respect to expiration of the Certificate pursuant to the final positions of People's Counsel and the Co-Applicants, as OPC has not indicated opposition to grant of the application but proposes conditions regarding possible expiration of the Certificate due to non-activity. While these parties support or do not oppose the application, although with certain disputed conditions, the Joint Intervenors in this proceeding, MaryPIRG, Nuclear Information and Resource Service, Public Citizen, and Beyond Nuclear at NPRI, all oppose the grant of the Certificate as they primarily raise cost issues of the plant, while clearly supporting use of alternative sources of generation and conservation rather than nuclear generation. Also, the Joint Intervenors have proposed a condition requiring the Co-Applicants to also provide a percentage of alternate energy sources in the event the application is granted.

This application has been filed pursuant to Sections 7-207 and 7-208 of the Public Utility Companies Article . Pursuant to Section 7-207(e), the Commission shall take action on an application for a Certificate of Public Convenience and Necessity only after due consideration of the following factors:

- (1) the recommendation of the governing body of each county or municipal corporation in which any portion of the construction of the generating station or overhead transmission line is proposed to be located; and

(2) the effect of the generating station or overhead transmission line on:

(i) the stability and reliability of the electric system;

(ii) economics;

(iii) esthetics;

(iv) historic sites;

(v) aviation safety as determined by the Maryland Aviation Administration and the administrator of the Federal Aviation Administration;

(vi) when applicable, air and water pollution; and

(vii) the availability of means for required timely disposal of wastes produced by any generating station.

Under Section 7-208, the Commission shall also include in the Certificate it issues the requirements of the federal and State environmental laws and standards that are identified by the Department of the Environment, and the methods and conditions that the Commission determines are appropriate to comply with those environmental laws and standards.²⁵

In reviewing the record, the Co-Applicants and PPRP have presented substantial testimony and evidence with respect to the statutory factors required to be considered by the Commission noted above. These parties conclude that the application should be granted, subject to numerous conditions, which conditions will

²⁵ In addition, the Commission may not adopt any method or condition under these provisions that the Department of the Environment determines is inconsistent with federal and State environmental laws and standards. § 7-208(f).

assure compliance with all applicable regulatory standards including compliance with environmental requirements, according to the expert testimony presented by the Co-Applicants and PPRP witnesses. The differences between these parties with respect to certain specific conditions involve jurisdictional issues and certain timelines, primarily with regard to water appropriations, which disputes are discussed below. The Commission Staff, through its witness, concludes that the proposed project will be a beneficial source of power for Maryland, providing it meets requirements of PJM impact studies and the interconnection service agreement. Therefore, Staff recommends two conditions regarding certifications of improvements required by PJM and the interconnecting transmission line owner, which conditions are uncontested and accepted by the Co-Applicants. The Office of People's Counsel, which party did not present any direct witnesses of its own but has participated at the hearings in this matter, proposes two conditions regarding submission of progress reports on a regular basis as well as a condition regarding a date certain for expiration of the Certificate should there be failure to progress to completion. Therefore, OPC proposes that any three-year period of inactivity in starting construction or dormancy after construction would require a re-filing. The Joint Intervenors in this proceeding are the only parties to oppose grant of the application, and have cited the cost of the project as well as the corporate structure and novel EPR design as the primary grounds for their opposition.

The public comment in this proceeding has produced considerable support for the project, with many supporters praising the operation of the existing Calvert Cliffs nuclear units, including numerous expressions of support for the high level of concern for safety. Supporters also cite community benefits that have been experienced by the operations of the existing units, with confidence that the third unit at that location will also be of great benefit to the community. In this regard, the local governing body and clear majority of public commenters who are within the local jurisdiction of Calvert County, as well as the majority of commenters from nearby local jurisdictions as well as the local government officials from the neighboring southern Maryland counties, have also indicated clear support for the project as they believe the existing units and proposed unit are beneficial to the local community and region, including economic benefits of both jobs and local tax revenues. In contrast, opposition has been expressed in a number of public comments received, with such opponents primarily from more distant areas than the local area and neighboring counties, with the greatest number of comments in opposition expressed in form comment that has been presented by groups or individuals opposed to nuclear power as such opponents favor alternative energy, especially renewable energy or promotion of conservation. There is also a small group of public commenters located within Calvert County who have attended and commented in opposition at the August 2008 evening hearings, and also requested the additional hearing on the Air Permit which was held in

March 2009. Several of these members of the public opposed to the application also seek another hearing with regard to water quality. This opposition is clearly opposed to nuclear power and has also cited concerns regarding cumulative effects of the plant's emissions upon the environment and local areas near the plant site in their arguments against the application.

Upon review of the record, including the evidence and testimony submitted by the parties, the comments rendered by the public at the three August 2008 general comment evening hearings and the fourth March 2009 specific evening hearing held for the purpose of receiving comment on the Air Permit, as well as the written public comment that has been submitted during the course of this proceeding and the written arguments of the parties submitted in brief, I find and conclude that the application for a Certificate of Public Convenience and Necessity for construction of a third nuclear unit at the Calvert Cliffs site located in Calvert County, Maryland, should be granted. Furthermore, the CPCN shall be granted subject to various conditions that the record reflects will protect the environment and assure compliance with applicable standards and regulations. I find such a plant will provide additional power at the site of existing nuclear facilities, Calvert Cliffs Units 1 and 2, with numerous conditions on operations that will assure adherence to environmental standards so that the grant of the application will be in the public interest. The record reflects the application satisfies the statutory criteria, as discussed further below, and will actually be a major source of

electric power with far lower emissions than other major power plants. The proposed plant will be a new source of 1600 MW of electric power for use by the State and region at a site that is supported by the local government and community, with the existing operations at such site showing a long history of satisfactory and safe operation. The record shows this proposed application by an affiliated company will produce large amounts of power with significantly less emissions of pollutants than fossil fueled plants, and it would be in the public interest to grant the application to allow construction of the additional power source unit at that same location which has a proven record with regard to nuclear power and existing infrastructure to support the project.

While much of the opposition to the application is clearly opposed to nuclear power and believes alternative renewable energy sources or increased conservation and efficiency goals should be implemented rather than construction of a third nuclear power plant, the fact that this proposed plant will be at the site of existing nuclear operations makes many of the concerns in general opposition to the use of nuclear power of lesser weight to consideration of this project, as such opposition is opposed to the institution of nuclear power, which power is already in place at the site. The fact is that nuclear power has operated at the Calvert Cliffs campus for many years, with the record in this case showing a high regard for safety by the existing operator and substantial benefits to the public from these operations. Much of the opposition is clearly opposed to nuclear operation in general

whereas a third plant at this existing location will provide significantly increased power output with very little additional marginal impacts by the addition of a third plant at such site. In fact, it is hard to think of any better site for an additional nuclear power plant in Maryland, as the Calvert Cliffs site has the existing infrastructure and long record of successful operations, which factors in support of an additional nuclear plant at that location would not exist anywhere else in the State. Also, despite the concerns and opposition to nuclear power expressed by opponents, the evidence on the record indicates that nuclear power has a more benign environmental impact than electric plants powered by fossil fuels, with a substantially lower level of pollutant emissions. The record shows that the only emission that required substantial further review as constituting a potentially significant level was Particulate Matter, for which the additional review, including meticulous review engaged by the Power Plant Research Program, concludes that such PM emissions will be in compliance with applicable standards subject to the recommended conditions, which conditions limit the amount of PM, including limits on PM_{2.5}, the smaller particles, which is a subset of PM.

As noted above, the only parties who have opposed the application are the Joint Intervenors, whose one witness emphasizes the costs of the project as the primary grounds for opposition, as well as the corporate structure and the EPR design of the proposed plant. With respect to this opposition based on cost, Mr. Schlissel, the witness for the Joint Intervenors, stated he has

reviewed the nuclear industry and other publicly available documents regarding estimated costs of proposed nuclear power plants and considers such cost estimates as uncertain and generally underestimating actual costs of the constructed plants compared to projected costs. He states that frequently ratepayers have to bear many millions of dollars of costs for abandoned projects, and also cites costs for completed nuclear power plants becoming much more expensive than proponents had claimed, resulting in rate shock. In this case, he notes that even a 100 percent cost increase, that is a doubling of costs, would mean a new plant like Calvert Cliffs 3 would be extremely expensive, and he questions whether UniStar will be able to obtain federal loan guarantees for all or even most of the cost of financing the project. He further considers the limited liability ownership structure to be an effective mechanism for transferring profits to the parent owner while avoiding tax payments and also providing a financial shield for the benefit of the parent owner. He believes the EPR design, which has not yet been certified, presents further uncertainties with respect to this application.

While the Joint Intervenors have stressed the costs, corporate structure, and EPR design as grounds for their opposition, which themes have been repeated by several members of the public in comments opposed to the application, the record is clear that the proposed plant is not being built as part of a regulated ratebase for any Maryland ratepayers of any electric utility in Maryland. Rather the plant will be owned and operated as a merchant

power plant whereby the risks for recovering costs, including any cost over-runs, rest solely with the Company's investors rather than utility ratepayers. Mr. Schlissel also expressed opposition to the federal programs that provide loan guarantees and may place taxpayers at financial risks if the nuclear plant subsidiaries are unable to continue making safety-related or decommissioning expenditures or pay required Price-Anderson Act premiums. However, these concerns should be directed at Congress which has established such programs in promotion of nuclear energy, and do not involve ratepayer risks that would be borne by ratepayers of regulated utility services in Maryland. Accordingly, to the extent Mr. Schlissel opposes these federal programs, his efforts would be better directed at the appropriate federal jurisdictions and do not constitute grounds for denial of this application before the Maryland Public Service Commission.

The Joint Intervenors' opposition based on an EPR design is also more properly directed toward the concurrent proceedings before the Nuclear Regulatory Commission where the design of the plant must be approved. Also, the concerns and opposition based on the limited liability corporate structure operation of the plant does not present grounds for rejection of the application as such an ownership structure is apparently common for this industry, and ownership issues are also reviewed and must be approved by the NRC. An additional concern that is also within the general purview of the NRC and has been repeated by the Joint Intervenors as well as in public comments in opposition concerns waste disposal of nuclear

waste produced by the plant. However, the record in this case shows that there is capacity to store such additional waste from Unit 3 for several years onsite as is the waste of the existing units. As to long-term waste disposal, this is also a federal issue wherein the federal government is attempting to establish a long-term storage site for nuclear waste. The fact that such long-term nuclear waste disposal issues have not been fully resolved and implemented does not constitute grounds for rejection of this third unit at the existing site where such waste produced will have the same near-term disposal as the waste of operating Units 1 and 2, and long-term disposal will likewise be subject to the same long-term disposal as the existing plant waste.

1. Recommendation of Local Governing Body

In reviewing the application and record in this case with respect to the specified criteria that the Commission must consider pursuant to Sections 7-207 and 7-208 of the PUC Article, as noted the recommendation of the local governing body strongly supports grant of the application, as the Calvert County Board of Commissioners has submitted a letter to that effect and also commented at each of the public hearings to reiterate their strong support for the project. In addition, as noted above, the public comment from those members of the public from Calvert County who presented comments in this proceeding has consistently expressed support by an overwhelming majority during the public hearings and in written comment. The record further contains expressions of

strong support for the project by local governing bodies of neighboring counties to Calvert County, as the Chairman of the Tri-County Council representing three southern Maryland counties , the President of the St. Mary's County Board of County Commissioners, and the President of the Charles County Commission have also appeared at the public evening hearing sessions and expressed support for the project. Accordingly, the record shows strong local support by the local governing body, neighboring jurisdictions, and clear majority support of the local population who have commented and are most directly impacted by the project location.

2. Stability and Reliability of the Electric System

The beneficial effect of the generating station on the stability and reliability of the electric system is also supported by the evidence on the record, as Commission Staff witness Taborsky has concluded the project will be a beneficial source of power for Maryland providing it meets requirements of PJM's impact studies and interconnection service agreement, which conditions he has proposed and are not contested in this proceeding. Mr. Taborsky notes that the additional power provided by the plant will lessen Maryland's dependence on fossil fuels and will reduce the State's dependence on imported electricity. He states the nuclear plant will be a welcome source of baseload power designed to run continuously, which would help peak period congestion on transmission lines within the State to the benefit of the public. Mr. Taborsky

concludes the project should have a positive effect on reliability and stability of the electric system and will be a beneficial source for Maryland and the electric grid in general. The Joint Intervenors contend the EPR design will negatively impact the stability and reliability of the grid stating the EPR design is untested in practice and cost over-runs raise doubts the unit will ever be completed, thereby impacting reliability. However, the design must be approved by the NRC, and if the project never comes to fruition, there is no impact to the grid.

3. Economics

The Joint Intervenors have also contested the plant's effect with regard to economics by citing potential for cost over-runs that they have argued will be to the economic detriment of ratepayers. However, as discussed above, the record shows the plant will be a merchant plant that is not part of regulated ratebase of electric utility customers in Maryland, and therefore risks of cost over-runs and other economic risks of the plant are borne by the shareholders rather than any ratepayers of regulated utility services. With respect to the economic impact, much of the local support that has been expressed by the local governing body as well as business and other economic interests in the locality and neighboring areas support the plant due to the significant beneficial economic impact that the construction and operation of the plant will have on the local economy. The Co-Applicants themselves consider some of the specific economic effects and impacts of the

project to be largely confidential, as the Company will be negotiating contracts and desires protection of certain economic information. However, the record is replete with estimated beneficial impacts to both local taxes, incomes, and other economic data so that it is clear that the project will have a significant positive economic benefit of millions of dollars to the local area as well as to the State in general. Also, ratepayers of regulated utility services will likely receive some economic benefits through the provision of the additional power source that may reduce congestion charges and provide a further source of power that local regulated utilities may bid for in auctions to supply their local loads. However, if the costs of such power are higher than other competitive bidders, local ratepayers would not be burdened by such prices if power supplies can be achieved more economically through other sources, with such risks again falling upon shareholders rather than ratepayers if the output proves to be uncompetitive.

4. Esthetics

No substantive issues have been raised with respect to the esthetics of the proposed plant, as the record is clear that the proposed plant will be located on the existing site of Calvert Cliffs Units 1 and 2 so that impacts from the new plant are minimized by having it placed at an existing power plant location. The record also reflects the site is very large, and as noted by the State agencies' witness with respect to socio-economic impacts,

most construction activities would not be visible from outside the site boundary.

5. Historic Sites

No issues have been raised with respect to historic sites, as once again the location of the site on an existing power plant campus clearly reduces such impact. Also, the expert witnesses who have testified note that a consultant has surveyed architectural resources within the area of potential effect and several sites have been recommended to be potentially eligible for the National Register of Historic Places. PPRP's witness has recommended that until a memorandum of agreement between the Maryland Historical Trust and UniStar has been reached stipulating agreed upon mitigation measures, no site preparation work or construction activities having potential to affect historic properties should take place within the limits of National Register-eligible archeological or structural resources, nor should any eligible structures be demolished or removed. These recommendations have basically been accepted in Conditions 56 and 57, with the record indicating no controversy so that the application may be granted subject to such conditions.

6. Aviation Safety

No issues with respect to aviation safety have been raised in this proceeding. The location of the new plant at the existing site of Units 1 and 2 with comparable-sized structures

shows evidence of no detrimental effect on aviation safety should occur from this third plant at the same general location.

7. Air and Water Pollution

a. Air Impacts

Issues of air and water pollution as specified in Section 7-207(e)(2)(vi) are among the most important criteria that are considered in a CPCN application. In this case, the Co-Applicants and PPRP have produced extensive testimony with respect to these factors, with the testimony and evidence submitted by the expert witnesses clearly stating that the application may be granted and the plant can be constructed and operated in accordance with all applicable environmental regulations provided the Certificate incorporates recommended conditions.²⁶

As noted above, the Co-Applicants have presented Robert Iwanchuk as an expert witness who has testified that emissions from the plant will not cause or contribute to an exceedance of National Ambient Air Quality Standards, and the project will comply with New Source Review/Prevention of Significant Deterioration permit requirements. The impacts for sulfur dioxide, nitrogen oxides, and carbon monoxide will be well below thresholds noted in EPA guidance for screening impacts, although he states the project will trigger PSD review for Particulate Matter.

²⁶ The dispute over specific conditions discussed below does not change these parties' recommendation in support of the grant of the CPCN, but rather concern specific aspects of the conditions as to jurisdictional issues and timelines.

PPRP has presented three witnesses as a panel, Mr. Paul, Ms. Ross, and Mr. Garrison. Mr. Paul noted the State evaluated emissions of criteria pollutants with respect to NAAQS standards which have been set by the federal EPA to protect the public health and welfare with an adequate margin of safety. Mr. Paul also concurs that the only emission reaching a level to be subject to PSD review in this case is Particulate Matter, as other projected emissions from the project are less than significant thresholds, including the emissions that may cause ozone, for which the County is designated a moderate ozone non-attainment area. Mr. Paul has reviewed the Company's proposed control of PM from the plant equipment which will produce emissions during operations, including the cooling towers and emergency generators, and notes the Co-Applicants propose control of this pollutant through installation and operation of high-efficiency drift eliminators for the cooling towers and combustion practices and limits on operations for the emergency diesel generators. PPRP is in accord that the Company's proposals constitute the Best Available Control Technology (BACT), subject to limitations on hours as contained in the Recommended Licensing Conditions. These air quality conditions are contained in the Recommended Licensing Conditions at Conditions 63 through 93, with Conditions 75 through 78 specifically addressing BACT with regard to Particulate Matter emissions and performance testing, including specific limits on such emissions (limits on PM, PM₁₀, and PM_{2.5}) from the emergency diesel generators, the station blackout generators, the Circulating Water

System ("CWS") cooling tower, and the essential service water system ("ESWS") cooling towers. According to the evidence on the record, including the testimony and evidence by the PPRP witnesses who provide the independent expert State agency review on this matter, the Company's proposals and the Recommended Licensing Conditions constitute the BACT for Particulate Matter emissions from the proposed plant and will render the plant in compliance with applicable requirements so that the application should be granted with such conditions.

While the expert testimony on the record in this proceeding indicates a clear consensus that the application may be granted subject to conditions which will protect the environment from adverse impacts with respect to air emissions, as noted the record was re-opened for further comment on the Air Permit. The comments from various members of the public opposed to the plant expressed concerns with respect to the effects of the plant on air emissions, so that the record was re-opened and further hearing was held on March 9, 2009 solely with respect to the Air Permit aspects of the application. The members of the public who opposed the plant raised concerns with regard to cumulative effects, noting the existing Units 1 and 2 in the area as well as the Cove Point LNG plant nearby, and the comments also noted that the area is designated as non-attainment for ozone. Concerns with Particulate Matter were specifically expressed, primarily the smaller $PM_{2.5}$, which can have a deleterious effect on health as the small particles can affect lungs. In addition, the comments indicate a clear skepticism

of the results of the Co-Applicants' and PPRP's review of the project emissions, as such recommendations are based upon air modeling and air monitoring systems with air quality monitors generally located in distant areas. Many of the opponents believe that such results cannot be trusted, as they believe that only actual results from local monitors would satisfy their concerns. Importantly, however, no evidence on the record or comments in opposition to the issuance of the CPCN, which also constitutes the issuance of an Air Quality Permit to construct, including PSD approval, have presented evidence or information that the proposed measures and conditions do not constitute the Best Available Control Technology for the plant with respect to Particulate Matter emissions.

In response to these public comments at the March 9, 2009 Air Permit public evening hearing, at the conclusion of the hearing Mr. Paul of PPRP and Mr. Iwanchuk on behalf of the Co-Applicants responded with further information as to the air quality, emissions and air monitoring and modeling concerns. Mr. Paul stated that the actual emissions from this facility are minimal, especially compared to fossil fueled plants, and that Calvert Cliffs is the least polluting of any power plant in Maryland for all criteria pollutant emissions. Also, the monitors are put in place by certain protocols specified by federal regulations and the federal Environmental Protection Agency ("EPA") guidelines, and modeling conforms to EPA guidelines which are applicable across the country. Mr. Paul also noted that the

Maryland Department of the Environment has responsibility for the permitting and continued compliance of sources of air emissions, and measurements are taken of the actual emissions from power plant sources.

Mr. Iwanchuk reiterated at the public hearing that the results from the studies show that the plant will meet or exceed air quality standards established for the protection of public health, which included review of the cumulative effects of adding emissions to existing air quality. As to criticisms of modeling, he noted that emissions are evaluated at the design stage as the plant is not yet constructed and that much of the review is modeled on peak load running times that are likely to overstate actual emissions. With respect to Particulate Matter, which is the only emission that required further evaluation, he stated that the Particulate Matter is mostly sea salt and natural salt emissions from the Bay are actually much greater. He also disputed the contention of certain public commenters that the existing Units 1 and 2 at Calvert Cliffs emit over 1,000 tons of PM_{2.5} per year, stating the actual emissions have averaged only 2.5 tons per year based on recent data (March 9, 2009 Evening Hearing, at T. 830). As to the lack of a local monitoring station, the monitoring data used as background pollutant concentrations is taken from a higher density area in Fairfax County, Virginia, which results in higher cumulative emissions levels, and he concludes that the project will meet requirements for a PSD permit and will comply with federal and

state air regulatory requirements including stringent BACT emission limits, with no adverse impacts on human health or the environment.

Following the hearing with regard to Air Permit concerns, on March 19, 2009, the Maryland Department of the Environment submitted through PPRP a letter with certain revisions to the Recommended Licensing Conditions.²⁷ These revised final conditions contain both short-term and long-term emission limits on the cooling towers as well as operational limits on the emergency generators. Also, the letter states the Co-Applicants have stated no objection to including these revised emission limits on the cooling towers and emergency generators. These revised conditions affect Conditions 75 through 78,²⁸ and specify limits on emissions of Particulate Matter with the State concluding that such revisions do not change the conclusion that "the site is suitable and that the plant can be constructed and operated in accordance with all applicable environmental regulations provided the Certificate

²⁷ The Co-Applicants and PPRP have also filed letters in response to the public concerns with greater explanations of the modeling and air monitoring systems, which letters will be considered as further responsive comments to the public comments. Of note in these comments is that by far the largest source of PM_{2.5} emissions in Calvert County is residential wood burning, with emissions from Calvert Cliffs, including potential emissions from Unit 3, a small percentage compared to residential emissions.

²⁸ In its final form, Condition No. 75 specifies Particulate Matter emission limits for the emergency diesel generators, and provides such limits will be achieved by burning of diesel fuel with a maximum sulfur content of 0.05 percent by weight, with reasonable worst-case hours of operation up to 600 hours per year (with an exception if necessary for safe operations and shut down). Condition No. 76 specifies limits for the station blackout generators, including burning of ultra-low-sulfur diesel fuel with a limit of 200 hours of operation per year (with no restriction for Loss of Offsite Power events needed for safe operations and shutdown). Condition No. 77 specifies limits (including PM_{2.5} limits) for the CWS cooling tower, including use of high efficiency drift eliminators. Condition No. 78 specifies limits (including PM_{2.5} limits) for the ESWS cooling towers, including use of high efficiency drift eliminators.

incorporates the attached recommendations as conditions to the CPCN."²⁹

Upon review of the record, I find and conclude that the final revised conditions submitted on March 19, 2009, which modify Conditions 75 through 78, represent the BACT and constitute adequate safeguards on the emissions of Particulate Matter and will be accepted. While certain opponents of the project have expressed concerns with respect to the Air Permit aspects of the application, the evidence on the record shows that with such conditions, the proposed plant will include the Best Available Control Technology for PM emissions and meet applicable standards, and the application accordingly will be granted with such conditions. While some members of the public clearly do not trust the air modeling and lack of a local air monitor station near the Calvert Cliffs site, the expert testimony indicates that such modeling and monitoring systems are set up to consider peak loads and to protect air quality and the environment throughout the entire area, and the local air quality and environment will be within acceptable limits and also protected according to the expert witnesses who have testified in this proceeding. Accordingly, I find and conclude that the application will comply with all applicable air quality requirements, and the Air Permit aspects of the application have been satisfied so that the application may be granted.

²⁹ March 18, 2009 letter from William V. Paul, at p. 3 (filed March 19, 2009 by PPRP).

However, in reviewing the air emissions concerns of the public, I note that some of the data cited in the responsive comments of the Co-Applicants from the EPA air data database are somewhat dated, and also that the closest air monitoring station to Calvert County is in Upper Marlboro, Maryland which the comments indicate is six miles from Calvert County but clearly is located near the northern part of Calvert County. While the record does not indicate that a local air monitoring station should be required at this time as the PM emitted by the plant will be primarily salt particles and appears to constitute a very small amount of the total Particulate Matter in the ambient air quality and is within acceptable levels, I request that MDE review more recent data prior to the plant going online, which is proposed to be at the end of 2015. At that time, if it would be in the public interest to establish an additional air monitoring station for Particulate Matter in southern Calvert County near the site of the Calvert Cliffs nuclear campus, and if MDE recommends a local air monitoring station for PM, it may be added as a condition of this CPCN prior to completion of construction and commencement of operation of the plant either through agreement of the Co-Applicants and MDE or upon consideration of a motion by MDE, if necessary.

b. Water Impacts

With respect to water pollution and water impacts in general, the record does not indicate any real issues in dispute with respect to the effect on water resources. The Co-Applicants

have presented testimony on water impacts with respect to both groundwater impact from using groundwater resources during construction as well as evidence regarding surface water impacts from operation of the plant including use of desalinated Chesapeake Bay water. Initially, the Co-Applicants proposed utilizing existing appropriations for groundwater from the allocated amounts for Calvert Cliffs Units 1 and 2 during the construction phase, but during the course of the proceeding changed its proposal to utilize up to two new wells for groundwater purposes that would obtain water from the Aquia aquifer, which has many other users, and also construction dewatering obtained from the surficial aquifer. The witnesses presented by the Co-Applicants note the temporary nature of such groundwater usage for construction and dewatering purposes, and these witnesses indicate there is sufficient availability in the aquifers so that this temporary usage would not be detrimental.

The State's witnesses with respect to water impacts are in general agreement with the conclusions provided by the Co-Applicants and have also proposed numerous conditions regarding water supply. Proposed Conditions 6 through 16 concern surface water supply for operations including a daily average limit of 63 million gallons on a yearly basis and a maximum daily withdrawal of 72 million gallons from the Bay water, which water shall be used for cooling water and operational uses for the new unit. In addition, proposed Conditions 17 through 27 concern the groundwater supply during construction, with a limit on groundwater withdrawal to a daily average of 100,000 gallons on a yearly basis and a daily

average of 180,000 gallons for the month of maximum use, which water shall be withdrawn from up to two production wells in the Aquia aquifer. Importantly, if the MDE Water Management Administration ("MDE-WMA") determines a drought period or emergency exists requiring preservation of the aquifer, the Company may be required to reduce groundwater withdrawal subject to continuation of nuclear safety-related water-dependent construction activities or continuation of concrete pours. Proposed Conditions 28 through 35 concern construction dewatering authorization which would appropriate use of water from the surficial aquifer. This withdrawal would also be temporary during the period of construction and is limited to a daily average of 75,000 gallons on a yearly basis and a daily average of 100,000 gallons for the month of maximum use. Additional water supply conditions are contained in Conditions 36 through 38, and water discharge conditions are specified in Conditions 39 through 42.

These conditions have substantively been agreed by the Co-Applicants and PPRP, although differences exist with respect to certain timing factors regarding initiation of groundwater withdrawal, expiration and renewal of water appropriations, and jurisdictional authority to revise conditions to protect and control the water resources of the State. These differences are discussed below.

As noted above, some members of the public filed written requests following the final evening hearing held on March 9, 2009 that an additional public hearing be held to address water quality

issues as well. As noted earlier, these requests were untimely as they were made seven months after the public comment period was closed, with the record re-opened only for comment on the Air Permit. However, those requests have been reviewed, and request additional hearing with respect to effects on water quality as well as effects on groundwater availability.

With respect to impacts on water resources, the record reflects that the Co-Applicants will engage in a stormwater pollution prevention plan for the site as well as best management practices designed to minimize potential for accidental discharge of contaminants, and will also conduct additional on-site surface water monitoring to compare established water quality benchmarks to current water quality conditions.³⁰ Also, discharges from Unit 3 must comply with National Pollutant Discharge Elimination System ("NPDES") Permit requirements issued by the Maryland Department of the Environment, and PPRP's report states that potential impacts from chemical constituents in the cooling discharges from Unit 3 will be minimized by compliance with NPDES Permit requirements. Also, this permit will limit the thermal discharges in accordance with State of Maryland requirements as contained in COMAR 26.08.03.03.³¹ Also, the PPRP report states the cumulative effects on aquatic fresh water wildlife resources from the proposed Unit 3 project would not likely be significant to most species found at

³⁰ See, DNR Exhibit No. 3, PPRP Environmental Review Document at p. 5-5, and also Condition 40.

³¹ *Id.*, DNR Exhibit No. 3, Environmental Review Document at pp. 5-5 to 5-12, and Condition 39.

the site within the region, and the Company has indicated it would provide over 10,000 linear feet of stream restoration on remaining site freshwater streams to mitigate impacts.³²

The record contains extensive testimony by both witnesses for the Co-Applicants and PPRP with respect to effects on water resources and groundwater availability, with the conclusion that such effects will not be harmful to other users as groundwater will be utilized during construction and for construction dewatering purposes with operation of the plant utilizing the Bay water. Also, if necessary, restrictions can be placed on use of groundwater resources if necessary to protect the water resources and aquifers, including the Aquia aquifer which is utilized by other water users for their potable water needs. The State agencies conclude that their recommended licensing conditions will ensure that the water supply impacts associated with proposed withdrawal for construction are acceptable, and the proposed usage by the plant for surface water appropriations are also reasonable and will not adversely impact the recreational use of the Bay or aquatic life. Accordingly, the expert PPRP review concludes that the surface water appropriation of maximum withdrawal of 72 million gallons per day from the Chesapeake Bay withdrawal is reasonable and will not have any adverse impact on the ability of others to utilize the water supply resources of the Bay.³³ In fact, PPRP notes that there

³² *Id.*, DNR Exhibit No. 3, Environmental Review Document at p. 5-33.

³³ DNR Exhibit No. 20, PPRP Environmental Review Document at pp. 6-28, 6-29.

are seven generating stations that withdraw much more than the Co-Applicants are requesting, and the requested surface water appropriation for Unit 3 is a small percentage of the existing 3,500 MGD daily appropriation issued to the Calvert Cliffs Nuclear Power Plant and incorporated for cooling of Units 1 and 2. PPRP therefore recommends that, as the requested amount of water withdrawn from the Bay will not adversely impact recreational use of the river or aquatic life, that the Company be granted an appropriation for 12 years from the date the CPCN is issued consistent with standard conditions issued by MDE-WMA for surface water appropriations.³⁴

The members of the public who have requested the further hearing on water quality have presented no new information or grounds for re-opening the record and hearing for additional comment, as the initial three public evening hearings held in August 2008 for receipt of public comment were for all aspects of the application, including any water quality concerns and comments. In fact, comments that included water impacts were presented by some of these same individuals at the prior public hearings.³⁵

In sum, I find the record does not present any grounds for re-opening the record and holding further public comment hearing for water quality as full opportunity for public comment on

³⁴ *Id.*

³⁵ For example, the person who presented the most detailed request for an additional hearing on water quality appeared at the August evening hearings and submitted a Bay State Maryland document regarding Chesapeake Bay water quality at the August 19, 2008 evening hearing.

water quality was provided at the three hearings held previously in this matter, which comments on the application included water quality issues. The record does not indicate any genuine dispute involved with water quality issues as the expert testimony indicates full review by the State agencies who are responsible for protection of the State's water resources and determined the impacts will be within acceptable limits. The record reflects that effects on groundwater appropriations will be temporary as they are limited to the construction period of the plant and, if necessary, further protections may be instituted if drought conditions would affect the availability of supply in the Aquia aquifer which would be utilized during the temporary construction period. Also, conditions may be revised or additional conditions added if necessary to protect, control and manage the water resources of the State (Conditions 14, 22 and 31). In addition, the usage from the Bay during the operation of the plant appears to be of much lesser demand and impact than the existing power plant Units 1 and 2 at Calvert Cliffs, and the expert testimony indicates use by Calvert Cliffs Unit 3 will not have deleterious impacts on the Bay.

8. Waste Disposal

The final statutory criteria involves timely disposal of waste produced by a generating station, with the only issue raised in this regard concerning public comments with regard to nuclear waste disposal. As discussed previously, nuclear waste disposal is within the purview of the Nuclear Regulatory Commission, but the

record reflects there is on-site storage capabilities for several years for nuclear waste produced by Unit 3 at the same on-site temporary disposal for waste produced by Units 1 and 2. With respect to long-term waste disposal, once again this is a matter of federal jurisdiction with the United States Government planning to set up a long-term depository and such matter is within the jurisdiction of the Nuclear Regulatory Commission.

9. Summary - Statutory Factors

In summary, based upon the factors specified in Section 7-207 of the PUC Article, I find that the record reflects the application satisfies the statutory criteria, and the Certificate of Public Convenience and Necessity should be granted subject to the appropriate licensing conditions which will assure the plant meets all applicable standards and requirements. The uncontested conditions proposed by PPRP and Staff have been reviewed and are accepted, and the disputed conditions recommended by PPRP, OPC and the Joint Intervenors will now be discussed.

B. Disputed Conditions

1. PPRP Conditions

As noted, the Co-Applicants and PPRP, while agreeing on the substance of all recommended licensing conditions, which total 93 conditions in the final recommendation of PPRP, have noted specific disputes regarding certain conditions with regard to timelines and jurisdictional approvals. These disputed conditions con-

cern aspects of water supply Conditions 7, 10 and 14, groundwater supply Conditions 18, 21, 22, 30 and 31, and one further jurisdictional dispute regarding authorization for filling tidal wetlands contained in Condition 53.

In arguing with regard to their respective positions as to the disputed conditions, the Co-Applicants and PPRP have filed extensive argument on brief with a fundamental dispute between these two parties as to authority and jurisdictional issues regarding State agencies' authority versus Public Service Commission authority in a CPCN authorization, including future extensions of specified authorizations. The Co-Applicants contend that the Commission is the single State agency vested with authority over environmental authorizations for purposes of power plant siting and further argues that the CPCN is an authorization to impact both State and private wetlands, together comprising all tidal wetlands. Furthermore, the Co-Applicants argue that, as the Commission has the authority to grant the CPCN applicant permission to appropriate waters of the State, it must logically retain continuing authority over its water appropriations.³⁶ They therefore argue that if authority to discontinue or modify the appropriation would revert to the Maryland Department of the Environment ("MDE") following issuance of the CPCN, this would essentially nullify the statutory purpose of granting authority to the Commission in the first place.

³⁶ Co-Applicants Initial Brief, at p. 10 (November 21, 2008).

In contrast to the Co-Applicants' position regarding Commission authority with respect to the CPCN and continuing authority as stated above, PPRP argues that while specific permits regarding private wetlands, water appropriations, and air permits are encompassed within the Commission authority for issuance of the CPCN, PPRP disagrees that the CPCN process encompasses licenses for work within State wetlands or permits for construction work within non-tidal wetlands and waterways.³⁷ PPRP has presented an extensive review of statutory authorizations and their history in this area, and argues that State wetlands are within the proprietary authority of the Board of Public Works and not within the CPCN process which would usurp the Board's unique proprietary authority over State-owned lands. PPRP argues that the CPCN process also does not encompass non-tidal wetlands permits, and therefore agency practice has been to exclude non-tidal permits from the CPCN process. Therefore, previous CPCNs have recognized the need for the applicant to obtain a non-tidal wetlands permit independent of the CPCN. PPRP also included an affidavit from the Administrator of the Wetlands and Waterways Program within the Water Management Administration of the Department of the Environment ("MDE-WMA") which attests it is standard practice for power plant projects to obtain non-tidal wetlands permits from MDE even where the Commission issues a CPCN. Also, it asserts it is standard practice for power plant projects to obtain waterways construction permits

³⁷ *Id.*, PPRP Reply Brief, at p. 8 (December 8, 2008).

from MDE under Section 5-503 of the Environmental Article, even where the Commission issues a CPCN.³⁸

PPRP further argues that the CPCN encompasses initial permits that are specifically included by the application for a CPCN, but not subsequent modifications, revisions, or renewals as power plants are not exempted from the need to obtain other permits except for those that are specifically encompassed in the CPCN. Accordingly, PPRP contends that while the Commission has sole authority to issue permits encompassed within the CPCN, the content of such permits remain as it otherwise would be had they been issued by the Maryland Department of the Environment. Therefore, with respect to water appropriations and private wetlands, MDE continues its oversight role, including a continuation of permit requirements and their applicability to plant modifications occurring after issuance of the initial CPCN.³⁹

This fundamental difference between the Co-Applicants and PPRP with respect to Commission and other State agency authority with regard to specific authorizations of a CPCN constitutes the apparent basis for these parties' disputes as to specific recommended licensing conditions. This dispute manifests itself in several primary differences between the parties' recommended conditions. First, there is a dispute as to certain deadlines linked to the issuance of the CPCN, as recommended by PPRP,

³⁸ See, Affidavit of Gary T. Setzer, attached to PPRP Reply Brief (December 8, 2008).

³⁹ PPRP Reply Brief, at p. 26 (December 8, 2008).

or linked to issuance of the Combined Operating License issued by the NRC, as advocated by the Company. This dispute is present in contested language within Conditions 7, 10, 18, 21 and 30. A second fundamental dispute concerns alteration of permit conditions with respect to water appropriations, including extensions of time limits, with PPRP advocating MDE having authority or discretion to extend time limits for good cause or revise permit conditions at any time. The Co-Applicants contend such extensions or revisions need not require MDE authority, and if any such authority is necessary, it would be exercised by the Public Service Commission rather than MDE. These disputed authorizations arise within Conditions 7, 10, 14, 18, 21, 22, 30, and 31. The final area of dispute involves a jurisdictional dispute as to whether work in tidal wetlands requires authorization from MDE as advocated by PPRP which, as noted above, is disputed by the Company. This dispute involves Condition 53.⁴⁰

As noted above in this Order, this application has been filed pursuant to Sections 7-207 and 7-208 of the PUC Article, which sections concern the applicable procedure and require the Certificate of Public Convenience and Necessity for construction issued by the Commission. Under Section 7-208(d), the Commission provides notice of an application to various State agencies,

⁴⁰ This dispute with regard to work in tidal wetlands appears to manifest itself in that the Co-Applicants request the Commission issue a permit to dredge and fill wetlands to construct an in-take structure, fish return discharge pipe, outfall discharge pipe, and improve barge loading facilities impacting 5.7 acres of tidal wetlands. Co-Applicants Initial Brief at p. 26 (November 21, 2008).

including the Department of the Environment and Department of Natural Resources, and the Commission shall ensure presentation of the information and the recommendations of the State units and shall allow the official representative of each unit to sit during hearing of all parties. Also, based on the evidence relating to the State units' areas of concern, the Commission shall allow each State unit 15 days after the conclusion of the hearing to modify or affirm the unit's initial recommendations. After conclusion of the hearings, the Commission shall grant the Certificate of Public Convenience and Necessity either unconditionally or subject to conditions, or may deny the certificate. Also, each certificate issued shall include the requirements of the federal and state environmental laws and standards identified by the Department of the Environment and the methods and conditions that the Commission determines are appropriate to comply with those environmental laws and standards.⁴¹ Also, the Commission may not adopt any method or condition that the Department of the Environment determines is inconsistent with federal and State environmental laws and standards. Furthermore, the grant of a certificate constitutes: "(1) authority for the person to dredge and construct bulkheads in the waters or private wetlands of the State and to appropriate or use the waters; and (2) registration and a permit to construct, as required under Title 2, Subtitle 4 of the Environment Article."⁴²

⁴¹ Section 7-208(f).

⁴² Section 7-208(h).

The Court of Appeals has commented on interpretation of the certificate authority in *Baltimore Gas and Electric Company vs. Department of Health and Mental Hygiene*, 284 Md. 216 (1979), which case involved the predecessor statute prior to code revision of the current statutory language, and such case has been cited by both parties with respect to their dispute regarding jurisdictional issues and condition language. In that decision, the Court stated

the overall scheme of the Act 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 the environmental impact.⁴³

Upon consideration of the arguments, I find that the certificate granted by the Commission, which expressly authorizes the person to dredge and construct bulkheads in the "waters or private wetlands of the State and to appropriate or use the waters," applies to both private wetlands (which is not in dispute) and also to "waters of the State," which would constitute authority by this Commission to authorize construction as to State-owned wetland property for which PPRP argues approval of the Board of Public Works is necessary as the overseer of the State's interests in any real or personal property, including submerged lands.⁴⁴ The construction of the statute that PPRP proposes, that the CPCN does

⁴³ 284 Md. 216, 231.

⁴⁴ PPRP Reply Brief at p. 13 (December 8, 2008).

not apply to authorizations for State wetlands, would effectively negate the express authorization for the person granted the CPCN to dredge and construct bulkheads in "the waters of the State" and also effectively negate the attempt to vest the Commission with "the sole power and authority to approve on behalf of the State of Maryland the erection of electric generating stations," which is the approved interpretation of the statute by the Court of Appeals. Furthermore, this interpretation is in accord with the intent of the law as enacted initially in 1971 under the Power Plant Siting Act to consolidate review of such applications for construction before the Public Service Commission, which all parties agree was the intent of the statute.

PPRP essentially argues that only very specific grants of authority, especially looking at those elements within the governing statutes regarding its specific client State agencies, are encompassed within the overall authority referenced within the Public Utility Company statute, and PPRP parses the Power Plant Siting Act so as to exclude the CPCN as an authorization over State wetlands. In further support of its argument, PPRP cites numerous prior instances wherein conditions have been included in CPCN applications that have been accepted by parties and included in the Commission's final orders that specifically reference conditional permits needed by other State agencies as to State wetlands. These examples include prior CPCNs issued to affiliated companies of the Co-Applicants, such as Commission Case No. 9048 regarding the CP Crane Generating Station owned by Constellation Power Source

Generation, Inc.⁴⁵ In this regard, the affidavit from Mr. Setzer of the Water Management Administration states that he is not aware of a single instance in which the Commission included the State wetlands license within a CPCN.

While prior cases have included specific conditions by the parties which have been accepted by the Commission with respect to other agency approvals with regard to State wetlands licenses, this does not necessarily mean that the CPCN authority of the Commission would not cover such activity. As noted by the Co-Applicants, COMAR 20.79.03.02B(4) specifically requires the applicant to demonstrate that the application complies with applicable environmental restrictions, including a "description of the effect on State or private wetlands." Also, as noted above, the inclusion of authority over State wetlands is in clear support of the overall purpose of the statute to provide a one-stop shop that vests the Commission with the "sole power and authority" to approve erection of electric generating stations with regard to the State of Maryland and its agencies.

While I find that the CPCN includes authorization as granted by the Commission to perform construction in State-owned properties, I further note that the statute specifically requires the Commission to ensure presentation of information and recommendations of the State agencies, and the certificate is subject to

⁴⁵ PPRP notes that Constellation obtained the State wetlands license for construction of and dredging an access channel to a coal unloading pier at the CP Crane facility.

conditions the Commission determines to be appropriate. The record in this case is clear that numerous conditions such as have been advocated by PPRP in this proceeding have been included in prior certificates issued by the Commission, and while such conditions similar to those in dispute here were apparently agreed by the parties when accepted by the Commission, the fact that these specific conditions are now in dispute does not necessarily mean that such conditions would not be best for the public convenience and necessity and in the public interest. Therefore, while the Commission has statutory authority to authorize construction by grant of the CPCN, it may also provide for construction only after other approvals as deemed appropriate in conditions, and accordingly the contested conditions and approvals may be accepted by the Commission within its authority to approve appropriate conditions on any authorized certificate.

In regard to the specific conditions and language that are in dispute between the Co-Applicants and PPRP,⁴⁶ a fundamental dispute concerns expiration of certain authorities if action is not commenced within certain time limits from either the issuance of the CPCN, as recommended by PPRP, or expiration from issuance of the Combined Operating License ("COL") issued by the NR C, as advocated by the Company. This dispute involves Condition 7

⁴⁶ The disputed PPRP conditions and language are included as Appendix I to this Order, with legislative format changes (i.e., striking existing language and underlining new language) constituting the Co-Applicants' proposed changes to the recommended PPRP licensing conditions. That is, the initial condition language has been proposed as recommended licensing conditions by PPRP, and the legislative changes constitute those disagreements and changes proposed by the Co-Applicants.

regarding initiation of withdrawal of surface water supply for operations, Condition 18 regarding initiation of withdrawal of groundwater supply for construction, Condition 21 regarding duration of the groundwater appropriation, and Condition 30 regarding appropriation for construction dewatering purposes. The Co-Applicants desire such periods expire from time limits set with issuance of the COL, as the long period for this project in both obtaining authority from the Commission and NRC, as well as the long construction period, would make such periods as proposed to start from the issuance of the CPCN too short so that further approvals would be necessary. The Co-Applicants further argue that while such conditions starting from issuance of CPCNs may have been appropriate in other types of CPCN cases, this project's scope is unique and short authorizations would be a signal to the financial community that would possibly jeopardize financing of the project. The PPRP recommendation to commence such periods from the issuance of the CPCN appears to be based upon prior practice, although PPRP appears to concede the Commission does have authority to push starting dates back and tie them to issuance of the combined license. PPRP also indicates the State's best judgment in balancing the reasonable needs of the Co-Applicants with other water users forms part of the basis of their recommendation to utilize periods starting from the issuance of the CPCN.⁴⁷

⁴⁷ PPRP Reply Brief at pp. 30-31 (December 8, 2008).

A second dispute concerns whether extensions for good cause should be at the discretion of the MDE-WMA, with renewal requests also filed with such agency, as argued by PPRP, or such agency need not be requested for such extensions for renewal applications as argued by the Co-Applicants. This dispute arises in Conditions 7 and 10 with regard to surface water withdrawal and appropriation renewal, Conditions 18 and 21 with regard to groundwater supply for construction, and Condition 30 with respect to construction dewatering. PPRP argues such conditions are consistent with those previously granted in prior cases by the Commission and are consistent with the MDE authority to issue any subsequent permits relating to activities occurring at the facility, including permit renewals, as PPRP argues the Commission issues only the initial CPCN with the incorporated water appropriation permit and the State agencies would retain all other authority within their respective law for renewals and extensions. In contrast, the Co-Applicants desire that such conditions relating to renewals and extensions be issued without references to WMA as the agency to exercise discretion over renewals, as they contend this authority is reserved by statute to the Public Service Commission ("PSC").

This same argument regarding the authority of WMA or the Public Service Commission also arises with regard to disputed language in Condition 14 regarding surface water appropriations, Condition 22 regarding groundwater supply for construction, and Condition 31 regarding construction dewatering, with respect to which agency, WMA or the PSC, should hold authority to revise any

condition of the appropriation or add additional conditions concerning each specific appropriation which may be necessary to properly protect, control, and manage the water resources of the State. Also, such condition revisions and additions will be accompanied by issuance of a revised appropriation.

A further disputed condition involves Condition 10 regarding the term for appropriation for surface water withdrawal, as PPRP recommends review and possible renewal of the appropriation 12 years from the issuance, which is in accord with regulations of the Department of the Environment that a permit period for water appropriations shall be 12 years unless the Department determines a shorter period is appropriate. COMAR 26.17.06.06A(1). PPRP argues there is no discretion to issue a water appropriation permit for more than 12 years, and as the Commission must include within the CPCN the requirements of federal and State environmental laws and standards identified by the Department of the Environment, it must include this provision within the certificate and there is no discretion to do otherwise.

The Co-Applicants dispute PPRP's contentions as to Condition 10 and instead recommend that the surface water appropriation issued by the Commission with the CPCN be coincident with the expiration of the Combined Operating License issued by the NRC, which would cover the life of the plant. The Co-Applicants note that the record indicates there is clearly available water in the Chesapeake Bay likely to be sufficient to meet the requested appropriation level on an annual basis over the anticipated 40+ years of

operation without harm to the environment, and such issuance co-extensive with the operating license will ensure continued safe operation throughout the Unit's useful life and remove economic risk that water will not be available for operation. They further dispute PPRP's claim that the Commission has no discretion to waive the MDE regulation limiting water withdrawal to 12 years, arguing that a regulation is neither a law passed by the General Assembly nor an environmental standard that would limit the appropriation and use sought by the Co-Applicants. However, in the event the Commission concludes it cannot grant a water appropriation and use permit for more than 12 years, they request the Commission consider alternatives that would satisfy the purported regulatory limit and reduce regulatory uncertainty, recommending as an alternative that the condition be revised to allow for four consecutive 12-year permits that would automatically renew absent a showing by State agencies, after notice and hearing, that such renewal is not warranted.

The final PPRP condition term in dispute involves Condition 53, whereby the dispute regarding authority over tidal wetlands surfaces. In this regard, PPRP proposes that the condition include language that certain payments by UniStar related to UniStar's new dredging or filling of tidal wetlands must be completed within two years of the completion of authorized work in tidal wetlands, with PPRP recommending such authorization occur by MDE in addition to the United States Army Corps of Engineers, whereas the Co-Applicants oppose the specific inclusion for

authorization by MDE in the condition. This disputed language appears to involve the dispute noted above with respect to jurisdiction of the CPCN over tidal wetlands.

Upon review of the record and arguments of the parties with regard to the disputed PPRP conditions discussed above, I find and conclude as follows:

1. Authorizations for water appropriations, including any expirations of such appropriations, shall run with respect to issuance of the Combined Operating License issued by the U.S. Nuclear Regulatory Commission as advocated by the Co-Applicants, with the timeframes specified in the conditions as written in Conditions 7, 18, 21, and 30.⁴⁸ As to extension of such initiations and time limits, the recommended language of PPRP specifying the MDE Water Management Administration shall be specified as the entity at which initial extensions for good cause shall be requested, but if dispute arises as to such initial extensions, the Co-Applicants may then file to the Commission for an extension of these initial withdrawal authorizations and extensions.
2. The contested provisions in Conditions 14, 22, and 31 regarding authority to revise conditions for protection and management of the water resources of the State shall remain as recommended by PPRP, who shall have such authority and need not request the Commission make such final decision as advocated by the Co-Applicants, so that the additional language proposed by the Co-Applicants is not accepted.

⁴⁸ The time periods stated in the conditions will be utilized, however, as discussed later, no such appropriation may exceed 12 years without renewal.

3. The surface water appropriation period in Condition 10 will be reviewed and eligible for renewal 12 years from the date of CO L issuance, with renewal applications filed with the MDE-WMA no later than 45 days prior to expiration, thereby using CO L issuance as advocated by the Co-Applicants with 12-year renewal advocated by PPRP.
4. The inclusion of MDE in Condition 53 as advocated by PPRP will be accepted so that no changes to their recommended licensing condition language for this condition is necessary.
5. In sum, modifications have been determined with respect to PPRP's recommended Licensing Conditions Nos. 7, 10, 18, 21 and 30, while no modifications have been made to PPRP's recommended Licensing Conditions Nos. 14, 22, 31 and 54.⁴⁹

In making the above determinations, I agree with the arguments of the Co-Applicants that initiation dates and their extensions should generally start from the issuance of the Combined Operating License, as this project is of such scope with approvals necessary by both this Commission and the Nuclear Regulatory Commission so that the extended periods are reasonable and in the public interest. Furthermore, I find that any requests for extensions of the initial withdrawal authorizations should first be made to the MDE-WMA, and it is fully anticipated that the parties will work out any such initial extension request and that there will be no need for Commission action on any disputes in this regard. This condition has apparently been utilized for prior CPCNs without

⁴⁹ The accepted final conditions are contained in Appendix II, attached to this order and incorporated by reference.

noticeable problems, but if an irreconcilable conflict arises on such request, the parties, specifically the Co-Applicants as the probable aggrieved party if resolution is not reached, may request the Commission to adjudicate such disputes which would fall under the Commission's authority as the issuer of the CPCN with such conditions concerning initial commencement dates and extensions thereto.

In regard to the second dispute concerning authority of MDE-WMA to revise conditions which may be necessary to properly protect, control, and manage the water resources of the State, I find that such authority remains in the Water Management Administration, which applies to contested Conditions 14, 22, and 31. The protection of such water resources is within the mandate of the MDE-WMA, and therefore this agency has full authority to make such conditions that pertain to such goals of protection and management of water resources. These conditions have apparently been utilized successfully in prior CPCNs, and there is no reason to suspect that such conditions would be abused by the agency or utilized as a subterfuge to negate the general grant of authority represented by the issuance of the CPCN by this Commission. Accordingly, these conditions will be accepted as reasonable and utilized in prior CPCNs, and the recommendation of the State agencies will be accepted to include such language without need for Commission review, which acceptance of such recommendation is not a usurpation of Commission authority as argued by the Co-Applicants unless the utilization of such additional permit

conditions is intended to be a subterfuge to the grant of the Commission authority, which is not expected.

With respect to the 12-year renewal period accepted in Condition 10, while the Co-Applicants oppose such a condition and desire the water appropriation for the 40+ years of the life of the plant, it is clear that the general policies for appropriations of water is for 12-year periods, and such appropriation periods have apparently worked successfully for other CPCNs and will be accepted as a reasonable period for review upon the recommendation of the State agencies. While the Co-Applicants are correct that the evidence on the record shows at this point in time there is no reason to suspect any problems in the surface water capacity and use of the Bay for the entire life of the project, there is also no reason to favor this use over any other important uses for such Bay water that may exist now or arise in the future.

While the Co-Applicants argue that any restrictions or necessary renewals of water appropriations would be a detrimental signal to the investment or financing community, the record reflects there clearly appears to be adequate water supply from the Bay waters over the entire life of the project, and it is difficult to believe that requiring renewals of water appropriations for this project would jeopardize financing when it is clear policy of the State to provide for maximum 12-year appropriation periods for all water users. The renewal periods have the advantage to view all water usage to assure that the water resources are efficiently and appropriately used for the benefit of all citizens of the State,

and it may well be arbitrary and capricious to deny renewal if adequate water is available as appears fully likely, and there is no other reason to alter or otherwise modify the appropriation on renewal reviews. MDE-WMA is also the appropriate State agency to hold authority of such renewal application as it is the agency charged with management of the water resources of the State and has the appropriate expertise in this area. However, as noted above, the initial 12-year period of the appropriation shall commence from the issuance of the COL as the starting point for the initial 12-year period.

With respect to the final disputed terms of Condition 53, while I have determined that Commission authority in issuance of the CPCN also authorizes certain construction work in State wetlands, I note that the specific contested language of this condition specifies that the U.S. Army Corps of Engineers must also authorize work in the tidal wetlands with the Co-Applicants contesting only authorization also by MDE in such areas. The record further reflects the Co-Applicants are in the process of seeking a non-tidal wetlands permit from MDE via their Joint Federal/State Application for the Alteration of Any Floodplain, Waterway, Tidal or Nontidal Wetland in Maryland.⁵⁰ For the disputed Condition 53, MDE seeks to have authorization of work within this tidal wetlands, and while I find Commission authority may exist for authorization of construction within State wetlands, the further authorization of

⁵⁰ See, Applicants Surreply Brief at p. 2, footnote 1 (December 19, 2008).

MDE as an agency with particular expertise in this matter will be accepted as the recommendation of this State agency and should not be overly burdensome to the Co-Applicants as they must also obtain U.S. Army Corps of Engineers authorization for such work as well. Accordingly, the proposed language as recommended by PPRP to include MDE will be accepted as reasonable for this condition.

2. Recommended Conditions of the Office of People's Counsel

The Office of People's Counsel, which office represents residential and non-commercial customers of utility services in Maryland, participated in all the hearings in this matter but did not present any witnesses. However, on brief, OPC requests two conditions regarding regular progress reports to the Commission on the construction progress, and also a finite period for which the CPCN should remain viable. That is, OPC notes that in Case No. 8997, *Re the Application of Catoclin Power, LLC*, a repeated request for an extension of commencement of construction was denied by the Commission after granting prior extensions, and, accordingly, OPC recommends the Co-Applicants must re-file the CPCN in the event actual construction is either not started within three years or if the project becomes dormant for a three-year period.

The Co-Applicants and Staff each oppose the three-year proposed expiration if construction is not started or the project becomes dormant. The Co-Applicants state the proposed time limit condition will add unnecessary regulatory uncertainty that could economically jeopardize the project, and Staff notes the NRC is not

expected to issue a final safety evaluation report before March 2011. As this power plant has a multi-year construction schedule, Staff opposes the three-year time limit condition as its ratification could result in considerable expenditures on any new application that may result.

With respect to progress reports, the Company agrees that it would file the same and believes that an explicit condition is not necessary. As the Company has made such commitment in its final positions on brief, I find that there is no reason to require an explicit further condition, noting the Commission also retains its own authority to require reports as necessary.

In regard to the proposed three-year limitation on construction or expiration for dormancy of the project for such period, I find that such condition would not be in the public interest in this case as the complexity and dual approval process makes this a much more complex application and project than the *Catoctin Power* proposed non-nuclear plant that did not require NRC approval. The approval process before this Commission and the NRC involves a multi-faceted multi-year review period, and a three-year expiration would be an unnecessary and unrealistic impediment. Accordingly, the proposed conditions of OPC will not be accepted.

3. Proposed Conditions of Joint Intervenors

The Joint Intervenors, the only parties which have expressed opposition to grant of a CPCN in this proceeding, argue on brief that should a CPCN be granted, the Co-Applicants should be

required to build additional generating capacity that will come on line prior to the completion of the nuclear unit and employ clean, carbon-free renewable energy resources. Therefore, the Joint Intervenors propose that the Co-Applicants be required, as a condition of the CPCN, to build 25 percent of the capacity of Calvert Cliffs Unit 3, or 400 MW, in renewable energy resources that can be used by Maryland ratepayers. This could be achieved by wind turbines, solar thermal power plants, roof-top or parking lot photovoltaics, or a combination of these and/or demonstrable and quantifiable energy efficiency improvements within the State of Maryland. Furthermore, they recommend that at least half of this new capacity should be completed and in service by the end of 2011 and the remainder by the end of 2013. In support of this proposed condition, the Joint Intervenors note the Commission has identified a looming energy shortage projected prior to the on-line target date for the Calvert Cliffs Unit 3, which Unit would therefore be several years too late to help with such projected shortage. Also on brief, the Joint Intervenors appear to argue that construction of Calvert Cliffs Unit 3 would constitute a large new consumption of electricity at the time the State is expected to experience an electricity shortfall as a further negative consequence of the application.

The proposed condition recommended by the Joint Intervenors that the Co-Applicants must construct additional generating capacity fueled by renewable resources on an expedited basis prior to the construction of the proposed nuclear unit is

vigorously opposed by the Co-Applicants. The Co-Applicants note that such request is totally unprecedented and there is no factual evidence supporting this new demand. They further argue that the grant of such a condition would be arbitrary and beyond the bounds of the Commission's statutorily mandated authority to require an unregulated merchant generation company to build additional generation as a condition to approval of a proposed power plant.

It is recognized and understood that the Joint Intervenors in this proceeding clearly favor use of renewable resources rather than nuclear power as a source for meeting energy needs. Apparently, in accordance with such view, the Joint Intervenors propose their condition and appear to link it to the potential shortages in electric power that may be experienced in Maryland prior to the in-service date of the proposed nuclear power plant that will take several years to gain approval and construction, whereas other methods of either reducing energy consumption or producing additional power may be faster. However, the proposed application to construct a large nuclear plant would produce a much larger useful output of electric power than any of the proposals cited by the Joint Intervenors, and the project's power would be able to address energy needs of the State and region for decades to come. Also, the implication that construction of the plant would have power needs that would negatively impact power capacity is clearly a temporary and necessary use of power during construction periods, and any such use of power for construction is not grounds for denial of such use as it is a temporary and manageable impact

whereas the long-term impact from construction of a new large power plant would clearly provide much additional generation that will be used for the benefit of future power needs for years to come.

Furthermore, while the Joint Intervenors desire utilization of alternative generation by renewable resources, the proposed project is a discrete proposal for a large amount of nuclear power generation and planned at a certain capacity, and it would be unduly burdensome on a proposed applicant for a power plant to be required to join such a proposal for a totally separate power plant or source as now proposed by the Joint Intervenors. Effectively, such a condition would require a proposed merchant power plant application to also bear the cost and efforts to create a totally separate power plant proposal. Such a requirement would be an inefficient and counter-productive methodology to seek any additional power resources, and is clearly not in the public interest as it would have a chilling effect on future power generation in the State. Accordingly, the proposed condition of the Joint Intervenors is not accepted.

C. Co-Applicants Motion to Waive Two-Year Notice Requirement Prior to Construction

The Co-Applicants in this proceeding have filed a Motion to request waiver of the two-year notice requirement specified in Section 7-208(b) of the PUC Article which provides filing of an application with the Commission at least two years prior to commencement of construction of a facility. In the Motion, the

Co-Applicants note they also have a pending application for a combined license before the Nuclear Regulatory Commission, but that certain non-safety-related construction is permitted prior to issuance of the COL once the CPCN is granted. They therefore request permission to commence non-safety-related construction, such as site clearing and pre-construction site preparation, as soon as possible following issuance of the CPCN, and in the event the NRC license is not issued or the Co-Applicants decide not to proceed further, they would agree to stabilize the site. They note that waivers have been provided in many other instances by the Commission on a case-by-case basis, and waiver would be essential to the construction schedule of this facility while denial of the waiver will unreasonably impede commencement of the site preparation activities.

Staff Counsel supports granting of the waiver, noting that it may be granted for good cause consistent with other cases, and also the acceptance by the Company of the conditions that would require returning the site to an environmentally stable condition if it does not go forward. In contrast, the Joint Intervenors and Office of People's Counsel oppose granting the waiver. The Joint Intervenors note this is one of the largest single projects ever considered by the Commission, and argue it is therefore exactly the kind of plant which the Legislature intended to be subject to the two-year waiting period. Also, they claim the requirement would likely have no tangible effect on the construction schedule as the Combined Operating License from the NRC is not currently scheduled

to be issued prior to May 2011, and therefore, the Co-Applicants have failed to demonstrate good cause for waiver of the two-year requirement. They further contend that in the event the project does not go forward, the site should be returned to its original status rather than merely stabilized.

In OPC's reply letter filed in lieu of a reply brief, OPC notes the complexity of the instant application and requests the Commission should apply all the time required to thoroughly consider the evidence. They note the request for waiver only reflects a desire to commence pre-construction site preparation, but claim no good cause has been shown for any waiver beyond this limited request.

Upon review of the record and arguments of the parties, the request for waiver will be granted. Each application and request for waiver must be considered on an individual basis, and the record here is clear that the proposed construction will be on a site already utilized as part of the complex in which existing power plants are located. Accordingly, any site work commenced prior to the two-year period would not disturb virgin grounds utilized by the public or otherwise effect public enjoyment of such area. I further note that the application was filed in November 2007, so that the two-year waiting period would in fact terminate in November 2009. While the opponents of the waiver are correct that full authority to construct the entire project will not be granted until review and approval may be given by the NRC, which period will take several years, the commencement of activi -

ties prior to the full two-year waiting period would be a relatively short period in advance of the full waiting period and would only allow activities that are not safety-related and must await the full approval by the NRC. As I find grant of the application would be in the public interest and as the activities commenced on site that would be authorized by this CPCN do not involve safety-related aspects that must await the NRC review, I find it is in the public interest to allow commencement of such activities on the existing site as there will be no harm to the public by prior commencement several months earlier than otherwise would occur. Such earlier commencement of activity may also be beneficial in reducing costs, and would allow work to begin without unnecessarily delaying the project. Therefore, the waiver is granted as being in the public interest.

D. Request for Expedited Appeal Period

The Co-Applicants have also requested during the course of this proceeding that the minimum seven-day appeal period of a Proposed Order be implemented pursuant to Section 3-113(d)(2)(ii) of the PUC Article. Such expedited period would facilitate issuance of a final order in this proceeding and would therefore expedite conclusion of this proceeding and the application before the Commission, according to the Co-Applicants.

Upon consideration of this request, which does not appear to be supported by any other party, I note that this case is of great importance and public interest, with a voluminous record.

It also represents a case and decision in which consensus of parties has not been achieved, and in fact there are sharp disagreements as to the grant of the application, which is opposed by certain parties, and also with respect to the terms of specific conditions that have been proposed in this proceeding. Accordingly, I find the request for an expedited appeal period is not in the public interest, as a full appeal period would be beneficial to allow better opportunity by the parties to present any arguments they may have in disagreement with the decisions rendered herein, and would also allow a fuller and more complete opportunity for the Commission to review this Proposed Order and record herein. Therefore, the full 30-day appeal period will be utilized pursuant to Section 3-113(d)(2)(ii).

III. SUMMARY AND CONCLUSION

In conclusion, I find that the application for a Certificate of Public Convenience and Necessity to construct a nominal 1710 MW nuclear power plant generation station and associated overhead transmission line at the site of the existing Calvert Cliffs Nuclear Power Plant site in Calvert County should be granted as best for the public convenience and necessity and in the public interest. The plant will constitute a new large source of power that would be of benefit to the citizens and State of Maryland, with the record showing that such plant location at the site of an existing nuclear plant campus will reduce impacts, and

with conditions accepted herein will meet all applicable environmental standards and requirements. This third nuclear plant at Calvert Cliffs is also strongly supported by the local government and community. While the record reflects that there are opponents to the plant and to nuclear power that have expressed concerns during the course of this proceeding, the plant will be a merchant power plant for which ratepayers will not bear financial risks, which was a primary focus of opposition from the opposing parties. Also, the evidence on the record indicates that such power source for the proposed plant provides a lesser impact on the environment than other sources of fossil fuel powered generation, with the only emission that raised any potential concerns being Particulate Matter, with the further in-depth review of such emission resulting in conditions that will assure levels within acceptable limits. Furthermore, such Particulate Matter emissions from the plant are primarily salt, and in the event that it would be in the public interest to establish an additional air monitoring station for Particulate Matter in southern Calvert County, the Maryland Department of the Environment may recommend a further air monitoring station for Particulate Matter as a further condition prior to completion of construction and commencement of operation of the plant if necessary.

In addition, I find and conclude that with respect to the disputed conditions among the parties, water appropriation conditions will extend from the time of issuance of the Combined Operating License by the Nuclear Regulatory Commission as proposed

by the Co-Applicants, and extensions should be sought through the MDE Water Management Administration, but if dispute arises, such disputes on certain extensions may be brought before the Public Service Commission. However, the MDE-WMA would retain all authority for renewals of appropriations greater than 12 years. Also, such agency retains its authority under State law to revise conditions or add additional conditions which may be necessary to properly protect, control, and manage the water resources of the State. In addition, while I find the CPCN granted herein authorizes work in State-owned wetland property, the retention of MDE authorization for work in tidal wetlands specified in contested Condition 53 will be accepted as the recommendation from such agency in the proposed condition by PPRP.

The proposed OPC condition to require expiration of the certification if dormant for three years, and the proposed condition of the Joint Intervenors to require a percentage of alternate generation by renewable resources, have not been accepted.

Finally, I find that good cause has been shown to allow commencement of operation prior to the two-year waiting period provided in Section 7-208 of the PUC Article, while the full appeal period of this Proposed Order will be utilized due to the complexity and scope of this case.

IT IS, THEREFORE, this 28th day of April, in the year Two Thousand Nine,

ORDERED: (1) That the application filed on November 13, 2007 for a Certificate of Public Convenience and Necessity to con-

struct a nuclear power plant at Calvert Cliffs in Calvert County, Maryland is hereby granted to Co-Applicants UniStar Nuclear Operating Services, LLC and Calvert Cliffs 3 Nuclear Project, LLC in accordance with the findings and decision rendered herein.

(2) That the conditions in Appendix II attached and incorporated herein are hereby accepted as licensing conditions of the Certificate of Public Convenience and Necessity in accordance with the findings of this Order.

(3) That the two-year waiting period for construction to commence noted in Section 7-208(b) of the Public Utility Companies Article is hereby waived in accordance with the findings of this Order.

(4) That this Proposed Order will become a final order of the Commission on May 29, 2009, unless before that date an appeal is noted with the Commission by any party to this proceeding as provided in Section 3-113(d) (2) of the Public Utility Companies Article, or the Commission modifies or reverses the Proposed Order or initiates further proceedings in this matter as provided in Section 3-114(c) (2) of the Public Utility Companies Article.

Joel M. Bright
Chief Hearing Examiner
Public Service Commission of Maryland