

BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF DELAWARE

IN THE MATTER OF INTEGRATED RESOURCE )  
PLANNING FOR THE PROVISION OF STANDARD )  
OFFER SERVICE BY DELMARVA POWER & )  
LIGHT COMPANY UNDER )  
26 DEL. C. §1007(c) & (d) )  
(OPENED JANUARY 11, 2011) )

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Reply of Delmarva Power & Light Company  
to the Written Comments of the Parties

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## I. INTRODUCTION

On December 1, 2010, Delmarva filed its Integrated Resource Plan (“IRP”) with the Commission, as required under the Electric Utility Retail Customer Supply Act of 2006 (“EURCSA”) 26 *Del.C.* § 1006 *et seq.* On or before May 31, 2011 a number of intervening parties filed their comments to the IRP. The parties included Delaware Public Service Commission Staff (“Staff”), the Delaware Division of the Public Advocate (“DPA”), the Department of Natural Resources and Environmental Control (“DNREC”), The Caesar Rodney Institute (“CRI”), NRG Energy (“NRG”), Calpine Corporation (“Calpine”), Mid-Atlantic Renewable Energy Coalition (“MAREC”), Delaware Energy Users Group (“DEUG”), The Sierra Club (“Sierra Club”), Retail Energy Supply Association (“RESA”), John Greer, and Eastern Shore Gas Company (“ESNG”). This document provides Delmarva’s comments in response to the other parties’ filings. It is not Delmarva’s intention in these responsive comments to discuss each and every comment submitted by the other parties in detail. Rather, after providing a brief summary, the Company’s comments provide: (1) some general observations on the IRP, (2) a response to the major topics discussed by the other parties in their comments and, (3) suggestions for moving the IRP and Docket No 10-2 forward towards a conclusion.

## II. SUMMARY

- The IRP working group process has been successful in constructively engaging key stakeholders in a collaborative process.
- The IRP as filed is compliant with EURCSA and the IRP rules and regulations.
- The IRP, as submitted, does not request Commission approval for any tariff, program implementation or other specific action not otherwise already approved by the Commission. Consequently, the IRP as filed requires Commission ratification, rather than Commission approval.
- To the extent that Delmarva seeks to change the resources or process for securing new resources for SOS procurement before the next IRP is prepared, the Company will seek Commission approval for such changes through separate application.



- Staff, DPA, and DNREC all recommend that their suggested changes to the IRP be considered as part of the *next* IRP.
- Delmarva recommends that the IRP working group continue to meet no less than once per quarter. A number of potential topics for collaborative discussion have already been provided by the parties in their comments submitted in this Docket. Delmarva suggests that each topic presented by the parties in the respective comments be addressed in the working group meetings.
- The Hearing Examiner should recommend that Delmarva's IRP as filed December 1, 2010 be ratified by the Commission.

### III. GENERAL COMMENTS ON THE IRP

#### A. A collaborative workshop process allowed interested parties to provide meaningful input into Delmarva's 2010 IRP

Based upon its experience with prior IRPs, Delmarva determined that in preparing the present IRP, a more collaborative process needed to be developed such that issues the stakeholders wished to have explored would be considered as part of the IRP planning process. Accordingly, the 2010 IRP was prepared in a more collaborative manner, with many of the other parties and stakeholders participating in the process. Delmarva and the parties held a series of several informal workshops to discuss and review many topics of critical interest in developing the IRP. These topics included the methodology and preparation of the Company's load forecast, details of the Company's Energy Efficiency and Demand Response Programs, the Company's planned approach to estimating the quantitative benefits of improved air quality on human health in Delaware, life cycle analysis of environmental impacts, and the selection of alternative planning scenarios for detailed evaluation within the IRP. Copies of the presentations made at these workshops were posted on both the Commission and the Company web-sites.

From the Company's point of view, there were a number of constructive advantages to developing the IRP in this collaborative manner. The Company also believes that most, if not all, of the other parties that participated in the workshop development process would agree that the process was worthwhile and beneficial. The



informal workshops allowed for an open and transparent discussion, flow of information and exchange of ideas among the parties. The Company received many valuable suggestions and constructive feedback at these workshops. As a result, numerous items that Delmarva had not initially planned to include in the IRP were studied and included therein. The Company was also able to more effectively explain some of the technical analytical techniques and methods it anticipated employing in developing the IRP. The end result, again in the Company's view, is that the 2010 IRP is better understood and less controversial than its predecessors.

**B. Delmarva's IRP complies with the requirements of EURCSA and the IRP regulations**

In August 2009, as part of Docket 60, the Commission promulgated rules and regulations for preparing an IRP. The IRP filed by the Company on December 1, 2010 was the first IRP submitted under the newly adopted rules and regulations. In particular, the rules and regulations provided specific guidance for the inclusion of environmental benefits and externalities into the IRP evaluation. As part of the IRP, Delmarva prepared an "IRP Regulation Compliance Matrix" which was provided as Appendix 1 of the IRP. The Compliance Matrix describes how Delmarva has complied with each and every requirement of the regulations.

**C. Delmarva's evaluation of environmental externalities in the IRP planning scenarios represents a pioneering, cutting edge effort.**

The inclusion of an evaluation of environmental externalities on a consistent and integrated basis with the resource planning model in Delmarva's IRP represents a pioneering, cutting edge effort. This effort was developed with significant input from state and regional environmental experts. Delmarva received significant input in particular from DNREC and NESCAUM. As part of the collaborative IRP development process described above, and because the detailed environmental benefits analysis was a new addition to the IRP, Delmarva presented its proposed approach to the IRP working group in a series of meetings beginning on October 26, 2009. Delmarva also continued



discussions with DNREC, as the State's air quality experts, to obtain its feedback and input on technical aspects of the proposed evaluation techniques.

The environmental analysis contained in Delmarva's IRP, as described in detail and included in Appendix 6, is based on proven publically available EPA air quality models and internationally recognized standards and is responsive to the IRP rules and the requirements of EURCSA. As with any first time application, it is likely that there will be lessons learned and opportunities for improvement. Nevertheless, the analysis of environmental benefits presented by the Company in the IRP provides significant insight and observations into the nature and estimation of environmental benefits affecting Delaware.

Some of the more important insights and observations resulting from the environmental analyses include the following: First, while the total dollar estimate of the value of health benefits from cleaner air is subject to a wide range of expert opinions and involves some degree of uncertainty, it is obvious that the combined effect of multiple, state, regional and federal environmental programs designed to reduce air emissions from power plants will significantly improve air quality in Delaware and surrounding states between the present and 2020. Exactly how much air quality will improve is less certain, but it will improve. The rate at which air quality improves over time will depend on the specific environmental regulations enacted and regulations already in place (such as the Delaware Renewable Portfolio Standards calling for annual increases in renewable energy generation) that ensure improving air quality over time. Because the dynamic mix of generation, fuel, environmental controls and rules are changing every year, emissions from power plants affecting air quality are also changing every year. Consequently, environmental benefits will also change each year.

Second, local air quality in Delaware depends not only on air emissions from power generation and other sources in Delaware itself, but also on air emissions and meteorological conditions across the Mid Atlantic States and beyond. In addition, since Delmarva's customer load requirements represent only a relatively small proportion of PJM and Mid Atlantic electric system load, even large changes in Delmarva's resource procurement mix will have relatively small impacts on overall air quality in Delaware.



Finally, one cannot model a change in generation capacity and assume everything else in a large regional interconnected competitive electric system will remain the same over time. Decisions affecting generation location and development (including renewable sources) impact the location, timing of development and market economics of other competing resources. Power markets, just like other dynamic natural markets or eco-systems, will always move towards equilibrium. Injecting 150 MW of additional wind power to the PJM system, as Delmarva has done in two of the alternative scenarios modeled in the IRP, will lead to other changes in the system generation mix over time. Importantly, these changes will impact the development of other renewable and nonrenewable resources. Using alternative models or assumptions about the scope or timing of environmental regulations will not fundamentally change the underlying observations of environmental benefits that Delmarva has presented in the current IRP.

In the spirit of cooperation and with an eye toward improving the value of the analysis provided as part of IRP, Delmarva is willing to discuss and review changes to the environmental evaluation process as proposed by DNREC, the Sierra Club, the Caesar Rodney Institute and other interested parties as part of the collaborative development of future IRPs. As such, Delmarva encourages each of these groups to participate in the IRP working group sessions.<sup>1</sup>

**D. The scenarios presented in Delmarva's IRP represent a set of resource options that appropriately address realistic planning alternatives for Delmarva's customers**

EURCSA specifies that Delmarva prepare an IRP which evaluates electricity supply options over a ten year planning period in order to meet its customers' needs at minimal cost.<sup>2</sup> EURCSA also provides, and the Commission has further authorized, that Delmarva shall collect from customers, through base electric distribution rates, the costs

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<sup>1</sup> DNREC was an active participant in the working group and made numerous requests and suggestion that were included in the present IRP. Delmarva hopes that CRI and the Sierra Club will do the same for the working group sessions used to prepare the 2012 IRP.

<sup>2</sup> 26 Del.C. § 1007(c) (1).



and expenses associated with preparing the IRP.<sup>3</sup> Delmarva's distribution customers do not comprise the entire State of Delaware. Given that Delmarva's distribution customers are paying for the preparation of the IRP, including the environmental analyses, the IRP should focus on the planning needs and requirements of Delmarva's customers. It is important for Delmarva, IRP participants, and the Commission to be vigilant in managing the costs of the IRP in a manner that seeks to avoid expenses that do not reasonably benefit Delmarva's customers.

In December 2009 and in February 2010, Delmarva discussed the selection of scenarios for inclusion in the IRP with the working group. At the workshop, Delmarva indicated that the expense of the IRP is directly proportional to the number of scenarios being evaluated and, therefore, the scenarios should be carefully selected to provide the greatest analytical benefit for Delmarva's customers. The three alternative scenarios that Delmarva included for detailed analyses in the IRP are:

1. Adding an additional 150 Mw of offshore wind resources to the Reference Case;
2. Adding an additional 150 Mw of land based wind resources to the Reference Case; and,
3. Adding 135 Mw gas fired combine cycle generation to the Reference Case.

These scenarios reflect reasonable planning options for procuring electric supply relevant to Delmarva's customers.

**E. Delmarva recommends ratification of the IRP and continuing the collaborative working group process on a regular basis.**

The IRP Rules provide Delmarva with the option of seeking either Commission Approval or Commission Ratification of an IRP. Whether Approval or Ratification is the

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<sup>3</sup> 26 Del.C. § 1007(c) (1) d.



appropriate choice is dependent upon what Delmarva is requesting within the IRP itself.

Section 2.0 "Definitions" of the IRP Rules provides as follows:

**"Commission Approval"** means that if the Company requests and the Commission approves specific policies, contracts or guidelines that are attached to the IRP for rate making purposes. Certain policies, contracts, or guidelines previously approved by the Commission will not need additional Commission approval in the IRP unless materially changed.

**"Commission Ratification"** means that after the completion of the regulatory process, including analysis by Staff and input from the public and other parties, the Commission finds that the IRP is not unreasonable and appears to be in the best interest of the ratepayers. Any specific ratemaking treatment for the plan or any portions thereof is neither directly nor indirectly guaranteed by virtue of the ratification."

In this case, because Delmarva does not seek approval of any specific policies, contracts or guidelines, Commission ratification is the appropriate Commission action for closing this docket.<sup>4</sup> In the future, Delmarva will file separate applications for any supply-related actions requiring Commission approval.

Delmarva respectfully requests that the IRP filed December 1, 2010 be ratified by the Commission. Commission ratification is appropriate if "the Commission finds that the IRP is not unreasonable and appears to be in the best interest of the ratepayers."<sup>5</sup> The IRP is in compliance with the rules and regulations and represents a balanced approach to achieving reasonable prices, price stability, and environmental benefits for Delmarva's customers. Delmarva's customers will be well served by having the plan laid out by Delmarva in the IRP serve as a basis for moving forward. To the extent that Delmarva seeks to change the resources or process for securing new resources for SOS procurement, the Company will seek Commission approval for such changes through separate application.

Delmarva also believes that the working group meetings that assisted the development of the IRP were a beneficial and efficient process and that these working

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<sup>4</sup> The IRP itself does not contain any request for Commission approval of policies, contracts or guidelines. For instance, there are no requests for 1. retail or wholesale tariff changes 2. contracts or power purchase agreements, 3. new generation facilities, or 4. changes to existing approved SOS procurement practices. Accordingly, the definition of "Commission Approval" as set forth in Section 2.0 of the IRP Rules does not apply.

<sup>5</sup> IRP Rules Section 2.0, Definition of Commission Ratification.



group meetings should be continued on a regular basis. Delmarva believes that the working group process for development of the next IRP would be an efficient and timely way for the Company to discuss the comments of the other parties as filed in this Docket and to make improvements based on these discussions for the next IRP. For example, Staff, DPA, DNREC, Sierra Club, and CRI all provide specific recommendations for consideration in the next IRP. The IRP working group would be well suited for the discussion of these recommendations and Delmarva strongly encourages all these groups to participate in the upcoming working group sessions.

Delmarva is willing to meet at least once each quarter with the working group to discuss these issues including load forecasting, portfolio management, DSM, environmental benefits, the timing and complexity of IRP filings, and other related matters. Because (1) the participants in this IRP have made many suggestions for inclusion in the next IRP and (2) the next IRP is currently scheduled to be filed in December 2012, Delmarva anticipates that working group meetings will be held more often than once each quarter. Many of the suggestions made by participants in this IRP that Delmarva recommends addressing in the working group sessions for the next IRP are addressed in the following section.

#### **IV. RESPONSE TO COMMENTS SUBMITTED BY OTHER PARTIES.**

##### **A. Load Forecast**

DPA makes several suggestions regarding the development of the load forecast for use in the next IRP. (DPA Comments at p 9). Delmarva appreciates these helpful suggestions and looks forward to discussing these suggestions with DPA and the other parties as part of the IRP working group process.

##### **B. Portfolio Management**

Delmarva currently uses Full Requirements Service (FRS) contracts as the principle vehicle to supply SOS customer requirements. Staff, DPA, and the Caesar Rodney Institute make suggestions regarding Delmarva investigating or implementing other approaches which require more active portfolio management. Delmarva is willing



to discuss various forms of active portfolio management as part of the working group process for the next IRP. Delmarva notes that there would also need to be a concurrent discussion of the associated tariff changes and hedging guidelines that would also need to be implemented if Delmarva were to take a more active approach to managing the SOS customer portfolio. The specific managed portfolio recommendations can be discussed by the IRP working group or separate task-team, as appropriate.

### C. Demand Side Management

Staff, DPA, DNREC, and the Caesar Rodney Institute provide a number of comments on Delmarva's inclusion of DSM within the IRP and for energy saving opportunities moving forward. DPA recommends that Delmarva provide more detailed documentation regarding demand side analyses and, further, that the Company should model interactions for its DSM programs to the extent possible when estimating peak demand and energy savings (DPA comments at p 3). Delmarva supports exploring the best way to implement each of these recommendations in the next IRP as part of the Working Group process. The Company has modeled the interactive effects of utility-provided demand response programs, but the Company must rely upon the SEU for data related to new energy efficiency and conservation programs. Delmarva respectfully notes however, that the implementation of certain energy saving programs is under the authority of the SEU and the schedule of IRP filings may restrict Delmarva's ability to obtain certain information related to the developing SEU programs on a timely basis for IRP filings.

Staff recommends that Delmarva continue to coordinate energy efficiency and conservation efforts to promote effective procurement of energy efficiency with the SEU (Staff comments at p 7). Staff also notes that, given the role of the SEU, no analysis of the cost-effectiveness of direct procurement of more energy efficiency resources is presented in the IRP (Staff comments at Table 1 p.2). Delmarva is continuing to work with and coordinate with the SEU to support its energy efficiency and conservation efforts. The Company meets quarterly with the SEU to discuss achievements and steps to improve those achievements. Delmarva notes that the SEU is legislatively tasked to



“design and deliver comprehensive end-user energy efficiency and customer-sited renewable energy services to Delaware's households and businesses.”<sup>6</sup> In addition, the Delaware Code provides: “Costs associated with achieving the energy savings goals are not recoverable through Public Service Commission proceedings.”<sup>7</sup> The Company is willing, however, to discuss these issues with the Working group. The SEU and its programs continue to evolve and Delmarva would be interested in engaging in reasonable energy efficiency and conservation efforts in addition to those promulgated by the SEU, as long as such additional programs do not conflict with or duplicate programs offered by the SEU.<sup>8</sup>

Staff also recommends that the Company determine the best ways to maximize peak demand savings available from AMI customers and continually refine an AMI tariff to ensure such savings (Staff comments at 7). Delmarva filed its Dynamic Pricing application and testimony on March 22, 2011. Since then, there have been two (2) workshops held to discuss dynamic pricing and gather input from all interested parties in order to maximize the savings impact for our customers. In addition, on July 28, 2011, Delmarva filed a separate direct load control program application and testimony which we anticipate will go through a similar collaborative process. Delmarva agrees with Staff's comments and will continue to work with PSC Staff, DPA, the SEU, and other parties to ensure that the peak demand savings are maximized and customer savings are realized. The effects of peak savings programs from AMI, direct load control and any future programs will be included in future IRPs.

DPA recommends that future IRPs include a scenario analysis where DSM goals are not met to the fullest (DPA Comments at p 3), while DNREC recommends that the Company evaluate a scenario where DSM programs are implemented “significantly in excess of state requirements” (DNREC comments at unnumbered p 10). The Caesar

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<sup>6</sup> 29 *Del.C.* § 8059 (c) (1).

<sup>7</sup> 26 *Del.C.* § 1505 (g).

<sup>8</sup> Delmarva notes that, due to the prohibition provided in 26 *Del.C.* § 1505 (g), it may prove difficult for Delmarva to participate in energy efficiency programs through Public Service Commission proceedings.



Rodney Institute recommends that the IRP include a contingency plan in the event the SEU fails to meet energy efficiency goals (Caesar Rodney Institute at p 3). The Company agrees that exploring various scenarios for the effectiveness of DSM would be appropriate. Accordingly, Delmarva further agrees to discuss with the working group the most appropriate scenarios to evaluate the impact of alternative DSM achievements in the next IRP.

Finally, the Company notes that the recommendation of the Caesar Rodney Institute that energy efficiency improvements be counted toward meeting the State RPS goals (Caesar Rodney at p 7) would require a change to existing State legislation. Such legislation was, in fact, presented to the 146<sup>th</sup> General Assembly in the form of House Bill 27. That bill was tabled in the House Energy committee on January 25, 2011.<sup>9</sup>

#### **D. IRP Scenarios**

Staff, DNREC, and Calpine provided comments on the selection of scenarios for inclusion in the IRP. Staff suggests that more documentation be provided in future IRPs to support the selection of scenarios (Staff Comments at p 8-10). This is a reasonable suggestion and Delmarva agrees that it would be a good topic for further discussion and clarification with the IRP working group.

While DNREC recognizes that the scenarios selected for the current IRP “explore a range of alternatives that exist wholly within DP&L’s control to implement” (DNREC Comments at unnumbered p 2), DNREC also claims that other alternative scenarios affecting price, price stability and environmental benefits, such as engaging in “regional and federal programs” (DNREC unnumbered p 3), should be considered as part of the IRP. DNREC further claims that Delmarva’s failure to do so limits the utility of the IRP.

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<sup>9</sup> House Bill 27 provided as follows:

Section 1. Amend §363(a), Title 26 of the Delaware Code by adding a new sentence at the end of the subsection as follows:

“For purposes of this section, a comparable program may include eligible energy resources and energy and capacity savings which result from the implementation of conservation, energy efficiency, and demand-side programs. These units must be quantifiable through an appropriate evaluation, measurement and verification protocol and measured in Megawatt-hours of energy saved or Megawatts of capacity avoided.”.



DNREC appears concerned that since Delmarva on its own can only implement comparatively small changes relative to the much larger regional electric system, only small changes in air quality will occur based upon Delmarva's actions. Consequently DNREC implies that the Company should evaluate much larger regional and federal initiatives. However, Delmarva does not believe that it is appropriate within this Delmarva-only IRP to evaluate potential scenarios that are beyond the ability of Delmarva to implement.<sup>10</sup> The cost of Delmarva's IRP is born by Delmarva's customers<sup>11</sup>. Accordingly, Delmarva believes that the IRP must remain focused on evaluating Delmarva's options for procuring their electrical requirements consistent with the IRP rules and regulations. An analysis of regional and federal programs would be expensive and time consuming. Decisions to engage in regional and federal programs are made by the State and Federal governments, not by Delmarva. Moreover, such programs are meant to benefit all customers in a region, not just Delmarva's customers. As such, the expense of conducting analyses of such programs and what effect they might have on the State and region should not be born solely by Delmarva's customers.

Delmarva, like DNREC, understands the need for important environmental policy issues to be properly assessed and vetted; however, Delmarva should not be spending customer funds dedicated to preparing the IRP in order to evaluate the regional and federal initiatives proposed by DNREC unless there is both a direct relationship to the IRP and clearly defined benefits to Delmarva's customers. To the extent such environmental analyses are needed, DNREC should seek a more fair and balanced source of funding independent of the IRP process. In other words, regional and Federal programs are meant to benefit all residents of Delaware. As such, the expense of analyzing such programs should not be born by only one segment of customers. There is no support in EURCSA (the legislation enabling the IRP) for Delmarva to conduct studies for the sole purpose of informing State environmental policy decisions affecting regional or federal environmental protection initiatives when these initiatives are outside

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<sup>10</sup> The *risk* of potential changes in environmental policies on the results of the Reference Case and Scenario cases could be an appropriate consideration for an IRP. The scope and nature of such *sensitivity analyses* could be the subject of review and discussion by the IRP working group.

<sup>11</sup> Delmarva estimates that expenses associated with the 2010 IRP through June 2011 have exceeded \$1.1M.



the ability of Delmarva to execute or the Commission to approve. It is not equitable for Delmarva's customers to pay for research into questions of State, regional or federal environmental policy that would be better and more appropriately directed and funded by DNREC, the US EPA, or other qualified agency. Under DNREC's direction, such analyses could be performed by a broad team chosen for their diverse perspectives and technical expertise on environmental science, engineering and health. If desired, Delmarva would be willing to participate in such a team effort to help build scientific consensus. The costs of such a State-wide effort must be born by all in the State, however, not just Delmarva's customers.

Finally, Calpine claims that the IRP understates the importance of developing flexible gas fired generation (Calpine at 2 and 7). Calpine is mistaken, however. One of the three principle alternative scenarios evaluated in the IRP was a new gas-fired combined cycle generator.

#### **E. New Generation in Delaware**

NRG and Calpine both provide comments related to new generation in Delaware. NRG states that it "...supports the PJM Reliability Pricing Model (RPM) as a market that can help retain existing generation in the State of Delaware and attract additional resources as needed. NRG further supports the long-standing role of PJM in performing regional planning." (NRG at 4). NRG also suggests that if the Commission "...chooses to take more direct action regarding the procurement of a portion of the generation supplying SOS customers or all Delaware electricity consumers" then the Commission should require a competitive RFP process requiring electric distribution companies to enter into long term contracts that are paid for through non-bypassable charges (NRG at 4,5). Calpine states that "...to the extent that the Commission finds that there is a specific reliability need in Southern Delaware and that generation resources should be acquired in that area, the process should be competitive and open to both new and existing resources." (Calpine at 1, 2). However, as addressed above, pursuant to this Commission's IRP Rules, Delmarva has the option of seeking either Commission Approval or Commission Ratification of an IRP. Because Delmarva does not seek approval of any specific policies, long term contracts or guidelines in this IRP regarding



new generation, Commission ratification is the appropriate Commission action for closing this docket.<sup>12</sup>

Let it be clear, however, that Delmarva is not necessarily against exploring additional alternatives, including the construction of natural gas generation in Delaware, as long as (1) such new generation is shown to be the most cost-effective alternative necessary for providing its customers with reliable service, (2) is reasonably priced compared to other market alternatives, and (3) the financial risks to Delmarva are appropriately mitigated.<sup>13</sup> Delmarva is open to discussing with Staff, DPA, and any other participants whether a working group should be developed for the further investigation of additional generation in Delaware. Because the cost of such new facilities is significant and long-lived, Delmarva would prefer both: (1) significant analysis, including a study of the need for new generation and associated transmission infrastructure; and, (2) substantial participation from Staff, DPA, and DNREC into the matter before potentially subjecting its customers and shareholders to risks associated with financing the construction of new generation. In any event, it is clear that Delmarva's IRP has not requested the Commission to take any direct action regarding new generation resources in Delaware where "Commission Ratification" of an IRP is sought.

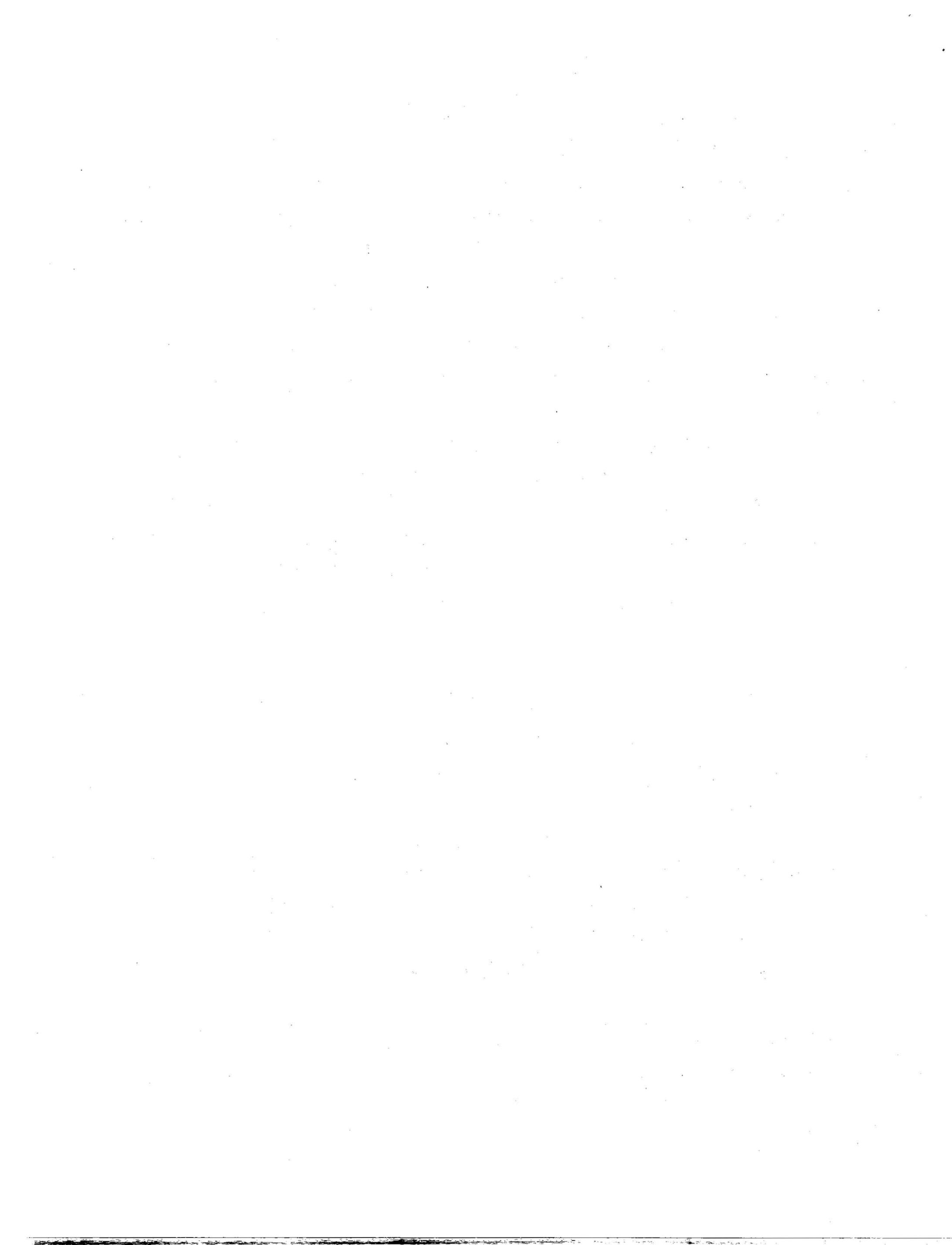
#### **F. The Evaluation of Externalities**

Staff, DNREC, Caesar Rodney Institute, Calpine, and the Sierra Club provided comments on Delmarva's analysis of externalities. The externality analysis contained in the IRP focused on the quantification of changes in air quality on human health in Delaware and surrounding areas. As noted above, Delmarva's externalities study was a pioneering effort. Now that Delmarva has prepared and filed the environmental externalities study integrated into the IRP, there is a good opportunity for discussion of the underlying assumptions employed and other finer points of the study with the working group designed to refine an externality study for future IRPs. Topics for

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<sup>12</sup> See Section 2.0 IRP Rules.

<sup>13</sup> Financial risks include but are not limited to cost recovery and avoidance of consolidation and imputed debt.



discussion by the working group could include discussions of the complexity of estimating externalities, the implications for Delmarva's SOS procurement plans, how often should detailed externality studies be conducted as part of the IRP, and what externality sensitivity analyses are appropriate to be evaluated within an IRP.

Although Delmarva is prepared to work collaboratively with the other parties on the topic of externalities, the Company believes it is appropriate at this time to respond to several comments submitted by the other parties regarding the evaluation of externalities within the IRP. This includes comments on the environmental models and results of the IRP.

In the present IRP, Delmarva selected the CMAQ model to estimate changes in particulate matter and ozone for examining changes in air quality for the Reference Case and the alternative scenarios. DNREC has suggested that the CMAQ model results provide "little practical information" (DNREC at unnumbered p 2). However, CMAQ is widely used by the US EPA, state and local air quality agencies, industry, universities, and consulting groups for conducting air quality analyses. The CMAQ model is a "one-atmosphere" model that can dynamically simulate ozone and particulate matter in a single simulation and thus provide an integrated perspective regarding how the emissions changes may affect multiple pollutants. The detailed, quantitative modeling results provide an excellent basis for examining the effects of the changes in emissions on air quality and provide the requisite input for the health effects and benefits modeling.

The CMAQ model was used in the IRP because it represents the best available, state-of-the-science modeling tool for regional-scale air quality assessment. Compared to other types of models, such as single- and multiple-source Gaussian models (e.g., AERMOD) or trajectory models (e.g., CALPUFF),<sup>14</sup> CMAQ provides a more complete and integrated representation of the atmospheric conditions (including meteorology and regional/background pollutant concentrations), emissions distributions and interactions, and chemistry and deposition mechanisms. The CMAQ model contains a comprehensive chemical mechanism that simulates the photochemical reactions involved in the formation of ozone in the atmosphere. The CMAQ model also contains algorithms for

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<sup>14</sup>The AERMOD and CALPUFF models were suggested by DNREC in footnote 3 on unnumbered p4 of their comments.



calculating the formation of secondary aerosols (fine particulates - PM<sub>2.5</sub>) based on emissions, precursor concentrations, and local meteorological conditions. The AERMOD and CALPUFF models include only simplified approaches to simulating photochemistry and secondary aerosol formation.

In particular, CMAQ is also well suited for use with the IPM® resource planning model used in the IRP, since the emissions changes estimated using IPM® typically: 1) involve point sources (with varying stack-height and plume-rise parameters) that require a three-dimensional representation of the atmosphere, 2) are distributed regionally (within the power grid), and 3) simultaneously affect multiple precursor species. All of these factors can be taken into account in a CMAQ simulation. CMAQ also accommodates temporal variations in the emissions and changes to the temporal profiles of the emissions. In addition to a spatially and temporally detailed treatment of the emissions, CMAQ is designed to account for other factors that affect air quality and the resulting health impacts at any given location, such as meteorology, topography, land-use, and atmospheric chemistry processes.

The combination of CMAQ and IPM® also provides interesting insights into changes in air quality in Delaware and the Mid Atlantic states. One of the IRP scenarios included adding an additional 150 Mw of off-shore wind generation in Delaware. As discussed previously, changes in generation resources in Delaware impact changes in the location, timing and operation of generation resources in other locations. While the addition of the off-shore wind in Delaware reduced air emissions in the Mid Atlantic, it also increased fossil generation a small amount in areas outside the Mid Atlantic. Due to atmospheric and meteorological conditions, this lead to small decreases in air quality in Delaware relative to the Reference Case in 2020. This was the result of a sophisticated and integrated evaluation of complex systems phenomena and not “a discontinuity” as suggested by DNREC (DNREC at unnumbered p4).

In their comments, the Sierra Club references the monetized health effects associated with the simulated changes in air quality from 2010 to 2020 as the “monetary value of the externalities reduced (that is, the economic benefit arising out of the use of the proposed mix of energy sources in the 2010 IRP’s reference case)...” (Sierra Club at pp 3-4). This value is in the range of \$1.8 – 4.3 billion expressed in 2008 dollars for



Delaware. To be clear, this estimated value of benefits represents the combined effect not only of reduced air emissions expected to result from Delmarva's actions under the Reference Case, but also from the expected changes in emissions from all sources across not only Delaware, but the entire Mid-Atlantic Region and beyond. This includes changes in mobile sources, other industrial point sources, and electric power generation outside of Delaware.

G. **Changes to the SOS Auction Process**

The alternative SOS procurement approaches suggested by NRG and RESA represent major policy changes from the current procurement construct approved by the Commission in Docket 04-391 and as improved over the years. Unlike RESA and NRG's suggestions, Delmarva prefers continuation of the three year laddered contract term governing Residential, Small Commercial and Industrial (RSCI) customers<sup>15</sup> because:

- 1) transparent pricing is available from brokers for this period;
- 2) there is price transparency and liquidity for up to three years; and,
- 3) suppliers are less likely to include substantial risk premiums for the forward periods in their bid prices.

Delmarva notes that the Commission's technical monitoring consultant, in its final report on Delmarva's 2010-2011 Requests For Proposals observed, as part of their evaluation, that competition and bidding were consistent with current market conditions. The Consultant further observed that while Maryland residential "procurement is 24-month and therefore reflects different supply vintage, differing transition plans and different capacity costs" than Delaware, the change in Delaware residential customer average bills moved in a consistent market direction with Maryland. In light of market conditions existing at the time of Delaware procurements and the conclusions of the Commission monitoring consultant, Delmarva's position on continuing with the three laddered contracts is that it provides a useful balance of low price and control over volatility that meets Delaware customer needs for fixed priced SOS.

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<sup>15</sup> The current three year laddered contract term is similar to the form of procurement successfully being implemented in the District of Columbia and New Jersey.



Delmarva further supports continuation of the one-year fixed price option for all large commercial customers as approved by the Commission in Docket 04-391. This construct provides such customers with a one year stable price and provides them the opportunity to make decisions consistent with their annual business and budget decisions.

#### **H. Compliance with Regulations**

Calpine claims that the IRP does not adequately comply with rule 6.1.4 of the IRP regulations in that the IRP “ignores the environmental impacts related to power supplied from out-of state resources” (Calpine pp 2). That claim is clearly incorrect. As described previously in these comments, the estimation of environmental externalities for Delaware includes not only the effect of generation produced in Delaware, but also from all emission sources within the Mid Atlantic Area including transportation, industrial processes, *and* generation from power plants in other states. A description of how the complex environmental modeling analysis provided in the IRP incorporates these emission sources into the quantification of external health benefits is provided in Chapters 2 and 3 of Appendix 6 of the IRP. In particular, Table 2-5 in Appendix 6 of the IRP provides a listing of the estimated total SO<sub>2</sub>, NO<sub>x</sub>, and Hg emissions of each power plant in Delaware and the Mid Atlantic Region for the Reference Case and the IRP Scenarios. The air emissions of these out of state generation resources were part and parcel of the environmental analyses of human health impacts in Delaware for the Reference Case and the alternative scenarios.

#### **I. Transmission**

DPA suggests that the IRP should include a more robust treatment of transmission options, more clearly identify the interconnection costs for new capacity, and present a more robust contingency plan for loss of major transmission facilities. (DPA at pp 12 -14). As a transmission provider in PJM, Delmarva participates in a robust transmission planning process including the PJM RTEP. PJM’s generation deliverability criteria test performed during each RTEP cycle ensures all capacity within a PJM area is deliverable to the remainder of PJM. As per PJM Manual 14B Section 2.3.8, “*The generator deliverability test for the reliability analysis ensures that, consistent with the load deliverability*



*single contingency testing procedure, the Transmission System is capable of delivering the aggregate system generating capacity at peak load with all firm transmission uses modeled. The procedure ensures sufficient transmission capability in all areas of the system to export an amount of generation capacity at least equal to the amount of certified capacity resources in each area."* All projects developed to mitigate the violations associated with the generation deliverability criteria test must comply with the PJM identified in-service date.

Delmarva participates with PJM through the PJM Interconnection Queue process to provide the necessary information associated with interconnecting new capacity. Each study phase of the process provides a greater level of detail with regard to project scope, estimates, and timeline, as per PJM Manual 14B. The Company also works with PJM to ensure the existing and future transmission system meets all PJM and NERC criteria. The PJM RTEP process includes a detailed contingency analysis which incorporates evaluation of NERC category A, B, and C events and the most critical common mode outages, as per PJM Manual 14B section 2.3. All projects necessary to mitigate violations will be included in the current RTEP with a required in-service date. If temporary mitigation is necessary, Delmarva works with PJM to develop short term fixes which can be put in place until the ultimate solution is complete. Such temporary improvements may include substation terminal upgrades and similar work which can be accommodated within short timeframes. Additionally, consideration of special protection schemes is often an option evaluated by Delmarva and PJM for short term fixes.

All that being said, Delmarva does not necessarily disagree with DPA's suggestion that the IRP contain more information concerning transmission and related issues. Delmarva is willing to discuss the transmission planning process with the IRP working group and further discuss what additional transmission information should be included in future IRPs.

#### **J. Frequency of IRP Filing**

DPA reports that Delaware is one of only 3 states where utility restructuring has occurred that also requires utilities to develop an IRP. DPA also states that it would support the Company preparing a long-term procurement plan rather than an IRP or, in the alternative, filing the IRP less frequently than once every two years (DPA comments



p 25). Delmarva concurs with DPA's suggestions in this regard. A two year turn around cycle is a very short time period indeed to obtain public comment, initiate a stakeholder workshop process, incorporate any new Commission Directives and legislative requirements, complete the IRP analysis, submit the IRP filing, proceed through discovery, obtain the comments of other parties, proceed through an evidentiary hearing and either receive a Commission Order providing guidance for the next IRP cycle or reach a settlement among the parties for Commission approval. Moreover, the process of preparing an IRP is a significant cost born by Delmarva's customers. This topic would also be another good item for discussion with the IRP working group and Delmarva looks forward to exploring the matter with DPA, Staff and other participants.

## V. MOVING THE IRP FORWARD

As discussed above, the IRP working group process has, in Delmarva's opinion, been successful in constructively engaging key stakeholders in a collaborative process. Delmarva recommends that this process continue and that going forward, the IRP working group meet no less than once per quarter. A number of potential topics for discussion have already been provided by the parties in their comments submitted in this Docket.

Delmarva further recommends that the IRP be ratified as submitted. The IRP as submitted does not request Commission approval for any tariff, program implementation or other specific action not otherwise already approved by the Commission. The IRP as filed is compliant with EURCSA and the IRP rules and regulations. Clearly, as filed, "the IRP is not unreasonable and appears to be in the best interest of the ratepayers"<sup>16</sup> and is in compliance with the administrative requirements of this regulation and the Electric Utility Retail Customer Supply Act of 2006.<sup>17</sup> As such, pursuant to the IRP Rules and EURCSA, the IRP should be ratified. Moreover, Staff, DPA, and DNREC all recommend that their suggested changes to the IRP be considered as part of the *next* IRP

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<sup>16</sup> IRP Rules, Section 2.0, definition of "Commission Ratification."

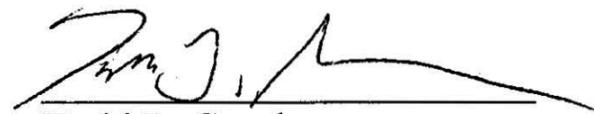
<sup>17</sup> *Id.* at Rule 1.7.



and the Company agrees to collaboratively discuss these proposed changes through the IRP working group process.

## VI. CONCLUSION

For the reasons set forth herein, Delmarva respectfully requests that the Hearing Examiner find and recommend to the Commission that the IRP, as filed by Delmarva, is not unreasonable, appears to be in the best interest of the ratepayers and is in compliance with the administrative requirements of both the IRP Rules and EURCSA.



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