

STATE OF MAINE  
PUBLIC UTILITIES COMMISSION

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February 25, 2010

CENTRAL MAINE POWER COMPANY  
Request for Alternative Rate Plan

MAINE PUBLIC  
UTIL. COMM.

ORDER APPROVING  
INSTALLATION OF AMI  
TECHNOLOGY

REISHUS, Chairman; VAFIADES and CASHMAN, Commissioners

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## I. SUMMARY

Through this Order, we approve Central Maine Power Company's (CMP) advanced metering infrastructure (AMI) project and associated ratemaking treatment as specified below.

## II. BACKGROUND

In its most recent distribution rate case proceeding, CMP proposed to implement AMI<sup>1</sup> on a company-wide basis. CMP's proposal included providing solid-state meters or meter modules for all 550,000 of its customer accounts, supported by a two-way communications network and a meter data management system. CMP also examined and provided cost estimates for necessary changes to its back-office and billing processes and systems to allow the AMI system to support supply market programs (e.g., demand response), as well as time-differentiated pricing. The benefits of the AMI installation were in two categories: 1) operational savings (e.g., reduced meter reading costs, storm restoration expenses and service calls); and 2) supply side savings through demand response programs and time-of-use (TOU) pricing.

Due to its substantial cost, estimated at the time to be in the range of \$100 million, the CMP AMI proposal was carefully examined to determine whether the benefits would outweigh the costs. At the conclusion of the rate proceeding, the parties agreed, in part because of rapid changes in the AMI standards and protocols occurring at that time and in part because of the complexity of AMI that the Commission should defer the decision on the AMI proposal and continue the examination of the cost benefit issues. (Stipulation dated June 6, 2008 in Docket No. 2007-215).

Upon the enactment of the American Recovery and Reinvestment Act of 2009 (Stimulus Act), the potential for receipt of federal stimulus funds to establish a cost effective CMP AMI project was examined by the Commission and the parties through a series of meetings and technical conferences. The Stimulus Act included provisions for the Department of Energy (DOE) to provide matching grants up to 50% of the cost of qualifying smart grid investments.

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<sup>1</sup> AMI includes meters and related systems with varying levels of capability, including: detailed customer usage measurement; customer usage data storage; automated and remote meter reading; and communications to and from the meter.

In an Order issued on July 28, 2009, the Commission approved the installation of AMI by CMP, subject to the receipt of a substantial DOE grant award. In that Order, the Commission stated its view that AMI is:

an important technology that will ultimately reduce utility operational costs, improve customer service and provide customers with necessary tools to use electricity more efficiently and lower their electricity bills, for example, by reducing or shifting usage during high cost periods in response to market price signals. In particular, AMI and associated systems are necessary to provide customers with the option of obtaining rates that are time-differentiated to more closely reflect the actual power costs through the day.

*Order Approving Installation of AMI Technology*, Docket No. 2007-215(II) at 2 (July 28, 2009). Accordingly, the Commission stated that it is reasonable and prudent for CMP to aggressively pursue opportunities for the cost-effective deployment of AMI, and that it will allow full and timely cost recovery of CMP's prudently incurred AMI investment, including the full and timely cost recovery of CMP's undepreciated investment in metering plant that may be replaced by the AMI. The Commission noted that this cost recovery will occur according to the Commission's ratemaking practices and relevant prior commitments made by CMP. These prior commitments include the stipulation provisions in Phase I of this proceeding<sup>2</sup> (Revenue Requirement Stipulation) and in a CMP reorganization proceeding<sup>3</sup> (Reorganization Stipulation) that provide for a levelized recovery of reasonable net costs without the recovery of carrying costs associated with the levelization. *Id.* At 3-4.

On August 6, 2009, CMP submitted a smart grid investment grant application to the DOE. To fulfill the DOE grant requirements and provide increased AMI capabilities, CMP estimated the updated project cost in the DOE application to be approximately \$192 million, including the undepreciated value of the current meters. On October 27, 2009, the DOE notified CMP that it had received a \$95.9 million grant award; the details of which would be finally determined through negotiations with the DOE.

After the notification of CMP's DOE grant award, several technical conferences were held to explore the benefits and costs of CMP's current AMI proposal, the capabilities of the proposed AMI system, and various ratemaking issues. Subsequently, CMP, the active intervenors (the Public Advocate and the International Brotherhood of Electrical Workers Local 1837 (IBEW)) and the Advisory Staff entered into settlement negotiations. After several meetings to discuss settlement, the Public Advocate and the

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<sup>2</sup> Paragraph 6 of the June 6, 2008 stipulation, approved by Commission order dated July 1, 2008.

<sup>3</sup> Paragraph 25 of the stipulation in the Iberdrola reorganization proceeding (Docket No. 2007-355) dated January 9, 2008 and approved by Commission order dated February 7, 2008.

IBEW stated that they could not support CMP's proposal and would oppose it before the Commission.

On January 19, 2010, CMP submitted testimony in support of its AMI project and corresponding ratemaking treatment. At the request of the IBEW, the Commission conducted a public witness hearing on the matter on January 20, 2010. The Commission held a hearing on January 22, 2010, in which CMP presented its case, intervenors cross-examined CMP's witnesses, and all parties presented oral argument to the Commission.

### III. DESCRIPTION OF AMI PROJECT

As described in its January 19, 2010 testimony, CMP's Smart Grid proposal to the DOE is a deployment of AMI throughout the Company's service territory to serve all 600,000 plus residential, commercial and industrial customers at a cost of \$165.9 million. The inclusion of the undepreciated value of the existing meters brings the requested grant funding to \$191.7 million.<sup>4</sup> CMP's grant application requested and it was granted 50% of this amount or \$95.9 million.<sup>5</sup>

CMP states that its proposed AMI deployment incorporates state-of-the art technology, data management, cyber security, and functionality. CMP's proposed project will support AMI, dynamic pricing and distribution automation applications, and provide a future-proofed flexible framework to support enhanced smart grid functionality. In automating the meter reader process, CMP will realize operational and cost benefits related to billing and account openings and closings. The project will also offer benefits to customers by providing customer usage information via a home area network (HAN). Moreover, CMP's AMI project will support dynamic pricing and enhance CMP's restoration of service after major storms. Finally, the communications network CMP proposes to install will have sufficient bandwidth to support applications beyond AMI that enable future Smart Grid activities, including monitoring of power quality, charging and discharging of plug-in electric vehicles, and future automation of distribution infrastructure.

### IV. POSITION OF THE PARTIES

#### 1. Central Maine Power Company

CMP states that its AMI project is cost-effective and provided an analyses showing that the project will provide approximately \$25 million in operational savings over 20 years (not including demand response and other supply-side benefits that will be available to customers once the AMI project is in place). In its filing, CMP proposed a savings and revenue requirement determinations for the AMI project, including a

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<sup>4</sup> Currently, it is unclear whether the DOE grant will include the undepreciated value of the existing meters and, if not, whether the DOE money will be available for other AMI purposes.

<sup>5</sup> At the current time, it is unclear whether the DOE grant will be considered taxable income to CMP.

levelized AMI-related revenue requirement consistent with the Revenue Requirement Stipulation and the Reorganization Stipulation, as well as a mechanism for recovery of its remaining investment in legacy meters replaced by AMI meters. Moreover, CMP provided an analysis that shows its project is cost effective even if the AMI grant is determined to be taxable. CMP also states that there will be substantial additional benefits to customers, beyond the \$25 million in operational cost savings, in reduced customer outage costs, web portal benefits and demand response benefits.

CMP urges the Commission to issue an order that provides final approval of its AMI project and its ratemaking treatment.

## 2. Public Advocate

The Public Advocate argues that the Commission should not approve CMP's AMI proposal. The Public Advocate lists a number of risks to ratepayers if the Commission approves the AMI project. These include the speculative nature of CMP's cost and benefit modeling,<sup>6</sup> the risk that the new technology will fail, and the potential for stranded costs if the meters or systems do not work as expected and are replaced by newer technology. The Public Advocate urges the Commission to wait for a more final verdict from other utilities and let customers in other states bear these risks. The Public Advocate argues that there are risks of unforeseen costs to make the system work and that there is risk of vendor instability, bankruptcy and disappearance. The Public Advocate notes that the industry continues to go through major changes and that the standards are only being discussed and finalized now. In particular, the HAN technology is immature.

The Public Advocate also states that there are risks regarding the demand side benefits, that ratepayers may not be interested in the benefits from AMI, and they have not asked for AMI-enabled dynamic pricing options. The Public Advocate is concerned about the possibility of catastrophic failure of the digital technology given that CMP's AMI proposal involves a digital meter connected to every customer, with radio relays and collector stations, and a multi-million dollar MDM system that is supposed to integrate all the data coming from the meters and into CMP's billing system

Other risks cited by the Public Advocate include the vulnerability of digital equipment to electrical storms, potential for slower storm restoration due to a reduction of employees available to work during storms, lack of adequate cyber security, and the possible taxability of the grant that would significantly reduce the benefits of the proposed investment.

In the event that the Commission approves CMP's proposed AMI investment, the Public Advocate proposes several conditions. These are:

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<sup>6</sup> The Public Advocate noted that the savings estimates offered by CMP have been reduced over time. The purported savings associated with AMI have gone from \$44 million in October, to \$38 million two weeks before the hearing, to \$25 on the day of the hearing.

- That the Commission not allow CMP to recover any cost of the AMI project until all the meters are installed;
  - That the Commission not allow CMP to proceed with its investment until there is a resolution of the tax treatment of the DOE grant;
  - That CMP be required to engage in meaningful education efforts to achieve the demand response and efficiency benefits; and
  - That CMP's shareholders bear the risk of catastrophic failure of the system.
3. IBEW Local 1837

The IBEW agrees with the views of the Public Advocate. In addition, the IBEW asks that the Commission require CMP to engage in a meaningful early retirement program and re-training program for the affected employees so that they can move into CMP available jobs. The IBEW states that there are 185 current CMP employees that will be qualified to retire within the next three years, which is only slightly longer than the implementation period of this project.

4. Public Witness Hearing

As mentioned above, the Commission, at the request of IBEW, held a public witness hearing on January 20, 2010. All the public witnesses at the hearing testified against CMP's AMI proposal. The witnesses generally expressed concerns regarding the use of federal stimulus funds, intended to help the economy, being used in a manner that results in the lay off of 141 workers. Moreover, witnesses were concerned that the AMI project is too costly and will not be economic for customers. Public witnesses also stated that the digital AMI system will be prone to failures and will end up costing more than anticipated. Finally, witnesses stated a concern that the lay off of so many workers would jeopardize storm restoration efforts.

The Commission notes that it did receive numerous letters from the public expressing similar concerns as those stated by the public witnesses.

## V. DISCUSSION

1. Overview

As a general matter, the Commission continues to view AMI as an important technology that will ultimately reduce utility operational costs, improve customer service and provide customers with necessary tools to use electricity more efficiently. We understand concerns expressed by the Public Advocate, IBEW and the commenters at the public witness hearing regarding the deployment of new,

sophisticated technology and the consequences of system failures. However, AMI technology is sufficiently mature that we can be reasonably confident that the AMI systems will work as designed. Due in part to the stimulus funds, utilities around the country are installing smart grid technology, thus accelerating the development of the technologies. We note that Bangor Hydro-Electric Company deployed an automated meter reading system several years ago that has functioned as expected and has resulted in lower costs and increased reliability.

Accordingly, for the benefit of its ratepayers, CMP should position itself to take advantage of new smart grid technology that will allow for lower operational costs and more efficient use of electricity. Maine should not fall behind other states in the use of the latest technology to make electric usage more efficient.

We also understand the views regarding the use of stimulus funds in a manner that results in the loss of jobs. However, the stimulus funds were also intended to promote energy efficiency and Maine cannot miss an opportunity to reduce its electricity rates. The importance of moving ahead with CMP's AMI proposal at the current time is magnified by the receipt of a federal matching grant.

## 2. Cost-Effectiveness of AMI Proposal

The primary issue in this stage of the proceeding is to determine whether CMP's proposed AMI investment is reasonably likely to be cost-effective, taking into account both operational and supply-side benefits, the costs of the investment and possible risks involved with new technology. CMP has provided a cost-benefit analysis that shows with the DOE grant, its proposed AMI investment will result in approximately \$25 million in operational savings over 20 years. This estimate does not include demand response and other supply-side benefits that will be available to customers once the AMI project is in place. Although the quantification of supply-side savings is, by its nature somewhat speculative, CMP estimates them to be over \$338 million over 20 years.

We have carefully reviewed CMP's analysis of the benefits and costs of its AMI proposal. We recognize the view of the Public Advocate and the IBEW that CMP's estimates of operational savings, because they are based on projections and assumptions, are necessarily speculative to some degree. Moreover, we agree that the supply side benefits are difficult to quantify and uncertain by nature. However, based on the record in this proceeding, we find that it is reasonably likely that the operational and supply side savings over time will be substantially greater than the cost of the AMI investment. Accordingly, we approve CMP's proposed AMI project as described in its filing.

As mention above, there is an issue as to whether the DOE grant will be taxable. In the event the grant is taxable, the benefits of the investment will be significantly reduced. The Public Advocate believes that this is a substantial risk and CMP should not be allowed to proceed with the investment until the issue is resolved. CMP believes, while possible, it is highly unlikely that the DOE grant applicable to the

AMI investment will be taxable.<sup>7</sup> CMP notes that at least one utility has received a private letter ruling from the IRS indicating that such a grant is not taxable to the utility. Moreover, CMP has provided an analysis that shows a positive benefit of \$6 million in operational costs even if the DOE grant is taxed.

Although the Public Advocate is correct that the benefits of the investment are vastly decreased if the DOE grant is taxable, we agree with CMP that it is unlikely that the DOE grant will be taxed. We understand that the private letter ruling reference by CMP is not binding with respect to CMP, but it is an indication that CMP's DOE grant will not ultimately be taxed. It is unclear how long it will take for the taxation issue to be resolved and significant delays in Commission approval could jeopardize CMP's DOE grant award. Therefore, we will not delay Commission approval until the tax issue is resolved as recommended by the Public Advocate. We will, however, require CMP to file an updated cost benefit analysis within two weeks of a determination of the tax issue.

Finally, as mentioned above, CMP's DOE grant is subject to negotiations with the DOE. CMP has stated that, based upon its initial review of a draft agreement provided by the DOE, it does not anticipate any material changes to the project's scope, costs or benefits. We direct CMP to provide notification to the Commission and parties if communications with DOE indicate that there may be material changes to the project.

### 3. AMI Capabilities

Our approval of CMP's AMI project is explicitly premised on the system having the capabilities specified in CMP's January 19, 2010 testimony and its DOE grant application. These capabilities include:

- o Measuring and storing load on an hourly (or less) interval basis for residential and small commercial customers; a 15-minute interval basis for commercial and industrial (C&I) customers, and a less than 15-minute interval basis for specified customers. The two-way communications network will have adequate capacity and capabilities to allow for real-time meter queries and remote software upgrades. The AMI system will have sufficient capacity to store the hourly billing data for load settlement processes, including potential adjustments and corrections.

- o Measuring and storing the TOU peak demands of each customer as necessary for billing and settling ICAP tags as well as each customer's daily peak demand.

- o Back office and billing systems capable of billing, both T&D and supply, on a TOU basis. These systems will be designed to allow for time periods that differ between T&D and supply and to allow hourly billing for large commercial and industrial customers. The billing and other back office systems will allow loads to be settled in the ISO-NE market systems for all customers based on actual hourly loads rather than load

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<sup>7</sup> CMP states that the portion of grant funding of the costs for the existing or legacy meters would be taxable.

profiles and allow ICAP tags for all customers to be based on actual metered load in the applicable hour, rather than the load profile. The billing and back office systems will allow for multiple standard-offer products within a given standard offer class and allow for bill proration to be performed using metered loads rather than days in the period, as is currently done.

- o Remote disconnections and reconnections.
- o Reliably poll individual meters to evaluate outages and must include an outage tracking system.
- o Monitoring and measuring voltage variances.
- o Accommodate "value added" systems and devices (e.g., in-home displays; load control devices).

#### 4. Ratemaking Issues

##### a. CMP's Proposed Ratemaking Methodology

CMP has developed estimated costs and operational savings attributable to its AMI project, an estimated resulting revenue requirement projection and a methodology for establishing the initial levelized AMI revenue requirement, as well as subsequent adjustments during the current ARP (through 2013) and during periods subsequent to the current ARP. CMP proposes that the savings determination and revenue requirement and rate treatment of its AMI project be in accordance with the methodology in its January 19, 2010 filing. In particular, CMP's proposal is to use the methodology in its January 19, 2010 filing to establish the initial revenue requirement in rates beginning July 1, 2010. This levelized amount would remain in CMP's rates for the duration of the AMI investment life (22 years). During the ARP 2008 period, annual reconciliations would be made for changes in actual costs and transmission/distribution allocation factors. After the ARP, CMP proposes annual adjustments to the savings based on actual changes in escalation factors, as well as AMI investment costs and transmission/distribution allocator changes.

As a result of discussions with Staff and the parties regarding savings from remote disconnection and reconnection, CMP proposes to perform a time study of the travel involved in a sample of the disconnection and reconnection work during the months of April and May, 2010. CMP will provide the results of this analysis to the Commission in its 2010 ARP price change proceeding and recommend an adjustment, if appropriate, to the levelized revenue requirement resulting from the time study.

Also, as a result of previous discussions, CMP proposes to reflect the AMI investment, costs and savings in customer rates in a manner that provides a fair allocation of costs and savings to customer rate schedules. This is necessary because the AMI-related benefits are disproportionately allocated to transmission rates



relative to costs, which, conversely, are disproportionately allocated to distribution rates. Thus, CMP will, during 2010 ARP proceeding, explore cost allocation and rate design methods that equitably allocate these costs and benefits, and present allocation methodologies for consideration before the July 1, 2010 rate change.

Finally, CMP's proposal for the ratemaking treatment of its legacy meters is to record the value of the retired meters that are replaced by AMI meters in a regulatory asset account and amortize the regulatory asset account at the related existing depreciation amounts. In the event that CMP obtains DOE funding for these costs,<sup>8</sup> CMP proposes to reduce that regulatory asset account by such after-tax funding, including any applicable income tax gross-up. CMP will continue to amortize the regulatory asset account at the related existing depreciation amounts, resulting in a shorten recovery period.

b. Commission Decision

We agree with many aspects of CMP's proposed ratemaking methodology. The levelized distribution revenue requirement calculations appear reasonable and consistent with the applicable provisions in the Revenue Requirement and Reorganization Stipulations. In addition, CMP's proposed methodologies for future adjustments provide a useful framework for determining revenue requirements and rates. However, we recognize that changes to the methodology will likely be needed in the event the actual implementation reveals such changes to be necessary or appropriate. CMP is, hereby, directed to file its levelized distribution revenue requirement, consistent with the methodology presented in its January 19, 2010 filing, in its annual 2010 ARP proceeding, subject to updated costs, proposed changes resulting from the time study and reallocations to match transmission and distribution costs and benefits. We will determine, as part of that proceeding, the details associated with the AMI ratemaking for the ARP 2008 period. We specifically leave open the issue of ratemaking for the period beyond the ARP 2008.

We approve CMP's proposed ratemaking treatment for its legacy meters, if it receives DOE funding. In the event that CMP does not receive DOE funding for the legacy meters, but is still eligible for up to \$96 million from the DOE, CMP is directed to notify the Commission so that options can be explored for AMI scope changes that would enable CMP to take full advantage of the DOE funding.

As mention above, as conditions of approval, the Public Advocate recommends that Commission not allow CMP to recover any cost of the AMI project until all the meters are installed and that CMP's shareholders should bear the risk of catastrophic failure of the system. We decline to adopt either of the recommended conditions. First, due to the levelized ratemaking approach dictated by the Reorganization Stipulation, future savings are moved forward in time, providing a significant benefit to ratepayers that would be lost under the Public Advocate's approach of not placing the investment in rates until after the meters are operational.

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<sup>8</sup> As mentioned above, it is unclear as to whether the DOE grant will pay for the costs of the legacy meters

Second, requiring the shareholders to bear the risk of catastrophic failure of the system is inconsistent with ratemaking principles in Maine in which utilities are allowed to recover the costs of prudently incurred investment.

5. Promotion of Pricing Programs

Issues were raised during this phase of the proceeding regarding CMP's role in the promotion and marketing of pricing programs and web portal opportunities that take advantage of its AMI platform. As a condition of approval of the AMI investment, the Public Advocate proposed that CMP be required to engage in meaningful education efforts to achieve the demand response and efficiency benefits.

In its filing, CMP stated that it would work with Staff, interested parties and Efficiency Maine to develop and implement one or more voluntary pricing programs that take advantage of the AMI technology. CMP also stated that it would work with Staff, interested parties and Efficiency Maine to develop and distribute effective and timely customer communications describing the nature and value of the pricing programs. Finally, CMP asks that it be allowed to defer, and be permitted to recover, any incremental costs, including carrying costs, to develop, support, or distribute effective and timely customer communications, provided such costs are not already reflected in AMI costs.

Because these programs have not yet been developed, we recognize that it is premature to make any definitive decisions in this regard. We will, however, initiate a proceeding to consider pricing programs that CMP should implement to take advantage of the AMI platform. We anticipate that CMP will work with Staff, Efficiency Maine Trust and other interested parties to develop programs that take full advantage of the AMI platform. CMP's commitment to work with interested parties on the development and promotion of AMI-enabled pricing programs satisfies the Public Advocate's proposed condition.

We intend to allow CMP to defer and recover incremental customer communication costs, including carrying costs, to develop, produce, or distribute effective and timely customer communications related to AMI use or benefits, to the extent not already reflected in AMI costs. However, we will require CMP to seek prior Commission approval of the expenses it seeks to defer.

6. Employee Transition Issues

We recognize that CMP's AMI investment will result in the loss of 141 full time equivalents or 115 to 120 full time jobs. This represents approximately 10% of CMP's work force. As mentioned above, the IBEW asks that the Commission require CMP to engage in a meaningful early retirement program and re-training program for the affected employees so that they can move into CMP available jobs. The Commission does not want to be involved with CMP's union negotiations or labor relations and we will not at this time adopt any CMP requirements concerning employee transition issues. However, we urge CMP to make all reasonable efforts to accomplish the necessary workforce attrition through early retirement and employee retraining for

other CMP positions. This should be possible given CMP's employee attrition rate of around 6.8% over the last several years. So that we can monitor CMP activities in this regard, we direct CMP to file a work force reduction, employee support transition and retirement plan, prior to elimination of any positions or layoff of employees.

Dated at Augusta, Maine, this 25<sup>th</sup> day of February, 2010.

BY ORDER OF THE COMMISSION



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Karen Geraghty  
Administrative Director

COMMISSIONERS VOTING FOR:      Reishus  
   Vafiades  
   Cashman

## NOTICE OF RIGHTS TO REVIEW OR APPEAL

5 M.R.S.A. § 9061 requires the Public Utilities Commission to give each party to an adjudicatory proceeding written notice of the party's rights to review or appeal of its decision made at the conclusion of the adjudicatory proceeding. The methods of review or appeal of PUC decisions at the conclusion of an adjudicatory proceeding are as follows:

1. Reconsideration of the Commission's Order may be requested under Section 1004 of the Commission's Rules of Practice and Procedure (65-407 C.M.R.110) within 20 days of the date of the Order by filing a petition with the Commission stating the grounds upon which reconsideration is sought.
2. Appeal of a final decision of the Commission may be taken to the Law Court by filing, within **21 days** of the date of the Order, a Notice of Appeal with the Administrative Director of the Commission, pursuant to 35-A M.R.S.A. § 1320(1)-(4) and the Maine Rules of Appellate Procedure.
3. Additional court review of constitutional issues or issues involving the justness or reasonableness of rates may be had by the filing of an appeal with the Law Court, pursuant to 35-A M.R.S.A. § 1320(5).

Note: The attachment of this Notice to a document does not indicate the Commission's view that the particular document may be subject to review or appeal. Similarly, the failure of the Commission to attach a copy of this Notice to a document does not indicate the Commission's view that the document is not subject to review or appeal.