

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Pat Wood, III, Chairman;
Nora Mead Brownell, Joseph T. Kelliher,
and Suedeem G. Kelly.

Consumers Energy Company

Project Nos. 2436-187, 2447-178, 2448-
186, 2449-160, 2450-158, 2451-154,
2452-162, 2453-186, 2468-160, 2580-
216, and 2599-178

ORDER ON REHEARING

(Issued November 23, 2004)

1. Consumers Energy Company (Consumers) seeks rehearing of the Commission's October 27, 2003 order denying its applications to amend ten of the above-referenced licenses to reduce required contributions and to obtain a ruling that it has no further obligations under the fish protection terms of all eleven project licenses.¹ For the reasons explained below, we are denying rehearing except to the extent indicated in this order. Our action serves the public interest by clarifying why Consumers provided insufficient support for amending its licenses.

Background

2. In 1994, pursuant to a settlement agreement among Consumers, the Michigan Department of Natural Resources (Michigan DNR), and others,² the Commission issued Consumers 11 new licenses for the continued operation of hydroelectric projects located

¹ 105 FERC ¶ 61,126 (2003).

² Other signatories to the settlement agreement were the U.S. Forest Service, U.S. Fish and Wildlife Service, National Park Service, and Michigan State Historic Preservation Officer.

in Michigan on the AuSable, Manistee, and Muskegon Rivers.³ Article 408 of each license requires Consumers to study, design, construct, operate, and maintain fish protection measures or devices at each project, as well as to provide funding for the study, design, and construction. Article 409 of each license requires Consumers to make specified annual monetary contributions to a State of Michigan Habitat Improvement Account (fisheries account), for fish losses due to turbine entrainment mortality at each project. Each project's contribution to the fisheries account was calculated based on fish entrainment and mortality studies conducted by Consumers at each project in 1990 and 1991 (1990/91 studies) in connection with its relicensing applications. Article 409 provides procedures for reducing such annual contributions commensurate with the reduction of turbine entrainment mortality achieved by Consumers' implementation of the Article 408 fish protection requirements. Articles 408 and 409 also reserve the Commission's authority to modify or terminate the respective funding requirements after notice and opportunity for a hearing.

3. Consumers filed an overall Fish Protection Installation Plan and Schedule (Protection Plan) for fish protection devices for the eleven projects, and Commission staff approved it in November 1996.⁴ Under the Protection Plan, screens were to be installed and tested first at the Foote Project No. 2436, since this project had the highest annual contribution to the fisheries account. Subsequently, in 1999, Consumers conducted a study at the Foote Project to determine the effectiveness of fish screens in reducing turbine mortality, by comparing pre-license fish entrainment and mortality, as indicated by the 1991 study, with entrainment and mortality following the installation of the screens.⁵

³ Projects located on the AuSable River are Foote (No. 2436), Alcona (No. 2447), Mio (No. 2448), Loud (No. 2449), Cooke (No. 2450), and Five Channels (No. 2453). Projects located on the Manistee River are Tippy (No. 2580) and Hodenpyl (No. 2599). Projects located on the Muskegon River are Rogers (No. 2451), Hardy (No. 2452), and Croton (No. 2468). The orders issuing the new licenses are found at 68 FERC ¶¶ 61,071 through 61,076 and ¶¶ 61,079 through 61,083 (1994). An order on the offer of settlement is found at 68 FERC ¶ 61,077 (1994).

⁴ *Consumers Power Company*, 77 FERC ¶ 62,115 (1996).

⁵ Commission staff approved Consumers' study plan for the effectiveness of the screens at the Foote Project in 1999. 86 FERC ¶ 62,038 (1999).

4. In April 2001, Commission staff determined that fish screens at the Foote Project would not be cost effective, and should not be required, because the study showed only a small difference between the number of fish entrained at screened and unscreened turbines. In addition, staff accepted the study's finding that, with or without fish screens, entrainment mortality at the Foote Project is much lower than Consumers' 1991 study for the project had indicated. Accordingly, the Director reduced the Foote Project's annual Article 409 contribution to the fisheries account from \$210,180 to \$3,100 (in year 2000 dollars).⁶ Consumers was required to continue to pay the amounts specified in Article 409 of the ten other project licenses until such time as it applied for, and the Commission approved, similar amendments of those licenses.

5. On April 30, 2002, Consumers filed applications for amendment of the other ten licenses to reduce Article 409 contributions to levels specified in the applications, and to obtain a determination that it had completed all of its obligations with respect to the Article 408 Protection Plan for all eleven projects.⁷ Accompanying the applications was "Consumers' Desktop Evaluation of Entrainment at 10 Hydroelectric Projects on the AuSable, Manistee, and Muskegon Rivers" (Desktop Study). The Desktop Study examined data from fish entrainment studies at 17 hydroelectric projects in the Midwest, including the Foote Project, and used those studies to represent entrainment rates at Consumers' other ten projects.⁸

⁶ *Consumers Energy Company*, 95 FERC ¶ 62,048, at 64,069. We sustained the staff's determination on rehearing, 95 FERC ¶ 61,394 (2001).

⁷ Motions to intervene in opposition to the applications were filed by Michigan DNR, the U.S. Department of the Interior, and the Michigan Hydro Relicensing Coalition (Coalition). The U.S. Forest Service and, jointly, Michigan DNR, the Forest Service, the U.S. Fish and Wildlife Service, and the Coalition filed comments in opposition.

⁸ For convenience, we will refer to the 17 projects from which the Desktop Study collected data as the "representative projects" and to the 10 projects for which Consumers seeks a modification of the Article 409 contribution levels as the "Consumers projects" or the "10 projects," although the Foote Project, one of the representative projects, is also a Consumers project and the subject of this proceeding to the extent that Consumers seeks a determination that it has satisfied its Article 408 obligations.

6. In our October 2003 order denying the license amendment applications, we concluded that the representative data used in Consumers' model contained flaws that prevented our accepting the results of the Desktop Study. In particular, we stated that the 17 representative projects differed from the 10 Consumers projects in respect to turbine capacity, reservoir size, and type of operation, to the extent that entrainment data from the representative projects could not be relied on to support conclusions about the Consumers projects. We also rejected Consumers' assumption that the species composition of fish collected in reservoir samplings at the representative projects could be relied on to determine either the species composition in the reservoirs at the Consumers projects or the species composition of fish entrained at those projects. Moreover, we noted, the data from the representative projects were taken more than a decade ago and would not account for any changes that may have occurred in the fish community since that time. In reaching these conclusions, we relied on an analysis of the Desktop Study conducted on the Commission's behalf by Oak Ridge National Laboratory (Oak Ridge analysis).⁹

7. We concluded that the Desktop Study did not produce a reliable estimate of the species composition of entrained fish, and therefore of the value of fish lost, at the ten Consumers projects. We stated that site-specific studies would be needed to provide such data as the fish size distributions and numbers of fish in each of the project reservoirs, and that the most accurate assessment of turbine-passage-related fish losses would be derived from site-specific studies at each of the projects. We suggested that Consumers could conduct sufficient site-specific studies in the appropriate river reaches to improve the data used in its Desktop Study.

8. On rehearing, Consumers argues that we held the Desktop Study to an unrealistically high standard of accuracy, particularly in light of our policy of accepting the use of such studies. Consumers emphasizes that the purpose of the Desktop Study was to provide a reasonable level of scientific support for the amendment applications, using more reliable and accurate data than the 1990/91 data that underlie the present Article 409 payment levels. Consumers argues that, rather than rejecting the entire Desktop Study based on general criticisms, we should have examined whether it was

⁹ Review and Evaluation of Consumers Energy Company's "Desktop Evaluation of Entrainment at 10 Hydroelectric Projects on the AuSable, Manistee, and Muskegon Rivers," Oak Ridge National Laboratory (February 20, 2003), filed in the record of these proceedings on October 27, 2003.

adequate to support modifying the payment level as to each of the individual amendment applications, based on a project-specific analysis. Consumers asserts that we should have determined that the Desktop Study, even if scientifically imperfect, was adequate for purposes of amending the payment requirements.

9. Consumers criticizes our reliance on the Oak Ridge analysis, which Consumers asserts we merely summarized in our order, in place of conducting our own independent analysis. It also complains that it had no opportunity to respond to the Oak Ridge analysis, as that analysis was entered into the record only when the amendment order was issued.¹⁰ Consumers contends that our order incorporated a number of errors and mischaracterizations from the Oak Ridge analysis. Finally, Consumers complains that we did not address its request in the amendment applications for a finding that the Article 408 Protection Plan and Schedule have been completed as to all 11 projects and require no further action on Consumers' part.

Discussion

10. Consumers argues that, in other proceedings, we have allowed licensees to use studies that have been conducted at other projects, and that we have not invariably insisted on the undertaking of expensive or theoretical studies when existing studies would suffice. However, the issue in this proceeding is not our policy on the use of desktop or representative studies generally, but the reliability of the particular data used by Consumers for demonstrating fish entrainment and losses at the 10 Consumers projects. The Oak Ridge analysis did not find Consumers' Desktop Study unacceptable simply because it was a desktop study. On the contrary, the analysis concluded that the use of a simple desktop entrainment model to estimate fish losses would be reasonable, provided that appropriate, representative data are used as input to the model.¹¹ Similarly, although we may not require studies to demonstrate impacts on resources with absolute certainty, this does not obviate the need to evaluate Consumers' study for reliability. The

¹⁰ Consumers argues that the Oak Ridge analysis was entered into the record on October 28, 2003, the day after the order was issued, not on October 27, as we stated in the amendment order. The record indicates that the analysis was stamped as filed on October 27 but is designated as received in the Secretary's office on October 28. For purposes of our discussion here, the difference is of no significance.

¹¹ Oak Ridge analysis at 7.

problems found with Consumers' Desktop Study do not derive from a failure to appreciate the usefulness of desktop studies or from an insistence on perfect data; rather, they are specific to that study, the data it used, and the conclusions Consumers asked us to accept as justified by those data.

11. The fisheries account contributions required by Article 409 were based on the value of fish entrained, which, in turn, is a function not only of the numbers of fish entrained, but also of their size and species. The Oak Ridge analysis determined that the 1990/91 studies, on which the existing contribution levels are based, were likely flawed, because an unusually high number of large fish was found in the discharge nets and because there were problems with the fish sampling techniques.¹² Therefore, the analysis concluded, the 1990/91 estimates of the sizes, numbers, and even species of fish entrained at these projects were probably inaccurate, and a reevaluation of entrainment at the 10 projects was appropriate. But the Oak Ridge analysis found that Consumers' Desktop Study did not provide a reliable substitute evaluation. Although we summarized the reasons for this finding in our prior order, it is necessary to describe them more fully here for the purpose of addressing Consumers' criticisms.

A. Findings of the Oak Ridge Analysis

12. As described by the Oak Ridge analysis, the Desktop Study incorporated three categories of data to estimate the annual turbine-passage losses of fish at each of the ten projects: numbers and sizes of entrained fish, species composition of entrained fish, and turbine-passage mortality. The Oak Ridge analysis described the weaknesses of the data sources and assumptions in each category.

13. In respect to estimates of numbers and sizes of fish, the Desktop Study calculated the number of fish entrained per month and year, with all species and size groups combined, for each of the 17 representative projects. It then applied the mean annual entrainment estimates to the 10 Consumers projects, but without adjustment for the size of the Consumers projects or for their turbine discharge rates. So, for example, the Desktop Study assumed that the mean annual entrainment for the 15 representative projects that are run-of-river (58,156 fish) would be the number of fish entrained every year at each of the six Consumers' projects that are run-of-river or re-regulation facilities. Similarly, it assumed that the overall mean annual entrainment for all 17 representative

¹² *Id.* at 7.

projects (70,516 fish) would be the number entrained every year at each of the four Consumers peaking plants.

14. The Oak Ridge analysis stated that such use of a single value for number of fish entrained per unit time (in this case, per year) ignores often substantial variability in entrainment rates within and among projects, in that diel, seasonal, spatial, site-specific, and species-specific patterns in entrainment rates can vary widely.¹³ Consistent with this observation, the analysis found that among the 17 representative projects there was considerable monthly and annual variation in the numbers of fish entrained. The annual number of fish entrained at the 15 representative projects that operate in a run-of-river mode ranged from 6,620 to 172,455, while entrainment during April, a peak entrainment month, ranged from 110 to 81,916 fish among those projects. The analysis noted that the Desktop Study's use of the mean annual value to establish fish losses produced different results from those that would have been produced if the Study had used the highest annual entrainment value of 172,455 (a more conservative method of estimating losses) or the median value of 41,921 (which might have been a more appropriate method where large individual numbers can skew the mean). That the choice of entrainment value measurement (mean, median, or highest value) would affect the study results underscores the unreliability of using a single value to represent annual fish entrainment.

15. The Oak Ridge analysis also found that the 17 representative projects were not clearly similar to the 10 Consumers projects in respect to project design aspects that could affect entrainment rates. Higher turbine intake volume per unit time can result in higher entrainment rates, while smaller reservoirs will support smaller fish populations than larger reservoirs, resulting in fewer fish entrained. The analysis found that turbine capacities of the representative projects range from 416 to 3,994 cubic feet per second (cfs), whereas the 10 Consumers projects have a turbine capacity range of 2,400 to 5,800 cfs. Similarly, the reservoir volumes of the representative projects range from 375 to 13,987 acre-feet, compared to a range of 3,420 to 134,970 acre-feet for the 10 Consumers

¹³ A diel pattern reflects changes that occur in fish entrainment rates over a 24-hour period. For example, owing to their behavior, fish may be entrained at higher rates during the nighttime than during the daytime. In such a case, a peaking hydroelectric power project that operates less at night than during the day may entrain fewer fish than would a run-of-river project. A spatial pattern may reflect differences in the distribution of fish within a reservoir or among reservoirs in different geographic regions that may affect their relative rate of entrainment compared to the mean value for a group of reservoirs.

projects.¹⁴ The analysis found that the Desktop Study also treated run-of-river and re-regulation projects the same for purposes of estimating how project operations influence entrainment, even though entrainment rates may be greater for re-regulation projects than for run-of-river projects under certain circumstances.¹⁵

16. The Oak Ridge analysis notes that the Desktop Study estimated the length-frequency distribution of entrained fish at each of the 10 Consumers projects by applying the species-specific length frequency observed at the Foote Project during the 1999 screen effectiveness study. That is, if a particular percentage of fish of a given species collected at Foote was a certain length, the Desktop Study assumed that the same percentage applied to fish of that species entrained at each of the other projects. The Oak Ridge analysis concluded that this approach would not be reliable unless it were known that the size distributions of fish in the reservoirs of the 10 projects (that is, the sizes of fish available for entrainment) were similar to those in the Foote reservoir and that the characteristics of the intakes of the 10 projects were similar to those at Foote.¹⁶ The analysis concluded that the Desktop Study did not satisfy these conditions: the Study provided only the total numbers of fish collected in the reservoirs by various techniques, not size distributions and estimated population numbers; and the 11 projects (including Foote) have substantial differences in reservoir size, mode of operation, and intake configuration that might create differences in the sizes of the fish entrained at the different projects.¹⁷

¹⁴ Oak Ridge analysis at 10.

¹⁵ *Id.* at 11.

¹⁶ The analysis also concluded that, for the approach to be valid, the 1999 Foote study should have been conducted over a sufficiently long time to accurately estimate the length-frequency distributions of all entrained species over the course a year, rather than only between April and November. We acknowledge that this defect did not prevent our acceptance of the Foote study for purposes of establishing a revised estimate of the value of fish losses at the Foote Project itself, and we do not rely on it here as a basis for rejecting the Desktop Study.

¹⁷ Oak Ridge analysis at 12-13.

17. The Oak Ridge analysis also could not accept Consumers' estimates of the species composition of entrained fish at each of the 10 projects.¹⁸ The analysis noted that these estimates were based on species composition data obtained from surveys conducted at each of the reservoirs in the early 1990's, supplemented by even earlier data collected by the Michigan Department of Natural Resources. For each reservoir, the Desktop Study determined the relative abundance of each species as a percentage of the total number of fish collected in the surveys, and this percentage was then applied to the total number of fish that the Study estimated were entrained at each project.¹⁹ However, the analysis found, the data presented on the fish populations in each of the reservoirs were not estimates of population size but simply a tally of fish collected. Each reservoir was sampled using different techniques, in different years, and with different levels of fishing effort. Consequently, the analysis concluded, the information might not accurately reflect the relative composition of fish species in the reservoirs, much less the species composition of entrained fish.²⁰ The Oak Ridge analysis also cited possible changes in the fish community since the surveys were conducted as a factor undermining the surveys' reliability for estimating the species composition of entrained fish.

18. The Desktop Study used turbine-passage survival data from entrainment studies conducted at four of the 10 Consumers projects. Since each of the four projects had a different design, Consumers considered them representative of the different project designs and turbine types of all 10 projects. The Oak Ridge analysis found that these site-specific studies did not reveal expected patterns in turbine-passage survival rates, in respect to either turbine types or sizes of fish. The Oak Ridge analysis concluded that the absence of predictable patterns in survival among the four categories of projects suggested that there might not be patterns within a project category, calling into question the applicability of the survival estimates to the remaining six projects, and raising the

¹⁸ Estimates of species composition are important in determining value of fish lost, since some species are more valuable than others.

¹⁹ As noted earlier, the Study estimated the mean annual entrainment to be 58,156 fish at each of the six run-of-river or reregulation projects and 70,516 fish at each of the four peaking projects.

²⁰ The species composition of the fish population at a reservoir would not necessarily be the same as the species composition of fish entrained at that reservoir, since fish of larger species would be less likely to be entrained than those of smaller species.

possibility that studies might have to be conducted at each of the other projects to obtain precise estimates of turbine passage survival there. Although the Oak Ridge analysis found the Desktop Study's turbine-passage survival methodology to be acceptable, the analysis considered the survival estimates less valuable than might have been expected.

19. In summary, the Oak Ridge analysis found that the data in the Desktop Study were not adequate or reliable to support a determination of the value of the fish entrained at the 10 Consumers projects. Consumers objects to the Oak Ridge conclusions on several grounds.

B. Consumers' Criticisms

20. Consumers filed a separate rehearing request for each of the 10 projects for which it seeks both to amend Article 409 and to obtain a ruling as to its obligations under Article 408. Consumers also filed a separate rehearing request for the Foote Project, for which it seeks only an Article 408 determination, the Article 409 payment level having already been modified by the Commission staff's April 2001 order.

21. Consumers contends that many of the Desktop Study weaknesses cited by the Oak Ridge analysis, such as the potentially significant differences among the projects in respect to project characteristics and fish populations, vary from project to project. Consumers argues that it was error to deny the amendment applications collectively on these bases without a site-specific analysis to determine whether the criticisms applied to each individual project. Consumers asserts that, in fact, there are certain of the applications to which none of the criticisms apply.²¹ In each of the rehearing requests, Consumers presents a technical response to the Oak Ridge analysis that addresses both the findings of the analysis that apply generally to all 10 projects and the extent to which the flaws alleged to exist in the Desktop Study do or do not apply to the individual project in question. Consumers asks that we reassess the applicability of the analysis to each project's amendment application.

²¹ For example, Consumers argues that, although entrainment estimates at the representative run-of-river projects might not be representative of entrainment at Consumers' re-regulating projects, those estimates could still be used to support entrainment conclusions for Consumers' run-of-river projects. Similarly, Consumers notes that, despite general Oak Ridge criticisms about the inability to compare turbine capacity and reservoir size among the projects, some of the 10 projects fall within the range of turbine capacity and reservoir size of the representative projects.

22. We will not attempt to evaluate the applicability of the Oak Ridge analysis criticisms on a project-by-project basis. Consumers chose to submit a single study in support of modifying the payment obligations for all 10 projects. It was Consumers' responsibility, in the first instance, to ensure that the Study's data could be applied reliably to each project. Consumers now seeks to salvage the rejected Study by having the Commission determine what aspects of the data might still be considered applicable to particular projects. We will not engage in this piecemeal approach to applying the results of Consumers' Study.

23. Moreover, to the extent that similarities exist between any of the representative projects and any of the projects for which Consumers seeks to modify its payment obligations, such similarities would not overcome the defects of the study that we have previously described in respect to the way data were collected, grouped, and applied. These defects include: the grouping of data from the representative projects to produce one mean annual entrainment figure for groups of Consumers projects; the grouping of data from the representative projects over a wide range of turbine capacities and reservoir volumes that do not correspond to the capacity and volume ranges for the Consumers projects; the generalization of species-length frequency results from the 1999 Foote Project study to the other 10 Consumers projects; the unreliable and inconsistent methods used to determine populations of fish species in the 10 reservoirs; and the unsupportable use of those fish population figures to estimate the species composition of entrained fish in those reservoirs.

24. Consumers urges us to consider its Desktop Study in relation to the data on which the present fisheries account payments are based. It argues that, although the Oak Ridge analysis may have found the Study to be scientifically imperfect, the Commission itself should not be bound by a purely technical analysis but should be willing to accept study results that are clearly superior to those of the 1990/91 studies, which the Oak Ridge analysis itself concluded were unreliable. Consumers cites the Commission staff's order amending the Foote Project Article 409 payment levels as representing the kind of pragmatic approach to a study that Consumers would have us adopt in relation to the Desktop Study and the present amendment requests.

25. We do not agree that we should revise license article payments based on flawed study results simply because existing payment levels are based on other study results that may be even less reliable. In the relicensing proceeding for these projects, Consumers agreed to use of the 1990/91 studies as a basis for determining the Article 409 payments levels, despite any flaws those studies might contain. If Consumers proposes a modification of those payment levels, the burden is on it to produce documentation sufficiently reliable to support its specified revised contribution figures. Consumers' citation of the Foote order as a model for considering the validity of the Desktop Study

results is not apt. The Foote study used specific fish entrainment data collected at that project site in 1999 after the installation of fish screens and applied it to the Foote Project itself. Here, Consumers asks us to accept assumptions about its 10 projects based not on new data collected at those project sites but on characteristics of 17 other projects. The methodologies of the two studies, in respect to the conclusions they purport to justify, are not comparably reliable.

26. Consumers states that it chose, in the Desktop Study, to err on the side of overstating entrainment mortality, and that it introduced other conservative assumptions into the Study, ensuring that it would not be underpaying for fish losses at the projects during the license term. Consumers also claims that it has overpaid considerably to date under the existing Article 409 levels, as evidenced by the reduction authorized in the Foote Article 409 payments, making it additionally unlikely that the proposed license amendments would result in underpayments, when considered over the entire license terms.

27. We cannot accept Consumers' assertion that assumptions built into the study and overpayments to date will ensure that modified contributions during the remainder of the license terms will not result in underpayments. The Oak Ridge analysis could not determine whether the Desktop Study's methodology would have overestimated or underestimated entrainment as to each reservoir. We also cannot be certain that the 1990/91 studies overestimated the value of fish losses at the other projects as they did at Foote; therefore we have no assurance of overpayments as to each project, let alone of their extent. Moreover, an expectation that accepting the Study results would create a rough equalization of payment levels over time is not a sufficient basis for accepting study results and amending licenses. Such an amendment must instead be based on reliable fish loss estimates that would support establishment of rational payment levels.

28. Consumers objects to our concern with its use of species composition data from 1990-91. It points out that, while use of older data may be a weakness, the Commission routinely relies on data to establish license provisions that will apply for many years after the data were collected. It notes further that the current Article 409 values, which will continue to apply if Article 409 is not amended, are based on species composition data from the same relicensing studies. Similarly, Consumers criticizes our objections to its use of a single-year study and to aspects of its turbine survival studies, given that we were willing to rely on these studies in issuing the licenses. In issuing orders, we seek to rely on information that is as accurate and current as circumstances permit. The 1990/91 studies may have produced the best available data when the licenses were issued, but these data are less valuable for supporting an amendment of the licenses a decade later. In any event, our unwillingness to accept the Desktop Study rests on more significant factors than the age of the species composition data and the use of a single-year study.

29. Consumers objects to our relying on what it characterizes as an “outside” source for our disposition of its amendment requests rather than conducting our own independent analysis, especially given that the Oak Ridge analysis did not, in Consumers’ view, reflect any Commission guidance about the acceptability of desktop studies. As noted earlier, Oak Ridge’s criticisms of Consumers’ Desktop Study derived from the Study itself, not from a failure to acknowledge the acceptability of desktop studies generally. Moreover, that the Commission contracted with Oak Ridge to analyze the Study does not prevent the Oak Ridge analysis from being a staff analysis. Because disposition of the amendment requests largely entailed the resolution of technical issues, the Commission of necessity relied on the analysis of its technical staff. The argument that we were required to conduct our own “independent” analysis has no merit.²²

30. Consumers asserts that the Oak Ridge analysis contained errors that our order perpetuated or did not correct. Consumers states that the analysis and the order incorrectly assumed that none of the representative projects, but two of the Article 409 amendment projects, were re-regulating projects, whereas in fact the Foote Project, one of the representative projects, is a re-regulating project, and only one of the 10 amendment projects (the Croton Project No. 2468) operates in this mode. This minor mischaracterization does not invalidate the findings of the analysis in respect to the flaws in Consumers’ Study. Consumers also complains that the analysis and order do not appear to acknowledge that the 1999 Foote study has already been accepted as a basis for modifying the estimates of entrainment losses at the Foote Project. While the analysis (at page 24) questioned whether the 1999 study accurately reflected entrainment rates at Foote, this statement was made in the context of considering the circumstances under which the Foote study results could be extrapolated to other projects. Neither the analysis nor our order failed to recognize that the present requests to amend Article 409 do not apply to the Foote Project.

²² Consumers also complains that it was given no notice and opportunity to comment on the analysis before issuance of the order. There is no requirement to release a staff technical analysis for comment in advance of an order that relies on and incorporates that analysis. The Oak Ridge analysis was placed in the record, and our amendment order clearly referred to it as the source of our conclusions. Rehearing presents Consumers the opportunity to address any part of our order, including the underlying technical analysis, to which it objects.

C. Article 408

31. Each of the amendment applications requested a Commission finding that the Article 408 Fish Protection Installation Plan and Schedule “have been completed and require no further action on Consumers’ part.” Consumers argues that we did not address this issue in our amendment order. Consumers is correct. We will therefore grant rehearing in order to address the issue here.

32. Under the Protection Plan, screens were to be installed and tested first at the Foote Project. Based on the installation and test results at Foote, Consumers was to proceed with the second phase of the Protection Plan, in which it would evaluate the use of screens or other protection devices at the Five Channels Project. A third phase of the Protection Plan would involve sequential installation of screens at the Cooke, Mio, and Croton Projects, depending on their cost effectiveness.

33. In its applications, Consumers asserted that the the Protection Plan and Schedule for fish protection devices was based on the Article 409 payment levels and the 1990/91 entrainment studies. It argued that the original economic and scientific bases for proceeding with the Plan no longer exist, now that the 1990/91 studies have been shown to be seriously flawed.

34. In its November 1996 order approving the Protection Plan and Schedule, staff noted Consumers’ determination that only at the five projects mentioned above was the value of lost resources sufficient to support installation and operation of cost effective fish protection devices. Installation of stoplog screens appeared to be very cost effective at two of the projects (apparently Foote and Five Channels) but only marginally cost effective at the remaining three projects.²³ Thus, the decision to install and test fish screens and other devices at the projects, including selection of the projects to be included in the Plan, was dependent on the value of lost fish resources, as Consumers asserts.

35. Nevertheless, it would be inappropriate for us to conclude here that the flawed nature of the 1990/91 studies obviates the need for further actions under the Protection Plan and Schedule. Although the Foote study findings call into question the reliability of the 1990/91 studies generally, and although the Oak Ridge analysis concluded that those

²³ 77 FERC ¶ 62,115 at 64,193.

studies likely were flawed, we have not accepted the results of the Desktop Study as to fish losses for the other projects. Therefore, we have made no determination of the extent to which the 1990/91 study results might not reflect entrainment losses at those projects. To the extent that Consumers' Article 408 request is tied to its request for a revision of fish loss estimates and payments at the other projects, our conclusions in this proceeding provide no basis for a finding that Consumers' Article 408 Protection Plan obligations have been satisfied.

36. Consumers also argued in its amendment applications that the terms of the Protection Plan themselves provide that there is no need for further activities under the Plan. Under the Plan, as described in the staff order approving it, the stoplog screens installed at Foote were to be tested for their "biological effectiveness." If the screens were determined to be ineffective, Consumers was to evaluate the cost effectiveness of redesigning them. If the redesign proved infeasible, Consumers was to evaluate the installation of a seasonal barrier net at Foote Dam. This redesign was to be done in consultation with the state and federal resource agencies, taking cost considerations into account.²⁴ Consumers argues that the April 2001 staff order amending the Foote Article 409 payments should be construed as finding that no further activities were required to be undertaken at Foote.

37. Citing the 1999 Foote study, the April 2001 order found that the difference in fish entrainment mortality between screened and unscreened units was 146 fish out of approximately 10,000 fish entrained, and that the annual value of those lost fish was approximately \$1,030. The staff found that installation of the fish screens "would not be an effective fish protection system and should not be required."²⁵ The order was silent on the issues of screen redesign and evaluation of a barrier net, as was the Commission's order on rehearing.²⁶

²⁴ 77 FERC ¶ 62,115 at 64,192.

²⁵ 95 FERC ¶ 62,048 at 64,066.

²⁶ Ordering paragraphs (D) and (E) of the staff order directed Consumers to consult with the resource agencies and develop a plan to evaluate fish entrainment and the resultant monetary compensation at the other 10 projects. This filing was also to address recommendations to continue, modify, or cease implementation of the order approving the Protection Plan and Schedule. 95 FERC ¶62,048 at 64,069. However, the

(continued . . .)

38. Since, under the Protection Plan, screen redesign and evaluation of a barrier net at the Foote Project were to take cost effectiveness into consideration, and since the annual value of lost fish at Foote has been revised such that further measures at Foote would clearly not be cost effective, we clarify that no further fish protection measures at the Foote Project are required under the Plan. However, as described in the order approving the Protection Plan, under the Plan's second phase, which was to begin in September 1999, Consumers was required to evaluate use of stoplog screens or a seasonal barrier net at Five Channels "[i]f the ¾-inch horizontal bar stoplog screens were not biologically effective at the Foote Project." Further, the third phase of the project, installation of ¾-inch horizontal bar stoplog screens at the Cooke, Mio, and Croton Projects, was to be "solely dependent upon the cost effectiveness of such installations and would be determined in consultation with the resource agencies in September 2002."²⁷ In light of these provisions, and of the fact that no revised fish entrainment values have been determined for any of these other projects, we cannot conclude on the basis of this record that Consumers has no further fish protection obligations at these projects under the Protection Plan.²⁸

39. Because it is no longer possible to adhere to the approved schedule for undertaking further activities under the Protection Plan, we will direct Consumers to consult with the resource agencies and to file with us, for our approval, a modified plan that will identify remaining activities to be undertaken and the schedule for accomplishing them. The filing should include any recommendations of the agencies and indicate whether or not those recommendations were adopted.

The Commission orders:

(A) The request filed November 26, 2003, by Consumers Energy Company for rehearing of the Commission's order of October 27, 2003, denying amendment of its

Commission's order on rehearing deleted these ordering paragraphs as beyond the scope of the proceeding. 95 FERC ¶ 61,395 at 62,469.

²⁷ 77 FERC ¶ 62,115 at 64,192.

²⁸ Even though the Protection Plan and Schedule affects only five projects, it is a requirement of all 11 licenses and the approved Plan and Schedule applies to all 11 projects. Therefore, until all activities under the Plan have been completed, we cannot find that the Article 408 Plan requirements have been fulfilled for any of the projects.

licenses for the projects included in this proceeding is denied except as indicated in this order.

(B) Consumers shall consult with the Michigan Department of Natural Resources, the U.S. Forest Service, and the U.S. Fish and Wildlife Service regarding remaining actions to be taken under the Installation Plan and Schedule for Fish Protection Devices, approved November 22, 1996, and, within 60 days, file for Commission approval any modifications to that plan and schedule. The filing shall include any recommendations of the above resource agencies and indicate whether they were adopted.

By the Commission.

(S E A L)

Linda Mitry,
Deputy Secretary.