STATE OF VERMONT

ENVIRONMENTAL COURT

In re: Entergy Nuclear/ Vermont Yankee Thermal Discharge permit amendment (Appeal of Connecticut River Watershed Council, Trout Unlimited (Deerfield/Millers 349 Ch.), and Citizens Awareness Network) (Appeal of New England Coalition on Nuclear Pollution) (Cross-Appeal of Entergy Nuclear Vermont Yankee, LLC)	}	Docket No. 89-4-06 Vtec

Decision and Order on Pending Motions

The Court issued the Decision and Order on the merits of the present appeal on May 22, 2008 (the May 2008 Decision). Appellants Connecticut River Watershed Council, Trout Unlimited (Deerfield/Millers 349 Chapter), Citizens Awareness Network (Massachusetts Chapter) and New England Coalition on Nuclear Pollution, and Cross-Appellant Entergy Nuclear Vermont Yankee, LLC, had appealed from a decision of the Vermont Agency of Natural Resources, approving an amendment of the thermal discharge conditions in the most-recently-expired direct discharge (NPDES) permit issued to Entergy Nuclear Vermont Yankee, LLC.

Appellants Connecticut River Watershed Council (CRWC), Trout Unlimited, and Citizens Awareness Network (CAN) (collectively: the CRWC Appellants) are represented by Patrick A. Parenteau, Esq., and David K. Mears, Esq.; Appellant New England Coalition on Nuclear Pollution (NECNP) is represented by Phoebe Mills, Esq.; Cross-Appellant-Applicant Entergy Nuclear Vermont Yankee, LLC (Entergy) is represented by Elise N. Zoli, Esq., Sarah Heaton Concannon, Esq., U. Gwyn Williams, Esq., Matthew S. Borick, Esq., Robert A. Miller, Jr., Esq., R. Bradford Fawley, Esq., Zachary R. Gates, Esq., Haimavathi Marlier, Esq., and Kevin C. Hartzell, Esq.; and the Vermont Agency of Natural Resources

(ANR) is represented by Catherine Gjessing, Esq. and Warren T. Coleman, Esq. In addition, the Water Resources Panel of the Natural Resources Board entered an appearance, represented by John H. Hasen, Esq., but did not participate in the merits of this appeal. The Court has granted the parties' requests for an enlargement of time to appeal this decision to the Vermont Supreme Court, although noting that such an order was not, strictly speaking, necessary, as V.R.A.P. 4 is applicable to this case.

On May 29, 2008, Entergy filed a letter with the Court, addressed to Judge Wright, characterizing the choice of 76.7 degrees F as a "stenographic error, inadvertently transposing the actual maximum temperature information provided with non-maximum temperature information on the end date of the fishway period," and requesting its "correction." In the absence of any formal motion or title provided by Entergy, the Court treated this request as a V.R.C.P. 60(b)[1] motion for relief from judgment

In a footnote to this Court's October 3, 2006 scheduling order, reiterated in footnote 6 at page 10 of this Court's January 9, 2007 decision on then-pending motions, the Court noted that "that there is no provision in the Vermont Rules of Civil Procedure or the Vermont Rules for Environmental Court Proceedings for parties to make requests in letters addressed to the presiding judge, and that it assists the Court staff in properly docketing and tracking such requests if the requests are made in the form of motions." Entergy should not still be persisting in this practice. To the extent that it remains relevant in the present proceedings, the Court will not accept any further motions (from any party) cast in the form of letters to the presiding judge (not to mention that these letters also persist in misspelling Judge Wright's first name).

In its June 9, 2008 response to the Entergy motion, also in letter form, the ANR requested clarification of three issues in the May 2008 Decision: 1) whether the fish conduit

[1] It may have been intended by Entergy as a V.R.C.P. 60(a) motion to correct what it characterized as a stenographic or clerical error.

temperature sensor has to be installed if Entergy does not act to implement the 1 degree increase during the June 16-July 7 time period; 2) whether the 76.7 degree F cap is an actual measured temperature cap and not a plant-induced temperature measurement as is the remainder of the thermal discharge regime (except for the 85 degree F cap also imposed by the ANR and in the Court's decision); and 3) how to account for the early closure of the fish ladder, vis-a-vis the location of the temperature sensor, as the downstream fish conduit and fish pipe operate until the end of July regardless of the potential for closure of the fish ladder prior to July 7.

Pursuant to a briefing schedule established by the Court, Entergy filed a memorandum in support of its Rule 60(b) motion, together with an affidavit of its witness Dr. Mark Mattson, which included a discussion both of evidence in the record and of additional publicly-available data from Holyoke Dam not presented in evidence in this proceeding. The CRWC parties moved to strike the affidavit and those portions of Entergy's motion that rely on it.

On June 20, 2008, Entergy also filed, again in letter form, a response in support of ANR's request for clarification, but supplementing that request with several additional requests of its own, stating that the Court "may treat this request as [a] motion, pursuant to V.R.C.P. 59(e) to clarify. . . ." Entergy requests 1) that the monitoring requirement and discharge limitation in paragraph 1 of the order apply only when the fish ladder is in operation, and only when it is notified by the dam operator that the fish ladder has reopened; 2) that in the event of a "temporary loss or apparent inaccuracy" of either monitor in paragraphs 1 and 2 of the order, that the other monitor be allowed to be employed as a surrogate; and 3) that both monitoring locations must exceed the limit "to deprive Entergy of access" to the requested 1 degree F increase in the summer thermal regime.

Entergy Rule 60(b) Motion to Alter

Entergy has moved to alter the June 16-July 7 cap on ambient temperature as measured at the fishway or fish conduit. The premise of Entergy's motion is incorrect: the Court's decision to use some measure reflecting the conditions at the end of the shad run, rather than the maximum temperature earlier in the season, was not an inadvertent stenographic transposition but was a reasoned and conscious choice by the Court. However, the Court agrees both that it could have been better explained, and that the summary table referred to in the testimony did not accurately reflect the underlying data.

With respect to the upstream migration of shad, the methodology used in the May 2008 decision sought to ensure that all the shad that would migrate above Vernon Dam absent the influence of Vermont Yankee's thermal discharge would also migrate above Vernon Dam under the influence of that discharge. However, because this is not the renewal permit proceeding, the Court did not have before it the overall summer thermal regime, and only addressed the additional degree sought in this amendment proceeding. Based on the limited evidence presented as to the locations of the fishway, the additional downstream fish pipe, and the downstream fish conduit, with reference to the plume of heated water, the May 2008 decision set a cap on the additional degree increase during the annual shad migration, to protect that migration.

The evidence showed that the upstream extent of shad migration (that is, where the fish will stop migrating and will spawn) is related to water ambient temperature, but is also related to the date within the overall spawning season, the geographic location (latitude) within the range of the fish, and to the condition or level of stress and exhaustion in the fish. The result of these factors is that the later in the season within the spawning run, the fewer fish would be migrating past Vernon Dam anyway. As discussed in the May 2008 Decision, at p. 26 et seq., the purpose of the thermal discharge regime, however it is designed, is to ensure that the thermal discharge from Vermont Yankee will assure the protection and the propagation of the migratory species using lower Vernon Pool during all life stages of their migration, as well as protecting the resident species.

The Court set limits for the June 16-July 7 period, towards the end of the shad migration, to ensure that even these later season migrating fish, already less likely to

proceed the way up past Vernon Dam, are not deterred by unduly high temperatures from continuing up the fish ladder. Thus, even though temperatures earlier in the season may fluctuate above the selected limit, the Court intended to select a limit that would reflect normal conditions at the end of the annual fish migration, so as to provide some level of confidence that upmigrating fish would not be deterred from using the fish ladder and proceeding above Vernon Dam even during the latest segment of the migration run, and that post-spawned fish could successfully pass back downstream. That is, it was an effort to select a limit, to be applicable only to this three-week period, that would exclude the unusual or extremely hot or cold conditions, and would be representative of temperatures at the end of the shad run when shad were actually using the fishway.

A closer look at the underlying data found in Appendix 6, and not just at the summary tables, shows that the 76.7 degree F figure was the highest temperature on the last date that fish were counted in the fishway only in 1997, on July 6. The latest date on which fish were counted in the fishway for the 1991 through 2001 period was in 1996, on July 7, on which date the maximum temperature was 74.9. (As 1996 was a leap year that is the equivalent date to July 6). In other years the shad run finished on as early as June 26 and at temperatures as cold as 70.4 degrees F to as hot as 79.7 degrees F. Accordingly, to determine whether the 76.7 degree F figure remains a representative temperature cap for the purposes of protecting the shad run in the fishway, we have taken a weighted average of the temperatures of each hour during which shad were counted in the fishway on the last day of the run in each year, weighted by the number of fish counted in each counted hour. That weighted average would have resulted in a temperature cap for the June 16 through July 7 period of 75.8 degrees F rather than the 76.7 degree F limit imposed in the May 2008 decision. Accordingly, Entergy's request to alter the ambient temperature cap is DENIED; however, the Court will alter several paragraphs of the decision, as set forth below, to correctly reflect the cited data.

CRWC's Motion to Strike the Mattson Affidavit

To the extent that the Mattson affidavit sought to provide data, even publicly-available data, that was not presented in evidence at the extensive trial of this matter, the

Motion to Strike is GRANTED. Entergy did not show that this evidence was newly-discovered (V.R.C.P. 60(b)(2)) and did not show that it could not have been discovered in time to file a motion for a new trial. With regard to the remainder of the affidavit calling the Court's attention to evidence presented at trial or embedded in the voluminous exhibits, CRWC's Motion to Strike is DENIED.

ANR's Requests for Clarification

ANR requests clarification of whether the fish conduit temperature sensor has to be installed if Entergy does not act to implement the 1 degree increase during the June 16-July 7 time period. It was the Court's intention that the fish conduit temperature sensor be installed regardless of that increase, so that future studies could determine the presence and effect of the thermal plume on fish migrating downstream, as well as to provide a management tool for the ambient temperature cap established in paragraph 2 of the order.

ANR requests clarification of whether the 76.7 degree F cap is an actual measured temperature cap and not a plant-induced temperature measurement as is the remainder of the thermal discharge regime (except for the 85 degree F cap also imposed by the ANR and in the Court's decision). It is an actual measured temperature cap, intended to assure that the conditions at the location of upstream and downstream passage of migrating fish are in fact suitable for the life stage of fish using that location in the river during that period of time.

ANR also requests clarification of how to account for the early closure of the fish ladder, vis-a-vis the location of the temperature sensor, as the downstream fish conduit and fish pipe operate until the end of July regardless of the potential for closure of the fish ladder prior to July 7. This question is addressed below with regard to Entergy's requests for clarification.

Entergy's Requests for Clarification

Entergy has requested that the monitoring requirement and discharge limitation in paragraph 1 of the order apply only when the fish ladder is in operation, and only when Entergy is notified by the dam operator that the fish ladder has reopened. As the attraction flow pipe for the fish ladder is also used as a downstream fish pipe, and as the July 7 ending date was also chosen to address the needs of the post-spawning downstream migration of adult shad, the discharge limitation at the fish ladder and additional fish pipe needs to extend to July 7, whether it is due to paragraph 1 or paragraph 2 of the order and whether the fish ladder is operating as an upstream conveyance of fish or not. Accordingly this request for clarification is denied at this time and as affecting the 2008 season.

However, as discussed in the May 2008 decision, only limited evidence was presented to the Court regarding to the actual relative locations of the fish ladder, the fish conduit and the additional fish pipe. Nor was it clear where the temperature sensor is located within or near the fish ladder. The expired 2001 permit already requires Entergy to report the temperature at the fish ladder sensor when the fishway is in operation. If there are any technical or operational difficulties with extending the period of reporting from this sensor, Entergy and the ANR, in consultation with the other parties to this litigation and with the EAC, should discuss an alternative temperature monitoring method at or near the fish ladder to accomplish the desired result. To the extent that such a method will be incorporated into the renewal permit that will supersede the May 2008 decision, the Court need not be involved until or unless that renewal permit is appealed. To the extent that it remains necessary further to alter the May 2008 decision in the present case, it may be submitted to the Court after the parties and the EAC have considered it.

While the temperature sensor required to be installed by paragraph 2 of the order at the downstream fish conduit is only used in this amendment for the purpose of managing the post-spawning shad outmigration, the Court expects that the ANR and/or EAC may wish to require reporting from that monitor to continue at other periods of the year to

assist them in determining the renewal permit parameters or future permit amendment conditions with regard to the juvenile shad outmigration and the post-spawning adult shad outmigration, as well as studies of any other migrating species such as salmon or eel.

Entergy requests that in the event of a "temporary loss or apparent inaccuracy" of either monitor in paragraphs 1 and 2 of the order, that the other monitor be allowed to be employed as a surrogate. Without being informed of the relative locations of the two monitors or the definition of "apparent inaccuracy" this request must be denied at this time. The decision already allows the fish ladder monitor to be used as a surrogate for the downstream fish conduit monitor for the 2008 season. If the renewal permit does not supersede this expired amended permit well before the 2009 summer season, the parties may agree or any party may apply for further alteration in the decision conditions, and the Court will schedule a hearing as appropriate.

Entergy requests that both the fish ladder monitor and the fish conduit monitoring locations must exceed the limit "to deprive Entergy of access" to the requested 1 degree F increase in the summer thermal regime. This request is also denied. As explained in the May 2008 decision, the fish ladder monitoring location is set to assure that any shad that would have migrated above Vernon Dam under the previous thermal regime will also migrate above Vernon Dam under the amended thermal regime. The downstream fish conduit monitoring location is set to assure that any post-spawning adult shad will also be able to leave Vernon Pool and migrate back downstream after spawning. If the renewal permit does not supersede this expired amended permit well before the 2009 summer season, the parties may determine whether to make any further application for altered permit conditions relating to the post-spawning adult downstream migration at that time.

Accordingly, it is hereby ORDERED and ADJUDGED that the following paragraphs of the May 2008 Decision and Order (and the accompanying Judgment Order) are altered

to read as follows. A revised Decision and Order and accompanying Judgment Order, with the changes shown in bold type, is also issued, to be published electronically and filed in the case file; however, to avoid unnecessary copying and postage, please advise the Court if any party wishes to receive a complete hard copy containing the following changes:

Second full paragraph on page 30:

> Migratory and spawning behavior in adult shad is temperature sensitive, occurring in the low 60s (°F) to mid-70s (°F)**, as well as being sensitive to the time of year (length of day), geographic location or latitude, and condition of the fish**. The peak upstream passage of shad at Holyoke Dam occurred at temperatures in the range of approximately 62°F to 71°F. The peak day of passage at Vernon Dam occurred in 1991 at approximately 70°F to 73°F, with the peak four-day period that year occurring at approximately 70°F to 75.6°F. **Over the 1991– 2001 study period, the average of temperatures on hours at which fish were counted on the last day of the shad run each year, weighted for the number of fish counted at each such hour, was 75.8 °F.** The highest temperature measured in the fishway at Vernon Dam between 1991 and 2001 on **the latest two days of the shad run (July 6 or 7)** was 76.7°F

First full paragraph on page 31:

> As the Court does not accept the 86°F avoidance temperature at all life stages of shad, this decision will examine each life stage's temperature requirements separately for each relevant time period of the requested temperature increase during the summer thermal regime. For the upstream adult migration, the present evidence supports only a maximum temperature of 76.7°F in the fishway, as no American shad were counted **on the latest two days of the shad run (July 6 or 7)** in the fishway at any higher temperature.

Paragraph 2 of the Order:

> 2. A temperature sensor shall be installed at the fish conduit **and shall be monitored and recorded when the fish conduit is in operation, during both periods of operation annually**. During the period from June 16 through July 7, the discharge shall also be managed for the outmigration of post-spawned adult shad, so that it results in an actual measured temperature at the fish conduit sensor NOT TO EXCEED 76.7 °F. If the fish

conduit location is close to and at a lower depth than the sensor at the fish ladder, the ANR may allow this temperature to be measured instead at the fish ladder sensor for the 2008 summer season.

ANR's Request for a Status Conference

Because the Court did not have before it the entire thermal regime applicable to Vermont Yankee, it is important again to emphasize that the present decision only addresses the amendment of Vermont Yankee's already-expired permit. It is operating temporarily under the terms of that already-expired permit only until the ANR issues the renewal permit.

The Court cannot determine from the ANR's original request for a conference whether it is necessary after the issuance of the present decision, or whether the parties wish to discuss with the Court any remaining post-judgment issues, or to discuss the status of the renewal permit or the preservation of evidence from this proceeding for any contemplated appeals to this Court. Accordingly, no conference is now scheduled. However, in writing on or before July 8, 2008, any party may make or renew a request, or the parties may file a joint request, for a telephone conference, stating the issues they wish to address at such a conference. At present time is available in the schedule for such a conference on July 14 and on July 21, 2008.

Done at Berlin, Vermont, this 30th day of June, 2008.

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Merideth Wright
Environmental Judge