

IPRenewal NPEmails

From: Stuyvenberg, Andrew
Sent: Tuesday, August 09, 2011 2:12 PM
To: Gray, Dara F
Cc: Bessette, Paul M.; Sutton, Kathryn M.; Dacimo, Fred R.; YOUNG, GARRY G; IPRenewal NPEmails
Subject: RE: Follow up to email from Friday

Thank you, Dara.

To date, I've received nothing from NMFS to indicate that they will be unable to meet the agreed-upon consultation schedule. I put a call in to Julie Crocker regarding her probable timeline yesterday, and I have yet to hear back from her. If I hear anything that is different from what we'd discussed, then I will convey that information to you as soon as possible.

On a separate note, I wanted to let you know that I received a call from Matt Maraglio of the New York State Department of State's Coastal Management Program. He was curious about Entergy's plans for submitting its Coastal Zone Management Act Federal Consistency application for the proposed Indian Point renewal. Mr. Maraglio indicated that you have been his contact at Entergy, and I suggested that he confer with you directly regarding Entergy's plans for the application. I imagine you might already have heard from him. Please let me know if you need any contact information or if there's anything else I can provide.

Best regards,
Drew

From: Gray, Dara F [mailto:DGray@entergy.com]
Sent: Monday, August 08, 2011 6:44 AM
To: Stuyvenberg, Andrew
Cc: Bessette, Paul M.; Sutton, Kathryn M.; Dacimo, Fred R.; YOUNG, GARRY G
Subject: FW: Follow up to email from Friday

Hi Drew

I just wanted to make sure that you are in the loop in terms of where things stand with NMFS, on the technical end.

On this subject, do you have any information regarding the schedule/status of the BO? Based on the teleconference minutes, it looks like the draft BO should be out about August 26th.

Thanks and please don't hesitate to call if you have any questions.

From: Mark Mattson [mailto:mmattson@normandeau.com]
Sent: Friday, August 05, 2011 7:53 PM
To: Julie Crocker
Cc: Craig Swanson; Gray, Dara F
Subject: RE: Follow up to email from Friday

Julie – Thank you for clarifying your interest in information relating to Indian Point's thermal discharge plume extent analyses performed by ASA with Normandeau's assistance. The detailed reply below addresses your remaining questions using information from these analyses, underscoring that the analyses reflect extreme conditions – a “worst case” type condition experienced only once in the ten years of data analyzed during a limited summer period.

The ASA report “Hydrothermal Modeling of the Cooling Water Discharge from the Indian Point Energy Center to the Hudson River”, 22 March 2010 presents a series of figures and text addressing plume extent, again for the extreme

condition defined in the report. I have attached a PDF copy of this report in case you do not have one readily available and want to refer to it while reviewing this response (hopefully your email server will accept a 7 meg attachment).

Your inquiries about the lateral extent of the plume are addressed in Figure 7-9 on page 63 and Figure 7-10 on page 64. These two figures show the maximum surface plume extent for two stages within the dynamic tidal cycle, slack before flood and slack before ebb, respectively. Ambient conditions are represented by the dark blue color in the plan view color contour maps of the temperature in the river. Discussion of these figures is given on page 62 of the report. Because this is a surface plume, its scope will be larger than any other dimension measured, e.g., bottom or mid-water column, which enters a factor of conservatism in the figure with respect to your question.

Your inquiries about the vertical extent of the plume are addressed in Figure 7-15. That figure shows both the horizontal extent of the 4°F delta temperature above ambient and a vertical extent of the plume for a section downstream of IP, just north of Stony Point, under the studied extreme conditions.

Detail about the surface plume extent can be derived from the percent area coverage of the 4°F and 1.5°F criteria related delta temperatures above ambient background shown in Figure 7-14 and Figure 7-17, respectively. As summarized on page 73 of the report:

“the model results for the simulation time period showed that the 4°F temperature rise covered less than 15% of the River vertical cross sectional area at the transects at all times during the simulation period, and generally covered less than 3% of the cross sectional area. The model results also showed that the 4°F temperature rise surface extent was less than 35% across the River at all times, and generally less than 20%. Thus the model results show that the plant is in compliance with the NYSDEC thermal WQS.

In addition, the 1.5°F temperature rise above ambient was calculated for times when the ambient temperature exceeded 83°F. The 1.5°F temperature rise covered less than 40% of the River cross sectional area at all times, and generally covered less than 20 % of the cross sectional area. The 1.5°F cross-river temperature rise extent at the surface was also less than 40% across the River at all times and generally less than 21%.”

Finally, based on the information from the criteria analyses, the following table of plume areas was developed for the 4°F delta temperature areas indicating the extent of the plume on an instantaneous and 24 hour average basis for the depth layer overlying the river bottom, which is the sturgeon habitat. Note that all of the data provided are consistent with the instrument accuracy +/- 1°F of the field observations to which the model was calibrated, and therefore provide a reasonable inference with respect to ambient conditions.

Percentile of Plume Extent	Instantaneous (acres)	24 Hr Avg. (acres)
Max	68	9
99%	39	8
95%	10	7
90%	2	4
80%	-	3
75%	-	3
50%	-	0
25%	-	-
20%	-	-
10%	-	-
5%	-	-
1%	-	-
Min	-	-

We trust this answers your remaining questions, particularly since NYSDEC staff already have agreed that Entergy's plume conforms to NYSWQS that necessarily reflect ensuring sturgeon protection and propagation." Take care and have a great weekend. Mark

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Mark T. Mattson, Ph.D., Vice President

Normandeau Associates, Inc.

30 International Drive, Suite 6, Portsmouth NH 03801

Direct Phone: 603.319.5307

Cell: 603.345.0071

From: Julie Crocker [<mailto:Julie.Crocker@Noaa.Gov>]

Sent: Monday, August 01, 2011 5:05 PM

To: Mark Mattson

Subject: Re: Follow up to email from Friday

Hi Mark -

Thank you for the follow up info - that is helpful. Re. the request for the distance when the plume is fully dissipated/no longer detectable...as part of our biological opinion we need to describe the "action area" -- (see 50 CFR 402.02 "action area"), which is the geographic area that is affected by the action, so in this case it would include the area within the river where water temperature is affected by the discharge from Indian Point. I understand that this is a dynamic system and the geographic extent would not be static and may be constantly changing, but if it can be described in a meaningful way, even in a "worst case" scenario, that would be helpful as it would describe the maximum extent of the area affected. The description of the action area shapes some of our other analysis (for example, in our "environmental baseline" section of the Opinion we are required to include information on other actions that are happening in the "action area" - so if there was a dredging project or scientific research or something else that could affect shortnose sturgeon in that geographic area it would be discussed here, if it fell outside that area it would not be). Does that make sense?

Julie

On 7/25/2011 5:09 PM, Mark Mattson wrote:

Hi Julie – very strange about the yellow highlight, I couldn't make it go away in this response either. I managed to connect with Craig Swanson after lunch today, and we discussed your questions. We both are a bit baffled about your interest in ambient in Question 1 and the first part of Question 2. We don't understand why ambient would be part of the analysis, particularly since the Hudson at Indian Point is extremely dynamic with respect to both tidal and freshwater flow, and therefore continuously changing throughout each day. Perhaps Craig and I can give you a call (on Wed., I am out tomorrow) to discuss your intent for seeking the ambient information in order to help us answer Question 1 and the first part of Question 2.

The answer to the second part of question 2 is that below 5m the 33.7°C and 34.8°C are never experienced based on the 2010 thermistor data, which represented an extreme condition scenario experienced only for a brief period over the twenty year timeframe reviewed.

For Question 4, the answer is yes, the maximum recorded temperature for the 2010 survey - which again represented an extreme condition scenario - was 95.1°F recorded by the surface thermistor at station 25.

For Question 3, we will have to examine the historical monitoring data to describe the mosaic of bottom temperatures in space and time with respect to 28°C, so this will take a few days.

As always, please let me know if you have any questions and I will do my best to provide answers. Take care. Mark

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From: Julie Crocker [<mailto:Julie.Crocker@Noaa.Gov>]

Sent: Thursday, July 21, 2011 1:47 PM

To: Mark Mattson

Cc: dgrey@entergy.com

Subject: Re: Follow up to email from Friday

Hi Mark -

I've read through it a few times now and have a couple of remaining/clarifying questions that I've outlined below (all minor I believe!).... I apologize for the highlighting - I can't get it to go away! Thank you for your work on this.

1. At what distance from the outfall do temperatures return to ambient?

2. At what distance from the surface does the influence of the plume stop being detectable? Is it the 5m/16 feet from the surface, or is that just a reference to the depth that the 33.7C or 34.8C are never experienced?

3. The 7-8-11 email states that shortnose sturgeon could encounter near bottom areas with temps of 28°C but only in “discrete locations” and during “brief intervals”. Is there information available that would allow you to describe how large these areas would be and for how long they would persist?

• 4. The information on p. 62 of the Swanson report seems to indicate that temperatures at thermistor station 25 reached 95.1°F. Is this the maximum temperature recorded at any of the measuring stations?

5. Thanks,

Julie

4.

On 7/13/2011 5:30 PM, Mark Mattson wrote:

Hi Julie – I just got back in from a long weekend, and the folks at Indian Point wanted me to follow up with you to confirm your receipt of that email I sent to you on Friday 8 July to address your 30 June questions about Indian Point’s thermal plume and shortnose sturgeon. Did you get that email, and if so, is there any more information you need from me at this time? Thank you. Mark

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Hearing Identifier: IndianPointUnits2and3NonPublic_EX
Email Number: 2823

Mail Envelope Properties (AF843158D8D87443918BD3AA953ABF7832A15C89D0)

Subject: RE: Follow up to email from Friday
Sent Date: 8/9/2011 2:11:55 PM
Received Date: 8/9/2011 2:12:00 PM
From: Stuyvenberg, Andrew

Created By: Andrew.Stuyvenberg@nrc.gov

Recipients:

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MESSAGE	11852	8/9/2011 2:12:00 PM

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