NORMANDEAU ASSOCIATES
ENVIRONMENTAL CONSULTANTS

# Memorandum

November 3, 2021

TO: Section 7 Coordinator, NMFS GARFO Protected Resources Division, 55 Great Republic Drive, Gloucester, MA 01930

FROM: Normandeau Associates, Inc.

RE: 2020 and 2021 Sturgeon Impingement Monitoring Report

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On January 30, 2013, the National Marine Fisheries Service ("NMFS") issued a final Biological Opinion and Incidental Take Statement authorizing takes of Atlantic and Shortnose Sturgeon (collectively, "sturgeon") during the continued operation of the Indian Point Nuclear Stations, Unit 2 and Unit 3 (collectively, "Indian Point"), as amended on 9 February 2018 (the "Biological Opinion"). The purpose of this memorandum is to document the objective, methods, completed sampling, and results of impingement monitoring for sturgeon at the Ristroph screen intake structures at Indian Point in 2020 and 2021.

To implement the amended Biological Opinion, Normandeau Associates, Inc. ("Normandeau") performed Ristroph-screen-based sturgeon monitoring that consisted of three, 24-hour continuous monitoring periods per week. Monitoring occurred only at Unit 3 in 2020 and 2021, because the onset of the COVID-19 pandemic and related safety concerns cancelled monitoring in spring 2020 and Unit 2 permanently ceased electric generating activities on April 30, 2020 and thereafter was de-fueled. Monitoring occurred in September and October 2020 and April and May 2021 when Unit 3 was operational. Unit 3 permanently ceased electric-generating activities on April 30, 2021 and was completely de-fueled on May 10, 2021, so impingement sampling ended on May 10, 2021.

Impingement monitoring was conducted at Unit 3 on 25 days in fall 2020 and 18 days in 2021 (Table 1). All screen wash contents from the fish return sluice from the operating Ristroph screens at the Indian Point stations were diverted into the collection tank. Prior to the collection of the first one-hour impingement sample, Normandeau field crew performed a pre-wash to remove all debris and organisms. Normandeau field crew continuously monitored the collection tank during each 24-hour sampling day to detect sturgeon. Monitoring and sampling were conducted in a reasonable and prudent manner to minimize the stress on all non-sturgeon species and organisms that were collected by the continuously rotated Ristroph screens.

All 43 sampling events were completed as planned. As in 2020, in 2021, zero (0) sturgeon were encountered during the monitoring (Table 1). Given these monitoring results, zero sturgeon are

expected to be impinged with continued withdrawal at equal or reduced flows through the fish return and other systems during decommissioning.

This concludes sampling for sturgeon impingement at Indian Point.

**Table 1. Impingement sampling date, unit sampled, and total sturgeon collected at Indian Point Ristroph-traveling screens during Atlantic and Shortnose Sturgeon monitoring in fall 2020 and spring 2021.**

| 2020 | | | | 2021 | | | |
|---|---|---|---|---|---|---|---|
| Sample Date | Unit 2 | Unit 3 | Total Sturgeon | Sample Date | Unit 2 | Unit 3 | Total Sturgeon |
| | Duration (hours) | | | | Duration (hours) | | |
| 9/2/2020 | 0 | 24 | 0 | 4/2/2021 | 0 | 24 | 0 |
| 9/4/2020 | 0 | 24 | 0 | 4/5/2021 | 0 | 24 | 0 |
| 9/9/2020 | 0 | 24 | 0 | 4/7/2021 | 0 | 24 | 0 |
| 9/11/2020 | 0 | 24 | 0 | 4/9/2021 | 0 | 24 | 0 |
| 9/14/2020 | 0 | 24 | 0 | 4/12/2021 | 0 | 24 | 0 |
| 9/16/2020 | 0 | 24 | 0 | 4/14/2021 | 0 | 24 | 0 |
| 9/18/2020 | 0 | 24 | 0 | 4/16/2021 | 0 | 24 | 0 |
| 9/21/2020 | 0 | 24 | 0 | 4/18/2021 | 0 | 24 | 0 |
| 9/23/2020 | 0 | 24 | 0 | 4/21/2021 | 0 | 24 | 0 |
| 9/25/2020 | 0 | 24 | 0 | 4/23/2021 | 0 | 24 | 0 |
| 9/28/2020 | 0 | 24 | 0 | 4/26/2021 | 0 | 24 | 0 |
| 9/30/2020 | 0 | 24 | 0 | 4/28/2021 | 0 | 24 | 0 |
| 10/2/2020 | 0 | 24 | 0 | 4/29/2021 | 0 | 24 | 0 |
| 10/5/2020 | 0 | 24 | 0 | 4/30/2021 | 0 | 24 | 0 |
| 10/7/2020 | 0 | 24 | 0 | 5/3/2021 | 0 | 24 | 0 |
| 10/9/2020 | 0 | 24 | 0 | 5/5/2021 | 0 | 24 | 0 |
| 10/12/2020 | 0 | 24 | 0 | 5/7/2021 | 0 | 24 | 0 |
| 10/14/2020 | 0 | 24 | 0 | 5/10/2021 | 0 | 24 | 0 |
| 10/16/2020 | 0 | 24 | 0 | | | | |
| 10/19/2020 | 0 | 24 | 0 | | | | |
| 10/21/2020 | 0 | 24 | 0 | | | | |
| 10/23/2020 | 0 | 24 | 0 | | | | |
| 10/26/2020 | 0 | 24 | 0 | | | | |
| 10/28/2020 | 0 | 24 | 0 | | | | |
| 10/30/2020 | 0 | 24 | 0 | | | | |