

John R. Henson, Supervisor, Radiological and Environmental Protection Section,
Controls and Test Branch, Division of Nuclear Power, 1440 CST2-C
Robert J. Pryor, Program Manager, Aquatic Resource Protection, Fisheries
and Aquatic Ecology Branch, Division of Water Resources, 442 EB-K

APR 13 1982

BROWNS FERRY NUCLEAR PLANT (BFNP) - PROPOSED BARGE FACILITY

This replaces my memorandum on this subject dated April 4, 1982.

The following information and comments are in response to James D. Bukley's 45D and attached draft proposal on February 16 and subsequent conversations between our staffs on this subject.

Generally our comments on the draft proposal address three areas of potential impact from construction of the facility:

1. Turbidity resulting from dredging at Site No. 1 during May would impact research project activities at the biothermal station due to the proximity of the station intake to the proposed dredging area. Previous discussions on this aspect have involved Brian J. Armitage (Station Manager) and further questions relating to impact on station activities should be directed to him.
2. Fish spawning habitat and/or drifting fish eggs and larvae could be impacted by turbidity and subsequent siltation from dredging activity during May; especially if the plant intake entrained the turbid water and discharged it via the diffuser (Site No. 1). Impact from dredging at either of the other two sites would be influenced by duration of dredging activity as well as reservoir flow rate and relative size of the area affected by turbidity and siltation during periods of fish spawning and larval drift.
3. To evaluate the potential for impact to mussel beds in the vicinity of the three alternative sites indicated in the draft proposal, a survey using divers was conducted on March 9 and 10.

The survey consisted of 14 individual dives with 15 minutes of search time per dive beginning at the shoreline and continuing on a line toward the river channel. Three dives were conducted at each of the three potential sites, two dives each between Site 1 and the Alternate site and between the Alternate and proposed Site No. 2, and one dive downstream of Site No. 2. A map showing relative location of the survey dives is Attachment A.

Several types of substrate including clay, gravel, boulders, and crushed limestone usually covered with silt were encountered by the divers. The substrate at Site No. 1 contained the least silt.

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~~1. FAM - ?~~
~~2. GMS~~
 No currents 3. WQB
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A total of 12 species of mussels was identified during the survey and represented species typically inhabiting areas with slower flow and mud or silt substrate. The washboard, Megalonaias gigantea was the most abundant species collected (49 specimens), followed by the fragile papershell, Leptodea fragilis (19 specimens). Attachment B is a table of the number of each species collected by individual dive.

In all, 123 mussels were collected from the 14 dives. Sixty-seven percent (83 specimens) of these were collected during the 3 dives at Site No. 1. Therefore, impact to mussels from dredging for the proposed barge facility would be greatest if Site No. 1 was chosen.

No specimen of any endangered mussel species was collected during any of these dives (or during any previous collecting at Browns Ferry). If members of endangered mussel species exist in Wheeler Reservoir adjacent to the Browns Ferry Nuclear Plant, they must be extremely rare. In any case, construction of the barge facility at any of the three sites is not likely to jeopardize the existence of any endangered mussel species.

In summary, based on potential impacts to fishery and mussel resources and activities at the biothermal station, our recommendation with regard to site selection for the proposed barge facility would be to avoid Site No. 1 if possible. In addition, as discussed previously, May would be one of the worst months for dredging activity in terms of impacts to aquatic resources. Most potential impacts would be mitigated if construction of the facility was scheduled during September through February.

If additional information or comments are needed concerning the proposed barge facility, please coordinate with Johnny P. Buchanan of my staff (extension 3701 in Knoxville).

Robert J. Pryor for RJP
 Robert J. Pryor

JPB:JJJ:TDH

Attachments

cc (Attachments):

Roosevelt T. Allen, FOR B-N
 George G. Conner, 150 EB-K
 George L. Sherer, 170 OSWHA-M
Gerald R. Steiner, 248 401B-C
 John R. Thurman, 116 LSB-K

REC'D
 EEP
 4/14/82.

Prepared by Johnny P. Buchanan, coordinated with John J. Jenkinson

Topographic map of the Browns Ferry Nuclear Plant area. The map shows the Browns Ferry Nuclear Plant, surrounding roads, and topographic features. A legend indicates that circled numbers represent dive locations and vertical lines represent approximate locations of dives.

Legend:

- () - Dive number
- | - Indicates approximate location of dive

Map features include:

- Browns Ferry Nuclear Plant
- Paradise Shores
- Lawrenceville
- Reservoir
- Substation
- Switchyard
- Biological Station
- Wheeler
- BM WSR 23 L 568
- BM WSR 24 L 564
- BM WSR 25 R 573
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- Dive number
- Indicates approximate location of dive

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564

3M WSR 23 L
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BM WSR 24 L
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| | <u>Megaloniaias</u> <u>gigantea</u> | <u>Leptodea</u> <u>fragilis</u> | <u>Proptera</u> <u>alata</u> | <u>Truncilla</u> <u>donaciformis</u> | <u>Anodonta</u> <u>grandis</u> | <u>Obliquaria</u> <u>reflexa</u> | <u>Quadrula</u> <u>quadrula</u> | <u>Amblema</u> <u>plicata</u> | <u>Anodonta</u> <u>suborbiculata</u> | <u>Elliptio</u> <u>crassidens</u> | <u>Lasmigona</u> <u>complanata</u> | <u>Tritogonia</u> <u>verrucosa</u> | <u>TOTALS</u> |
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| <u>Site 1</u> | | | | | | | | | | | | | |
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| Dive 3 | 12 | 3 | 3 | 5 | 1 | 2 | 1 | | | | | | 29 |
| Dive 4 | 1 | 1 | | | 1 | | | | | | | | 3 |
| Dive 5 | 1 | 1 | | | | | | | | | | | 2 |
| <u>Site A</u> | | | | | | | | | | | | | |
| Dive 6 | | 1 | 1 | | 2 | 1 | 1 | | | | | | 2 |
| Dive 7 | | 2 | 2 | | 1 | | 2 | | | | | | 4 |
| Dive 8 | | | | | 1 | | | | | | | | 7 |
| Dive 9 | | 3 | 4 | 1 | | | | | 1 | | | | 9 |
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| <u>Site 2</u> | | | | | | | | | | | | | |
| Dive 11 | 2 | 1 | | | | | | 1 | | | | | 3 |
| Dive 12 | 2 | 1 | | | | | | | | 1 | | | 4 |
| Dive 13 | 1 | 2 | 1 | | | | | | | | | | 5 |
| Dive 14 | 1 | | | | | | | | | | | | 1 |
| <u>Totals</u> (Specimens) | <u>49</u> | <u>19</u> | <u>16</u> | <u>12</u> | <u>7</u> | <u>6</u> | <u>6</u> | <u>4</u> | <u>1</u> | <u>1</u> | <u>1</u> | <u>1</u> | <u>123</u> |
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