

NSP

50-263

NORTHERN STATES POWER COMPANY

PDR

September 19, 1972



Mr D R Muller, Assistant Director
for Environmental Projects
Directorate of Licensing
U S Atomic Energy Commission
Washington, DC 20545

Dear Mr Muller:

MONTICELLO NUCLEAR GENERATING PLANT E-5979
Responses to Comments
Draft Environmental Statement

As requested in your letters of September 6, 1972 and September 11, 1972, enclosed are three signed originals and 40 additional copies of NSP responses to comments on the AEC Draft Environmental Statement for Monticello made by the United States Department of the Interior and the Minnesota Department of Natural Resources.

It is intended that the enclosed responses be attached to the NSP "Responses to Federal, State, and local agency comments on the AEC Draft Environmental Statement" dated and submitted to you on August 9, 1972. To accomplish this, also enclosed is a revised table of contents to be inserted in the August 9, 1972 document.

Yours very truly,

E C Ward, Director
Engineering Vice Presidential Staff

By *D D Bohn*
D D Bohn, P.E.
Supervising Environmental Engineer

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CONTENTS

	<u>Page</u>
Department of the Army	1
The Assistant Secretary of Commerce	10
Environmental Protection Agency	20
Minnesota Environmental Control Citizens Association . .	49
Minnesota Pollution Control Agency	55
Department of the Interior	56
Minnesota Department of Natural Resources	66



UNITED STATES ATOMIC ENERGY COMMISSION

NORTHERN STATES POWER COMPANY

Monticello Nuclear Generating Plant

Docket No. 50-263

RESPONSES TO COMMENTS IN CONNECTION WITH
DRAFT ENVIRONMENTAL STATEMENT FOR THE
MONTICELLO NUCLEAR GENERATING PLANT

Northern States Power Company, a corporation organized under the laws of the State of Minnesota, hereby submits the above titled responses pursuant to letters of September 6 and September 11, 1972 from D R Muller, Assistant Director for Environmental Projects, Directorate of Licensing, U S Atomic Energy Commission.

NORTHERN STATES POWER COMPANY

By W W Larkin
W W LARKIN
GROUP VICE PRESIDENT
POWER SUPPLY

On this 19 day of September, 1972, before me, a notary public in and for said County, personally appeared W W Larkin, Group Vice President - Power Supply, and being first duly sworn acknowledged that he is authorized to execute this document in behalf of Northern States Power Company, that he knows the contents thereof and that to the best of his knowledge, information and belief, the statements made in it are true and that it is not interposed for delay.

John J. Smith
John J Smith
Notary Public, Hennepin County, Minnesota



NORTHERN STATES POWER COMPANY
MONTICELLO NUCLEAR GENERATING PLANT

Responses to United States
Department of the Interior
and Minnesota Department of
Natural Resources Comments
on the AEC Draft Environmental
Statement.

September 19, 1972

I hereby certify that this plan, specification or
report was prepared by me or under my direct
supervision and that I am a duly Registered
Professional Engineer under laws of the
State of Minnesota.

Donovan D. Bohm

Date 9/19/72 Reg. No. 7474

DEPARTMENT OF THE INTERIOR

(61) Comment:

It is mentioned on page II-13 that 160 of approximately 220 acres are being allowed to return to native vegetation or planted with conifers. For esthetic and possible pathogenic reasons, we do not recommend that pines be planted on this area because of the possibility of the high water table which eventually leads to slow growing or diseased pine trees.

Response:

Approximately 100 acres of pine trees were planted on well-drained high ground east of the reactor facilities. A few pine trees were planted in the lowland area (on peripheral high points) loaned to the Environmental Protection Agency for an experimental facility. A grass wildfire destroyed about 50 per cent of the planting in the lowland area. There has been no replanting of that area, nor are there plans for further plantings of pine trees on the site.

(2) Comment:

According to page III-1 the transmission line routings attempted to avoid active farm areas and where possible municipalities, county parks, ...In order to assess the environmental impact of the transmission lines, we believe that the statement should address itself to elucidating this statement ...in the form of a discussion with maps and illustrations showing the location of recreational, natural scenic and historic areas traversed by the transmission lines ...If no historic, scenic, county parks or recreational areas are traversed ...it should be so stated.

Response:

Routes of transmission lines constructed for the Monticello Nuclear Plant are identified on FIGURE III-2 of the Draft Environmental Statement. FIGURE II-6 of the Applicant's Environmental Report (included here as

Figure 1) has been modified to show two Wright County parks traversed by the Monticello-Parkers Lake 345kV transmission line. These are the only recreational, natural scenic or historic areas traversed by the Monticello-Parkers Lake line. No areas of this type are traversed by the Monticello-Coon Creek 345kV transmission line. The right-of-way through the county park bordering the City of Monticello on the west, forms a strip 1800 feet long and 155 feet wide. There are two steel lattice transmission towers along this right-of-way, each occupying about 900 square feet ground space. Land spaces occupied by tower structures and air spaces occupied by transmission lines are the only portions of the right-of-way to which access is restricted. The other right-of-way through a park is near the village of Hanover, and occupies a one-third acre triangular area, bounded on the east by the Crow River. No transmission towers occupy the right-of-way through the park.

(63) Comment:

We suggest that the applicant make provisions for wildlife management including public access for hunting to the extent compatible with project purposes. (ref: transmission line rights - of - way)

Response:

Transmission line rights-of-way are easements with non-transmission line uses controlled by the fee title land owners. NSP supports and encourages wildlife, and compatible recreational uses of rights-of-way. During transmission line construction, controlled clearing practices were utilized whereby brush and other low-lying vegetation were left relatively undisturbed. Only trees which would obstruct transmission line clearances were cut. Maintenance of rights-of-way has been similarly managed with the objective of not disturbing natural vegetation.

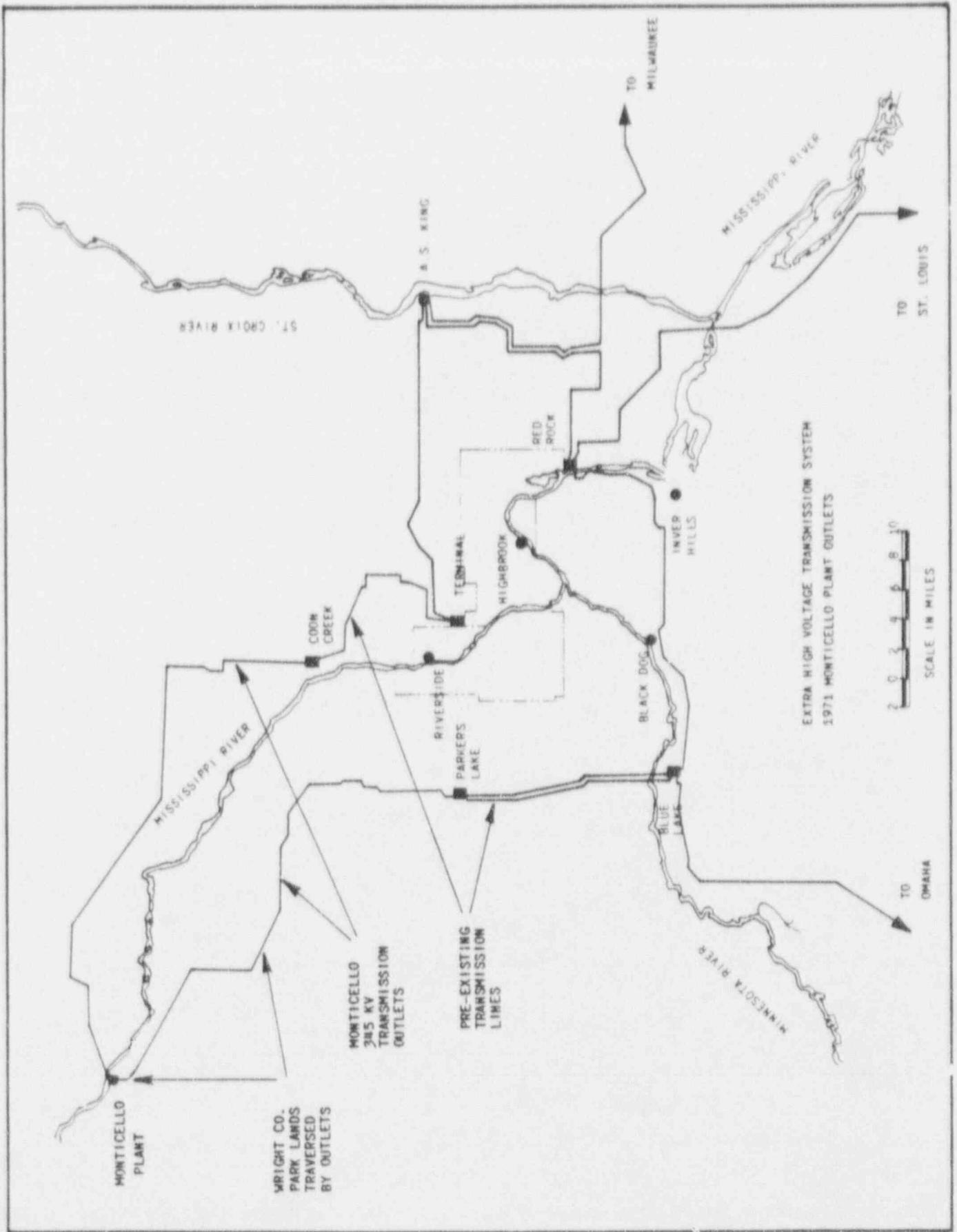


FIGURE 1

(64) Comment:

Since herbicides, TORDON 155 will be used, (on transmission line rights-of-way) the publication "Chemical Vegetation Control Manual for Fish and Wildlife Management Programs," issued in January 1968 as Resource Publication 48 by the Bureau of Sport Fisheries and Wildlife, should be consulted.

Response:

The referenced guide is utilized by NSP in applications of TORDON 155.

(65) Comment:

Although the average residual chlorine concentration in the discharge canal is less than 0.05 ppm, it is about 10 times that amount for short durations. Generally, we think that a maximum residual chlorine concentration of more than 0.1 ppm should not take place ...It has been found that concentrations of 0.03 ppm are toxic to some aquatic organisms. The statement should discuss changes in methods of operation or structural design ...to eliminate chlorine from the effluent.

Response:

This comment mirrors comments (12) and (40) by the Assistant Secretary of Commerce and Environmental Protection Agency, respectively. NSP responses to those comments conveyed by NSP letter of August 10, 1972, are responses to the above comment. Moreover, it should be noted that the reference to toxic effects of 0.03 ppm chlorine concentrations accompany continuous prolonged exposure to such concentration levels. Chlorination of circulating water at the Monticello Nuclear Plant occurs intermittently and for short durations.

(66) Comment:

The statement does not include a discussion of the dissolved solids which would be carried from the tower in the drift ... an estimate should be included in the report as to the amount of solids ...in the drift, and reference should be made to procedures ...minimizing their environmental impact.

Response:

The cooling towers will not be operated in winter and therefore no icing of the surrounding area is anticipated. The towers, when operated, will be operated primarily in the once-through helper mode although they may be operated in the closed cycle mode on rare occasions because of water appropriation restrictions. Consequently, there will be only a minor increase in solids concentration (about 3 per cent) at the outlet of the cooling towers, as compared to solids concentrations in the inlet river water. The Applicant's Environmental Report, Supplement 1, pages B-9 and B-10, discusses the environmental effects of drift. Drift fallout is expected to be limited to within 500 feet of the towers. No off-site fallout is anticipated. Since the concentration of solids in drift will not vary significantly from solids concentrations in the river, effects of drift should not be adverse and should be similar to those accompanying the use of river water for irrigation in the region.

(67) Comment:

We suggest that consideration be given to a fish and wildlife management and public use plan for Thompson Island and the remainder of the 1,325 acre project site to assure maximum use of project lands and waters to the extent compatible with project purposes.

Response:

Presently, the site exclusion area is fenced and posted to restrict public access. Nearly 80 per cent of Thompson Island and 50 per cent of Cedar Island are within the exclusion area. Unrestricted access to the exclusion area may not be consistent with 10CFR100 regulations and

has not been contemplated by Northern States Power Company. Northern States Power Company has provided 50 acres of the site, primarily within the exclusion area, to the Environmental Protection Agency for an experimental facility. The remainder of the undeveloped exclusion area has remained relatively undisturbed. Where it had been formerly cultivated it has since become naturally revegetated. The segmented nature of these undeveloped exclusion subareas and their relative inaccessibility do not make them attractive for public recreational use.

Access to site areas outside the exclusion boundary has not been controlled. These areas have been subject to multiple use. NSP has donated to Wright County a 7 acre plot of riverfront property adjacent to the east site boundary, which is being used as a public park. Another portion of the site north of the river is being leased for cultivation. There is an employee picnicing and camping area north of the river bordering the site on the east. General use of the remaining land has been for wildlife and recreation with no access restrictions other than those imposed by adjacent land owners.

(68) Comment:

The thermal effects on the Mississippi River of the various modes of condenser cooling have been predicted in the statement. Since accurate predictions of this type are difficult, a detailed temperature monitoring program of the river ...should be initiated

Response:

The response conveyed by NSP letter of August 10, 1972, to Department of the Army comment (2) should be referred to. The river temperature survey program is continuing (initiated mid-1971) with an average of

two surveys per month during the open water season. To date, there have been more than 20 surveys each involving approximately 500 temperature measurement points. Results of the first 13 surveys are included in Supplement 1 to the Applicant's Environmental Report and are briefly described in Table 1 included in responses conveyed by NSP letter of August 10, 1972.

(69) Comment:

We do not think that material that collects on the screens (intake structure), such as debris, fish, and other accumulations should be washed from the screens and returned directly to the river ...

Response:

The subject of this comment is the same as for comments (49) and (79) by the Environmental Protection Agency and by the Minnesota Department of Natural Resources, respectively. Please refer to NSP response (49) conveyed by letter August 10, 1972, and to response (79).

(70) Comment:

Environmental Impact of Postulated Accidents...
section contains an adequate evaluation of impacts resulting from accidents through Class 8 for airborne emissions. However, the environmental effects of releases to water are lacking. Many of these postulated accidents listed in tables VI-1 and VI-2 could result in releases to the Mississippi River and should be evaluated in detail.

Response:

An analysis of a worse case hypothetical accident was presented in the Applicant's Environmental Report, Appendix C, on pages C-41 and C-42, and in TABLE 14.6-2. The impact of a worst case accidental release to the Mississippi River was found to be within 10 CFR 100 guidelines.

(71) Comment:

Class 9 accidents resulting in both air and water releases should be described and the impact on human life and the remaining environment discussed as long as there is any possibility of occurrence ...

Response:

The following passage is extracted from the AEC proposed "Guide to the Preparation of Environmental Reports for Nuclear Power Plants", within Section 7.1, page 23. NSP considers this AEC guidance to be appropriate for an environmental impact assessment of Class 9 postulated accidents at the Monticello Nuclear Plant.

The occurrences in Class 9 involve sequences of postulated successive failures more severe than those postulated for the design basis for protective systems and engineered safety features. Their consequences could be severe. However, the probability of their occurrence is so small that their environmental risk is extremely low. Defence in depth (multiple physical barriers), quality assurance for design, manufacture, and operation, continued surveillance and testing, and conservative design are all applied to provide and maintain the required high degree of assurance that potential accidents in this class are, and will remain, sufficiently remote in probability that the environmental risk is extremely low. For these reasons, it is not necessary to discuss such events in the Environmental Report.

(72) Comment:

The subject of transportation accidents is discussed extensively, but little mention is made of the means for handling spills of low-level wastes ...

Response:

The subject of transportation accidents is generic to the nuclear industry, rather than specific to the Monticello Nuclear Plant. Transportation of radioactive materials is controlled by the carrier and regulated

by the AEC. Currently, there is a joint effort by the AEC and EPA to fully assess potential environmental effects of radioactive material transportation.

(73) Comment:

Adverse Effects Which Cannot be Avoided ...discuss the extent and type of wildlife and the loss in animal populations due to project construction and operation. Short-Term Uses, and Long-Term Productivity ...short-term use of the land and water should be compared to the plant's operational impact on the long-term productivity of fish and wildlife. Irreversible and Irretrievable Commitment of Resources ...describe the fish and wildlife resources lost annually because of the project construction and operation ...

Response:

With regard to land biota, the project has had a net beneficial effect. Plant facilities were constructed on land that had been cultivated for the most part. Undeveloped cultivated land within the exclusion area has been allowed to return to its natural state. It is doubtful that plant construction destroyed more than a small number of rodents. Other resident animals had ample opportunity to avoid construction activities, and should have repopulated the site since commencement of plant operations. The planned short-term use of 50 acres within the exclusion area for an Environmental Protection Agency research facility should benefit nation-wide efforts to maintain and enhance long-term aquatic biota productivity. Site land biota outside the fenced exclusion area have remained undisturbed by plant construction and operations.

Aquatic biota have been the subject of continuing studies by NSP with the objective of assessing both short-term and long-term, adverse and beneficial, and irreversible effects of the plant. To date, no significant alterations of aquatic biota have been discovered.

(74) Comment:

According to page IX-1, if the reactor is dismantled at the end of its useful life, some land would be required to permanently store highly radioactive structural components of the reactor facilities as well as other radioactive wastes ...If permanent burial of radioactive materials at this site is a possibility, the environmental consequences should be considered at this time.

Response:

Although no specific dismantling plan for the facility has been formulated at this time, the following considerations establish a relevant perspective for any on-site storage.

1) There will be no permanent on-site storage of radioactive wastes, such as spent nuclear fuel, spent resins, radioactive gases or liquids which comprise essentially all of the radioactive wastes generated at the plant.

2) Radioactive materials permanently stored on-site would primarily consist of induced activation products that are held within reactor component materials (and minor amounts of activated corrosion products could also exist as oxide scale on inner surfaces of reactor support systems) and only trace amounts of mixed fission products.

3) Essentially all radioactive materials stored on-site would be in highly insoluble forms entombed within a structure of sufficient integrity to insure maximum protection for the environs.

4) The plant grade is well above recorded and predicted flood levels. It is highly improbable that any entombment would be engulfed by flood waters. Any entombment extending below plant grade might be exposed to

ground water, however, it would be designed to prevent leakage of water through the entombment walls.

5) Long-term on-site storage of the abovementioned materials can be accomplished with negligible risk to the environs. Any specific plans to store materials would be subject to approval by applicable regulatory authorities.

MINNESOTA DEPARTMENT OF NATURAL RESOURCES

(75) Comment:

On page V-20, it is stated that "many of the species of fish in the river are classed as warm-water fish, with relatively high thermal tolerance." This may be true of the fishes in the river, in general, but is not true of the major game fish species, such as the smallmouth bass and walleye, which prefer cool water.

On pages V-20 and V-22, the report indicates that the preferred temperatures of smallmouth bass, bluegill and carp are 82° F, 90° F, and 90° F respectively. These preferences apparently were based on laboratory studies and would not apply to this river situation. Field studies, elsewhere, indicate that the preferred temperatures for these species in this area would more likely be in the order of 70° F, 80° F, and 80° F respectively. We would prefer to maintain suitable temperatures for the important game fish rather than for carp.

Response:

Field studies have shown that fish prefer temperatures a few degrees below or relatively close to their upper lethal limits. For those species mentioned in the comment, their preferred temperatures are well within temperature ranges available to them in the river when the plant is operating. Non-lethal temperature effects are of particular concern to on-going and planned ecological studies at Monticello.

(76) Comment:

Temperature preference of fishes are related to the environment in which they happen to live and to which they have become acclimated. Fish generally seek preferred temperatures which are several degrees below temperatures that are lethal. Great care should be exercised in interpreting temperature requirements from various studies and applying these data to a specific field situation, such as the Mississippi River at Monticello. A temperature rise, for example, can increase the lethal effect of toxic substances in the river to fish (synergistic action). The kinds and amounts of pollutants added to the river above and at the Monticello plant will alter the effects of higher temperatures on fish.

Response:

Ecological studies are being conducted by NSP to determine temperature responses of fish populations adjacent to and downstream of the plant. These studies should define both direct and synergistic temperature effects. In addition, the Environmental Protection Agency on-site research facility will be utilized for ecological studies of fish in a channel environment. These studies should prove valuable to state-wide efforts to maintain and enhance fishery resources.

(77) Comment:

As noted in the report on page V-22, since no mixing zone (to which the permissible temperatures in the river are related) has been set, the maximum river temperature which may result from plant operation is now uncontrolled. Until a definite mixing zone is established or effluent standards applied to the discharge, there really are no temperature standards.

Response:

The response to comment (34) by the Environmental Protection Agency should be noted. Thermal field surveys have continued since their initiation in mid-1971, at the rate of about two per month during the open water season. Temperature data from the nine continuous monitoring stations on the river and from field surveys will be presented in the 1972 Annual Environmental Monitoring and Ecological Studies Report. These data should provide an adequate basis for definition of a realistic thermal mixing zone.

(78) Comment:

No mention is made in the report about the so-called fish basket, which removes trash and debris from the traveling screen back-flush water before it is returned to the river. The basket also removes any fish that may be entrained in that water. We understand that this is no longer in use, but would like to know that the fish basket has been permanently discarded.

Response:

The river intake system has been redesigned to bypass the basket. Construction of this bypass is planned for late this Fall. Until the new bypass is installed, the basket will be utilized only when there is so much trash in the river, that the discharge line following the basket will become plugged. When the basket is in use, a resident biologist will monitor the basket contents on a daily basis. During low trash periods, the basket will not be used and all fish will be returned directly to the river. Experience to date has indicated a predominance of rough fish entrained by the basket.

(79) Comment:

Another concern of ours is the extensive posting ("Keep Off" signs) on both banks of the river and the islands, both above and below the plant. No doubt this posting involves plant security, but the excessive amount of posting detracts from fishing, canoeing and boating in the area and will in the long run, we feel, do NSP more harm than good.

Response:

This comment is similar to comment (67) by the Department of the Interior. Please note the response to that comment.