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DESCRIPTION:
Ltr re our 8-5-74 ltr, furnishing updated draft Enviro Tech Specs, trans the following:

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NOTE: Dist Per R. Bevan

PLANT NAME: Monticello

ENCLOSURES:
Proposed Appendix B Enviro Tech Specs for Monticello Nuclear Generating Plant

ACKNOWLEDGED

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FOR ACTION/INFORMATION 8-21-74 GC

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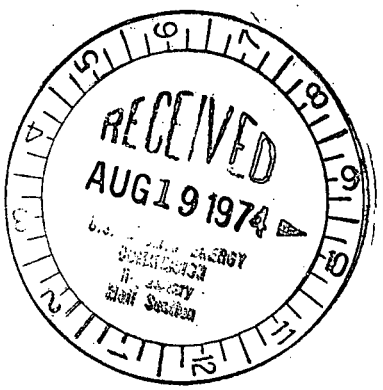
NSP

NORTHERN STATES POWER COMPANY

MINNEAPOLIS, MINNESOTA 55401

August 16, 1974



Mr William H Regan, Jr, Chief
Environmental Projects Branch 4
Directorate of Licensing
Office of Regulation
U S Atomic Energy Commission
Washington, DC 20545

Dear Mr Regan:

MONTICELLO NUCLEAR GENERATING PLANT E-5979
Docket No. 50-263 License No. DPR 22
Updated Draft - Environmental Technical Specifications

Your letter dated August 5, 1974 to our Mr A V Dienhart of Northern States Power Company requested that we furnish an updated draft of proposed Environmental Technical Specifications for the Monticello Nuclear Generating Plant. Attached are six copies of this document that we have redrafted.

When these Environmental Technical Specifications are issued, the following portions of the Appendix A Technical Specifications should be deleted:

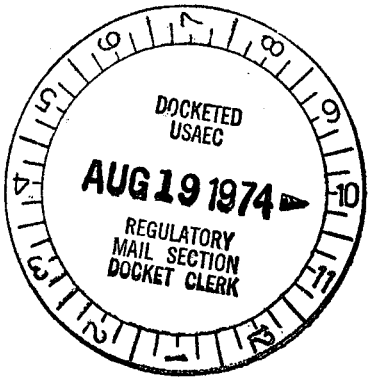
4.8.F (on page 173A)

Table 4.81 (pages 174, 175 and 176)

Basis 4.8F (on page 179B)

6.7.A.2.h (on pages 215 and 216)

Your letter enclosed a proposed Section 2.4 for the Environmental Technical Specifications covering limitation of radioactive discharges from the plant. Because there is



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much new information in this Section 2.4, we have not completed our review of this material and our updated draft of the Environmental Technical Specifications therefore does not incorporate this material. Furthermore we are evaluating the impact of including this Section 2.4 in the Environmental Technical Specifications and as a consequence it may be necessary for our appropriate personnel to meet with AEC staff representatives.

Yours very truly,

E C Ward

E C WARD, Director
Engineering Vice Presidential Staff

Cc: G Charnoff
L O Mayer

PROPOSED APPENDIX B

ENVIRONMENTAL TECHNICAL SPECIFICATIONS
FOR
MONTICELLO NUCLEAR GENERATING PLANT
NORTHERN STATES POWER COMPANY

1.0 DEFINITIONS

A. Onsite: Any area included within NSP owned property as indicated on Figure 1.0-1.

B. Offsite: All other properties or areas not considered onsite.

C. Discharge Canal: That portion of plant facilities starting at the cooling tower pump house and extending to its intersection with the river's edge (See Figure 1.0-2).

D. Point of Discharge: End of the discharge canal at the river's shoreline (See Figure 1.0-2).

E. Ambient River Temperature: Temperature of river water flowing into the plant intake, unaffected by heat discharge from the plant.

F. Environmental Event: Exceeding a protection condition.

G. Protection Conditions: The quantitative specifications as found in Section TS B-2.0.

H. Week: 7 consecutive days $\pm$ 2 days.

I. Month: 30 consecutive days $\pm$ 5 days.

J. Year: 360 consecutive days $\pm$ 30 days.

K. Biweekly: 14 consecutive days ± 4 days.

L. Quarterly: 90 consecutive days ± 15 days.

M. Semi-annual: 180 consecutive days ± 20 days.

2.0 PROTECTION CONDITIONS

2.1 Thermal

2.1.1 Maximum Change in Temperature (delta T) Across the Condenser

Objective: To reduce possible entrainment loss by limiting the delta T across the inlet and outlet of the condenser.

Specification: During any consecutive seven-day period the arithmetic mean delta T shall not exceed the limits of Table 2.1.1-1. The yearly mean delta T shall not exceed 27°F.

Table 2.1.1-1

Calendar Period	Maximum delta T
April 1 - October 31	35°F
November 1 - March 31	43°F

Basis: Mortality of entrained organisms is dependent on the upper incipient lethal temperature. For April through October, a delta T of 35°F should provide sufficient protection. The period November through March represents low ambient temperature during which corresponding higher temperatures can be tolerated by fish for short-term durations.

2.1.2 Maximum Receiving Water Temperature

Objective: To limit maximum Mississippi River temperature downstream of the point of discharge.

Specification: Maximum temperature of the river as a result of plant operation, shall not exceed 90°F over more than one-half of the river's surface width.

Basis: The environmental analysis as found in the Final Environmental Statement (FES) related to operation of Monticello Nuclear Generating Plant, Northern States Power Company, November 1972, published by USAEC Directorate of Licensing, has determined that the protection condition is sufficient for protection of the environment.

2.1.3 Rate of Change of Discharge Temperature

Objective: To limit rate of temperature decrease for protection of fish in the discharge canal during scheduled reductions in power during October through April.

Specification: For the months of October through April, temperature decrease shall not exceed 5°F each hour at point of discharge during scheduled power decreases of 15% or more. This specification does not apply to emergency shutdown, testing procedures, or initiation of cooling tower operation.

Basis: A fish kill due to cold shock during plant reduction in power is most likely in the wintertime. Although some fish mortality may result from winter shutdowns, total numbers killed are small due to low fish densities in the discharge canal. Operational fisheries population dynamics studies and creel census studies have shown no influence of winter shutdown on relative abundance of fish or quality of fishing. Thus the protection condition is sufficient to protect the natural fish populations from cold shock during normal power operation.

2.2 Hydraulic

2.2.1 Flow Rate Restrictions

Objective: To limit the amount of water appropriated.

Specification: Whenever river flow at the plant is less than 860 cfs but greater than 240 cfs, the maximum allowable appropriation from the river shall not exceed 75% of river flow at the intake. During river flows above 860 cfs the plant shall withdraw no more than 645 cfs.

Basis: The Mississippi River at Monticello experiences a high variation in flow rates. The specification allows for plant flow rates in proportion to river flow such that the present quality of the river's biota is maintained.

2.3 Chemical

2.3.1 Chlorine

Objective: To regulate the use of chlorine for cleaning of the condenser and service water system.

Specification: During chlorination periods the free chlorine at the point of discharge to the river shall not exceed a concentration of 0.05 mg/l for more than two hours per day or 0.1 mg/l for more than thirty minutes per day.

Basis: The main condenser and service water system are normally treated four times per day for 30 minutes during each treatment. Residuals as specified provide sufficient protection of the indigenous aquatic biota.

2.3.2 Retention Basin Effluent Chemicals

Objective: To limit the amount of chemicals released from the retention basin.

Specification: The following maximum limits shall apply to discharges from the chemical retention basin:

	Maximum lbs/month	Total lbs/year
Sulfate (as SO_4)	3,600	21,600
Sodium (as Na_2)	1,600	9,600
Phosphate (as P)	1	6
Calcium (as Ca_2)	250	1,200
Bicarbonate (as HCO_3)	350	1,500

In addition, the effluent from the retention basin shall not exceed an arithmetic monthly mean of 30 mg/l added suspended solids and 25 added Jackson Turbidity Units (JTU's).

Basis: Amounts of chemicals as listed in the protection condition allow for monthly variations in chemical discharges, yet insure protection. Based on plant operating conditions and assumed flows of 280,000 gpm in the discharge canal and 237 gpm from the retention basin, the following concentrations would be found in the discharge canal:

	Based on Max lbs/mo Discharged (ug/l)	Based on Total lbs/yr Discharged (ug/l)
Sulfate (as SO_4)	35.1	17.6
Sodium (as Na_2)	15.6	7.6
Phosphate (as P)	0.970	0.005
Calcium (as Ca_2)	2.4	1.0
Bicarbonate (as HCO_3)	3.4	1.2

These concentrations are within State standards and therefore protect the environment.

2.3.3 pH

Objective: To limit the range of pH levels due to plant additions in water discharged to the river.

Specification: pH of water discharged to the river shall be no lower than 6.5 nor greater than 8.5.

Basis: A pH range of 6.5 to 8.5 provides sufficient protection of the river's natural plant and animal populations.

3.0 MONITORING REQUIREMENTS

3.1 Thermal

3.1.1 Maximum Change in Temperature (delta T) across the condenser.

Objective: To measure the delta T across the condenser.

Specification: The delta T across the condenser will be measured once every hour. The mean hourly delta T for each day will be used for calculation of maximum and yearly average protection conditions.

Basis: The delta T across the condenser does not fluctuate greatly over a 24-hour period during constant plant power levels. Thus, use of the mean daily delta T will provide adequate monitoring.

3.1.2 Maximum Receiving Water Temperature

Objective: To measure maximum receiving water temperature.

Specification: Receiving water temperature shall be calculated once per day whenever the temperature of the circulating water at point of discharge is equal to or greater than 90°F.

Basis: If the discharge temperature does not exceed 90°F the protection conditions of TSB 2.1.2 cannot be exceeded. Compliance with the protection condition will be made with the use of a plume model developed and verified with physical data by January 1975. The model will be used once per day to demonstrate compliance when the discharge temperature is in excess of 90°F. Periodic verification of the model temperatures will be made throughout the year.

3.1.3 Rate of Change of Discharge Temperature

Objective: To measure temperature decrease at point of discharge during October through April.

Specification: Temperature decrease over a one-hour period at point of discharge will be measured during normal plant power decreases of 15% or greater from October through April. This specification does not apply to emergency shutdowns, testing conditions, or initiation of cooling tower operation.

Basis: Decreases in power levels of 15% or less are not expected to cause any appreciable effect on resident fish populations in the discharge canal.

3.2 Hydraulic

3.2.1 Flow Rate Restrictions

Objective: To monitor water appropriated from the river.

Specification: Once per day the river flow and amount of water appropriated will be recorded.

Basis: Changing river flows require daily monitoring of the river to determine circulating water system operating modes to minimize aquatic environmental impacts.

3.3 Chemical

3.3.1 Chlorine

Objective: To ensure the amount of free chlorine discharged during chlorination does not exceed the protection condition.

Specification: Once each month during a chlorination cycle, a sample will be taken at the point of discharge and analyzed for free chlorine.

Basis: During normal power operation, the service water system will be chlorinated to control slime growth in the system. Seasonal curves for chlorine feed rates and concentrations at the point of discharge will be developed from data obtained by sampling. Feed rates will be tested to insure that the free chlorine does not exceed the protection condition. Testing will consist of taking a total of three samples, one each at the start, half way through and at the end of a chlorination cycle. Sampling will be at the point of discharge to the river. If the free chlorine at this point is found to be greater than the protection condition, the feed rate will be reduced until the concentration is less than or equal to the protection condition. Once the established feed rates have been verified to produce free chlorine concentrations less than or equal to the protection condition, it will not be necessary to sample the discharge water during every chlorination cycle as long as the chlorine injection feed rate remains less than or equal to the maximum verified feed rate. A monthly sample at the point of discharge will be taken

during a chlorine injection cycle to verify that the protection condition is not exceeded. All analyses will be made by appropriate sampling techniques and analytical methods as outlined in Standard Methods for the Examination of Water and Wastewater published by the American Public Health Association.

3.3.2 Retention Basin Effluent Chemicals

Objective: To measure the amount of chemicals discharged from the retention basin.

Specification: Once per month, the amount of chemicals in the retention basin discharge will be determined. Once per week, the suspended solids and turbidity of the retention pond effluent will be determined and the monthly arithmetic mean will be calculated from the weekly samples.

Basis: Carefully controlled releases from the retention basin will provide the necessary control of chemical releases. Because the protection condition is based on the maximum possible flow rate from the retention basin and rate of dilution from discharge canal flow, the monitoring frequency provides for sufficient sampling to determine compliance.

3.3.3 pH

Objective: To measure the pH levels at the point of discharge to the river.

Specification: The pH value of the discharge water prior to entering the river will be measured two times per week.

Basis: A measurement frequency of two times per week will insure control of pH value and monitor compliance with the protection condition.

4.0 ENVIRONMENTAL SURVEILLANCE AND SPECIAL STUDIES

4.1 Biological

4.1.1 Aquatic

A. General Ecological Survey

Objective: To evaluate the impact of the facility on the biotic environment.

Specification:

1. Investigate any changes in the biota that may occur by comparing preoperational data to operational data and control stations to experimental stations.

2. Identify any change in the ecosystem induced by plant operation.

3. Evaluate significance of induced changes, if any, on sustenance of a healthy ecosystem as determined in preoperational studies or as defined by regulatory standards.

Basis: A general ecological survey was initiated in May 1968, three years prior to the beginning of plant operation in June 1971. This program has been extensively expanded since its inception. Information gathered from preoperational environmental studies was published in the 1968, 1969 and 1970 Monticello Nuclear Generating Plant Annual Environmental Monitoring and Ecological Studies Program Reports.

1. The program may be modified as necessary to accommodate sampling requirement changes. This program has been continually reviewed and reevaluated since its conception. After 60 months of data have been obtained from the beginning of commercial operation, some of the special studies in Section TS B-4.1.1 may be eliminated if the results of these studies are conclusive and show no significant harmful environmental effects.

2. These changes and results will be presented in the Annual Environmental Monitoring and Ecological Studies Program Report for the facility.

3. These studies are performed as follows: The program for aquatic ecological studies of the Mississippi River in the vicinity of the Monticello Nuclear Generating Plant has been designed to establish ecological characteristics prior to and during plant operation. Preoperational data are being compared with operational data to verify that the plant is not deleteriously altering the aquatic ecosystem. This study began 3 years prior to plant operation and will continue until specific effects of the plant can be determined and the data show a stabilized aquatic environment. Studies are organized to investigate the aquatic biota and the physical and chemical composition of the environment. Species are identified and their population and size are determined. Food habits and reproductive cycles of dominant species are studied whenever possible. Due to the seasonal fluctuations of these factors, most sampling programs are carried out on a scheduled year-round basis. It should be noted that this program is designed to remain flexible, so that changes can be made immediately if required. Factors studied are:

Biotic Communities

Periphyton
Benthic Macroinvertebrates
Fish

Physical and Chemical Water Parameters

Dissolved Oxygen
Biological Oxygen Demand

Physical and Chemical Water Parameters (cont)

Temperature
pH
Conductivity
Turbidity
Current Velocity
Total Dissolved Solids
Total Alkalinity
Total Phosphate
Ortho-phospate
Nitrate Nitrogen
Chlorides
Iron
Sulfates

Basic procedures for these studies are:

a. Periphyton

Periphyton sampling was initially conducted at 13 locations at the Monticello facility. Comparison of three years of preoperational studies with three years of operational indicate that only five stations are required to monitor any changes that may occur in species diversity, abundance and chlorophyll content due to the plant effluent. The locations are shown in Figure TS-B.4.1.1. There is one control station upstream of the discharge canal. One of the downstream stations is outside the thermal plume. Samples are analyzed every two weeks except when flooding destroys samplers or hazardous ice conditions exist.

b. Benthic Macroinvertebrates Study

Three years of preoperational and three years of operational studies have shown that there have been no significant changes in species diversity or abundance. Because

of this the program has been reduced to one upstream control transect C-2 (Figure TSB-4.1.1-2) and one downstream experimental transect E-2 (Figure TSB-4.1.1-2). The experimental transect is located 75 m downstream from the point of discharge. This transect serves as a reliable indicator of changes in species abundance and/or diversity that may occur due to plant discharges. Each transect consists of at least three stations spaced equidistant from each other. Four concrete block artificial substrates are located on the bottom at each station. These are removed monthly for enumeration, weighing and identification of colonized organisms. Some stations may not be sampled in the winter when unsafe ice conditions exist or when flooding removes sampling devices.

c. Fish

Electro-fishing and seining are the dominant methods used in the fish study. Trapnetting will be used in the future, as an additional sampling method. A representative sample of fish are measured and weighed with some scales removed for age and growth determinations. The fisheries data is used to determine changes in relative abundance and distribution due to the plant discharge. A creel census of the fishery is being conducted to determine quality of fishing. The census usually is conducted from May through November with the exact sampling time dependent upon angler presence.

A biweekly fish census will be conducted in the discharge canal during winter months to determine species distribution and abundance. This data will be used to predict possible harm should a winter shutdown occur.

d. Physical and Chemical Water Quality Parameters

The water quality study includes the physical and chemical parameters of water which might affect aquatic life. The chemical factors studied and their frequency of measurement is as follows:

Parameter	Frequency
Dissolved Oxygen	Quarterly
Biological Oxygen Demand	Quarterly
Temperature	Continuous at two locations
pH	Quarterly
Conductivity	Quarterly
Turbidity	Quarterly
Current Velocity	Quarterly
Total Dissolved Solids	Quarterly
Total Phosphate	Quarterly
Ortho-phosphate	Quarterly
Nitrate Nitrogen	Quarterly
Chlorides	Quarterly
Iron	Quarterly
Sulfates	Quarterly

A subsurface sample of one gallon of water is taken from each of three stations. One station is located 1000 feet upstream of the intake structure, one is in the discharge canal, and the downstream station is 1000 feet below the point of discharge to the river. Intake and discharge temperatures are measured continuously by the plant computer.

B. Impinged and Entrained Fauna

Objective: To determine monthly variations in species, size, and numbers, of all life stages of fish entrapped; to identify and count any other impinged vertebrates and to record that portion of the entrained fauna which is killed due to passage through the plant.

Specification: Impingement and entrainment studies shall be carried out for two years after the Appendix B Environmental Technical Specifications are in effect. Impingement studies shall be conducted every two weeks when the plant is operating. Entrainment studies shall be conducted from May through August for fish and May through October for aquatic insects.

Data collected during plant operation will be compared with appropriate control station data, thereby providing information to help determine the effect of the plant upon the impinged and entrained biota.

Basis:

1. Fish Impingement

Presently the plant is designed to return all impinged fish from the intake traveling screens to the river via low gradient sluice canal. Impinged fish are removed from the screens by periodic washings. All screen washed material is sampled by placing a 1/4 inch mesh net in the sluice canal. All fish collected will be identified, counted and a representative sample measured to determine monthly and seasonal trends in impingement and survivorship.

2. Impingement of Other Vertebrates and Macroinvertebrates

   If aquatic or semi-aquatic vertebrates (such as salamanders, frogs and snakes) or macroinvertebrates (including crayfish and clams, but excluding insects) are impinged, they will be identified, counted and reported.

3. Entrainment

   a. Estimates on numbers of entrained ichthyoplankton, including organisms up to 3/8 inch in diameter, shall be made monthly from May through August when peak numbers of fish fry and eggs are present in the river. Since previous studies have shown no great diel variation in number of fish collected during the day, a representative sample for a day will be collected, identified and mortality determined.

   b. Estimates on number and mortality of entrained aquatic insects will be performed monthly from May through October to coincide with high standing crop, drift rate, and growth periods. A representative subsample of the insects collected will be counted, identified and mortality estimates performed.

4.2 Environmental Radiation Monitoring

4.2.1 Environmental Monitoring of Plant Environs

Objective: To ascertain that radioactive releases are being maintained as low as practicable and within allowable values.

Specification: An environmental radiation surveillance program described in Table TSB 4.2.1 shall be conducted.

Basis: The number and distribution of sampling locations and types of measurement, together with preoperational background data, will provide verification of the effectiveness of plant effluent control and indications of measurable changes in environmental radioactivity due to plant operation.

5.0 ADMINISTRATIVE

5.1 Organization, Review and Audit

5.1.1 Organization

A. The Plant Manager has the onsite responsibility for operation of the facility and to assure that the plant operating limits in the Appendix B protection conditions are not exceeded. During periods when the Plant Manager is unavailable he will delegate this responsibility to other qualified supervisory personnel.

B. The radiation protection engineer in the plant organization has responsibility for the onsite chemical measurements related to plant releases at discharge to the environment.

C. The Supervising Scientist of the Engineering Vice Presidential Staff Department has the general office responsibility for the initiation and execution of the environmental surveillance and special studies which have been described in this appendix to the operating license. The Supervising

Scientist has the responsibility for directing the sampling programs and assignments for special environmental studies by independent consultants.

5.1.2 Review and Audit

A. The Plant Manager will have the responsibility for providing the appropriate review of those plant operations covered under Appendix B protection conditions.

B. The Supervising Scientist shall have the responsibility of providing for appropriate review of the results of the environmental surveillance and special studies programs detailed in Appendix B.

C. The Engineering Vice Presidential Staff will conduct periodic audits to determine:

1. Conformance of plant operations with the appropriate Appendix B protection conditions and monitoring requirements.

2. Conformance of the environmental surveillance and special studies programs with the appropriate Appendix B protection conditions and monitoring requirements.

5.2 Action to be Taken in the Event of an Environmental Event

An environmental event as defined in TSB-1.0.F shall be reported to the General Superintendent of Nuclear Power Plant Operation and the Director, Engineering Vice Presidential Staff, or their designated alternates in their absence. The environmental event shall be reviewed by the appropriate individuals in TSB-5.1.1. Reporting to the AEC shall be in accordance with section TSB-5.4.2.A.

5.3 Operating Procedures

5.3.1 Preparation of Procedures

Written procedures for the conduct of operations, monitoring, surveillance, and special studies covered in Appendix B Technical Specifications shall be prepared under the direction of responsible individuals as referenced in TSB-5.1.1. The following is a list of the major areas requiring procedures:

1. Control of release of chemicals in the circulating water discharge.

2. Control of the flow of discharge waters to remain within the allowable rate of change, discharge, and temperatures.

3. Sampling methods, frequencies and locations.

4. Calibration procedures and accuracies for various instruments used in measuring and analyzing samples which are required by these specifications.

5.3.2 Procedure Review

A. All procedures required by these Technical Specifications shall be reviewed and approved by an individual under the direction of the Plant Manager or Supervising Scientist in accordance with the division of responsibility provided for in TSB-5.1.1.

B. Temporary changes in procedures which do not change the intent of the original procedure may be made provided such temporary changes are approved by a member of the management staff for the responsible group and an individual with technical knowledge in the

area covered by the procedure. Such changes should be documented and subsequently reviewed in accordance with TSB-5.3.2.A.

5.4 Reporting Requirement

5.4.1 Routine Reports

A. An Annual Environmental Monitoring and Ecological Studies Program Report covering the year's operations and surveillance monitoring shall be submitted by August 1 of the subsequent year.

B. A Semi-Annual Environmental Studies Report covering the previous six months surveillance monitoring shall be submitted within 60 days after January 1 and July 1 of each year. This report will include a summary description of all environmental events, a summary of data from section TSB-3.0, summary of surveys completed within section TSB-4.1 and data analysis from section TSB-4.2.

5.4.2 Non-Routine Reports

A. Environmental Event Reports

Notification shall be made within 30 days by a written report to the Director of the Regional Regulatory Operations Office, upon the occurrence of an environmental event as defined in TSB-1.0.F. The report shall describe the event, analyze and evaluate the environmental impact, determine the cause, and outline corrective measures taken or planned to prevent repetitions of the event.

B. Changes to the Plant or Procedures

1. Changes in the plant or procedures which increase the environmental impact as evaluated in the Final Environmental Statement will be reported in the Semi-Annual Environmental Studies Report. The report shall include an evaluation of the environmental impact resulting from the changes.

2. Minor changes may be made in the monitoring and sampling procedures and analytical techniques referenced in this Technical Specification when weather or other conditions affect sample availability or the use of specified techniques. These changes shall be noted in the Annual Environmental Monitoring and Ecological Studies Program Report.

3. Requests for changes to Appendix B Environmental Technical Specifications shall be submitted to the Director of Licensing. An evaluation of the environmental impact, which would result from such a change in procedure, shall be included.

   The National Pollution Discharge Elimination System (NPDES) permit authority will include thermal and chemical effluent limitations and related monitoring requirements which by definition (P.L. 92-500), will protect the environment. As such, the NPDES permit will supersede the equivalent requirements of this Technical Specification. When the NPDES final permit is issued, a license amendment request will be processed for transfer of all non-radiological authority from this Technical Specification to the designated NPDES authority.

Table TS-B 4.2.1

SAMPLE COLLECTION AND ANALYSIS
MONTICELLO NUCLEAR PLANT - ENVIRONMENTAL RADIATION MONITORING PROGRAM

Type of Sample	Type of Analysis	Collection Site	Collection Frequency
River Water	GB, GS ^{3}H (M)	Upstream within 1000 ft of intake canal. Downstream within 1000 ft of discharge canal. St Paul raw water intake.	Weekly
Lake Water	GB, GS, ^{3}H	2 local lakes.	Quarterly (water and ice conditions permitting)
Well Water	GB, GS, ^{3}H	6 sites within 5 miles of plant site including the Monticello well.	Quarterly
Precipitation	GB, GS, ^{3}H, ^{131}I, ^{90}Sr	Meteorological Station at plant. State Health Dept Bldg - Mpls.	Monthly
Lake and River Bottom Sediment	GB, GS ^{137}Cs	2 local lakes. Upstream of plant. Downstream of plant.	Semi-annually
Plankton or Algae or Insects	GB, GS, ^{137}Cs, ^{90}Sr	2 local lakes. Upstream of plant. Downstream of plant.	Semi-annually (when available)
Aquatic Vegetation	GB, GS, ^{137}Cs	2 local lakes. Upstream of plant. Downstream of plant.	Quarterly (when available)

Table TS-B 4.2.1
Continued

Type of Sample	Type of Analysis	Collection Site	Collection Frequency
Clams	GB, GS	Upstream of plant. Downstream of plant.	Quarterly (when available
Fish	GB, GS	Upstream of plant. Downstream of plant.	Quarterly (water and ice conditions permitting)
Milk	GS, ^{131}I $^{90}SR(Q)$, $^{137}Cs(Q)$	Two farms/region Four regions	Monthly
	GS, $^{137}Cs(Q)$ $^{90}Sr(Q)$, ^{131}I	Uncomposited samples from two nearest dairy farms.	Monthly (^{131}I weekly during the grazing season)
Topsoil	GB, GS, ^{137}Cs	From 3 fields in the vicinity of plant site, also 3 fields irrigated with river water downstream of plant.	Semi-annually
Vegetation	GB, GS, ^{131}I	From 3 fields downwind of the plant site	Semi-annually
Agricultural	GB, GS, ^{137}Cs	From 3 fields irrigated by river water downstream from the plant	Annually (at harvest)
Air Samples (filters)	GB, GS (M) ^{131}I	Meteorological Station at plant and 7 other stations located within 15-mile radius of plant.	Weekly
Air Samples (film badge)	Beta Gamma	Same locations as filters plus 6 on-site stations	Every 4 weeks

Table TS-B 4.2.1
Continued

Type of Sample	Type of Analysis	Collection Site	Collection Frequency
Air Samples (TLD)	Gamma	Same location as filters plus 6 on-site stations	Every 4 weeks (with one day down for calibration

NOTES:

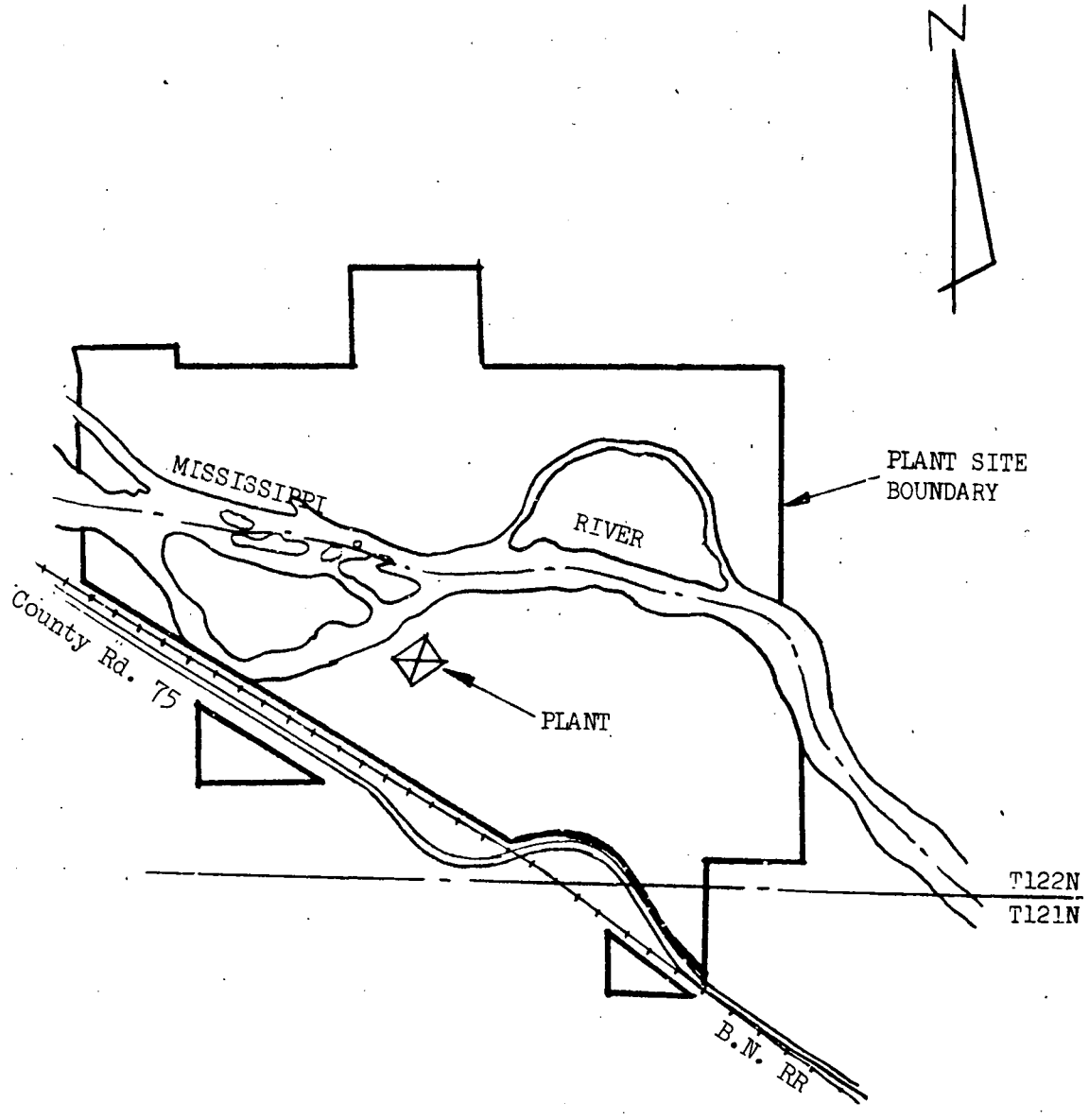
If ^{90}Sr concentrations in any of the environmental media monitored increase to twice that of the preoperational period, ^{90}Sr analyses shall be conducted on the following samples at the indicated frequency until it has been demonstrated that the increase is not attributable to plant operations:

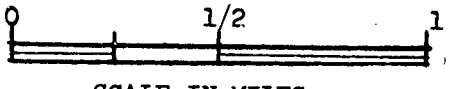
Sample	^{90}Sr Analysis Frequency
River Water	Quarterly
Lake Water	Quarterly
Well Water	Quarterly
Lake & River Bottom Sediment	Semi-annually
Plankton, Algae or Insects	Semi-annually
Aquatic Vegetation	Quarterly
Fish	Quarterly
Milk	Monthly
Topsoil	Semi-annually
Agricultural Crops	Annually at harvest

CODING SYSTEM:

GB - gross beta
GS - gamma scan
(M)- monthly
(Q)- quarterly

Exhibit A





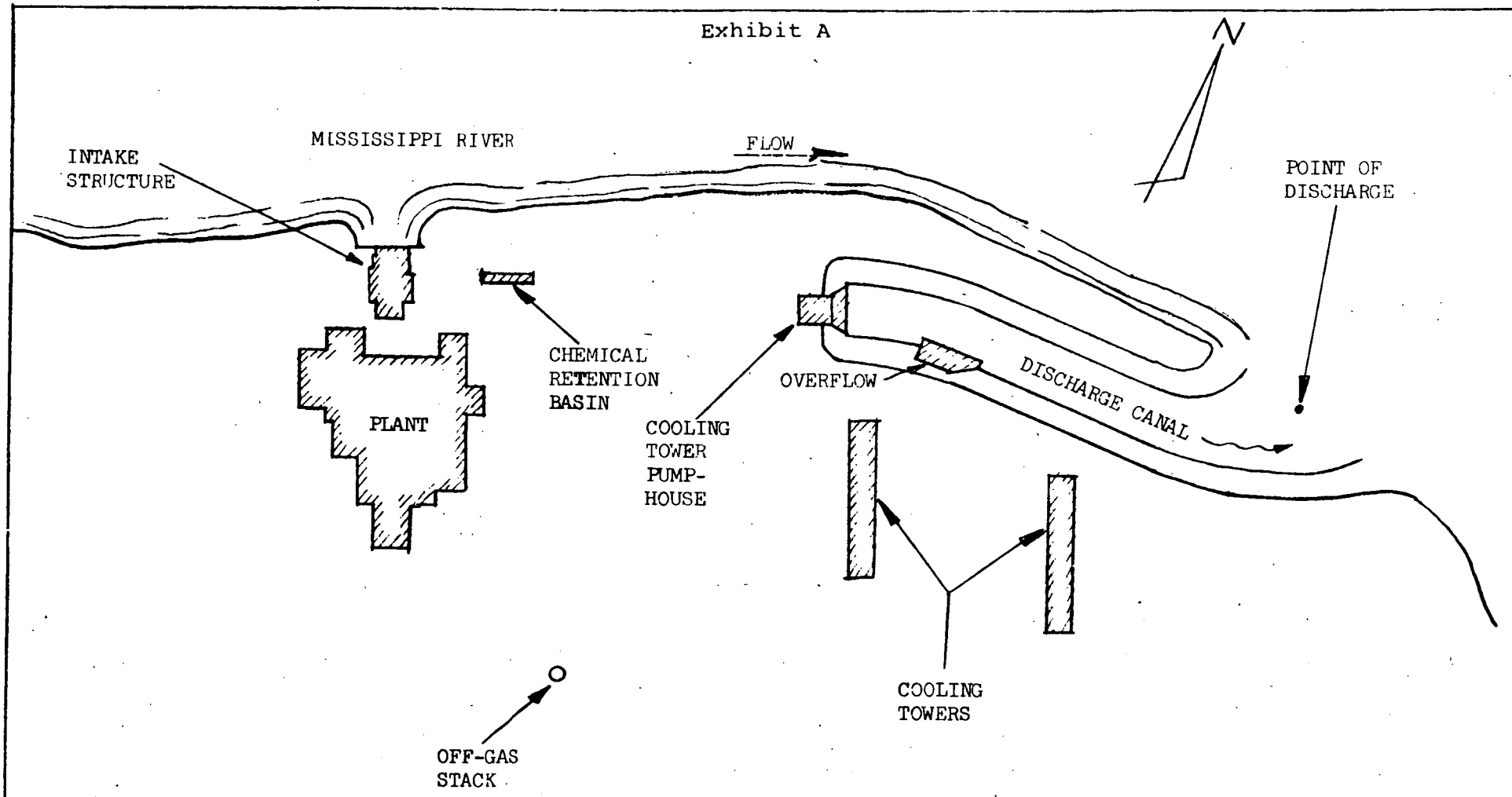
SCALE IN MILES

ON SITE PROPERTY

FIGURE TS B-1.0-1

8-15-74 JLB

Exhibit A

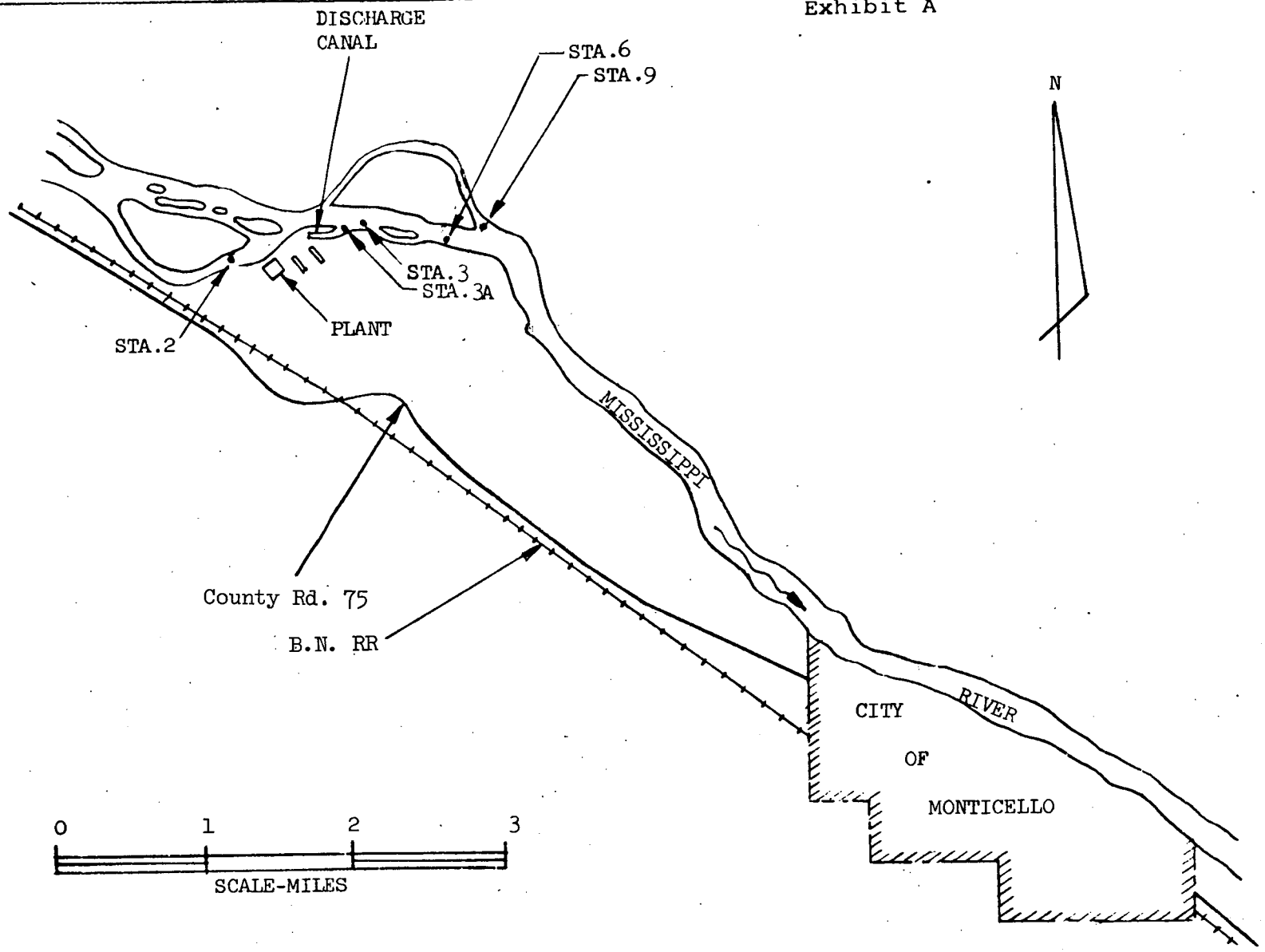


MONTICELLO PLANT FACILITY PLAN

FIGURE TS B-1.0-2

8-15-74 JLB

Exhibit A

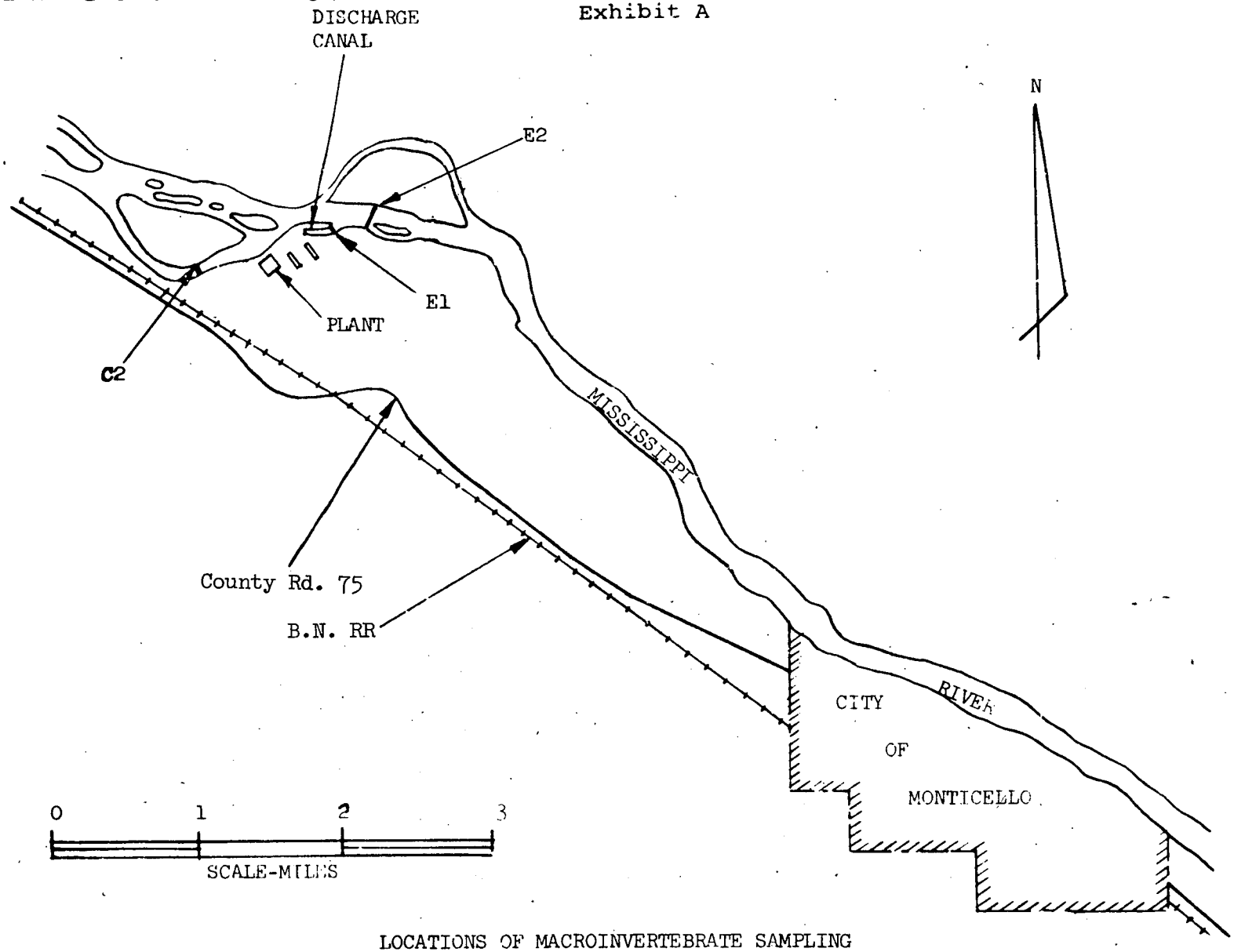


LOCATIONS OF PERIPHYTON SAMPLE STATIONS

FIGURE TS B-4.1.1-1

8-15-74 JLB

Exhibit A



LOCATIONS OF MACROINVERTEBRATE SAMPLING

TRANSECTS AND STATIONS

FIGURE TS B-4.1.1-2

8-15-74 JLB