

A

Dan Vg

I agree with the minority of city council ^{for the} following reasons.

First, they would make some alterations in the plant. They have examined scientific data describing what happens to a lake when it is warmed.

They find that the company ~~is~~ is doing their own research and building the plant at the same time. The taxes are needed for the city, but the heat would still ~~to~~ damage the lake. Other things would occur and the city would lose money. They think that cooling ponds and towers are the answers. I do too.

Lake Serena

- 1 Small Lake
- 2 Slow flow.
- 3 Grows algae May, Nov. Temp. 70°F Summer
- 4 Contains N, P Plant growth O_2
- 5 Lake aging rapidly
- 6 More soil and pollution in lake
- 7 Lake now clear to 10' depth - past 15'-20'
- 8 Income from swimming and fishing

USES

- 1 Recreation

2 City and Industrial
 H_2O $\approx 6-11$ million/year

3 Sewage

Present Power Plant

1 Previous plant no
apparent heat problem

2 New station 4x water
from 100'

3 Current plant 45' water
Lake

1 Depth 150'

2 20 mi. wide - 7 mi. long

3 Temp. 65° at 25'
 $45-50^\circ$ at 160'

Entry 2

1. One of nations largest

2. First on lake shore

3. Construction 5 yrs. \$125m.

4. 50% more heat than fossil fuel

5. No smoke, dust, or smell

6. Chemical pollution to H_2O

Economics

1 1000 workers x 5 yrs,

- #20 million in wages
- 2. #15-20 million in materials
- 3. 60 full time skilled workers
- 4. High tax basis for schools and roads

317

- 1 overall temp. change of lake = 1°
- 2 25° heat added to cooling water

Ways to remove Heat

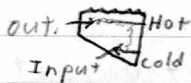
A. Direct flow

1 Cheapest

2 All heat goes to lake

B. Cooling Pond

1. Artificial pond

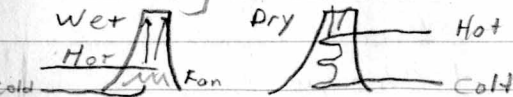


C. Lake used for recreation + homes

1 Cover 2 sq. mi.

2 Cost 2.5 million

D. Cooling Towers



1. Wet - 400' tall
#10 million

2. Dry - #25 million

Increased cost;

50¢/mol/home

More industry cost +

4 items

Para.

The effect of
Heat on the Lakes

1 Adding heat makes
plants and animals
grow faster. Don't
grow as large or live
as long, too hot they
die.

2 Lengthens algae
growing season. Speeds
up. Diatoms decrease
with temp. Lo 95° Hi 65°
Greens increase with
temp. Lo 45° Hi 90
Bl-Gr increase with

temp Lo 85° Hi 105°

3 Fish

type	Breed	Prefer	Die
Lake Trout	50°	55°	75°
Brown Trout	55°	60°	78
Perch	65°	70°	88°
Bass	73°	85°	90°

4 Hot water holds less O_2

Decay speeds up

Decay uses O_2

5 Desirable lake organisms need O_2

Pest organisms need little O_2