Wind Engineering Study of Atmospheric Dispersion of Airborne Materials Released from a Floating Nuclear Power Plant

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ABSTRACT

Measurements were made in the meteorological wind tunnel of the concentration of gas at selected sampling ports on a 1:450 scale model for selected emission locations on and at the sea surface upwind of the model of a floating nuclear power plant complex including the breakwater. The data obtained include time exposure, still photographs and color motion pictures of smoke from the selected sources. Maps of nondimensional concentrations at sampling points on the plant are supplemented by tables of the vertical distribution of nondimensional concentrations at a selected location.

The effects of wind direction, source emission rate and effluent initial buoyancy are evaluated for both neutral and stable density stratification. The effect of doubling the height of the plant vent stack and, in neutral stratification, the effect of changing the height of the breakwater and wind speed were also evaluated.

The results indicate that

1. Wind direction strongly alters the pollutant transport pattern.
2. Increasing the plant vent stack emission rate to well above that of a leak to, say, $V_s/V_a = 3$ greatly reduces the concentration at the selected sampling points.
3. Doubling the height of the plant vent stack is quite effective in reducing concentrations at the sampling points especially in stable stratification.
4. Upwind sea surface point sources of pollutant are for the most part deflected laterally around the breakwater in

stable stratification with negative buoyancy of the source. However, a small amount of elevation of source material (by positive initial buoyancy or otherwise) can alter this picture somewhat to allow a rather wide distribution within the complex.

5. The contaminent vessel leak pollutant is strongly entrained into leeside parts of plant components, plant and plant complex for most wind directions.

6. It will be difficult to select an intake point on the plant which can assuredly be free of pollutant from low flow rates out of the original height plant vent stack. The data, however, does permit the selection of a most preferable location which will minimize filter loads.

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LIST OF SYMBOLS

Symbol	Definition	
A	Area of the projection of the power station	(L^2)
C_p	Specific heat capacity	$(L^2T^{-2}\theta^{-1})$
D	Stack diameter	(L)
Fr	Froude Number $\frac{V^2}{g\frac{\Delta\rho}{\rho}D}$	$(-)$
g	Gravitational constant	(L/T^2)
H	Stack height, or Power Station effective building height	(L)
ΔH	Plume rise	(L)
k	von Karman constant	$(-)$
L_{MO}	Monin-Obukhov stability length	(L)
L	Reference length D_s/H_s	
M	Molecular weight	$(-)$
q	Source flow rate	(L^3/T)
Q	Source strength	(Curies/T)
R	Exhaust Velocity Ratio V_S/V_H	$(-)$
Re	Reynolds number $\frac{VL}{\nu}$	$(-)$
Ri	Richardson number $\frac{g\Delta TH}{T\ V^2}$	$(-)$
T	Temperature	(θ)
$\Delta T, \Delta\theta$	Temperature difference across some reference distance or layer	(θ)
U_*	Friction velocity	(L/T)
V	Mean velocity	(L/T)
x,y,z	General coordinates--downwind, lateral, upwind	(L)
z_o	Surface roughness parameter	(L)

LIST OF SYMBOLS (continued)

Symbol	Definition	
Greek Symbols		
χ	Local concentration	(Curies/L^3)
τ	Sampling time	(T)
θ	Potential temperature	(θ)
or	Azimuth angle of upwind direction measured from plant north	(-)
σ	Standard deviation of either plume dispersion or wind angle fluctuations	(L) (-)
ν	Kinematic viscosity	(L^2/T)
δ	Boundary layer thickness	(L)
γ	Specific weight	M/(T^2L^2)
ρ	Density	(M/L^3)
Ω	Angular velocity	(1/T)
μ	Dynamic viscosity	M/(TL)
δ	Length scale of boundary layer	(L)
Subscripts		
a	Free stream	
s	Stack	
m	Model	
p	Prototype	
max	Maximum	

1.0 INTRODUCTION

Questions involving environmental quality, priority of land uses, and public safety have created and will continue to create difficulties in finding acceptable sites for nuclear power plants. A novel solution to some of the difficulties of the siting problem is the construction of offshore artificial islands and/or floating platforms. In a summary of past studies incorporating this concept Anderson (1971) concludes that the floating offshore platform would provide an effective means of gaining earthquake protection for a nuclear plant that could be constructed with presently available techniques, that costs for a light-water reactor may be lower, and that heat rejection would normally produce only minor sea temperature variation.[1] Finally, though the probability of accidents initiated by plant malfunctions would be little different from a shore based station, the consequences of reactor accidents could be less severe for offshore systems. This is because a floating plant could provide a large exclusion zone in which there would be no permanent population.

Nevertheless, accidents, whether they arise from natural disasters or from plant malfunctions, are of great concern. In the event of accident, the effectiveness of engineered safety features incorporated for the protection of site personel are often questioned. The objective of this experimental program is then:

> "to obtain data for estimating concentration fields for gaseous radioactivity and other materials (pollutants) over or near the structure of an offshore power plant and downwind of the pollutant release point."

A primary factor in determining whether gaseous products may be a hazard is the stack design. Under certain conditions a release may occur under meteorologically unfavorable situations. Hence, it is necessary to design gas exhaust systems such that adequate dispersal of gaseous materials will occur under any realistic meteorological condition.

It has been a traditional design technique to release the various gases through the top of a tall stack located near the power station, where the stack is at least two and one-half times taller than nearby buildings. Calculation of peak and mean ground concentrations of these gases are then based on some semi-empirical model which relates the release rate from an elevated point source to the concentration at some point downwind. Mathematical models have been suggested by Sutton, Hay and Pasquill, Roberts and Cramer.[2,3,4,5] These mathematical models require the assumptions of plane homogeneous atmospheric turbulence and constant mean lateral and mean vertical velocities. These assumptions are satisfied for a point release over a flat undisturbed terrain.

In addition, considerable effort has been made to determine the effects of vertical stack velocity and gas buoyancy on the effective stack release height. Recently Carson and Moses[6] have reviewed over 15 plume rise formulas constructed to calculate effective stack heights for conditions where there are no effects from local terrain or buildings. They concluded that no available plume rise equation can be expected to accurately predict short-term plume rise. Recent results produced by Briggs (1969)[7] are more optimistic concerning isolated plumes suggesting error bounds for plume rise of ±20 percent.

Often, it is necessary, due to aesthetics, cost, and public relation reasons, to utilize a short to medium height stack. In these cases plume dispersion is sufficiently modified by the presence of the local building structure or ground topography that the only approach available to estimate plume trajectories or gaseous dillution factors is one of wind tunnel model tests.[8,9]

A number of wind tunnel studies have considered the effects of variations in a single building geometry on plume entrainment and dispersion.[10,11,12,13] These studies have permitted the specification of pertinent scaling criteria for model studies of plume excursions near buildings. Model laws will be discussed in greater detail in Section 2.

Since each arrangement of the power plant and auxiliary buildings or terrain may have separate effects on the generation of mechanical turbulence and mean flow movement, any specific gas dispersion problem will require individual tests. Hence, there exist in the literature descriptions of a variety of different model studies on reactor and industrial plants.[9,14,15,16,17,18,19,20,21] These studies are significant in that their results have been essentially confirmed by either direct prototype measurements or the absence of the gases or dusts the study was directed to remove. References 14, 15, 17 and 18 incorporate such comparisons within their text. Reference 9 has been compared with prototype measurements at the National Reactor Testing Station in southeast Idaho.[22] Agreement of the diffusion concentration results were very satisfactory. Martin[18] favorably compared his wind tunnel study measurements about a model of the Ford Nuclear Reactor at the University of Michigan with prototype measurements. Finally, Munn and Cole[23] have taken diffusion measurements on a power station complex at the National Research Council, Ottawa, Canada, to confirm the general entrainment criteria suggested by the model studies of Davies and Moore.[15]

The purpose of this study is to determine the behavior of plumes created by gases discharged from a proposed new offshore floating nuclear power plant complex (Fig. 2). Using a 1:450 scale model of the plant in a wind tunnel capable of simulating the appropriate meteorological conditions, on-site stack-gas concentrations were determined by sampling concentrations of tracer gas (Krypton-85) released from the model stacks, and overall plume geometry was obtained by photographing smoke plumes created by releasing smoke (titanium oxide) from the model stacks.

The general scope includes determination of how plume behavior is affected by stack location, height, and ejection velocity, wind direction, wind speed and thermal stratification of the atmosphere for plumes originating from the plant vent stack, containment vessel leaks, diesel generator exhausts, steam relief valves, and the house boiler exhaust. A wide range of meteorological conditions can be simulated in the meteorological wind tunnel of the Fluid Dynamics and Diffusion Laboratory (FDDL) at Colorado State University. The conditions simulated for this study included the adiabatic lapse rate (thermally neutral flow) and the ground based inversion (stably stratified) situation.

The modeling criteria necessary to simulate atmospheric motions over such a site are presented in Section 2. Details of the model construction and the experimental equipment are described in Section 3. Finally, Sections 4 and 5 discuss the results obtained and their significance.

This report is supplemented by a motion picture (in color) which shows the plume behavior for the larger sources for all operating levels, wind directions and meteorological conditions investigated during the course of this study (see Appendix A for motion picture sequences). A set of black-and-white photographs of each plume trajectory further supplements the material presented in this report.

2.0 SIMULATION OF ATMOSPHERIC MOTION

The use of a wind tunnel for model tests of gas diffusion by the atmosphere is based upon the concept that nondimensional concentration coefficients will be the same at contiguous points in the model and the prototype and will not be a function of the length scale ratio. Concentration coefficients will only be independent of scale if the wind-tunnel boundary layer is made similar to the atmospheric boundary layer by satisfying certain similarity criteria. These criteria are obtained by inspectional analysis of physical statements for conservation of mass, momentum and energy. Detailed duscussions have been given by Halitsky,[10] Martin[18] and Cermak.[24] Basically the model laws may be divided into requirements for geometric, dynamic, thermic and kinematic similarity. In addition, similarity of upwind flow characteristics and ground boundary conditions must be achieved.

For the Offshore-Power Plant study, geometric similarity is satisfied by an undistorted model of length ratio 1:450. This scale was chosen to facilitate ease of measurements, provide a boundary layer equivalent to 800-1000 feet for the atmosphere and minimize wind tunnel blockage. (The ratio of projected area to the area of the wind tunnel cross section should not exceed five percent. The model of the Power Plant at a scale of 1:450 produced a blockage of about three percent in the Meteorological Wind Tunnel.)

2.1 Modeling the Neutral Atmosphere Case

When interest is focused on the vertical motion of plumes of heated gases emitted from stacks into a thermally neutral atmosphere the following variables are of primary significance:

ρ_a = density of ambient air

$\Delta\gamma$ = $(\rho_a' - \rho_s)g$--difference in specific weight of ambient air and stack gas

Ω = local angular velocity component of earth

μ_a = dynamic viscosity of ambient air

V_a = speed of ambient wind at stack height

V_s = speed of stack gas emission

H = stack height

D = stack diameter

δ_a = thickness of planetary boundary layer

z_o = roughness heights for upwind surface

Grouping the independent variables into dimensionless parameters with ρ_a, V_a and H as reference variables yields the following parameters upon which the dependent quantities of interest must depend:[13,24]

$$\frac{V_a}{H\Omega}, \frac{\delta_a}{H}, \frac{z_o}{H}, \frac{D}{H}, \frac{V_a \rho_a H}{\mu_a}, \frac{\rho_s V_s^2}{\rho_a V_a^2}, \frac{\rho_a V_a^2}{\Delta\gamma D}, \frac{\Delta\gamma}{g\rho}$$

The laboratory boundary-layer-thickness parameter δ_a/H was made approximately equal to that for the atmosphere. A value for this ratio of at least 4.0 was established for the highest stacks. Equality of the effects of the surface parameter z_o/H for model and prototype was achieved through geometrical scaling of the stacks and similarity of the upwind velocity profile. Likewise the stack parameter D/H was equal for model and prototype.

Dynamic similarity is achieved in a strict sense if a Reynolds number $\frac{\rho_a V_a H}{\mu_a}$ and a Rossby number $\frac{V_a}{H\Omega}$ for the model is equal to its counterpart for the atmosphere. The model Rossby number cannot be made equal to the atmospheric value. However, over the short distances considered (up to 2000 ft), the Coriolis acceleration has little influence upon the flow. Accordingly, the standard practice is to relax the requirement of equal Rossby numbers.[24]

Kinematic similarity requires the scaled equivalence of streamline movement of the air over prototype and model. It has been shown by Golden[9] that flow around geometrically similar sharp-edged buildings at ambient temperatures in a neutrally stratified atmosphere should be dynamically and kinematically similar when the approaching flow is kinematically similar. This approach depends upon producing flows in which the flow characteristics become independent of Reynolds number if a lower limit of the Reynolds number is exceeded. For example, the resistance coefficient for flow in a sufficiently rough pipe as shown in Schlicting[25] (p. 521) is constant for a Reynolds number larger than 2×10^4. This implies that surface or drag forces are directly proportional to the mean flow speed squared. In turn, this condition is the necessary condition for mean turbulence statistics such as root-mean square value and correlation coefficient of the turbulence velocity components to be equal for the model and the prototype flow.[10,24]

Golden, as cited by Halitsky,[9,10] found that for flow about a cube for Reynolds numbers above 11,000, there was no change in concentration measurements. The minimum Reynolds number encountered in the present study was 14,000 based on the model scale of 1.0 ft and a minimum reference velocity of 2 fps. Correlation tests of flow about the Rock of Gibraltar, flow over Pt. Arguello, California, and flow over San Nicolas Island, California, may be cited as examples of large Reynolds number flows which have been modeled successfully in a wind tunnel.[26,27,28]

Buildings and building complexes produce nonuniform fields of flow which perturb the regular upstream atmospheric wind profiles. Around each building a boundary layer exists, where the velocity is zero at the surface but increases rapidly to a relatively constant value a short distance from the building wall. Outside of the boundary layer and downstream there exists a region of low velocities and pressures called the cavity. In this region circulations are such that flow may actually reverse with respect to the upstream winds. Surrounding the cavity but extending further downstream is a parabolic region called the wake in which the presence of the building is still evident in terms of deviations of velocity, turbulence, and pressure from conditions found in the upstream atmospheric boundary layer.

The formation of the wake and cavity regions are associated with a phenomena called boundary-layer separation. Under certain conditions the boundary layer actually detaches and enters the flow streaming about the building. This may occur at the corner of a sharp-edged building or on a curved surface if the pressure increases due to a decelerating flow field. The separated boundary layer forms a sheet which completely surrounds the cavity region which contains relatively stagnant fluid. The extent of the cavity region for the Floating Power Station building may be approximated by $5H \cong 1000$ ft. Based on the measurements of Evans[12] the effect of alternate wind approach angles to an elongated rectangular complex may extend this to $6H \cong 1200$ ft.

The need for scaling of the atmospheric mean wind profile was demonstrated by Jensen.[13] Substitutions of a uniform velocity profile for a logarithmic profile results in threefold variation in the dimensionless pressure coefficient downstream of a model building. Such variance in the pressure fields indicates a strong effect of the upstream wind profile on the kinematic behavior of the fluid near the building complex. One of the few tunnels currently capable of generating a turbulent boundary layer thick enough for a 1:450 model scale is the Meteorological Wind Tunnel at Colorado State University. Other investigators have attempted to generate logarithmic profiles in short tunnels by inserting special grids upstream of the test section; however, this technique normally creates a nontypical turbulence field which decays rapidly downstream.

The length scale often used for scaling the velocity profile is the roughness height z_o.[24] For flow over sea surfaces the dynamic roughness z_o varies from 0.1 to 1.0×10^{-7} cm (Roll, p. 139, 1965).[29] In a wind tunnel over a smooth surface the effective roughness length may be expected to behave as $0.141\ \nu/U^*$. Thus, for a scale of 1:450 the modeled roughness scale will be greater than desired by an order of magnitude. In this study, however, the primary scales of turbulence will be generated by the approach velocity profile interacting with sharp cornered geometry of the breakwater and plant complex. For neutral flow conditions the mean wind velocity profile may be simulated by a power law profile whose exponent, n, has a value in the range from 0.12 - 0.15,[30] i.e.,

$$\frac{u(z)}{u(z_1)} = \left(\frac{z}{z_1}\right)^n .$$

where z_1 is some reference height, say $z_1 = H$.

Equality of the parameter $\rho_a V_a^2/(\Delta\gamma D)$ for model and prototype normally assures one that the plume trajectory in that region dominated by buoyancy will be similar. Often this criteria results in $(V_a)_m$ being too small to satisfy the minimum Reynolds number requirement. In such cases the specific weight difference for the model $(\Delta\gamma)_m$ can be made larger than $(\Delta\gamma)_p$ to compensate for the effect of small geometric scale. Unfortunately when one reduces the model plume density there is the problem that its momentum flux relative to that of the surrounding air is too low if the efflux velocity, V_s, is scaled by the same factors as the surrounding air velocity, V_a.

Since the prototype plant vent stack, house boiler, and diesel generator exhaust temperatures may be 550°, 470° and 770°F, respectively, it is not practical to adjust model plume densities by increased temperature or use of helium-air mixtures. However, as the source heights are all short it was considered sufficient to model only the near plant trajectories where the dispersion rates are dominated by flow fields and mixing levels determined by the plant geometry. The initial plume behavior is governed by the interaction of the emitted effluent with the wind as determined by the ratio of their respective momenta.[9,10,11,15,18,31] When the prototype and model plumes have the same density this reduces to a ratio of velocities $R = V_s/V_a$.

To summarize the following scaling criteria were applied for the neutral boundary layer situation:

1/ $$Re = \frac{\rho_a V_a H}{\mu_a} > 11{,}000$$

2/ $$\left(\frac{\Delta\gamma}{\rho}\right)_m = \left(\frac{\Delta\gamma}{\rho}\right)_p$$

3/ $R = \frac{V_s}{V_a}$; $R_m = R_p$

4/ Similar velocity and turbulence profiles upwind.

Operating conditions for the Offshore Power Plant have been supplied by Offshore Power Systems (see Table 1). Modeled wind velocities, stack velocities, and plume densities based upon the selected scaling criteria are tabulated together in Table 2.

2.2 Modeling the Stratified Atmosphere Case

When air follows a trajectory over a cold water surface, the lower layers of the atmosphere are cooled and an inversion develops to a depth of from 100 to 1000 ft. Yang and Meroney found that inversion stratification causes smaller transverse spread in a diffusing plume behind a simple model building.[34] The stratification "freezes" the plume growth in the vertical direction once aerodynamic mixing has subsided. It is also expected that outside breakwater releases will tend to be blocked by the building complex--plumes will tend to stay near the ocean surface and move laterally around the complex rather than over it.

When vertical motion of plumes takes place in an atmosphere with thermal stratification, additional requirements must be met to achieve similarity of the atmospheric motion. These requirements have been discussed previously by Cermak,[31] Yamada and Meroney,[32] and SethuRaman and Cermak.[33] Similarity of the stably stratified flow approaching the power plant can be achieved by requiring equality of the bulk Richardson number

$$Ri = \frac{\Delta T}{\overline{T}} \frac{H}{V_a^2} g$$

for the laboratory flow and the atmosphere. In this expression, ΔT is the difference between mean temperature (potential temperature for the atmosphere) at the surface and at the height H, $\overline{T}$ is the average temperature over the layer of depth H and g is the acceleration due to gravitational attraction.

For a strongly stable stratified flow it is expected that the power-law coefficient for the velocity profile will increase in magnitude. Sutton reports measurements over an English airfield of coefficient values of 0.44, 0.59, 0.63, 0.62 and 0.77 when the temperature change over a 400 foot depth was 2-4, 4-6, 6-8, 8-10 and 10-12°F, respectively.[36] Panafsky, et al., have produced a nomogram from diabatic wind profile measurements for the power-law coefficient variation versus surface roughness, z_o, and stability length parameter, L, which suggests values for strongly stable situations between 0.25 to 0.6.[37]

3.0 TEST APPARATUS

3.1 Wind Tunnel

The meteorological wind tunnel (MWT) shown in Fig. 1 was used for this study. This wind tunnel, especially designed to study atmospheric flow phenomena, incorporates special features such as an adjustable ceiling, a rotating turntable, temperature controlled boundary walls, and a long test section to permit adequate reproduction of micrometeorological behavior. Mean wind speeds of 0.2 to 130 ft/sec (0.14 to 90 mi/hr) in the MWT can be obtained. Boundary-layer thickness up to four feet can be developed "naturally" over the downstream 20 feet of the MWT test section. Thermal stratification in the MWT is provided by the heating and cooling systems in the section passage and the test section floor. The flexible test section roof on the MWT is adjustable the MWT is adjustable in height to permit the longitudinal pressure gradient to be set at zero. A set of vortex generators were installed two feet downwind of the entrance to give the simulated boundary an initial impulse of growth. From six to 40 ft a set of 12 roll-bond aluminum panels were placed on the tunnel floor. These panels were connected to the facility refrigeration system and cooled to approximately 32°F. Fillets were installed in the bottom tunnel corners to cover the plumbing connections and reduce resulting wake turbulence. From 40 ft to the end of the test section a permanently installed set of cooling panels were used to also lower the aluminum floor temperature to a level of 32°F. The free stream temperature was raised to a level near 100°F as prescribed by the Bulk Richardson number.

3.2 Model

The model consisted of the power station, the stacks, and the breakwater constructed from plastic to a linear scale of 1:450 (see Fig. 2). The basic flat ocean surface topography was reproduced by fixing the model directly to the smooth wind tunnel floor surface. The model was built to dimensions taken from Offshore Power Systems Drawings 105H000-15 Revision A, dated 1/7/74. Three breakwater models were constructed to 1/2, 1 and 2 times the vertical dimensions found on Drawing 233203 A 1408-2 for Atlantic Generating Station, dated 6/1/73. All horizontal dimensions of the breakwaters were held to one scale.

The model was located on the MWT floor at 65 feet from the entrance. As required the model was rotated to eight wind angles as shown on Fig.3. Location of sampling points and source release points are identified on the same figure and in Fig. 2.

Metered quantities of gas were allowed to flow from each stack to simulate the exit velocity and also account for buoyancy effects due to the temperature difference between the stack gas and the ambient atmosphere. Helium and compressed air were mixed in metered amounts to adjust the specific weight as proposed in Section 2. For a limited series of tests for ground level releases outside the breakwater air was mixed with Freon to obtain a density ratio, $\Delta\rho/\rho$, equivalent to the conditions for an accidental release of chlorine gas. Fischer-Porter Flowrator settings were adjusted for pressure, temperature, and molecular weight effects as necessary. When a visible plume was required the gas was bubbled through titanium tetrachloride before emission. When a traceable plume was required a high pressure mixture of Krypton-85 and air was used in place of the compressed air.

3.3 Flow Visualization Techniques

Smoke was used to define plume behavior over the power plant complex. The smoke was produced by passing the air mixture through a container of titanium tetrachloride located outside the wind tunnel and transported through the tunnel wall by means of a tygon tube terminating at the stack inlet within the model complex. The plume was illuminated with arc-lamp beams. A visible record was obtained by means of pictures taken with a Speed Graphic camera utilizing Polaroid film for immediate examination. Additional still pictures were obtained with a Hasselblad camera. Stills were taken with camera speeds of 30 seconds to identify mean plume boundaries. A complete series of color motion pictures were also taken with a Bolex motion picture camera. Complete sets of these still pictures and motion picture sequences were provided to Offshore Power Systems as a separate part of this final report.

3.4 Wind Profiles, Temperature, and Turbulence Measurement

A DISA Type 55DO constant-temperature hot-wire anemometer system was utilized to measure the up and downstream velocity profiles for the neutrally stratified flow fields. Thermal stratification in the MWT precluded straightforward use of the hot-wire system; hence, an eddy shedding system based on the Strouhol shedding frequency of a cylinder in a cross flow was constructed.[35]

The device requires a "hot-wire" probe positioned in the cylinder wake to measure the eddy shedding frequency. The trace of the anemometer signal was observed on storage oscilloscope and the probe position adjusted so that only the frequency of vortex shedding from one side of this cylinder was counted. The signal appeared in wave form and could be counted by means of constructing Lissajous figures on the oscilloscope. Velocity was determined from Roshko's data relating Strouhol number to Reynolds number. Previous comparison of velocity measurement so measured with a smoke wire technique suggests accuracies to three percent.

Measurement of temperature was made with a miniature thermister (Fennal glass coated bead) system constructed by Yellowsprings, Corp. (YSI Model 42 SC). Thermocouples mounted in the MWT aluminum floor were used to monitor boundary temperatures and set electric heater controls. Table 4 lists all the instrumentation and materials employed in this study.

3.5 Gas Tracer Technique

After the flow in a tunnel was stabilized, a mixture of Kr-85 of predetermined concentration was released from model stacks at a required rate (Table 2). Samples of air were withdrawn from the sample points and analyzed. The flow rate of Kr-85 mixture was controlled by a pressure regulator at the supply cylinder outlet and monitored by Fischer and Porter precision flow meters. Source concentration was from .23 to .48 μc_i/cc of Kr-85, a beta emitter (half lifetime = 10.3 years). The sampling and detection systems are shown in Figs. 4 and 5 and described in Ref. 21.

3.5.1 Analysis of Data

Krypton-85 is a radioactive noble gas with a half life of 10.6 years. The gas decays by emission of beta particles with small amounts of gamma rays. The gas has many advantages over the other tracers used in wind-tunnel dispersion studies. It is diluted with air about a million times before use, and as such, has properties very similar to those of air. Its detection procedure is fairly simple and direct.

The procedure for analyzing the samples was as follows:

1. Counts of the pulses generated in the G.M. tubes and displayed by the ultra scaler counter were recorded for each of the samples.

2. These counts were transformed into concentration values by the following steps:

Cpm - Background (Cpm) = Cpm*

Cpm* x Counting Yield (p Curie/cc/Cpm)[□] = χ($\mu\mu$ Curie/cc).

3. For counts over 1,000 a dead time correction[Δ] had to be applied to the readings, and in this case the correction is,

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[□] p Curie: pico curie (10^{-12} curie); a separate counting yield was used for each sample counting chamber.

[Δ] The time taken for the positive space charge to move sufficiently far from the anode for further pulses to occur.

$$Cpm^* = Cpm - Background$$

$$Cpm^{**} = \frac{Cpm^*}{1 - 1.77 \times 10^{-6} \times Cpm^*}$$

χ(p Curie/cc) = Cpm** x Counting Yield.

Average concentration values were determined for the known probe position and then displayed at the proper locations.

The concentration parameter $\chi V/Q$ was then computed at all locations. A sample computation is shown below:

$$q = 600 \text{ cc/min} = 10 \text{ cc/sec}$$

$$Q_{total} = 1.8 \ \mu \text{ Curie/cc} \times 10 \text{ cc/sec}$$

$$= 18.0 \ \mu \text{ Curie/sec}$$

Let V = 2 fps = 60.96 cm/sec, and χ = 80 p Curie/cc. Then

$$\frac{\chi V}{Q} = \frac{80 \times 10^{-6} \times 60i96}{18} \times 10^4 = 2.71 \text{ m}^{-2}$$

$$(= .25 \text{ ft}^{-2})$$

So far the values of the concentration parameter apply to the model and it is desirable to express these values in terms of the field. At the present time there is no set procedure for accomplishing this transformation. The simplest and most straightforward procedure is to make this transformation using the scaling factor of the model. Since

$$1 \text{ ft} \big|_m = 450 \text{ ft} \big|_p \ (= 137 \text{ m} \big|_p),$$

one can write

$$\frac{\chi V}{Q}\Big|_p (\text{ft}^{-2}) = \frac{1}{450^2} \times \frac{\chi V}{Q}\Big|_m (\text{ft}^{-2})$$

or

$$\frac{\chi V}{Q}\Big|_p (\text{m}^{-2}) = \frac{1}{450^2} \times \frac{\chi V}{Q}\Big|_m (\text{m}^{-2})$$

or in terms of the above example,

$$\frac{\chi V}{Q}\Big|_p \ (ft^{-2}) = \frac{1}{450^2} \times .25 = 1.23 \times 10^{-6} \ (ft^{-2})$$

or

$$\frac{\chi V}{Q}\Big|_p \ (m^{-2}) = \frac{1}{450^2} \times 2.71 = 13.38 \times 10^{-6} \ (m^{-2})$$

This sample scaling of the concentration parameter from model to field appears to give reasonable results. All data reported herein are in terms of their equivalent prototype value $\frac{\chi V}{Q}\Big|_p$.

3.5.2 Errors in Concentration Measurements

Where data is obtained with a scaler counter, the apparent activity of a radioactive source is found by subtracting the background rate from the observed sample-plus-background rate. The background rate is measured separately and has an uncertainty of its own due to random radioactive sources.

If the background is present, the standard deviation in the net counting rate σ_{R_s} for a sample is

$$\sigma_{R_s} = \frac{R_{s+b}}{t_s} + \frac{R_b}{t_b} \quad 1/2$$

where R_{s+b} is the observed sample-plus-background rate, R_b is the background rate, t_s and t_b are the measurement time for the sample and background, respectively. The standard deviation in the sample rate depends, then, upon both the time for sample measurement and that for background-rate measurement. When R_{s+b} is large in comparison with R_b, a long background measurement is not needed to make the error contribution from the background rate negligible. On the other hand, when R_{s+b} is comparable to R_b, both t_s and t_b must be very long for small values of σ_{R_s}. In the present experiments, an effort was made to keep the probable errors in concentration measurements within 10 percent. For this reason the sample counting time and background counting time were manipulated with this end in view. More detailed information on errors in radioactivity measurements can be found in Yang and Meroney.[34]

4.0 TEST PROGRAM AND RESULTS

4.1 Test Program

The test program consisted of (1) a qualitative study of the flow field around the power plant by visual observation of the smoke plume trajectory released from the stacks; and (2) a quantitative study of gas concentrations produced by the release of Kr-85 from the stacks. The test conditions are summarized in Tables 2 and 3. The test program was accomplished in two parts: Phase A involved neutral stratification and Phase B involved stable stratification.

Angular locations of the approach winds are referred to in terms of angles from a nominal north which is shown in Figure 3. Vertical traverse coordinates are measured from the nominal site center shown in the same figure. Unless otherwise noted, the term wind velocity refers to the velocity upstream at a reference height of 200 feet (a mean total height for the plant structure). However, a velocity at any reference height is available by referring to the velocity profiles (Figs. 6 and 7).

4.2 Phase A: Neutral Stratification

4.2.1 Test Results: Characteristics of Flow

All the experiments were carried out in the MWT over the range of conditions shown in Table 2. The atmospheric boundary layer was modeled to produce a velocity profile equivalent to flow over the open ocean. Figure 6 shows the development of the velocity profile over the model for an approach direction of 90°. The profile is conditioned by the building complex as the wind passes over the plant. No comparison of model velocity data with that in the prototype is possible because the latter is not available over a range of height. However, as the model velocity profiles reproduce a power-law behavior with exponents of 0.13 and 0.17 for prototype free stream velocities of 25 and 5 ft/sec, respectively, it is expected that the prototype flow effects over the plant complex are adequately represented by the model.

4.2.2 Test Results: Plant Vent Stack

The visualization test results consist of photographs, sketches, and movie sequences showing the general nature of airflow and diffusion in the vicinity of the power station. A general understanding of wake and cavity flows is necessary for an interpretation of the plume behavior (see Ref. 10). Complete sets of still photographs supplement this report. Color motion pictures have been arranged into titled sequences, and the sets available are summarized in Appendix A.

Turbulent diffusion of gaseous effluent released for two heights, two wind velocities, two ejection velocities, two stratification situations, and eight wind directions were studied. Krypton-85 concentrations at 20 sampling locations on the faces of the two plant structures and at five heights on a vertical tranverse rake were recorded for each case. All concentration data as measured in counts per minute over the model structure have been converted to prototype scale and reported as $(\chi V_a/Q)_p$ in reciprocal meters squared, where χ is the concentration over the site in units per meter cubed, Q is the source strength in units per second, and V_a is the wind speed at 200 feet in meters per second. The quantitative results for all of the various sources, (including the plant vent stack) ejection velocities, wind directions, etc. are summarized in a series of figures which are to be found in the back of this report via locator Table 3.

The flow about the plant buildings was extremely turbulent and complex; hence all releases from the various sources were subject to entrainment, mixing, and dispersion over the plant site to some degree. The behavior of effluents from the plant vent stack displayed no exception to this general statement except in degree.

At low flow rates the exhaust velocity ratio is far less than 1.0; it is thus not surprising that the effluent frequently entrained behind the stack and traveled downward to the base of the stack. The sampling port located at the stack base often recorded very high concentration levels. When the wind was directed from the stack toward the domed surface of the circular containment vessel the plume often appeared to attach to the surface in a Coanda like mode of behavior and travel along the surface. Depending upon the wind angle of the approach flow this attached plume might deflect to one side or the other of the cylindrical containment vessel. In some cases it would fluctuate from one side to the other intermittently (Figs. 8a and 8b).

Once the plume was carried toward the plant surface one found it was generally mixed across the downwind face of the structure and some effluent would mix across the downwind cavity to the twin plant building and its downwind face.

When the plume was released at the higher exit velocity concentration levels at the stack base decreased markedly. At the higher exit velocities the plume managed to free itself from the plant complex for some wind directions. However, when the twin plant was also downwind plant was also downwind the vertical rise of the plume was not great enough to avoid strong entrainment and subsequent contamination of the downwind structure (Fig. 8c).

An increased stack height from the plant vent flue did not always improve the situation for low exit velocities. Since R was still less than 1.0 the plume continued to travel down the downwind side of the stack to the stack base. However, if the increased height was combined with the greater exit velocity it was found that the plume height was great enough to avoid serious downwash even when the twin plant building was directly downwind (Fig. 8b).

For wind orientations from 45° to 135° the plant vent stack gases may be said to downwash in a stronger manner than for the 225° to 315° approach flow wind directions. This is primarily because the tallest faces of the plant complex lie to the nominal west. Plant exhaust was entrained between the twin plant structures for the diagonal wind orientations (45°, 135°, 225° and 315°) with more severity than when the wind impinged normal to any building force.

Since one of the primary objectives of this study was to locate ventilation inlets for the "hardened" control room areas an effort has been made to rank sampling port locations by overall desirability with respect to low concentrations measured. If one assumes that there is equal probability for any wind approach angle then Figures C-1 to C-9 display the relative probable average concentration at each sample port for the various stack height and exhaust velocity combinations.

4.2.3 Test Results: Containment Vessel Leaks

A leaking containment vessel may actually leak at almost any surface location; however, after preliminary visualization, it was found that a release point at the base of the containment vessel on the control room side of the structure and a release point near the top of the structure on the opposite side of the containment represented the extremums of apparent plume behavior. Hence, in the laboratory tests to simulate a leaking vessel simultaneous releases at low exit velocities were made at both locations.

As before, releases were made for neutral and stable stratification conditions and eight wind directions. These are summarized in the locator Table 3. One observes during the laboratory experiment that with such low velocity releases emitted directly on the face of the structure the roof areas seem to completely flood with contaminated gas. This gas then fully participates in the secondary flows which wash across any downstream face of the separation cavities.

For these releases there is even a greater tendency for gases to fill the separation cavities and wash at ground level across downwind faces of the structure. For the 90° and 270° orientations the jetlike flow which occurs between the two structures tends to keep the area clear; however, for 45°, 135°, 225° and 315° the gases frequently spiral down into the intermediate region between the two plants (Fig. 8E).

Figures C-10 and C-11 display the average sampling port concentrations when adjusted for equally probable wind approach angles. These may be compared with previous results for the plant vent stack in Figs. C-1 to C-9. Figure C-13 provides a ranking of ventilator locations if one assumes releases from containment vessel or a short low exhaust velocity plant vent flue are equally probable.

4.2.4 Test Results: Diesel Generator Exhausts, House Boiler and Steam Relief Valves

The purpose of this series of tests was to determine the probable dilution of hot exhaust gases before they reached the inlet ventilators for the diesel generator units during emergency conditions. Samples were taken of the diluted tracer gas at only four locations on the plant structure representative of the diesel generator inlet positions. Since the source model exit areas were extremely small no attempt was made to introduce the rather dense titanium tetrachloride particulate tracer for visualization purposes. In each case only wind angles expected to transport the hot exhaust gases directly to the vicinity of the inlet ventilators were studied (i.e., 225°, 270°, 315°). Again locator Table 3 identifies the pertinent figures for each case.

4.2.5 Test Results: Outside Breakwater Releases

Gases released outside the breakwater mixed laterally and vertically as undisturbed ground-level point sources until they reached the influence region of the plant complex. The separation cavity behind the breakwater immediately entrained the intersecting plume. Once involved in the aerodynamic building and breakwater turbulence the plume was well mixed throughout the complex bathing almost all surfaces with the dilute gases (Fig. 9a-e).

Releases outside the breakwater when the wind approached from the nominal west (270°) were not as strongly mixed upon entering the plant complex because of the lower breakwater height involved. In these cases often only one building would be inundated rather than the entire complex. Releases for the 0° or 180° orientations were also somewhat ventilated due to the direct cross-complex ship channel which permitted uninterrupted flow downwind.

High density gases released outside the breakwater to simulate rupture of chlorine containing ship vessels behaved marginally different than neutrally buoyant gases. There was more rapid lateral spreading before the complex was intersected; howver, gases still passed over the breakwater structure in most cases and became mixed over the plant interior areas (Fig. 9d).

4.3 Phase B: Stable Stratification

4.3.1 Test Results: Characteristics of the Flow

All experiments were carried out in the MWT over the range of conditions shown in Table 3. The atmospheric boundary layer was modeled to produce a velocity and temperature profile equivalent to flow over an open ocean. Figure 7 shows the initial upwind profiles of velocity and temperature. Turbulence was essentially absent at surface level as evidenced by the behavior of smoke plumes released over the cooled model ocean surface. The power-law velocity coefficient for the lower equivalent 200 feet of the modeled boundary layer was 0.88, the less stably stratified region above fit a coefficient of 0.76. A bulk Richardson number evaluated over the height from sea surface to 200 ft has the value of $Ri_B = 0.4$ which represents a strongly stable limit for over ocean flow fields.

4.3.2 Test Results: Plant Vent Stack

Stable stratification tended primarily to inhibit vertical growth of the wake downwind of the complex; however, its effects on dispersion also were significant on site. When the complex was oriented at 90° or 270° from normal north a strong jet seemed to exist between the twin containment structures. This was enhanced by the reluctance of stable gases to rise over the body of the complex; hence the air sought direct routes downwind at low elevations. This jet was large enough in many cases to prevent gases entrained behind one structure from transferring to the downwind separation cavity of the twin structure (Fig. 8d).

Figures C-5,6, and 9 contain the values for the relative sample port locations for various stack height, and exhaust rate cases as averaged over the eight equally probable wind approach directions.

4.3.3 Test Results: Containment Vessel Leaks

As in the neutral case the emission of gases from containment vessel leaks resulted in bathing much of the upper structure of the emitting vessel in contaminated gases. When the twin structure was downwind it was immersed in a nearly constant concentration (well-mixed) plume of tracer gas. As noted in Section 4.3.2 the high velocity jet which separated the structures for angles 90° and 270° continued to shelter the neighboring structure from high level dosages.

Figure C-11 ranks the various sampling parts with respect to average probable values. Figure C-14 combines the implications of releases from both the containment leak and the low height, low exhaust plant vent stack.

4.3.4 Test Results: Outside Breakwater Releases

Gases released outside the breakwater were very strongly influenced by the stable background flow. Emissions at ground level did not mix vertically and were usually deflected to either side of the breakwater rather than passing over it. Often, however, such gases would enter the interior of the breakwater at the point of the sea level ship entrances. Such gases would then mix across the plant area, washing the western plant faces with the highest concentrations, but carrying diluted gases up and over the entire set of structures (Figs. 9a and 9c).

In a series of test runs it was found that for approach wind directions oriented at ±45° to a release point at 0.5D and 2D the exhaust plume usually did not intercept the complex at all. Hence such tests were not incorporated among those documented by pictures or concentration measurements.

If the plume was emitted at a small height, say ~ 20 ft, the plumes were not as strongly blocked by the breakwater wall--a greater percentage of the material passed over the breakwater directly downwind of the source. If the release is to represent a gas emitted from a damaged ship such a height is not unusual. Since the stable flow field suppress mixing the plume concentrations when the plant site is reached will be a great deal higher than in the neutral stratification cases.

4.4 Ranking of Relative Merits of Ventilator Location

Figures C-1 to C-14 as mentioned previously attempt to weigh the various sample ports as to their acceptability as ventilator inlet locations. They are not adjusted for any particular windrose condition, nor for the probability of stable versus neutral stratification. It is entirely possible that although a location ranks high with respect to average behavior it may be completely unacceptable for one unique situation. Thus the reader is cautioned to examine the individual case studies as well as these summary results.

5.0 CONCLUSIONS

This investigation was undertaken to determine the dispersion of exhaust gases released from various stacks, valves, ventilators, or leaks located near an offshore-floating nuclear power plant. The primary aim of the study was to determine gas dilution magnitudes, the influence of certain exhaust velocity and height variations, and to provide data for selecting the location of a ventilator inlet to freshen air in the hardened personnel control room.

On the basis of the experimental measurements reported herein, the following comments may be made:

1. Contaminated gases released from the short plant vent flue at low velocities will frequently bathe the upper part of the plant structure.

2. Releases from the tall plant vent flue with higher exit velocities do not appear to entrain into the separation cavities of the building complex.

3. A leaking containment vessel will probably bathe the entire structure with exhausted gas, but at a fairly well mixed level of dilution.

4. Although wind orientation and atmospheric stratification influence the character of flow over the complex there is no strong evidence of a "worst" release situation.

5. Upwind sea surface point sources of pollutant are for the most part deflected laterally around the breakwater in stable stratification with negative buoyancy at the source. However, a small amount of elevation of source material (by positive initial buoyancy or otherwise) can alter this picture to allow a rather wide distribution within the complex.

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Table 1. Prototype Emission Parameters of an Offshore Nuclear Power Plant

Source	Plant Vent Stack		Containment Vessel Leak	Diesel Generator Exhausts	House Boiler	Steam Relief Valves
Stack Diameter (in.)	110		---	23"	59"	17"
Area (ft^2)	66		---	8.7 (3 used)	19	31.5
Height (ft) (above sea surface)	195/245		90 & 150 simultaneously	113/125	155	113
Load	Lo	Hi	---	---	---	---
V_s (ft/sec)	0.5	15	---	125	50	~1550
T_s (°F)	ambient	550	ambient	770	470	290
R	.002-.01	0.6-3.0	---	5.0-25.0	2.0-10.0	60-300
$\frac{\Delta\rho}{\rho}$	0	~0.50	0	0.59	0.45	0.32

Table 2: Model Emission Parameters

Source	Stack Diameter (in.)	$(\frac{\Delta\rho}{\rho})_m$	Mole Fraction Helium	V_a * (ft/sec)	R	V_s	$\Delta T = T_H - T_{wall}$ °F ***	Ri_B	Re_D ****
Plant Vent Stack (Lo Load)	.25"	0.0	0.0	2	.01	.02	60°	0.255	40,000
				10	.002	.02	---	0	200,000
Plant Vent Stack (Hi Load)	.25"	0.50	0.57	2	3.0	6	60°	0.255	40,000
				10	0.6	6	---	0	200,000
Containment Vessel Leaks	---	0	0	2	~	~	60°	0.255	40,000
				10	~	~	---	0	200,000
Diesel Generator Exhausts	.05"	0.59	0.58	2	25	50	---	0	40,000
				10	5	50			200,000
House Boiler	.125"	0.45	0.52	2	10	20	---	0	40,000
				10	2	20			200,000
Steam Relief Valves	.04" (3 openings each side)	0.32	0.37	2	310	**	---	0	40,000
				10	62				200,000

* Velocity upstream at height of plant vent stack ~200'.

** As high as equipment will allow.

*** ΔT & V_a at height of plant vent stack ~200'.

**** D = Breakwater diameter.

Table 3: Summary of Test Conditions†

Source	Heights (ft)	Stability	V_a (ft/sec)	V_s (ft/sec)	Angle / Bldg.	0° α	45° α	90° α	90° β	135° β	180° β	225° β	270° β	270° α	315° α	SUM
*Plant Vent Stack	195	N	5	.05		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	C1
				15		B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	C2
			25	.05		B21	B22	B23	B24	B25	B26	B27	B28	B29	B30	C3
				15		B31	B32	B33	B34	B35	B36	B37	B38	B39	B40	C4
		S	5	.05		B41	B42	B43	B44	B45	B46	B47	B48	B49	B50	C5
				15		B51	B52	B53	B54	B55	B56	B57	B58	B59	B60	C6
	245	N	5	.05		B61	B62	B63	B64	B65	B66	B67	B68	B69	B70	C7
			25	.05		B71	B72								B80	C8
		S	5	.05		B81	B82	B73	B74	B75	B76	B77	B78	B79	B90	C9
				15			B180					B181			B182	
*Containment Vessel	---	N	5	Lo		B91	B92	B93	B94	B95	B96	B97	B98	B99	B100	C10
			25	Lo		B101	B102	B103	B104	B105	B106	B107	B108	B109	B110	C11
		S	5	Lo		B111	B112	B113	B114	B115	B116	B117	B118	B119	B120	C12
Combined	195	N	5	Lo												C13
Plant Vent Stack																
Containment Vessel	195	S	5	Lo												C14
Diesel** Generator Exhaust	113	N	5	125								B121		B122	B123	
			25	125								B124		B125	B126	
	125		5	125								B127		B128	B129	
			25	125								B130		B131	B132	
House Boiler**	---	N	5	50								B133		B134	B135	
			25	50								B136		B137	B138	
**Steam Relief Valves	---	N	5	Hi								B139		B140	B141	
			25	Hi								B142		B143	B144	

† Alphanumeric combinations (i.e. B35) indicate location of Figure in Appendix B or C.
* 25 sample locations each test
** 4 sample locations each test

Table 3: Continued

Source*	Breakwater Height	Stability	Distance	0°	45°	90°	270°	315°
Outside Breakwater	1	N	on	B145	B146	B147	B148	B149
			1/2	B150	B151	B152	B153	B154
			2					
		S	on	B155	B156			B157
			1/2	B158	B159			B160
			2	B161	B162			B163
	1/2	N	on					
			1/2	B164		B165		
			2			B166		
	2	N	on	B167		B168		
			1/2	B169		B170		
			2	B171		B172	B173	
Outside Breakwater Chlorine	1	N	on	B174				
			1/2	B175				
			2	B176				
		S	on	B177				
			1/2		B178			
			2			B179		

*V_a = 5 ft/sec all Breakwater runs

Table 4. Instrumentation and Materials Employed

Camera	movie:	Bolex 16 mm camera lens
	still:	Speed Graphic Camera 4" x 5" & Hasselblad 2" x 3"
Film	movie:	Ectachrome - 7242, ASA 125 - Forced developed ASA 500
	still:	Tri-X-Pan-4164 Kodak film, Polaroid
Exposure	movie:	f-1.9, 18 frames per second
	still:	f = 8-11, t = 1/30 sec or 30 sec
Flow meters	1)	Fischer & Porter Co. Precision Flowrator No. B4-21-10 float B SVT-45
	2)	Fischer & Porter Co. Precision Flowrator No. FP1/4-09-G-G3/4 / 61
	3)	Fischer & Porter Co. Precision Flowrator No. 2F-1/4-20-5/70
Counters		Ultra scaler - model 192A by Nuclear Chicago
Hot-Wire Ahemometer		Disa 55D0 constant temperature anemometer
Hot-Wire		Pt (80%) Ir (20%) wire, diameter - 0.1 mm
Traversing Mechanism		Made at CSU, with remote control, range 17"
Recorder		Hewlett and Packard X-Y Recorder Model 7035B
Meter		HP Integrating digital voltmeter model 2401C
Sampling Panels		1) Made at CSU, 25 sample point capacity as shown in Fig.
		2) Radioactive gas samplers a) N00014-68-A-0493-0001-65234 b) N00014-68-A-0493-0001-65227
Thermister		Fennal Glass coated bead #GB33L1, time constant in air ~ 2 sec
Thermometer		Yellow Springs Corp., YSI Model 42 SC, Tele - Thermometer, range - 40°C ~ 150°C

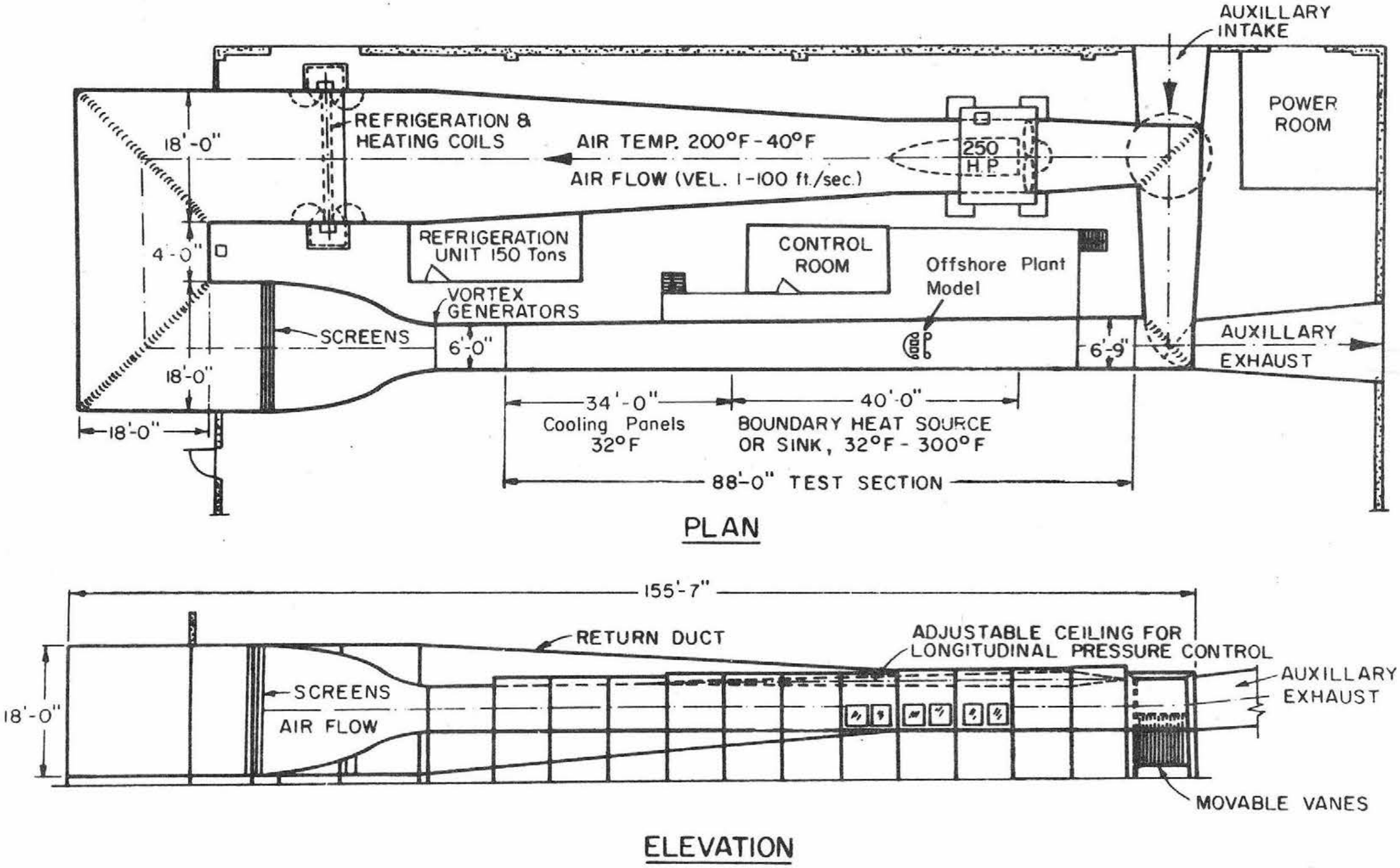
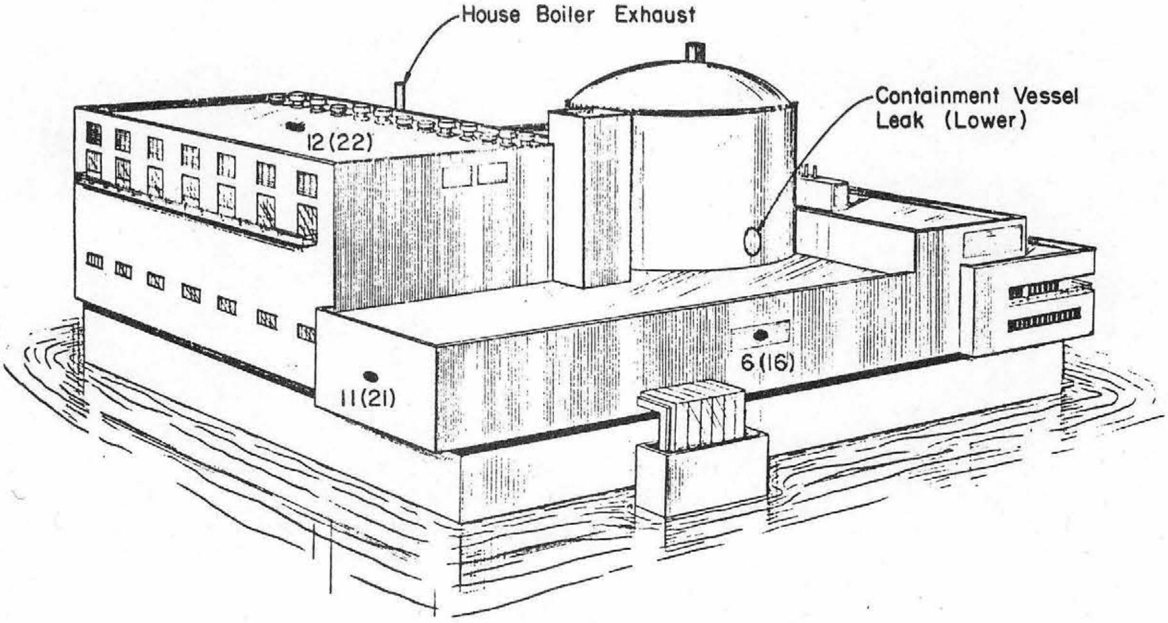
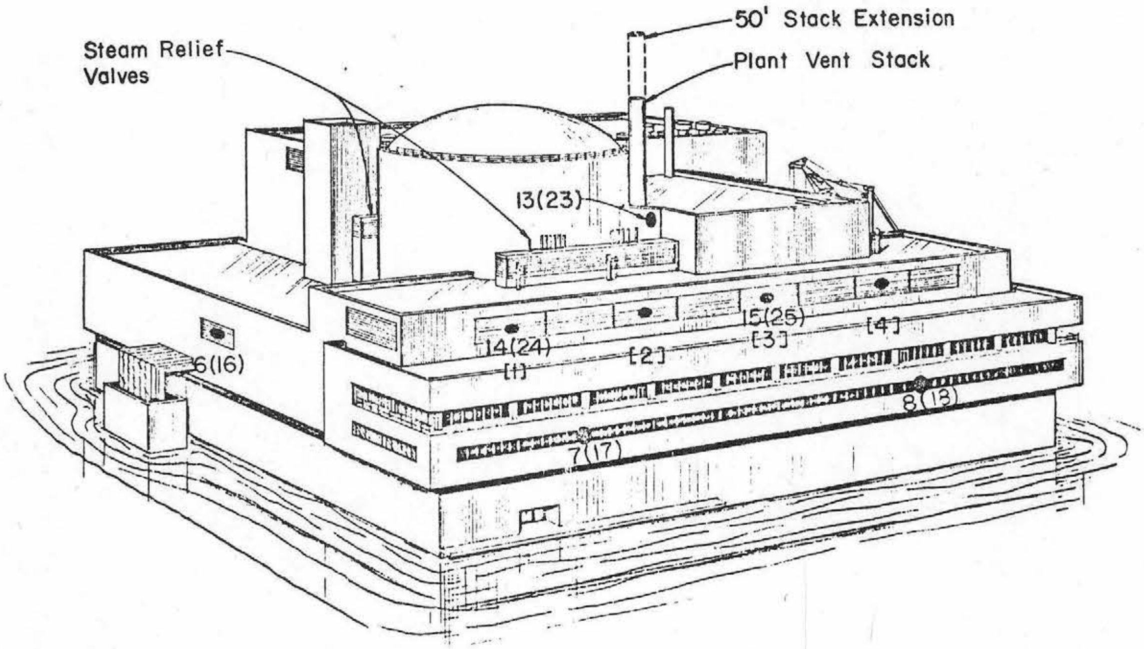


Fig. 1. Meteorological Wind Tunnel (Completed in 1963)
Fluid Dynamics & Diffusion Laboratory
Colorado State University

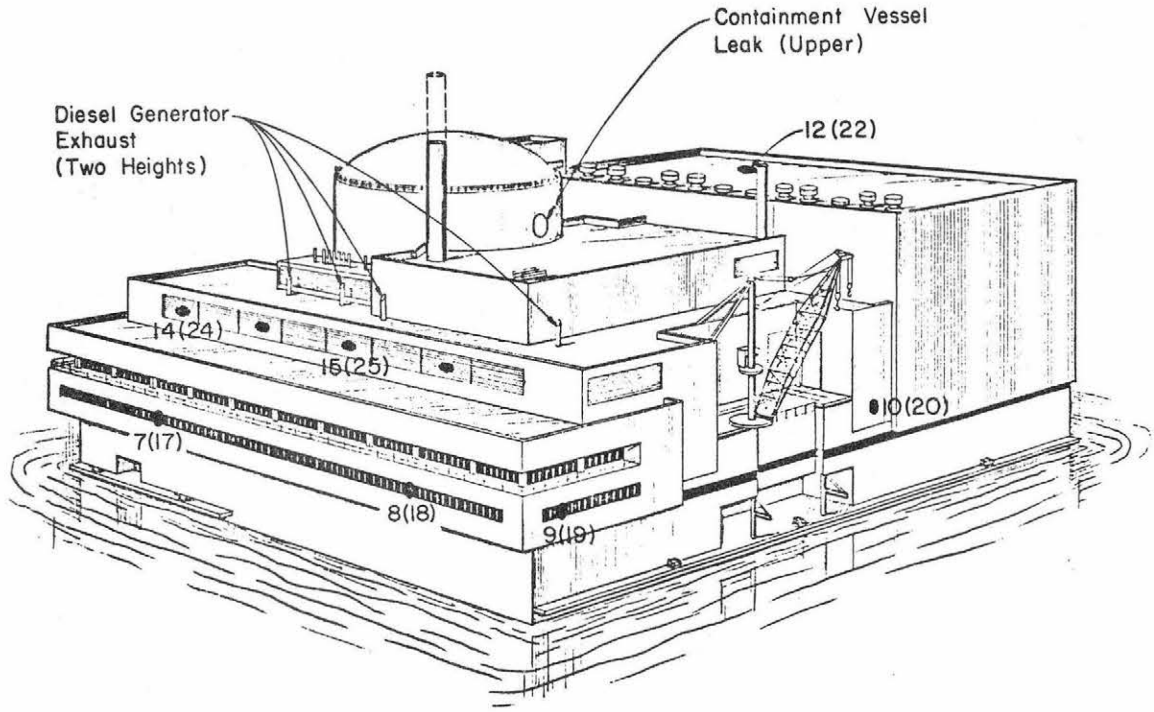


View from nominal SW

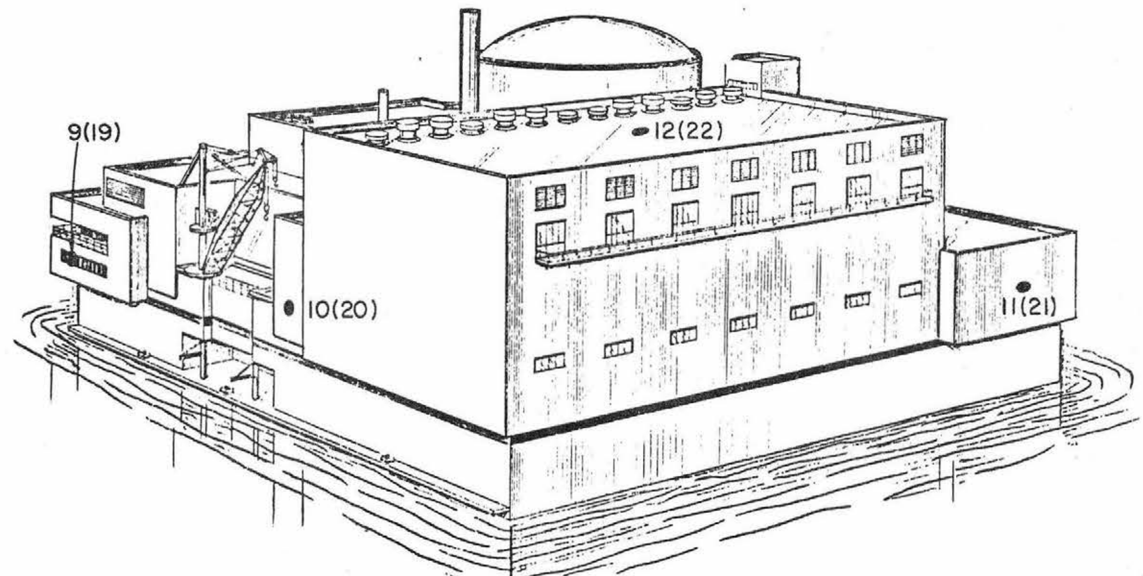


View from nominal SE

Fig. 2. Offshore Floating Nuclear Power Station--Sources and Sampling Locations as Indicated.



View from nominal NE



View from nominal NW

Fig. 2. (continued)

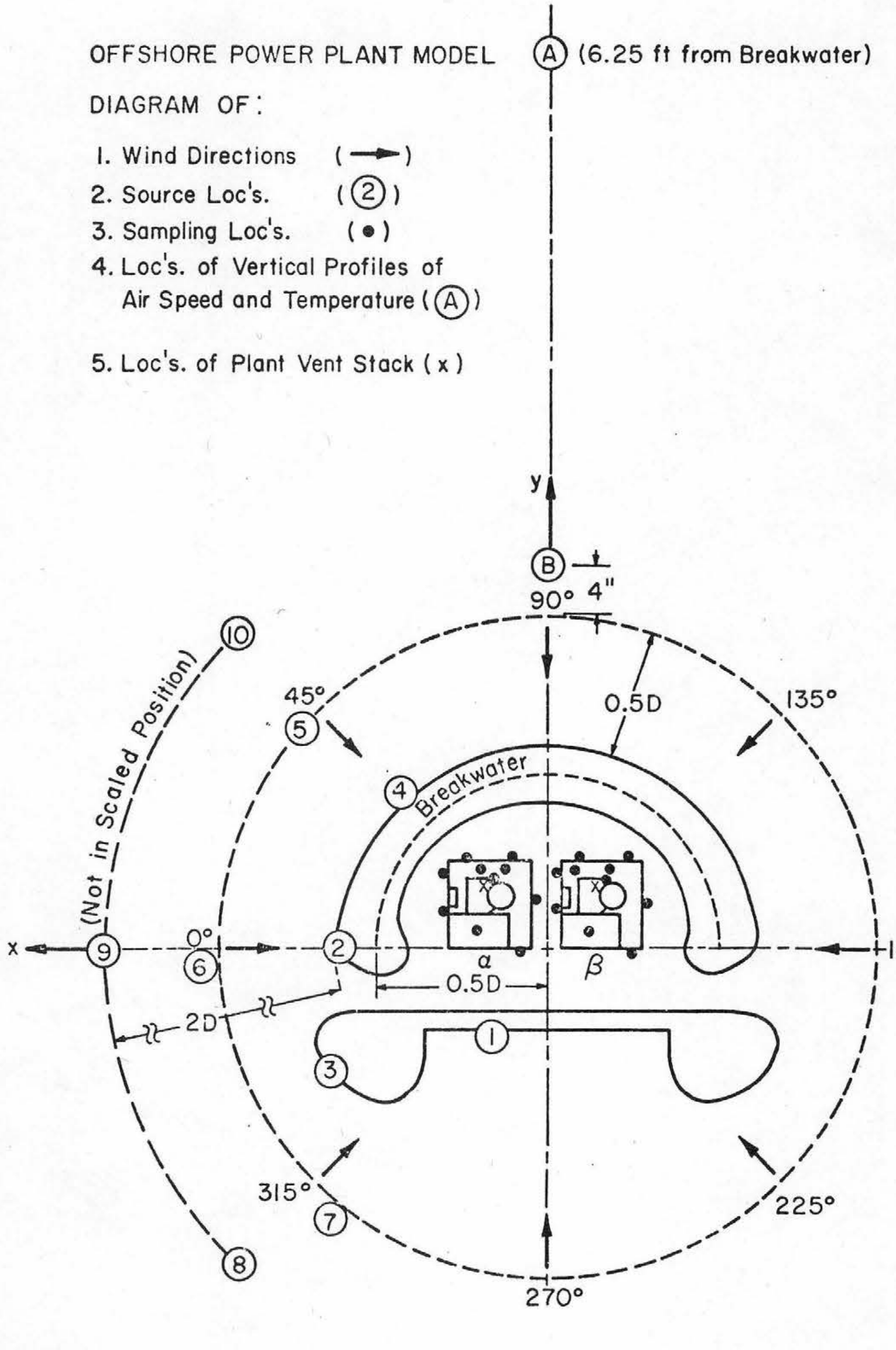


Fig. 3. Model Coordinates and Outside Breakwater Source Locations.

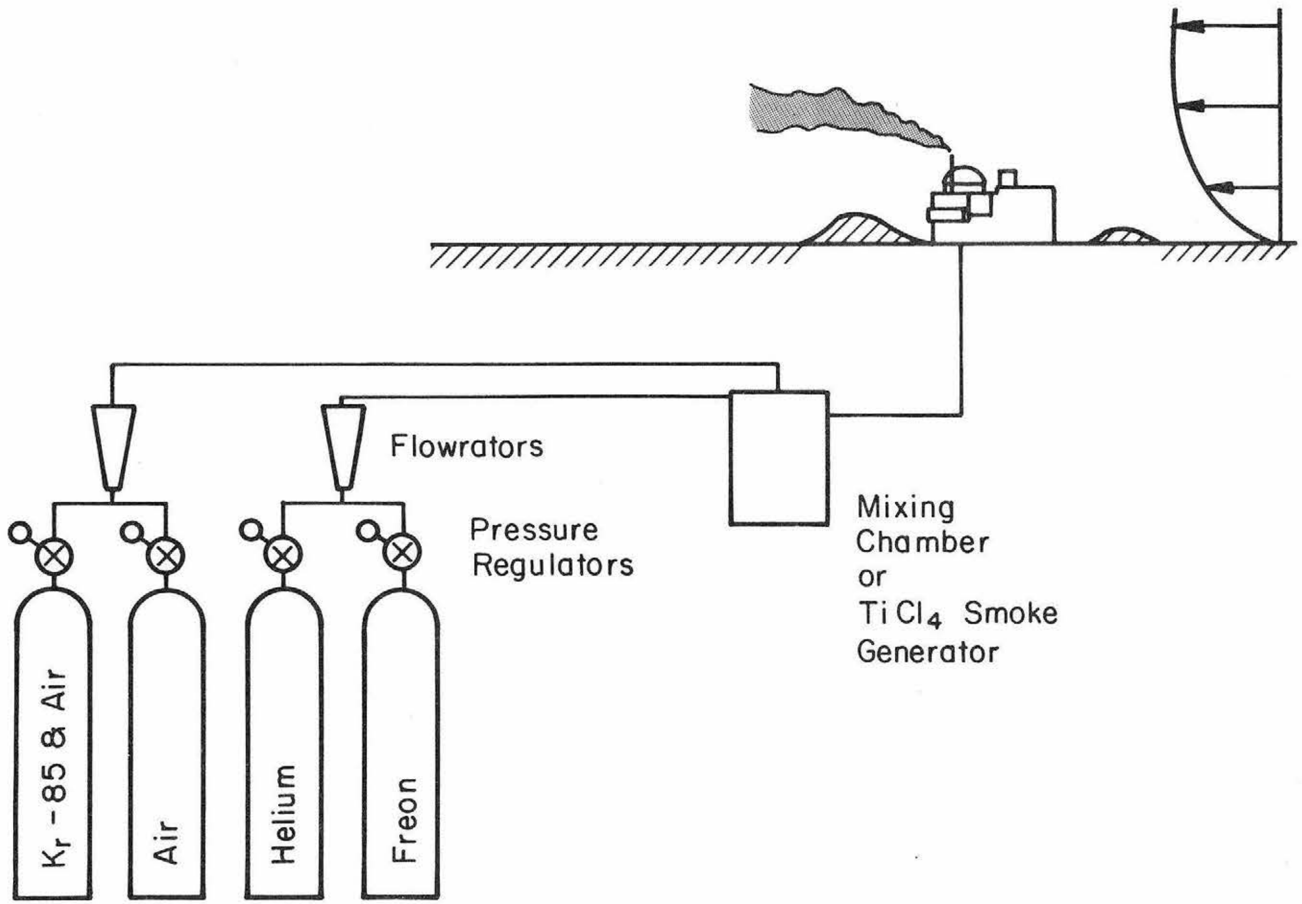


Fig. 4. Model Gas Source and Visualization System.

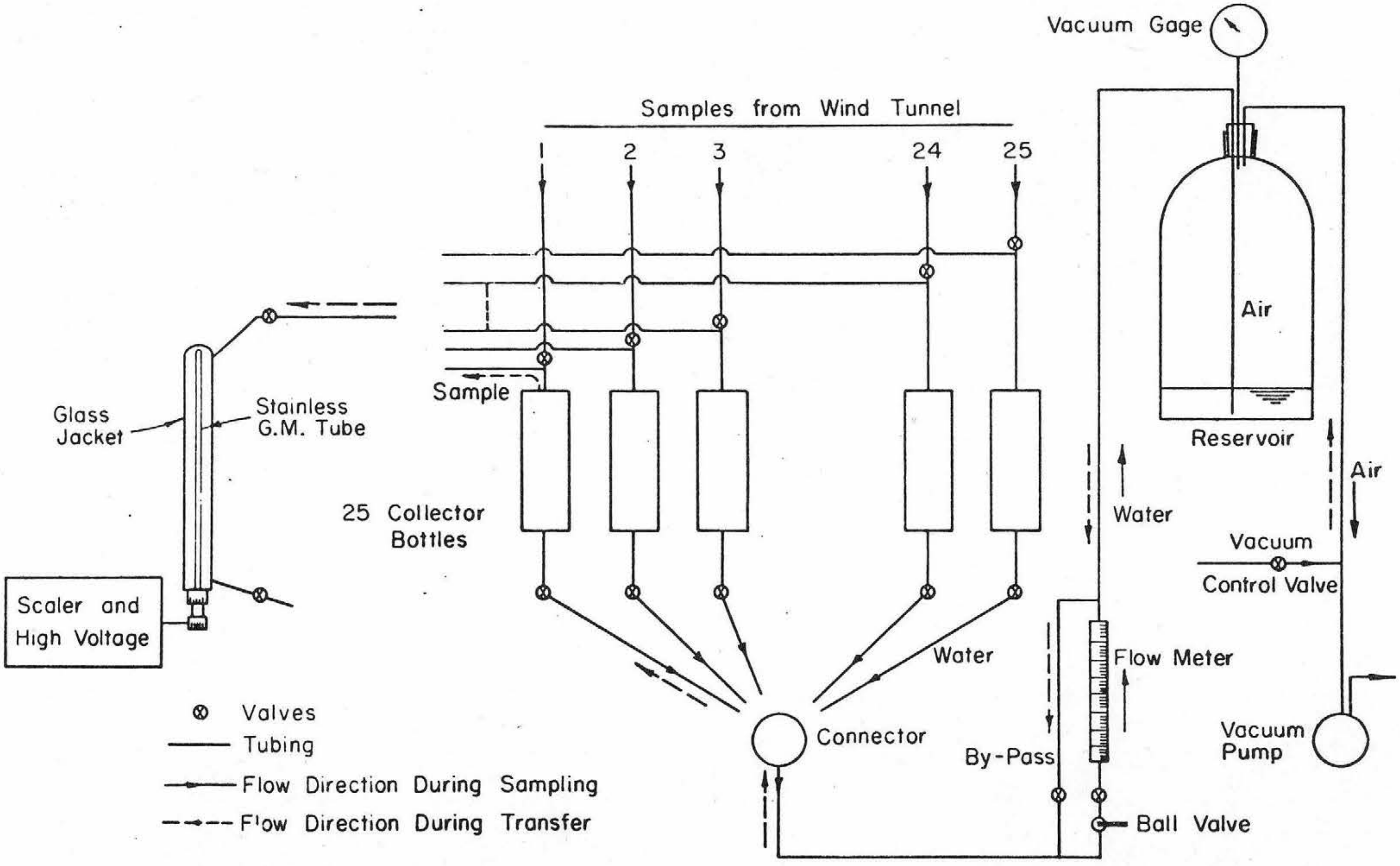


Fig. 5. Tracer-gas Sampling and Analysis System.

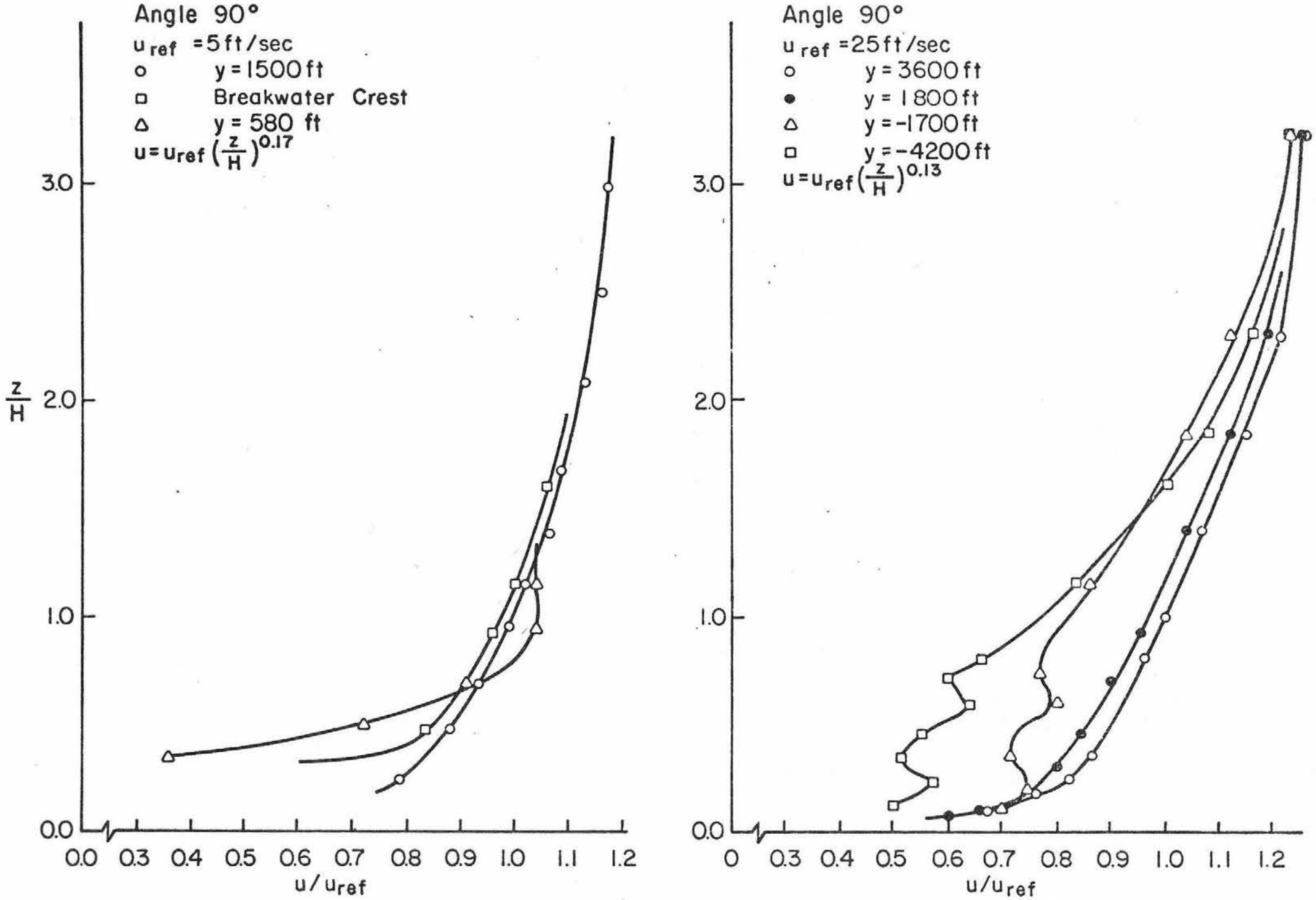


Fig. 6. Velocity Profiles--Neutral Stratification.

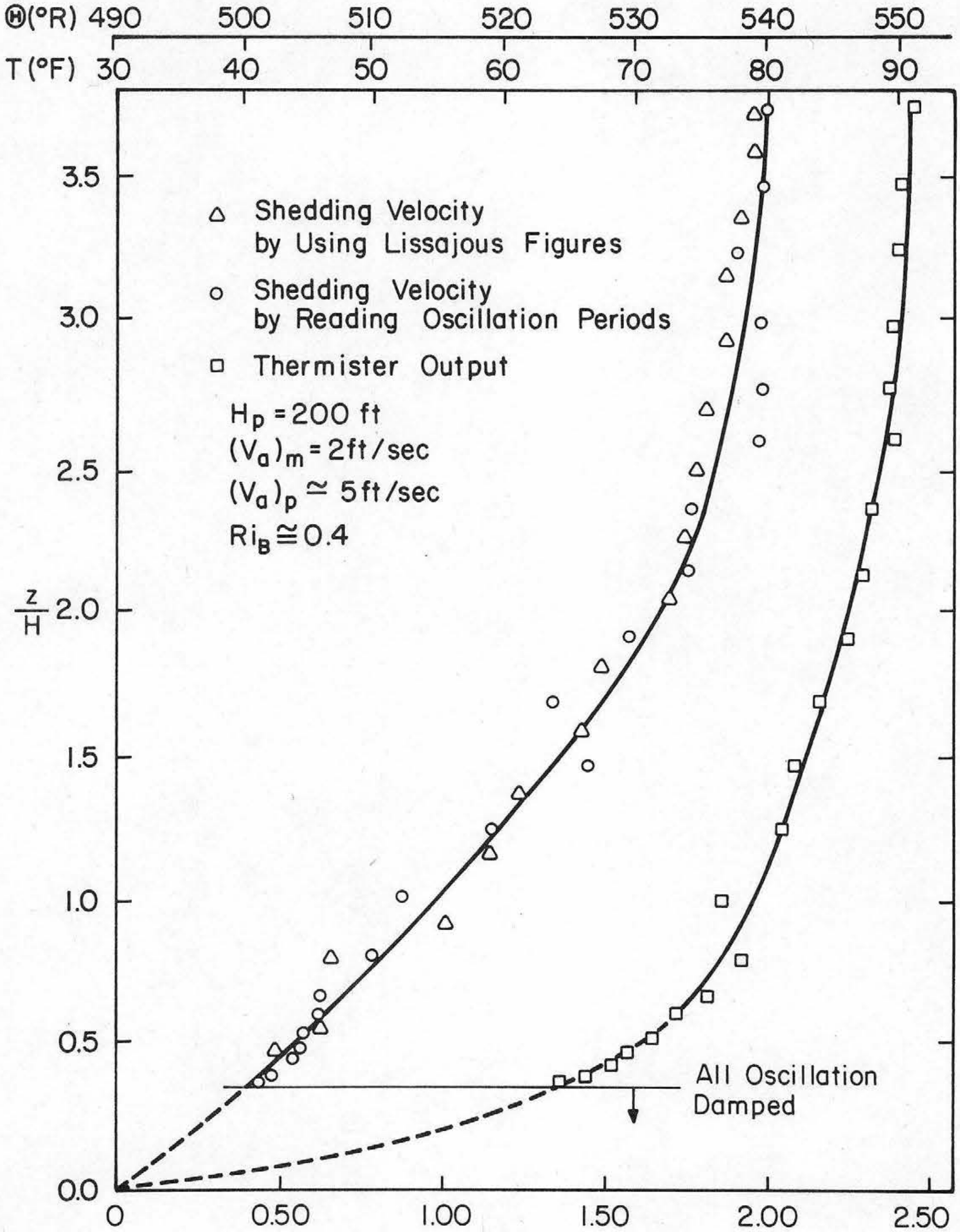


Fig. 7. Velocity Profiles--Stable Stratification - Far Upwind.

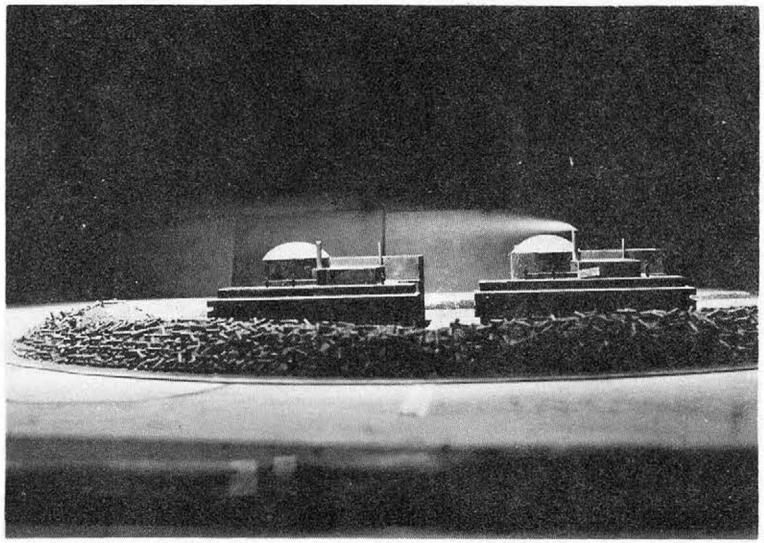
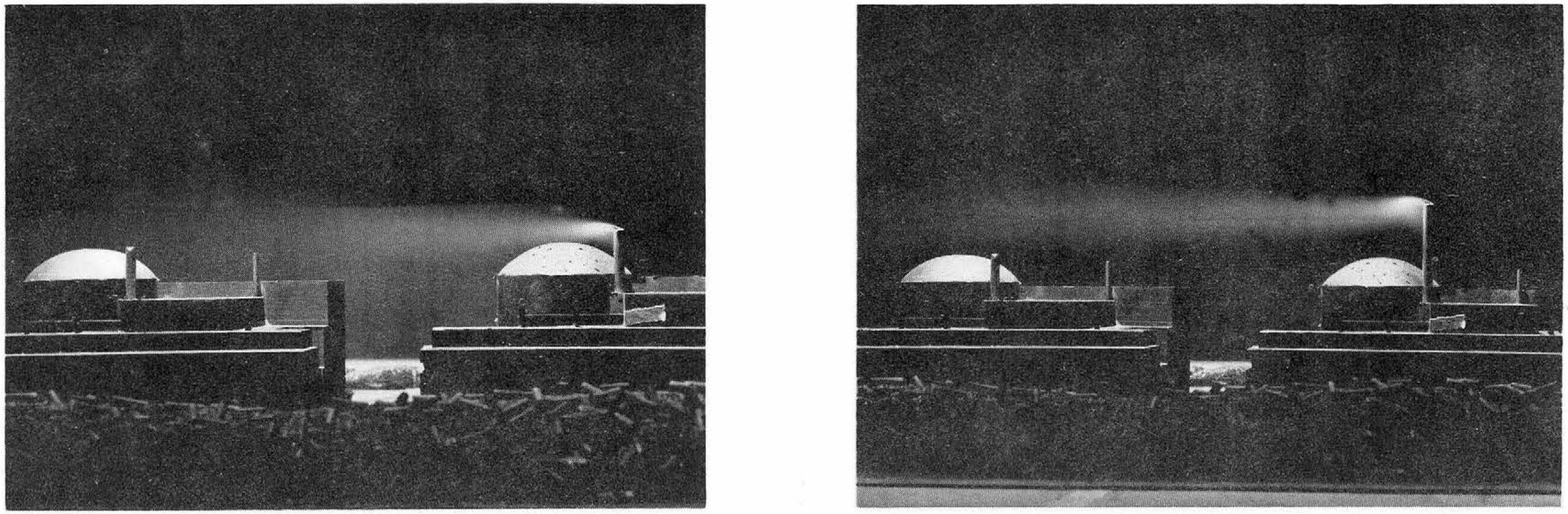


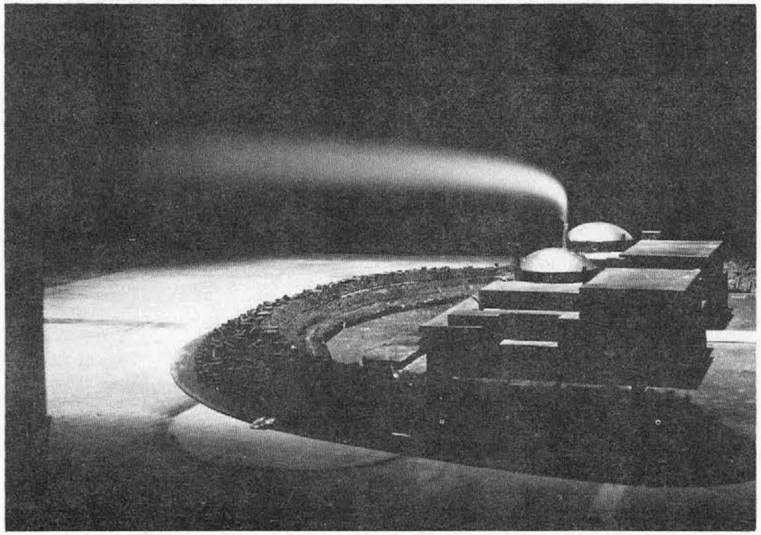
Fig. 8a. Plant Vent Stack, Building α, Va = 5 ft/sec, R = .002, Neutral, Angle = 0°



Plant Vent Stack, Building β, Va = 25 ft/sec, R = .002, Neutral, Angle = 0°

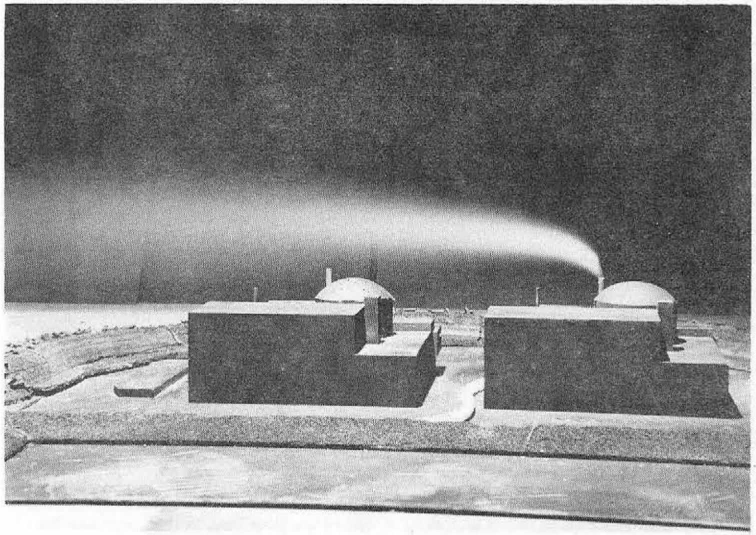
Fig. 8b

Plant Hi Stack, Building β, Va = 25 ft/sec, R = .002, Neutral, Angle = 0°

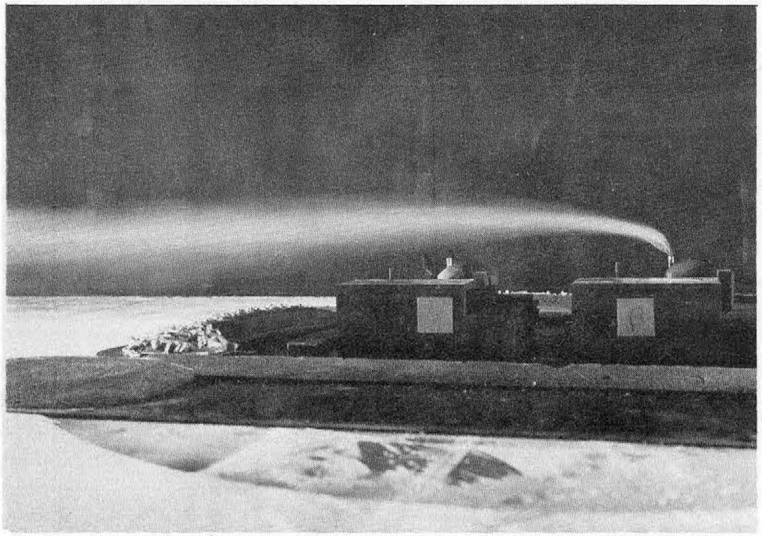


Plant Vent Stack, Building α, Va = 5 ft/sec,
R = 3.0, Neutral, Angle = 270°

Fig. 8c

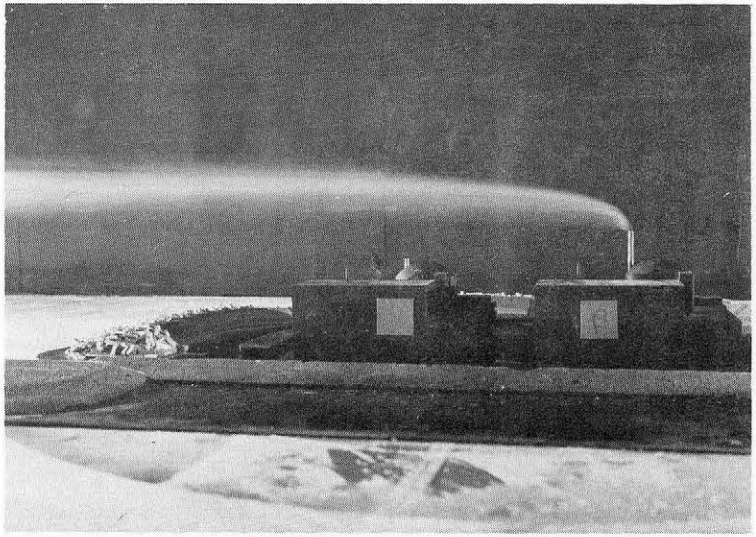


Plant Vent Stack, Building β, Va = 5 ft/sec,
R = 3.0, Neutral, Angle = 180°

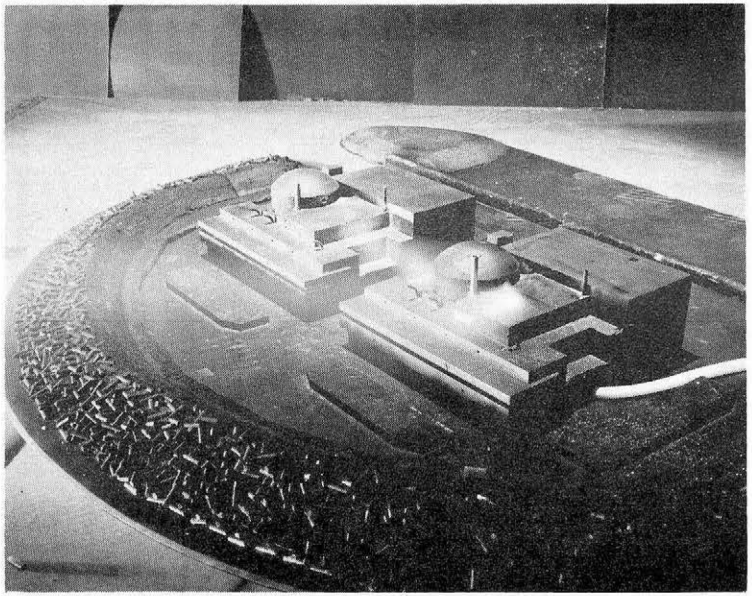


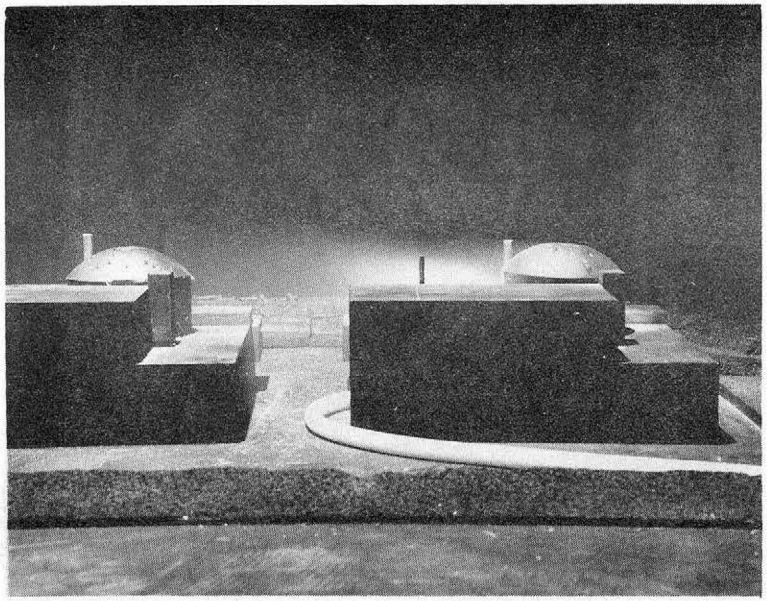
Plant Vent Stack, Building β, Va = 5 ft/sec,
R = 3.0, Stable, Angle = 180°

Fig. 8d



Plant Hi Stack, Building β, Va = 5 ft/sec,
R = 3.0, Stable, Angle = 180°

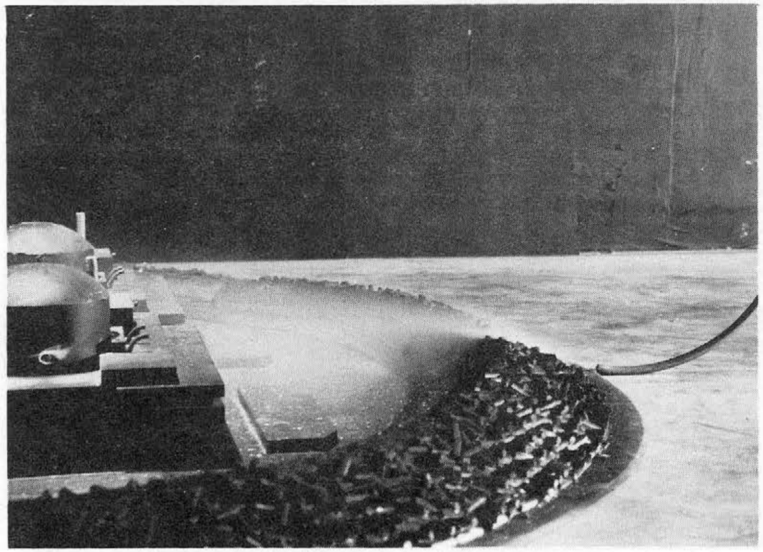


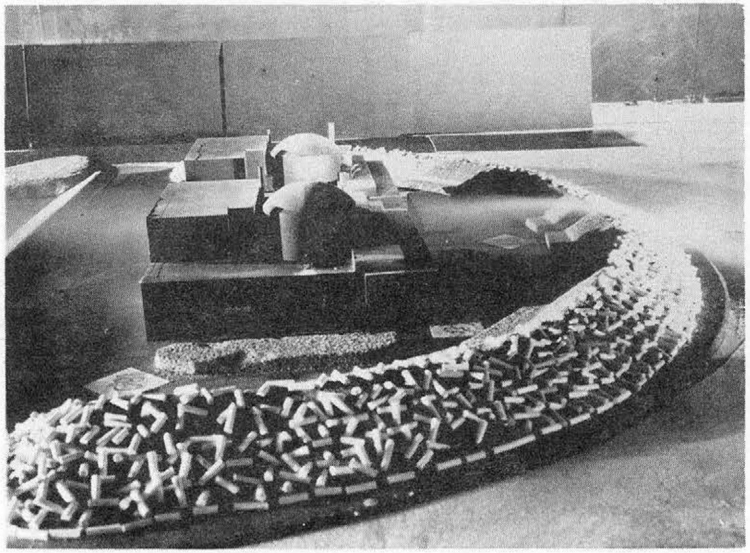


Containment Vessel Leak, Building α, Va = 5 ft/sec, R = 0.3, Neutral, Angle = 315°

Fig. 8e

Containment Vessel Leak, Building β, Va = 5 ft/sec, R = 0.3, Neutral, Angle = 180°

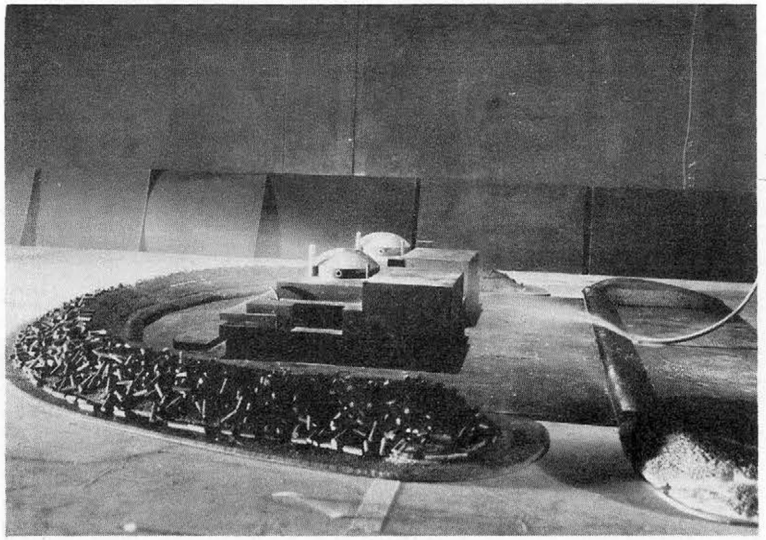


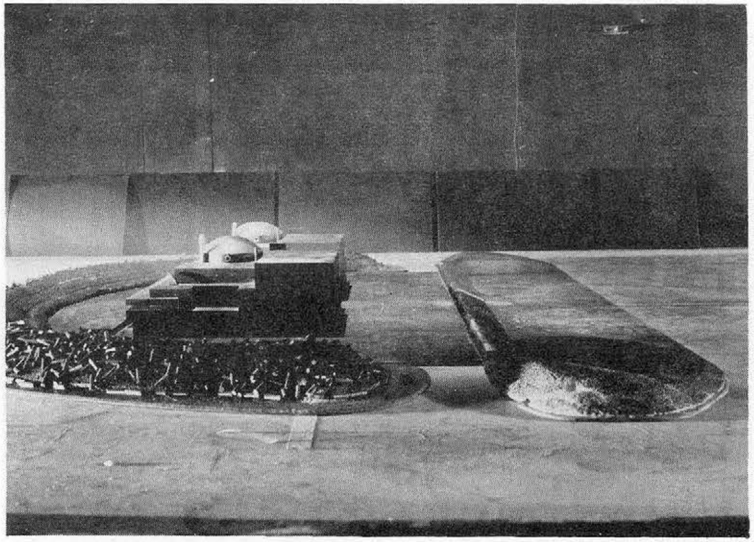


Outside Breakwater Release
Angle = 90°
On Breakwater
Va = 5 ft/sec
Neutral

Fig. 9a

Outside Breakwater Release
Angle = 90°
On Breakwater
Va = 5 ft/sec
Stable

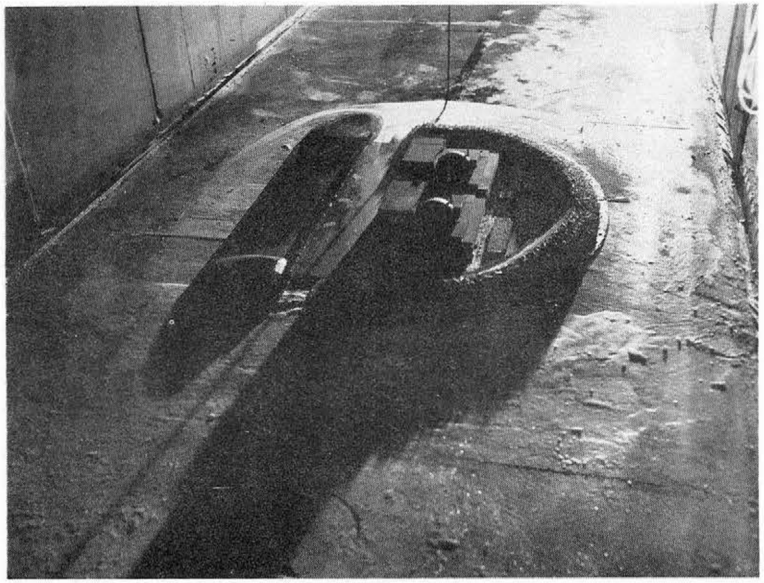




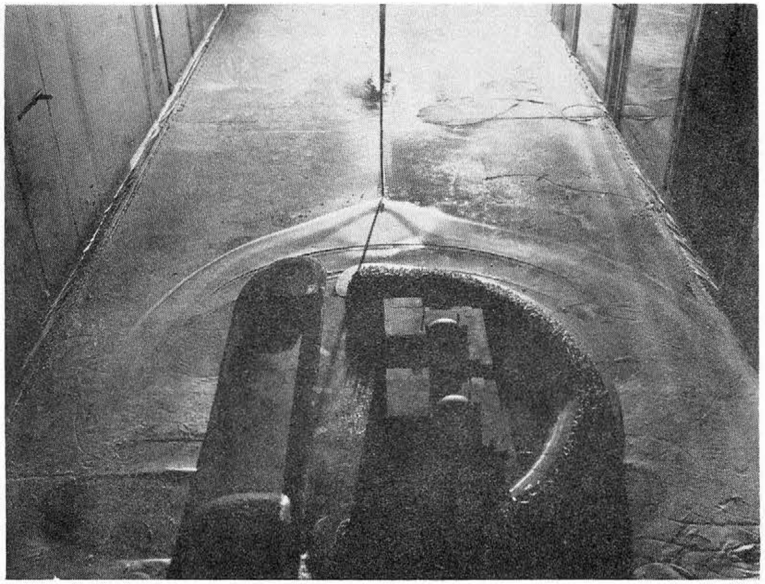
x = on breakwater

Fig. 9b.

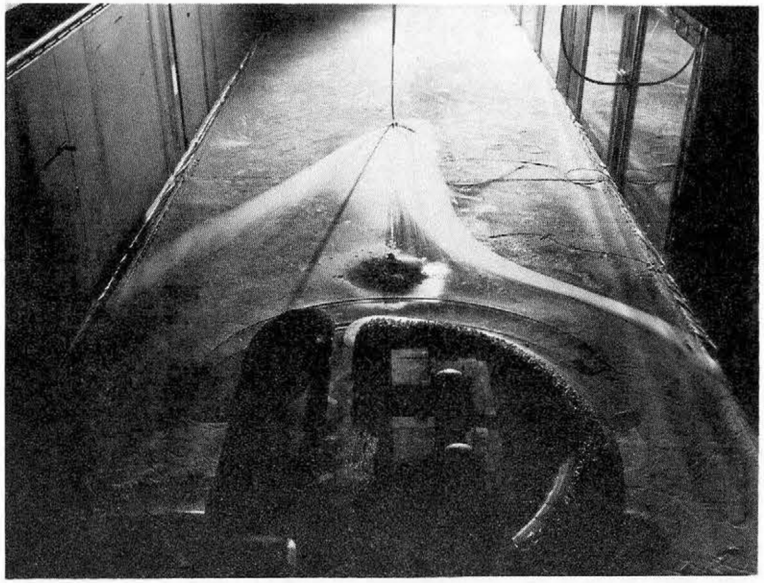
Outside Breakwater Release
Angle = 270°
Va = 5 ft/sec
Neutral



x = on breakwater

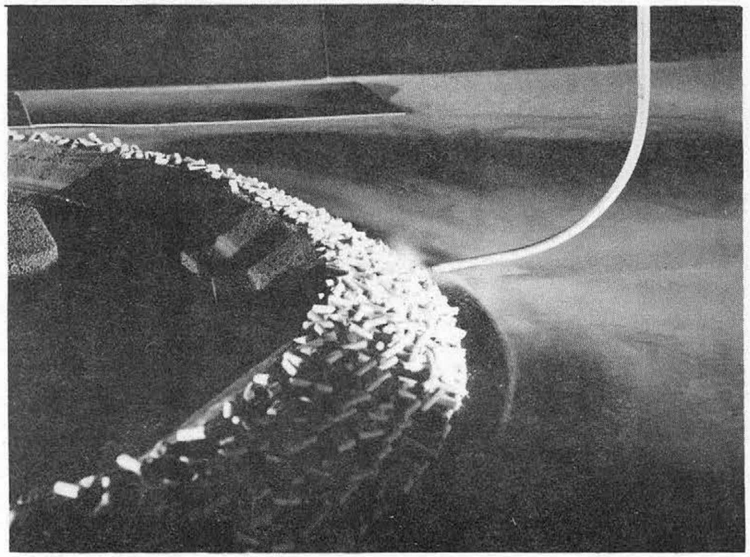


x = 0.5D

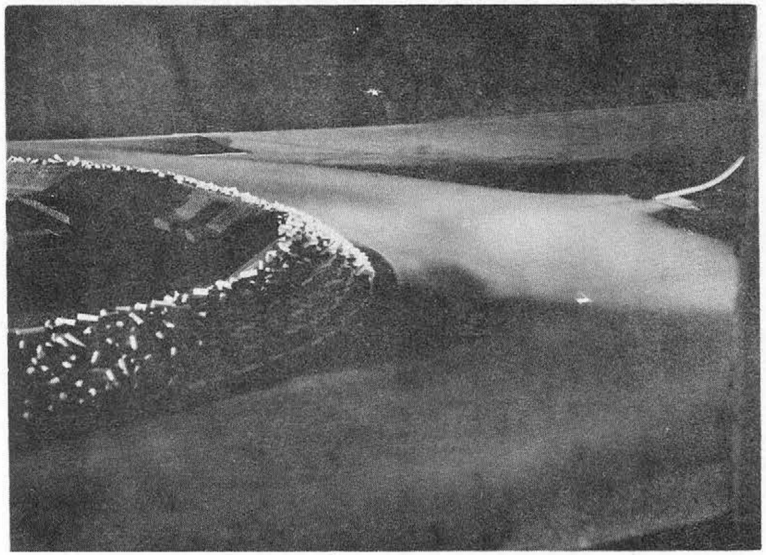


x = 2D

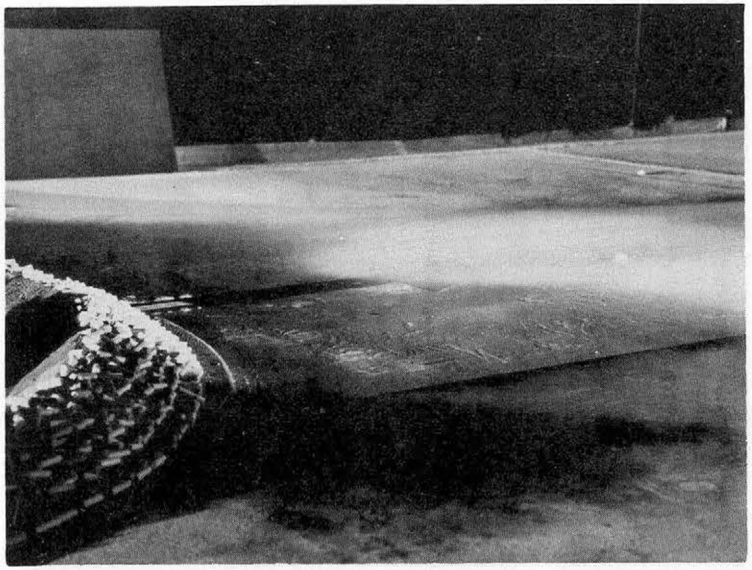
Fig. 9c. Outside Breakwater Release
Angle = 0°
Va = 5 ft/sec
Stable



x = on breakwater

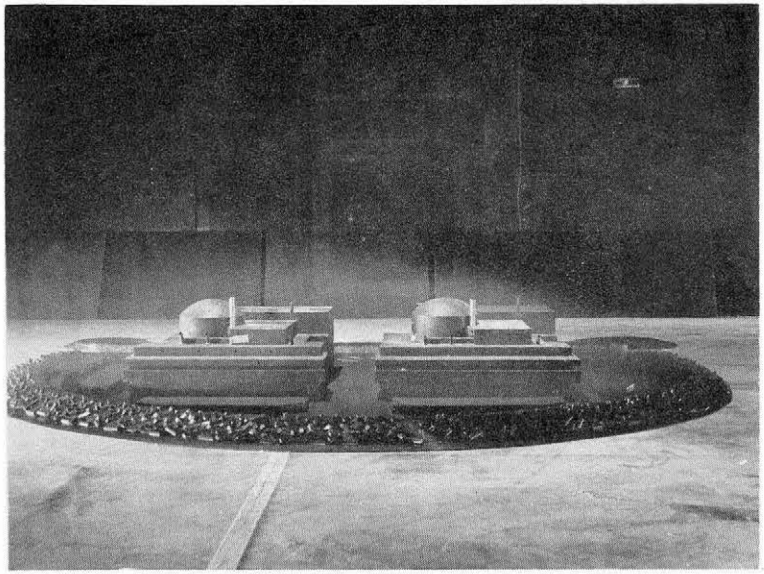


x = 0.5D

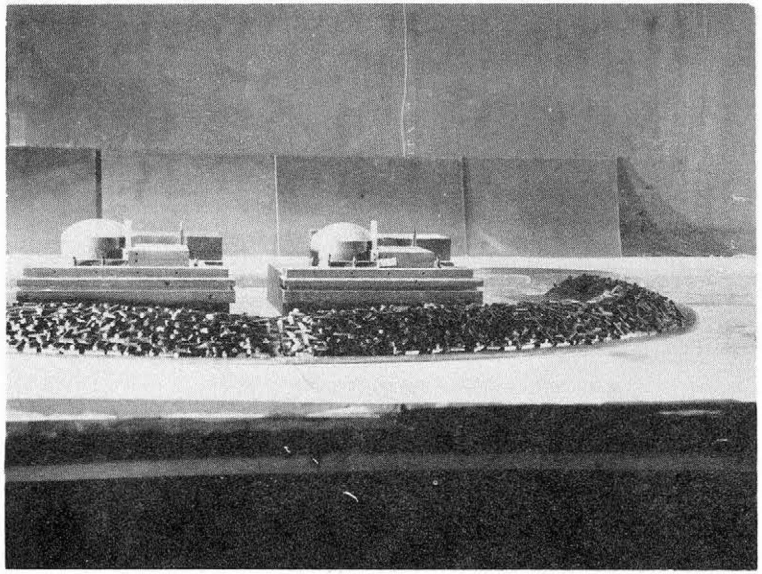


x = 2D

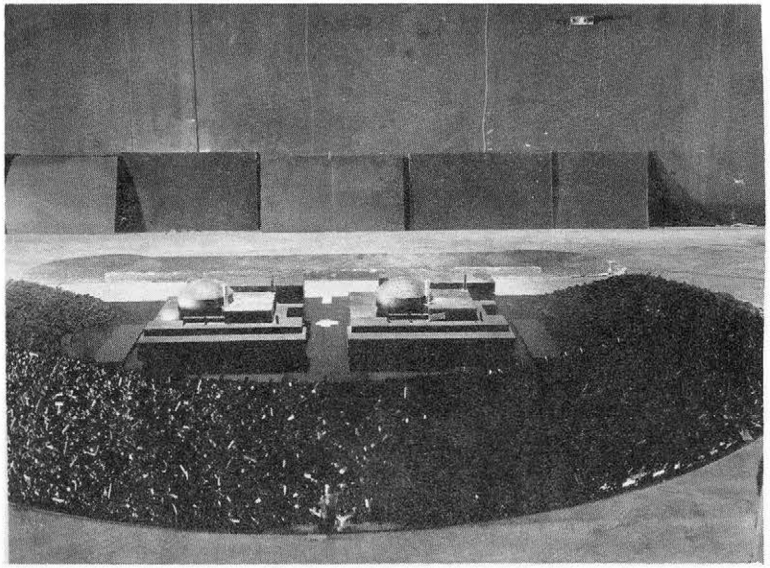
Fig. 9d. Outside Breakwater Release
Chlorine Simulation
Angle = 90°
Va = 5 ft/sec
Stable



One-half Height Breakwater



Normal



Twice Height

Fig. 9e. Outside Breakwater Release
Angle = 0°
x distance = ½D
Va = 5 ft/sec
Neutral

APPENDIX A

MOTION PICTURE LOG

Offshore Power Systems Floating Nuclear Power Plants

Motion Picture Log

Run No.	Wind Velocity	Wind Direction	Source			Notes
1	2	090	B-1	Lo	Stack	A,B = alpha or beta buildings; 1 - Plant vent stack; 2 - Contaminant vessel leak
2	2	090	B-1	Hi	Stack	
3	2	045	B-1	Lo	Stack	
4	2	045	B-1	Hi	Stack	
5	2	000	A-1	Lo	Stack	
6	2	000	A-1	Hi	Stack	
7	2	315	A-1	Lo	Stack	
8	2	315	A-1	Hi	Stack	
9	2	270	A-1	Lo	Stack	
10	2	270	A-1	Hi	Stack	
11	2	270	B-1	Lo	Stack	
12	2	270	B-1	Hi	Stack	
13	2	225	B-1	Lo	Stack	
14	2	225	B-1	Hi	Stack	
15	2	180	B-1	Lo	Stack	
16	2	180	B-1	Hi	Stack	
17	2	135	B-1	Lo	Stack	
18	2	135	B-1	Hi	Stack	
19	2	090	A-1	Lo	Stack	
20	2	090	A-1	Hi	Stack	At end of 20, stack velocity is raised, then slowly lowered to show smoke plume crawling down back of stack
21	2	045	A-1	Lo	Stack	
22	2	045	A-1	Hi	Stack	
23	2	090	A-2			
24	2	045	A-2			
25	2	000	A-2			
26	2	315	A-2			
27	2	270	A-2			

Run No.	Velocity	Direction	Source			Notes
28	2	270	B-2			
29	2	225	B-2			
30	2	180	B-2			
31	2	135	B-2			
32	2	090	B-2			
33	2	090	Breakwater			
34	2	090	Upwind 0.5 dia.			
35	2	090	Upwind 2.0 dia.			
36	2	090	Breakwater			chlorine simulation (runs 36–38)
37	2	090	Upwind 0.5 dia.			
38	2	090	Upwind 2.0 dia.			
39	2	090	A-1	Lo	Stack	
40	2	045	A-1	Lo	Stack	
41	2	000	A-1	Lo	Stack	
42	2	315	A-1	Lo	Stack	
43	2	270	A-1	Lo	Stack	
44	2	270	B-1	Lo	Stack	
45	2	225	B-1	Lo	Stack	
46	2	180	B-1	Lo	Stack	
47	2	135	B-1	Lo	Stack	
48	2	090	B-1	Lo	Stack	
49	2	000	2D	R=0.5		chlorine simulation (runs 49–51)
50	2	000	0.5D	R=0.25		
51	2	000	BKW2	R=0.25		
52	2	315	2D	R=0.25		(Dark)
53	2	315	0.5D	R=0.25		
54	2	315	BKW3	R=0.25		

Run No.	Wind Velocity	Wind Direction	Source			
55	2	315	BKW-1		R=0.25	
56	2	000	2D		R=0.25	(Dark)
57	2	000	0.5D		R=0.25	(Dark)
58	2	315	BKW-2		R=0.25	(Dark)
59	2	045	2D		R=0.5	
60	2	045	0.5D		R=0.25	(Dark)
61	2	045	BKW-2		R=0.25	(Dark)
62	2	045	BKW-2		R=0.25	
63	2	090	A-1	Lo	R=2.0	
64	2	090	A-1	Hi	R=2.0	
65	2	045	A-1	Lo	R=2.0	
66	2	045	A-1	Hi	R=2.0	
67	2	000	A-1	Lo	R=2.0	
68	2	000	A-1	Hi	R=2.0	
69	2	315	A=1	Lo	R=2.0	
70	2	315	A-1	Hi	R=2.0	
71	2	270	A-1	Lo	R=2.0	
72	2	270	A-1	Hi	R=2.0	
73	2	270	B-1	Lo	R=2.0	
74	2	270	B-1	Hi	R=2.0	
75	2	225	B-1	Lo	R=2.0	
76	2	225	B-1	Hi	R=2.0	
77	2	180	B-1	Lo	R=2.0	

Run No.	Wind Velocity	Wind Direction	Source		
78	2	180	B-1	Hi	R=2.0
79	2	135	B-1	Lo	R=2.0
80	2	135	B-1	Hi	R=2.0
81	2	090	B-1	Lo	R=2.0
82	2	090	B-1	Hi	R=2.0
83	Var.	090	B-1	Hi	R=Lo,Fxd
84	2	Var.	A,B-1	Lo	R=0.01

Model viewed from above while rotated CCW.
Source B-1 from 090-270, A-1 from 270-090

Run No.	Wind Velocity	Wind Direction	Source		
86	2	Var.	A,B-1	Lo	R=2

Model viewed from above while rotated CCW
Source B-1 from 090 to 270, A-1 from 270-090

Run No.	Wind Velocity	Wind Direction	Source	
87	2	Var.	A,B-2	R=0.3

Model viewed from above while rotated CCW
Source B-2 from 090 to 270, A-2 from 270-090

Runs 1-87 done under stable flow conditions.

There are no runs 88 through 100.

Run No.	Wind Velocity	Wind Direction	Source			
101	2	090	B-1	Lo	R 0.01	
102		Missing				
103	2	180	B-1	Lo Stack	R 0.01	
104	2	225	B-1	Lo Stack	R 0.01	
105	2	270	B-1	Lo Stack	R 0.01	Missing
106		Missing				
107	2	315	A-1	Lo Stack	R 0.01	
108	2	000	A-1	Lo Stack	R 0.01	
109	2	000	A-1	Hi Stack	R 0.01	
110	2	045	A-1	Hi Stack	R 0.01	Missing
111	2	045	A-1	Lo Stack	R 0.01	Missing
112	2	090	A-1	Lo	R 0.01	Missing
113	2	090	A-1	Hi Stack	R 0.01	
114	2	090	A-2		R 0.3	
115	2	045	A-2		R 0.3	
116	2	000	A-2		R 0.3	(Dark)
117	2	315	A-2		R 0.3	
118	2	270	A-2		R 0.3	
119	2	270	B-2		R 0.3	
120	2	225	B-2		R 0.3	
121	2	180	B-2		R 0.3	
122	2	135	B-2		R 0.3	
123	2	090	B-2		R 0.3	
124	2	090	A-1	Lo Stack	R 0.3	
125	2	045	A-1	Lo Stack	R 0.3	
126	2	000	A-1	Lo Stack	R 0.3	
127	2	315	A-1	Lo Stack	R 0.3	
128	2	270	A-1	Lo Stack	R 0.3	
129	2	270	B-1	Lo Stack	R 0.3	
130	2	225	B-1	Lo Stack	R 0.3	
131	2	180	B-1	Lo Stack	R 0.3	
132	2	135	B-1	Lo Stack	R 0.3	
133	2	090	B-1	Lo Stack	R 0.3	
134	10	090	A-1	Lo Stack	R 0.002	
135	10	090	A-1	Hi Stack	R 0.002	
136	10	045	A-1	Lo Stack	R 0.002	
137	10	045	A-1	Hi Stack	R 0.002	
138	10	000	A-1	Lo Stack	R 0.002	
139	10	000	A-1	Hi Stack	R 0.002	
140	10	315	A-1	Lo Stack	R 0.002	
141	10	270	A-1	Lo Stack	R 0.002	
142	10	270	B-1	Lo Stack	R 0.002	
143	10	225	B-1	Lo Stack	R 0.002	
144	10	180	B-1	Lo Stack	R 0.002	
145	10	135	B-1	Lo Stack	R 0.002	
146	10	090	B-1	Lo Stack	R 0.002	
147	10	090	A-2		R 0.3	
148	10	045	A-2		R 0.3	
149	10	000	A-2		R 0.3	
150	10	315	A-2		R 0.3	
151	10	270	A-2		R 0.3	
152	10	270	B-2		R 0.3	
153	10	225	B-2		R 0.3	
154	10	180	B-2		R 0.3	
155	10	135	B-2		R 0.3	
156	10	090	B-2		R 0.3	
157	10	090	A-1	Lo Stack	R 0.6	(Dark)
158	10	045	A-1	Lo Stack	R 0.6	
159	10	000	A-1	Lo Stack	R 0.6	
160	10	315	A-1	Lo Stack	R 0.6	
161	10	270	A-1	Lo Stack	R 0.6	
162	10	270	B-1	Lo Stack	R 0.6	
163	10	225	B-1	Lo Stack	R 0.6	
164	10	180	B-1	Lo Stack	R 0.6	
165	10	135	B-1	Lo Stack	R 0.6	
166	10	090	B-1	Lo Stack	R 0.6	
167	2	090	BKW			

Run No.	Wind Velocity	Wind Direction	Source		
168	2	090	0.5D		
169	2	045	BKW	Missing	
170	2	045	0.5D		
171	2	000	BKW		(Dark)
172	2	000	0.5D		
173	2	315	Mound	(at N. End of Cofferdam)	
174	2	315	0.5D		
175	2	270	BKW		
176	2	270	0.5D		
177	2	090	0.5D	(BKW 1/2 H)	
178	2	090	2.0D	(BKW 1/2 H)	
179	2	000	0.5D	(BKW 1/2 H)	
180	2	090	BKW	(BKW 2 H)	
181	2	090	0.5D	(BKW 2 H)	
182	2	090	2.0D	(BKW 2 H)	
183	2	000	BKW	(BKW 2 H)	
184	2	000	0.5D	(BKW 2 H)	Missing

Runs 101-184 done under
neutral flow conditions.

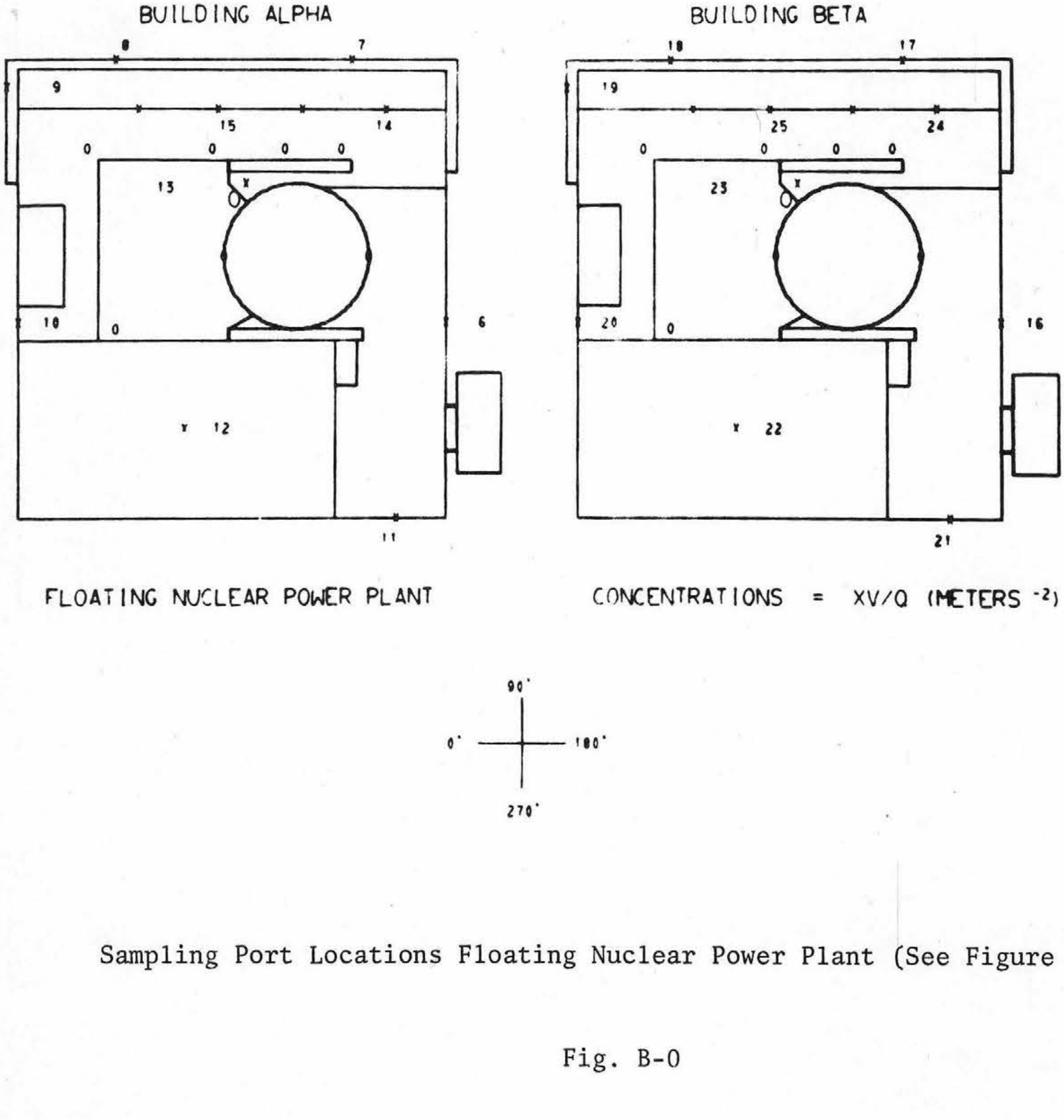
APPENDIX B

DETAILED CONCENTRATION MEASUREMENTS

ALL RELEASE SITUATIONS--

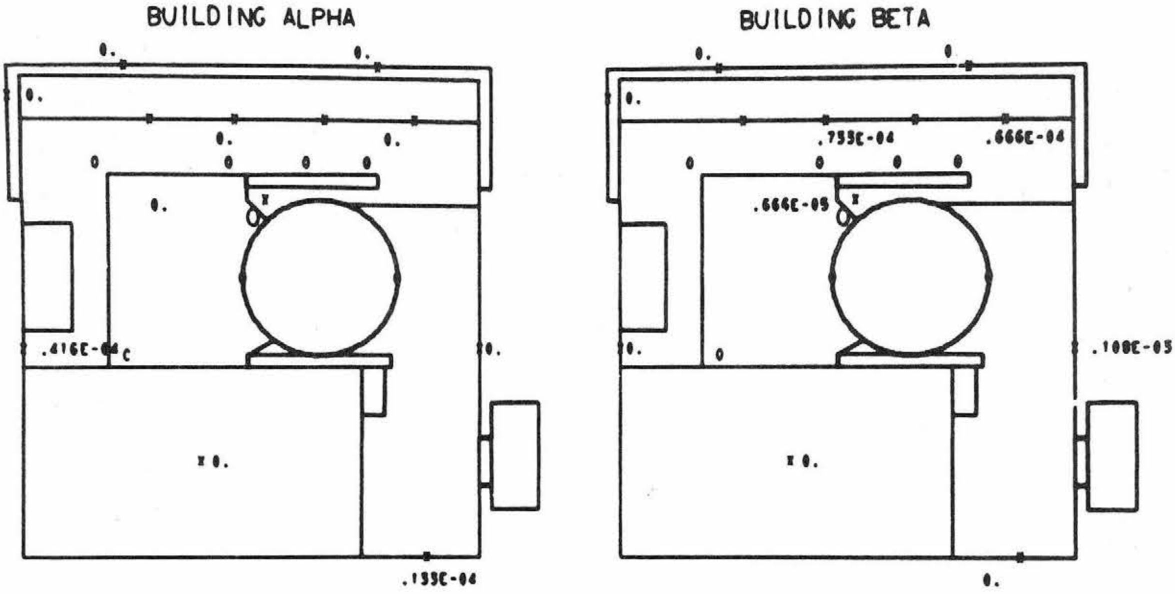
FLOATING OFFSHORE NUCLEAR POWER* STATION

* See Table 3 for an instant locator for various situations studied



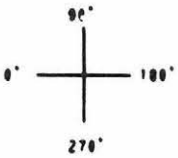
Sampling Port Locations Floating Nuclear Power Plant (See Figure 2)

Fig. B-0



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -1275.
Y = 330.

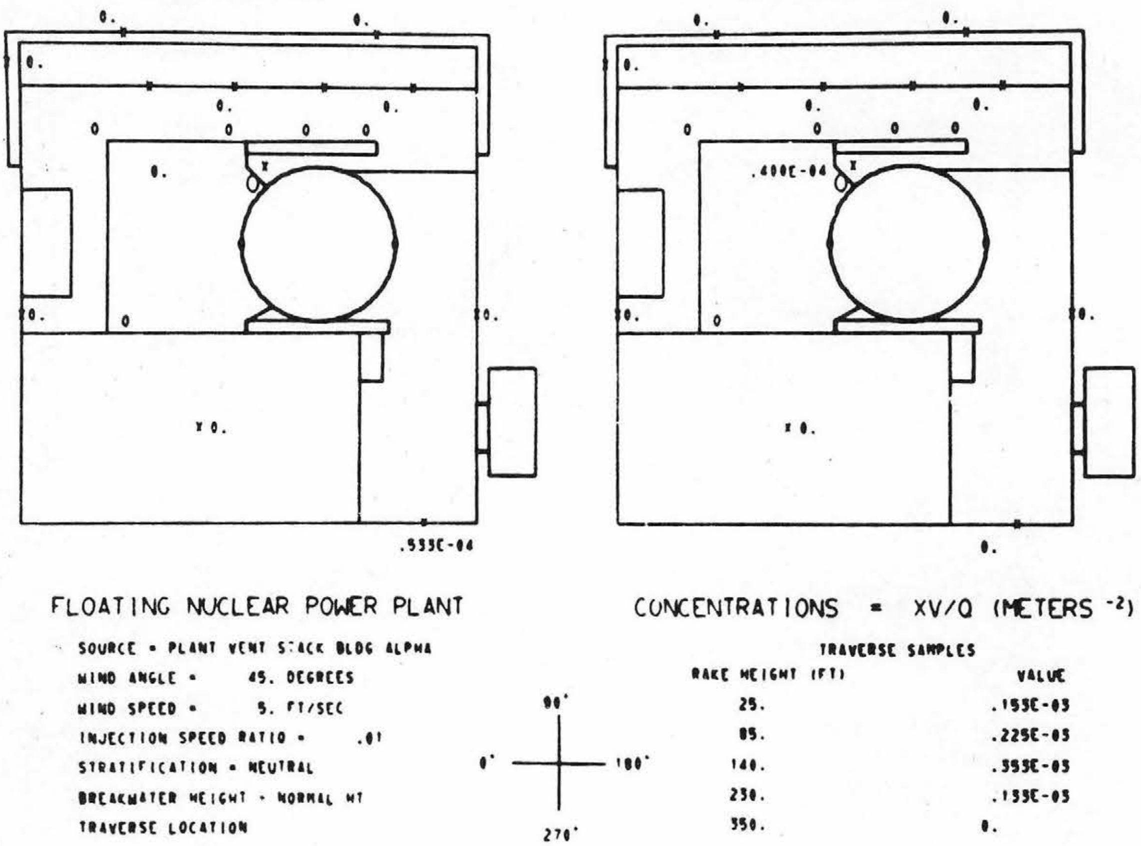


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

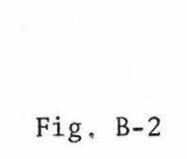
RAKE HEIGHT (FT)	VALUE
25.	.215E-03
85.	0.
140.	.160E-03
250.	.135E-03
350.	0.

Fig. B-1



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 45. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT - NORMAL HT
TRAVERSE LOCATION
X = -356.
Y = -356.

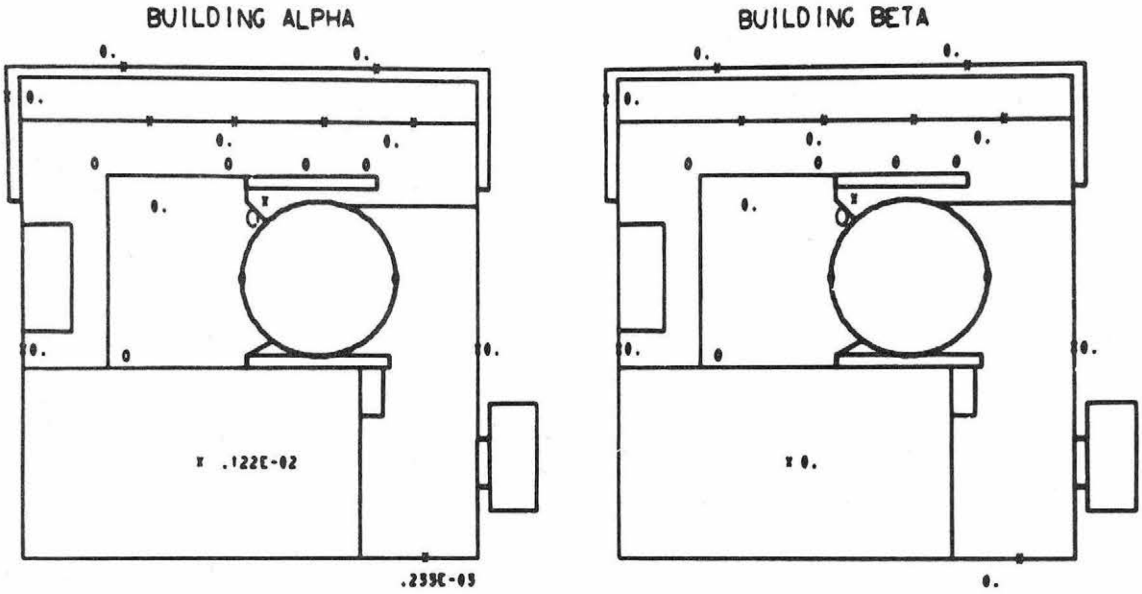


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

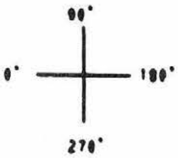
RAKE HEIGHT (FT)	VALUE
25.	.155E-03
85.	.225E-03
140.	.555E-03
230.	.135E-03
350.	0.

Fig. B-2



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 272.
Y = -356.

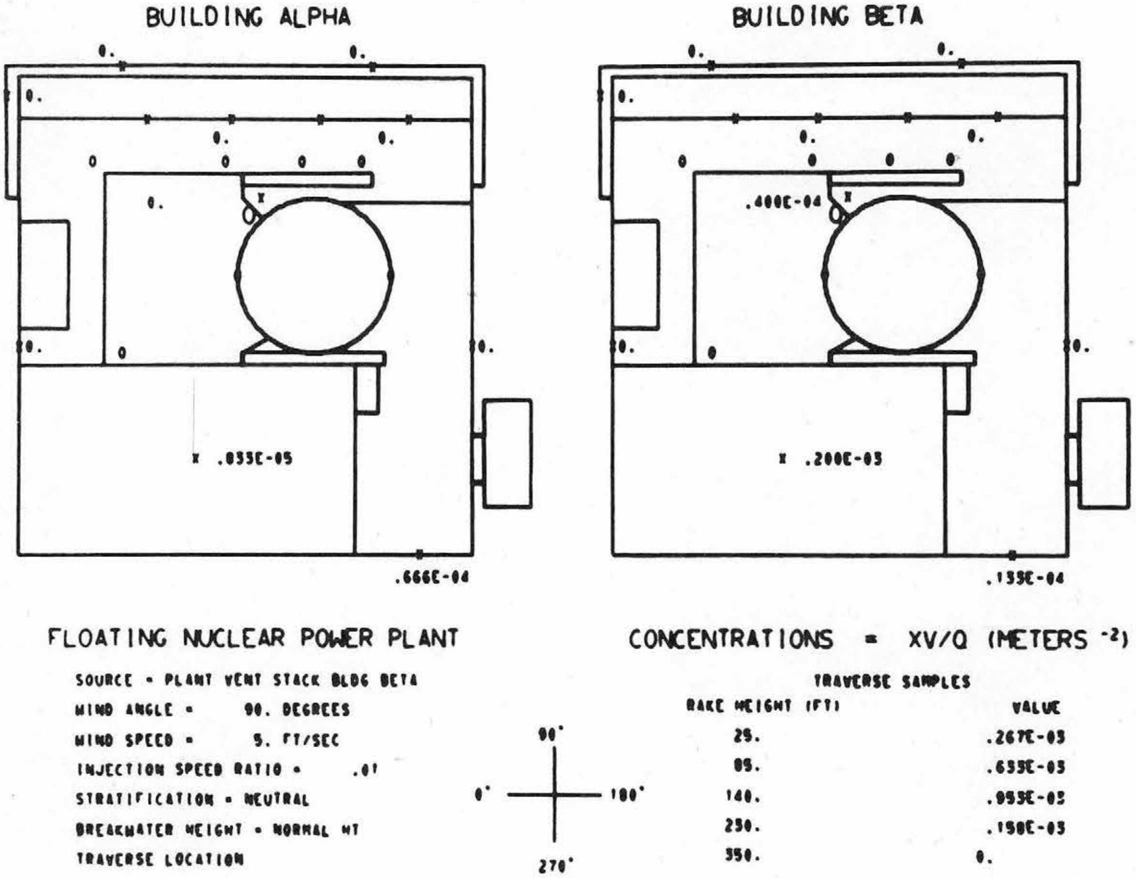


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

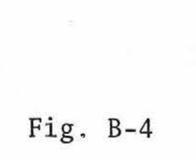
RAKE HEIGHT (FT)	VALUE
25.	.505E-03
85.	.142E-02
140.	.140E-02
250.	.100E-03
359.	.247E-03

Fig. B-3



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -263.
Y = -131.



CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.267E-03
05.	.635E-03
140.	.955E-03
250.	.150E-03
350.	0.

Fig. B-4

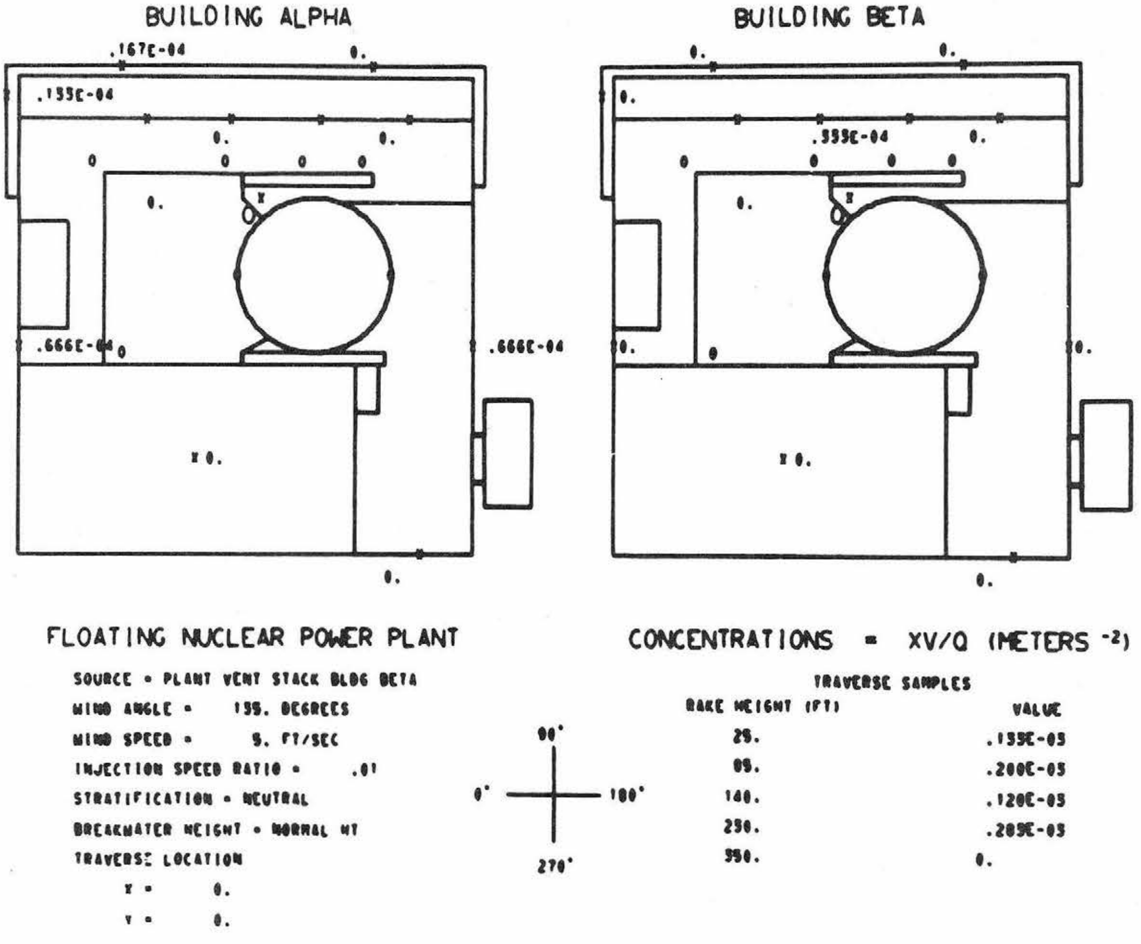
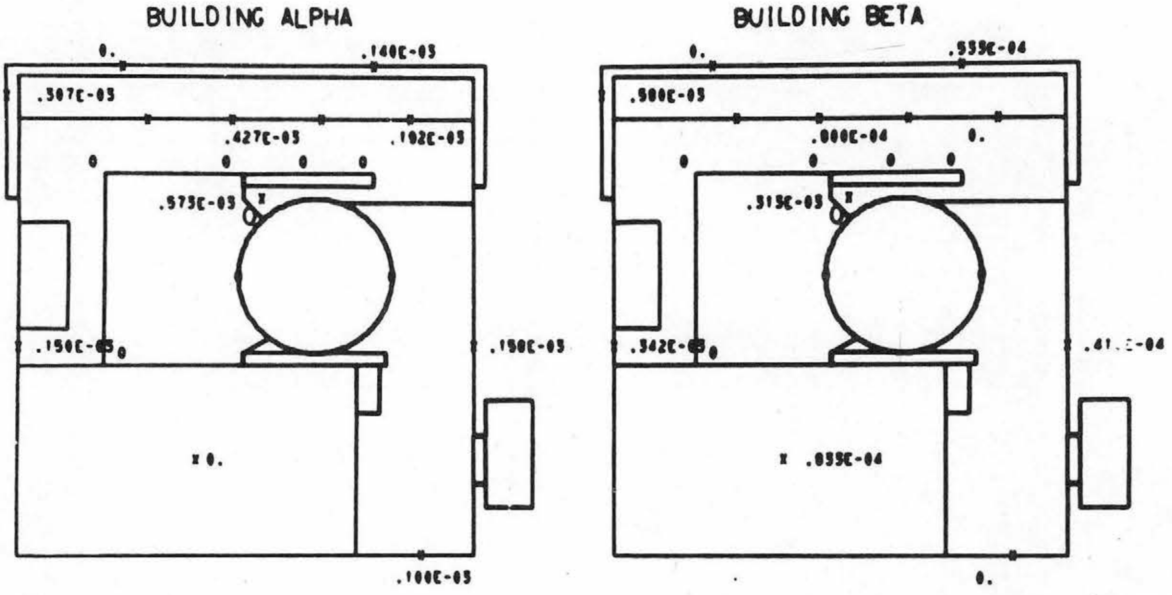
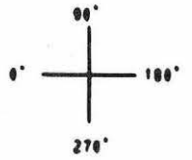

BUILDING ALPHA
.167E-04
0.
.133E-04
0.
0.
0
0
0
0
0.
.666E-04
0
.666E-04
X 0.
0.
BUILDING BETA
0.
0.
0.
.333E-04
0.
0
0
0
0
0.
0.
0
0.
X 0.
0.
FLOATING NUCLEAR POWER PLANT
SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 135. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 0.
Y = 0.
90°
0°
180°
270°
CONCENTRATIONS = XV/Q (METERS -2)
TRAVERSE SAMPLES
RAKE HEIGHT (FT)
VALUE
25.
.135E-03
85.
.200E-03
140.
.120E-03
230.
.205E-03
350.
0.

Fig. B-5



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 180. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 501.
Y = 300.

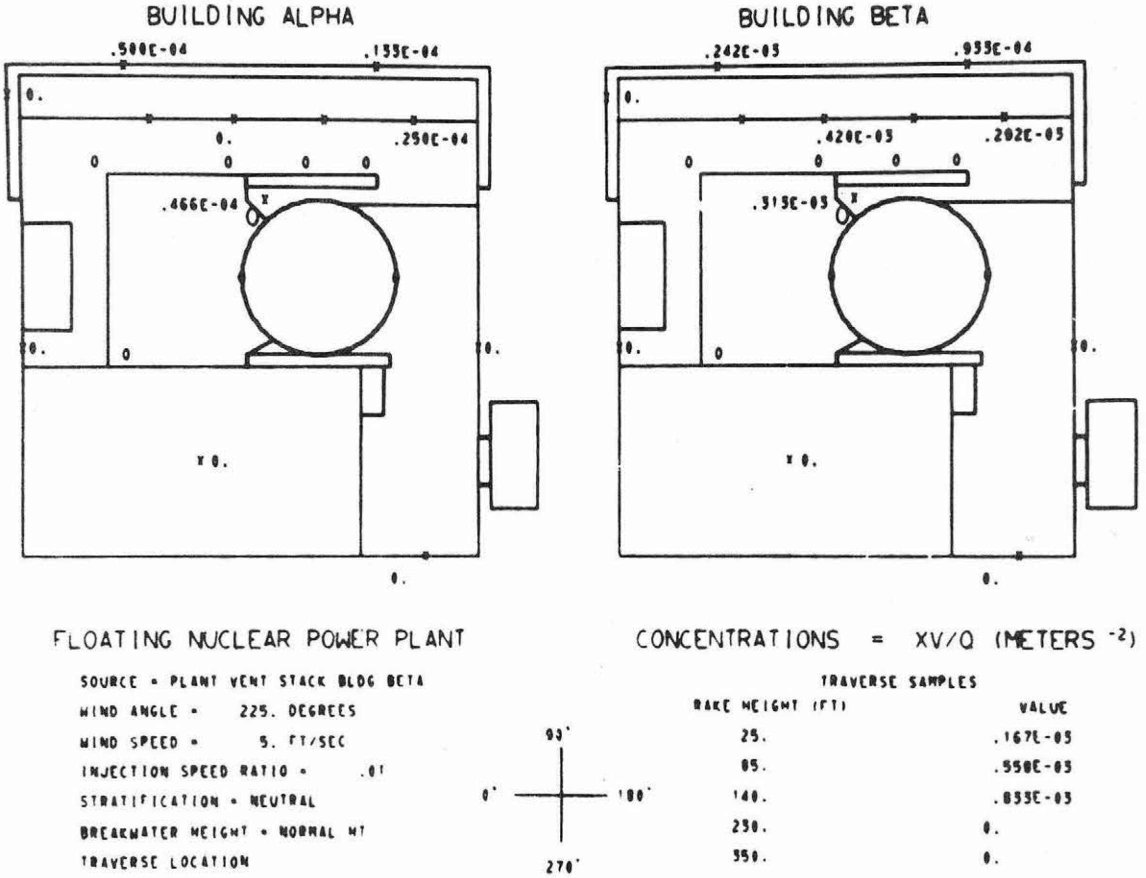


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

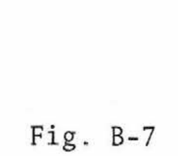
RAKE HEIGHT (FT)	VALUE
25.	.107E-02
85.	.535E-03
140.	.503E-03
250.	.167E-03
350.	.220E-03

Fig. B-6



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 225. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 56.
Y = 600.

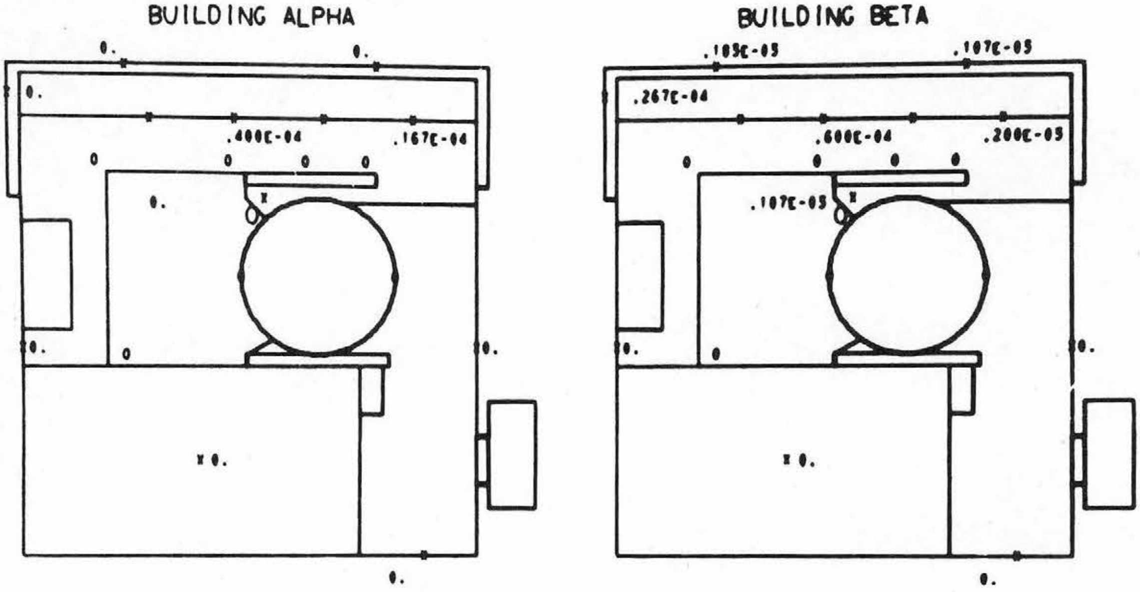


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

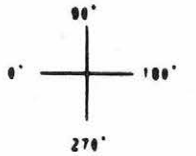
RAKE HEIGHT (FT)	VALUE
25.	.167E-03
85.	.550E-03
140.	.833E-03
250.	0.
350.	0.

Fig. B-7



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -244.
Y = 544.

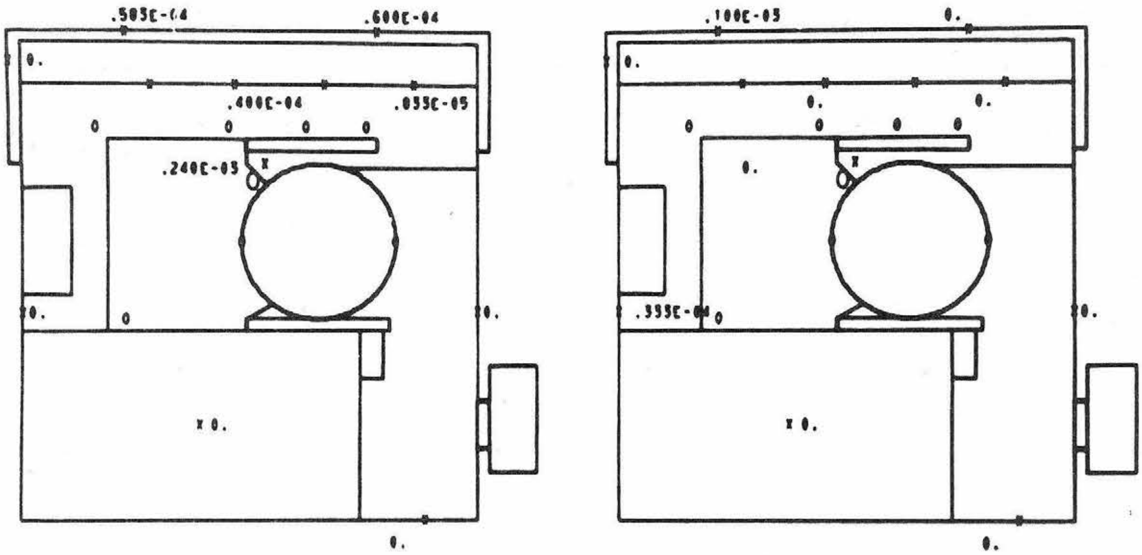


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

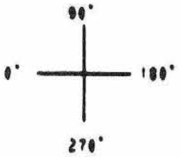
RAKE HEIGHT (FT)	VALUE
25.	.140E-05
85.	.202E-05
140.	.505E-05
250.	0.
350.	0.

Fig. B-8



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 244.
Y = 544.



CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.160E-03
85.	.417E-03
140.	.673E-03
250.	0.
350.	0.

Fig. B-9

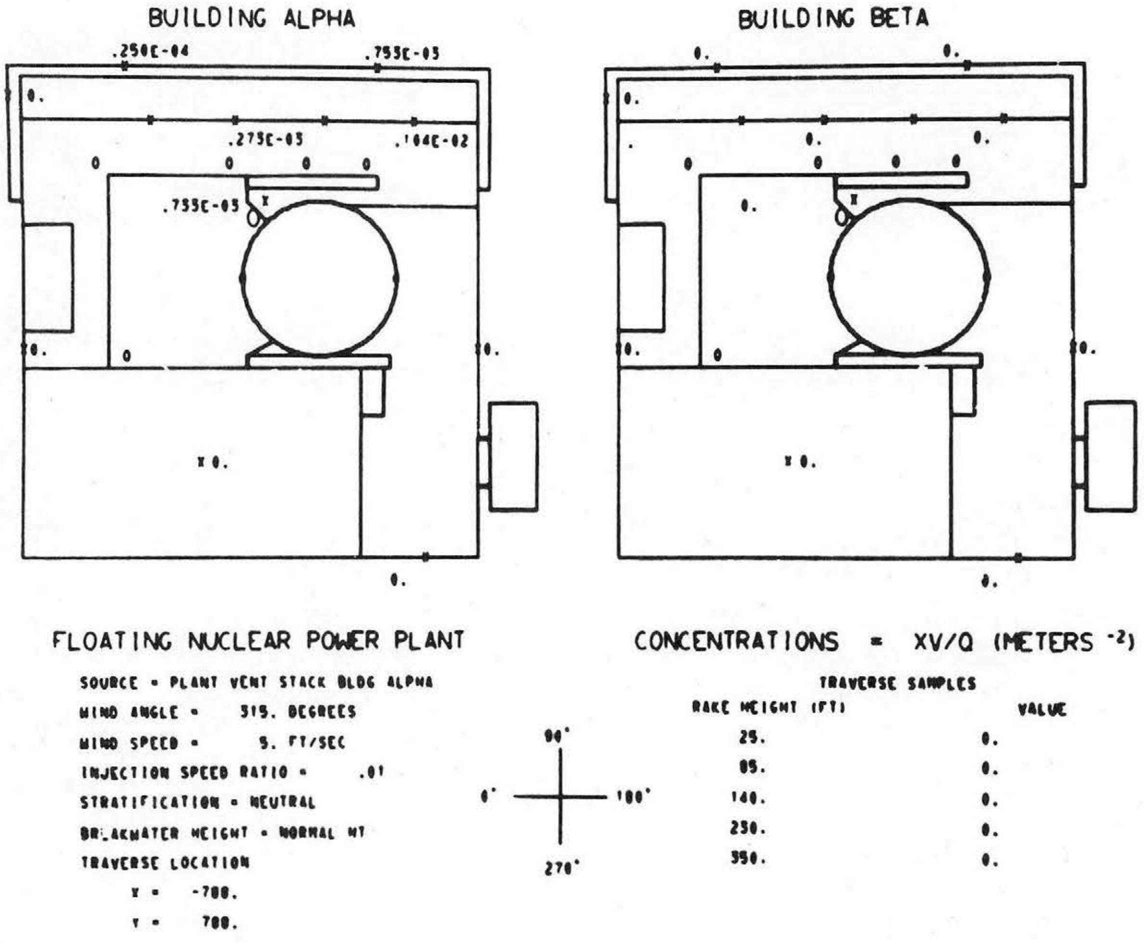
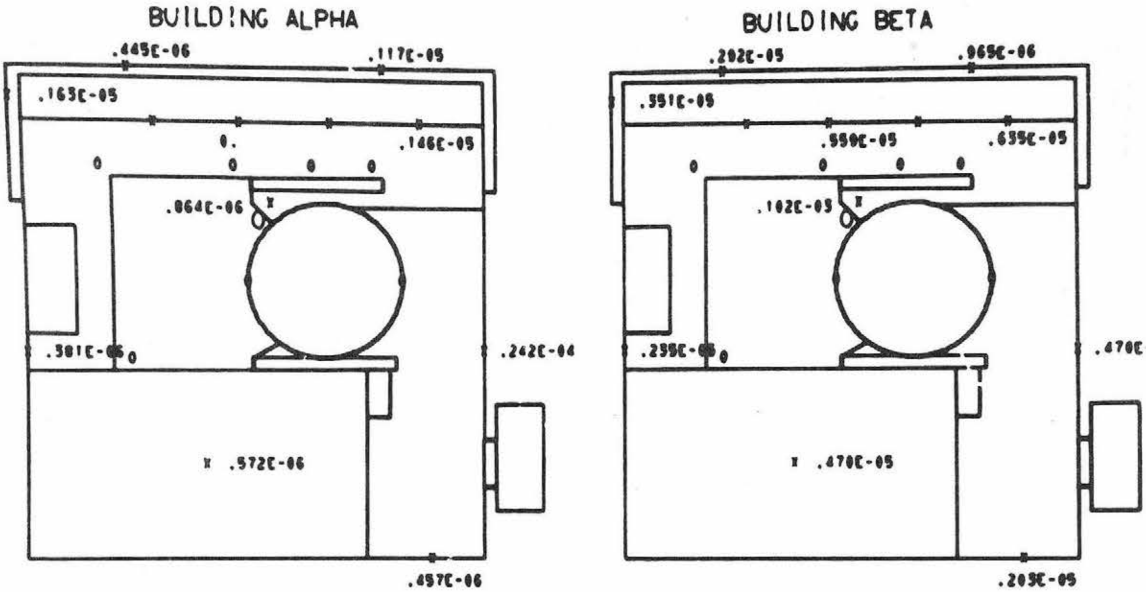
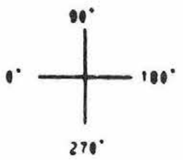

BUILDING ALPHA
.250E-04
.753E-03
0.
.275E-03
.104E-02
.755E-03
0.
0.
X 0.
0.
BUILDING BETA
0.
0.
0.
0.
0.
0.
0.
0.
X 0.
0.
FLOATING NUCLEAR POWER PLANT
SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 315. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -700.
Y = 700.
90°
0°
180°
270°
CONCENTRATIONS = XV/Q (METERS -2)
TRAVERSE SAMPLES
RAKE HEIGHT (FT) VALUE
25. 0.
85. 0.
140. 0.
230. 0.
350. 0.

Fig. B-10



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 2.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -600.
Y = 500.

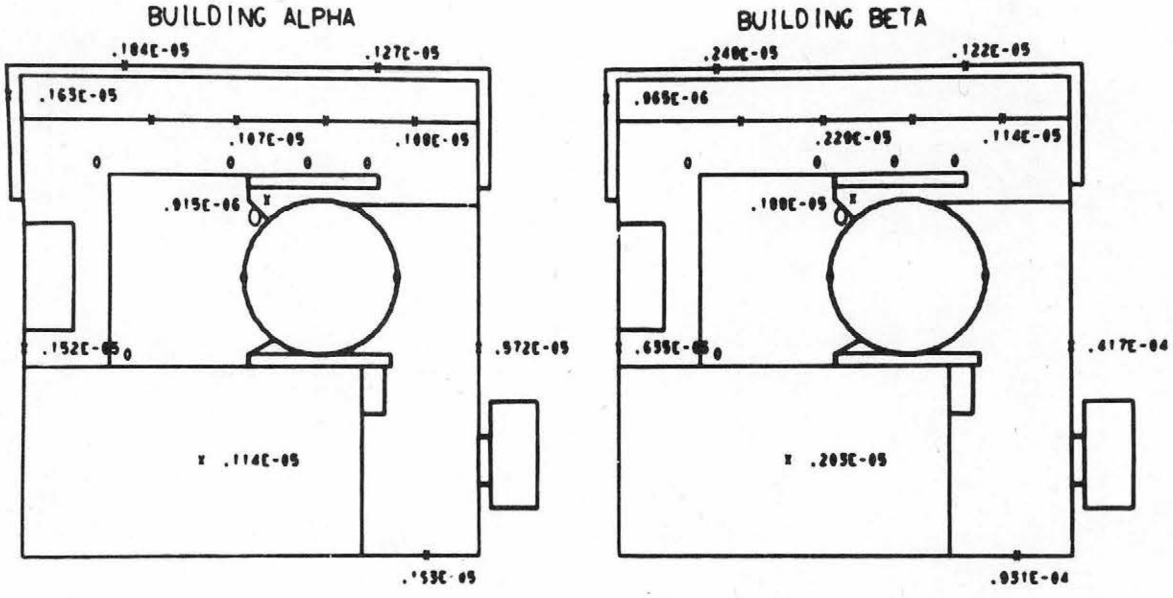


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

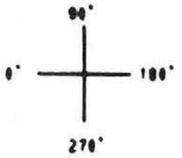
RAKE HEIGHT (FT)	VALUE
25.	.204E-04
85.	.106E-03
140.	.551E-03
250.	.526E-03
350.	.220E-04

Fig. B-11



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 45. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 2.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -150.
Y = -170.



CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.450E-04
85.	.962E-04
140.	.326E-03
250.	.715E-03
350.	.460E-05

Fig. B-12

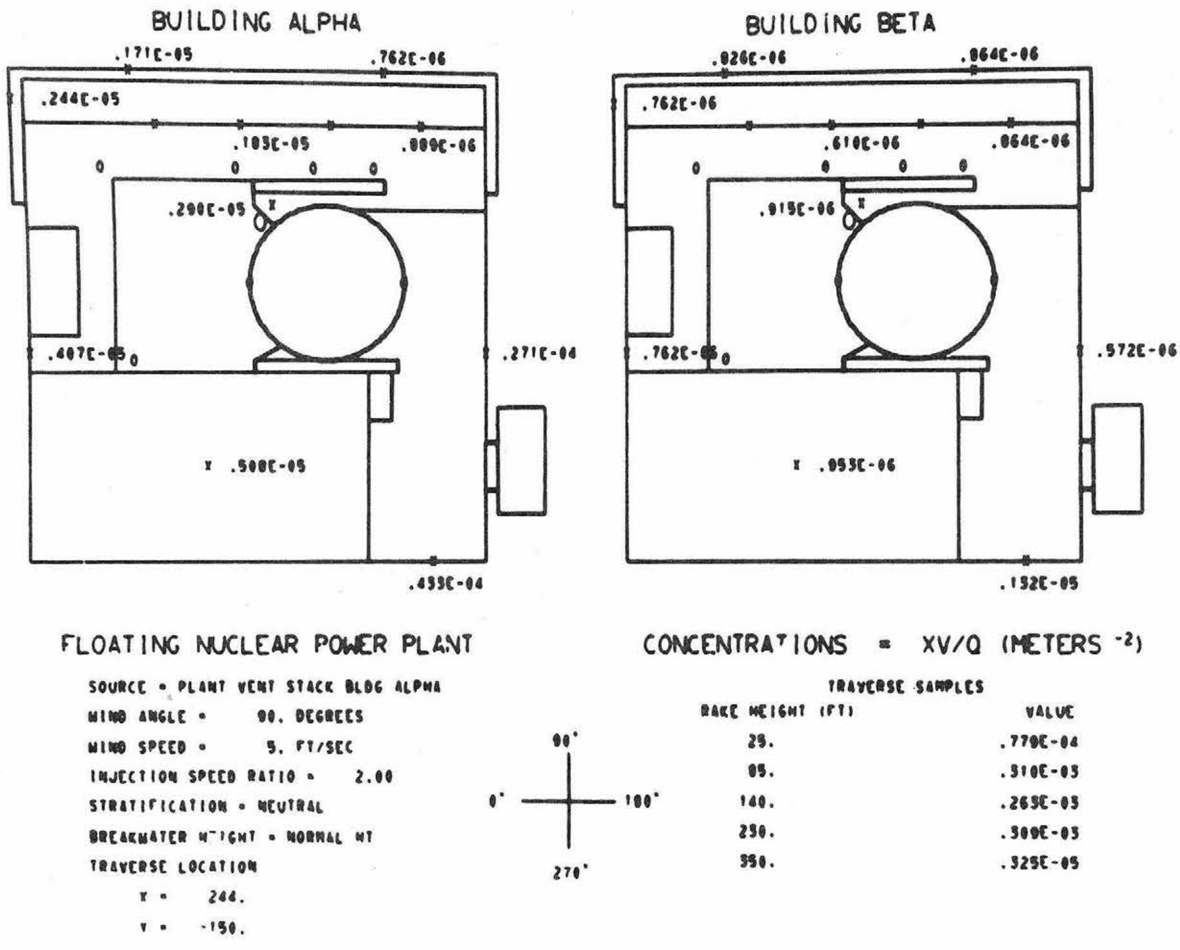
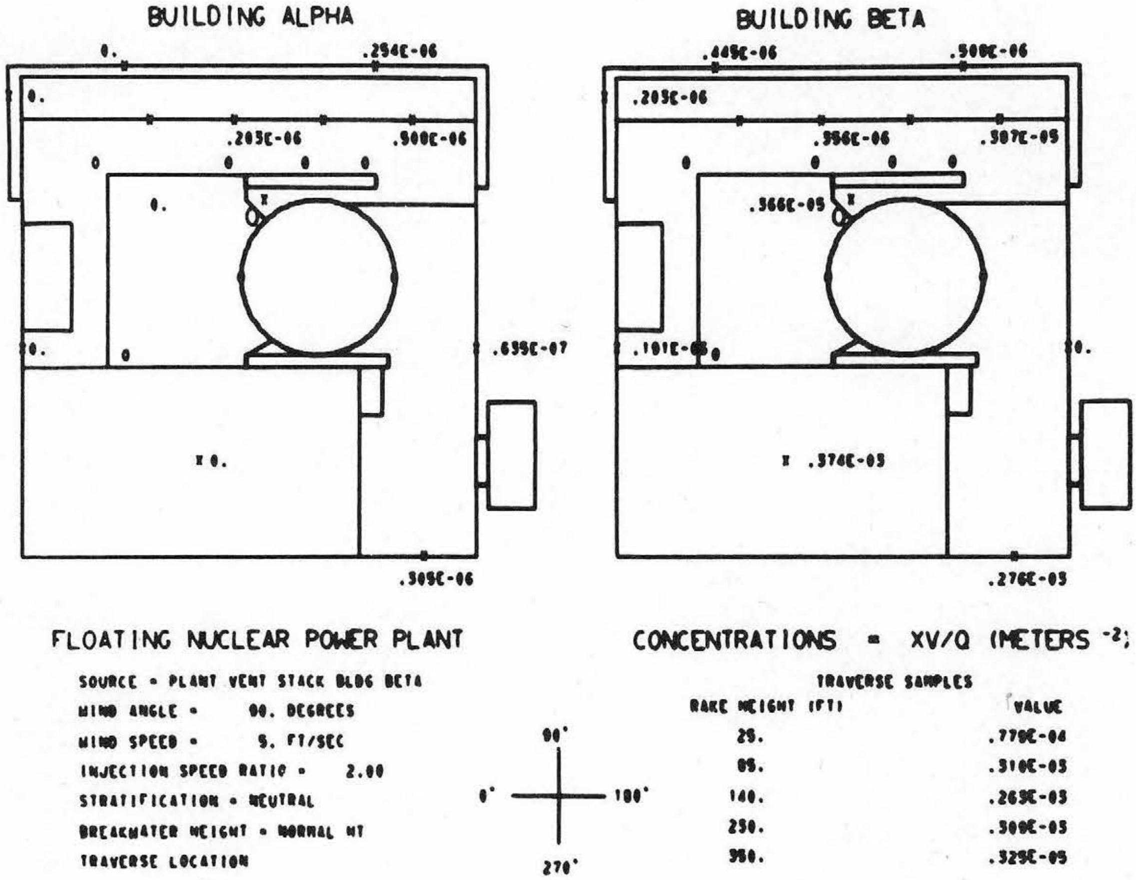
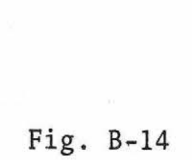

BUILDING ALPHA
.171E-05
.762E-06
.244E-05
.103E-05
.809E-06
0
0
0
0
.290E-05
X
.407E-05
0
.271E-04
X .508E-05
.433E-04
BUILDING BETA
.826E-06
.864E-06
.762E-06
.610E-06
.864E-06
0
0
0
0
.915E-06
X
.762E-06
0
.572E-06
X .953E-06
.132E-05
FLOATING NUCLEAR POWER PLANT
SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 2.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 244.
Y = -150.
90°
0°
180°
270°
CONCENTRATIONS = XV/Q (METERS -2)
TRAVERSE SAMPLES
RAKE HEIGHT (FT) VALUE
25. .770E-04
85. .310E-03
140. .265E-03
250. .309E-03
350. .325E-05

Fig. B-13



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 2.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 244.
Y = -150.

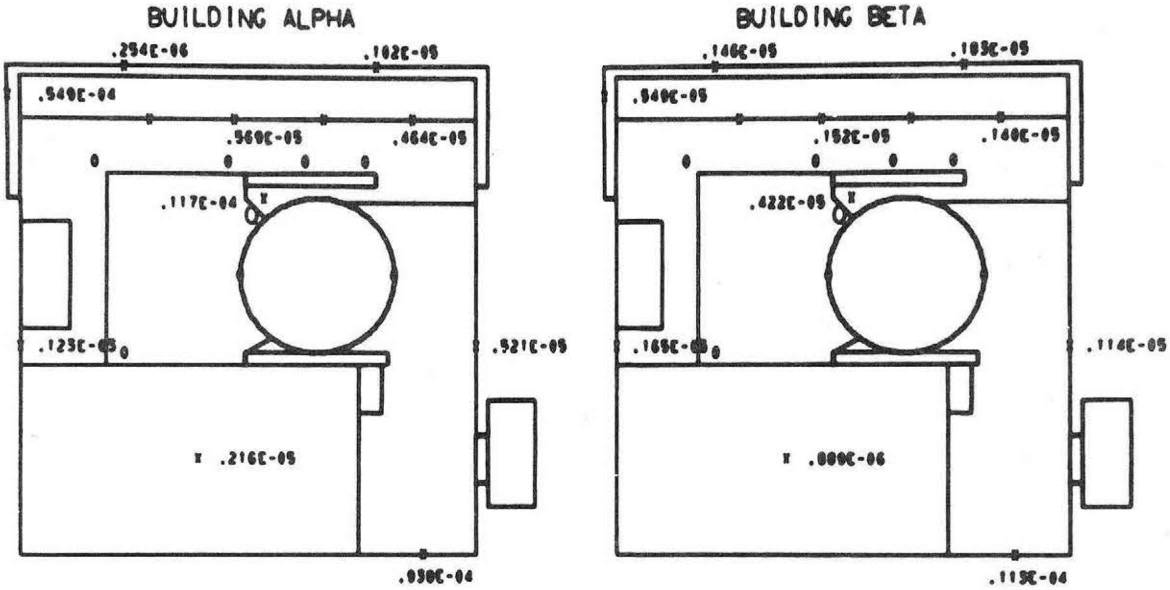


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.770E-04
85.	.310E-03
140.	.265E-03
250.	.300E-03
350.	.325E-03

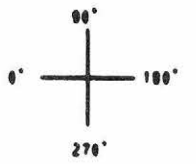
Fig. B-14



FLOATING NUCLEAR POWER PLANT

CONCENTRATIONS = XV/Q (METERS $^{-2}$)

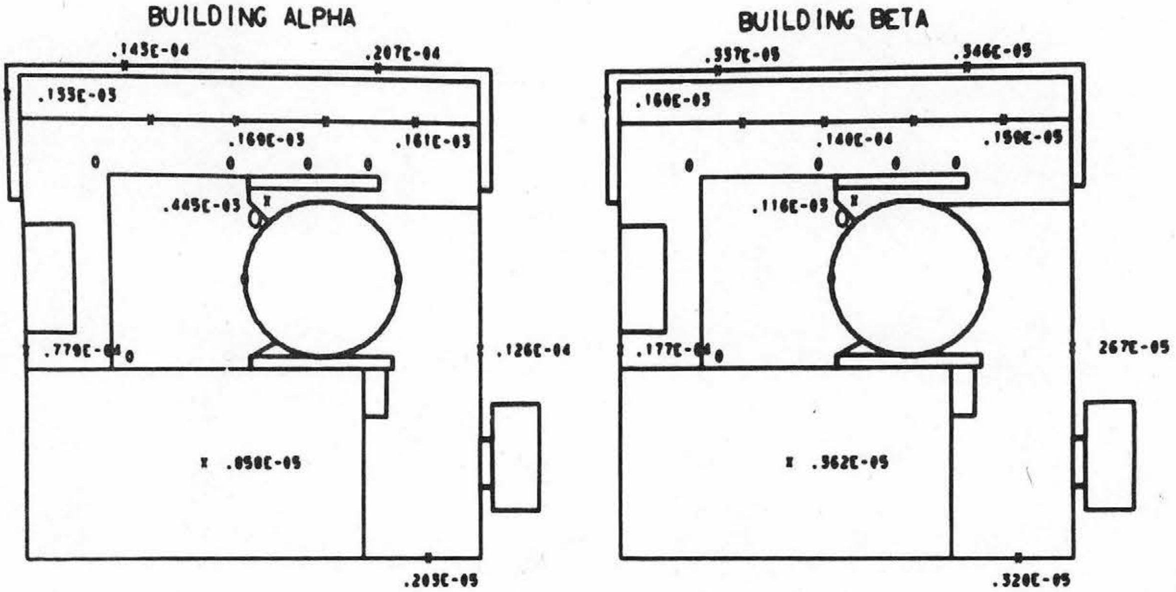
SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 135. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 2.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 206.
Y = -107.



TRAVERSE SAMPLES

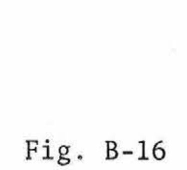
RAKE HEIGHT (FT)	VALUE
25.	.220E-05
85.	.344E-05
140.	.745E-05
250.	.502E-05
350.	.700E-05

Fig. B-15



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 180. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 2.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 501.
Y = 300.

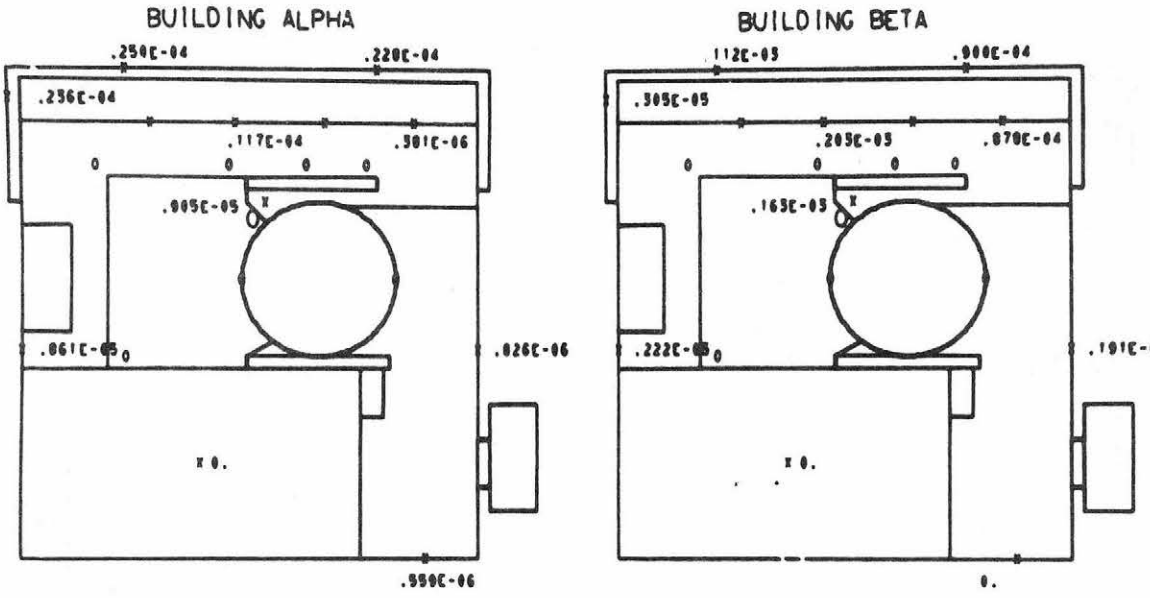


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

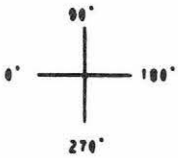
RAKE HEIGHT (FT)	VALUE
25.	.206E-03
85.	.357E-03
140.	.401E-03
230.	.203E-03
350.	.155E-04

Fig. B-16



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 225. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 2.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 0.
Y = 572.



CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.100E-03
85.	.376E-03
140.	.603E-03
250.	.461E-03
350.	.884E-05

Fig. B-17

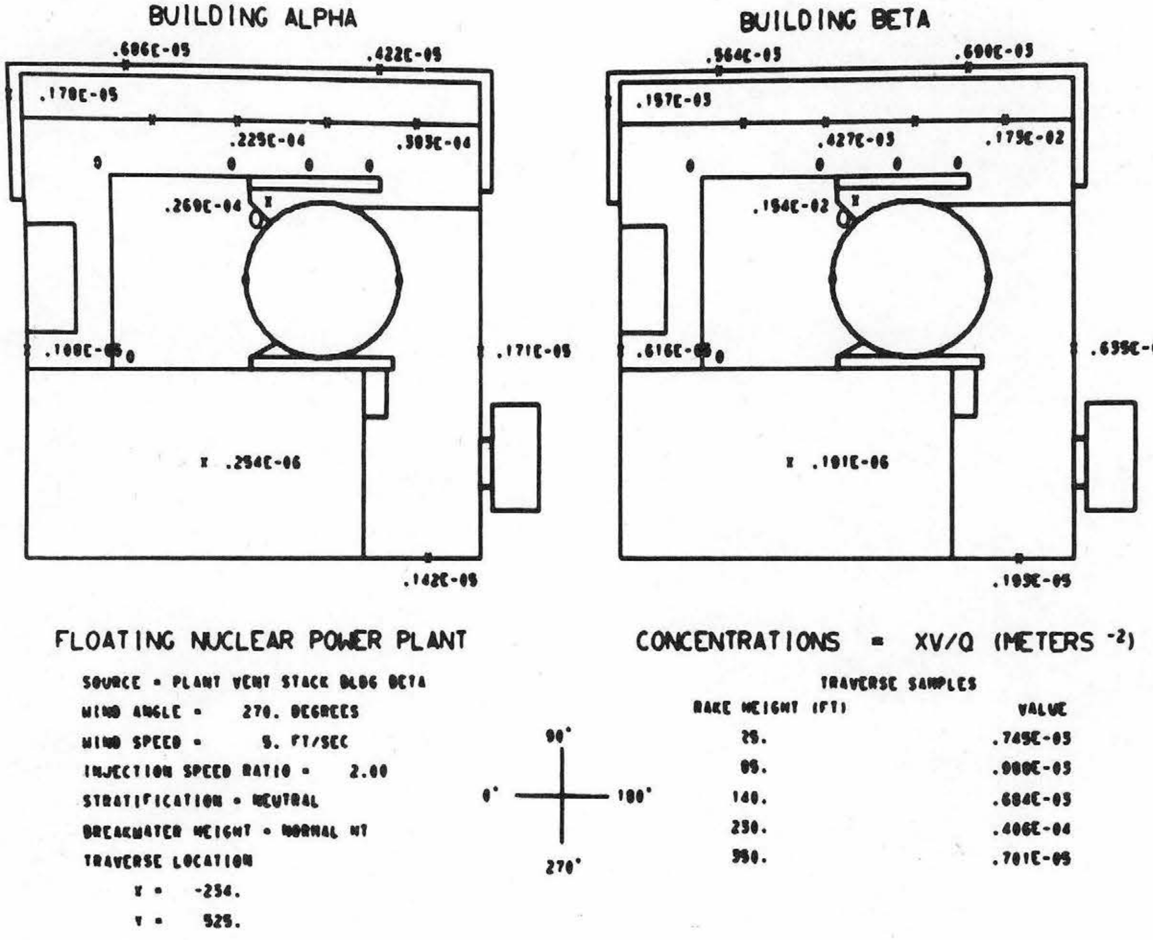
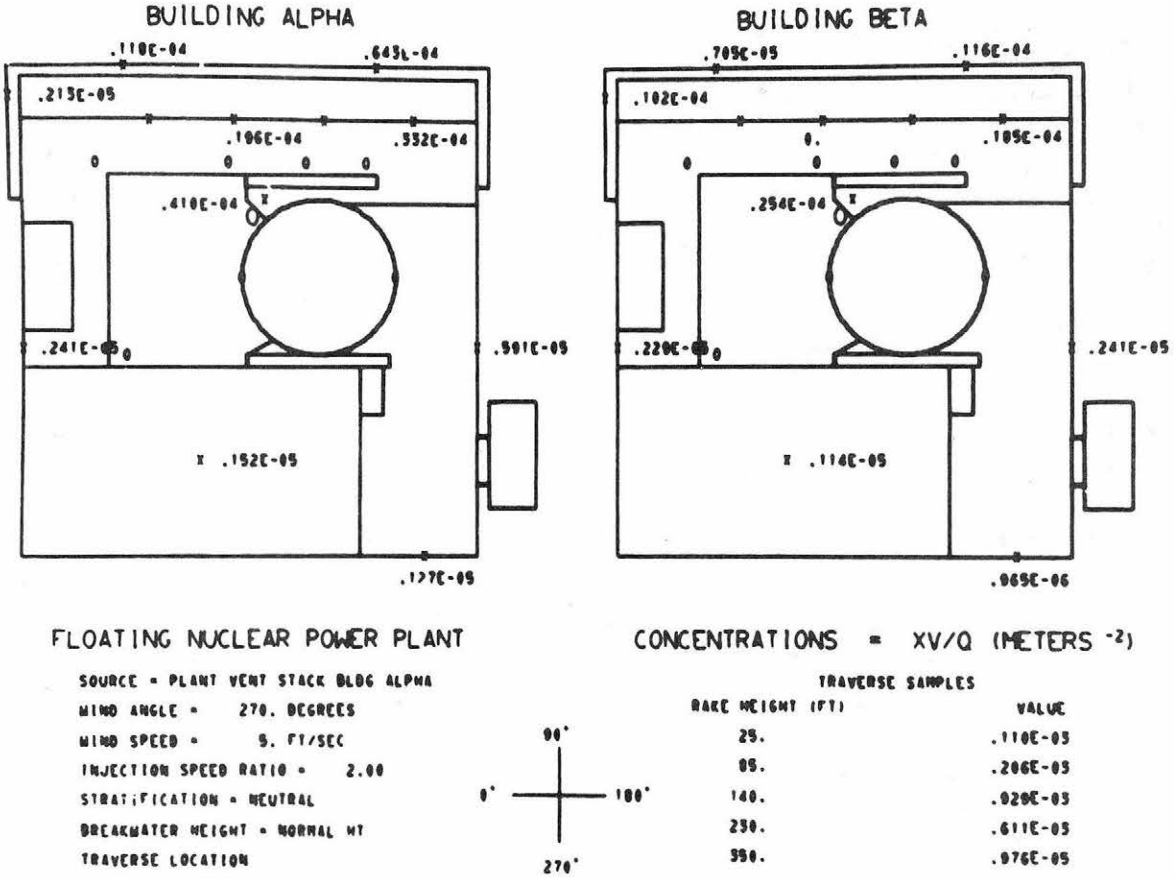
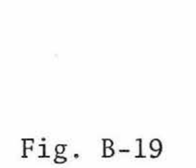

BUILDING ALPHA
.606E-05
.422E-05
.170E-05
.225E-04
.305E-04
.269E-04
.100E-05
.171E-05
.254E-06
.142E-05
BUILDING BETA
.564E-03
.690E-03
.157E-03
.427E-03
.173E-02
.154E-02
.616E-05
.635E-05
.191E-06
.193E-05
FLOATING NUCLEAR POWER PLANT
SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 2.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -254.
Y = 525.
90°
0°
180°
270°
CONCENTRATIONS = XV/Q (METERS -2)
TRAVERSE SAMPLES
RAKE HEIGHT (FT) VALUE
25. .745E-03
85. .980E-03
140. .684E-03
250. .406E-04
350. .701E-05

Fig. B-18



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 2.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 500.
Y = 525.

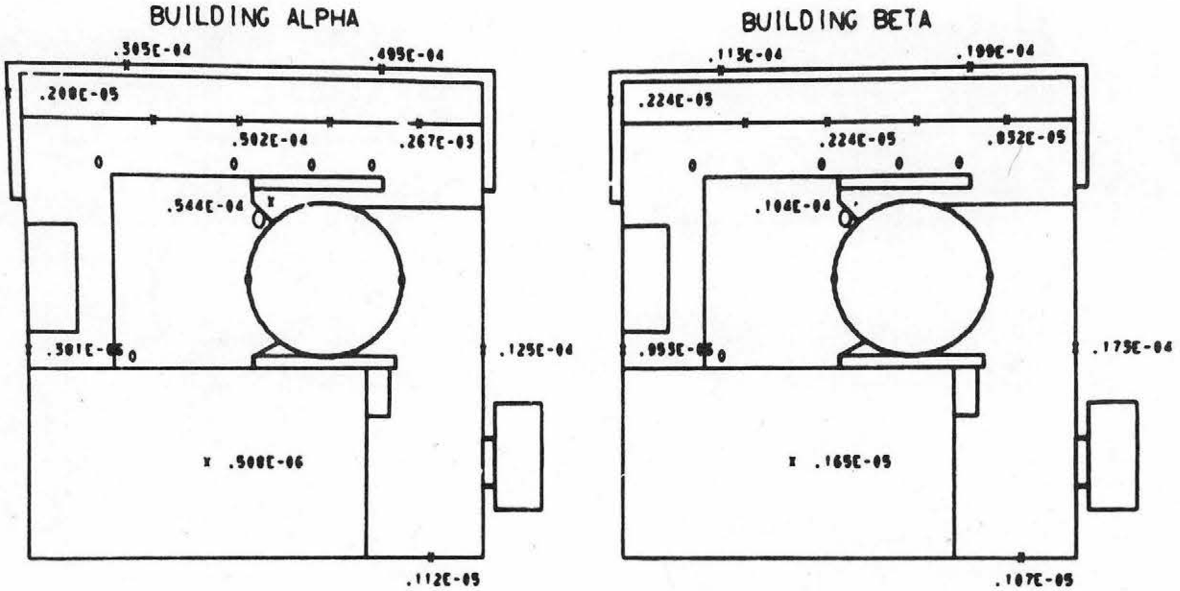


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

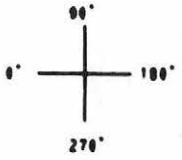
RAKE HEIGHT (FT)	VALUE
25.	.110E-03
85.	.206E-03
140.	.020E-03
250.	.611E-03
350.	.076E-05

Fig. B-19



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 315. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 2.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 0.
Y = 600.

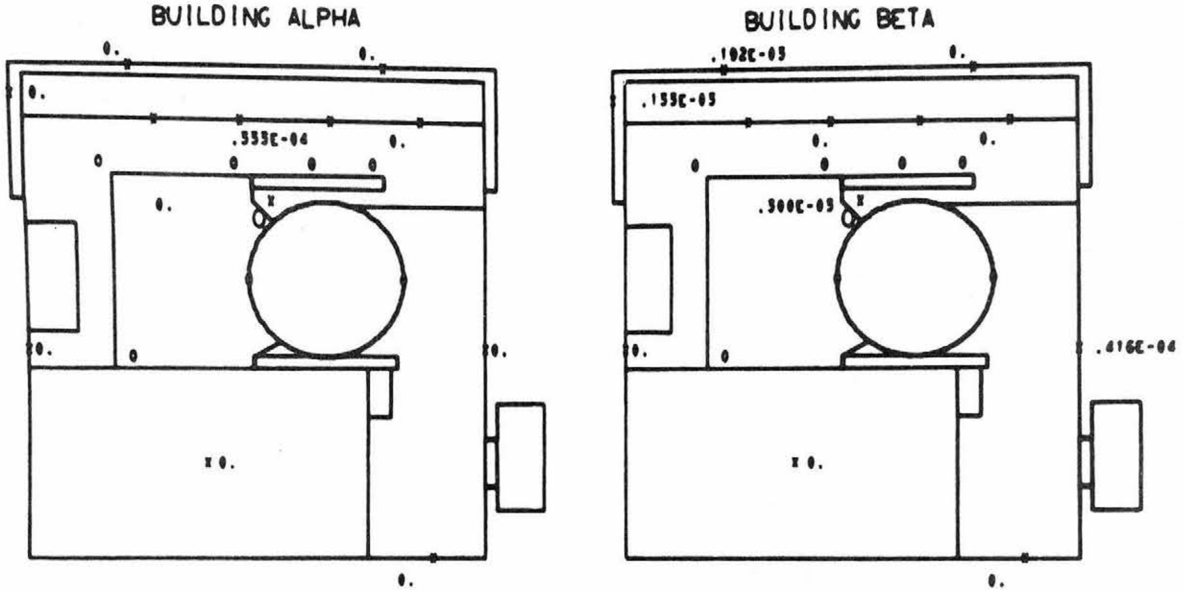


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

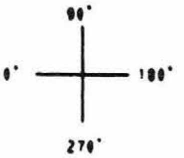
RAKE HEIGHT (FT)	VALUE
25.	.370E-04
85.	.140E-03
140.	.516E-03
230.	.861E-03
350.	.515E-05

Fig. B-20



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 0. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -572.
Y = 300.

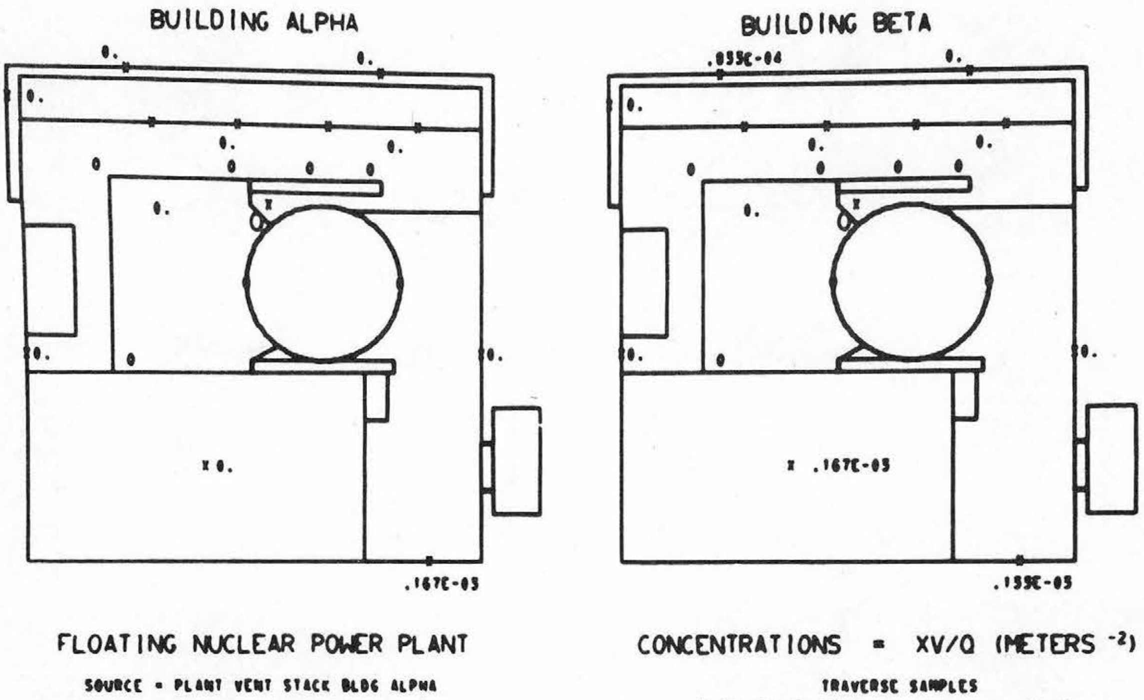


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	0.
85.	.625E-03
140.	.666E-04
250.	0.
350.	0.

Fig. B-21



FLOATING NUCLEAR POWER PLANT

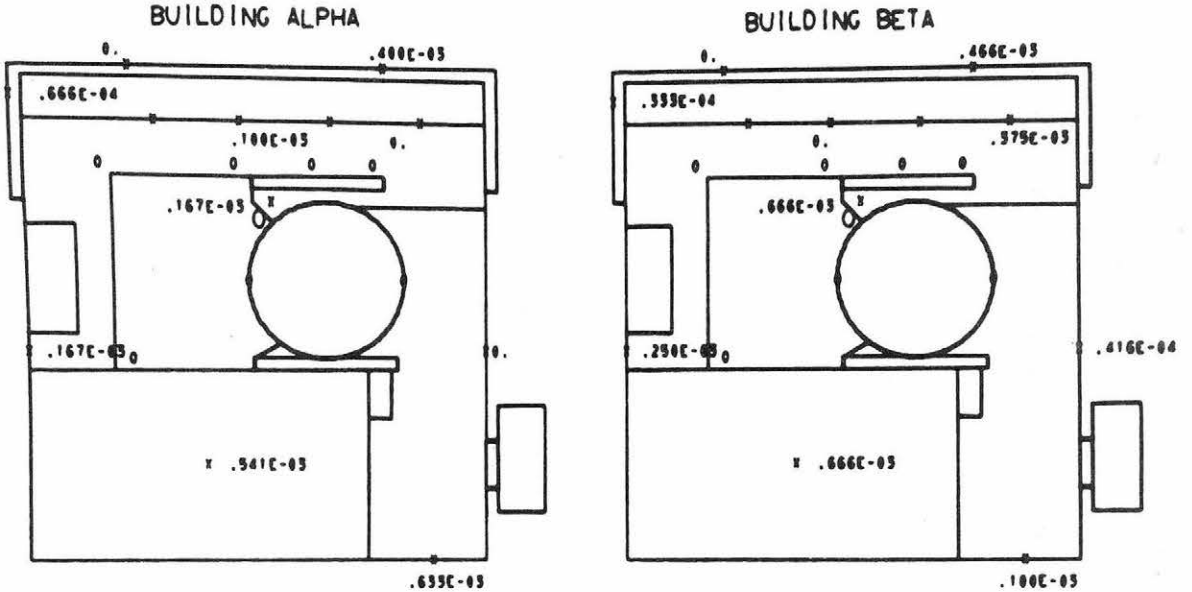
SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 45. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -225.
Y = -100.

CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

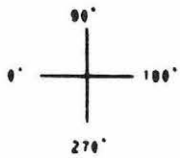
RAKE HEIGHT (FT)	VALUE
25.	.666E-03
85.	.500E-03
140.	.666E-03
250.	0.
350.	0.

Fig. B-22



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 90. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 244.
Y = -169.

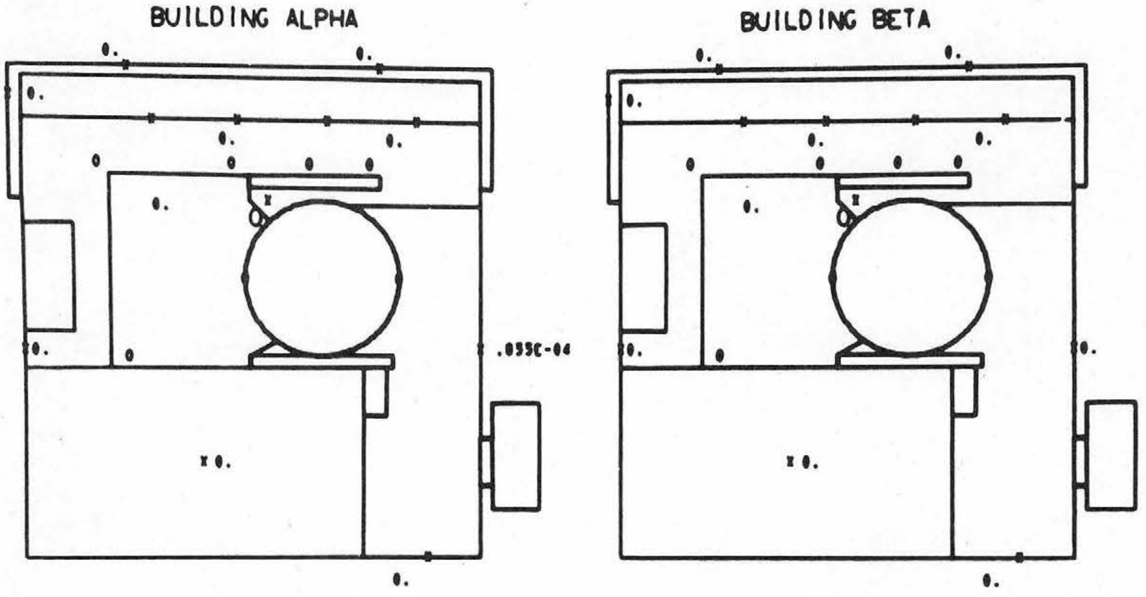


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

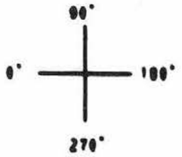
RAKE HEIGHT (FT)	VALUE
25.	.325E-02
85.	.367E-02
140.	.245E-02
250.	0.
350.	0.

Fig. B-23



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 90. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -244.
Y = -160.

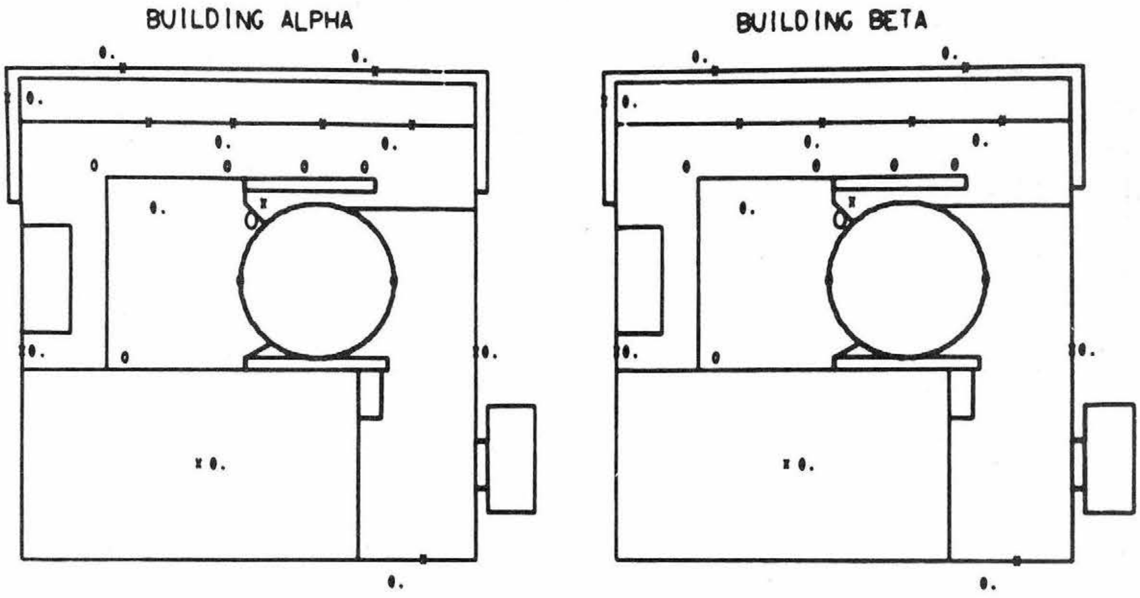


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

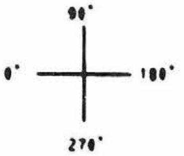
RAKE HEIGHT (FT)	VALUE
25.	0.
85.	.567E-02
140.	0.
250.	0.
350.	0.

Fig. B-24



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 135. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 206.
Y = -206.



CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	0.
85.	.200E-03
140.	.466E-03
250.	.202E-03
550.	0.

Fig. B-25

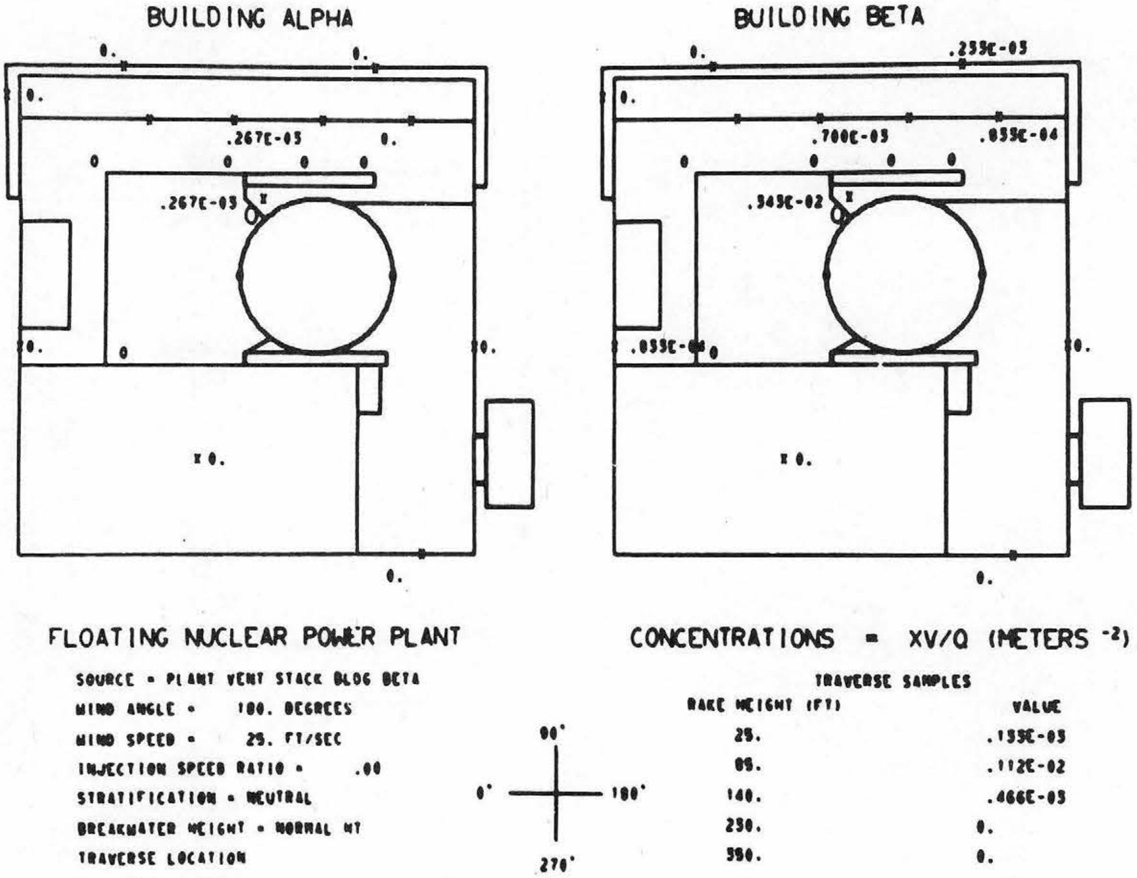
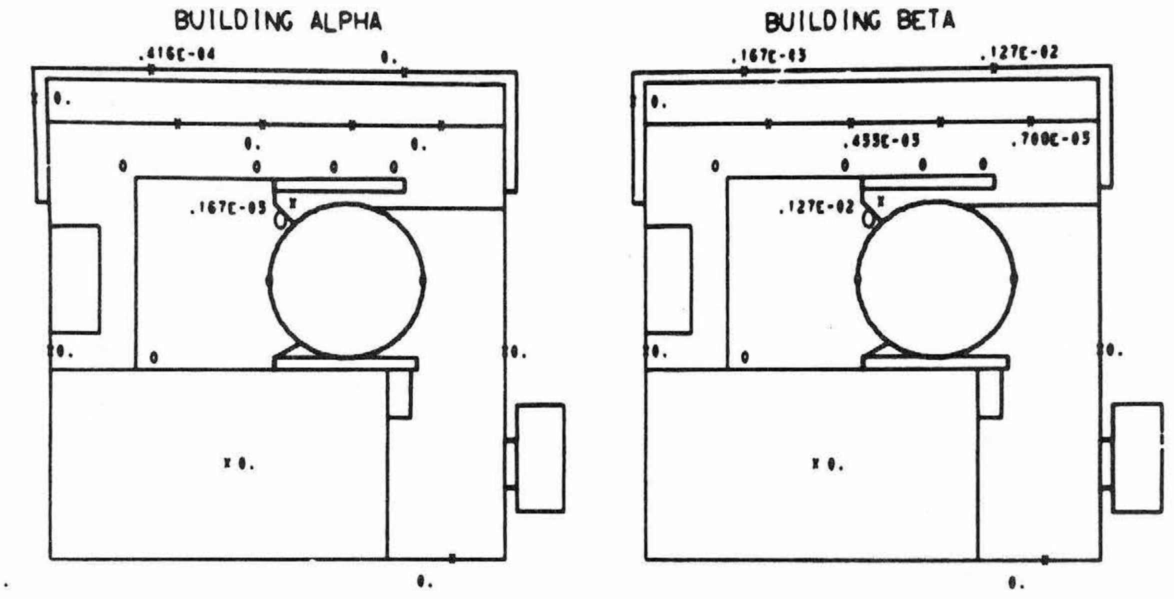
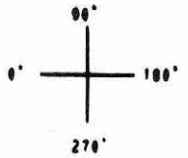

BUILDING ALPHA
BUILDING BETA
.267E-03
.700E-03
.343E-02
FLOATING NUCLEAR POWER PLANT
CONCENTRATIONS = XV/Q (METERS $^{-2}$)
SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 180. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 563.
Y = 500.
90°
0°
180°
270°
TRAVERSE SAMPLES
RAKE HEIGHT (FT)
VALUE
25.
.135E-03
85.
.112E-02
140.
.466E-03
250.
0.
350.
0.

Fig. B-26



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 225. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 0.
Y = 563.

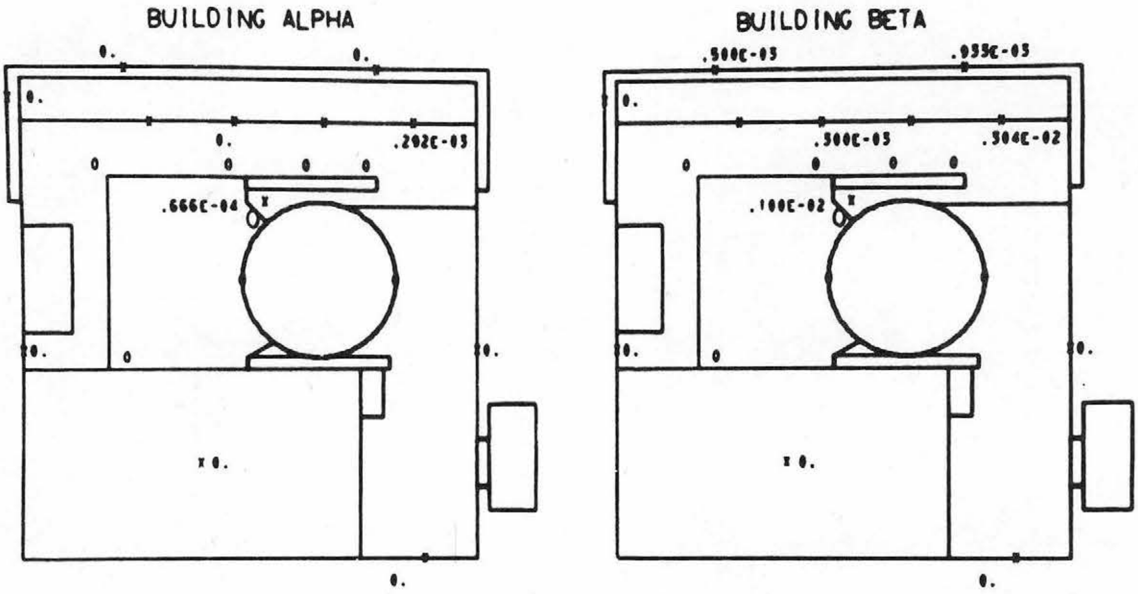


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	0.
85.	.666E-03
140.	0.
230.	.125E-03
350.	0.

Fig. B-27



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 270. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -265.
Y = 565.

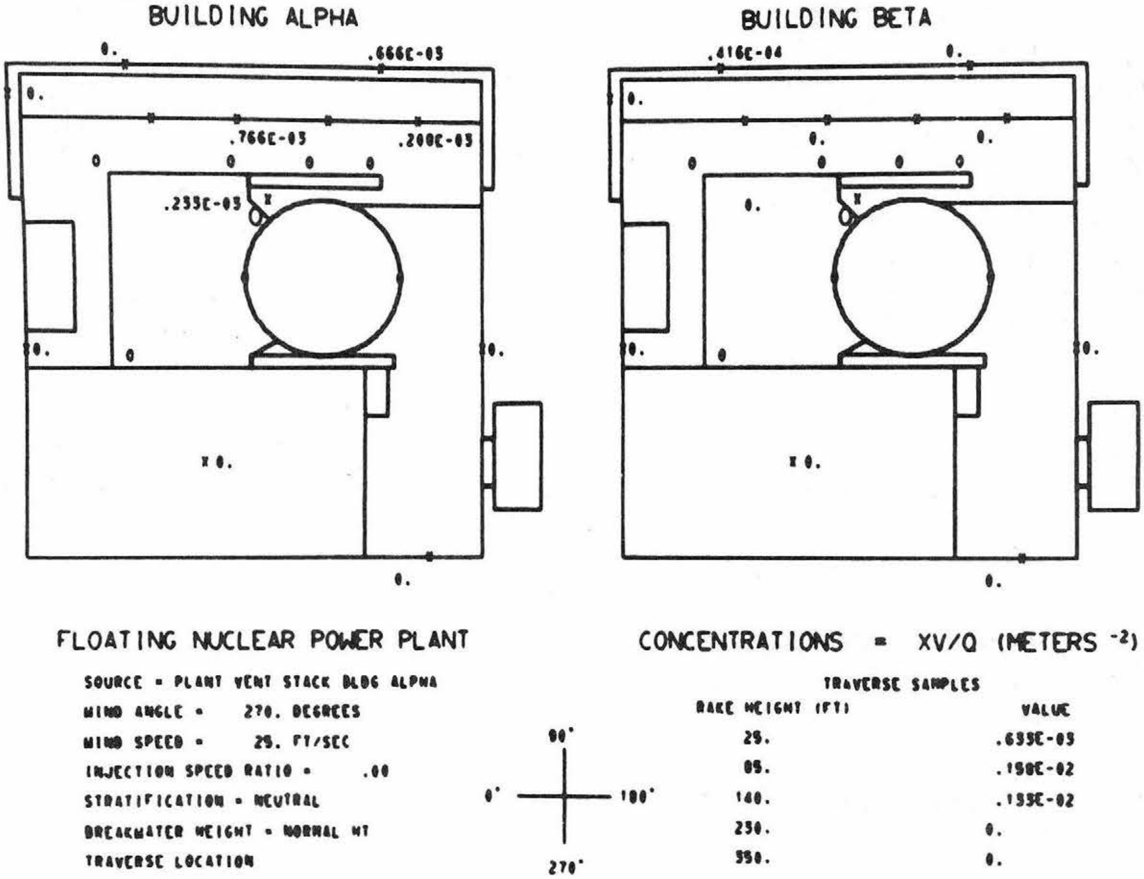
90°
0° 180°
270°

CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.107E-02
85.	.200E-02
140.	.866E-05
250.	0.
350.	0.

Fig. B-28



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA

WIND ANGLE = 270. DEGREES

WIND SPEED = 25. FT/SEC

INJECTION SPEED RATIO = .00

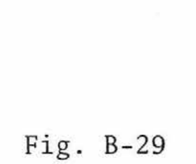
STRATIFICATION = NEUTRAL

BREAKWATER HEIGHT = NORMAL HT

TRAVERSE LOCATION

X = 244.

Y = 501.

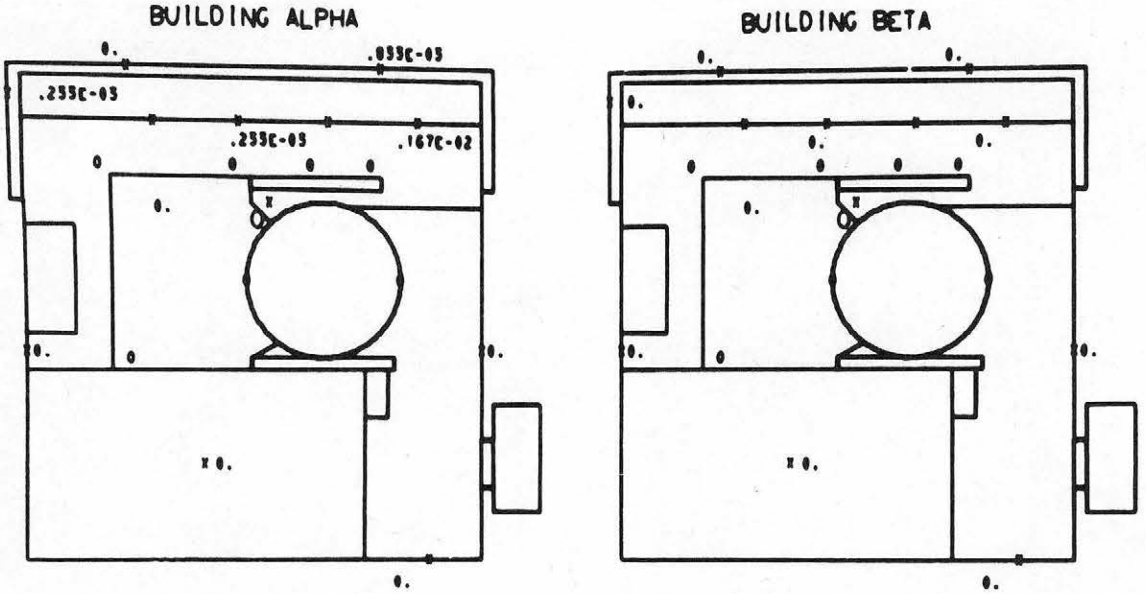


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

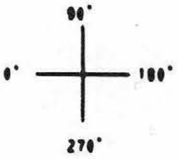
RAKE HEIGHT (FT)	VALUE
25.	.635E-03
85.	.158E-02
140.	.135E-02
230.	0.
350.	0.

Fig. B-29



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 315. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .60
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 0.
Y = 470.

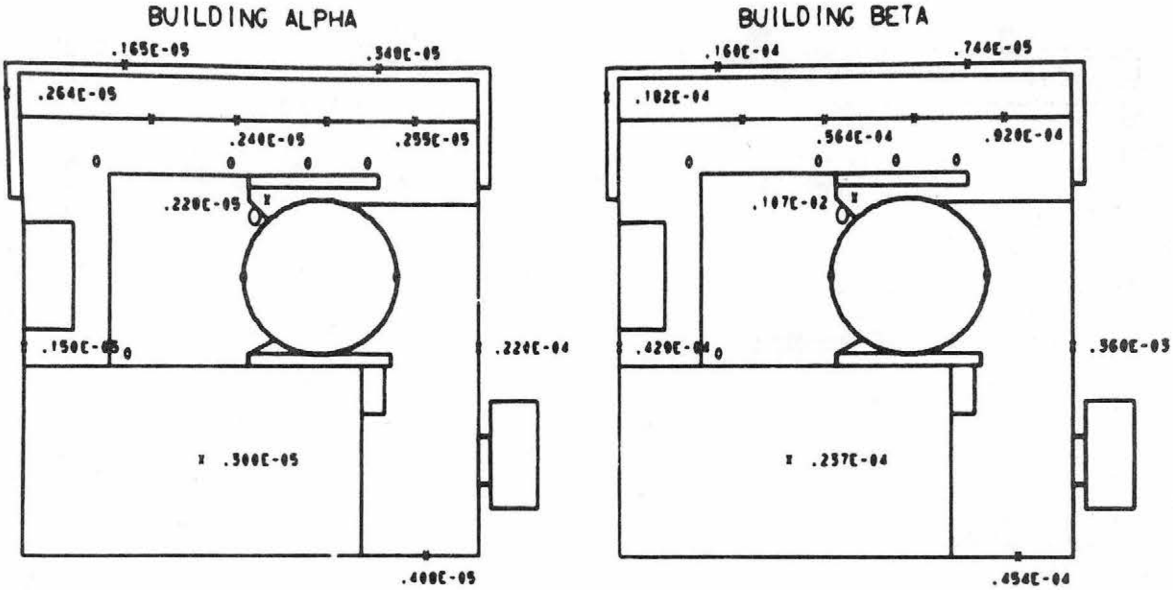


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

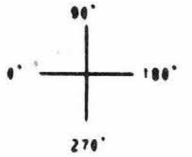
RAKE HEIGHT (FT)	VALUE
25.	0.
85.	0.
140.	.866E-03
250.	0.
350.	0.

Fig. B-30



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 0. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .60
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -600.
Y = 201.

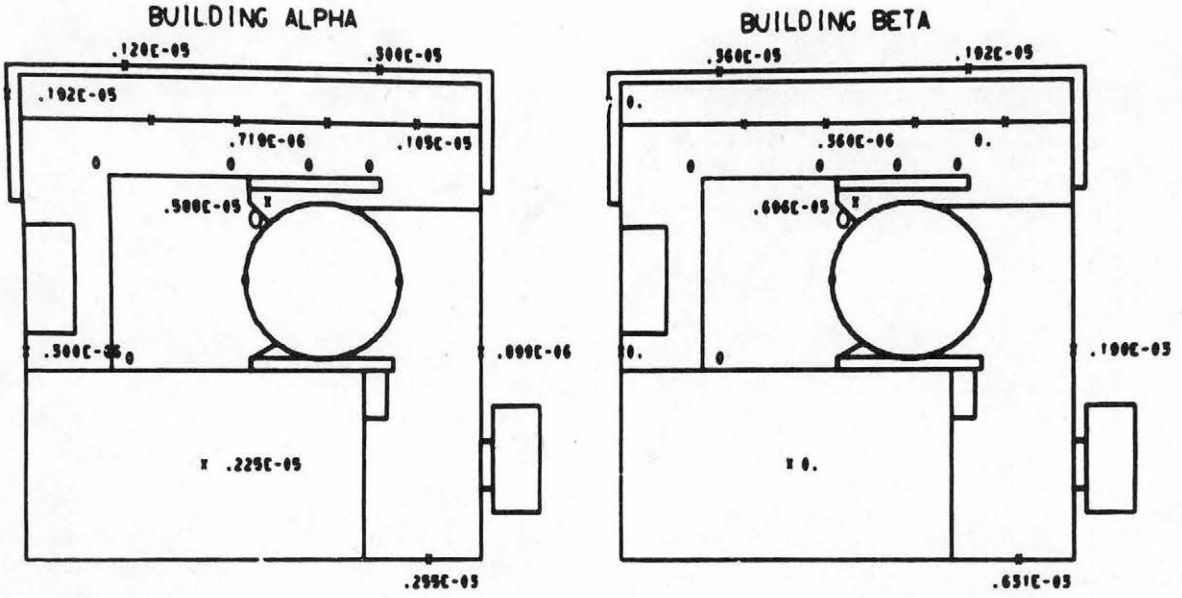


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

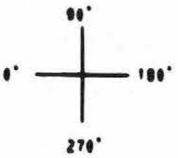
RAKE HEIGHT (FT)	VALUE
25.	.231E-05
85.	.834E-03
140.	.120E-02
230.	.440E-03
350.	.130E-04

Fig. B-31



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 45. DEGREES
WIND SPEED = 2:. FT/SEC
INJECTION SPEED RATIO = .60
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -206.
Y = -197.

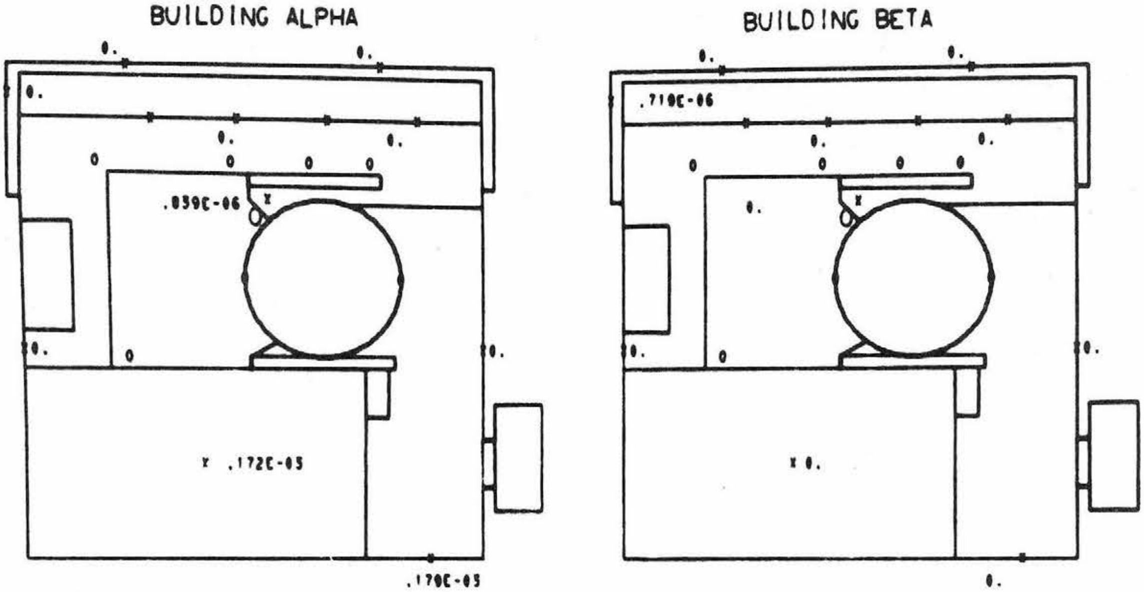


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

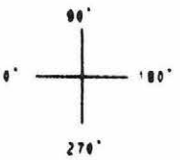
RAKE HEIGHT (FT)	VALUE
25.	.547E-03
85.	.877E-03
140.	.139E-02
230.	.161E-03
350.	.127E-04

Fig. B-32



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 90. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO .60
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 253.
Y = -160.



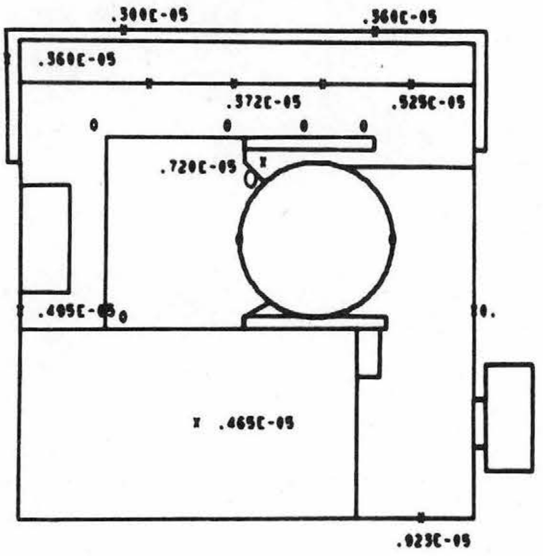
CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

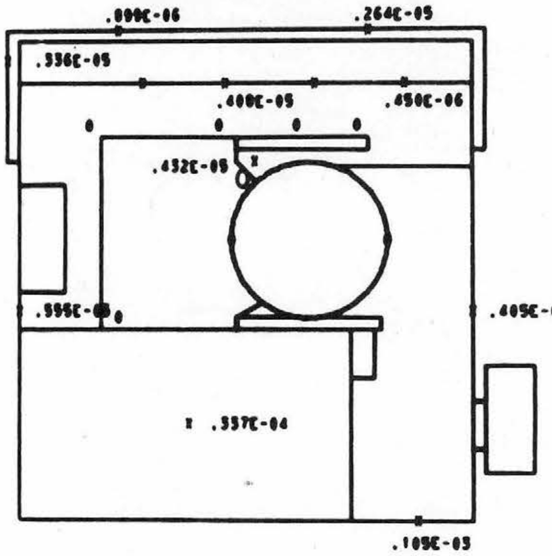
RAKE HEIGHT (FT)	VALUE
25.	.430E-03
85.	.952E-03
140.	.170E-02
250.	.100E-03
350.	.140E-04

Fig. B-33

BUILDING ALPHA

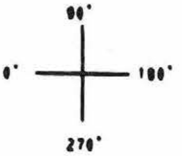


BUILDING BETA



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 90. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .60
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -201.
Y = -150.

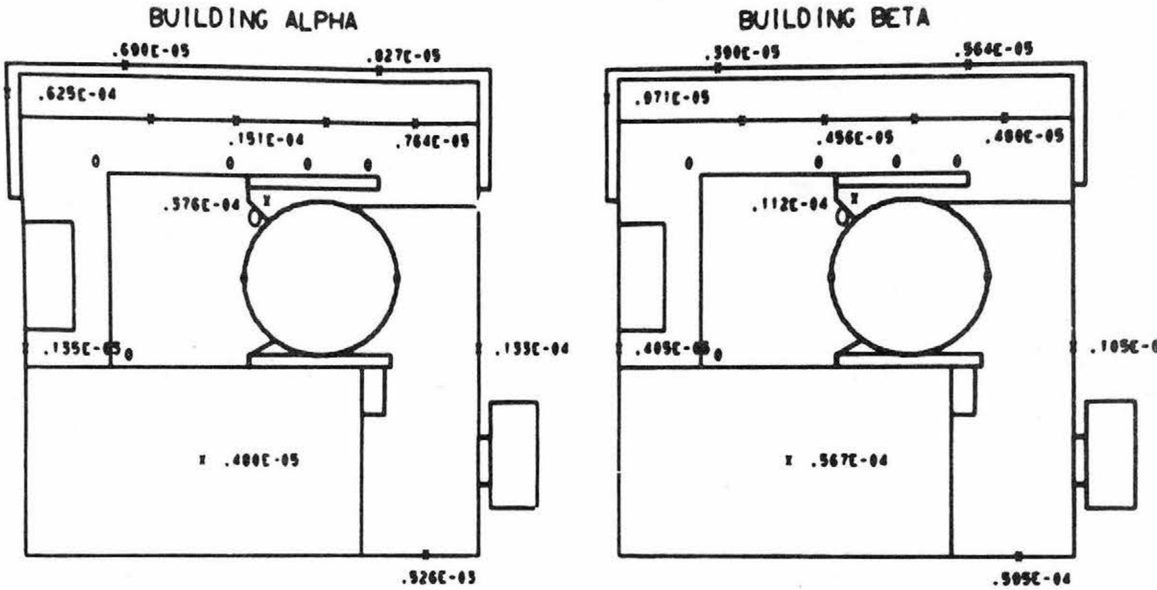


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.297E-03
85.	.607E-03
140.	.101E-02
250.	.112E-03
350.	.120E-04

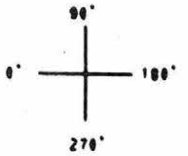
Fig. B-34



FLOATING NUCLEAR POWER PLANT

CONCENTRATIONS = XV/Q (METERS $^{-2}$)

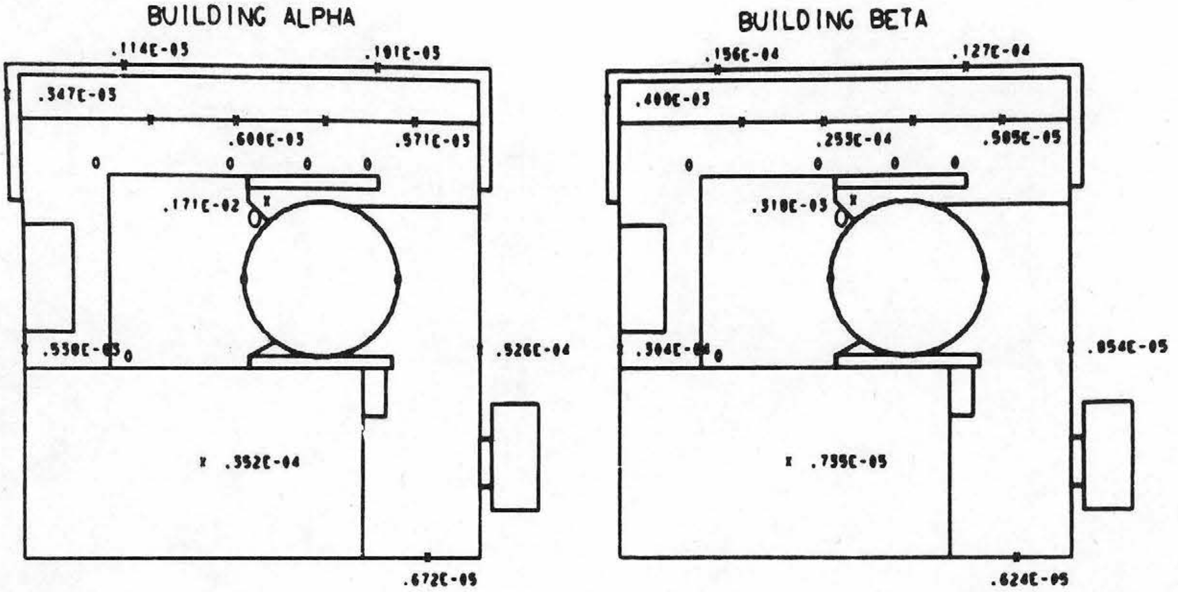
SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 135. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .60
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 206.
Y = -160.



TRAVERSE SAMPLES

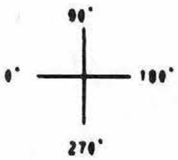
RAKE HEIGHT (FT)	VALUE
25.	.704E-03
85.	.920E-03
140.	.111E-02
250.	.950E-04
550.	.131E-04

Fig. B-35



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 180. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .60
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 565.
Y = 500.

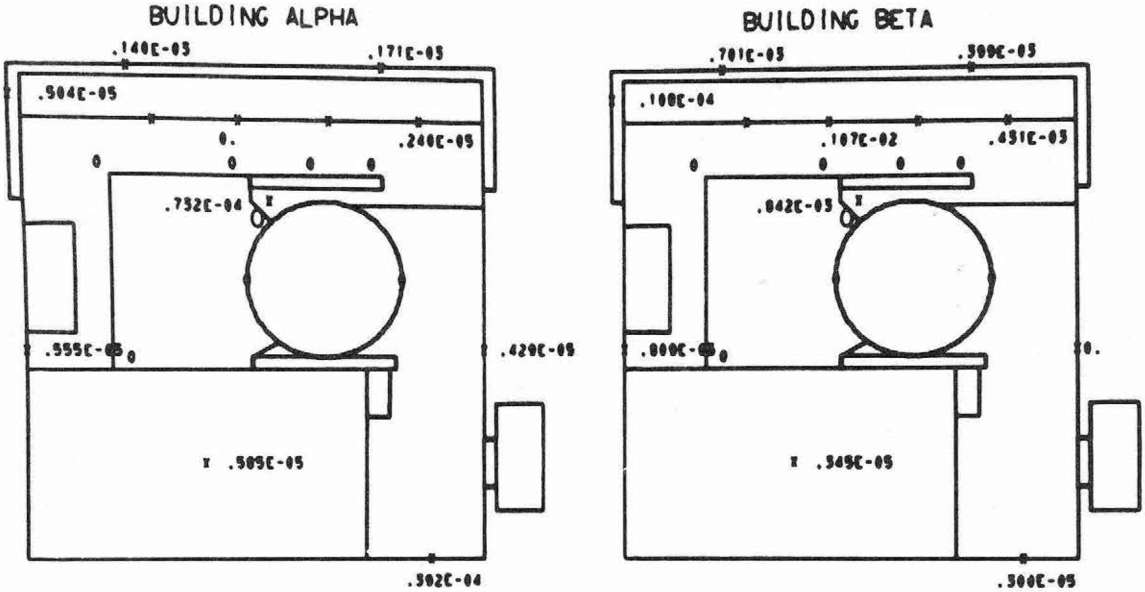


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.520E-03
85.	.867E-03
140.	.107E-02
250.	.360E-03
350.	.222E-04

Fig. B-36



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA

WIND ANGLE = 225. DEGREES

WIND SPEED = 25. FT/SEC

INJECTION SPEED RATIO = .60

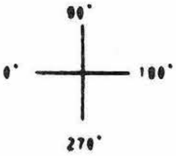
STRATIFICATION = NEUTRAL

BREAKWATER HEIGHT = NORMAL HT

TRAVERSE LOCATION

x = 0.

y = 563.

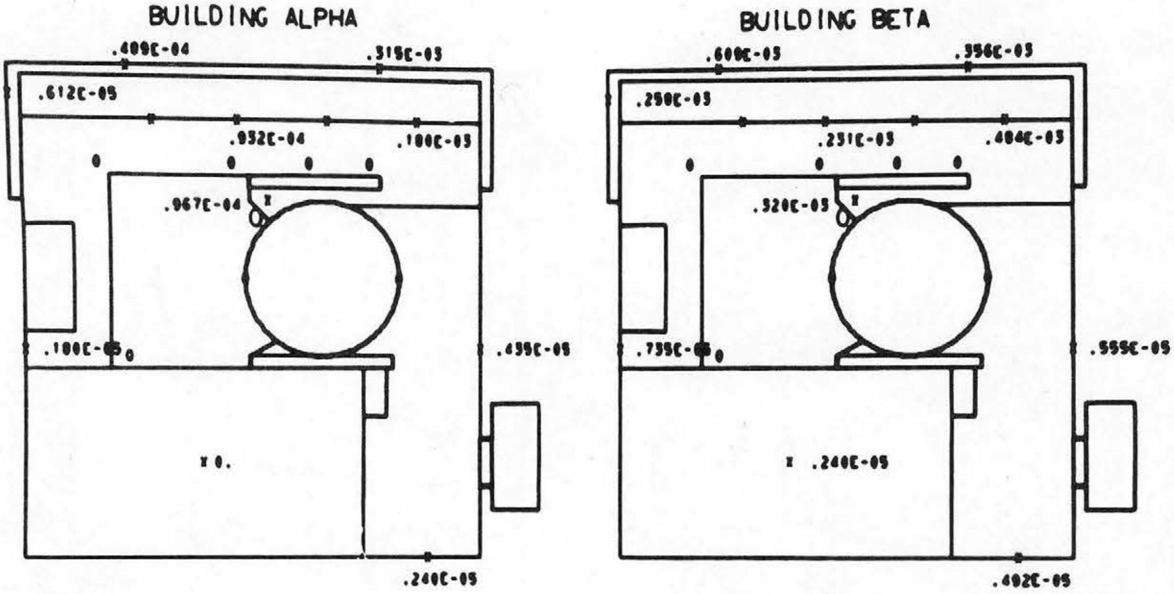


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

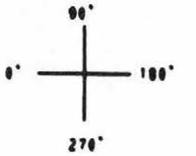
RAKE HEIGHT (FT)	VALUE
25.	.363E-03
85.	.100E-02
140.	.155E-02
230.	.171E-03
350.	.164E-04

Fig. B-37



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 270. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .60
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -244.
Y = 501.

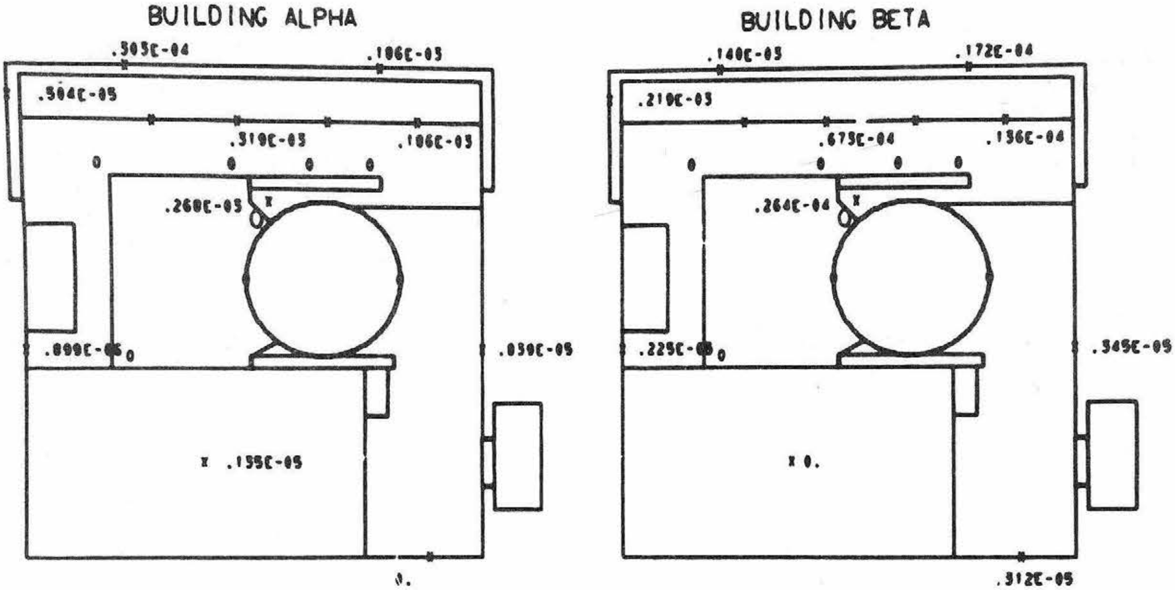


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

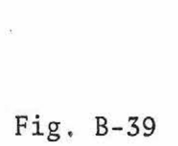
RAKE HEIGHT (FT)	VALUE
25.	.920E-03
85.	.140E-02
140.	.192E-02
250.	.819E-04
350.	.100E-04

Fig. B-38



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 270. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .60
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 244.
Y = 600.

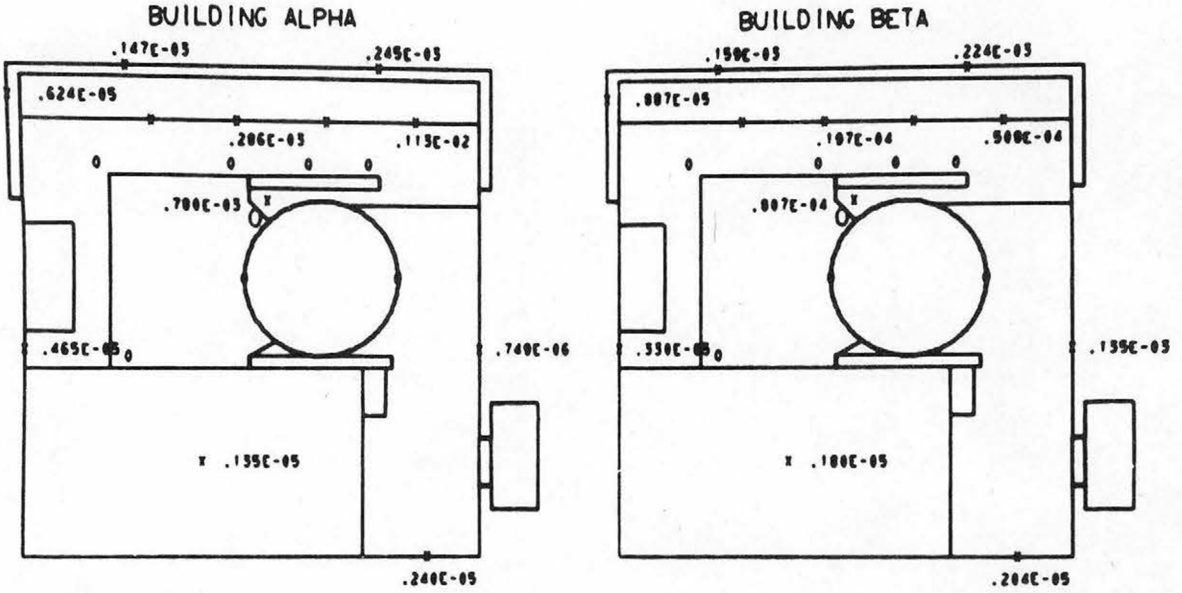


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

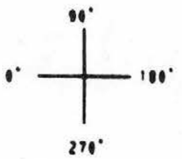
RAKE HEIGHT (FT)	VALUE
25.	.105E-02
85.	.200E-02
140.	.175E-02
230.	.442E-04
350.	.155E-04

Fig. B-39



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 315. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .60
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -57.
Y = 600.

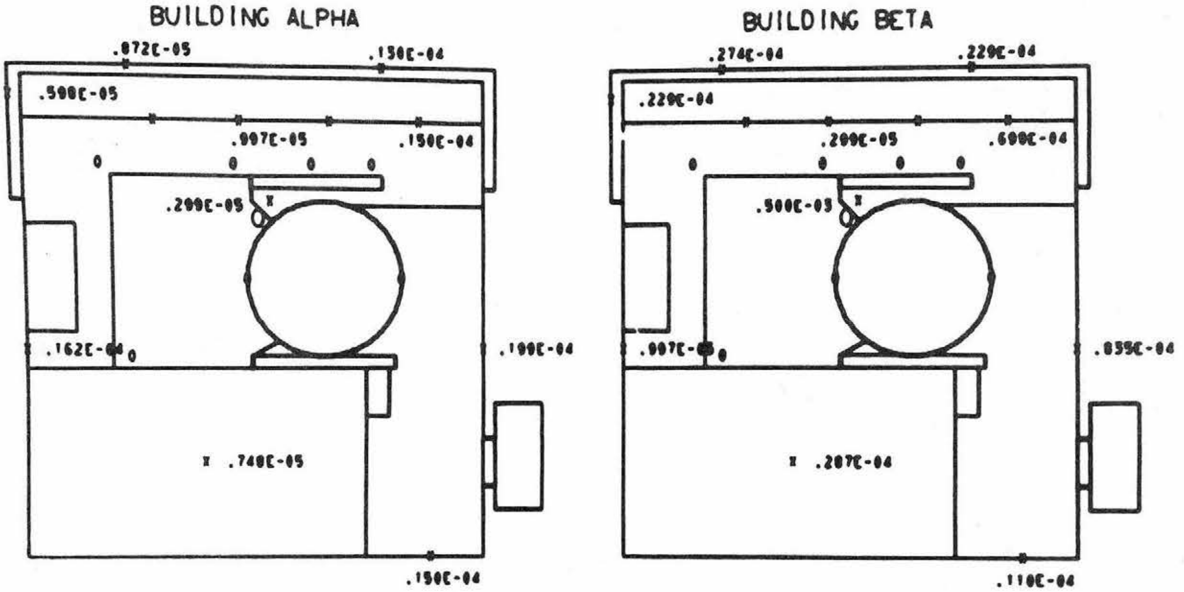


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

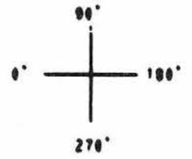
RAKE HEIGHT (FT)	VALUE
25.	.174E-03
85.	.890E-03
140.	.567E-03
230.	.135E-03
350.	.205E-04

Fig. B-40



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -70.
Y = -60.

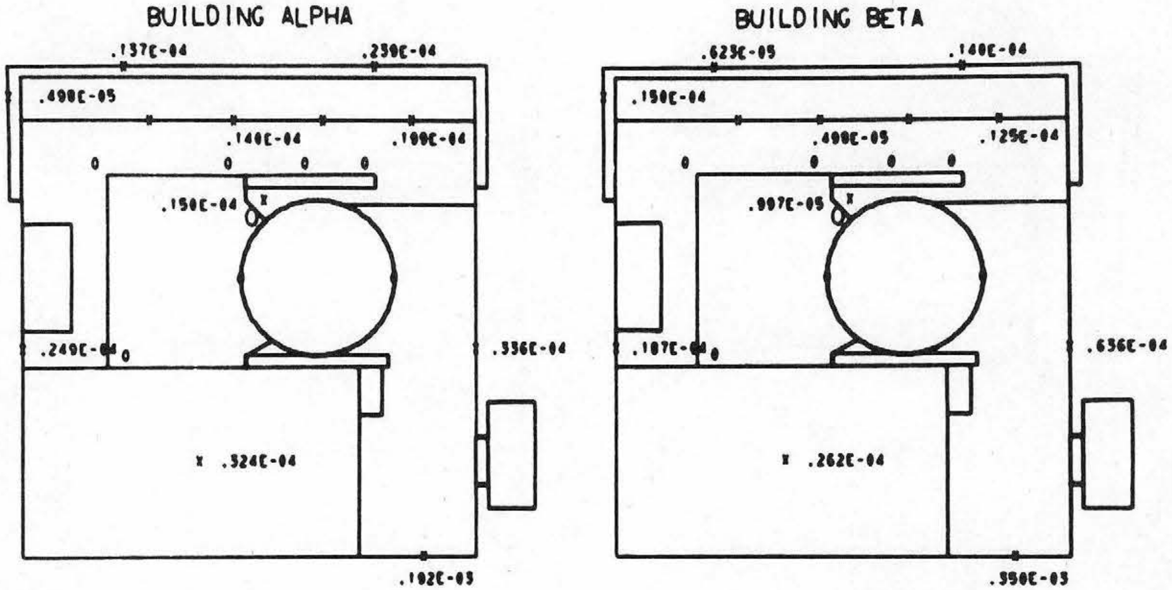


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

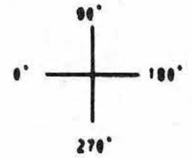
RAKE HEIGHT (FT)	VALUE
25.	.650E-04
85.	.405E-03
140.	.475E-03
250.	.201E-01
350.	.150E-04

Fig. B-41



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 45. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -154.
Y = -154.

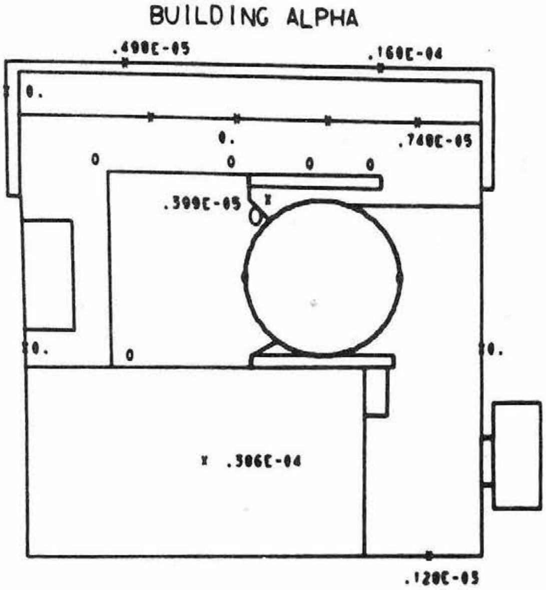


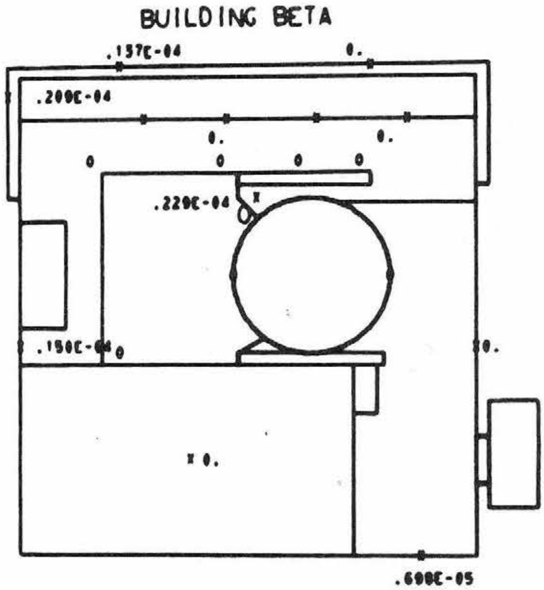
CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.506E-03
85.	.110E-02
140.	.690E-03
250.	.212E-04
350.	.100E-04

Fig. B-42

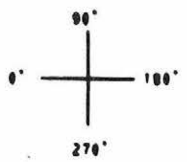




FLOATING NUCLEAR POWER PLANT

CONCENTRATIONS = XV/Q (METERS $^{-2}$)

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 251.
Y = -142.



TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.150E-03
85.	.600E-03
140.	.762E-03
250.	.997E-05
350.	0.

Fig. B-43

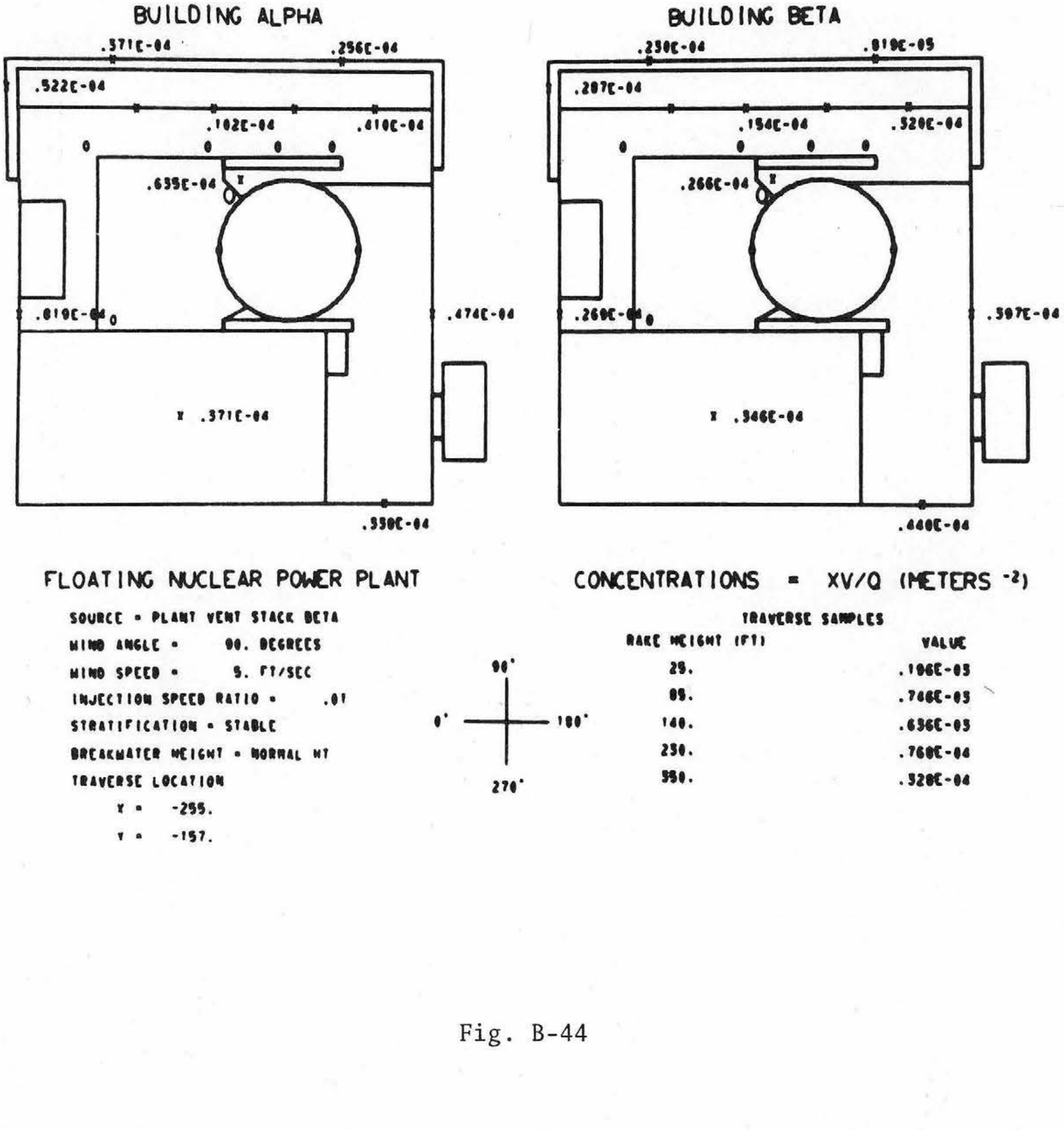
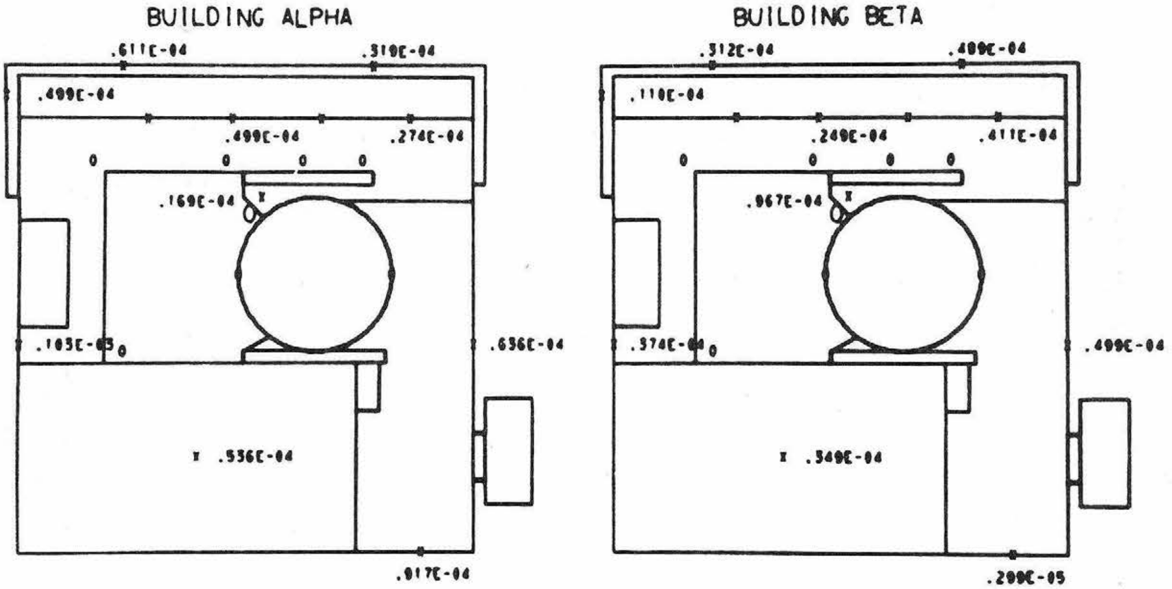
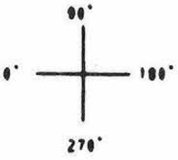

BUILDING ALPHA
.371E-04
.256E-04
.522E-04
.102E-04
.410E-04
.635E-04
.019E-04
.474E-04
.371E-04
.350E-04
BUILDING BETA
.230E-04
.019E-05
.287E-04
.154E-04
.520E-04
.266E-04
.260E-04
.507E-04
.346E-04
.440E-04
FLOATING NUCLEAR POWER PLANT
SOURCE = PLANT VENT STACK BETA
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -255.
Y = -157.
90°
0°
180°
270°
CONCENTRATIONS = XV/Q (METERS -2)
TRAVERSE SAMPLES
RAKE HEIGHT (FT)
VALUE
25.
.196E-03
85.
.746E-03
140.
.636E-03
230.
.760E-04
350.
.320E-04

Fig. B-44



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 155. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 169.
Y = -169.

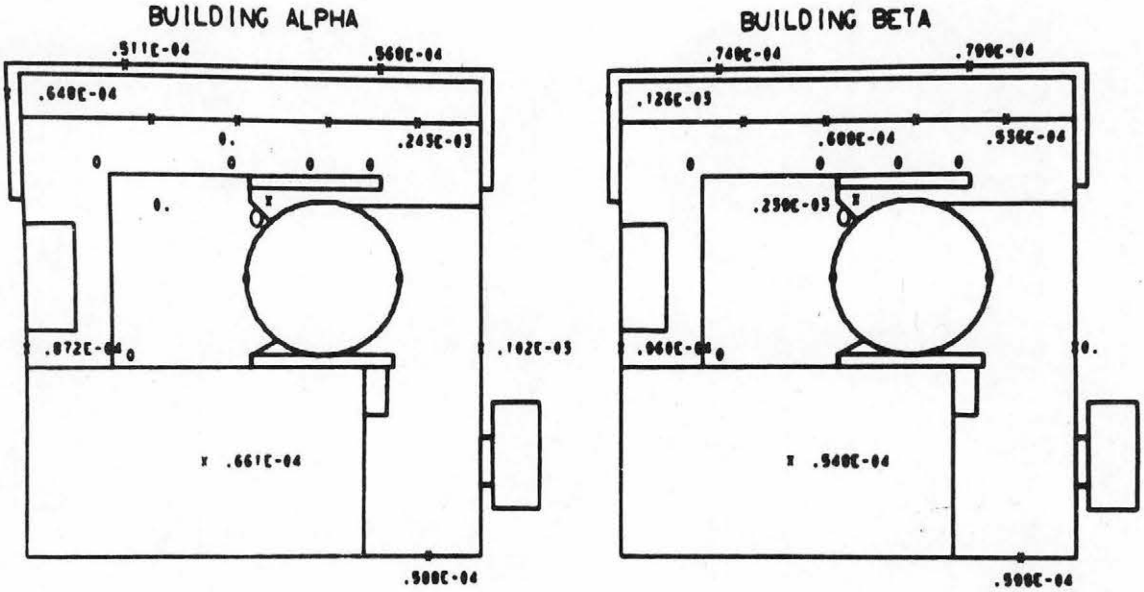


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

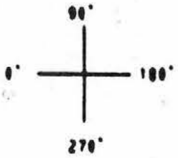
RAKE HEIGHT (FT)	VALUE
25.	.720E-04
85.	.194E-03
140.	.271E-03
250.	.350E-03
350.	.320E-04

Fig. B-45



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 180. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 574.
Y = 206.

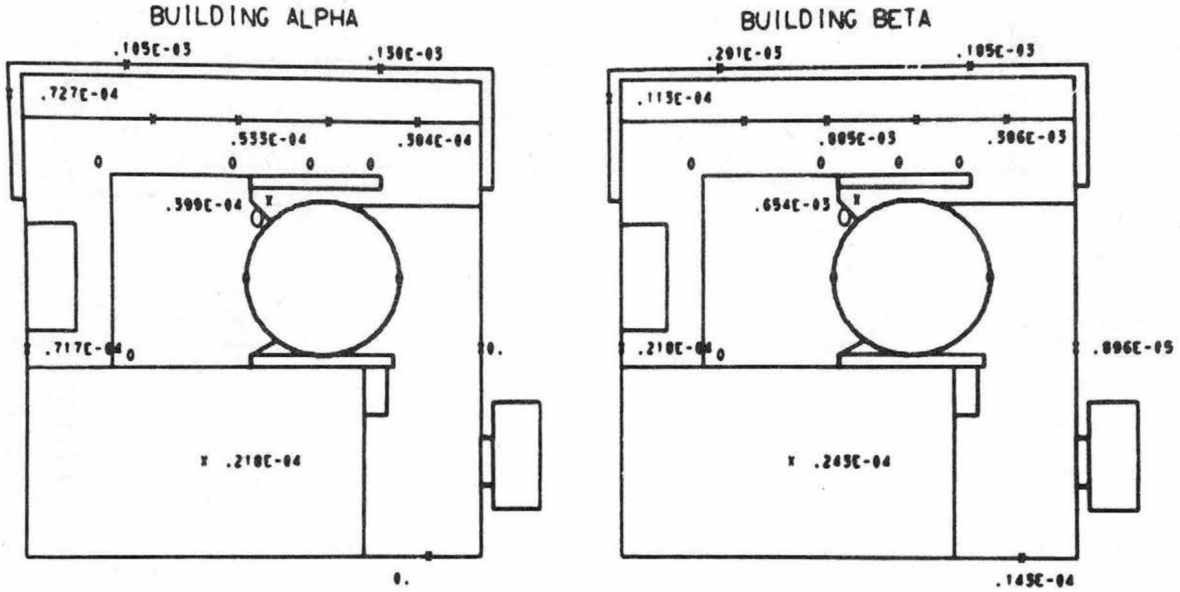


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

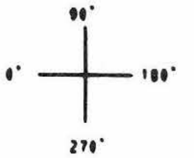
RAKE HEIGHT (FT)	VALUE
25.	0.
85.	.236E-03
140.	.225E-03
250.	.540E-04
350.	.550E-04

Fig. B-46



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 225. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 0.
Y = 521.



CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.207E-04
85.	.332E-03
140.	.409E-03
250.	.152E-03
350.	.154E-04

Fig. B-47

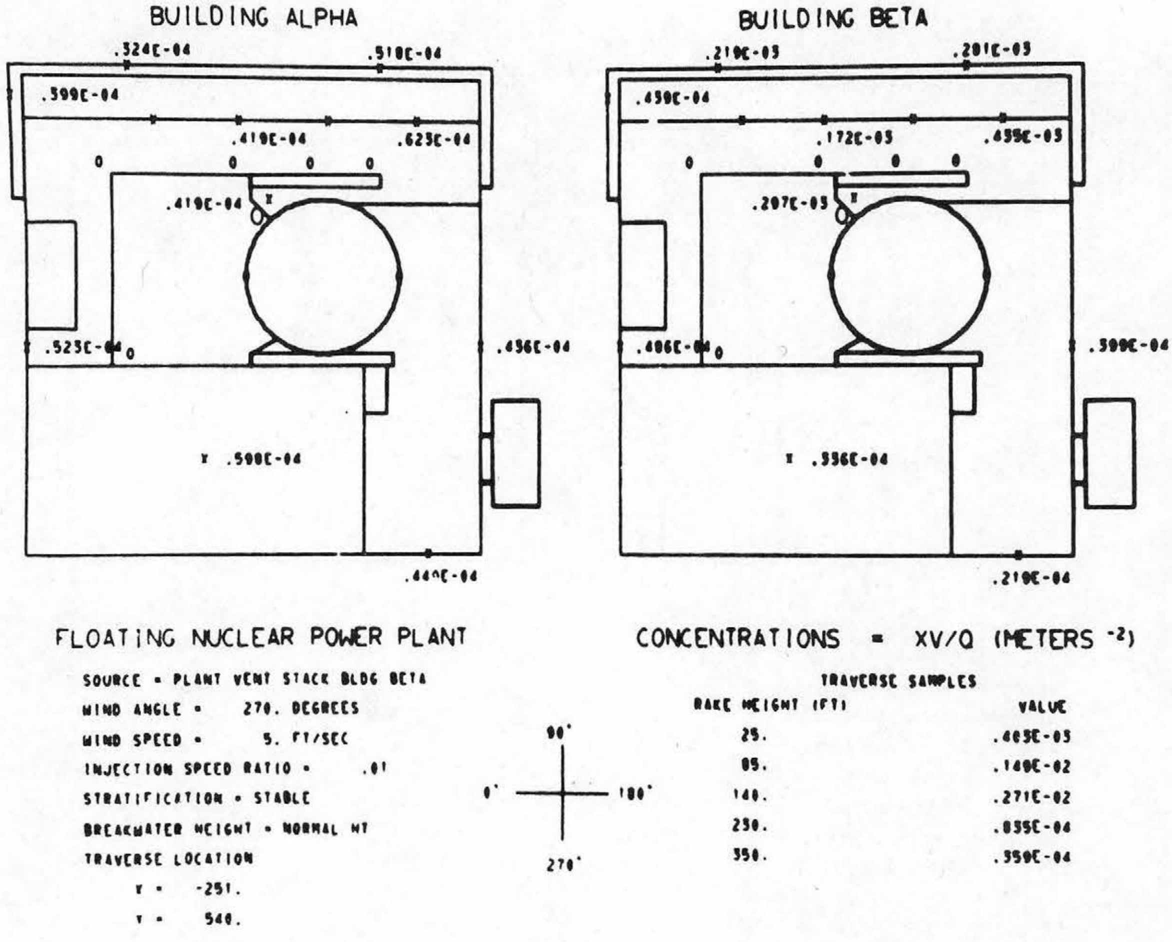
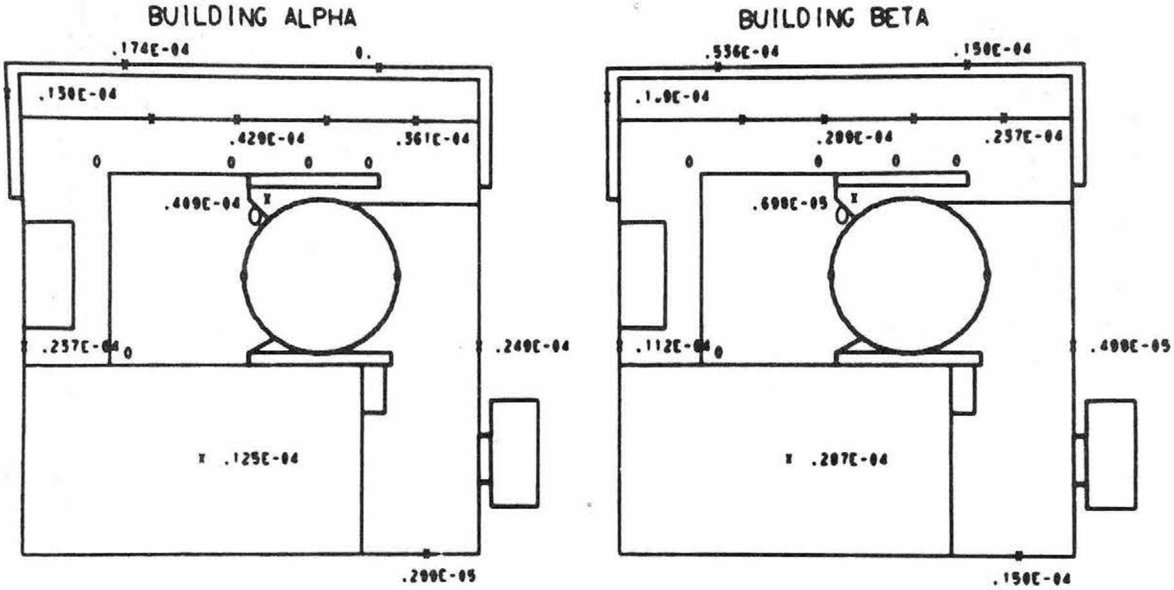

BUILDING ALPHA
.324E-04
.510E-04
.399E-04
.419E-04
.625E-04
.419E-04
.525E-04
.436E-04
.590E-04
.440E-04
BUILDING BETA
.219E-03
.201E-03
.459E-04
.172E-03
.455E-03
.207E-03
.406E-04
.390E-04
.356E-04
.219E-04
FLOATING NUCLEAR POWER PLANT
CONCENTRATIONS = XV/Q (METERS -2)
SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -251.
Y = 540.
90°
0°
180°
270°
TRAVERSE SAMPLES
RAKE HEIGHT (FT)
VALUE
25.
.403E-03
85.
.140E-02
140.
.271E-02
250.
.835E-04
350.
.350E-04

Fig. B-48



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA

WIND ANGLE = 270. DEGREES

WIND SPEED = 5. FT/SEC

INJECTION SPEED RATIO = .01

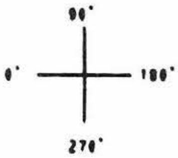
STRATIFICATION = STABLE

BREAKWATER HEIGHT = NORMAL HT

TRAVERSE LOCATION

X = 240.

Y = 540.

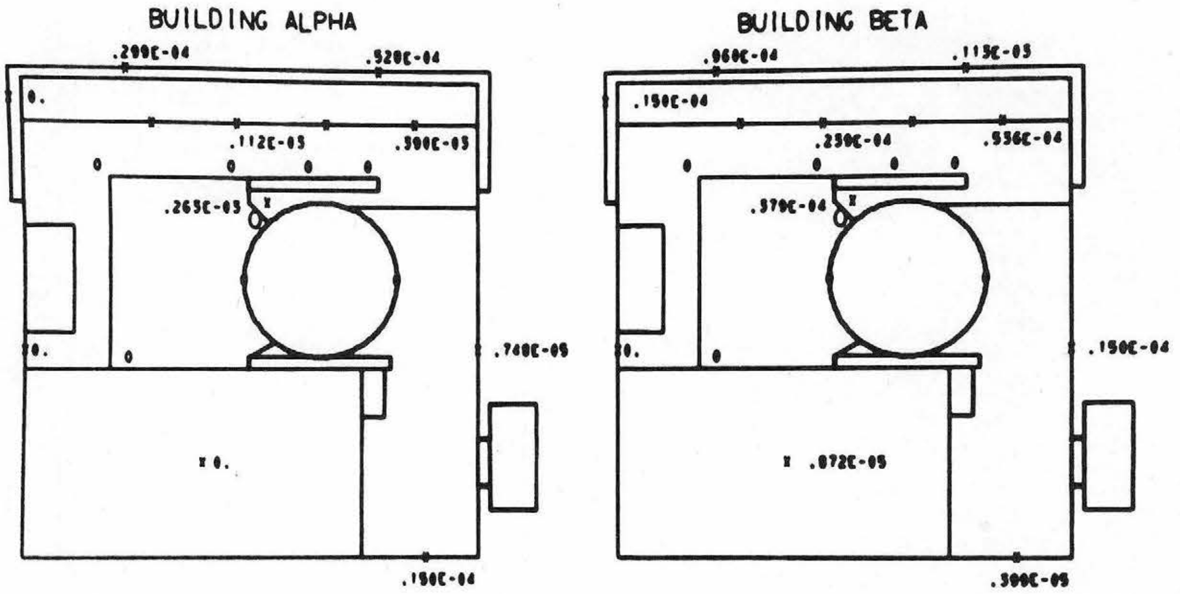


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

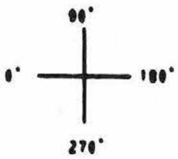
RAKE HEIGHT (FT)	VALUE
25.	.400E-04
85.	.204E-03
140.	.460E-03
230.	.224E-04
350.	.150E-04

Fig. B-49



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 315. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 0.
Y = 506.

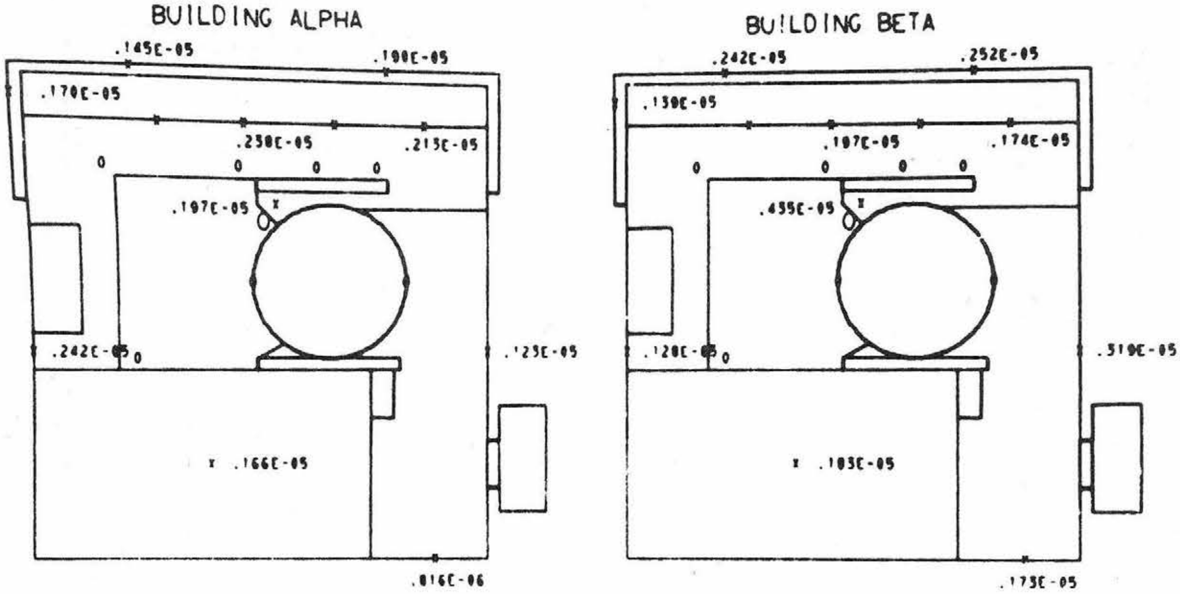


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

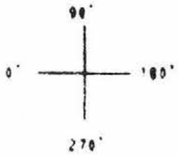
RAKE HEIGHT (FT)	VALUE
25.	.700E-05
05.	.775E-04
140.	.567E-03
250.	.735E-04
350.	.150E-04

Fig. B-50



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 3.00
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 1207.
Y = 251.

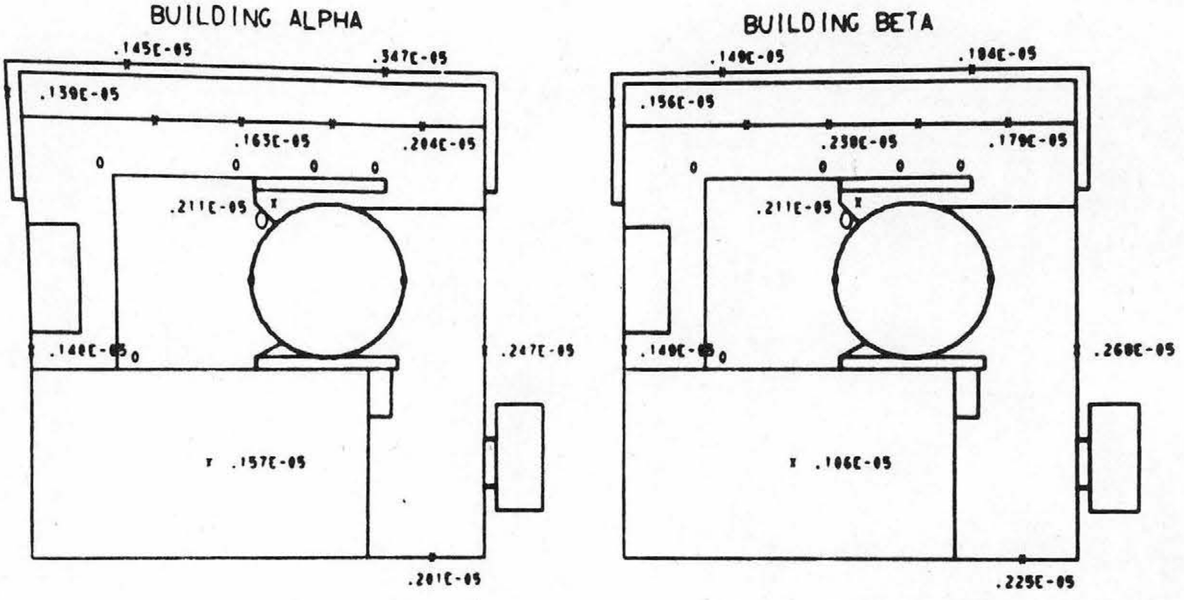


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.221E-05
85.	.301E-05
140.	.104E-04
250.	.100E-04
350.	.121E-05

Fig. B-51



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 45. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 3.00
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -154.
Y = -154.

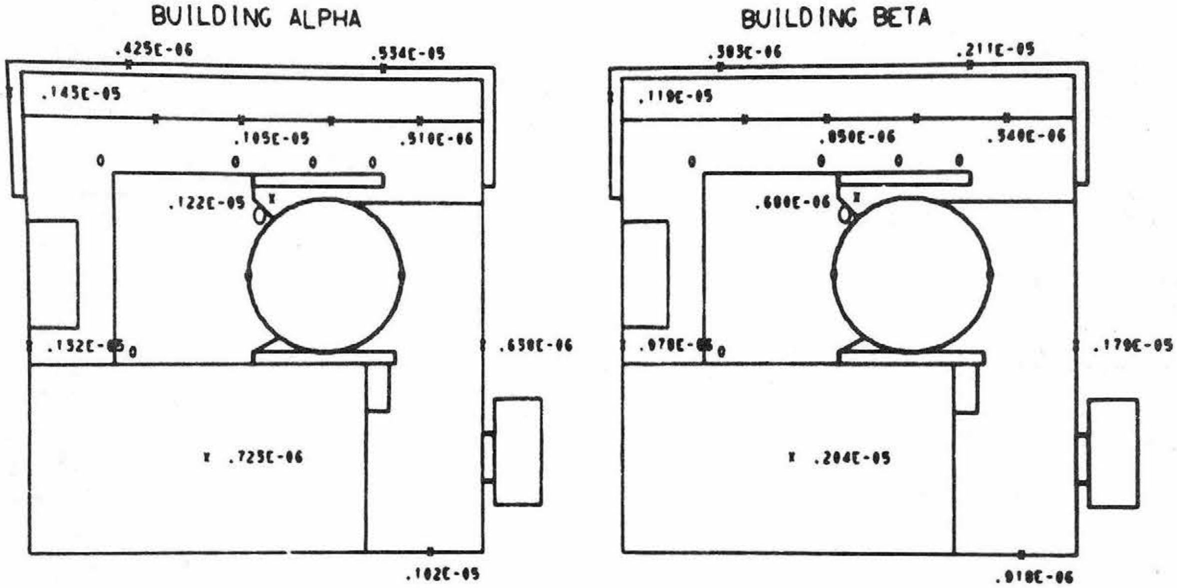
CONCENTRATIONS = XV/Q (METERS $^{-2}$)

90° 0° 180° 270°

TRAVERSE SAMPLES

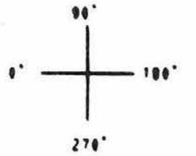
RAKE HEIGHT (FT)	VALUE
25.	.306E-05
85.	.170E-05
140.	.160E-05
230.	.157E-05
350.	.246E-05

Fig. B-52



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 3.00
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 251.
Y = -070.

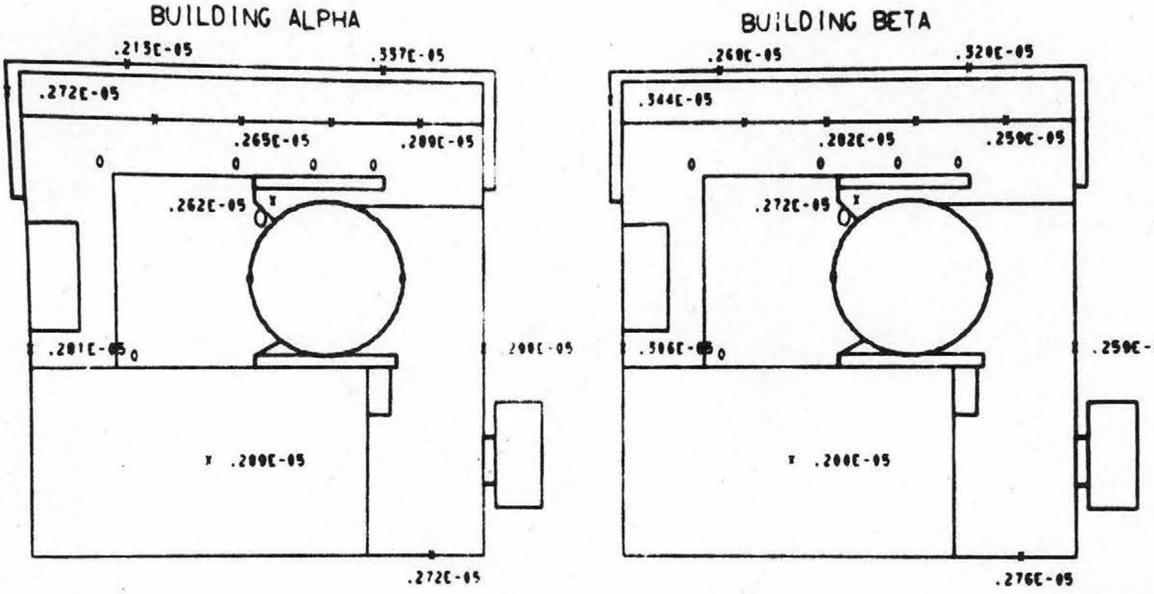


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.112E-05
85.	.850E-06
140.	.143E-05
230.	.140E-05
350.	.056E-03

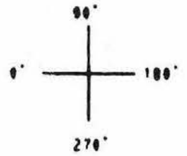
Fig. B-53



FLOATING NUCLEAR POWER PLANT

CONCENTRATIONS = XV/Q (METERS $^{-2}$)

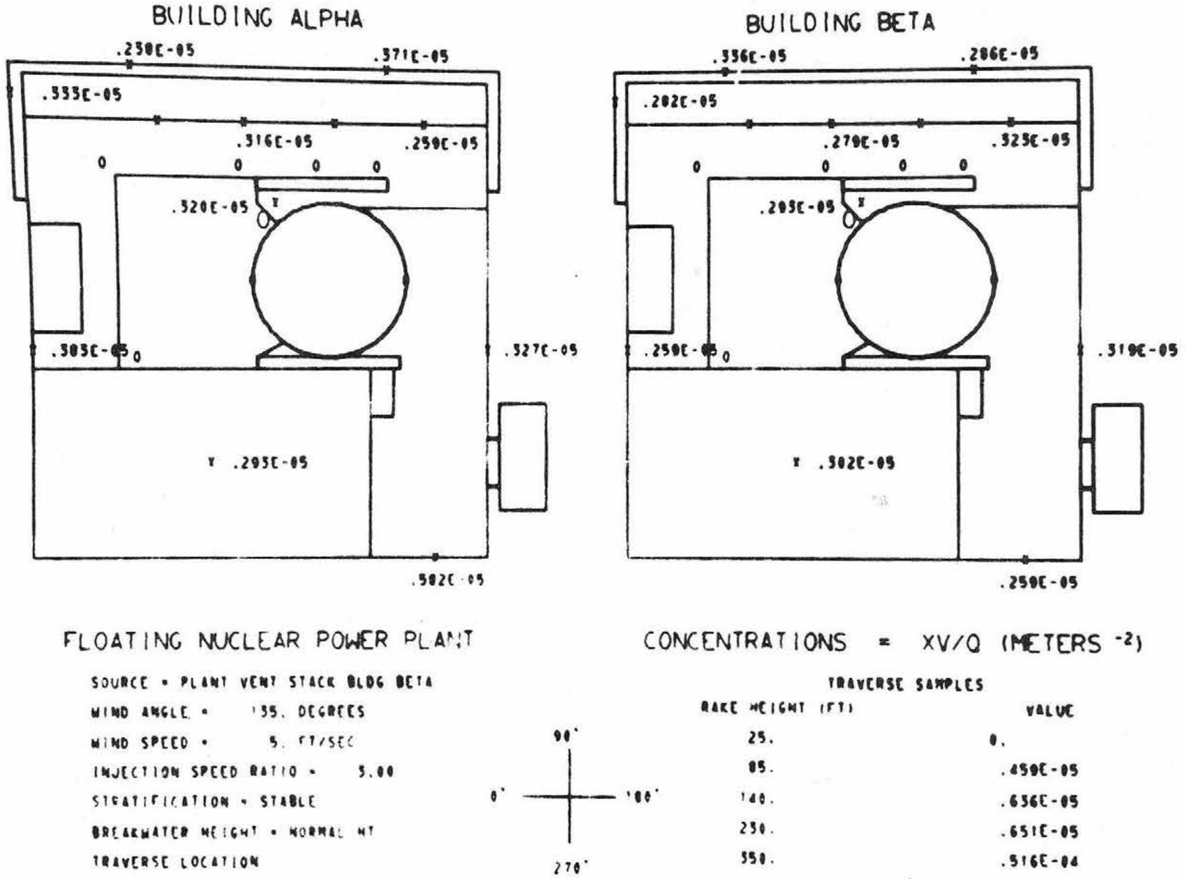
SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 3.00
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -370.
Y = 150.



TRAVERSE SAMPLES

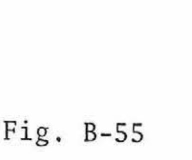
RAKE HEIGHT (FT)	VALUE
25.	.310E-05
85.	.510E-05
140.	.364E-05
250.	.501E-05
350.	.219E-04

Fig. B-54



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 135. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 5.00
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 150.
Y = -124.

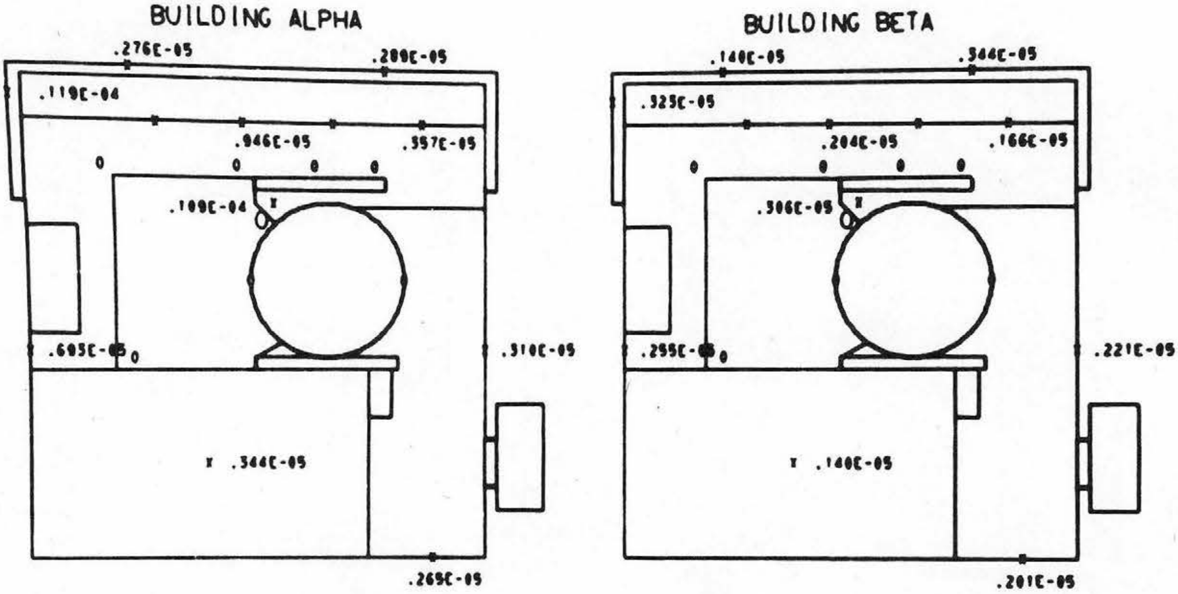


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

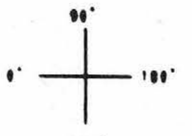
RAKE HEIGHT (FT)	VALUE
25.	0.
85.	.459E-05
140.	.636E-05
230.	.651E-05
350.	.516E-04

Fig. B-55



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 180. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 3.00
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 521.
Y = 274.

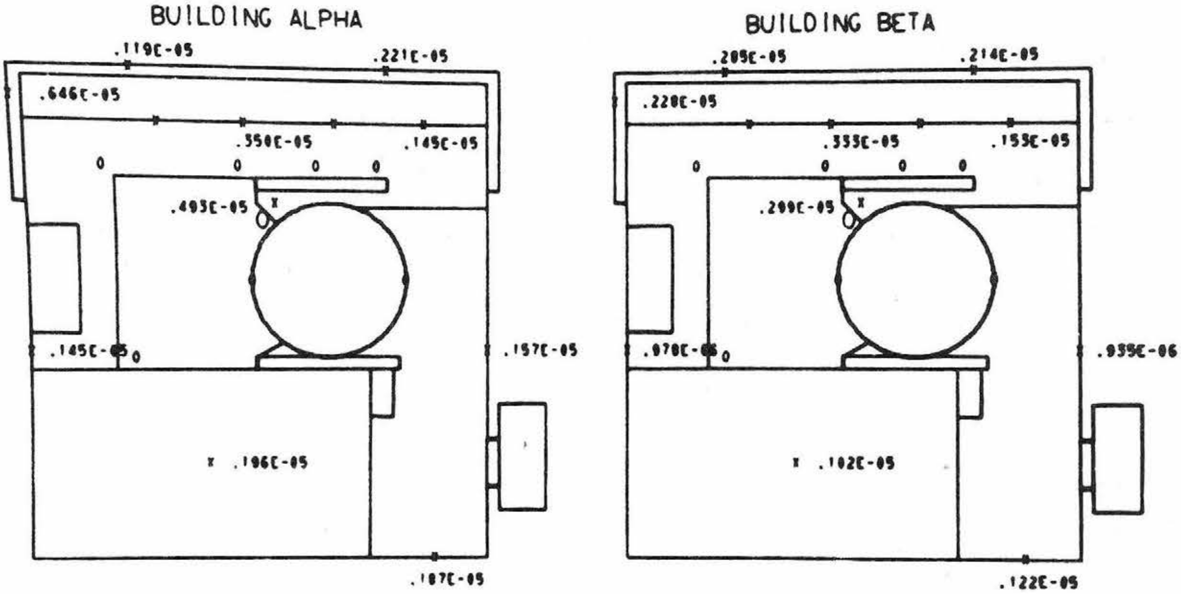


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

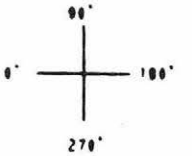
RAKE HEIGHT (FT)	VALUE
25.	.936E-05
85.	.102E-04
140.	.252E-04
250.	.319E-04
350.	.906E-04

Fig. B-56



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 225. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 3.00
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 127.
Y = 570.



CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.721E-05
85.	.137E-04
140.	.104E-04
250.	.103E-04
350.	.256E-04

Fig. B-57

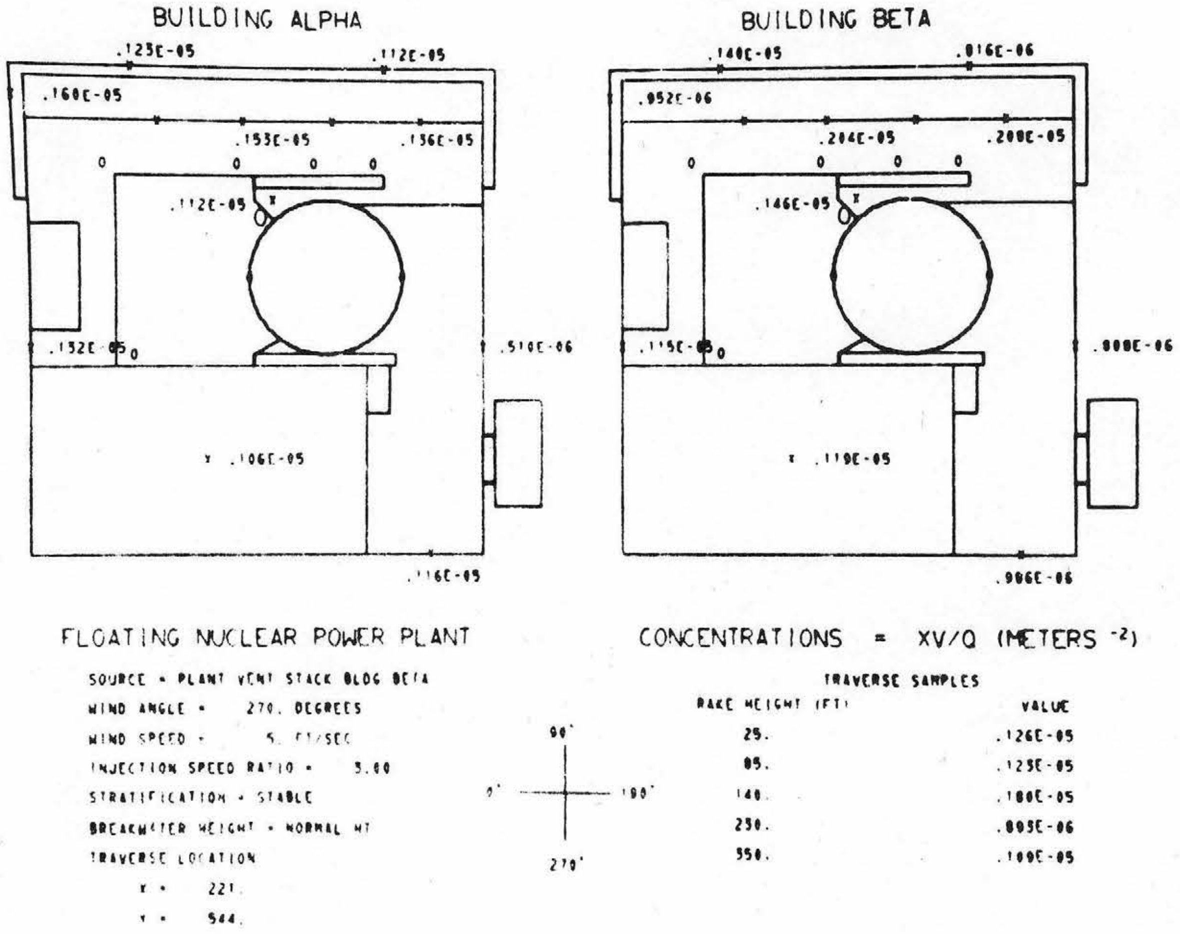

BUILDING ALPHA
.125E-05
.112E-05
.160E-05
.153E-05
.136E-05
.112E-05
.132E-05
.510E-06
.106E-05
BUILDING BETA
.140E-05
.952E-06
.204E-05
.200E-05
.146E-05
.906E-06
FLOATING NUCLEAR POWER PLANT
SOURCE = PLANT VENT STACK BLDG BETA
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 3.00
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 221.
Y = 544.
90°
0°
180°
270°
CONCENTRATIONS = XV/Q (METERS -2)
TRAVERSE SAMPLES
RAKE HEIGHT (FT) VALUE
25. .126E-05
85. .125E-05
140. .180E-05
250. .895E-06
550. .109E-05

Fig. B-58

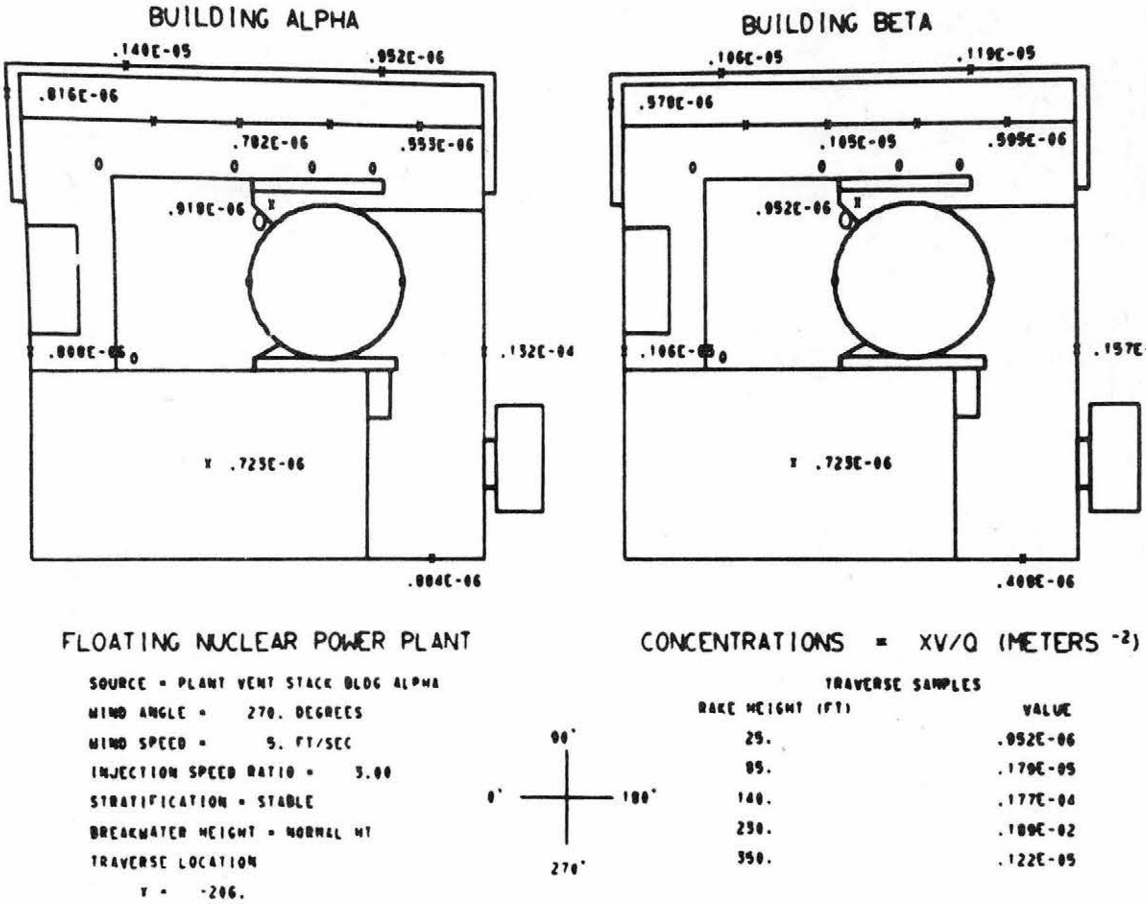
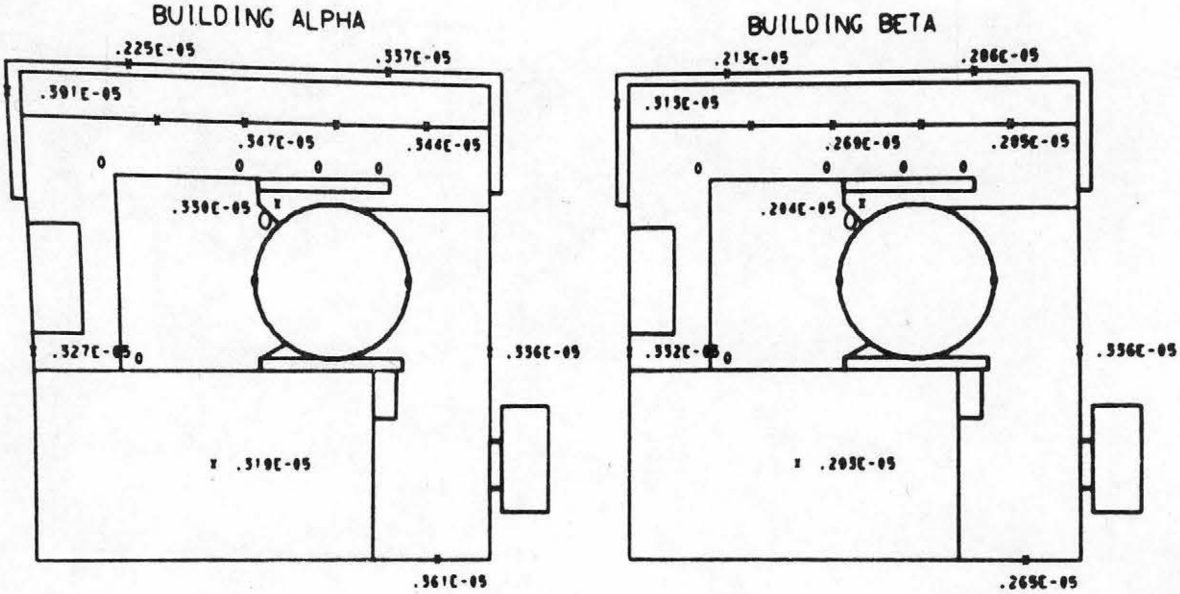
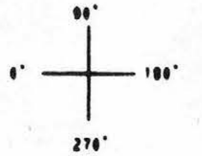

BUILDING ALPHA
.140E-05
.952E-06
.816E-06
.702E-06
.553E-06
0
0
0
0
.918E-06
.000E-05
0
.132E-04
x .725E-06
.004E-06
BUILDING BETA
.106E-05
.119E-05
.570E-06
.105E-05
.595E-06
0
0
0
0
.952E-06
.106E-05
0
.157E-05
x .723E-06
.408E-06
FLOATING NUCLEAR POWER PLANT
SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 3.00
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -206.
Y = 556.
90°
0°
180°
270°
CONCENTRATIONS = XV/Q (METERS -2)
TRAVERSE SAMPLES
RAKE HEIGHT (FT)
VALUE
25. .952E-06
85. .179E-05
140. .177E-04
250. .109E-02
350. .122E-05

Fig. B-59



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA
WIND ANGLE = 315. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 3.00
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 0.
Y = 506.

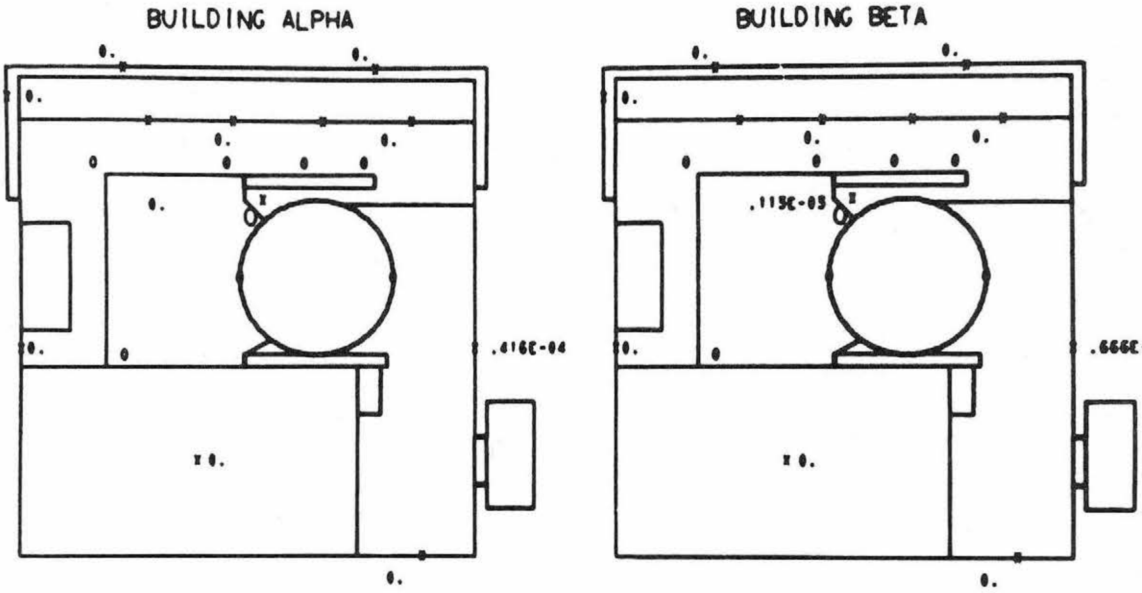


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

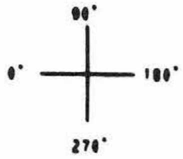
RAKE HEIGHT (FT)	VALUE
25.	.211E-05
85.	.355E-05
140.	.354E-05
250.	.276E-05
350.	.100E-04

Fig. B-60



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA TL
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -506.
Y = 500.

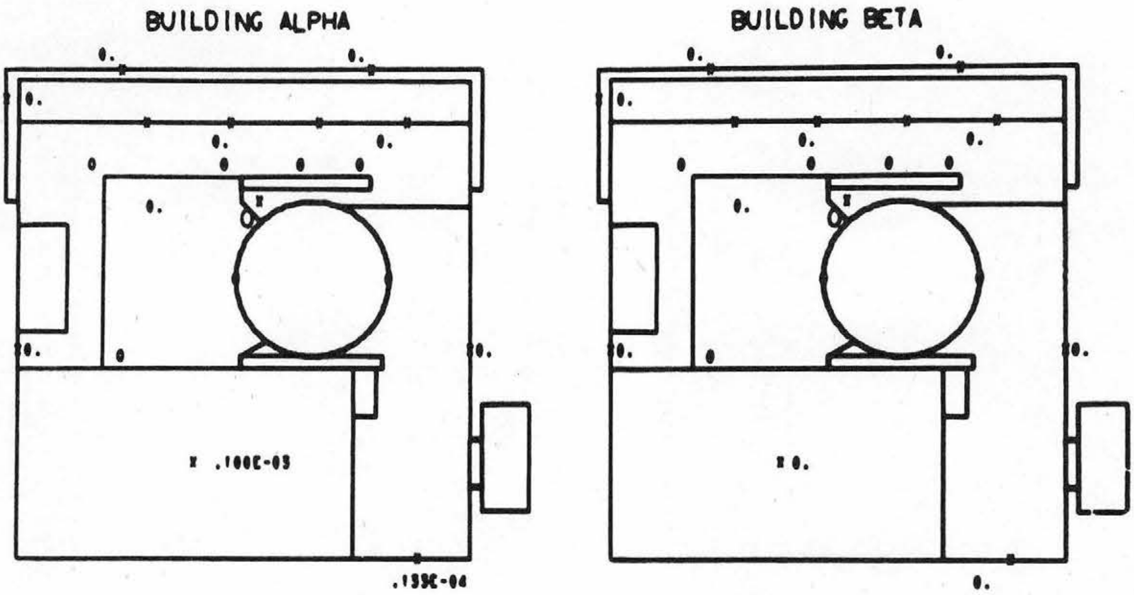


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

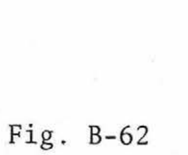
RAKE HEIGHT (FT)	VALUE
25.	.466E-04
85.	.750E-04
140.	.255E-03
250.	.741E-03
350.	0.

Fig. B-61



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA TL
WIND ANGLE = 45. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -94.
Y = -94.

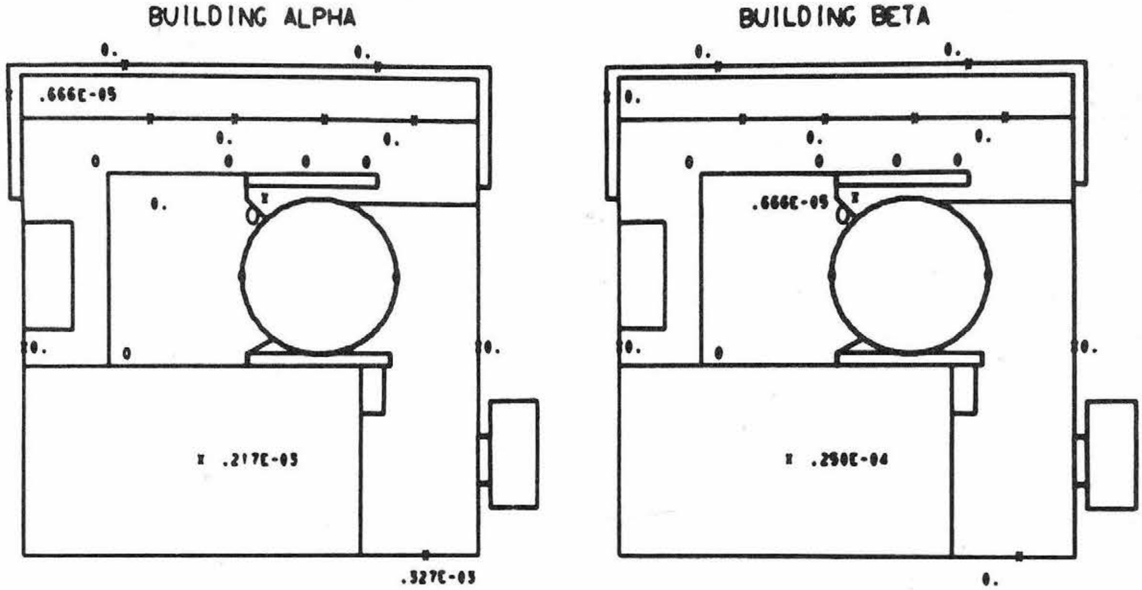


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

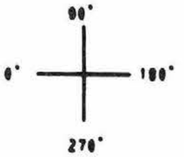
RAKE HEIGHT (FT)	VALUE
25.	0.
85.	.200E-03
140.	.647E-03
230.	.950E-03
350.	0.

Fig. B-62



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA TL
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 225.
Y = -131.



CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	0.
85.	.500E-03
140.	.555E-03
250.	.125E-03
350.	0.

Fig. B-63

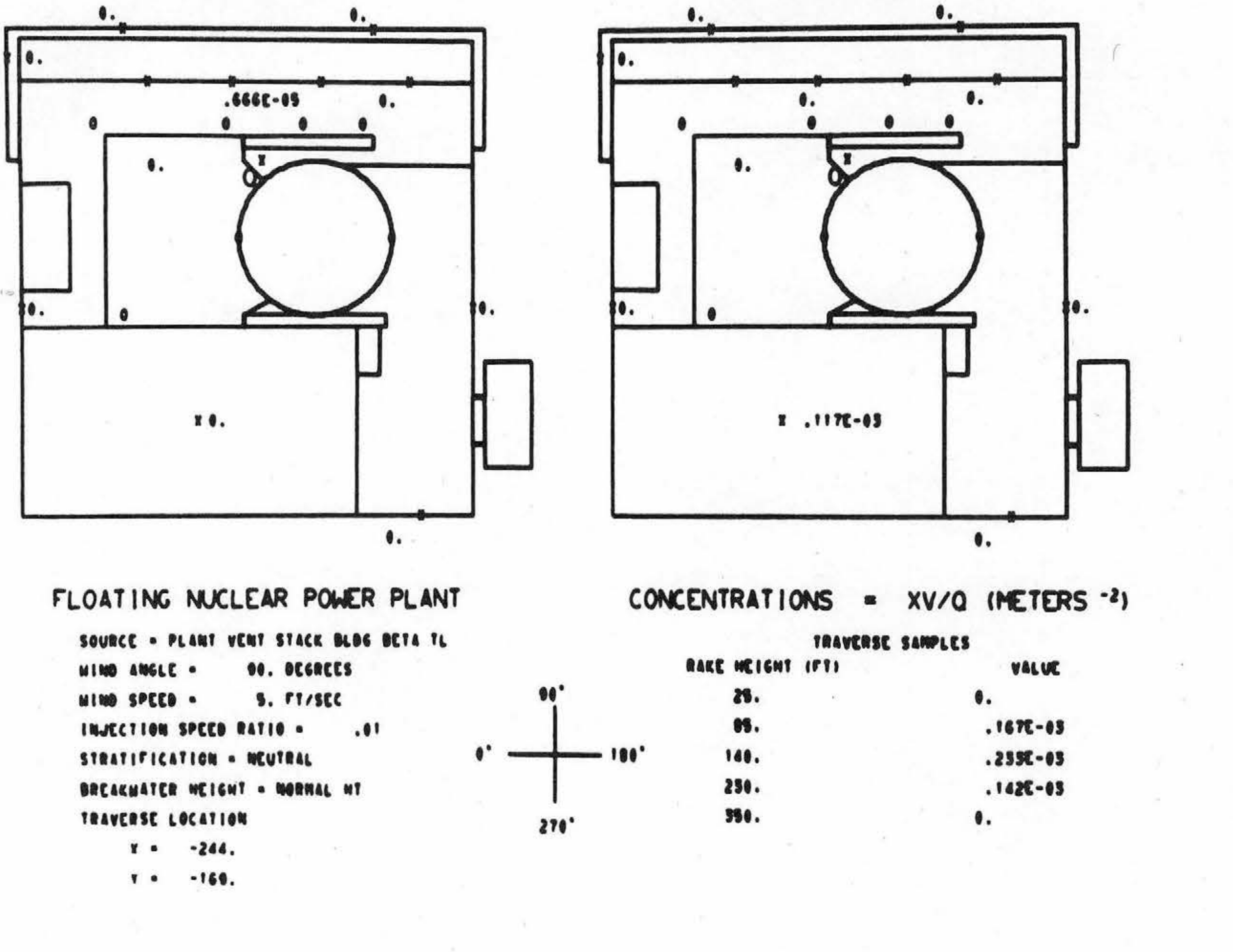
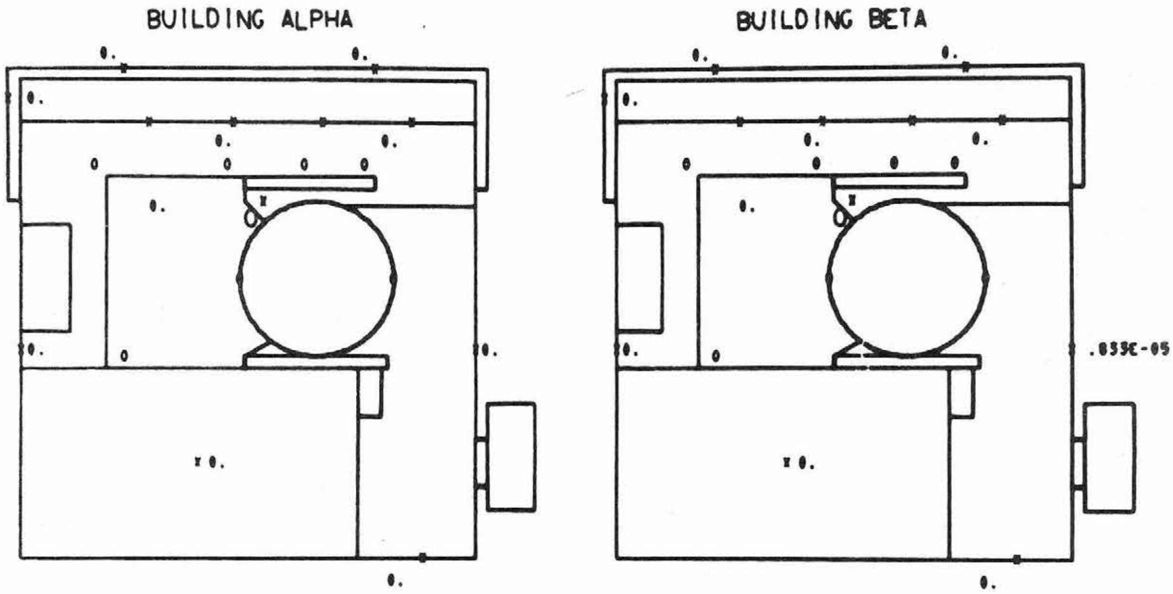
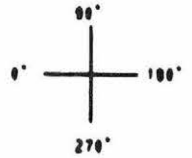

BUILDING ALPHA
BUILDING BETA
.666E-05
X 0.
X .117E-03
FLOATING NUCLEAR POWER PLANT
SOURCE = PLANT VENT STACK BLDG BETA TL
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -244.
Y = -160.
90°
0°
180°
270°
CONCENTRATIONS = XV/Q (METERS -2)
TRAVERSE SAMPLES
RAKE HEIGHT (FT) VALUE
25. 0.
85. .167E-03
140. .235E-03
250. .142E-03
350. 0.

Fig. B-64



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA TL
WIND ANGLE = 135. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 263.
Y = -206.



CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

WAKE HEIGHT (FT)	VALUE
25.	0.
85.	.416E-04
140.	.155E-03
230.	.750E-04
350.	0.

Fig. B-65

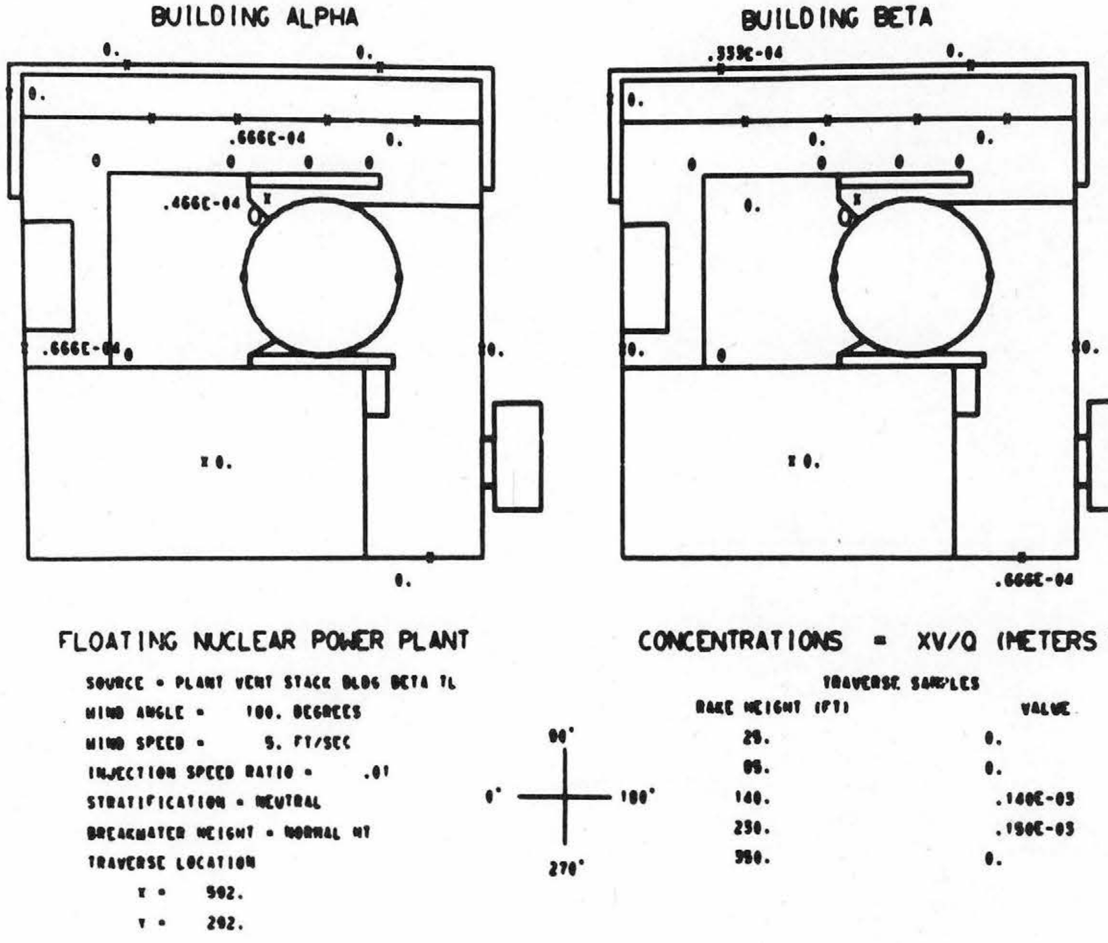
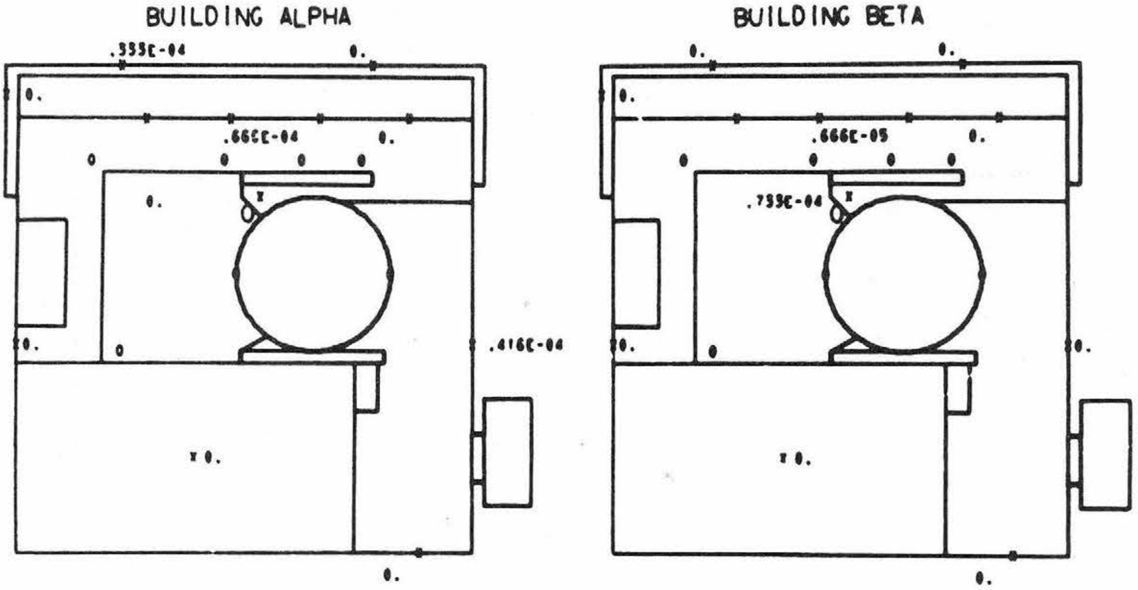
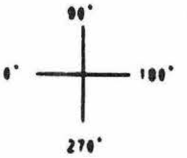

BUILDING ALPHA
0.
0.
0.
.666E-04
0.
.466E-04
.666E-04
0.
0.
0.
BUILDING BETA
.333E-04
0.
0.
0.
0.
0.
0.
0.
0.
.666E-04
FLOATING NUCLEAR POWER PLANT
SOURCE = PLANT VENT STACK BLDG BETA TL
WIND ANGLE = 180. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 592.
Y = 292.
90°
0°
180°
270°
CONCENTRATIONS = XV/Q (METERS -2)
TRAVERSE SAMPLES
RAKE HEIGHT (FT)
VALUE
25.
0.
85.
0.
140.
.140E-03
250.
.150E-03
350.
0.

Fig. B-66



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA TL
WIND ANGLE = 225. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 56.
Y = 600.

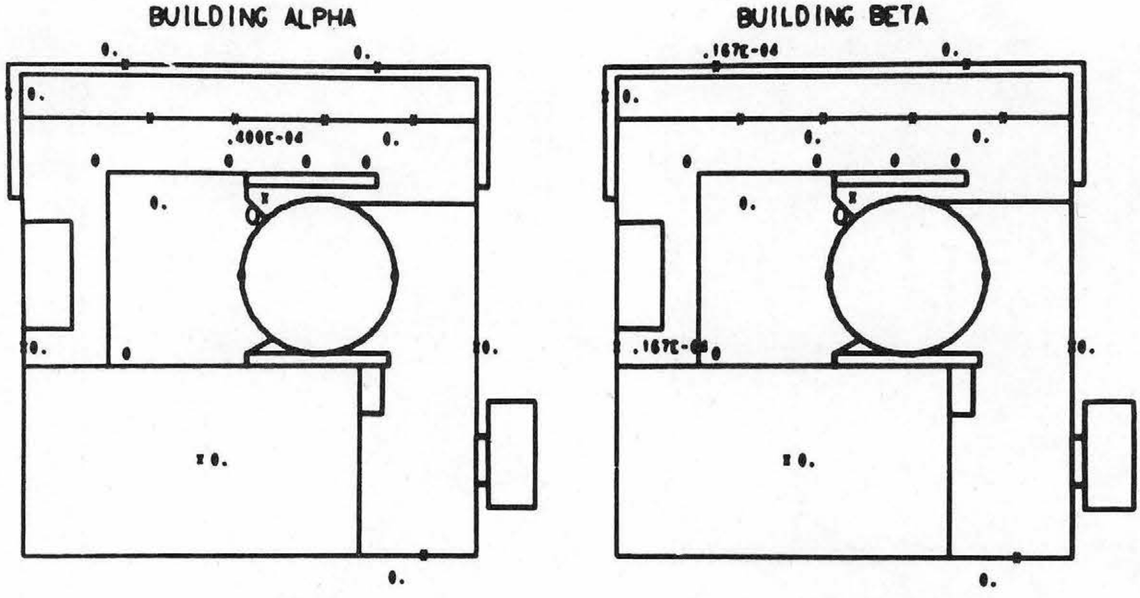


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

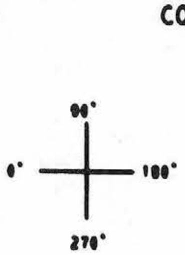
RAKE HEIGHT (FT)	VALUE
25.	0.
85.	0.
140.	.260E-03
230.	.300E-03
350.	0.

Fig. B-67



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA TL
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -244.
Y = 544.

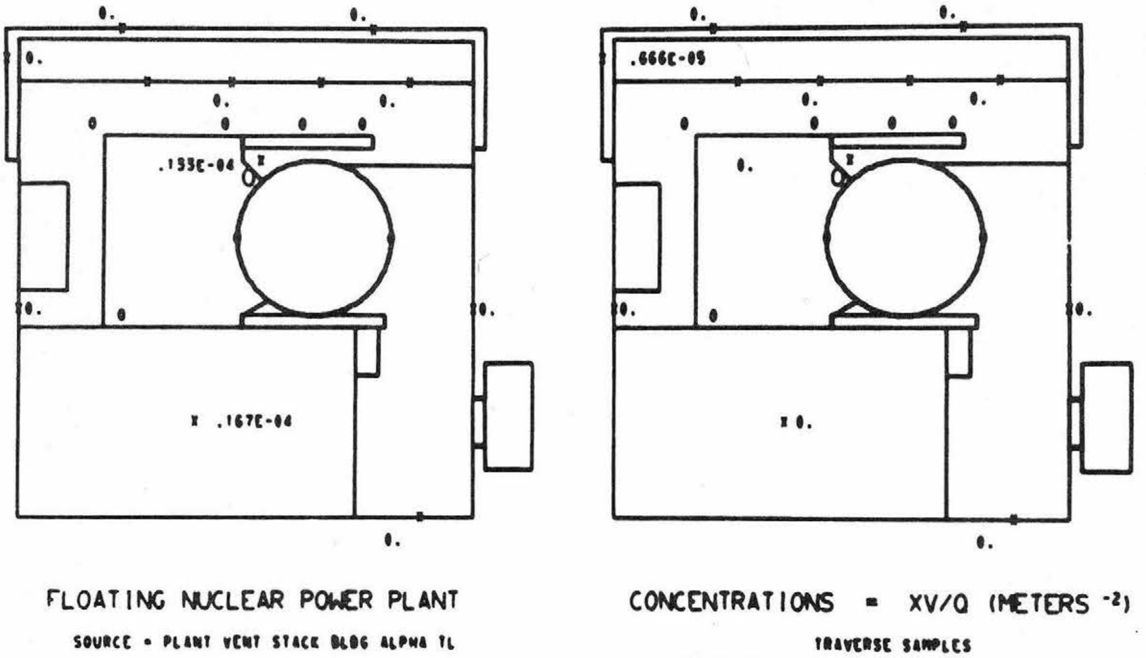


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

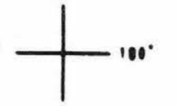
RAKE HEIGHT (FT)	VALUE
25.	0.
85.	0.
140.	.866E-04
250.	.891E-03
350.	0.

Fig. B-68



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA TL
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 263.
Y = 544.

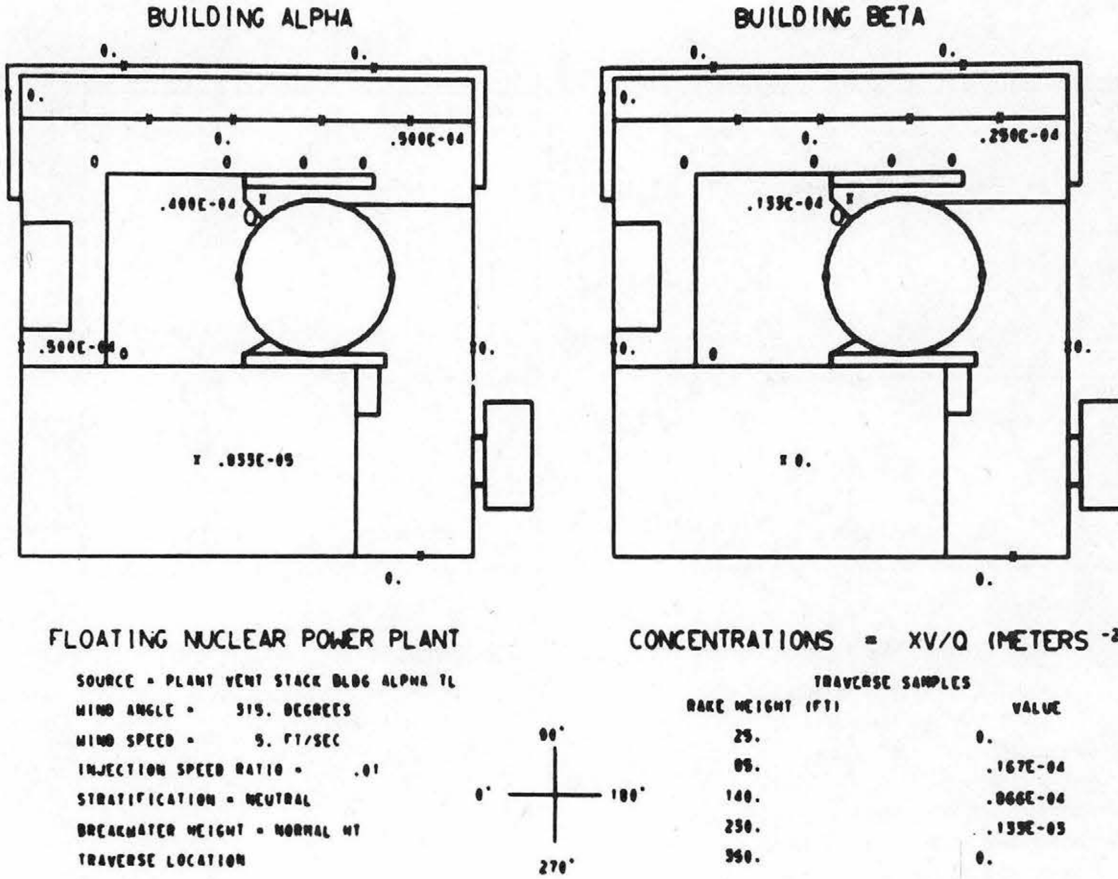


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

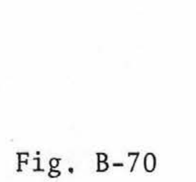
RAKE HEIGHT (FT)	VALUE
25.	0.
85.	.666E-04
140.	.353E-05
230.	.202E-03
350.	.400E-04

Fig. B-69



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA TL
WIND ANGLE = 315. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 56.
Y = 581.

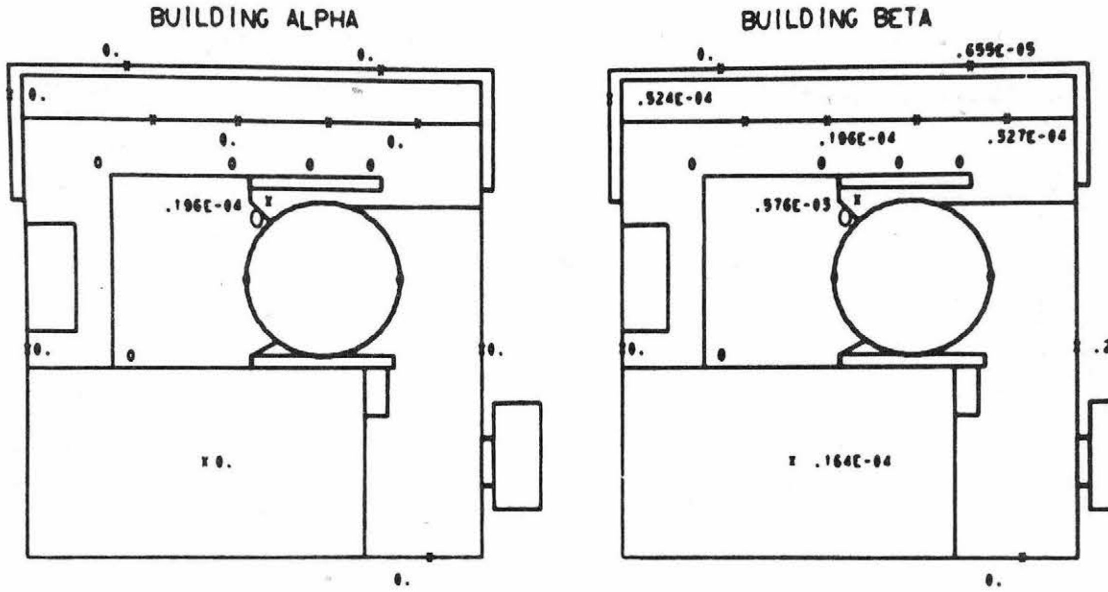


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

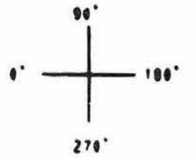
RAKE HEIGHT (FT)	VALUE
25.	0.
85.	.167E-04
140.	.866E-04
250.	.135E-05
350.	0.

Fig. B-70



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA TL
WIND ANGLE = 0. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .002
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -600.
Y = 300.

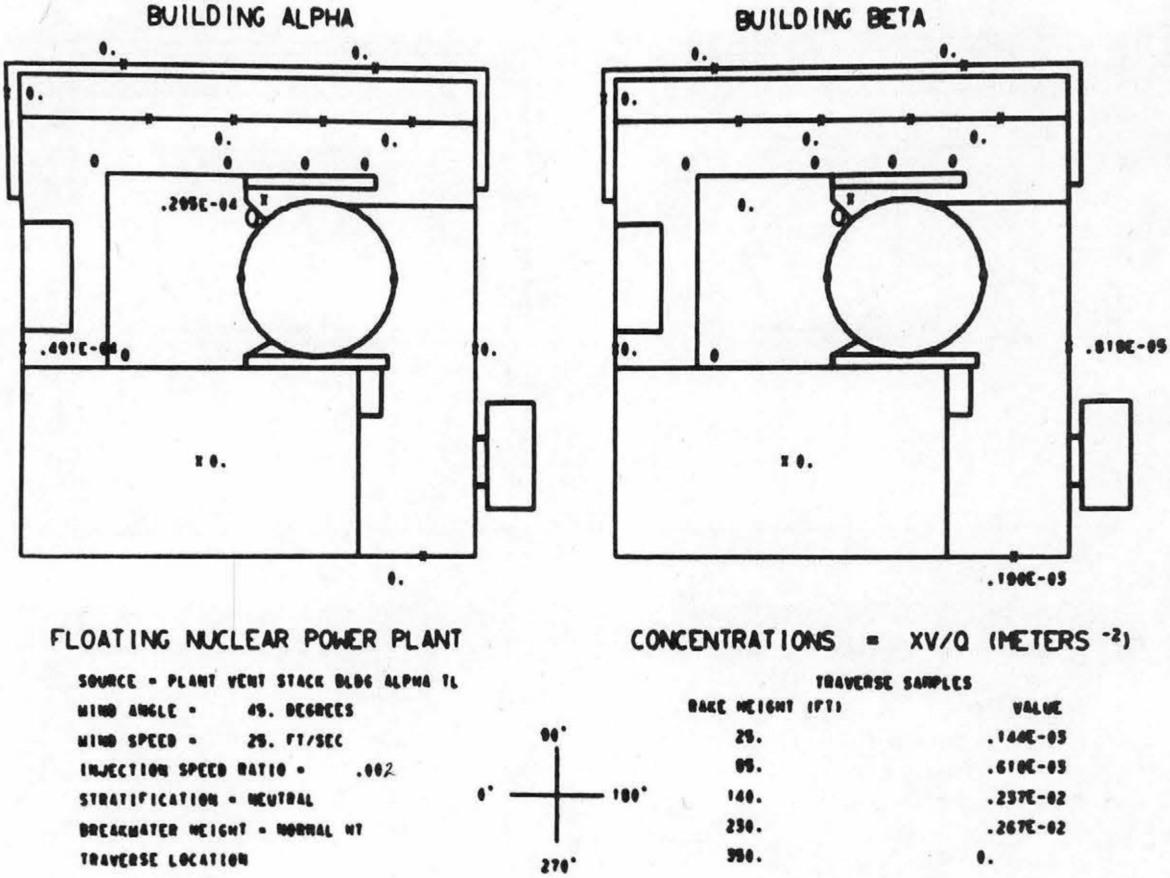


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

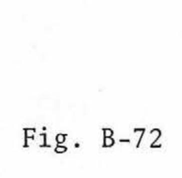
RAKE HEIGHT (FT)	VALUE
25.	.706E-04
85.	.180E-02
140.	.179E-02
250.	.151E-02
350.	.164E-04

Fig. B-71



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA TL
WIND ANGLE = 45. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .002
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -170.
Y = -170.

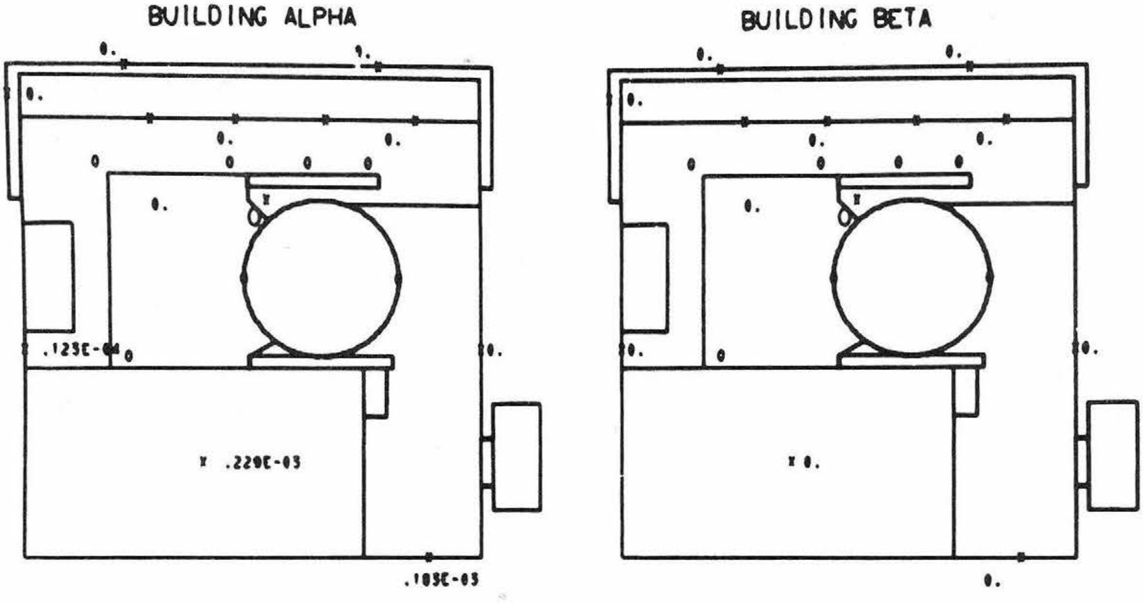


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

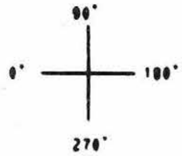
RAKE HEIGHT (FT)	VALUE
25.	.144E-03
85.	.610E-03
140.	.237E-02
230.	.267E-02
350.	0.

Fig. B-72



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA TL
WIND ANGLE = 90. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .002
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 244.
Y = -150.

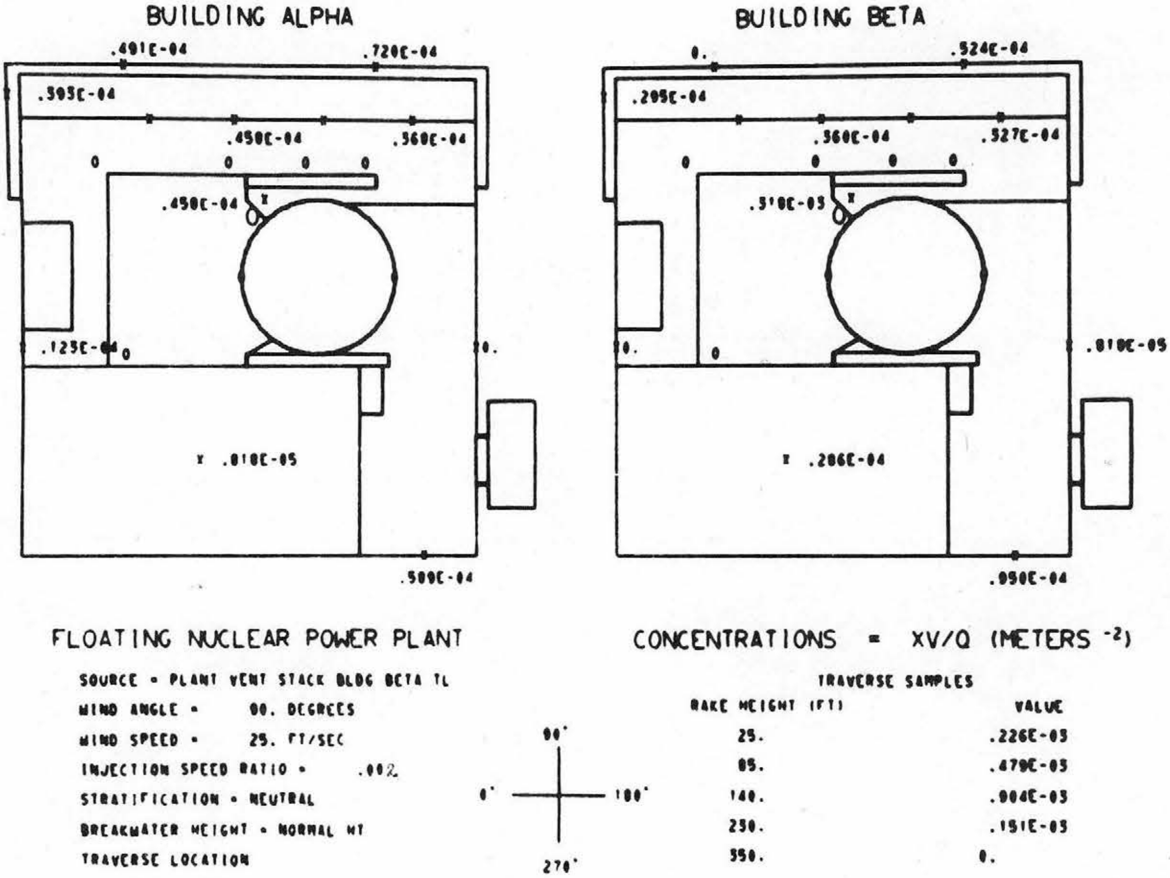


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

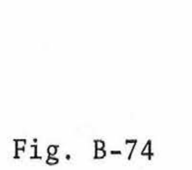
RAKE HEIGHT (FT)	VALUE
25.	.500E-03
85.	.134E-02
140.	.270E-02
250.	.155E-02
350.	.360E-04

Fig. B-73



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA TL
WIND ANGLE = 90. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .002
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -201.
Y = -150.

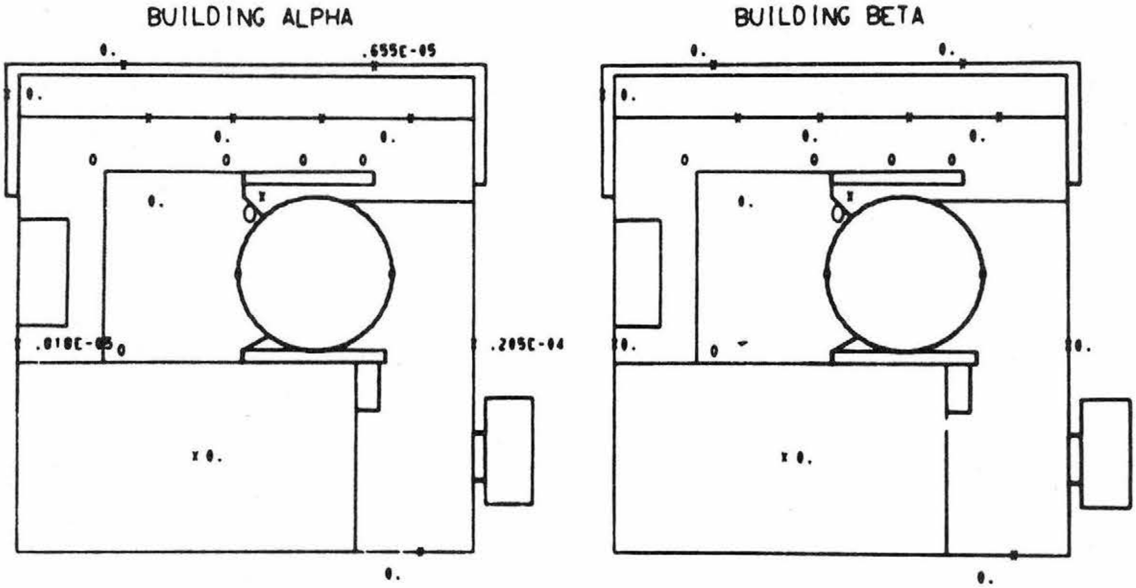


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

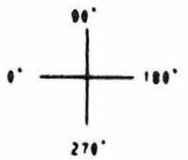
RAKE HEIGHT (FT)	VALUE
25.	.226E-03
85.	.479E-03
140.	.904E-03
230.	.151E-03
350.	0.

Fig. B-74



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA TL
WIND ANGLE = 135. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .002
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 265.
Y = -206.

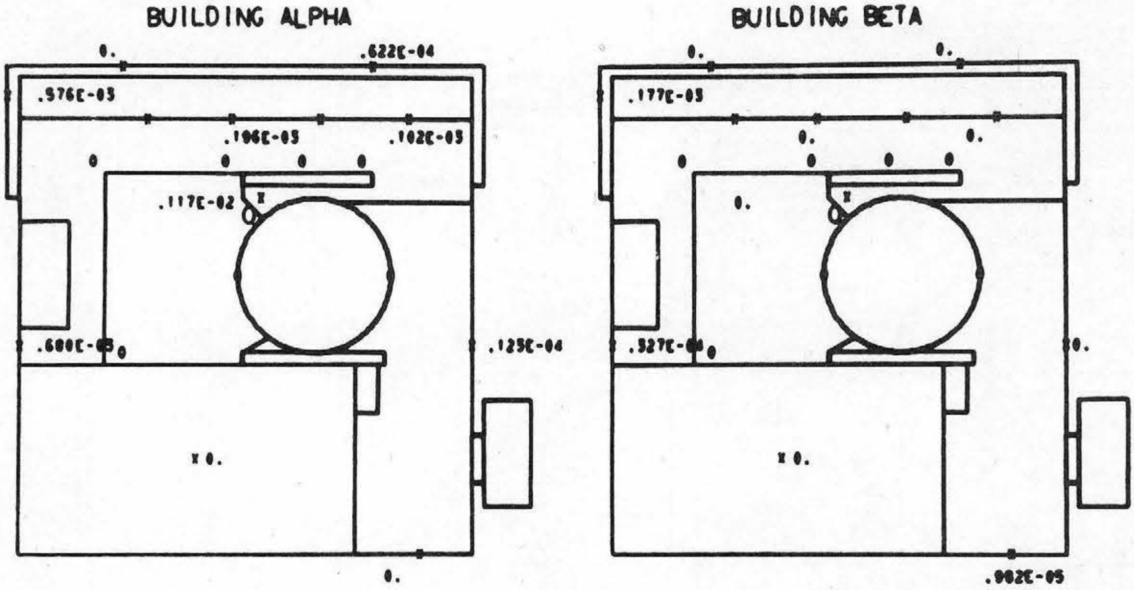


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

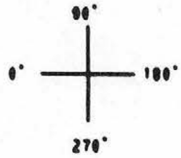
RAKE HEIGHT (FT)	VALUE
25.	.491E-04
85.	.941E-04
140.	.260E-03
230.	.123E-04
350.	0.

Fig. B-75



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA TL
WIND ANGLE = 180. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .002
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 581.
Y = 309.



CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.630E-03
85.	.155E-02
140.	.215E-02
250.	.800E-03
350.	.327E-05

Fig. B-76

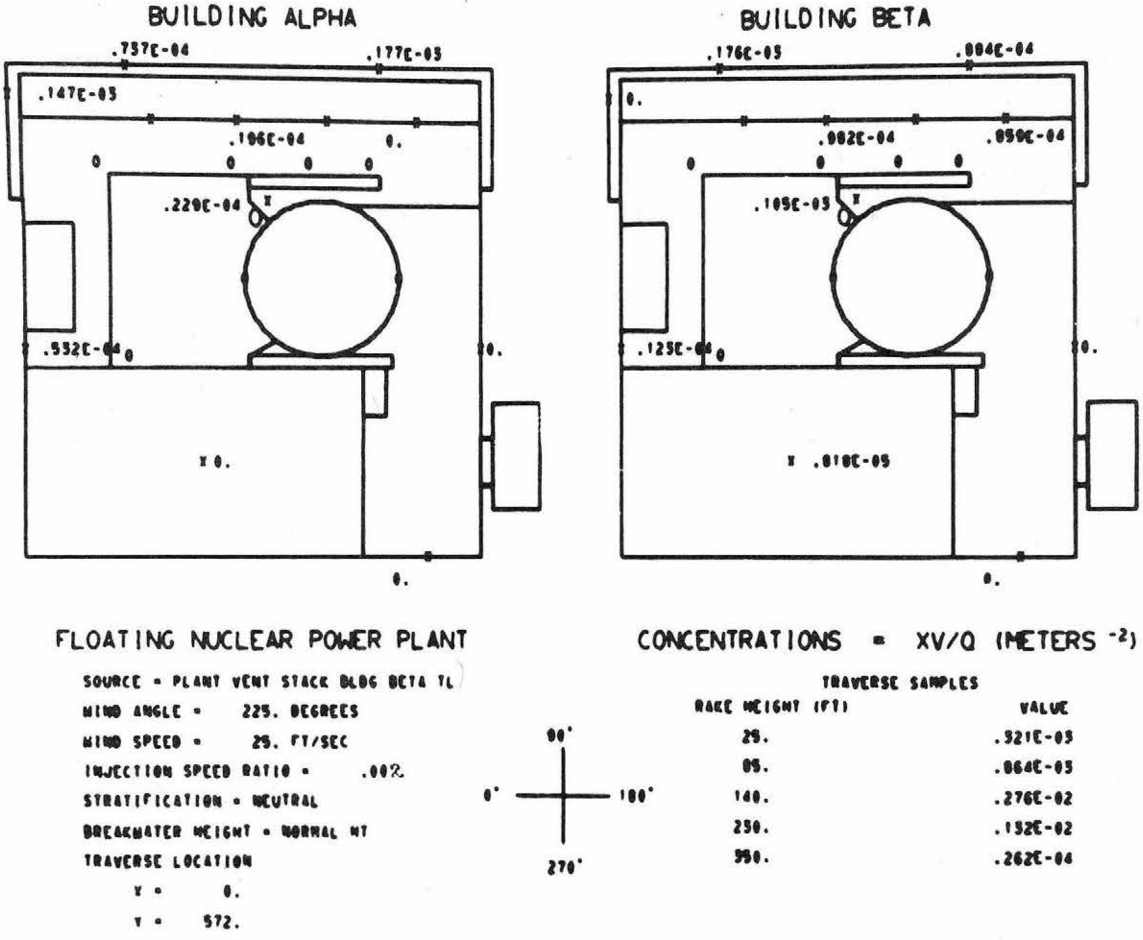
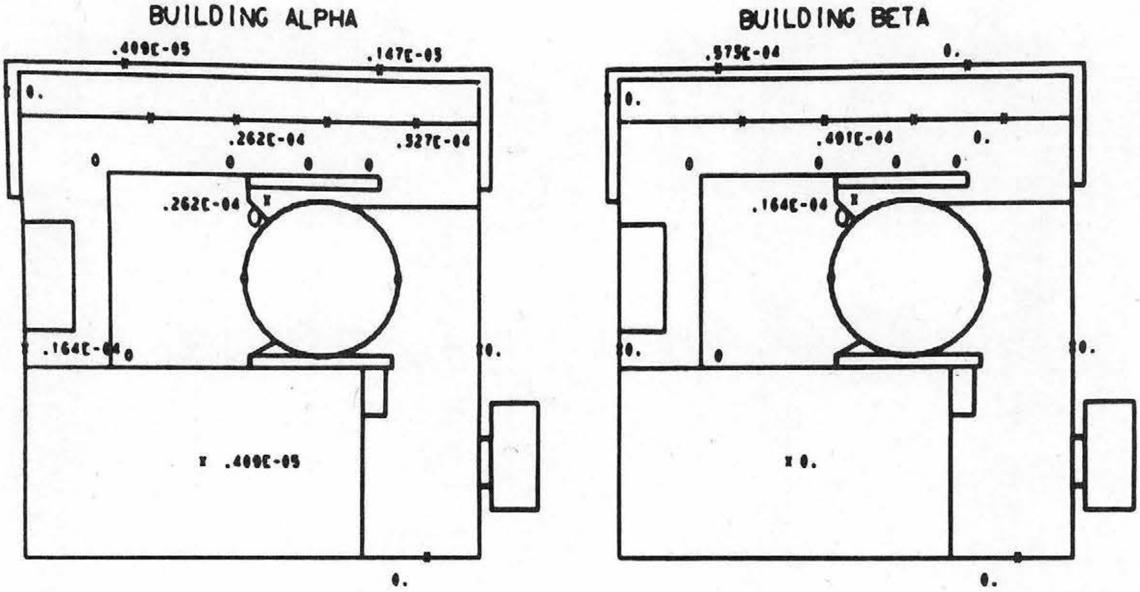
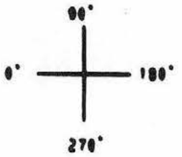

BUILDING ALPHA
.757E-04
.177E-03
.147E-03
.106E-04
0.
0
0
0
0
.229E-04
X
.532E-04
0
0.
X 0.
0.
BUILDING BETA
.176E-03
.884E-04
0.
.982E-04
.859E-04
0
0
0
0
.105E-03
X
.125E-04
0
0.
X .818E-05
0.
FLOATING NUCLEAR POWER PLANT
CONCENTRATIONS = XV/Q (METERS -2)
SOURCE = PLANT VENT STACK BLDG BETA TL
WIND ANGLE = 225. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .002
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 0.
Y = 572.
90°
0°
180°
270°
TRAVERSE SAMPLES
RAKE HEIGHT (FT)
VALUE
25.
.321E-03
85.
.864E-03
140.
.276E-02
250.
.132E-02
350.
.262E-04

Fig. B-77



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA TL
WIND ANGLE = 270. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .002
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -255.
Y = 572.

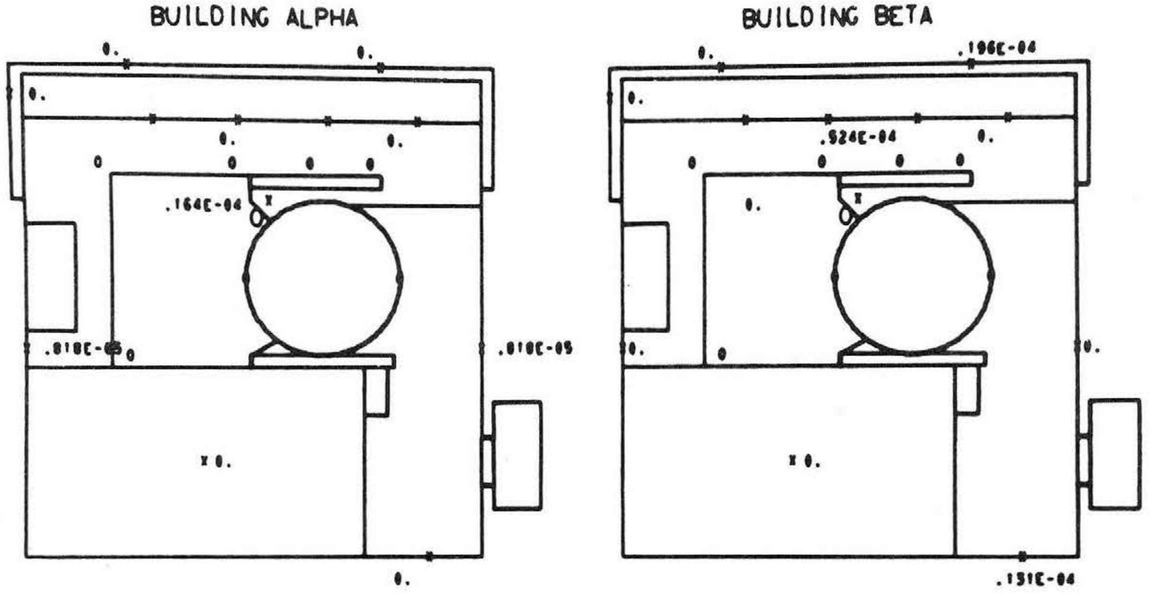


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

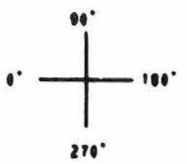
RAKE HEIGHT (FT)	VALUE
25.	.200E-03
85.	.901E-03
140.	.420E-02
230.	.105E-02
350.	.262E-04

Fig. B-78



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA TL
WIND ANGLE = 270. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .002
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 255.
Y = 501.

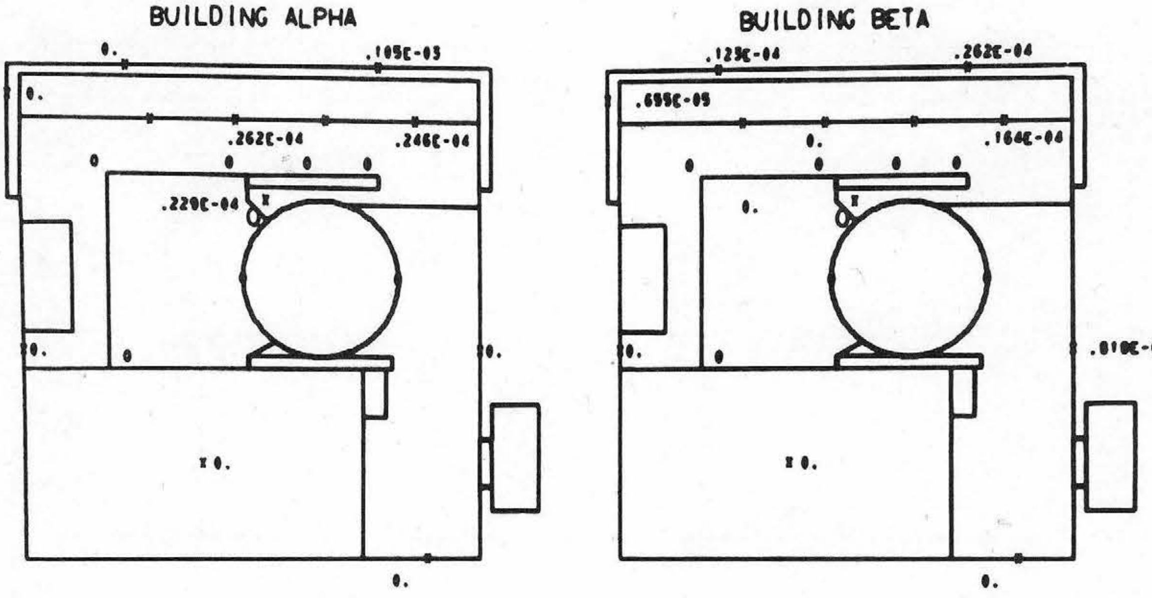


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.174E-03
85.	.807E-03
140.	.402E-02
250.	.807E-03
350.	.220E-04

Fig. B-79



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA TL
WIND ANGLE = 315. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .002
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 0.
Y = 581.

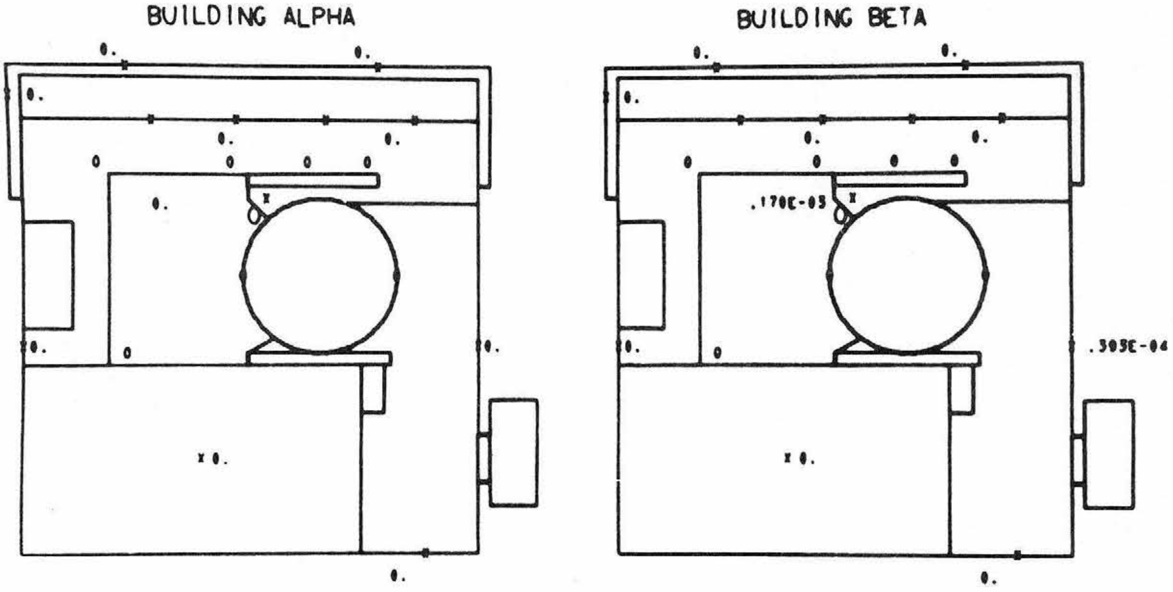
90° 0° 180° 270°

CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

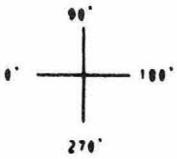
RAKE HEIGHT (FT)	VALUE
25.	.360E-04
85.	.110E-03
140.	.750E-03
250.	.954E-03
350.	0.

Fig. B-80



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA TL
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -56250.
Y = 292.

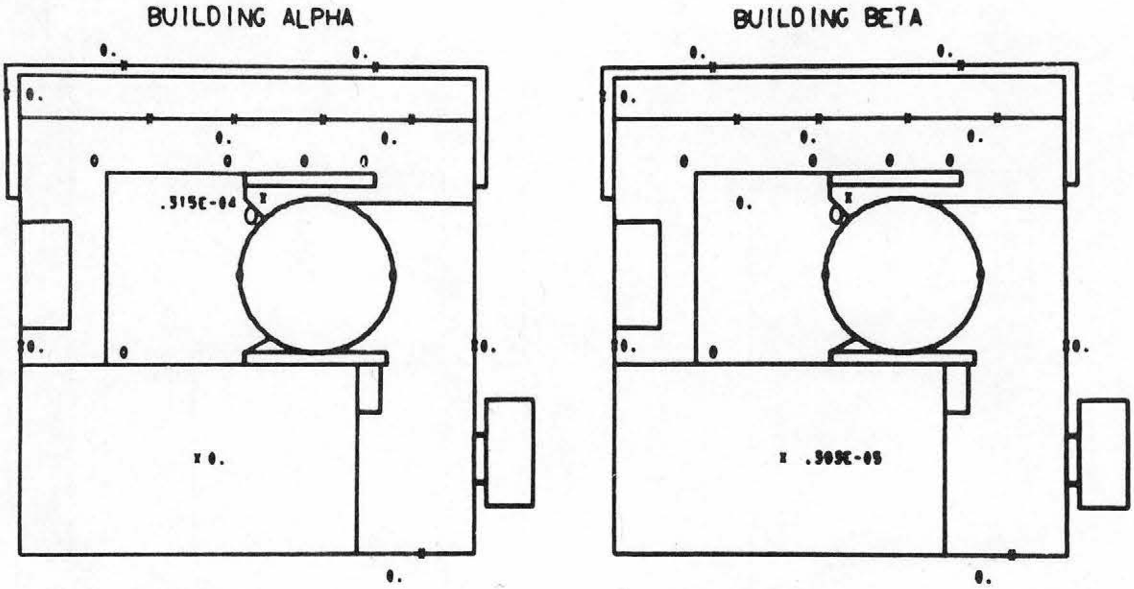


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

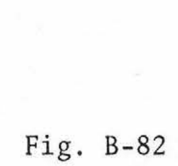
RAKE HEIGHT (FT)	VALUE
25.	0.
85.	.106E-03
140.	.881E-04
250.	.545E-03
350.	0.

Fig. B-81



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA TL
WIND ANGLE = 45. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -154.
Y = -154.

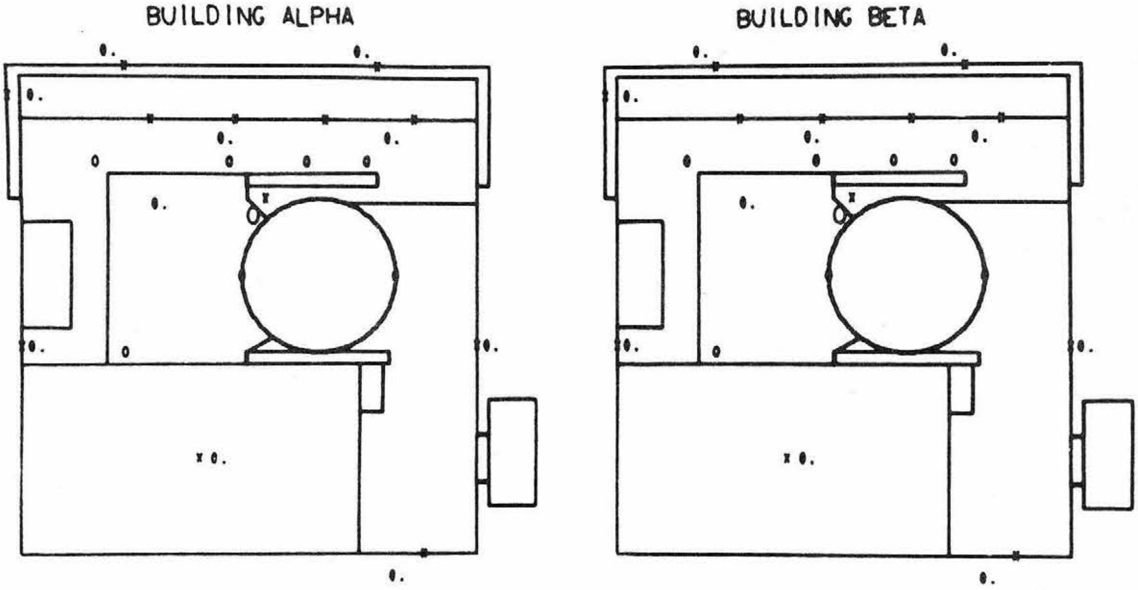


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

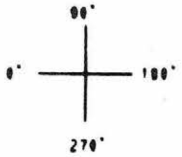
RAKE HEIGHT (FT)	VALUE
25.	0.
85.	.309E-05
140.	.242E-03
230.	.232E-03
350.	0.

Fig. B-82



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA TL
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 251.
Y = -142.

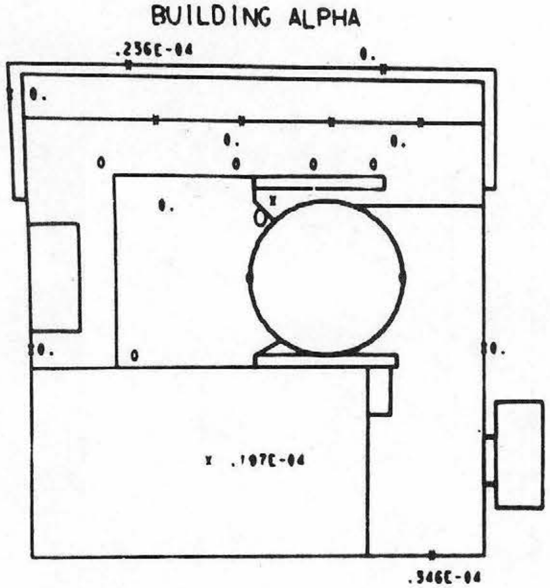


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

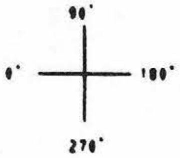
RAKE HEIGHT (FT)	VALUE
25.	.755E-04
85.	.110E-03
140.	.530E-03
230.	0.
350.	0.

Fig. B-83



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA TL
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -255.
Y = -157.

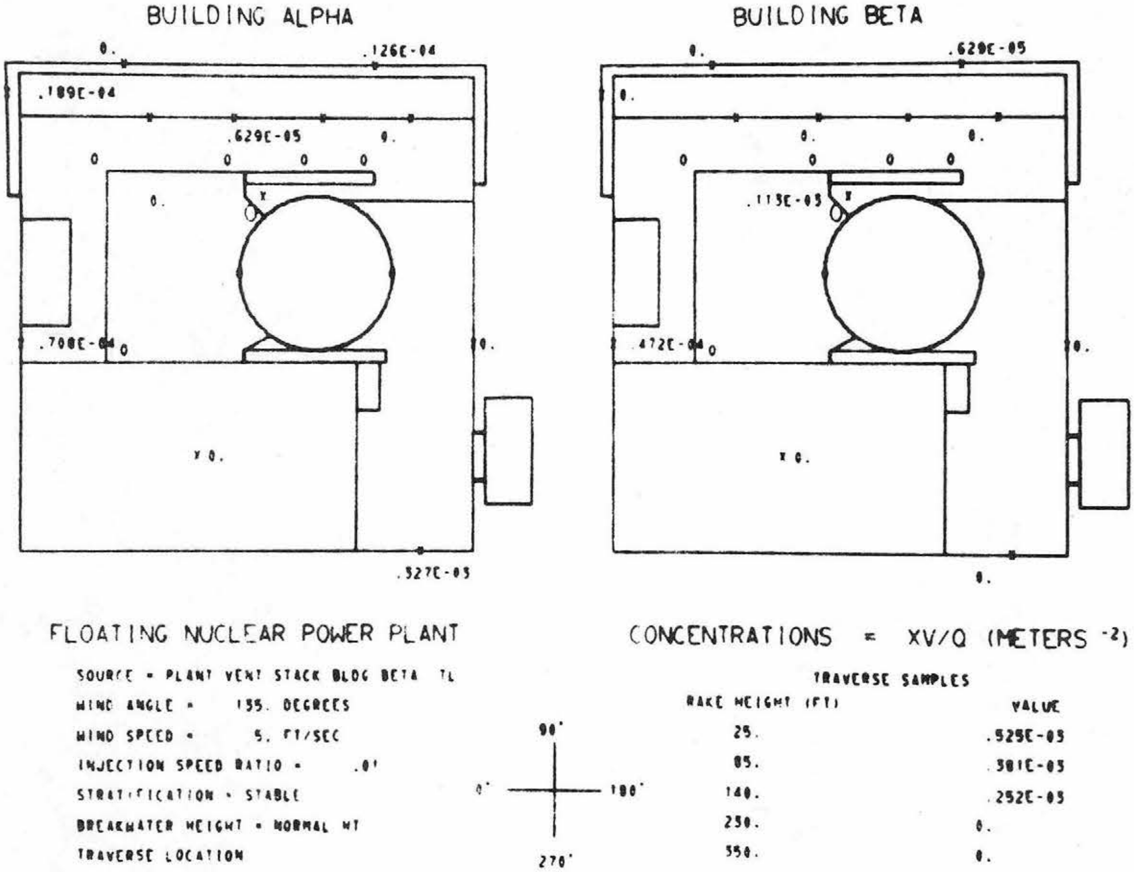


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

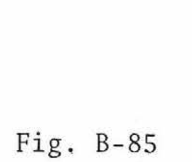
RAKE HEIGHT (FT)	VALUE
25.	.844E-05
85.	.220E-03
140.	.242E-03
250.	.985E-04
350.	0.

Fig. B-84



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA TL
WIND ANGLE = 135. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 160.
Y = -160.



CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.525E-03
85.	.381E-03
140.	.252E-03
250.	0.
350.	0.

Fig. B-85

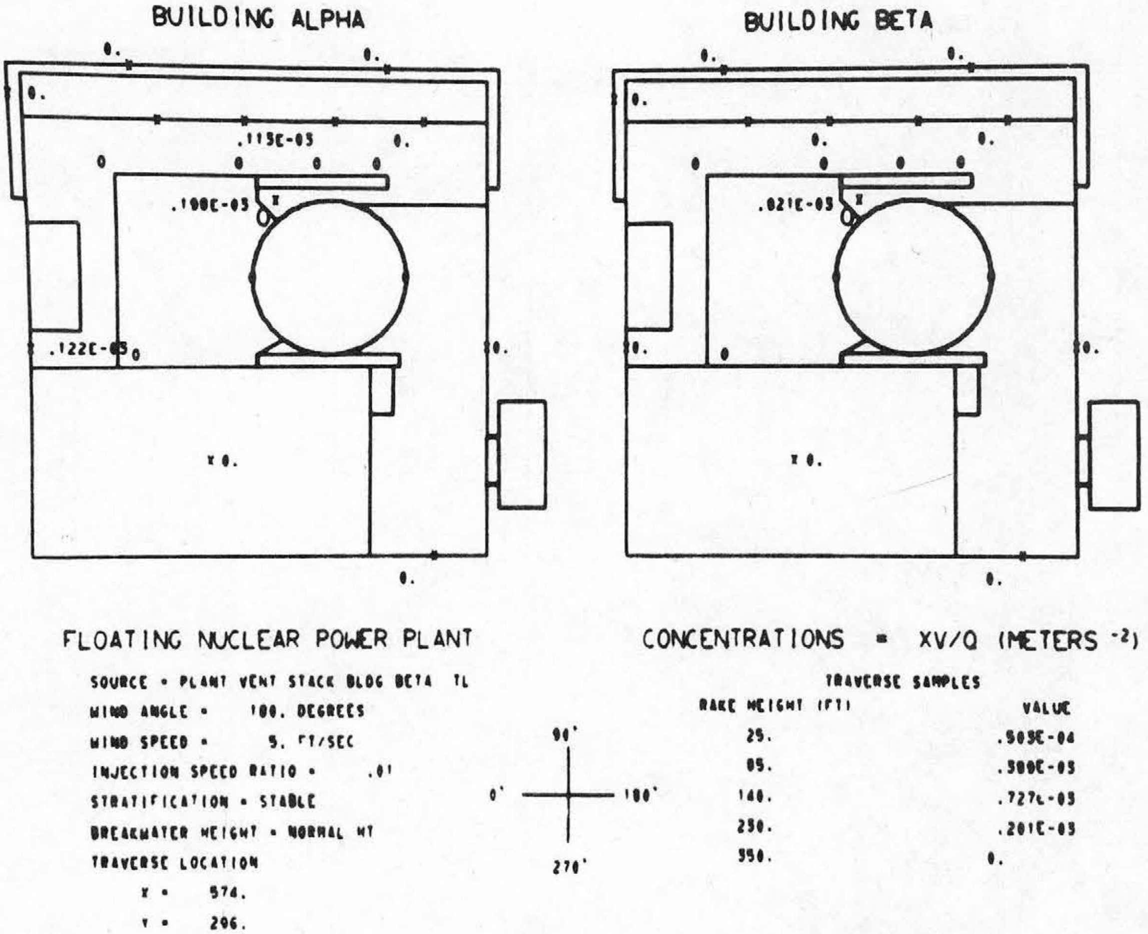
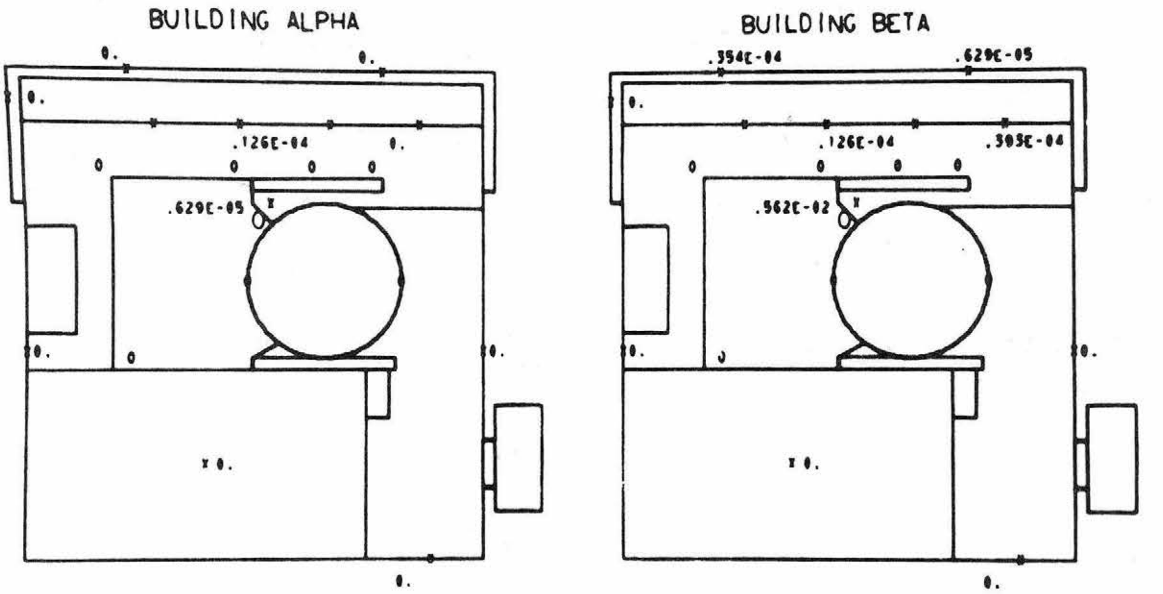

BUILDING ALPHA
BUILDING BETA
.115E-03
.100E-03
.122E-03
.021E-03
FLOATING NUCLEAR POWER PLANT
SOURCE = PLANT VENT STACK BLDG BETA TL
WIND ANGLE = 100. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 574.
Y = 206.
90°
0°
180°
270°
CONCENTRATIONS = XV/Q (METERS -2)
TRAVERSE SAMPLES
RAKE HEIGHT (FT) VALUE
25. .503E-04
85. .309E-03
140. .727E-03
250. .201E-03
350. 0.

Fig. B-86



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA TL

WIND ANGLE = 225. DEGREES

WIND SPEED = 5. FT/SEC

INJECTION SPEED RATIO = .01

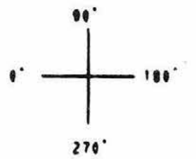
STRATIFICATION = STABLE

BREAKWATER HEIGHT = NORMAL HT

TRAVERSE LOCATION

X = 0.

Y = 521.

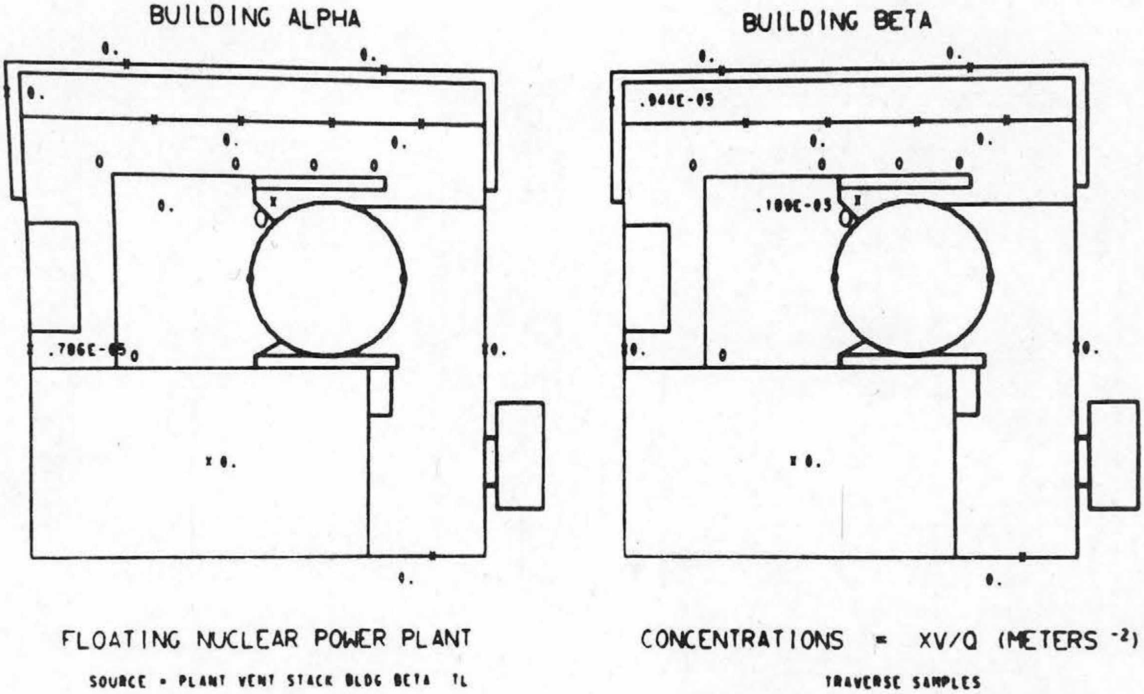


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.315E-05
85.	.303E-04
140.	.847E-03
250.	.220E-03
350.	0.

Fig. B-87



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA TL
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
Y = -251.
Y = 540.

CONCENTRATIONS = XV/Q (METERS $^{-2}$)

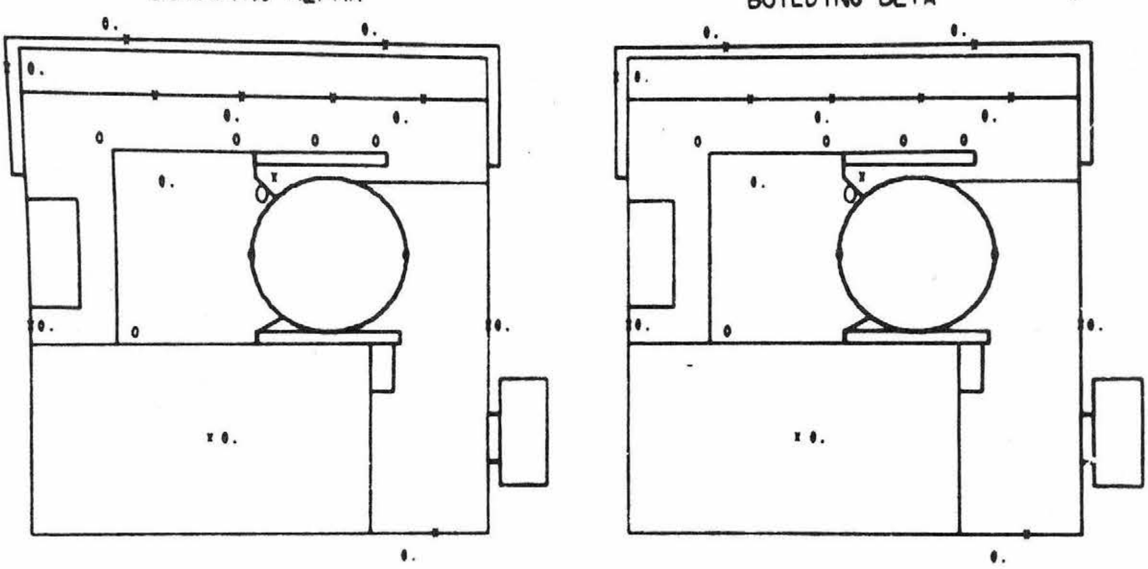
TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	0.
85.	0.
140.	.102E-03
250.	.270E-03
350.	0.

Fig. B-88

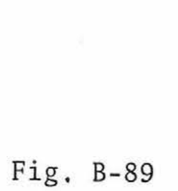
BUILDING ALPHA

BUILDING BETA



FLOATING NUCLEAR POWER PLANT

SOURCE - PLANT VENT STACK BLDG ALPHA TL
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 240.
Y = 540.

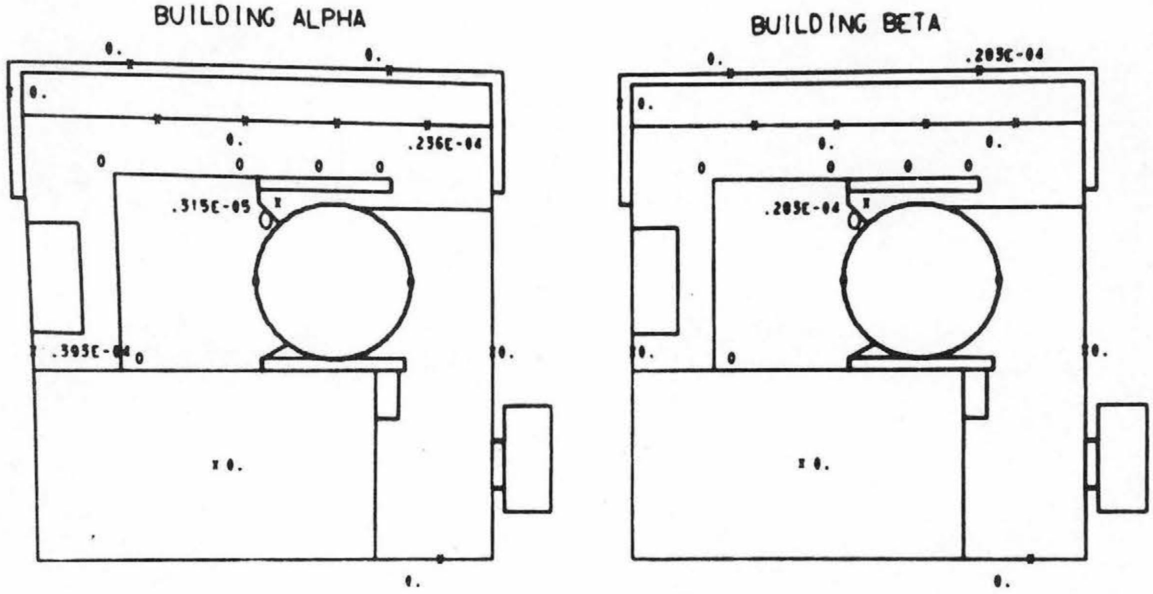


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

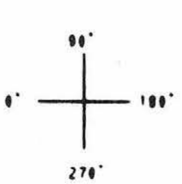
RAKE HEIGHT (FT)	VALUE
25.	0.
85.	0.
140.	.415E-03
250.	0.
350.	0.

Fig. B-89



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA TL
WIND ANGLE = 315. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
Y = 0.
Y = 506.

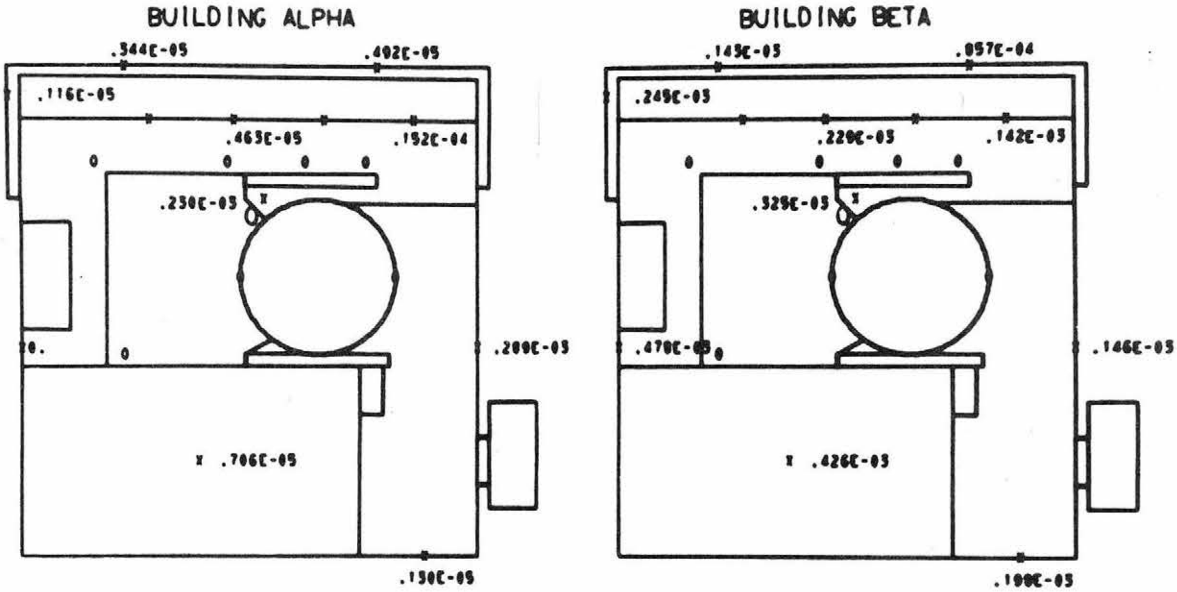


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

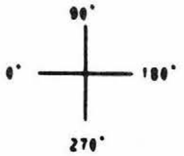
RAKE HEIGHT (FT)	VALUE
25.	0.
85.	.315E-04
140.	.346E-03
250.	.877E-03
350.	0.

Fig. B-90



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG ALPHA
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .50
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -525.
Y = 300.

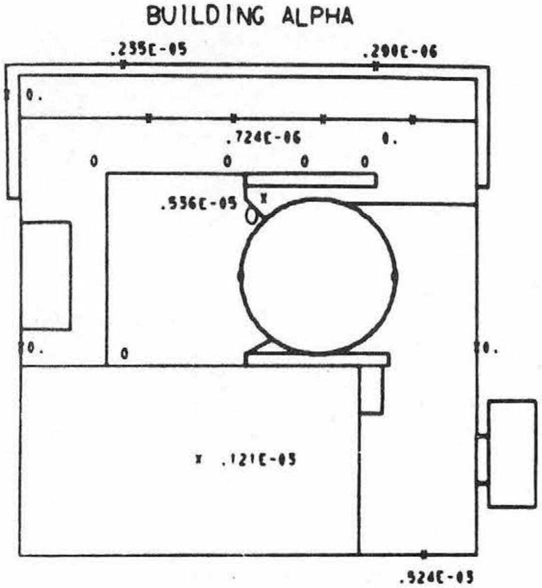


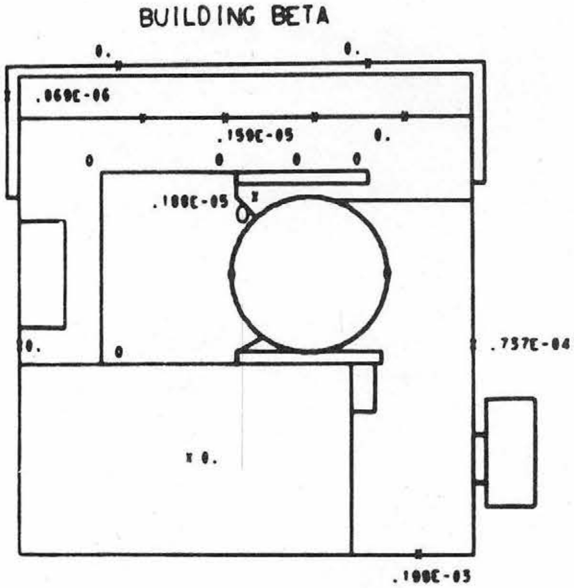
CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.650E-04
85.	.180E-03
140.	.303E-03
230.	.102E-03
350.	.637E-05

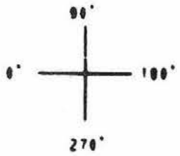
Fig. B-91





FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG ALPHA
WIND ANGLE = 45. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .50
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -56.
Y = 0.

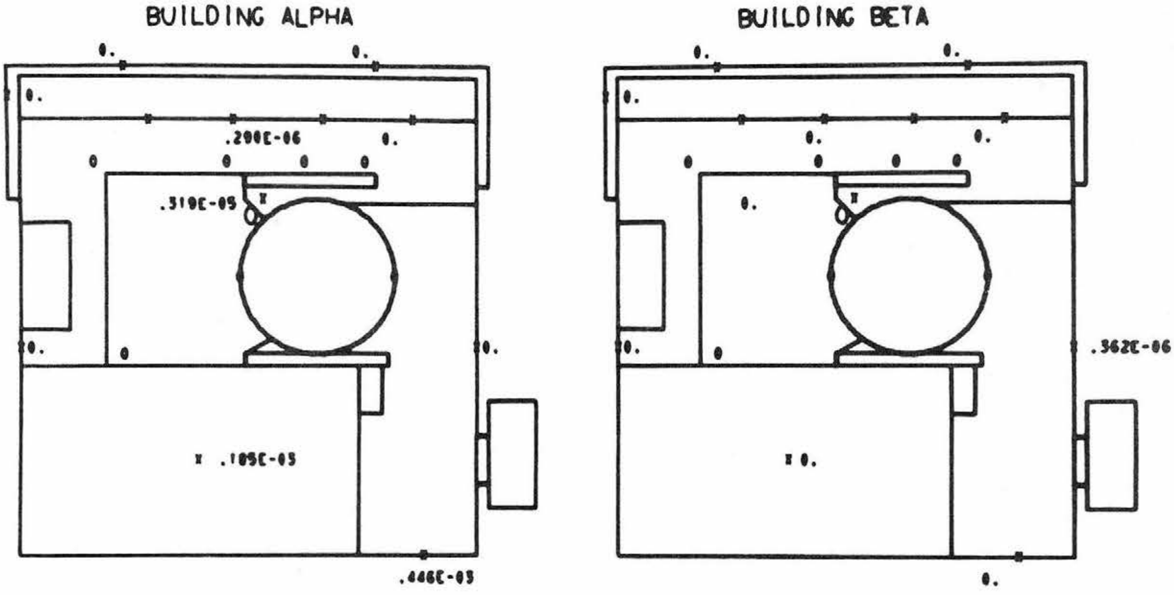


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.235E-03
85.	.620E-03
140.	.672E-03
250.	.346E-04
350.	.377E-05

Fig. B-92



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG ALPHA
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .50
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 151.
Y = -150.

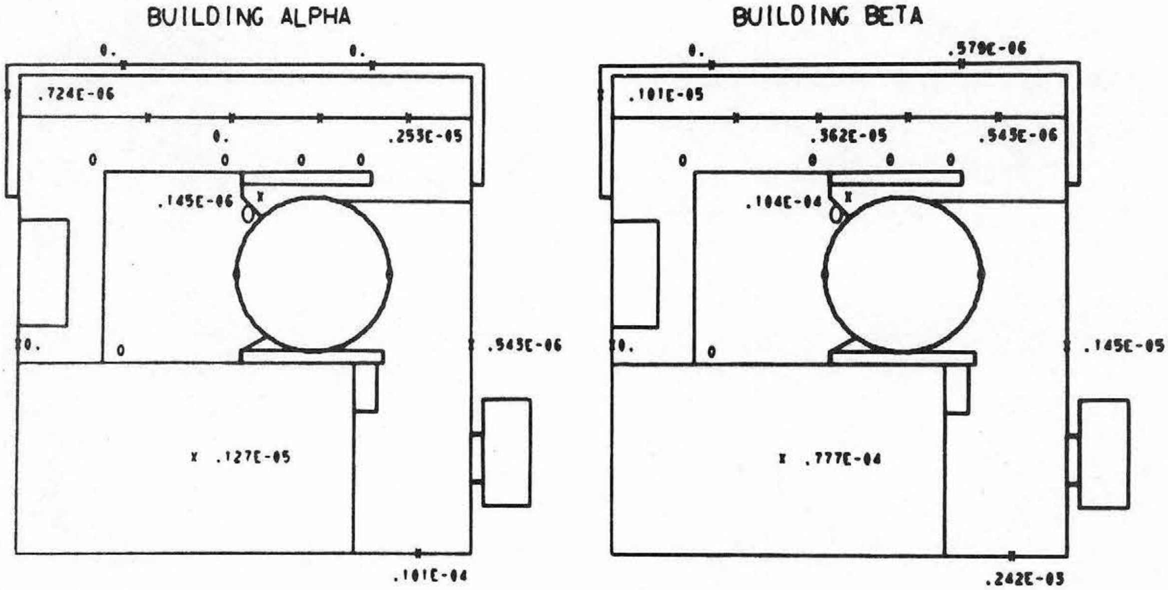
90°
0° 180°
270°

CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

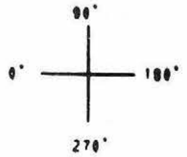
RAKE HEIGHT (FT)	VALUE
25.	.175E-05
85.	.509E-03
140.	.362E-03
230.	.180E-04
350.	.261E-05

Fig. B-93



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG BETA
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .50
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -511.
Y = -169.

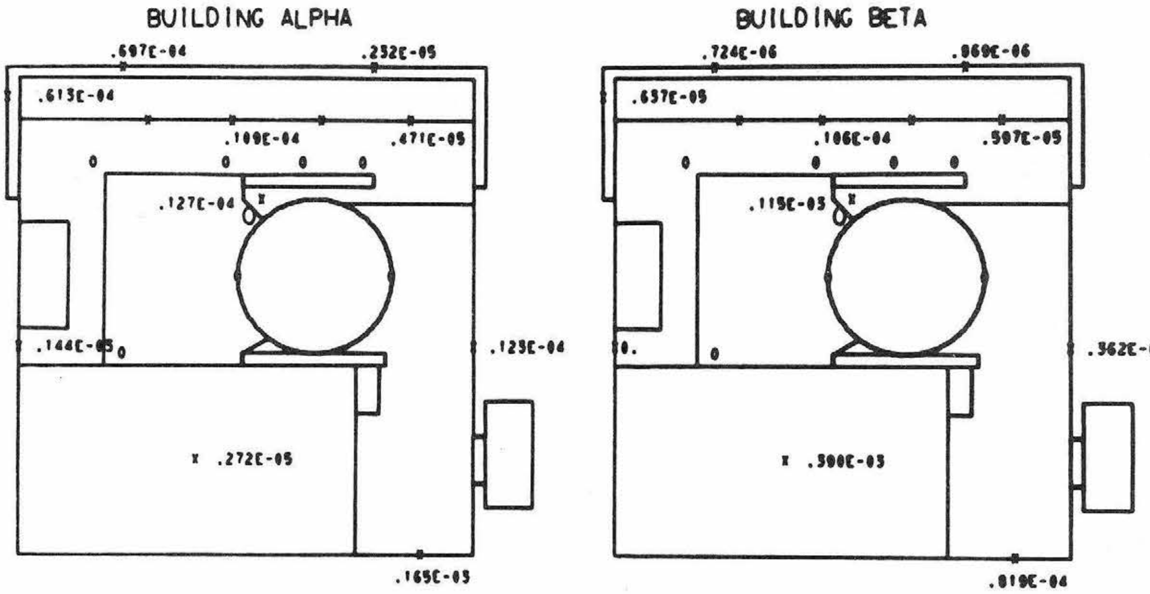


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.231E-03
85.	.108E-02
140.	.615E-03
230.	.170E-04
350.	.536E-05

Fig. B-94



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG BETA

WIND ANGLE = 135. DEGREES

WIND SPEED = 5. FT/SEC

INJECTION SPEED RATIO = .50

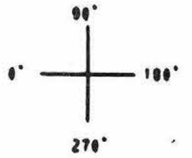
STRATIFICATION = NEUTRAL

BREAKWATER HEIGHT = NORMAL HT

TRAVERSE LOCATION

X = 100.

Y = -100.

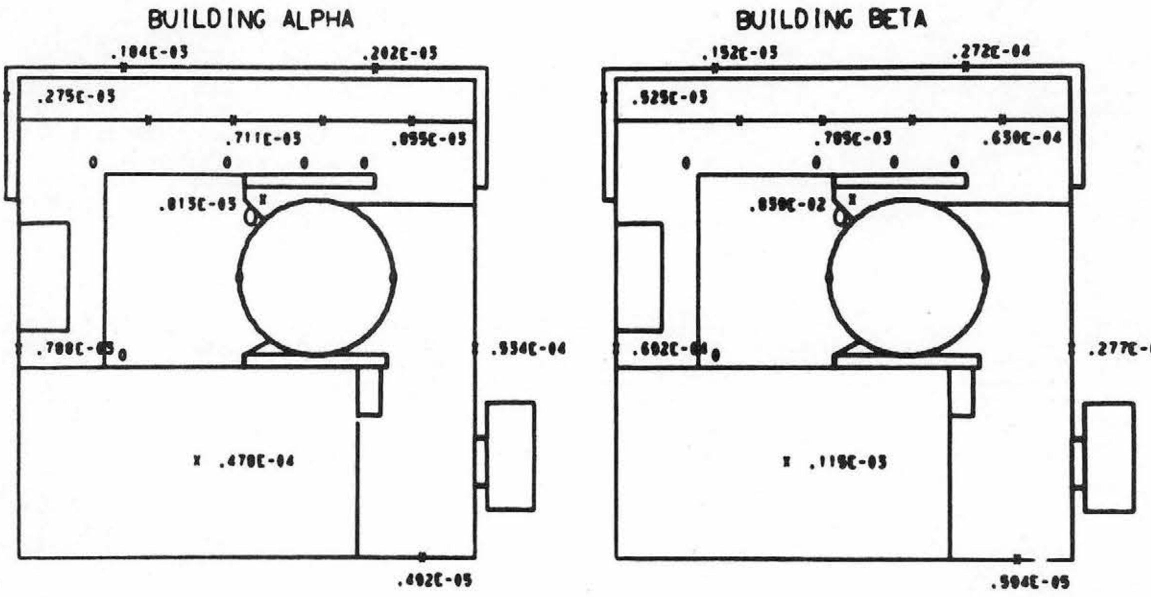


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

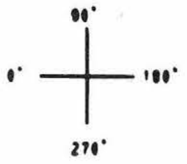
RAKE HEIGHT (FT)	VALUE
25.	.202E-03
85.	.202E-03
140.	.374E-03
250.	.117E-03
350.	.362E-05

Fig. B-95



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG BETA
WIND ANGLE = 180. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .30
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 581.
Y = 500.

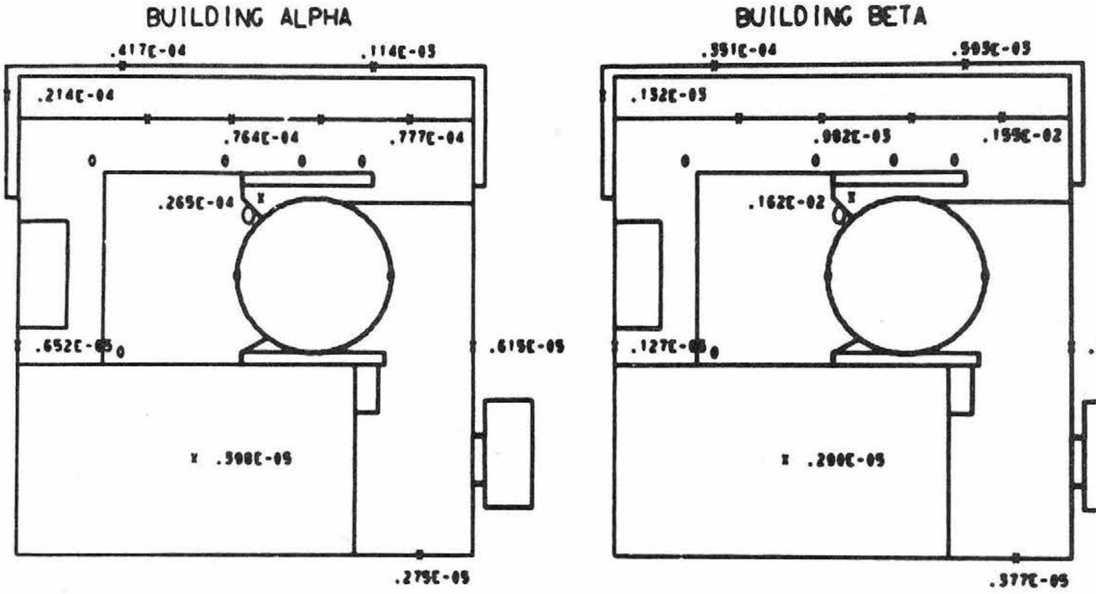


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

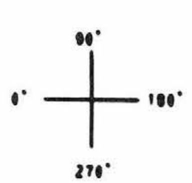
RAKE HEIGHT (FT)	VALUE
25.	.265E-03
85.	.415E-03
140.	.425E-03
250.	.171E-03
350.	.856E-05

Fig. B-96



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG BETA
WIND ANGLE = 225. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .50
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 0.
Y = 450.

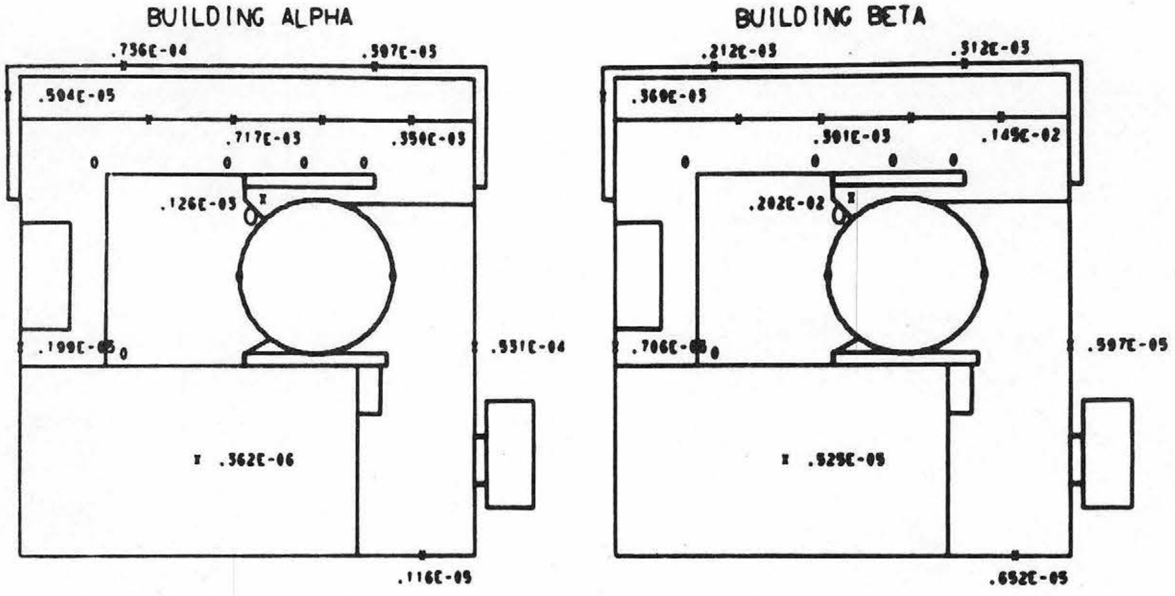


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.279E-03
85.	.417E-03
140.	.713E-03
250.	.129E-04
350.	.800E-05

Fig. B-97



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG BETA

WIND ANGLE = 270. DEGREES

WIND SPEED = 5. FT/SEC

INJECTION SPEED RATIO = .30

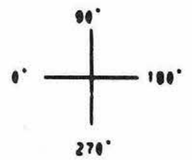
STRATIFICATION = NEUTRAL

BREAKWATER HEIGHT = NORMAL HT

TRAVERSE LOCATION

X = -356.

Y = 525.

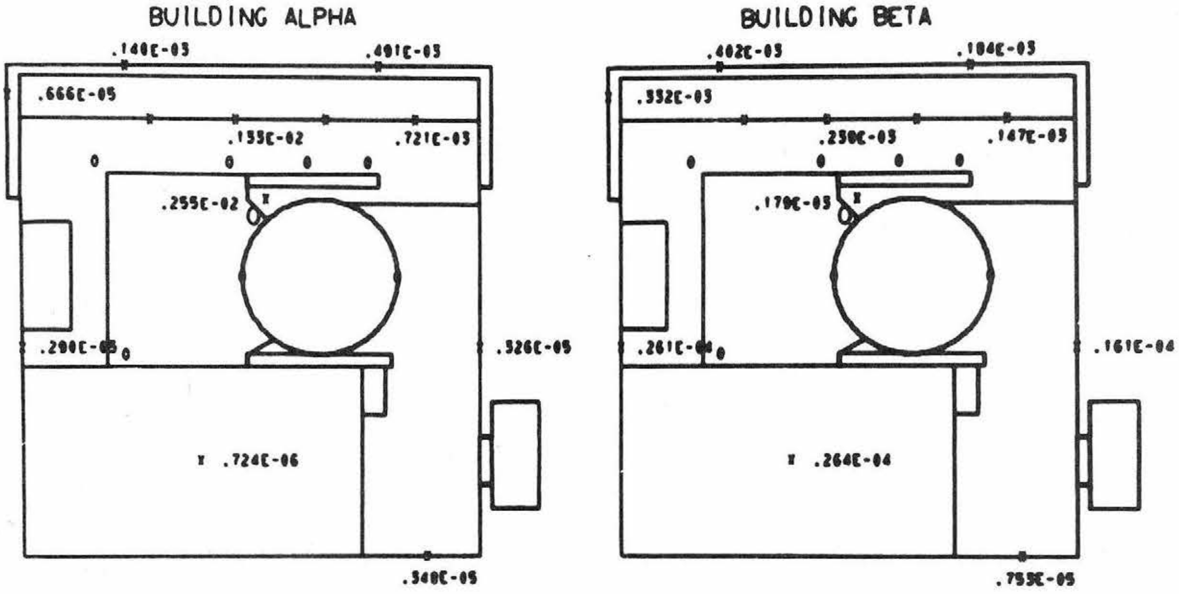


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

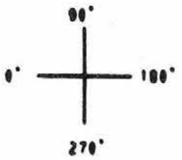
RAKE HEIGHT (FT)	VALUE
25.	.539E-03
85.	.113E-02
140.	.709E-03
230.	.244E-04
350.	.104E-04

Fig. B-98



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG ALPHA
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .50
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 131.
Y = 544.

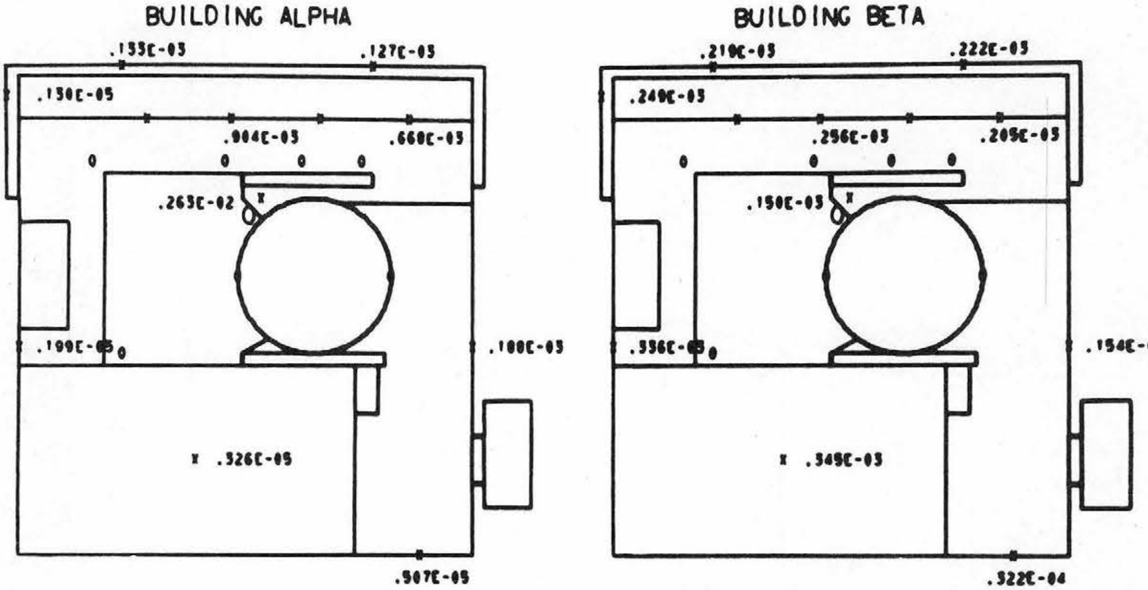


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

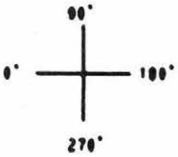
RAKE HEIGHT (FT)	VALUE
25.	.740E-03
85.	.855E-03
140.	.710E-03
230.	.446E-04
350.	.800E-05

Fig. B-99



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG ALPHA
WIND ANGLE = 315. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .50
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 37.
Y = 525.

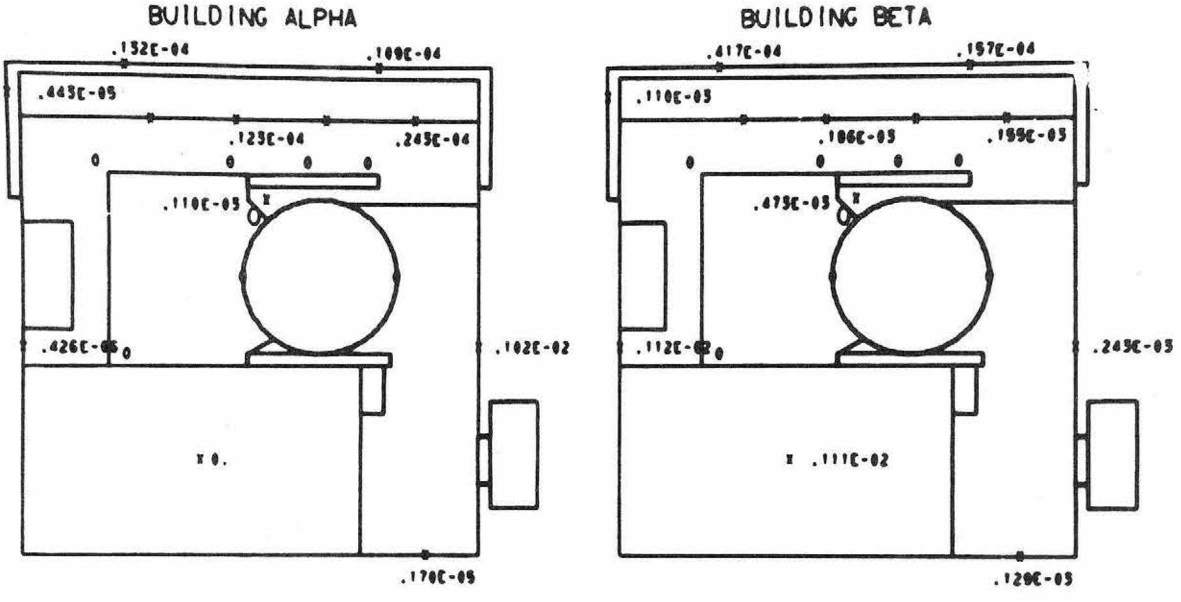


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

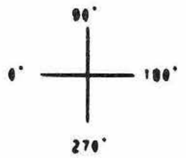
RAKE HEIGHT (FT)	VALUE
25.	.750E-04
85.	.490E-03
140.	.904E-03
250.	.792E-04
350.	.579E-05

Fig. B-100



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG ALPHA
WIND ANGLE = 0. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .10
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
Y = -400.
Y = 300.

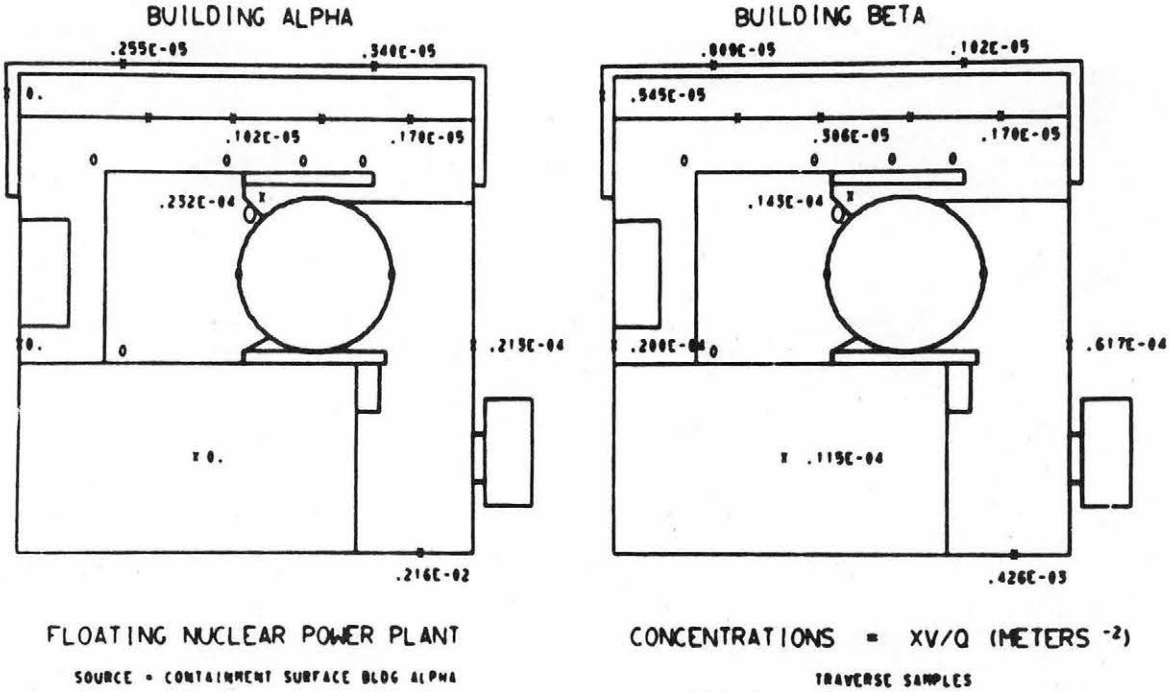


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

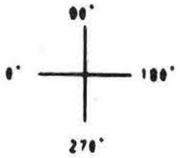
RAKE HEIGHT (FT)	VALUE
25.	.135E-03
85.	.216E-03
140.	.448E-03
230.	.201E-03
350.	.306E-05

Fig. B-101



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG ALPHA
WIND ANGLE = 45. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .10
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -160.
Y = -100.



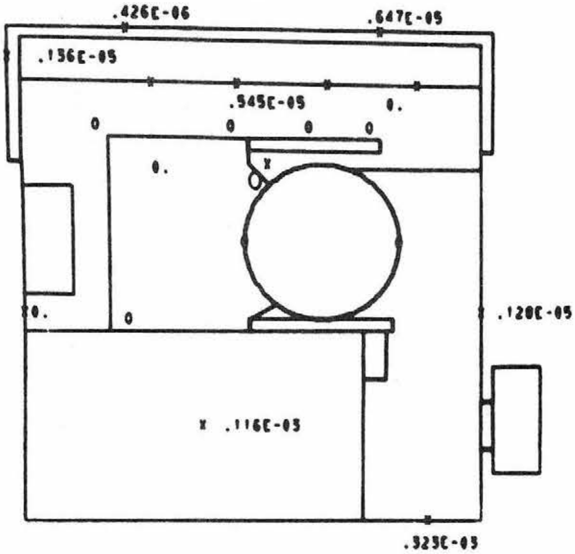
CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

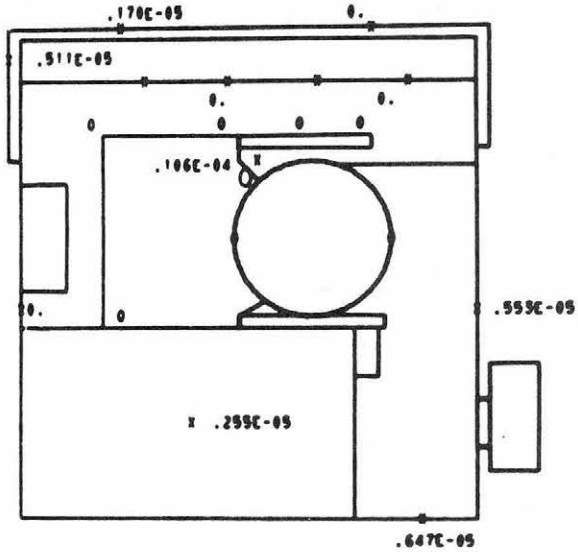
RAKE HEIGHT (FT)	VALUE
25.	.645E-03
85.	.627E-03
140.	.401E-03
250.	.125E-04
350.	.885E-05

Fig. B-102

BUILDING ALPHA

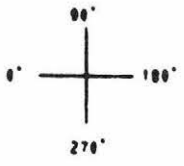


BUILDING BETA



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG ALPHA
WIND ANGLE = 90. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .10
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 244.
Y = -161.

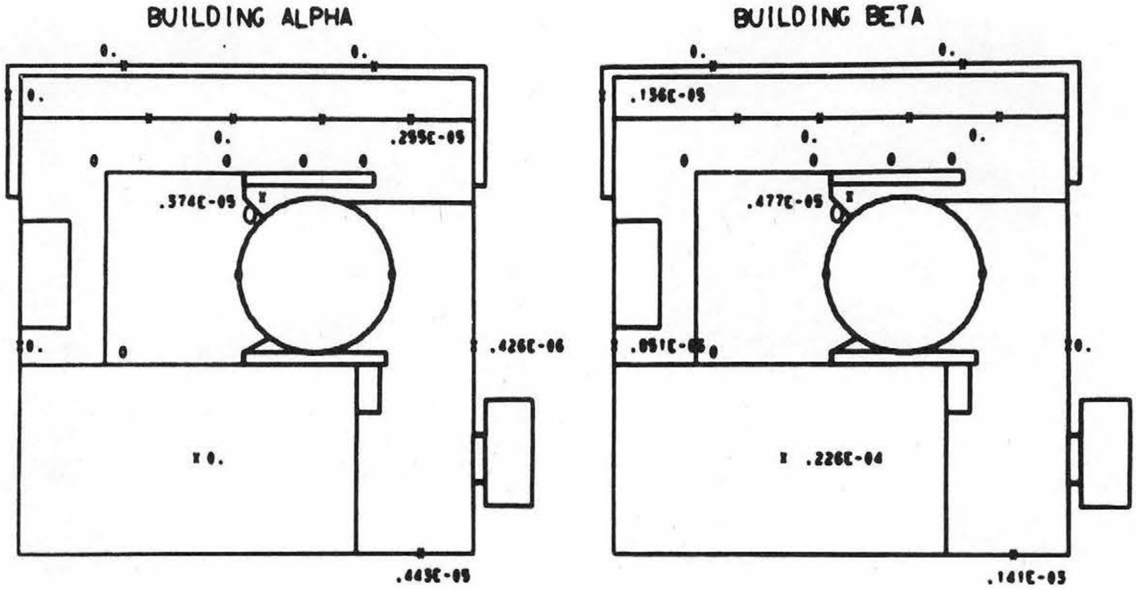


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

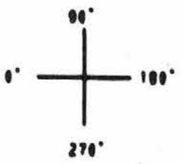
RAKE HEIGHT (FT)	VALUE
25.	.166E-02
95.	.154E-02
140.	.981E-03
250.	.157E-04
350.	.400E-05

Fig. B-103



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG BETA
WIND ANGLE = 90. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .10
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -311.
Y = -160.

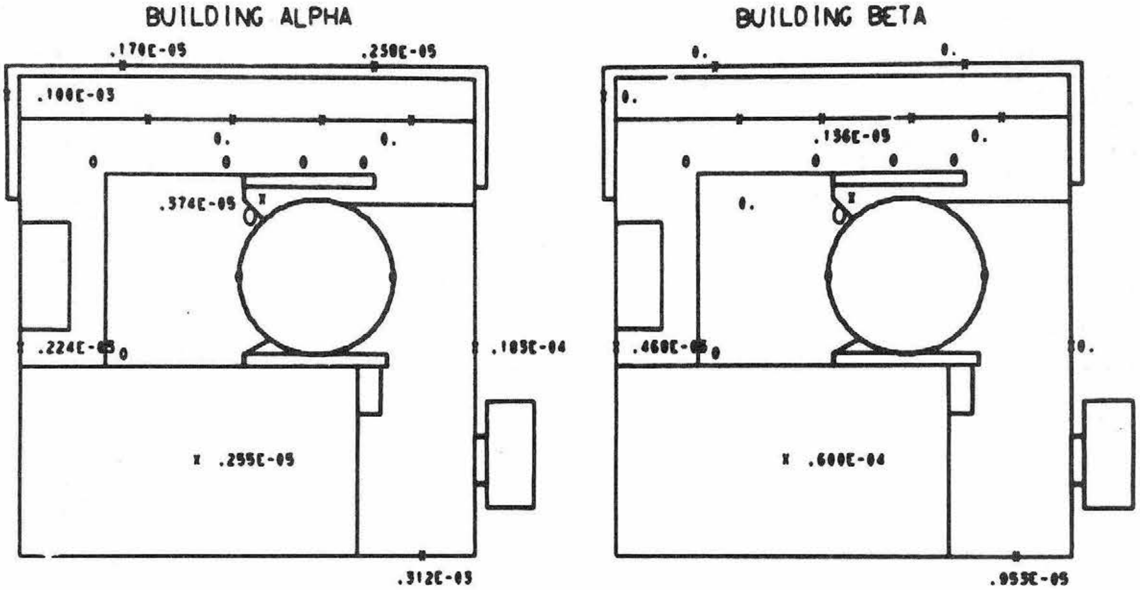


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

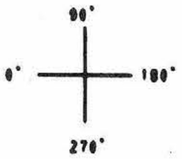
RAKE HEIGHT (FT)	VALUE
25.	.350E-03
85.	.850E-03
140.	.600E-03
230.	.970E-05
350.	.613E-05

Fig. B-104



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG BETA
WIND ANGLE = 135. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .10
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 160.
Y = -206.

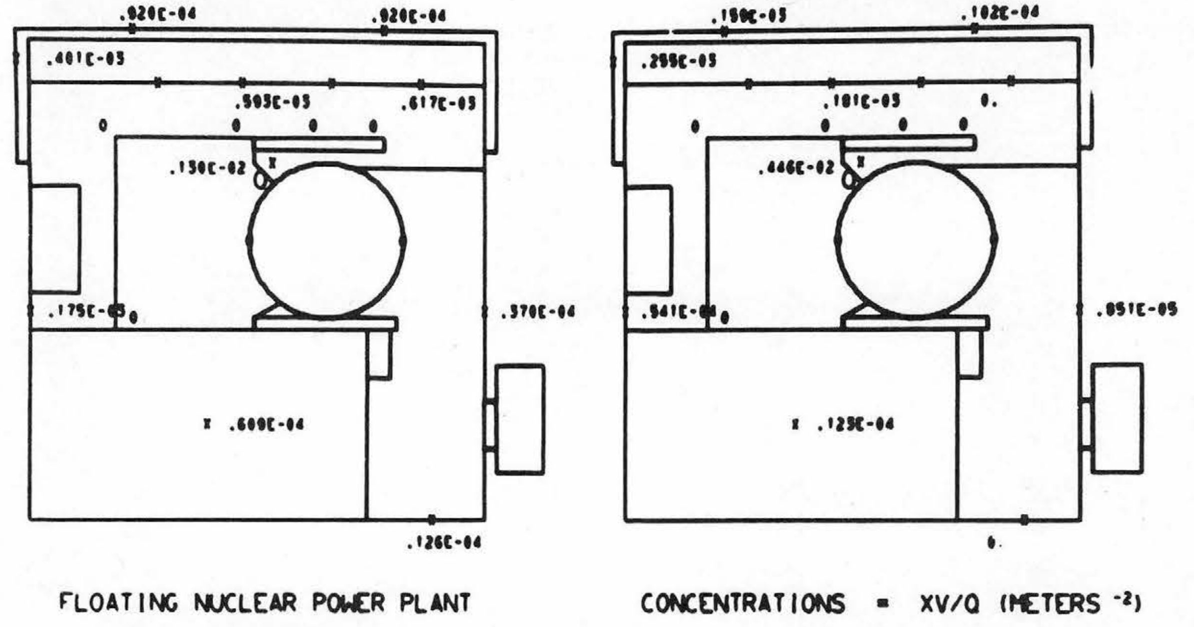


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

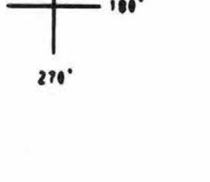
RAKE HEIGHT (FT)	VALUE
25.	.105E-03
85.	.171E-05
140.	.352E-03
230.	.105E-04
350.	.102E-05

Fig. B-105



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG BETA
WIND ANGLE = 180. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .10
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 400.
Y = 350.

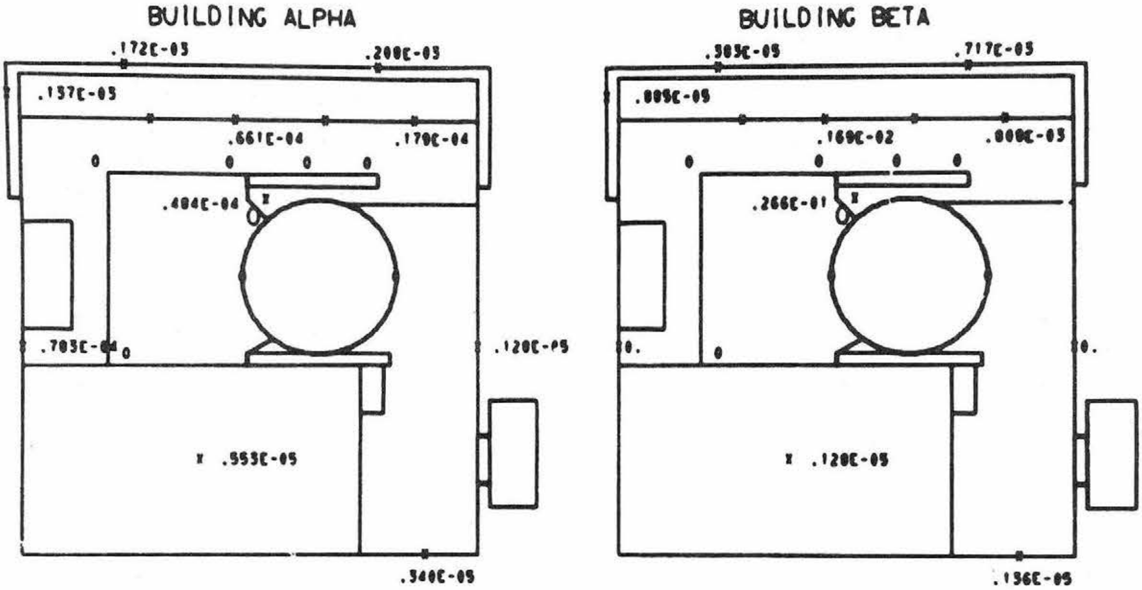


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

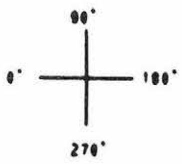
RAKE HEIGHT (FT)	VALUE
25.	.427E-03
85.	.640E-03
140.	.652E-03
230.	.660E-04
350.	.749E-05

Fig. B-106



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG BETA
WIND ANGLE = 225. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .10
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 0.
Y = 450.



CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.235E-03
85.	.770E-03
140.	.112E-02
250.	.115E-03
350.	.136E-04

Fig. B-107

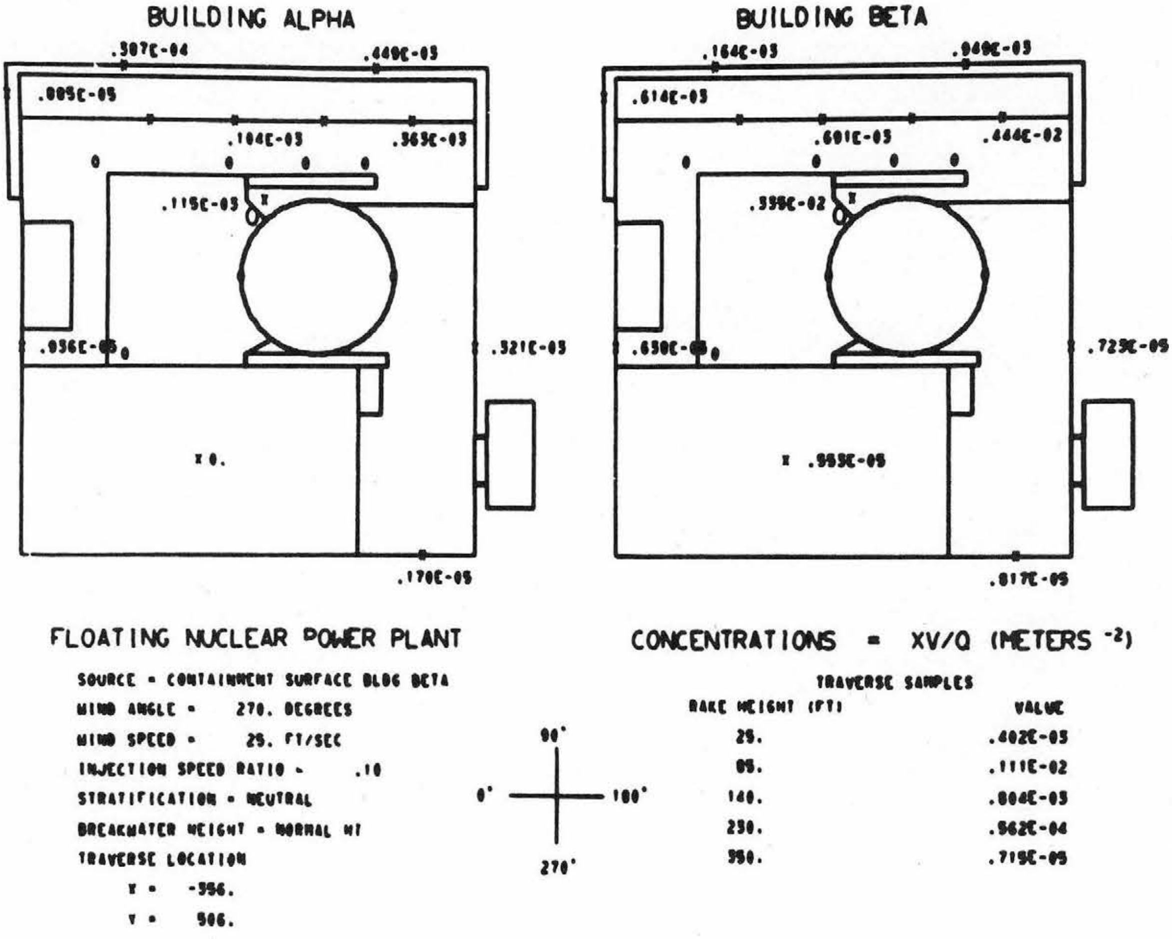
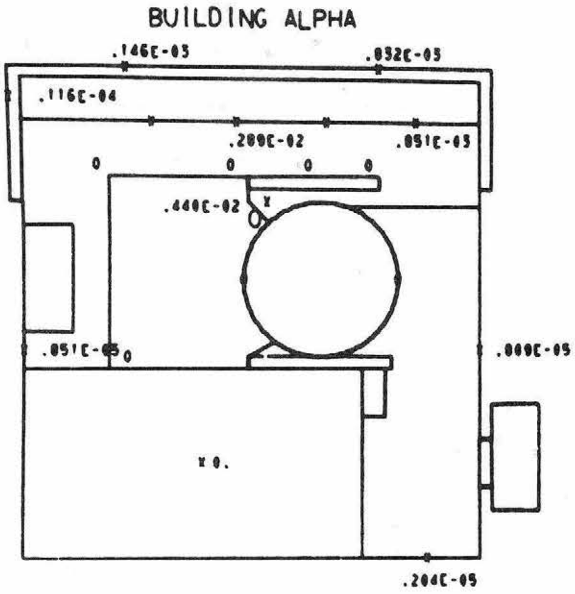
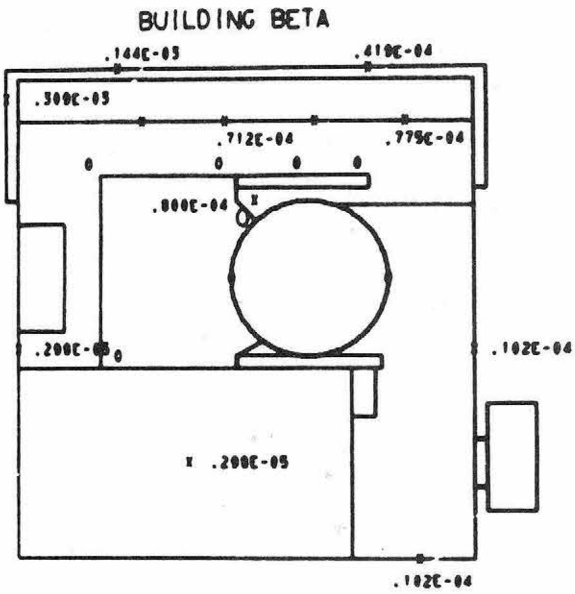

BUILDING ALPHA
.307E-04
.449E-03
.005E-05
.104E-03
.363E-03
.115E-03
.936E-05
.321E-03
X 0.
.170E-05
BUILDING BETA
.164E-03
.949E-03
.614E-03
.601E-03
.444E-02
.355E-02
.630E-05
.723E-05
X .953E-05
.817E-05
FLOATING NUCLEAR POWER PLANT
SOURCE = CONTAINMENT SURFACE BLDG BETA
WIND ANGLE = 270. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .10
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -356.
Y = 506.
90°
0°
180°
270°
CONCENTRATIONS = XV/Q (METERS -2)
TRAVERSE SAMPLES
RAKE HEIGHT (FT)
VALUE
25. .402E-03
85. .111E-02
140. .804E-03
230. .562E-04
350. .719E-05

Fig. B-108





FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG ALPHA

WIND ANGLE = 270. DEGREES

WIND SPEED = 25. FT/SEC

INJECTION SPEED RATIO = .10

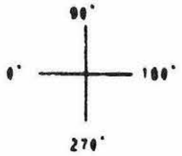
STRATIFICATION = NEUTRAL

BREAKWATER HEIGHT = NORMAL HT

TRAVERSE LOCATION

X = 151.

Y = 400.

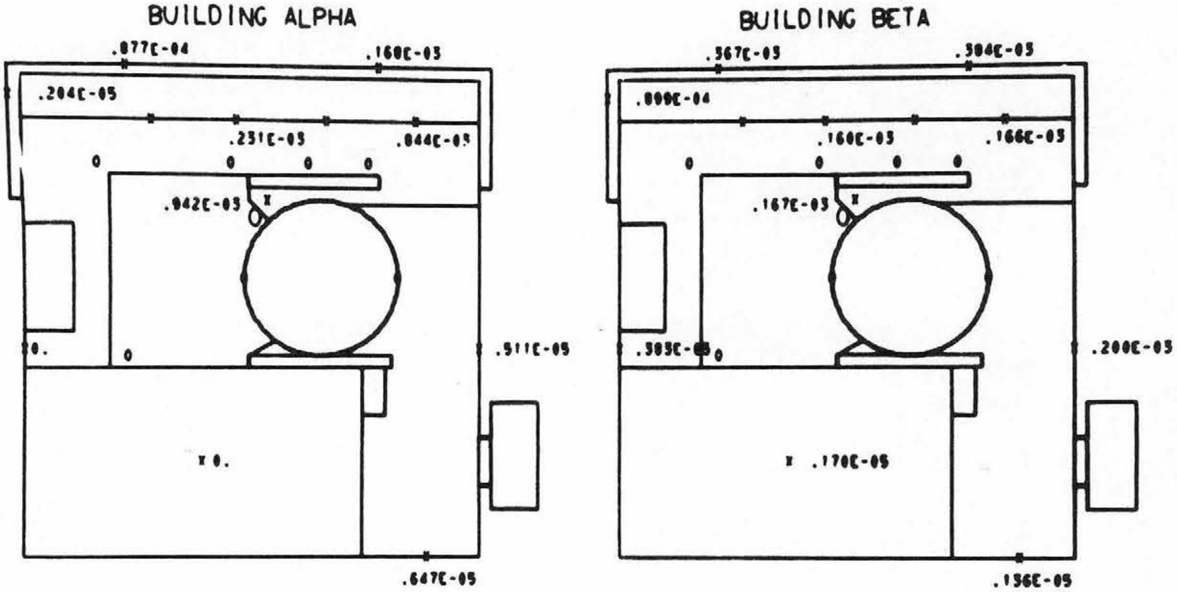


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

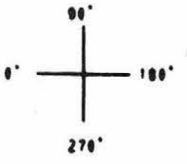
RAKE HEIGHT (FT)	VALUE
25.	.125E-02
85.	.104E-02
140.	.761E-03
250.	.149E-04
350.	.102E-04

Fig. B-109



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG ALPHA
WIND ANGLE = 315. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .10
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 0.
Y = 451.

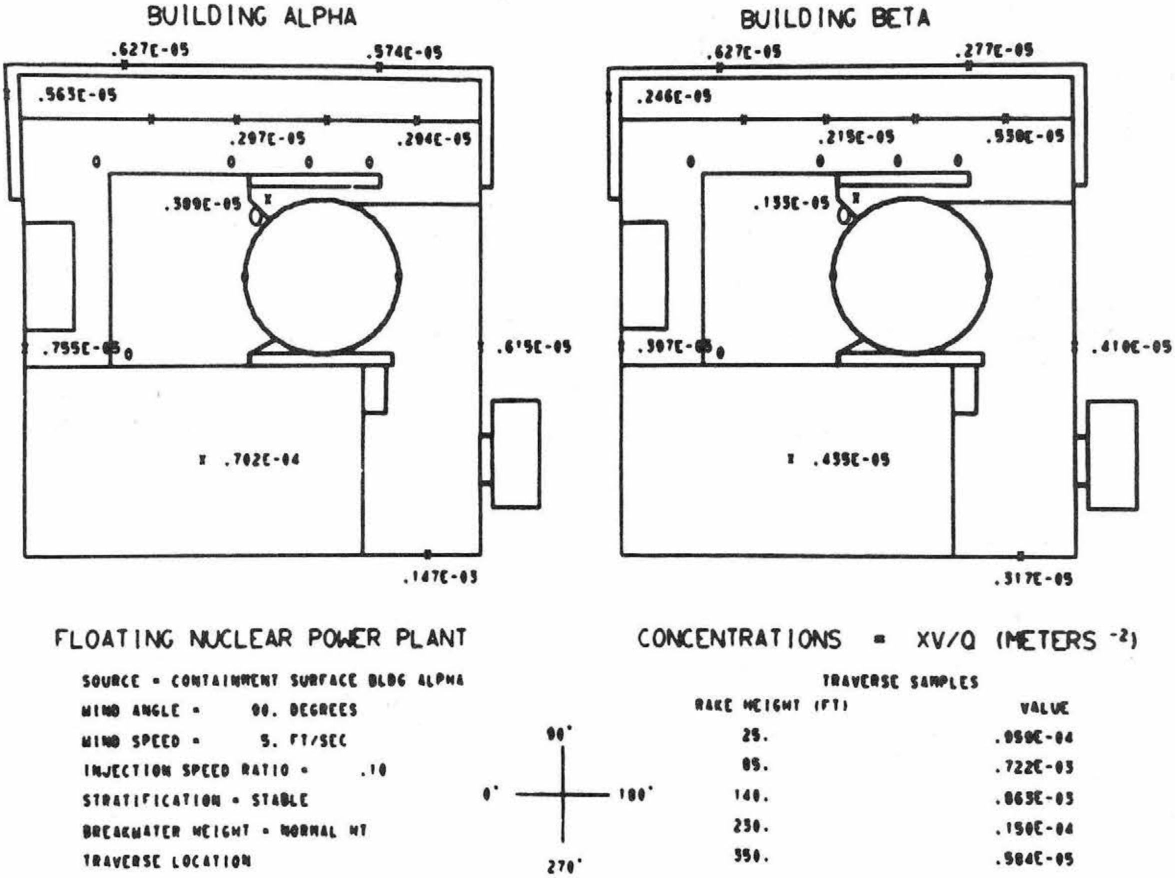


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.110E-03
85.	.079E-03
140.	.176E-02
230.	.106E-04
350.	.155E-04

Fig. B-110



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG ALPHA
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .10
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 135.
Y = -97.

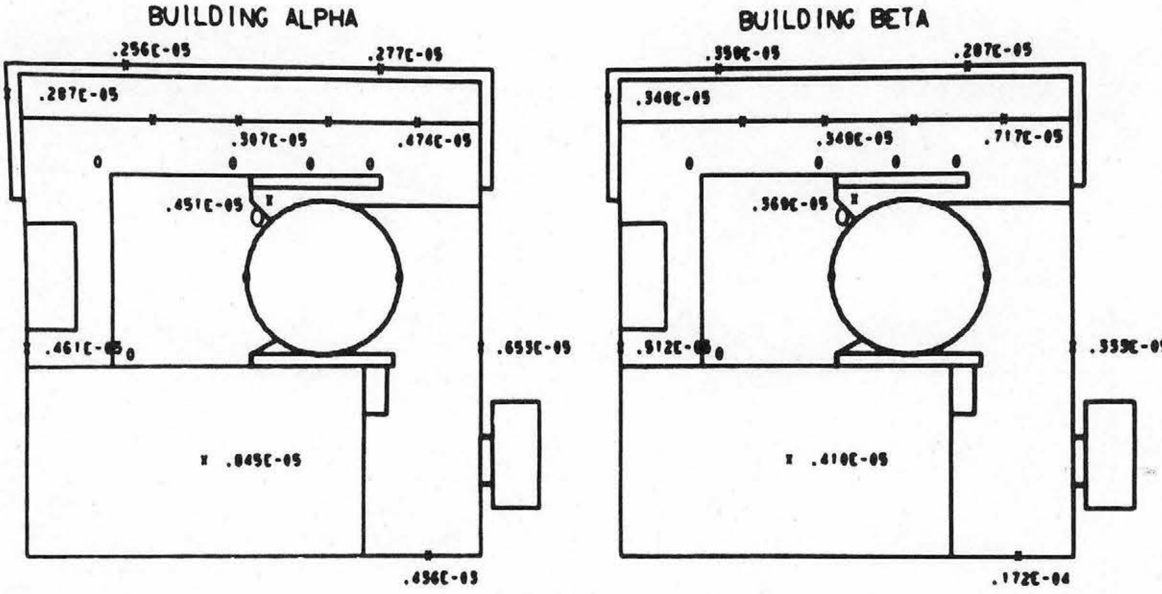
90°
0° 180°
270°

CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.950E-04
85.	.722E-03
140.	.863E-03
230.	.150E-04
350.	.584E-05

Fig. B-111



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG ALPHA

WIND ANGLE = 45. DEGREES

WIND SPEED = 5. FT/SEC

INJECTION SPEED RATIO = .10

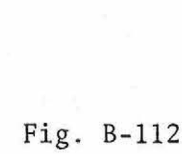
STRATIFICATION = STABLE

BREAKWATER HEIGHT = NORMAL HT

TRAVERSE LOCATION

X = -79.

Y = -60.

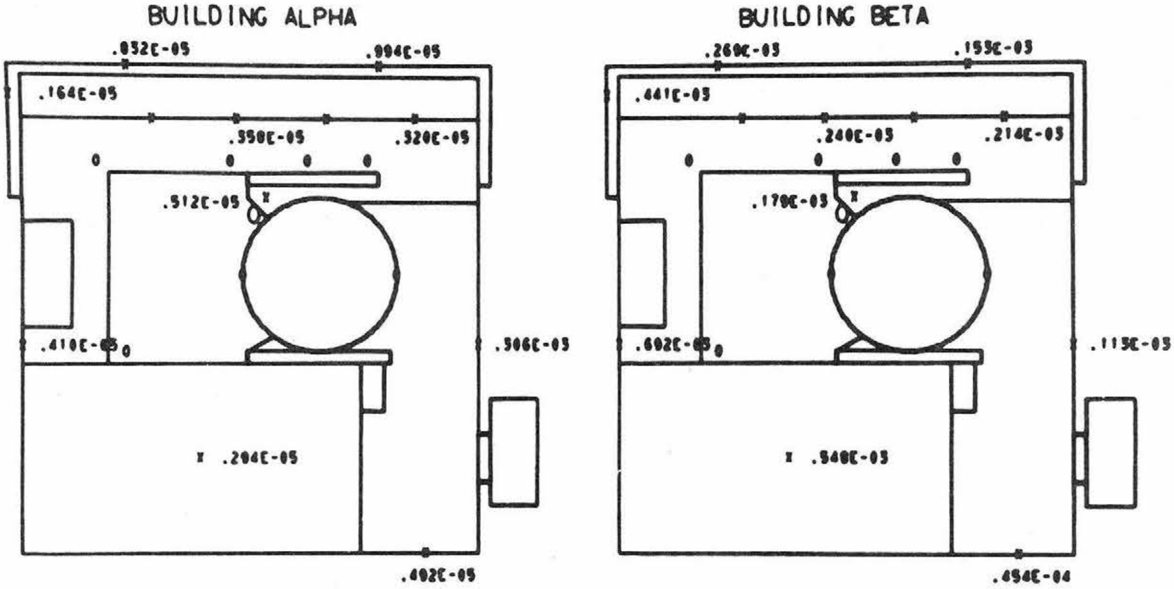


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

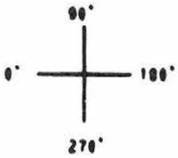
RAKE HEIGHT (FT)	VALUE
25.	.371E-04
85.	.117E-03
140.	.285E-03
250.	.806E-05
350.	.215E-05

Fig. B-112



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG ALPHA
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .10
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -517.
Y = 236.

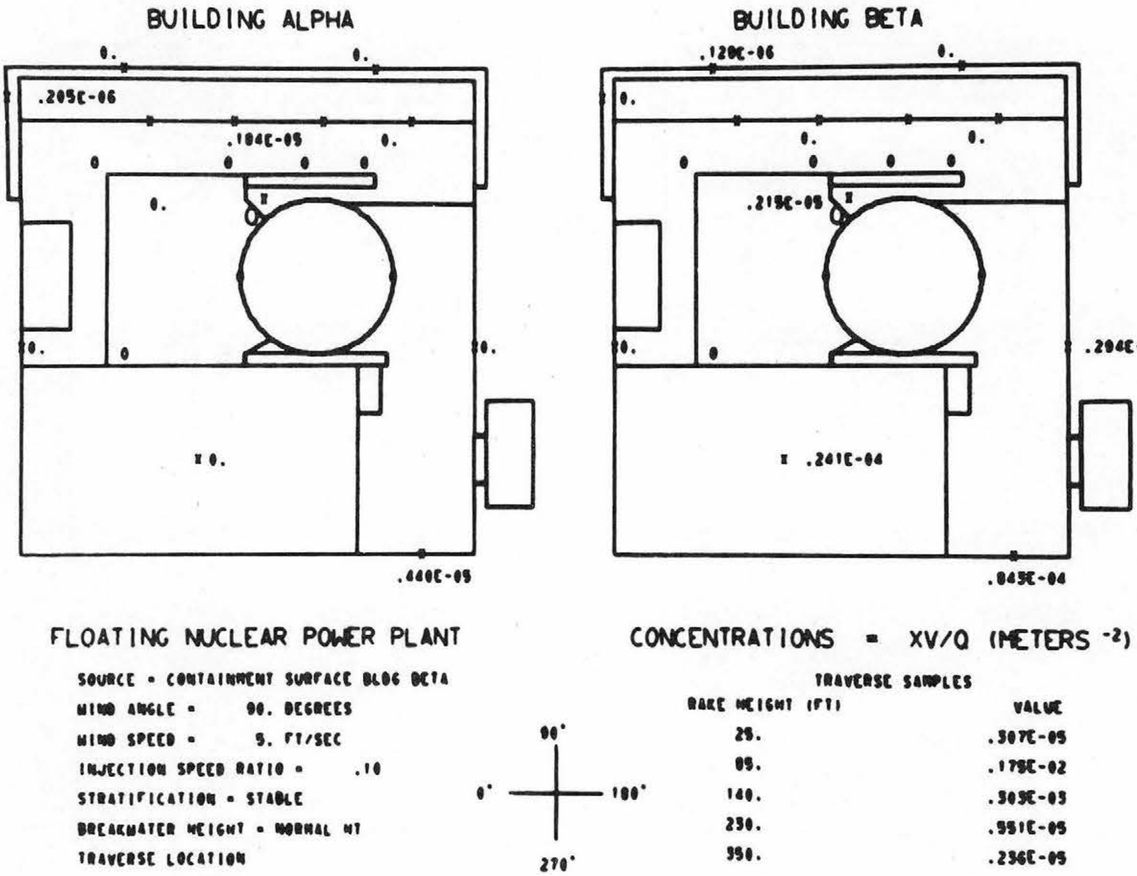


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.100E-03
85.	.214E-03
140.	.206E-03
250.	.156E-03
350.	.105E-05

Fig. B-113



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG BETA

HINO ANGLE = 90. DEGREES

HINO SPEED = 5. FT/SEC

INJECTION SPEED RATIO = .10

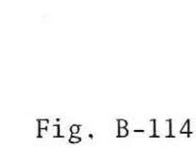
STRATIFICATION = STABLE

BREAKWATER HEIGHT = NORMAL HT

TRAVERSE LOCATION

X = -370.

Y = 150.

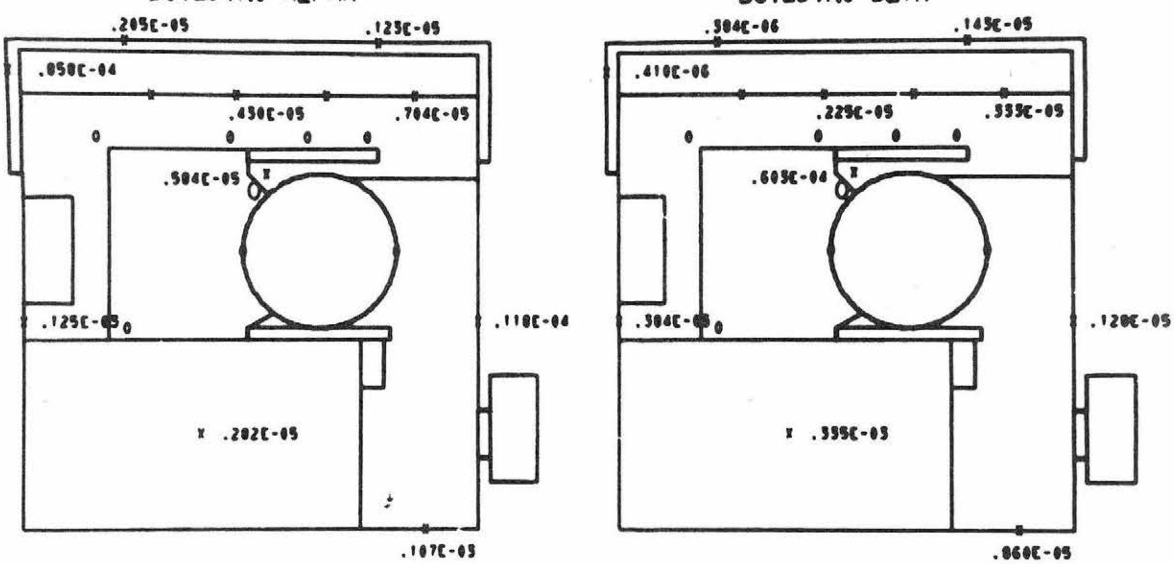


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.307E-05
85.	.179E-02
140.	.305E-03
230.	.551E-05
350.	.236E-05

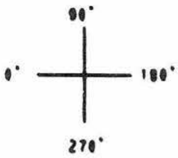
Fig. B-114



FLOATING NUCLEAR POWER PLANT

CONCENTRATIONS = XV/Q (METERS $^{-2}$)

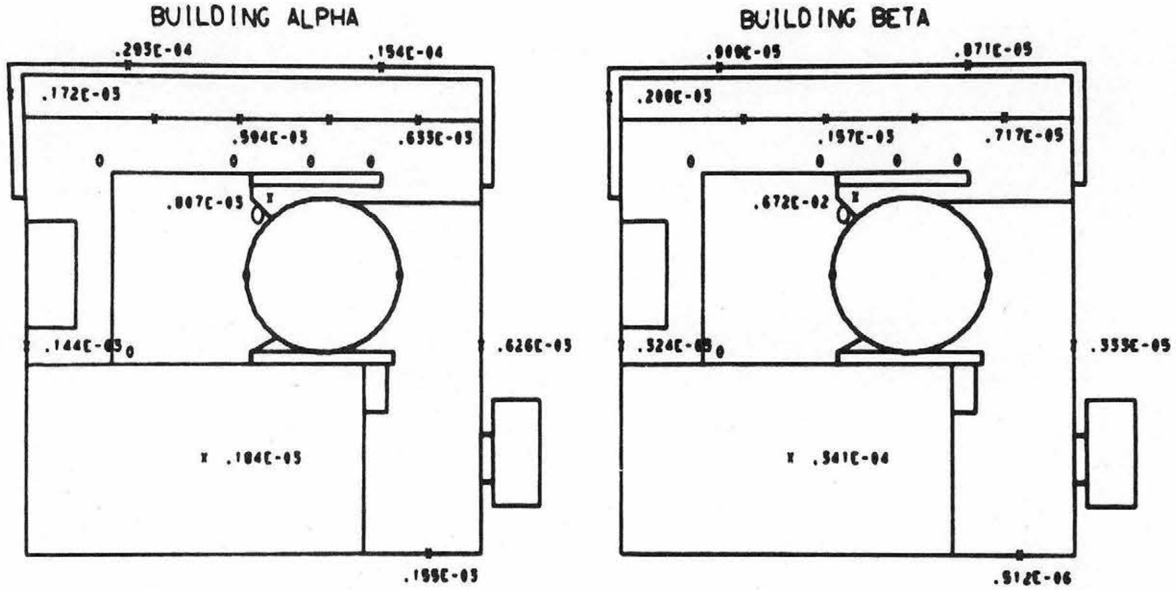
SOURCE = CONTAINMENT SURFACE BLDG BETA
WIND ANGLE = 135. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .10
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 139.
Y = -124.



TRAVERSE SAMPLES

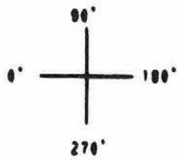
RAKE HEIGHT (FT)	VALUE
25.	.152E-02
85.	.204E-03
140.	.634E-03
250.	.327E-03
350.	.574E-05

Fig. B-115



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG BETA
WIND ANGLE = 180. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .10
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 521.
Y = 274.

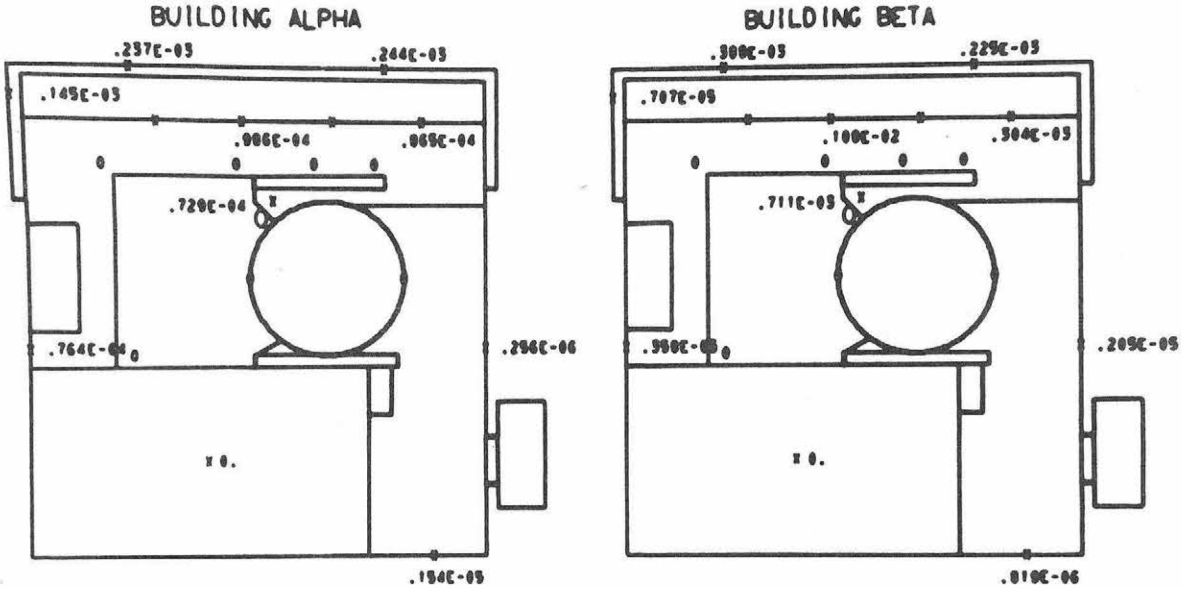


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.430E-03
85.	.340E-03
140.	.310E-03
250.	.105E-03
350.	.154E-05

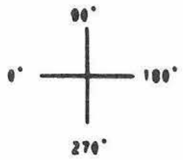
Fig. B-116



FLOATING NUCLEAR POWER PLANT

CONCENTRATIONS = XV/Q (METERS $^{-2}$)

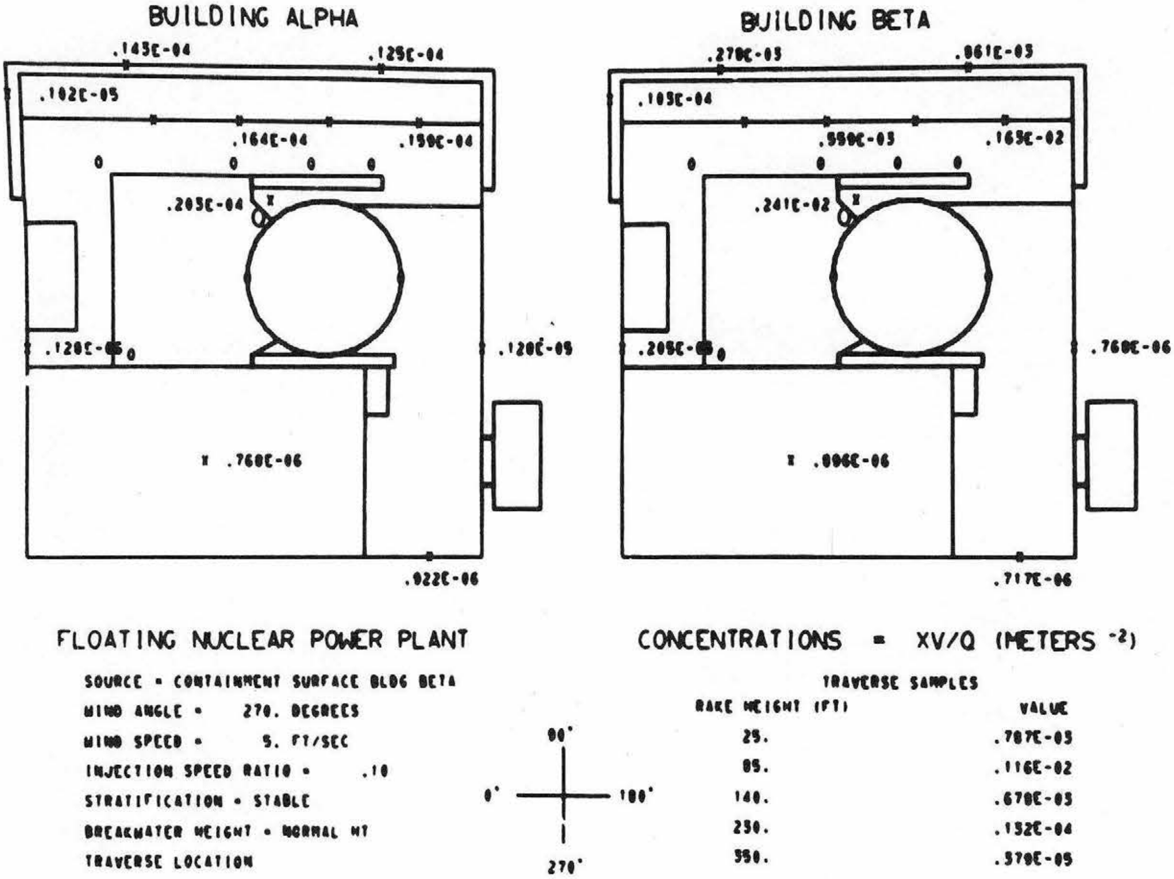
SOURCE = CONTAINMENT SURFACE BLDG BETA
WIND ANGLE = 225. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .10
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 127.
Y = 570.



TRAVERSE SAMPLES

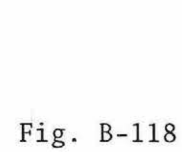
RAKE HEIGHT (FT)	VALUE
25.	.934E-04
85.	.420E-03
140.	.450E-03
230.	.28[illegible]-04
350.	.565E-05

Fig. B-117



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG BETA
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .10
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 221.
Y = 544.



CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.787E-03
85.	.116E-02
140.	.670E-03
250.	.132E-04
350.	.370E-05

Fig. B-118

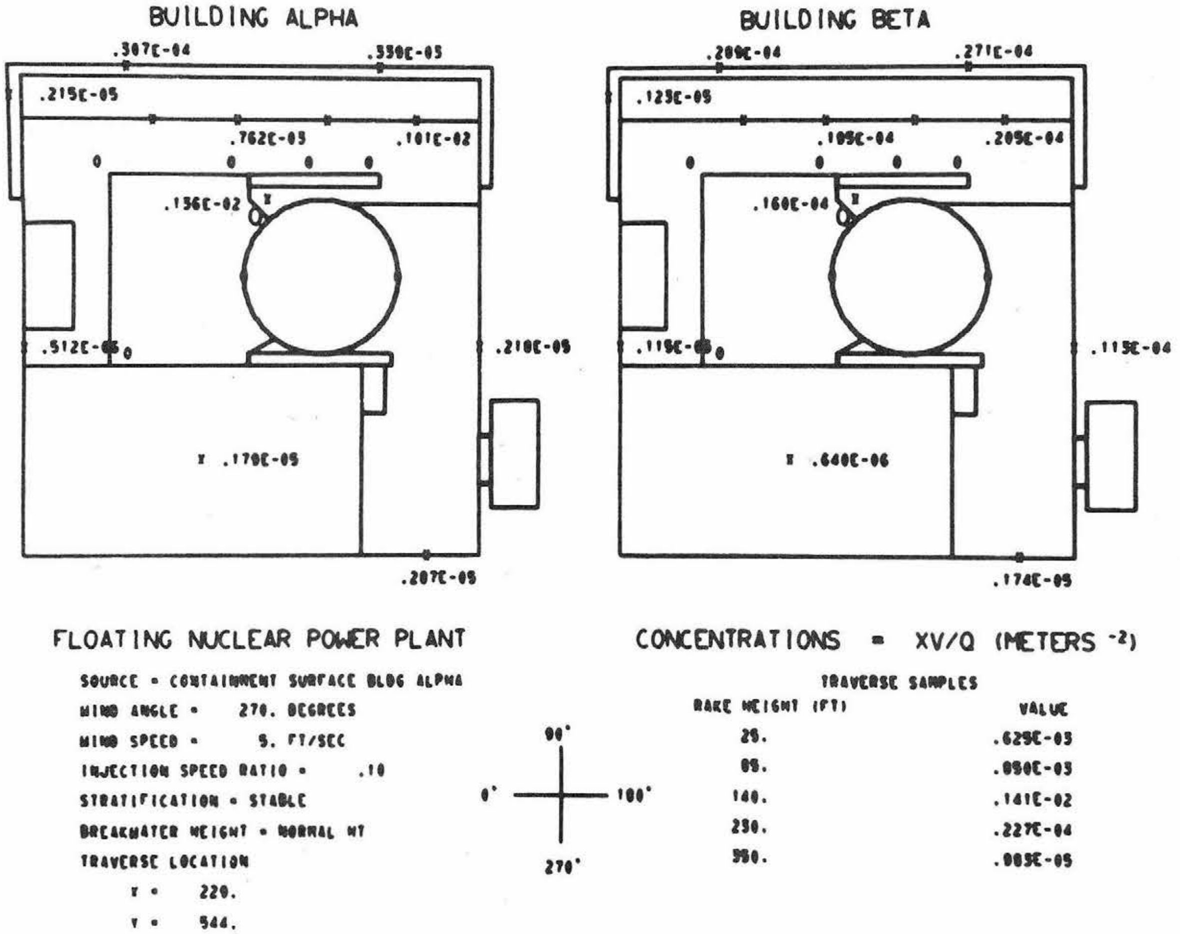
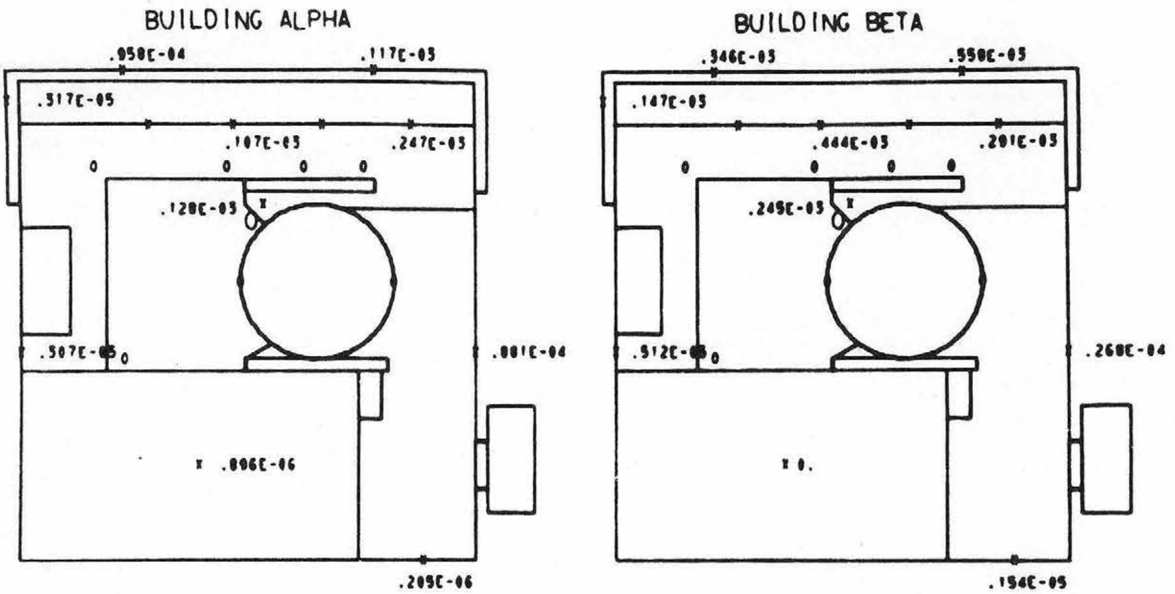

BUILDING ALPHA
.307E-04
.330E-05
.215E-05
.762E-05
.101E-02
.156E-02
.512E-05
.210E-05
X .170E-05
.207E-05
BUILDING BETA
.209E-04
.271E-04
.123E-05
.105E-04
.205E-04
.160E-04
.115E-05
.115E-04
X .640E-06
.174E-05
FLOATING NUCLEAR POWER PLANT
SOURCE = CONTAINMENT SURFACE BLDG ALPHA
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .10
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 220.
Y = 544.
90°
0°
180°
270°
CONCENTRATIONS = XV/Q (METERS -2)
TRAVERSE SAMPLES
RAKE HEIGHT (FT) VALUE
25. .625E-03
85. .850E-03
140. .141E-02
230. .227E-04
350. .805E-05

Fig. B-119



FLOATING NUCLEAR POWER PLANT

SOURCE = CONTAINMENT SURFACE BLDG ALPHA

WIND ANGLE = 315. DEGREES

WIND SPEED = 5. FT/SEC

INJECTION SPEED RATIO = .10

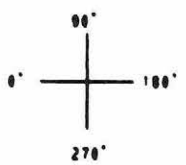
STRATIFICATION = STABLE

BREAKWATER HEIGHT = NORMAL HT

TRAVERSE LOCATION

X = -206.

Y = 536.



CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.702E-03
85.	.502E-03
140.	.541E-03
230.	.701E-05
350.	.535E-05

Fig. B-120

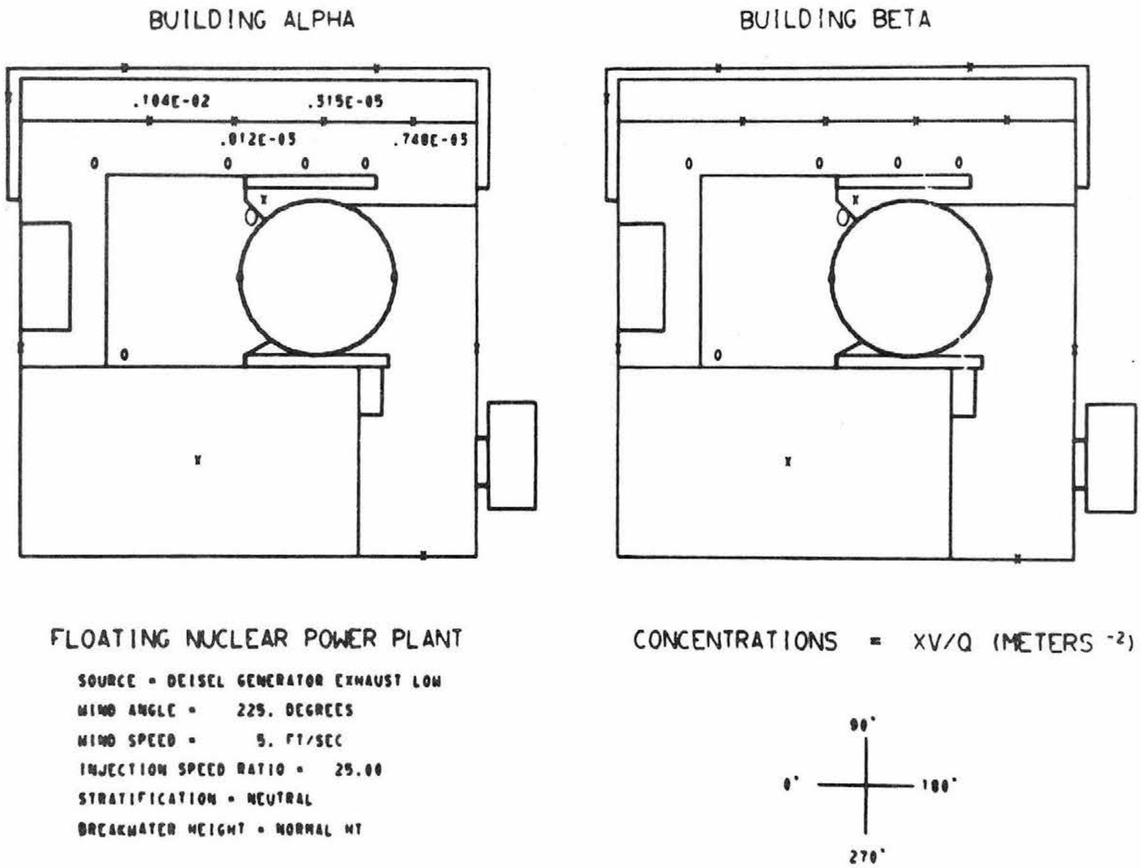

BUILDING ALPHA
BUILDING BETA
.104E-02
.515E-05
.812E-05
.740E-05
FLOATING NUCLEAR POWER PLANT
SOURCE = DEISEL GENERATOR EXHAUST LOW
WIND ANGLE = 225. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 25.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-121

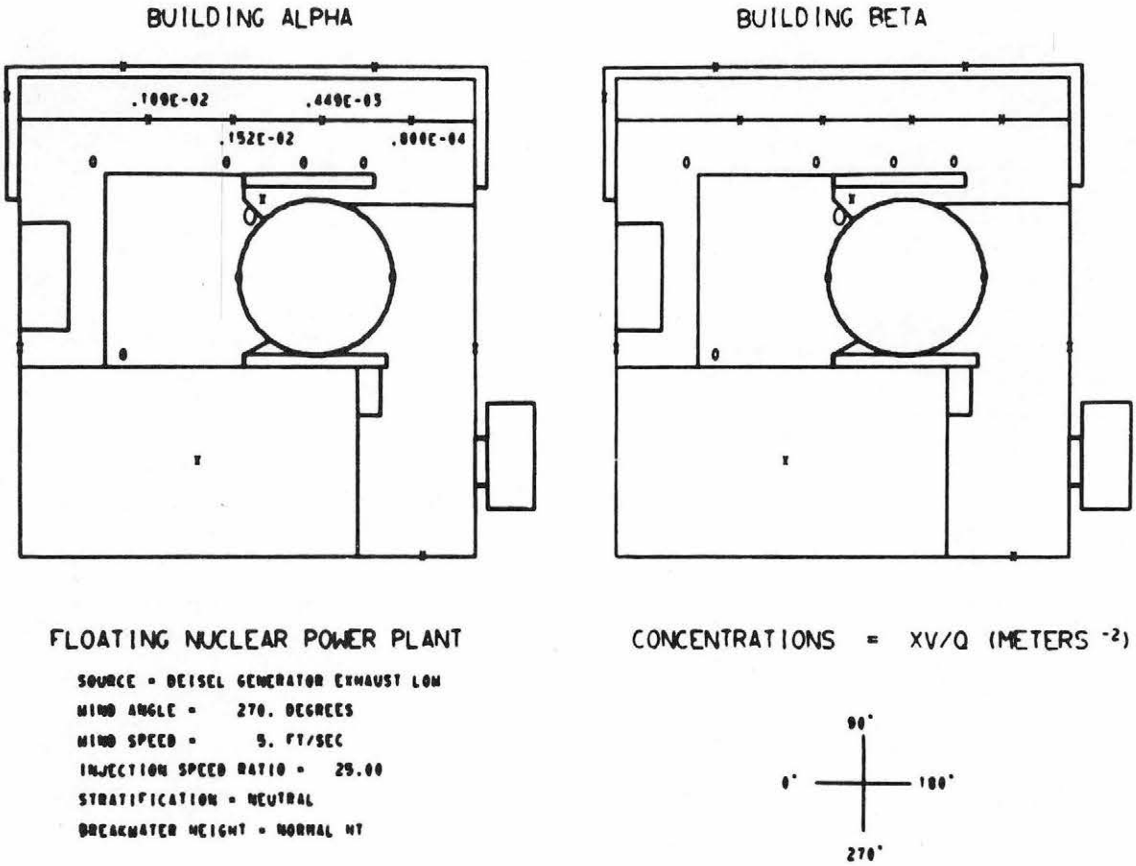

BUILDING ALPHA
BUILDING BETA
.109E-02
.449E-03
.152E-02
.800E-04
FLOATING NUCLEAR POWER PLANT
SOURCE = DEISEL GENERATOR EXHAUST LOW
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 25.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-122

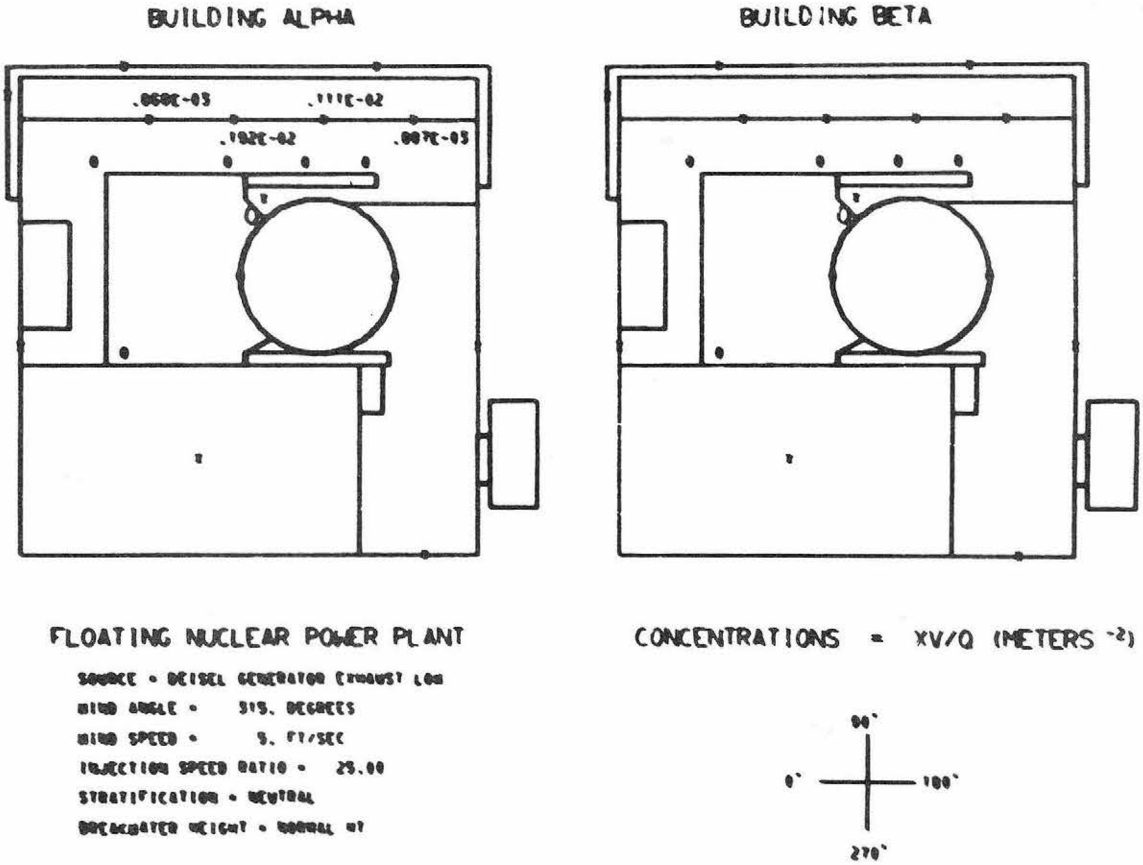

BUILDING ALPHA
BUILDING BETA
FLOATING NUCLEAR POWER PLANT
SOURCE = DEISEL GENERATOR EXHAUST LOW
WIND ANGLE = 315. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 25.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-123

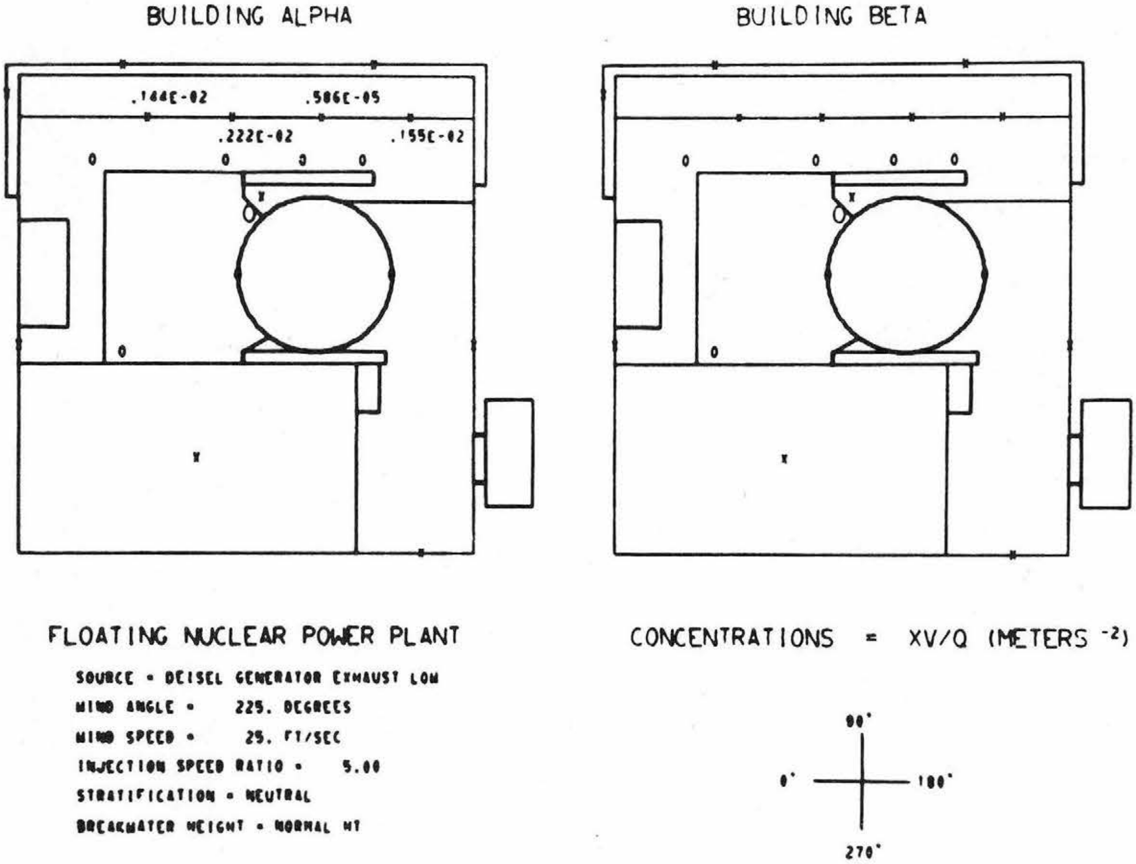

BUILDING ALPHA
.144E-02
.506E-05
.222E-02
.155E-02
BUILDING BETA
FLOATING NUCLEAR POWER PLANT
SOURCE = DEISEL GENERATOR EXHAUST LOW
WIND ANGLE = 225. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = 5.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-124

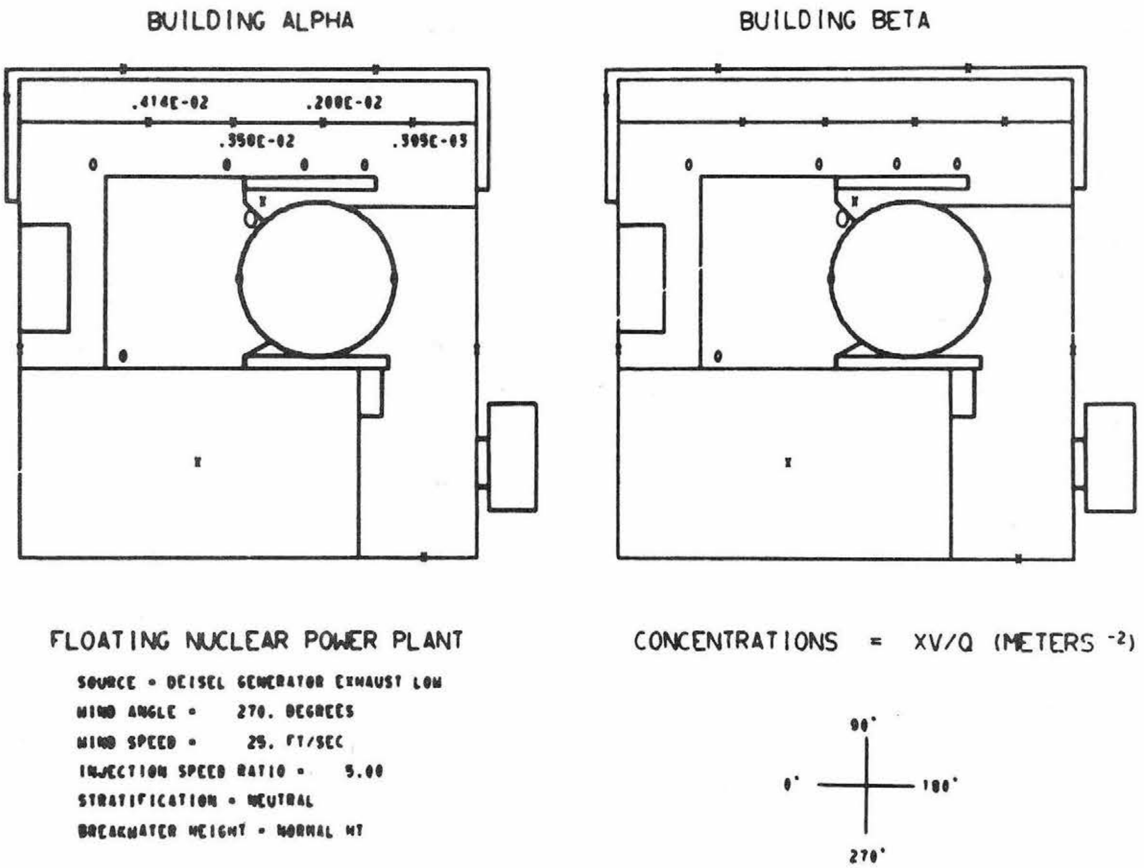

BUILDING ALPHA
BUILDING BETA
.414E-02
.200E-02
.350E-02
.305E-03
FLOATING NUCLEAR POWER PLANT
SOURCE = DEISEL GENERATOR EXHAUST LOW
WIND ANGLE = 270. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = 5.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-125

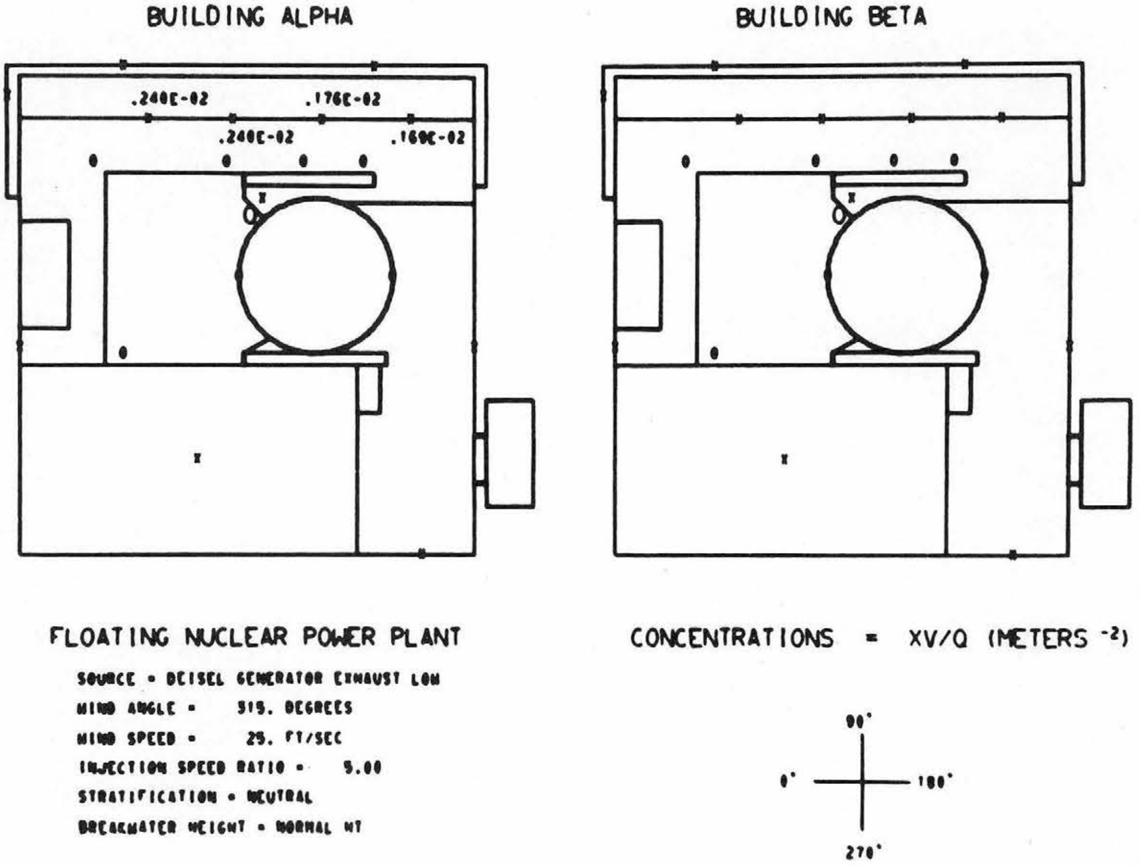

BUILDING ALPHA
BUILDING BETA
.240E-02
.176E-02
.240E-02
.160E-02
FLOATING NUCLEAR POWER PLANT
SOURCE = DEISEL GENERATOR EXHAUST LOW
WIND ANGLE = 315. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = 5.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-126

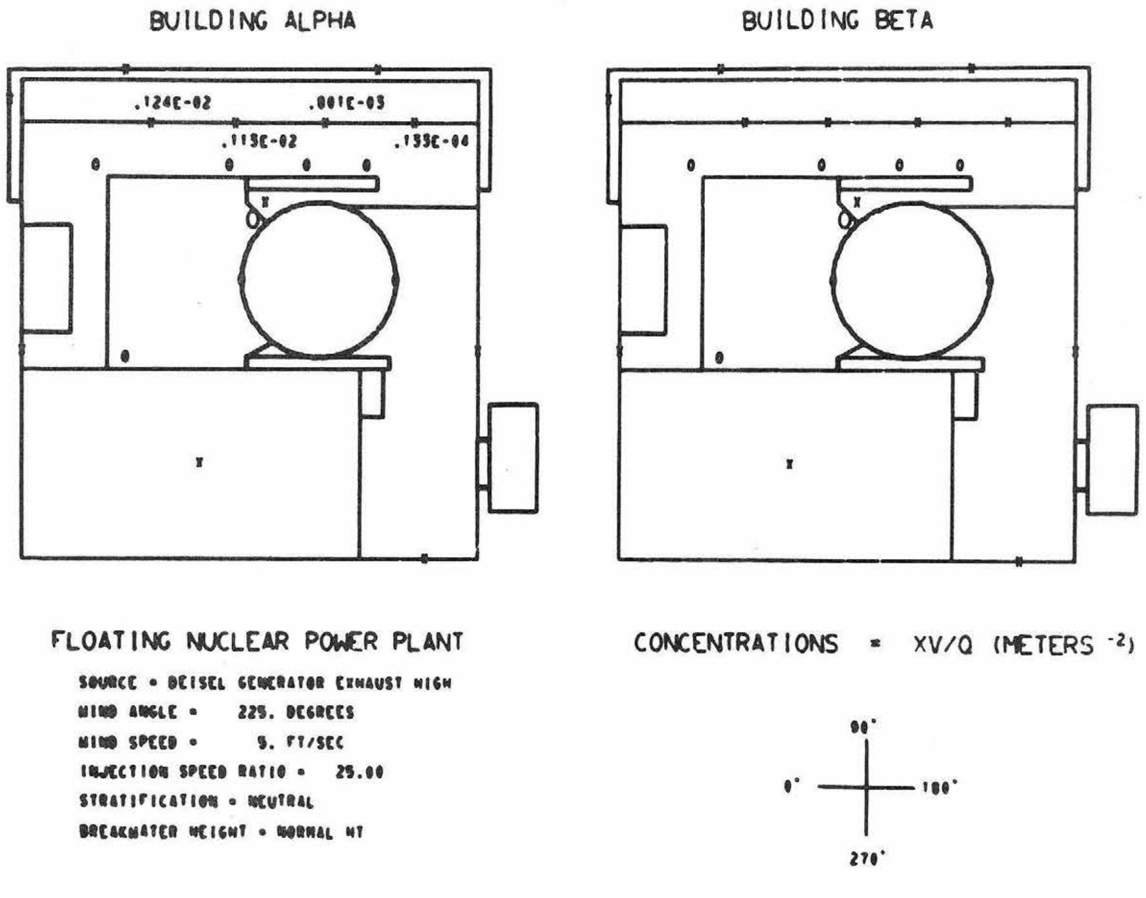

BUILDING ALPHA
BUILDING BETA
.124E-02
.881E-03
.113E-02
.133E-04
FLOATING NUCLEAR POWER PLANT
SOURCE = DEISEL GENERATOR EXHAUST HIGH
WIND ANGLE = 225. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 25.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-127

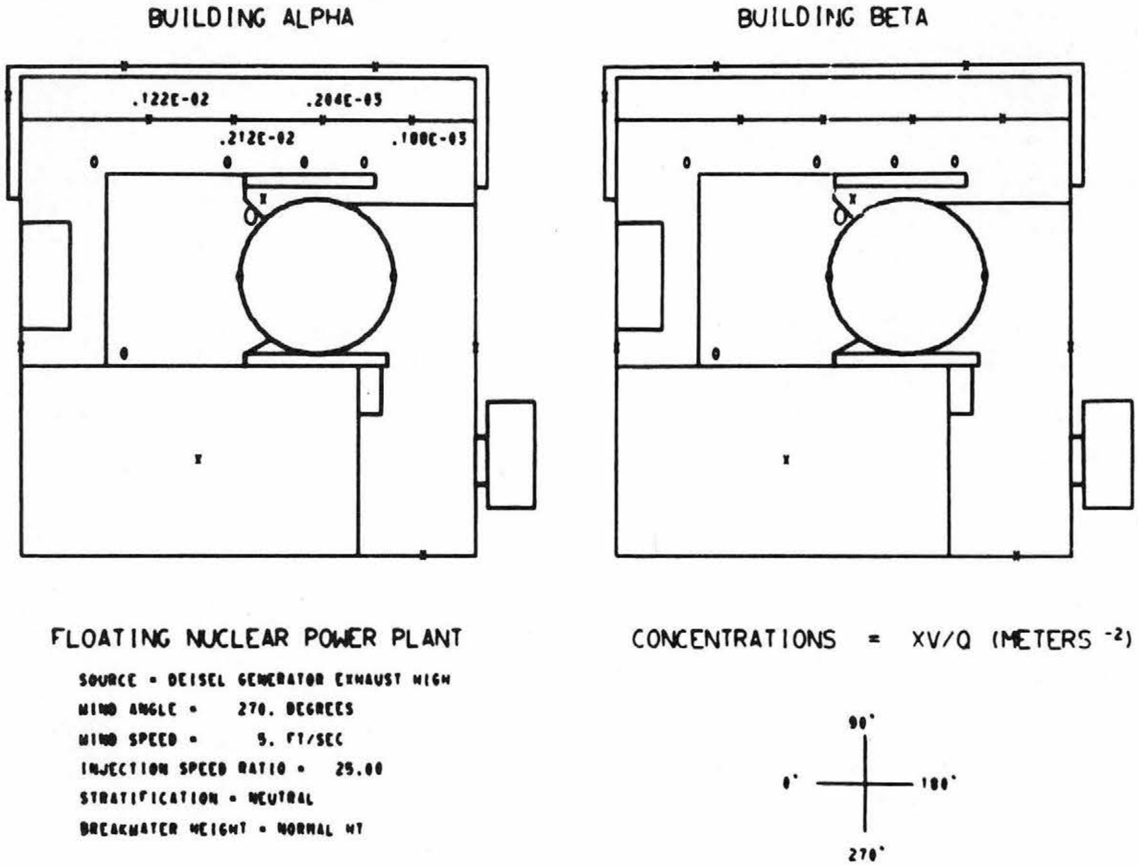

BUILDING ALPHA
BUILDING BETA
.122E-02
.204E-03
.212E-02
.100E-03
0
0
0
0
0
X
X
0
0
0
0
0
X
X
FLOATING NUCLEAR POWER PLANT
SOURCE = DEISEL GENERATOR EXHAUST HIGH
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 25.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-128

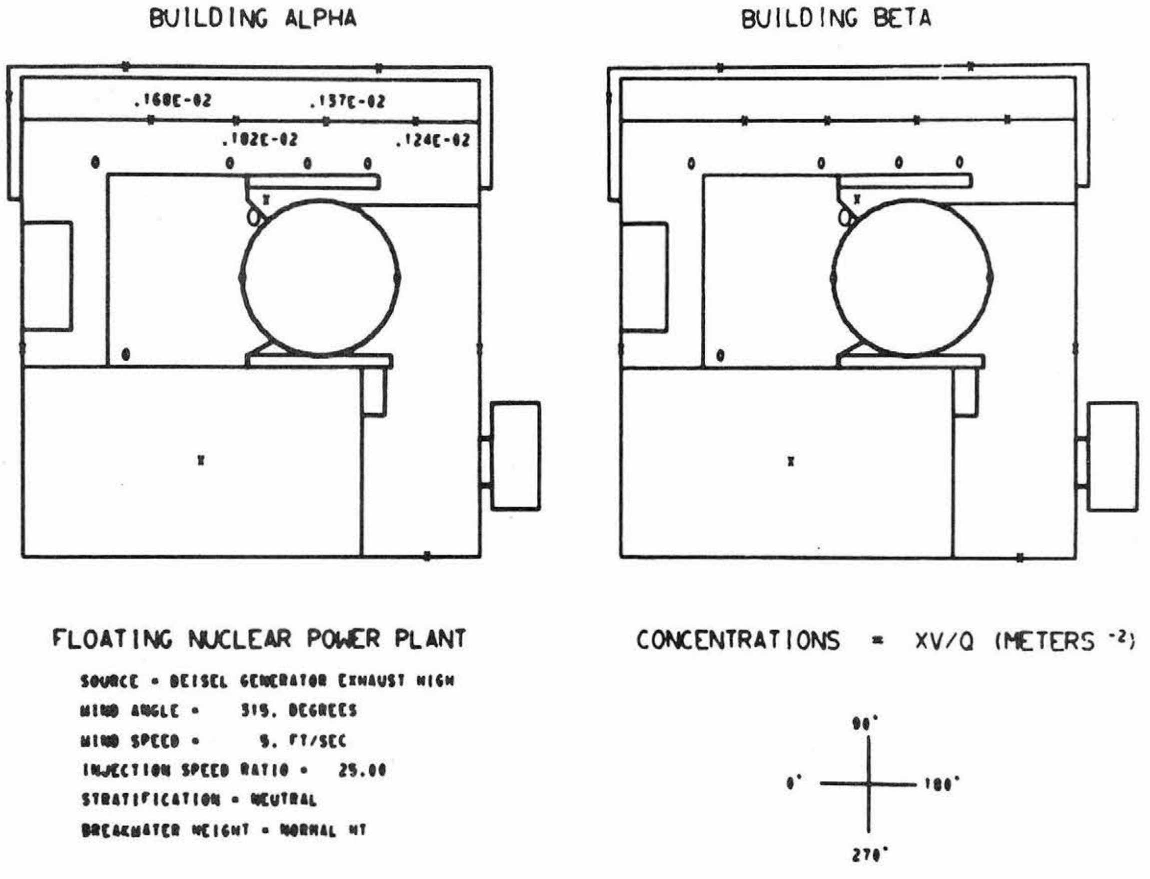

BUILDING ALPHA
.160E-02
.137E-02
.102E-02
.124E-02
0
0
0
0
0
BUILDING BETA
0
0
0
0
0
FLOATING NUCLEAR POWER PLANT
SOURCE = DEISEL GENERATOR EXHAUST HIGH
WIND ANGLE = 315. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 25.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-129

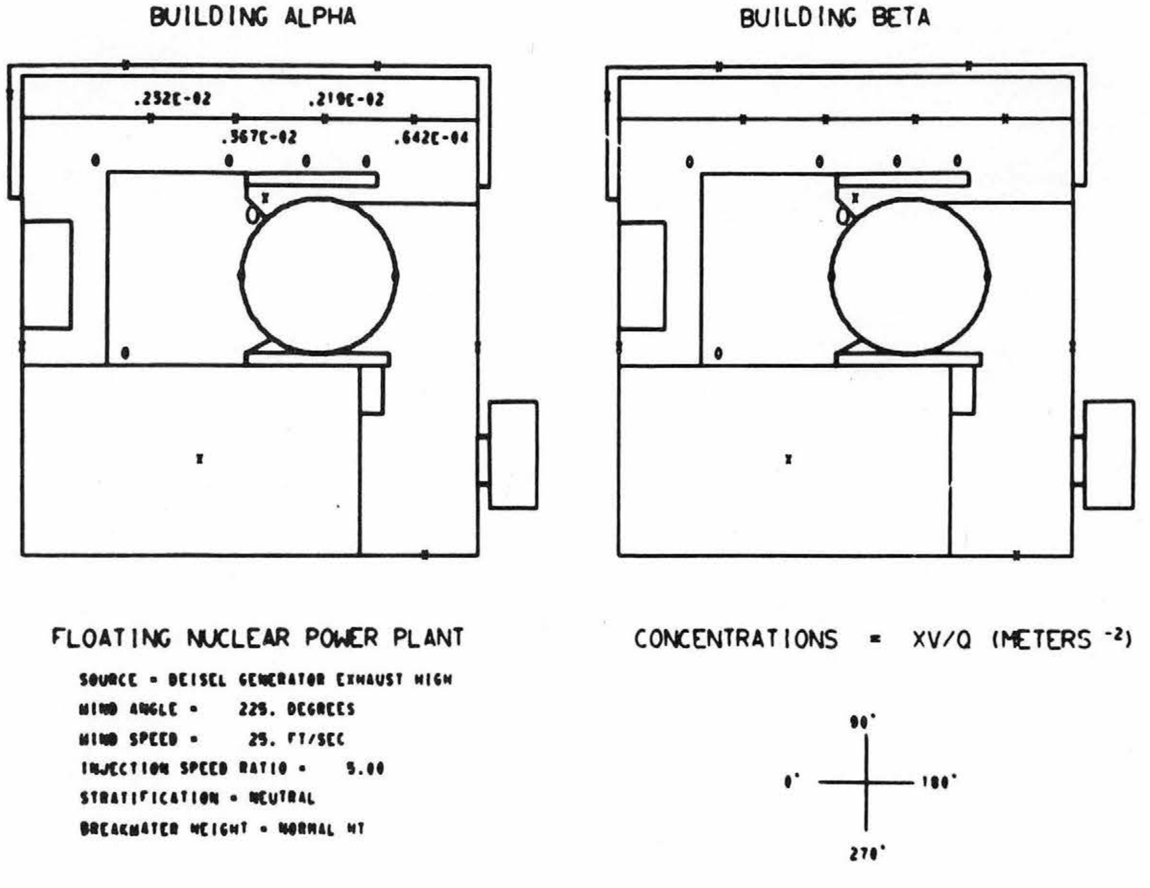

BUILDING ALPHA
.232E-02
.219E-02
.367E-02
.642E-04
0
0
0
0
0
BUILDING BETA
0
0
0
0
0
FLOATING NUCLEAR POWER PLANT
SOURCE = DEISEL GENERATOR EXHAUST HIGH
WIND ANGLE = 225. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = 5.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-130

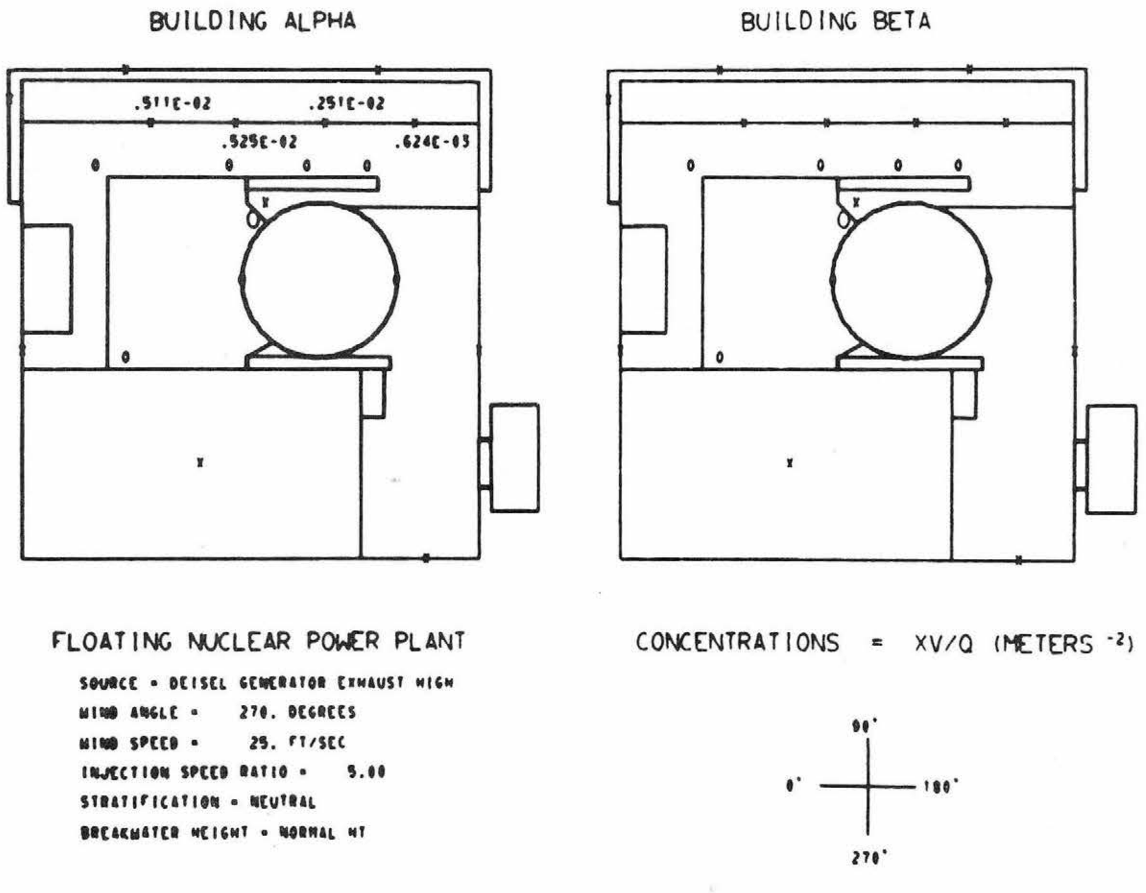

BUILDING ALPHA
BUILDING BETA
.511E-02
.251E-02
.525E-02
.624E-03
FLOATING NUCLEAR POWER PLANT
SOURCE = DEISEL GENERATOR EXHAUST HIGH
WIND ANGLE = 270. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = 5.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-131

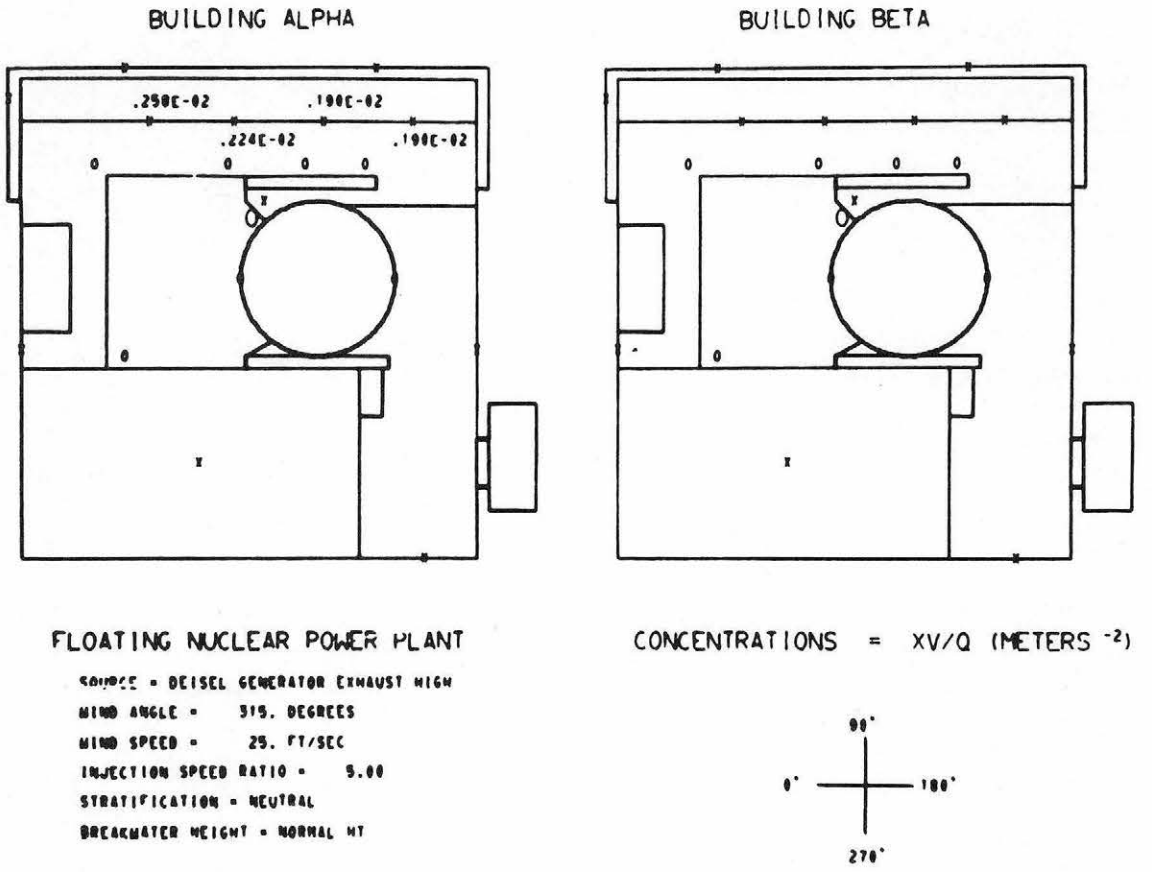

BUILDING ALPHA
BUILDING BETA
.250E-02
.190E-02
.224E-02
.190E-02
FLOATING NUCLEAR POWER PLANT
SOURCE = DEISEL GENERATOR EXHAUST HIGH
WIND ANGLE = 315. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = 5.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-132

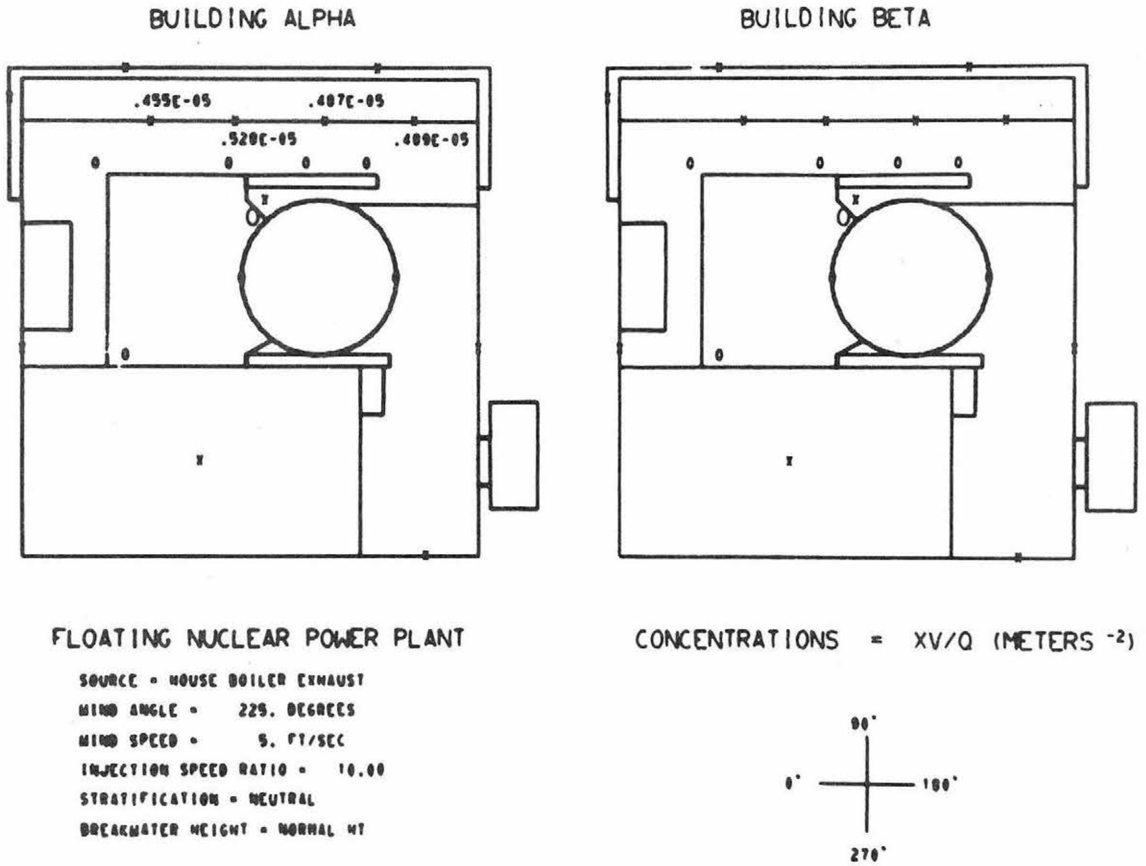
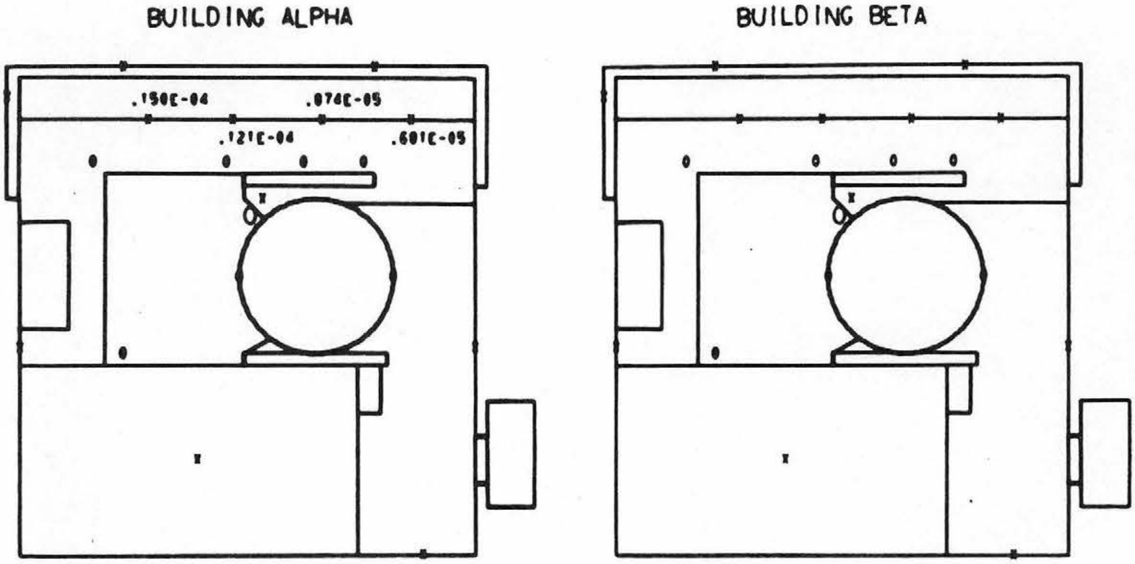

BUILDING ALPHA
BUILDING BETA
.455E-05
.487E-05
.520E-05
.409E-05
0
0
0
0
0
0
0
0
0
0
FLOATING NUCLEAR POWER PLANT
SOURCE = HOUSE BOILER EXHAUST
WIND ANGLE = 225. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 10.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-133



FLOATING NUCLEAR POWER PLANT

SOURCE = HOUSE BOILER EXHAUST
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 10.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT

CONCENTRATIONS = XV/Q (METERS $^{-2}$)

Fig. B-134

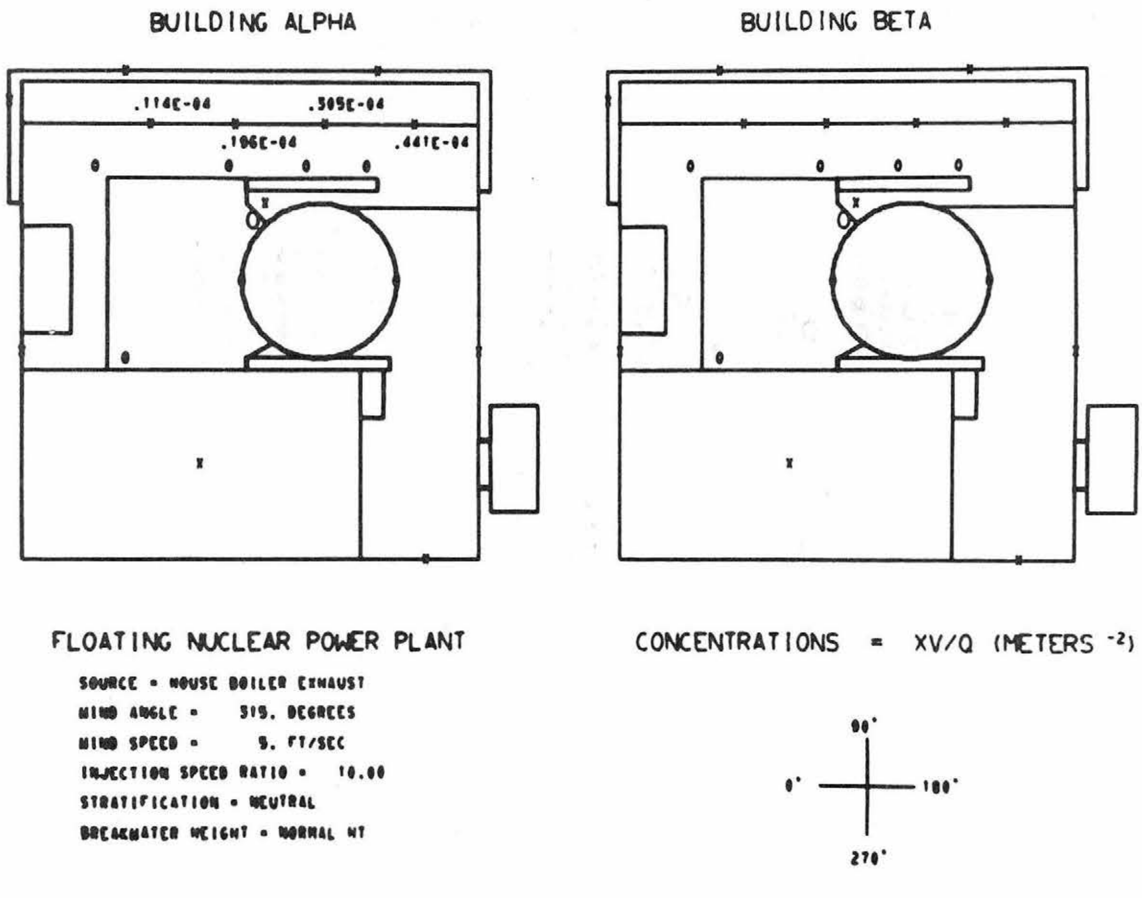

BUILDING ALPHA
BUILDING BETA
.114E-04
.505E-04
.196E-04
.441E-04
FLOATING NUCLEAR POWER PLANT
SOURCE = HOUSE BOILER EXHAUST
WIND ANGLE = 315. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 10.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-135

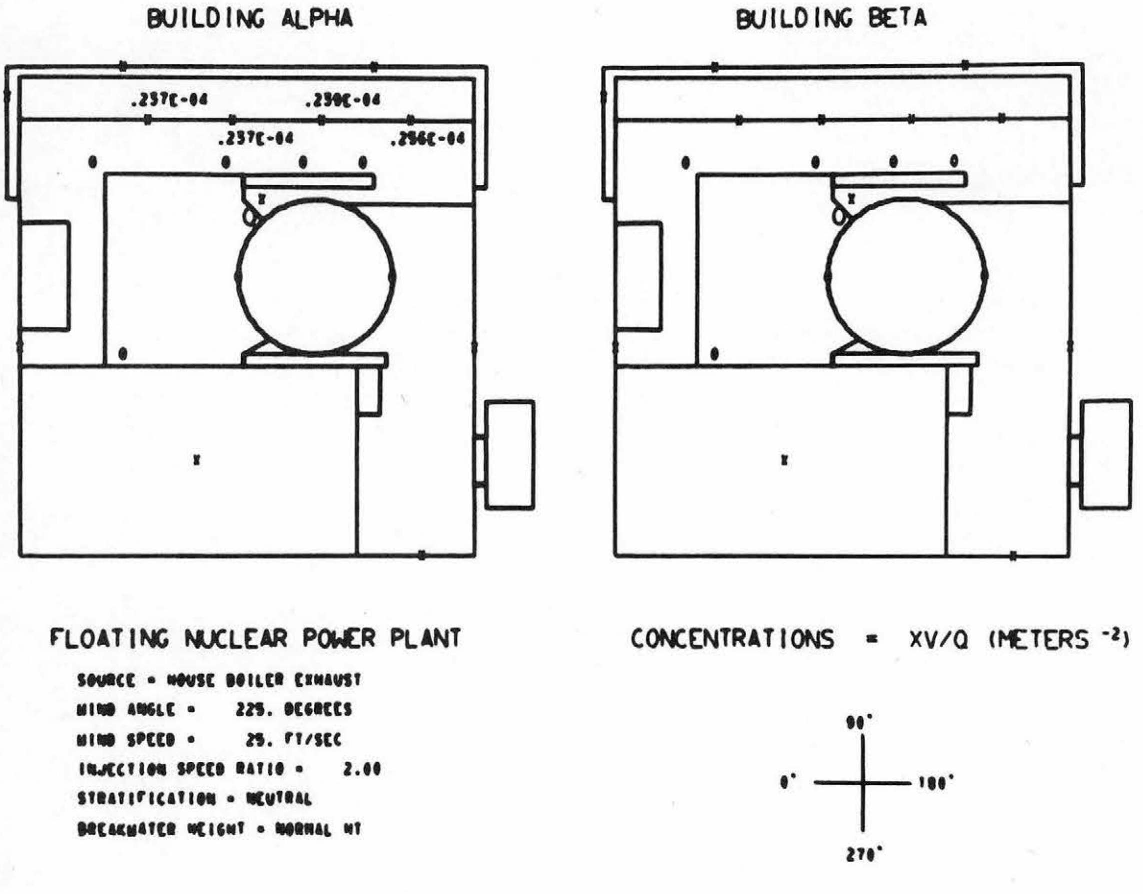

BUILDING ALPHA
BUILDING BETA
.237E-04
.290E-04
.237E-04
.296E-04
FLOATING NUCLEAR POWER PLANT
SOURCE = HOUSE BOILER EXHAUST
WIND ANGLE = 225. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = 2.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-136

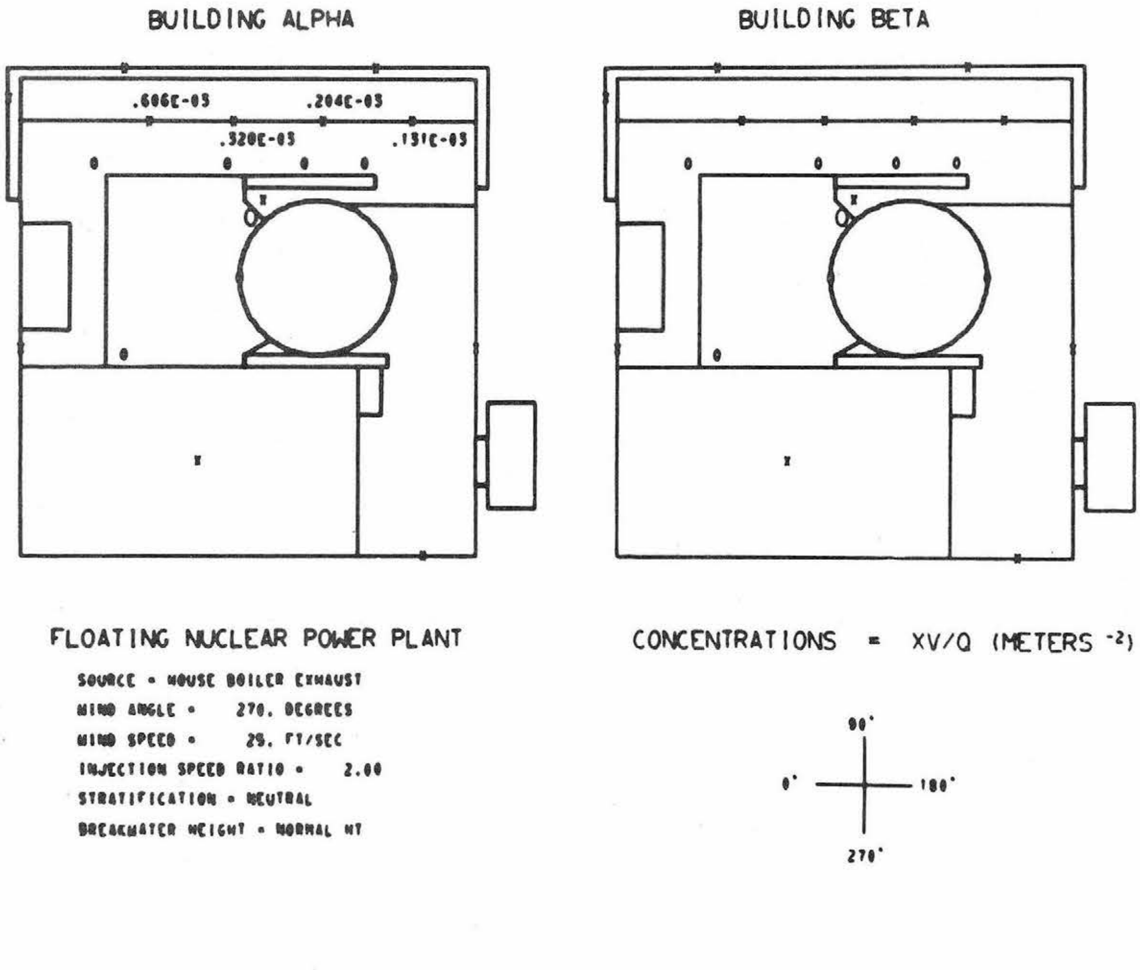

BUILDING ALPHA
BUILDING BETA
.606E-03
.204E-03
.320E-03
.131E-03
FLOATING NUCLEAR POWER PLANT
SOURCE = HOUSE BOILER EXHAUST
WIND ANGLE = 270. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = 2.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-137

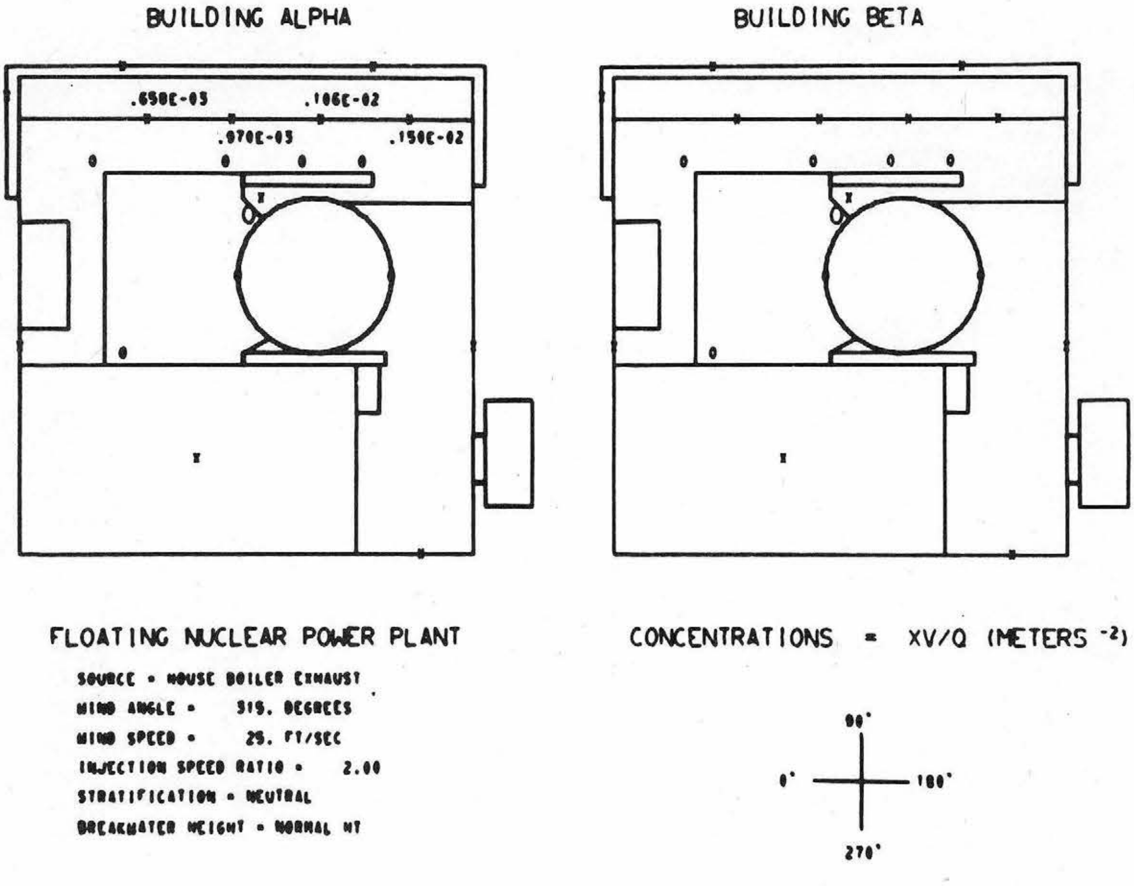
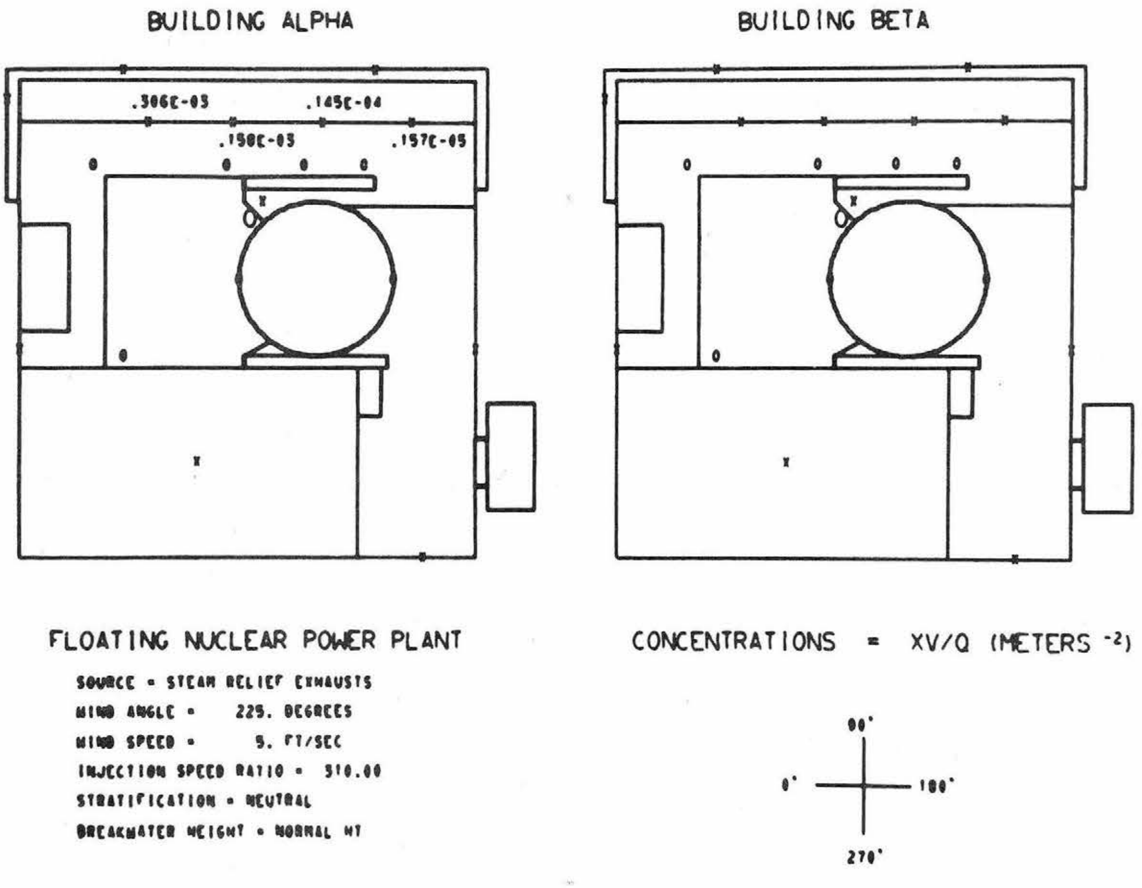

BUILDING ALPHA
BUILDING BETA
.650E-03
.106E-02
.970E-03
.150E-02
FLOATING NUCLEAR POWER PLANT
SOURCE = HOUSE BOILER EXHAUST
WIND ANGLE = 315. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = 2.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-138



BUILDING ALPHA
BUILDING BETA
.306E-03
.145E-04
.150E-03
.157E-05
0
0
0
0
0
X
X
0
0
0
0
0
X
X
FLOATING NUCLEAR POWER PLANT
SOURCE = STEAM RELIEF EXHAUSTS
WIND ANGLE = 225. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 510.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-139

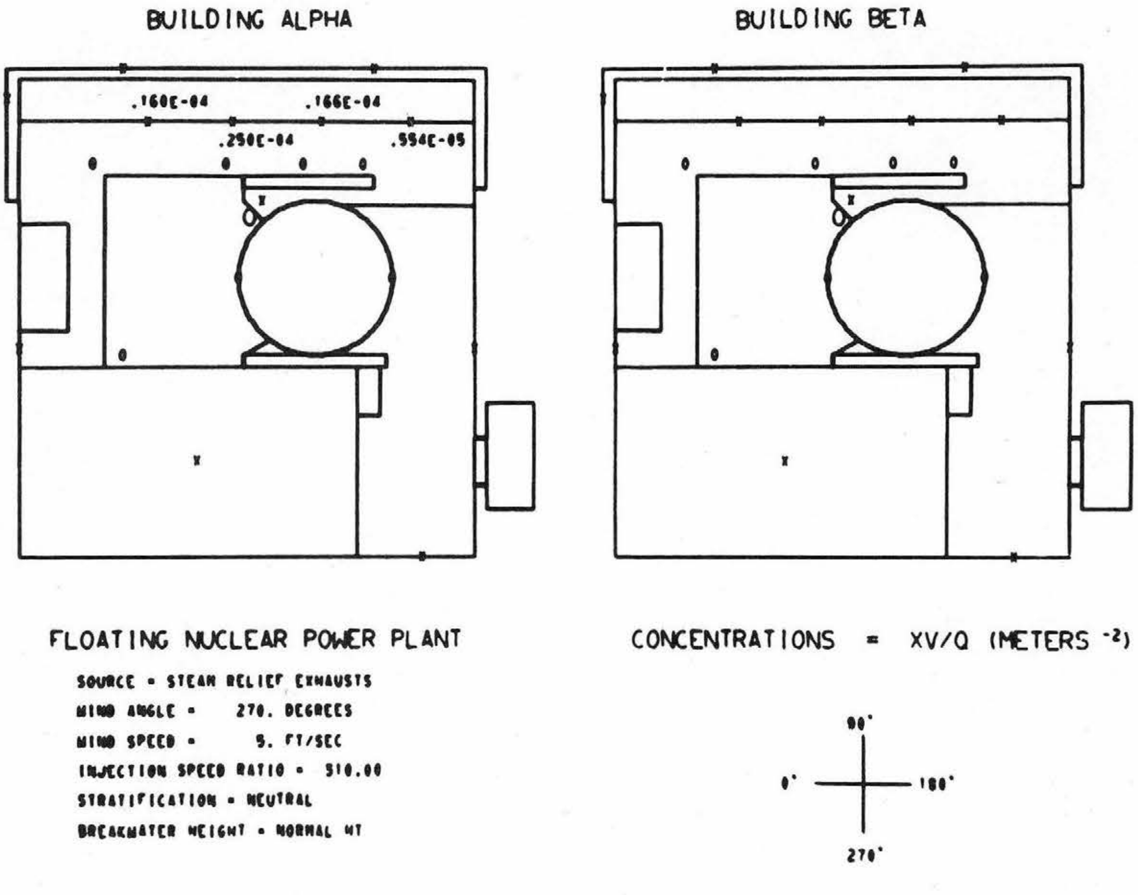

BUILDING ALPHA
BUILDING BETA
.160E-04
.166E-04
.250E-04
.554E-05
0
0
0
0
0
0
0
0
0
0
FLOATING NUCLEAR POWER PLANT
SOURCE = STEAM RELIEF EXHAUSTS
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 510.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-140

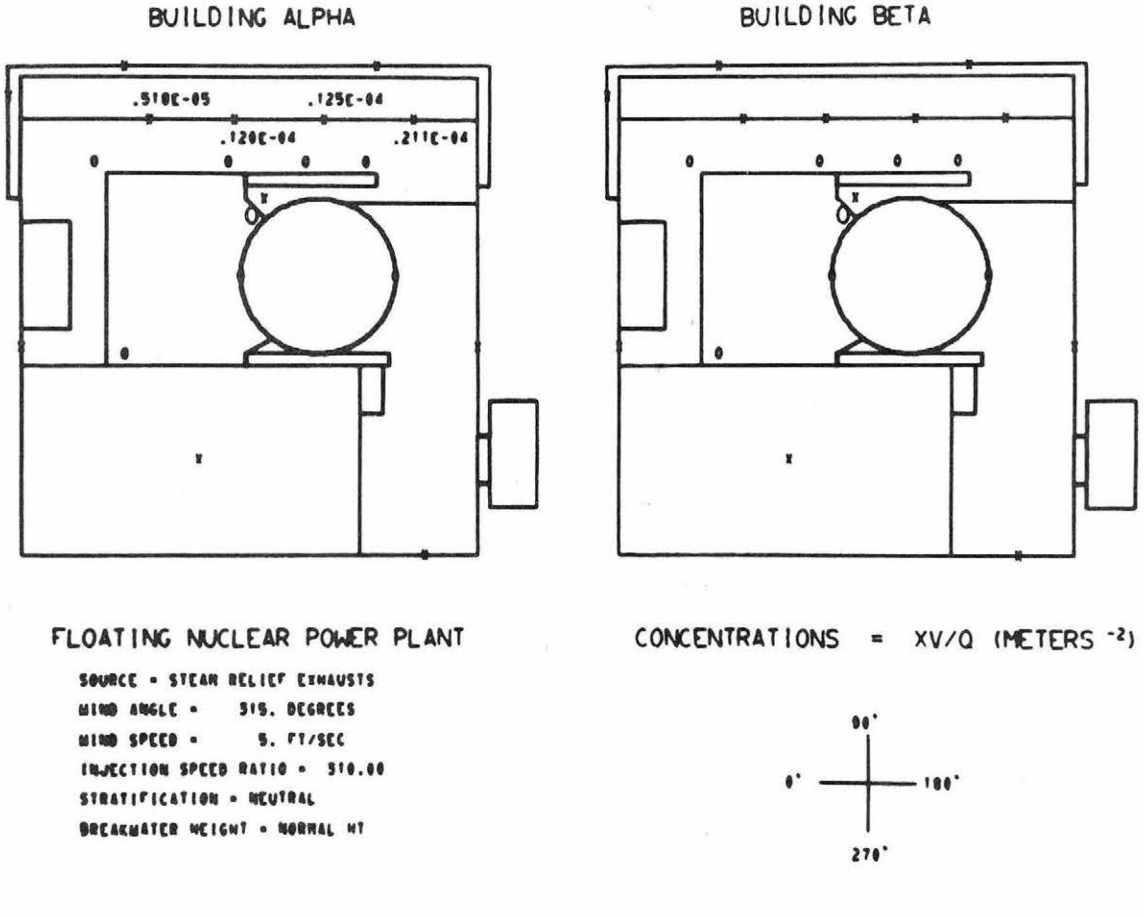

BUILDING ALPHA
BUILDING BETA
.510E-05
.125E-04
.120E-04
.211E-04
0
0
0
0
0
X
X
0
0
0
0
0
X
X
FLOATING NUCLEAR POWER PLANT
SOURCE = STEAM RELIEF EXHAUSTS
WIND ANGLE = 315. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 310.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-141

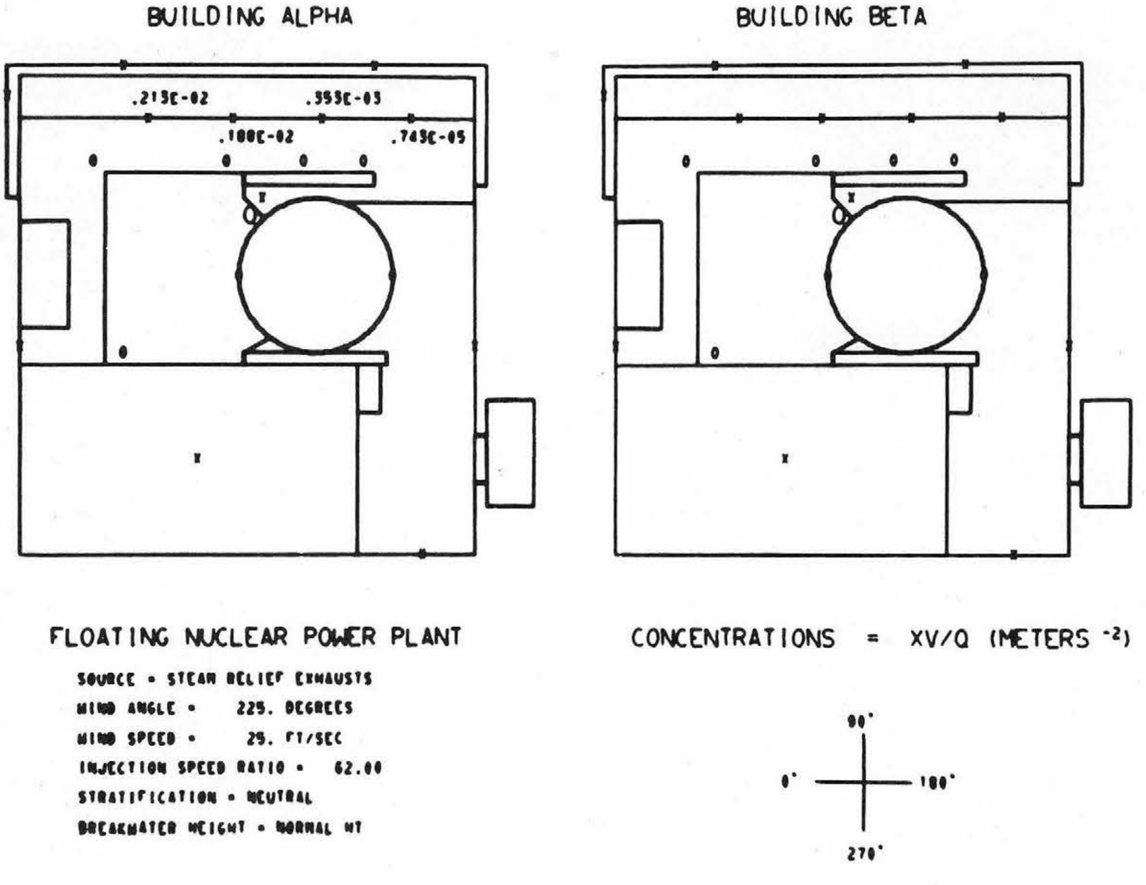

BUILDING ALPHA
.213E-02
.353E-03
.100E-02
.743E-05
BUILDING BETA
FLOATING NUCLEAR POWER PLANT
SOURCE = STEAM RELIEF EXHAUSTS
WIND ANGLE = 225. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = 62.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-142

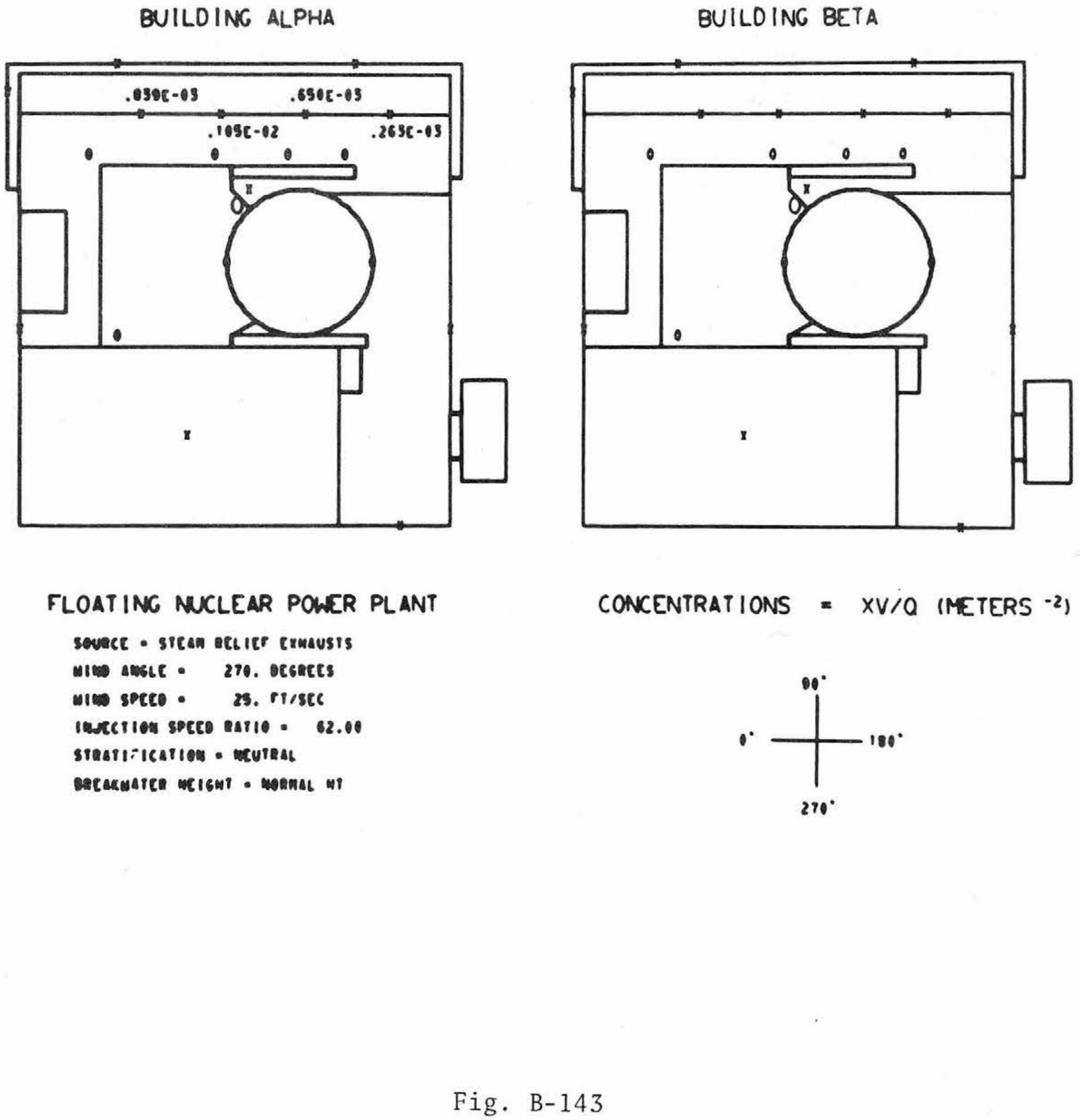

BUILDING ALPHA
BUILDING BETA
.839E-03
.650E-03
.105E-02
.265E-03
FLOATING NUCLEAR POWER PLANT
CONCENTRATIONS = XV/Q (METERS -2)
SOURCE = STEAM RELIEF EXHAUSTS
WIND ANGLE = 270. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = 62.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
90°
0°
180°
270°

Fig. B-143

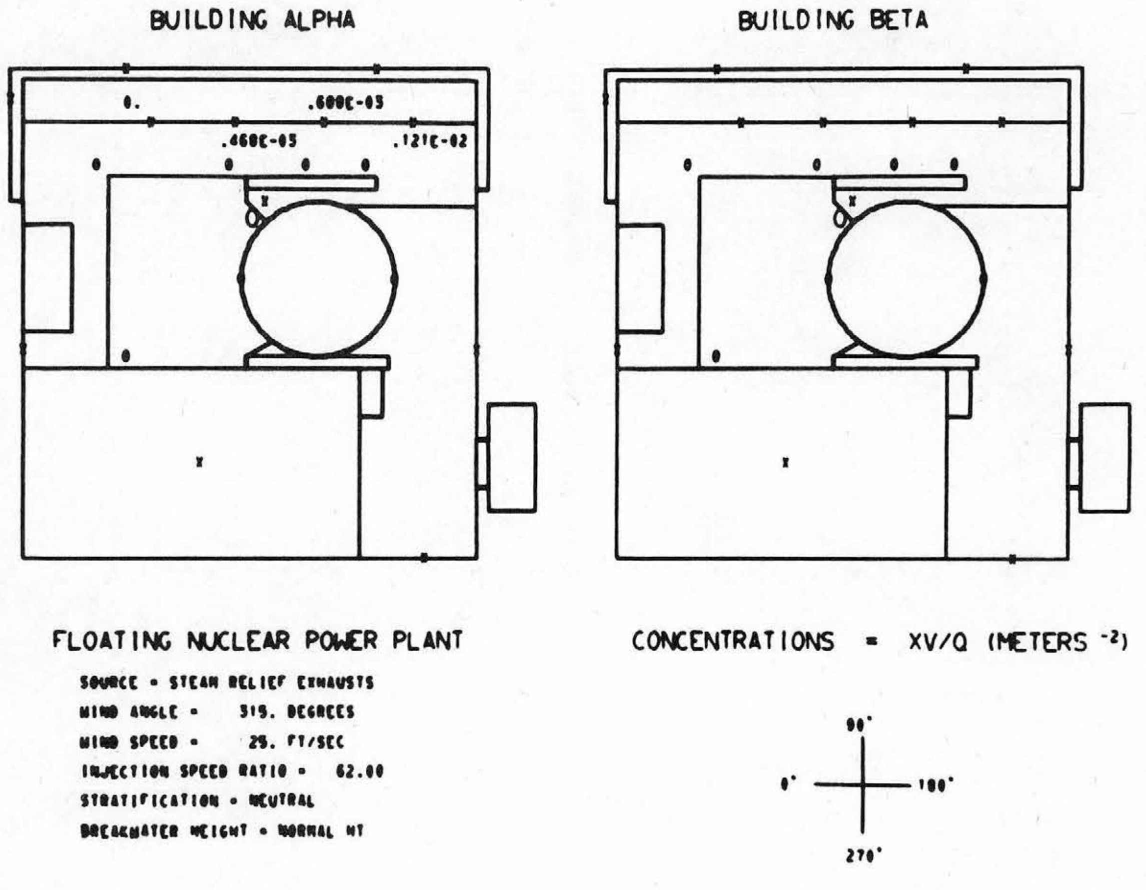
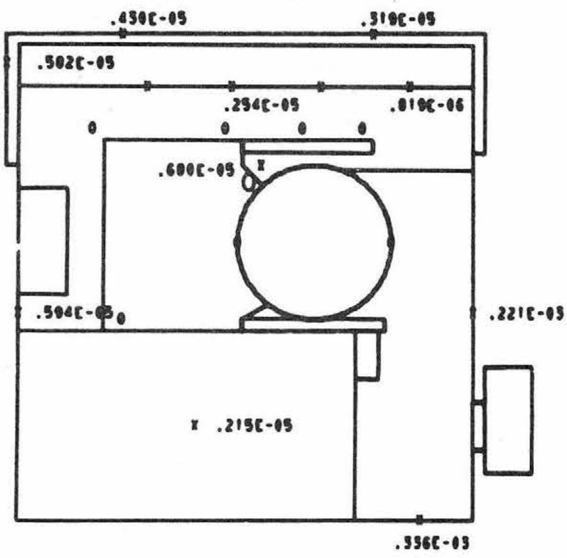
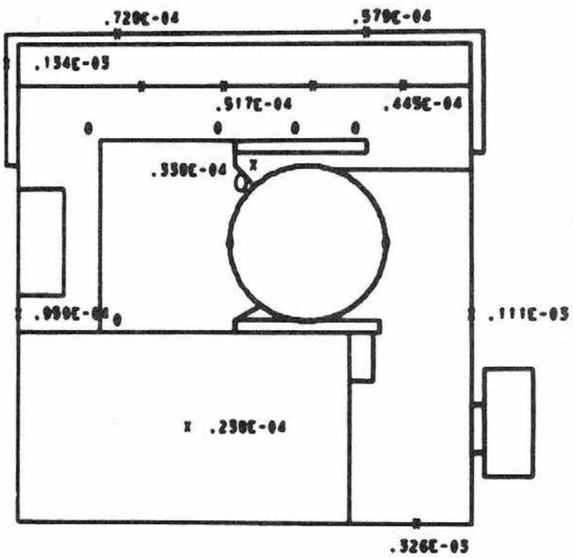

BUILDING ALPHA
BUILDING BETA
0.
.600E-03
.460E-03
.121E-02
FLOATING NUCLEAR POWER PLANT
SOURCE = STEAM RELIEF EXHAUSTS
WIND ANGLE = 315. DEGREES
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = 62.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. B-144

BUILDING ALPHA



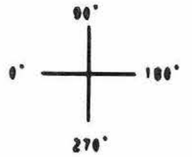
BUILDING BETA



FLOATING NUCLEAR POWER PLANT

CONCENTRATIONS = XV/Q (METERS $^{-2}$)

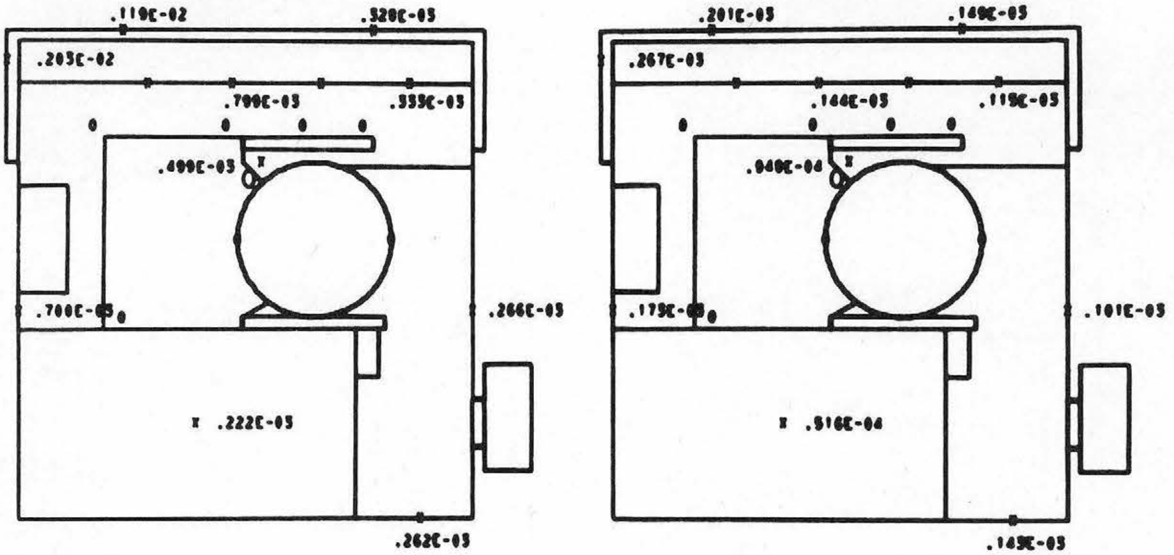
SOURCE = OUTSIDE BREAKWATER BKW
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 700.
Y = -206.



TRAVERSE SAMPLES

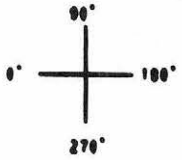
RAKE HEIGHT (FT)	VALUE
10.	.409E-03
25.	.204E-03
45.	.130E-03
65.	.122E-04
350.	.147E-05

Fig. B-145



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER BKW
WIND ANGLE = 45. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 300.
Y = -170.

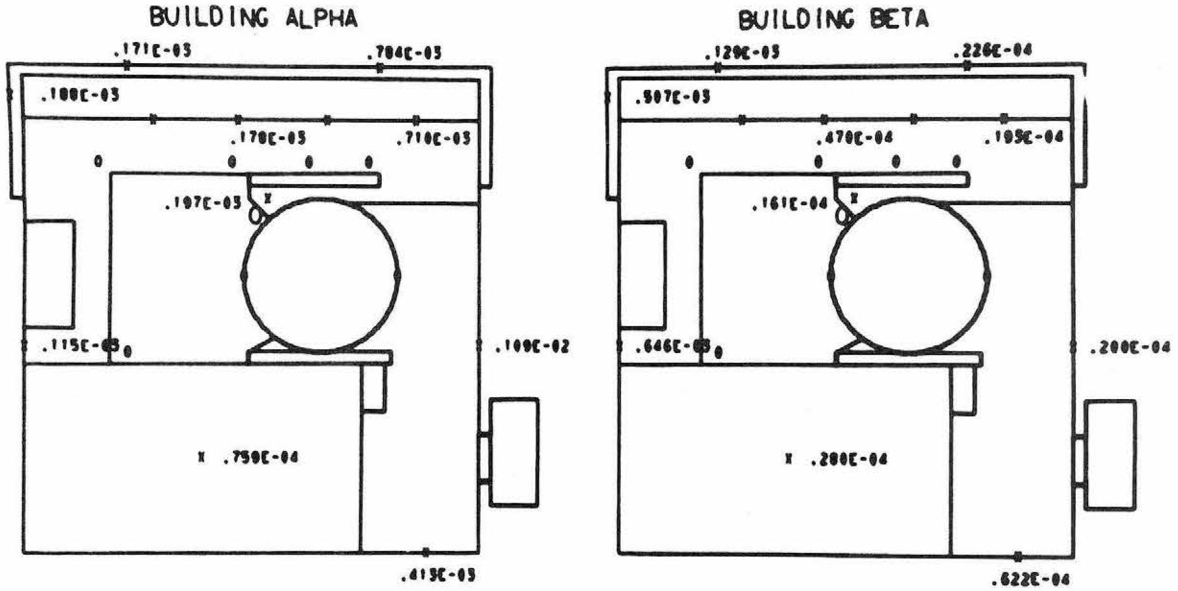


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

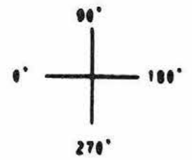
RAKE HEIGHT (FT)	VALUE
10.	.271E-03
25.	.130E-03
45.	.037E-04
65.	.164E-05
350.	.107E-05

Fig. B-146



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER BKW
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 0.
Y = -160.

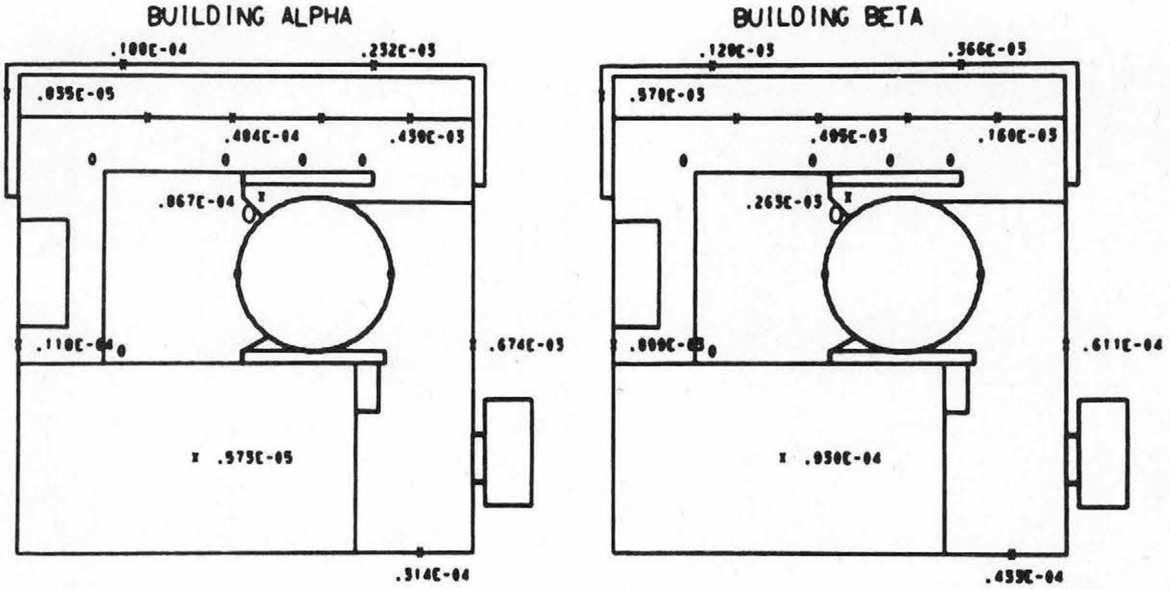


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

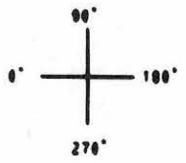
RAKE HEIGHT (FT)	VALUE
10.	.665E-03
25.	.450E-03
45.	.270E-03
65.	.435E-04
350.	.221E-05

Fig. B-147



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER BKW
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 0.
Y = 600.

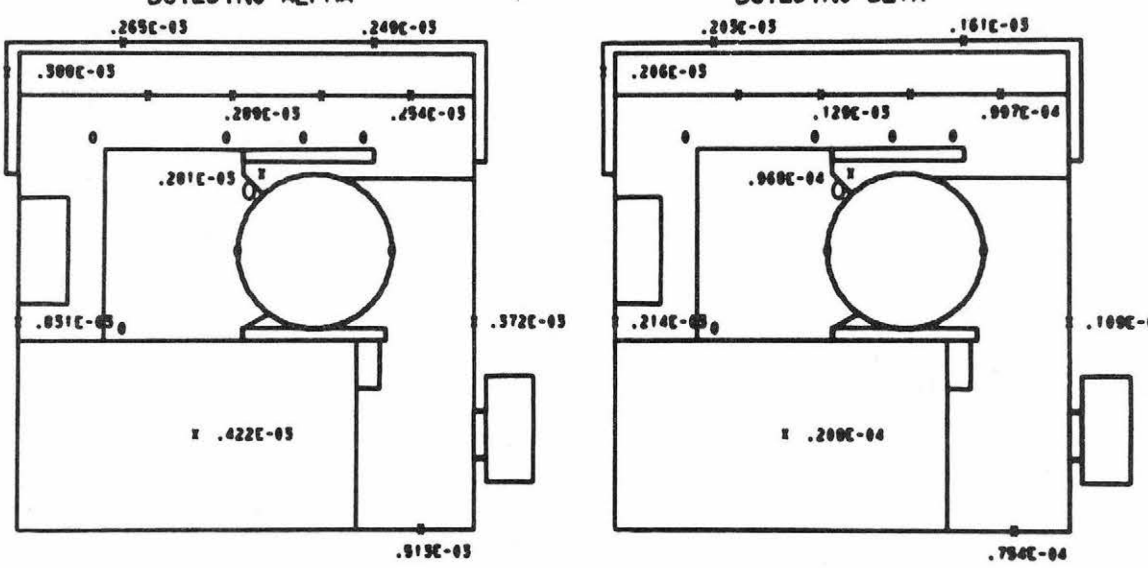


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
10.	0.
25.	.259E-03
45.	.449E-03
65.	.255E-03
550.	.715E-05

Fig. B-148



FLOATING NUCLEAR POWER PLANT

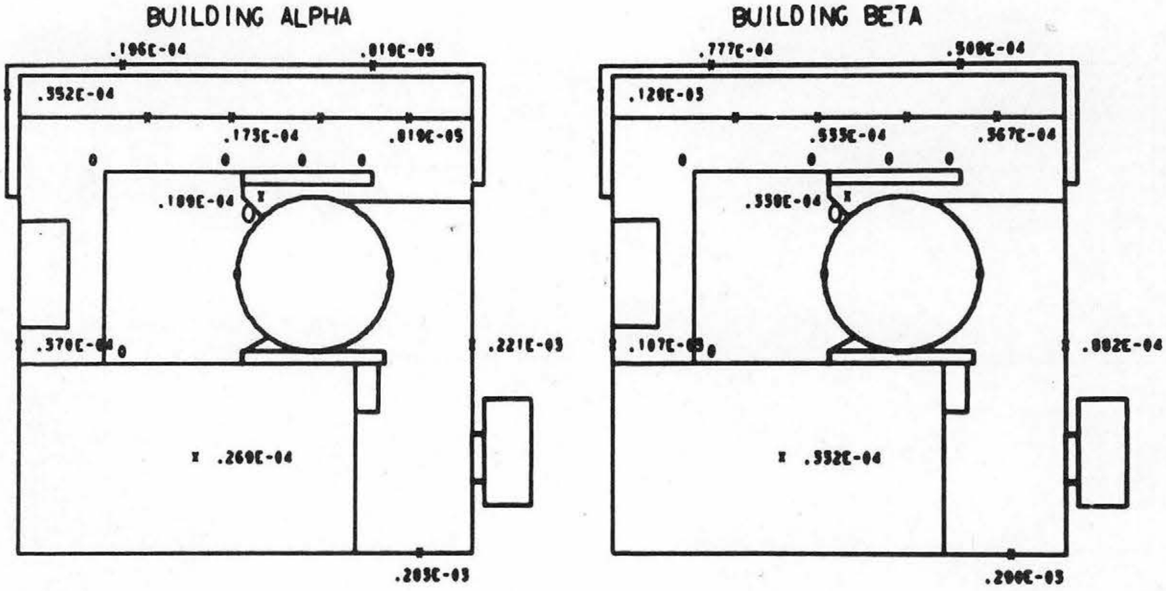
SOURCE = OUTSIDE BREAKWATER BKW
WIND ANGLE = 315. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -555.
Y = 0.

CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

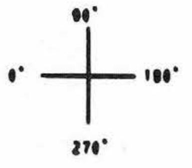
RAKE HEIGHT (FT)	VALUE
10.	.210E-03
25.	.212E-03
45.	.181E-03
65.	.432E-04
350.	.450E-05

Fig. B-149



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER 0.50
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -707.
Y = -115.

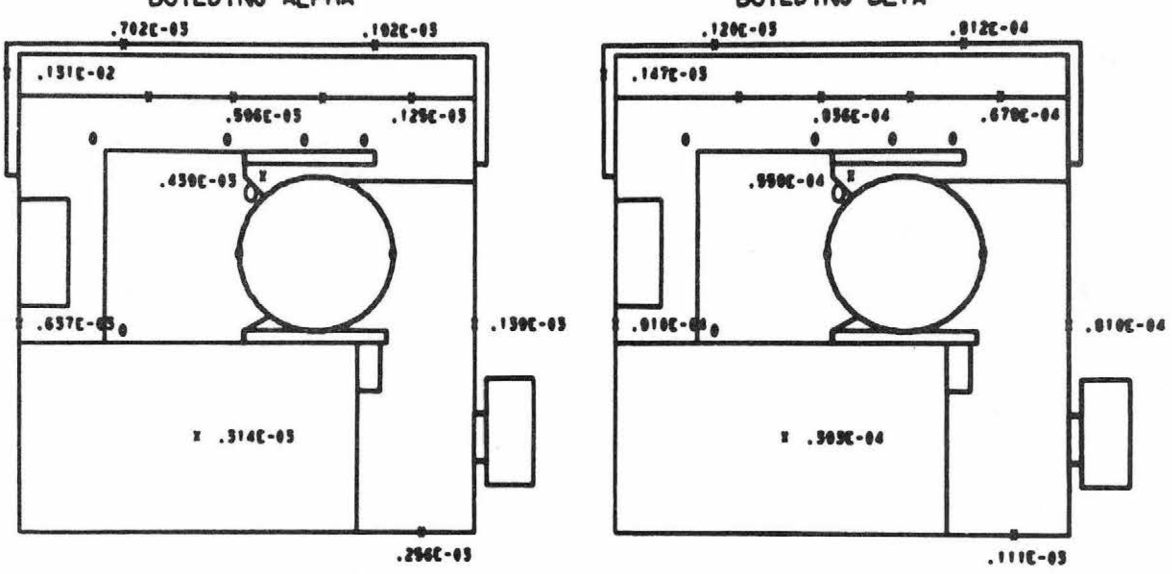


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
10.	.360E-03
25.	.290E-03
45.	.161E-03
65.	.344E-04
350.	.434E-05

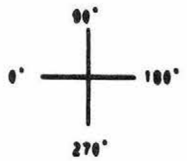
Fig. B-150



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER 0.50
WIND ANGLE = 45. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 300.
Y = -170.

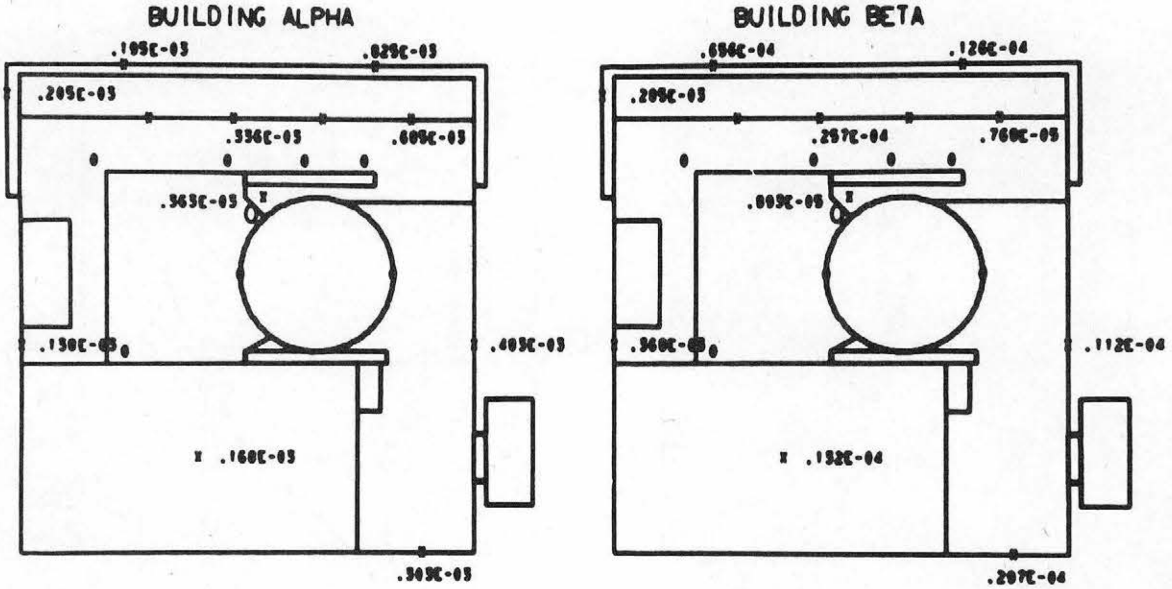
CONCENTRATIONS = XV/Q (METERS $^{-2}$)



TRAVERSE SAMPLES

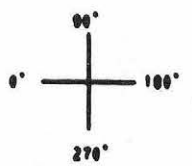
RAKE HEIGHT (FT)	VALUE
10.	.263E-03
25.	.150E-03
45.	.127E-03
65.	.985E-05
350.	.106E-05

Fig. B-151



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER 0.50
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 0.
Y = -160.

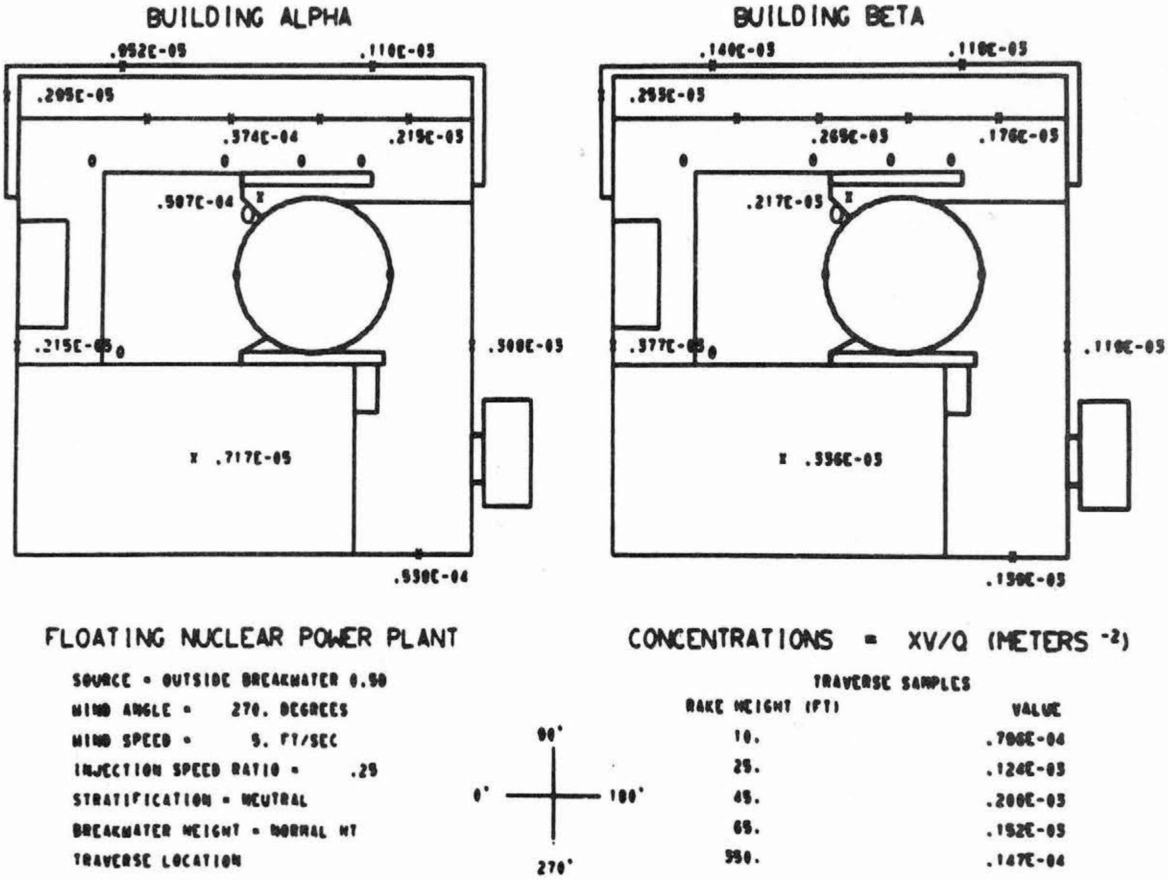


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
10.	.351E-03
25.	.236E-03
45.	.147E-03
65.	.295E-04
350.	.147E-05

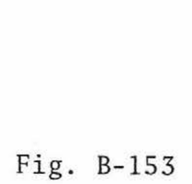
Fig. B-152



FLOATING NUCLEAR POWER PLANT

CONCENTRATIONS = XV/Q (METERS $^{-2}$)

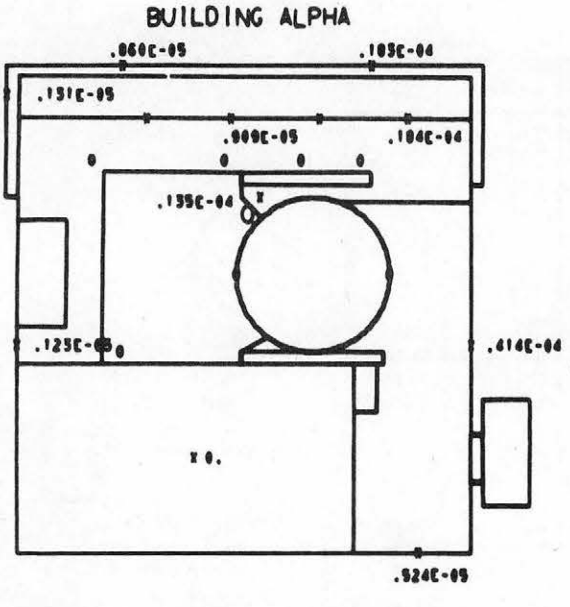
SOURCE = OUTSIDE BREAKWATER 0.50
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 0.
Y = 600.

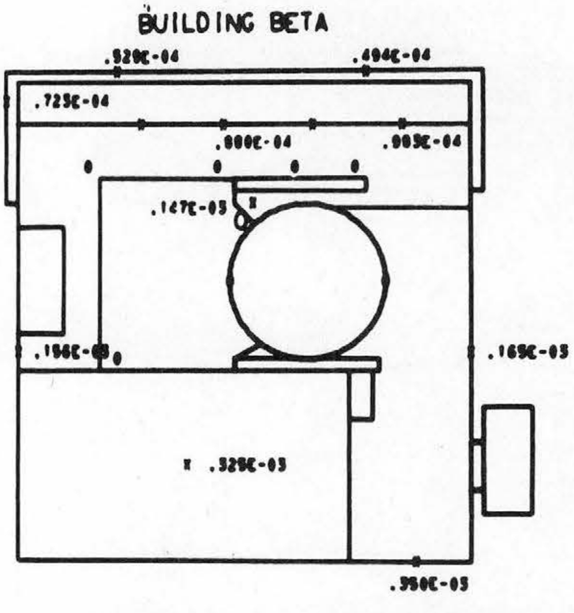


TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
10.	.700E-04
25.	.124E-03
45.	.200E-03
65.	.152E-03
550.	.147E-04

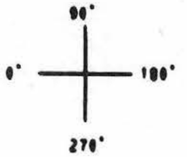
Fig. B-153





FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER 0.90
WIND ANGLE = 315. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -553.
Y = 0.

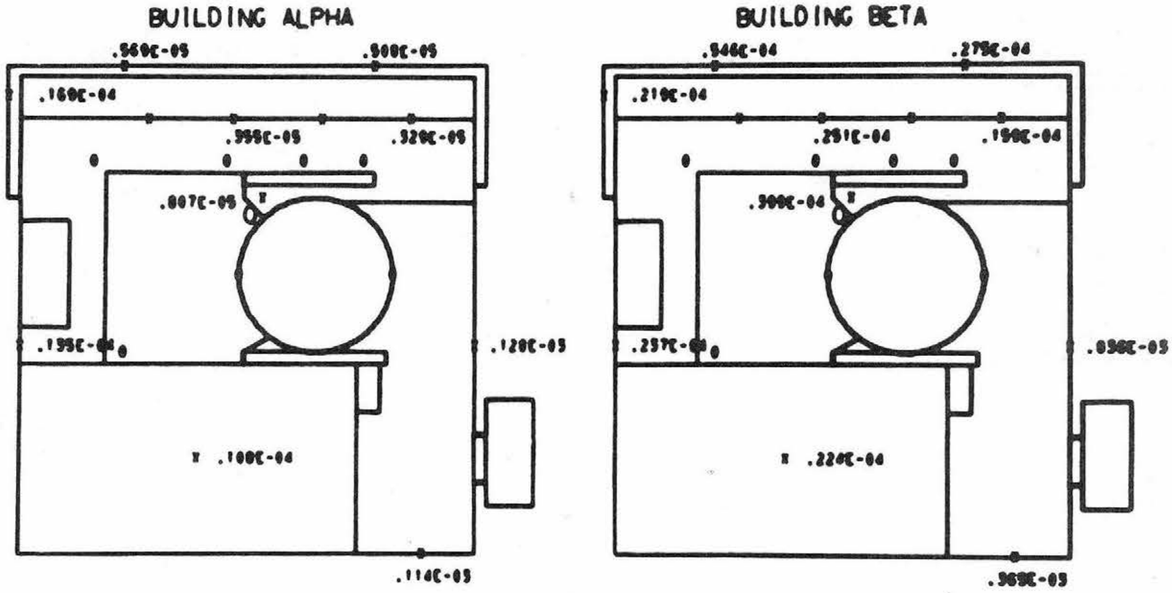


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

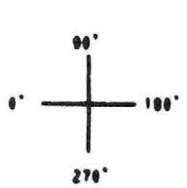
RAKE HEIGHT (FT)	VALUE
10.	.326E-03
25.	.241E-03
45.	.100E-03
65.	.157E-04
550.	.810E-06

Fig. B-154



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER BKW
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -825.
Y = -100.

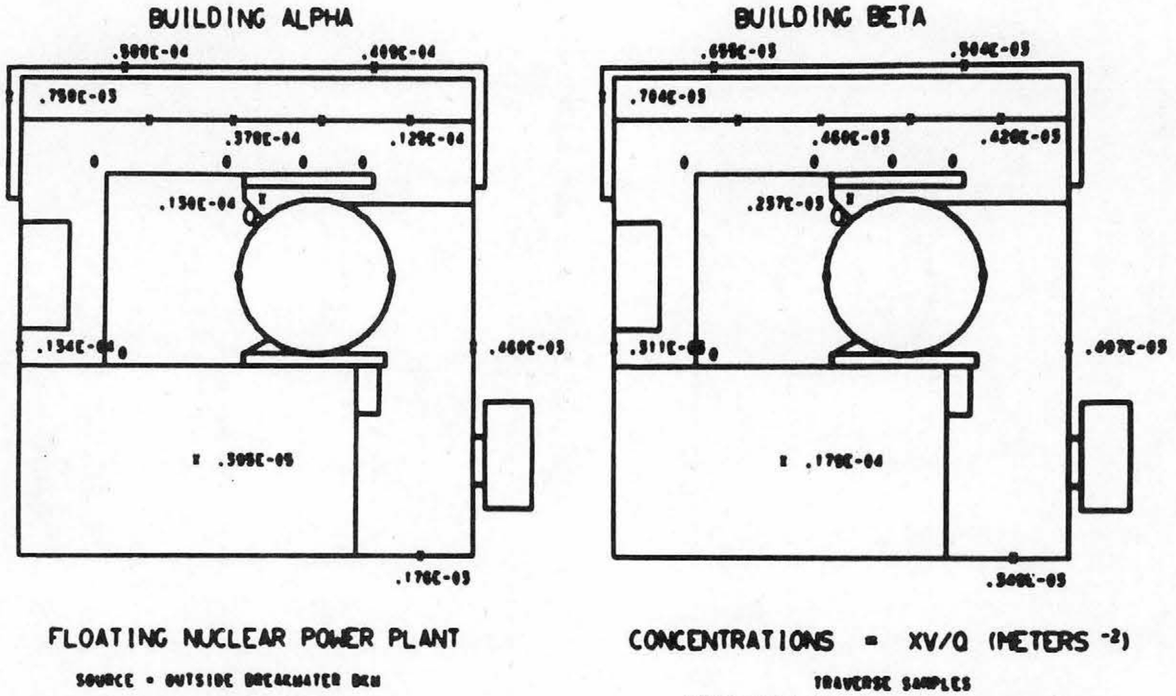


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

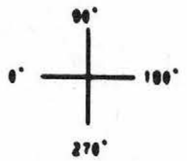
RAKE HEIGHT (FT)	VALUE
10.	.907E-03
25.	.212E-02
45.	.643E-03
65.	.388E-03
550.	.460E-05

Fig. B-155



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER BKW
WIND ANGLE = 45. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 40.
Y = -457.



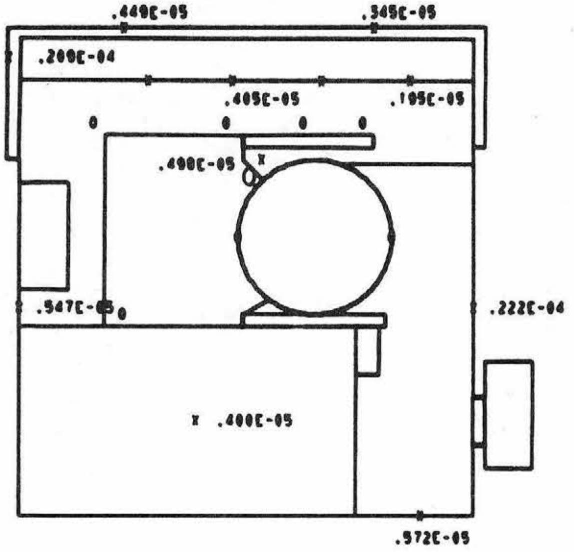
CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

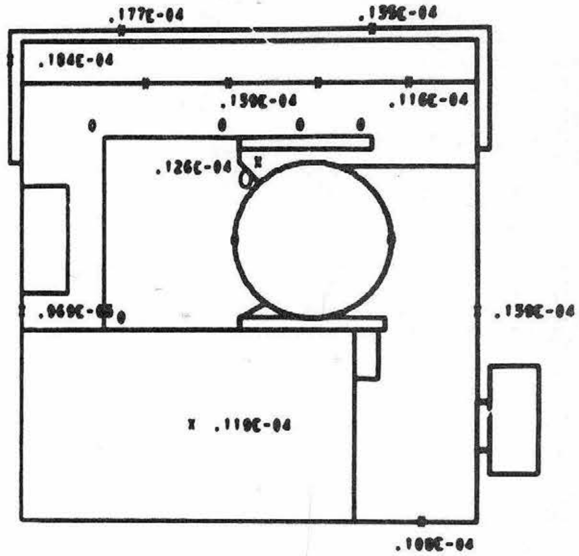
RAKE HEIGHT (FT)	VALUE
10.	.171E-03
25.	.142E-03
45.	.140E-03
65.	.100E-03
384.	.300E-05

Fig. B-156a

BUILDING ALPHA

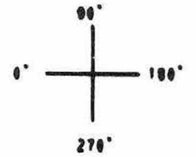


BUILDING BETA



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER BKW2
WIND ANGLE = 45. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 49.
Y = -457.

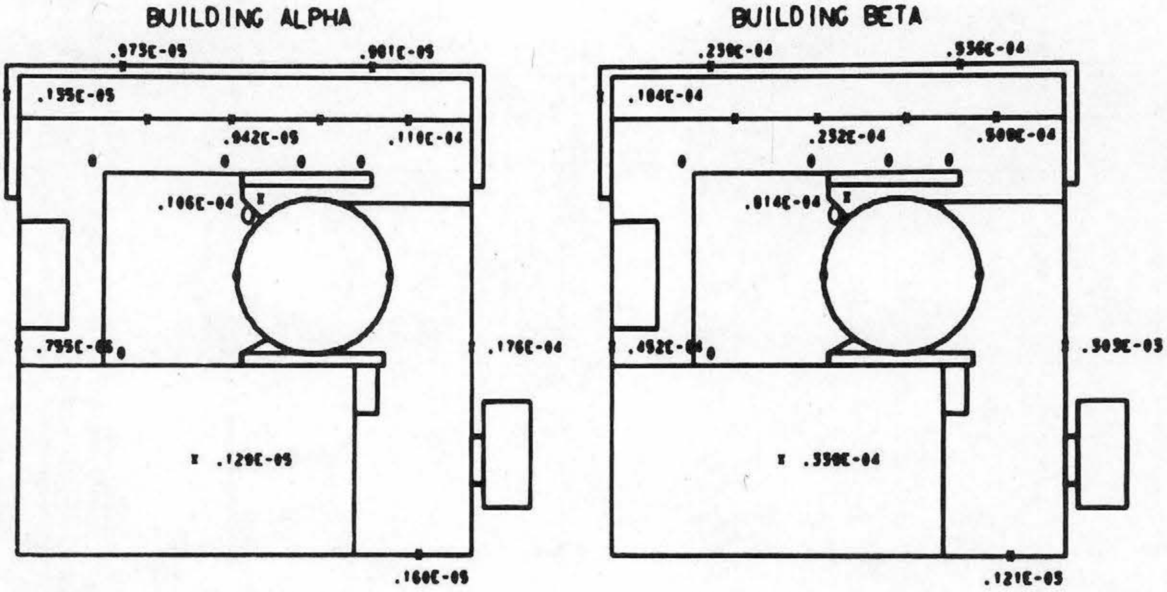


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

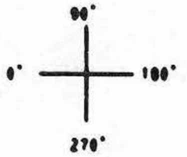
RAKE HEIGHT (FT)	VALUE
10.	.351E-03
25.	.295E-03
45.	.206E-03
65.	.157E-03
350.	.562E-05

Fig. B-156b



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER BKWT
WIND ANGLE = 315. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -1331.
Y = 356.



CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
10.	.419E-03
25.	.990E-03
45.	.204E-03
65.	.116E-03
350.	.240E-05

Fig. B-157a

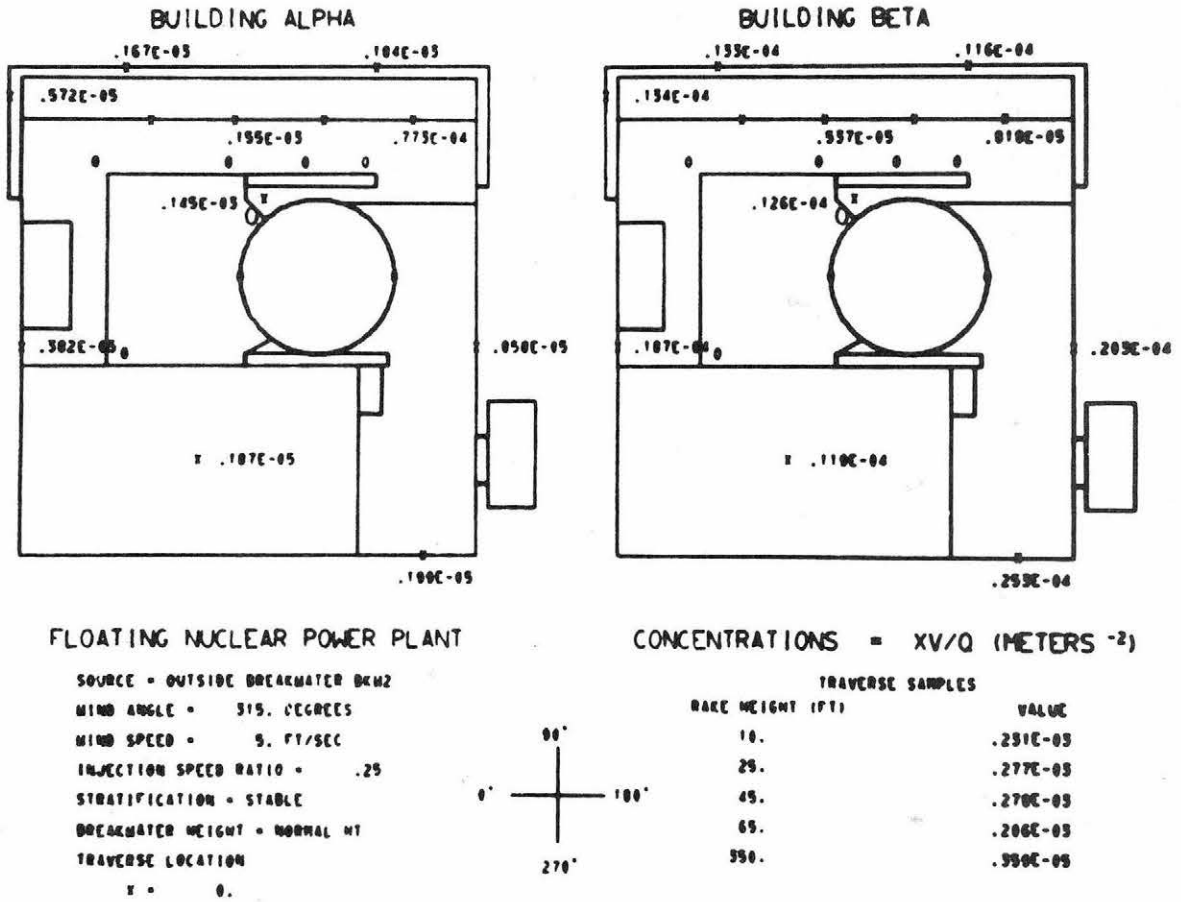

BUILDING ALPHA
BUILDING BETA
FLOATING NUCLEAR POWER PLANT
SOURCE = OUTSIDE BREAKWATER BKW2
WIND ANGLE = 315. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 0.
Y = 1515.
90°
0°
180°
270°
CONCENTRATIONS = XV/Q (METERS -2)
TRAVERSE SAMPLES
RAKE HEIGHT (FT)
VALUE
10. .231E-03
25. .277E-03
45. .270E-03
65. .206E-03
550. .350E-05

Fig. B-157b

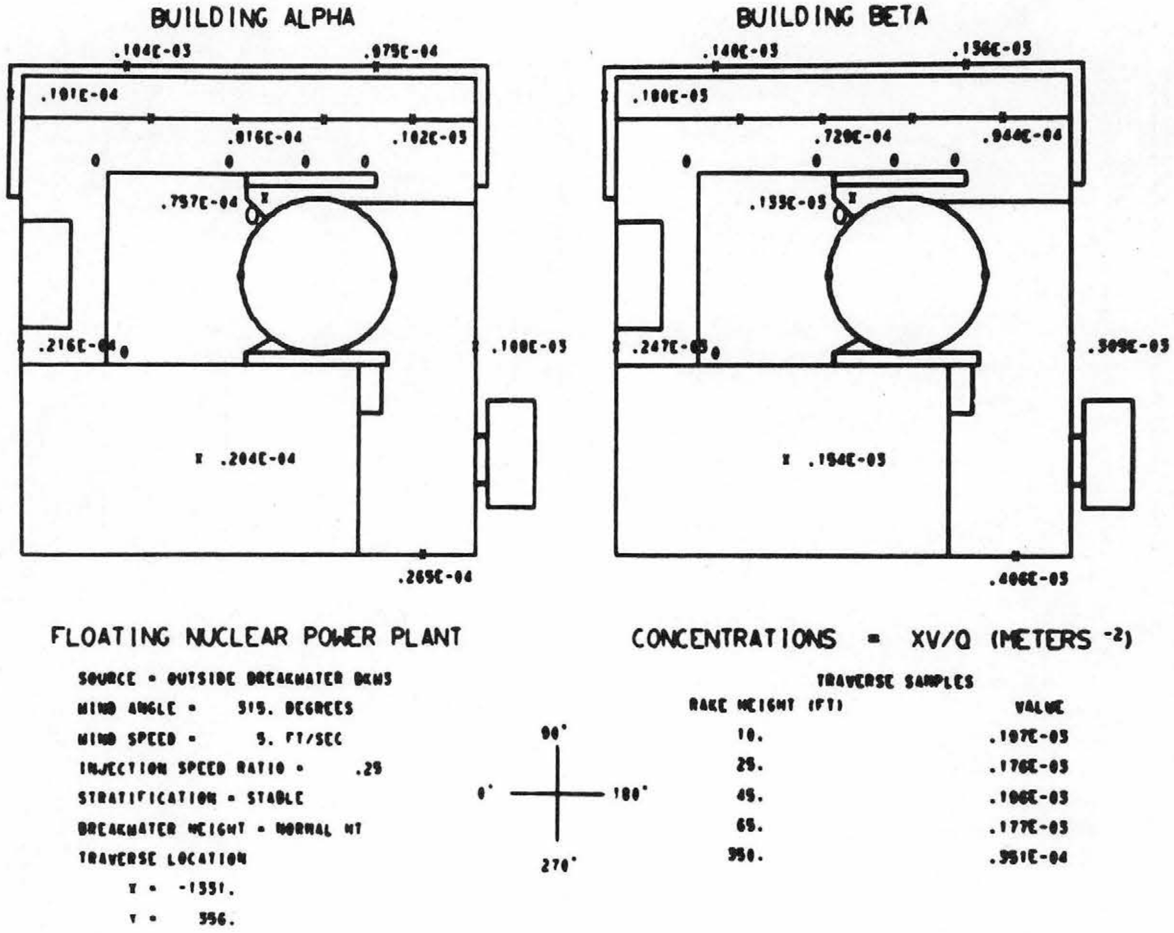
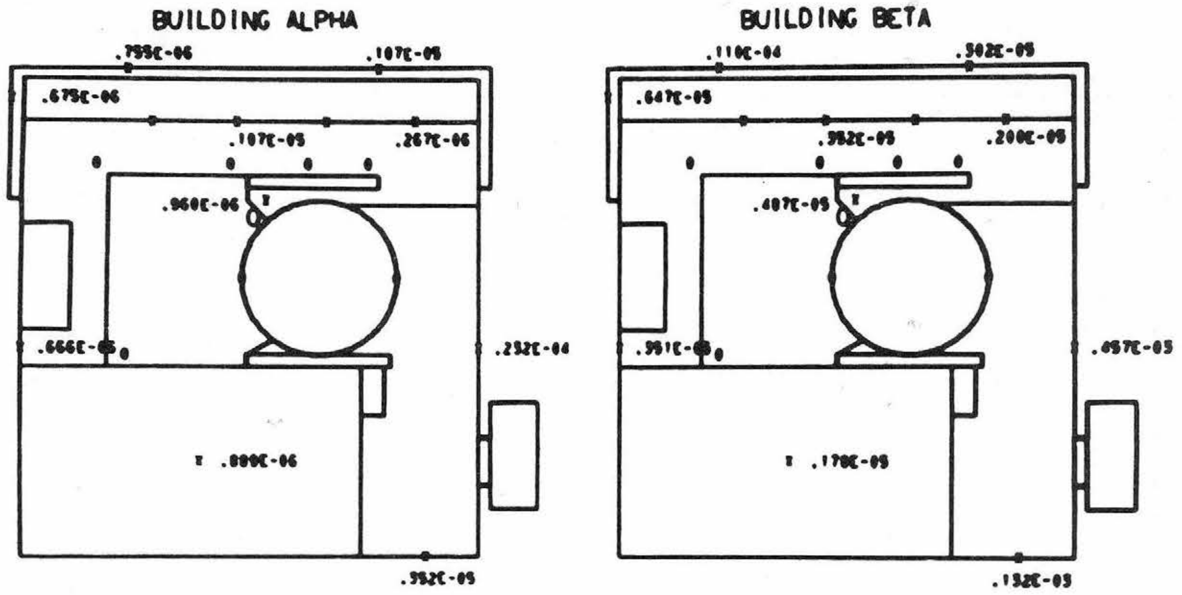
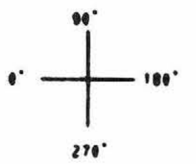

BUILDING ALPHA
.104E-03
.975E-04
.101E-04
.816E-04
.102E-03
.757E-04
.216E-04
.100E-03
.204E-04
.265E-04
BUILDING BETA
.140E-03
.136E-03
.180E-03
.720E-04
.944E-04
.135E-03
.247E-03
.309E-03
.154E-03
.406E-03
FLOATING NUCLEAR POWER PLANT
SOURCE = OUTSIDE BREAKWATER BKW3
WIND ANGLE = 315. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -1551.
Y = 356.
90°
0°
180°
270°
CONCENTRATIONS = XV/Q (METERS -2)
TRAVERSE SAMPLES
RAKE HEIGHT (FT)
VALUE
10.
.197E-03
25.
.176E-03
45.
.106E-03
65.
.177E-03
350.
.351E-04

Fig. B-157c



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER 0.50
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -825.
Y = -100.



CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
10.	.906E-03
25.	.500E-03
45.	.277E-03
65.	.145E-03
950.	0.

Fig. B-158

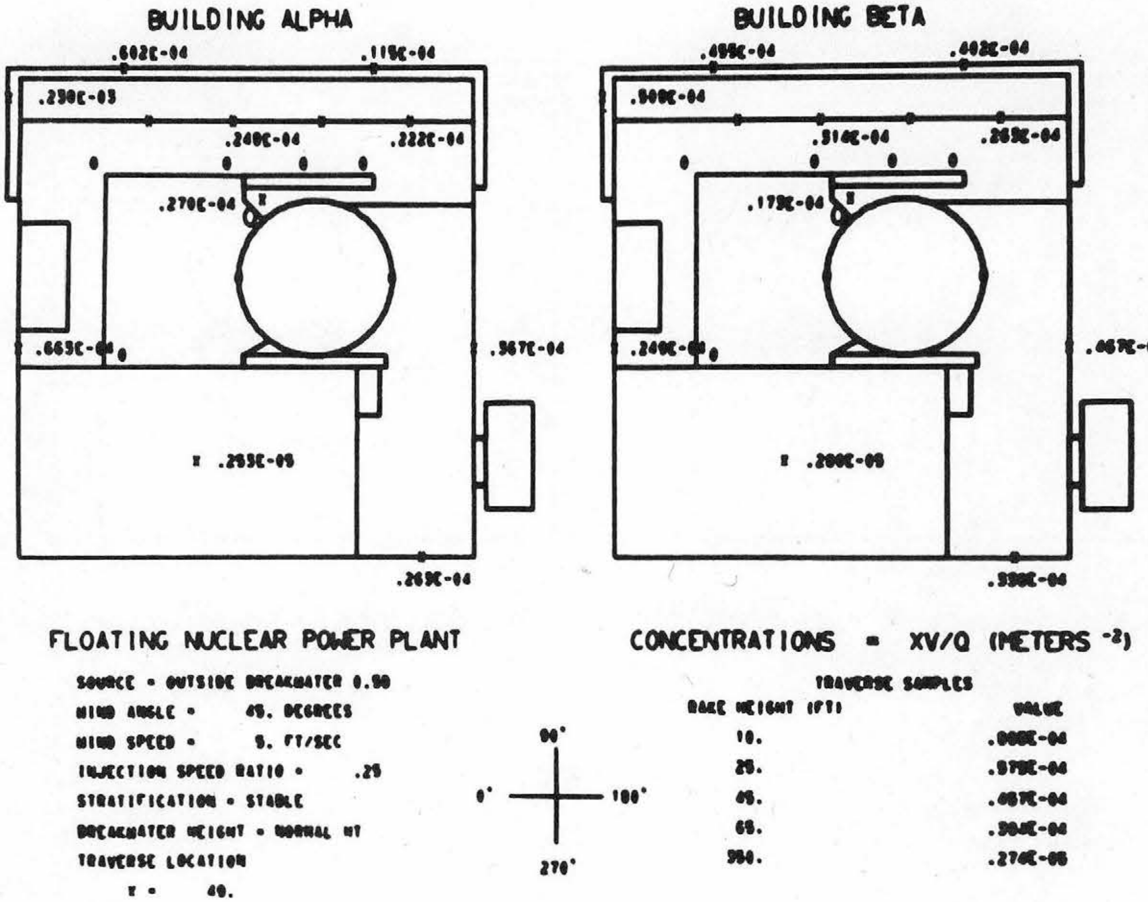
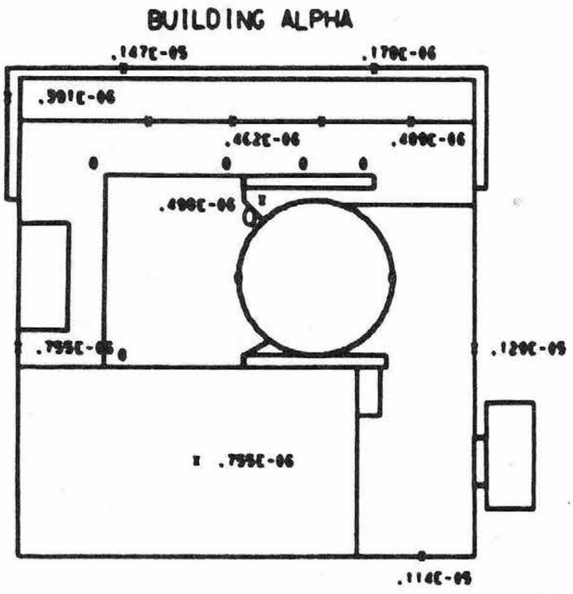
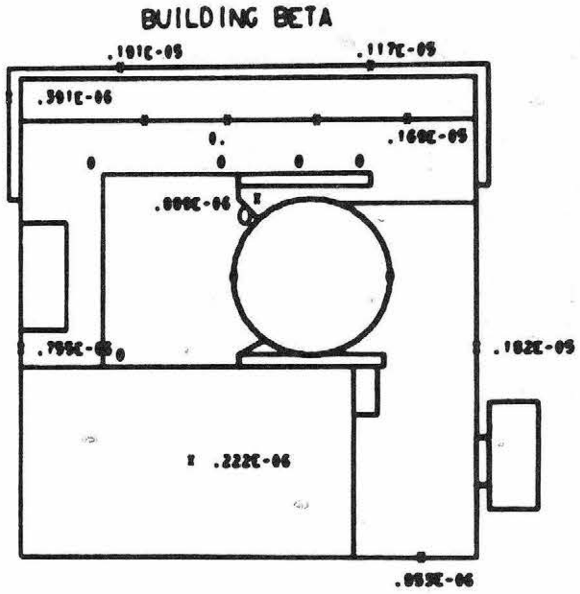

BUILDING ALPHA
.602E-04
.115E-04
.230E-03
.240E-04
.222E-04
BUILDING BETA
.495E-04
.402E-04
.314E-04
FLOATING NUCLEAR POWER PLANT
CONCENTRATIONS = XV/Q (METERS -2)
WIND ANGLE = 45. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 40.
Y = -457.
90°
0°
180°
270°
TRAVERSE SAMPLES
RAKE HEIGHT (FT)
VALUE
10.
25.
45.
65.
550.
.274E-05

Fig. B-159





FLOATING NUCLEAR POWER PLANT

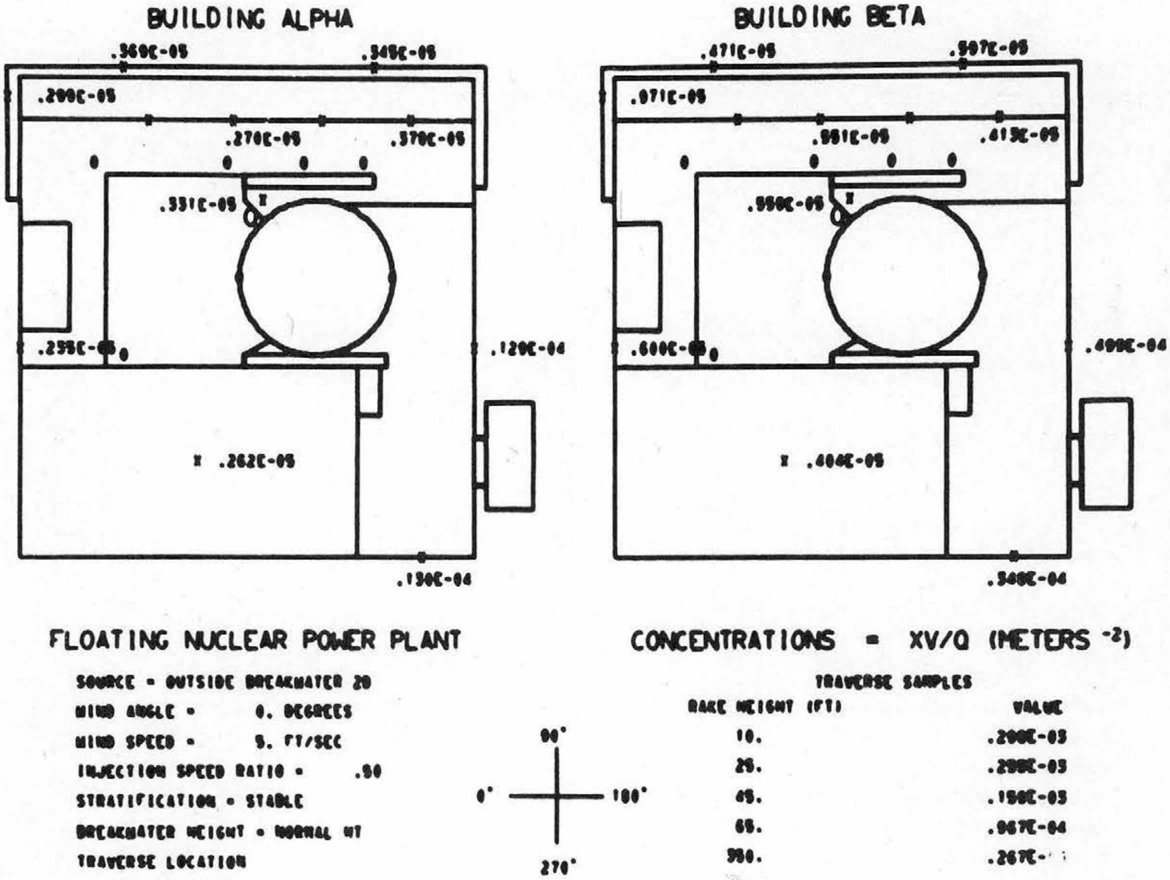
SOURCE = OUTSIDE BREAKWATER 0.30
WIND ANGLE = 315. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -1351.
Y = 356.

CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
10.	.214E-03
25.	.886E-04
45.	.600E-04
65.	.200E-04
350.	.500E-05

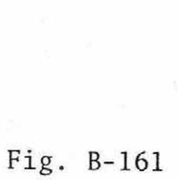
Fig. B-160



FLOATING NUCLEAR POWER PLANT

CONCENTRATIONS = XV/Q (METERS $^{-2}$)

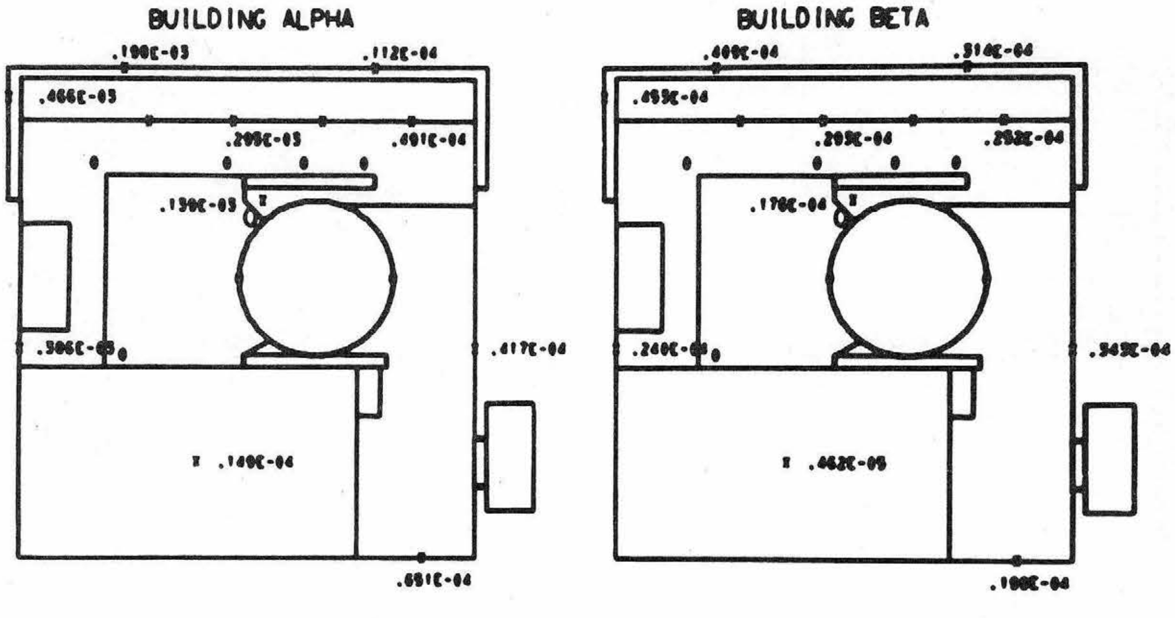
SOURCE = OUTSIDE BREAKWATER 20
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .50
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -825.
Y = -100.



TRAVERSE SAMPLES

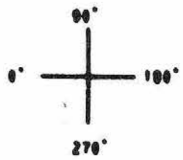
RAKE HEIGHT (FT)	VALUE
10.	.200E-03
25.	.290E-03
45.	.150E-03
65.	.967E-04
350.	.267E-[illegible]

Fig. B-161



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER 20
WIND ANGLE = 45. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .50
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 40.
Y = -457.

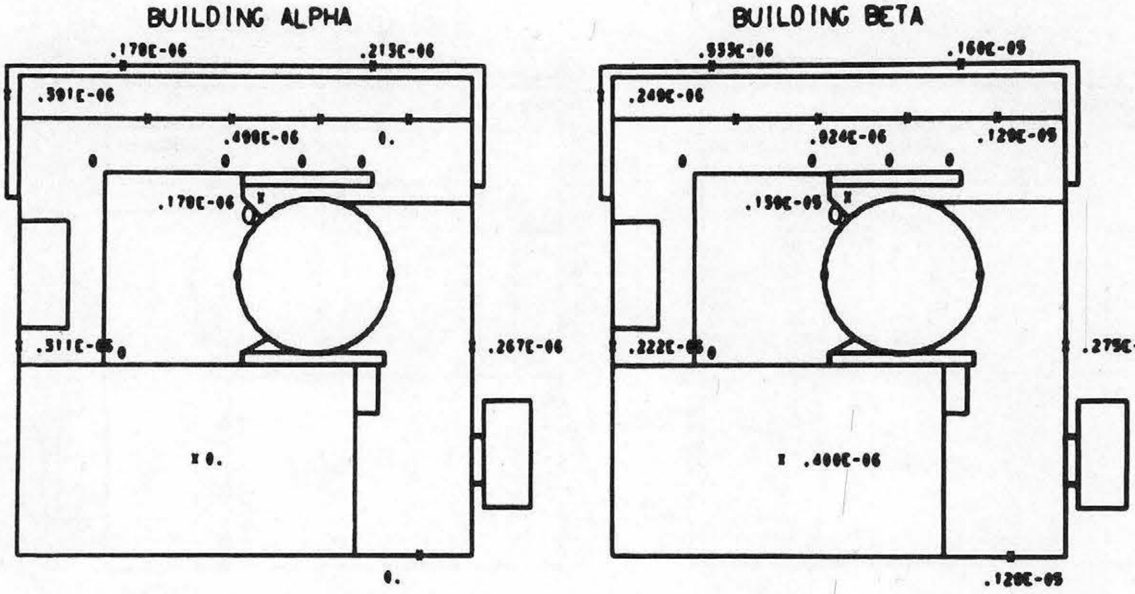


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

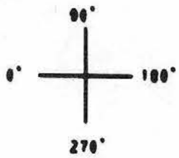
RAKE HEIGHT (FT)	VALUE
10.	.200E-02
25.	.162E-03
45.	.124E-03
65.	.844E-04
350.	.309E-05

Fig. B-162



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER 20
WIND ANGLE = 315. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .50
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -1331.
Y = 356.

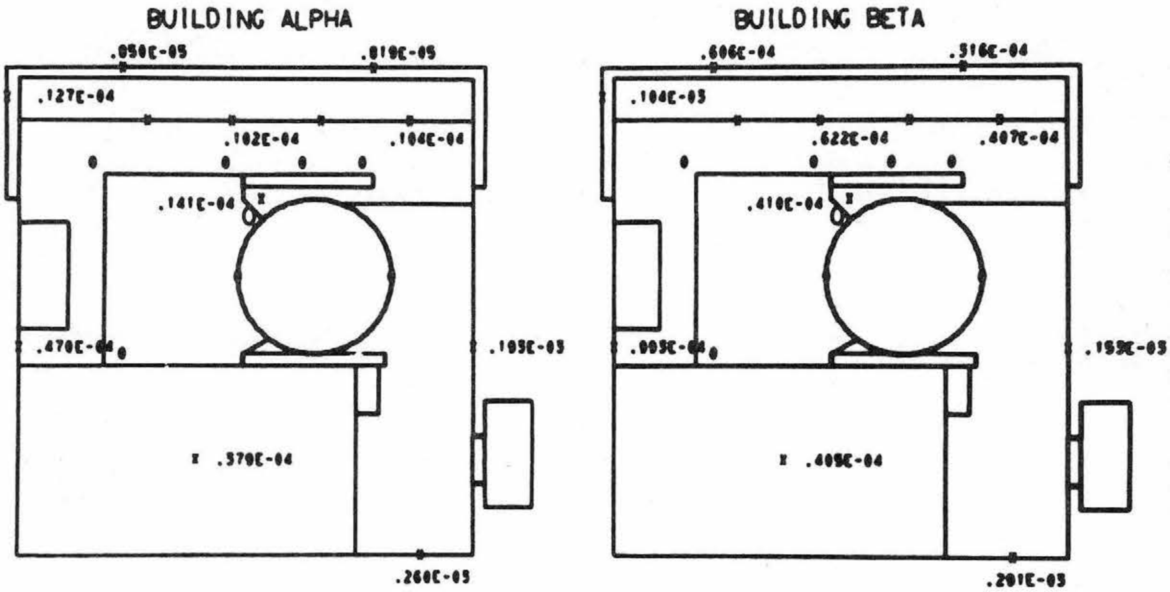


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

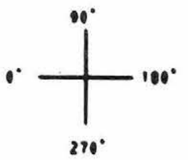
RAKE HEIGHT (FT)	VALUE
10.	0.
25.	0.
45.	.355E-06
65.	.267E-06
350.	.215E-06

Fig. B-163



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER 0.50
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = HALF HT
TRAVERSE LOCATION
X = -563.
Y = 0.

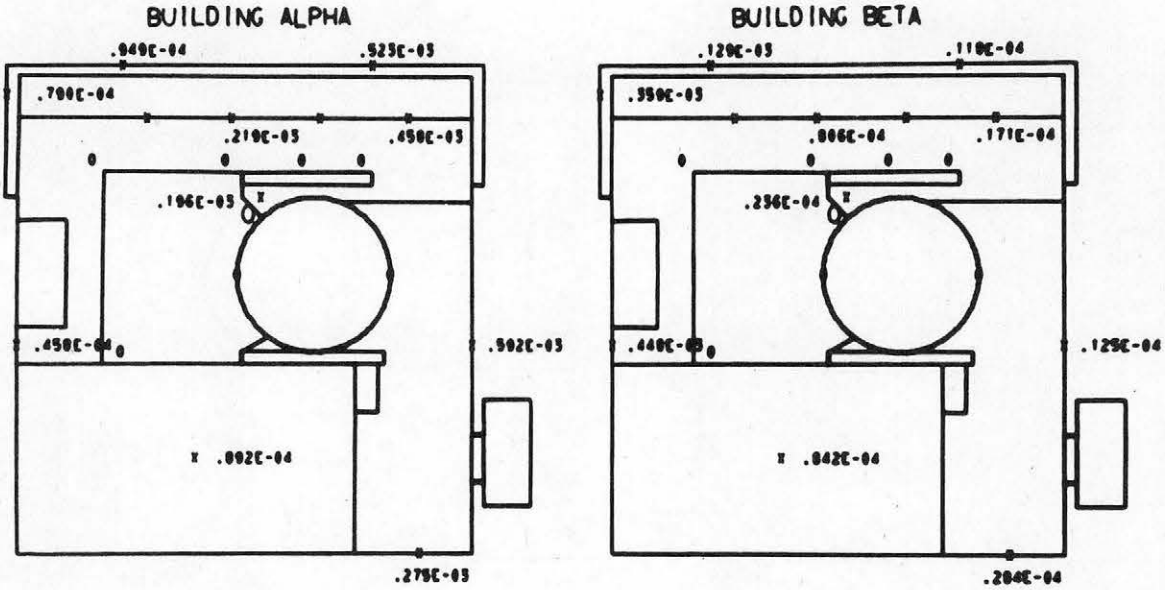


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
10.	.309E-03
25.	.214E-03
45.	.985E-04
65.	.200E-04
350.	.442E-05

Fig. B-164



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER 0.50

WIND ANGLE = 90. DEGREES

WIND SPEED = 5. FT/SEC

INJECTION SPEED RATIO = .25

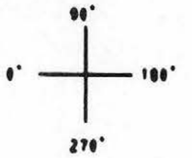
STRATIFICATION = NEUTRAL

BREAKWATER HEIGHT = HALF HT

TRAVERSE LOCATION

X = 0.

Y = -160.

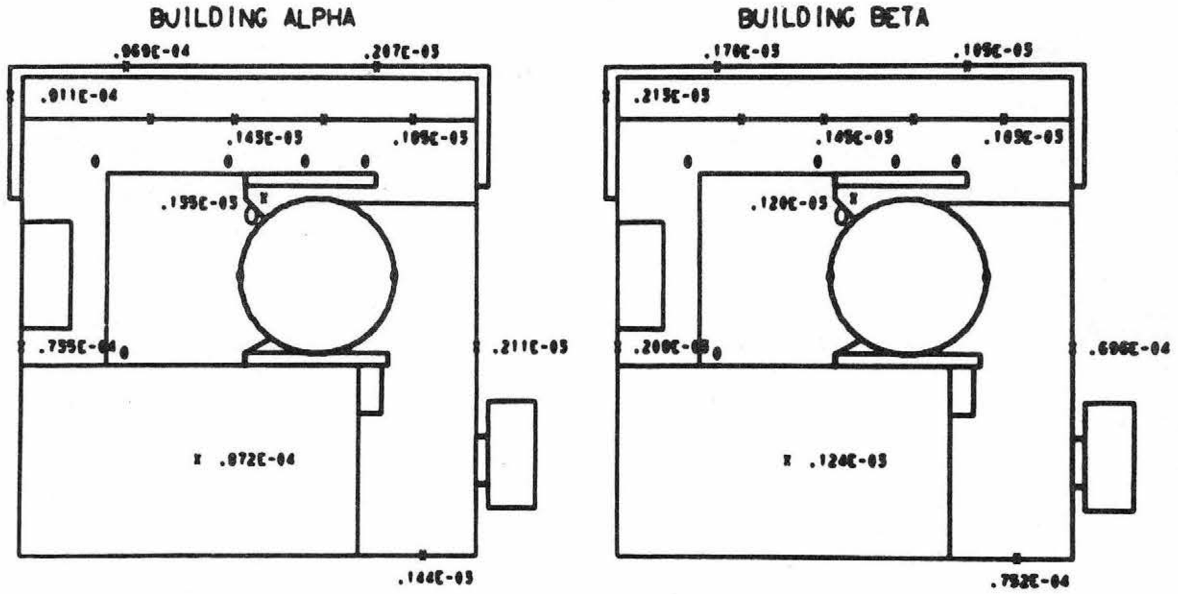


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

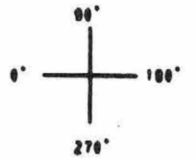
RAKE HEIGHT (FT)	VALUE
10.	.496E-03
25.	.466E-03
45.	.375E-03
65.	.110E-03
350.	.156E-04

Fig. B-165



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER 20
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .50
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = HALF H'
TRAVERSE LOCATION
X = 0.
Y = -169.

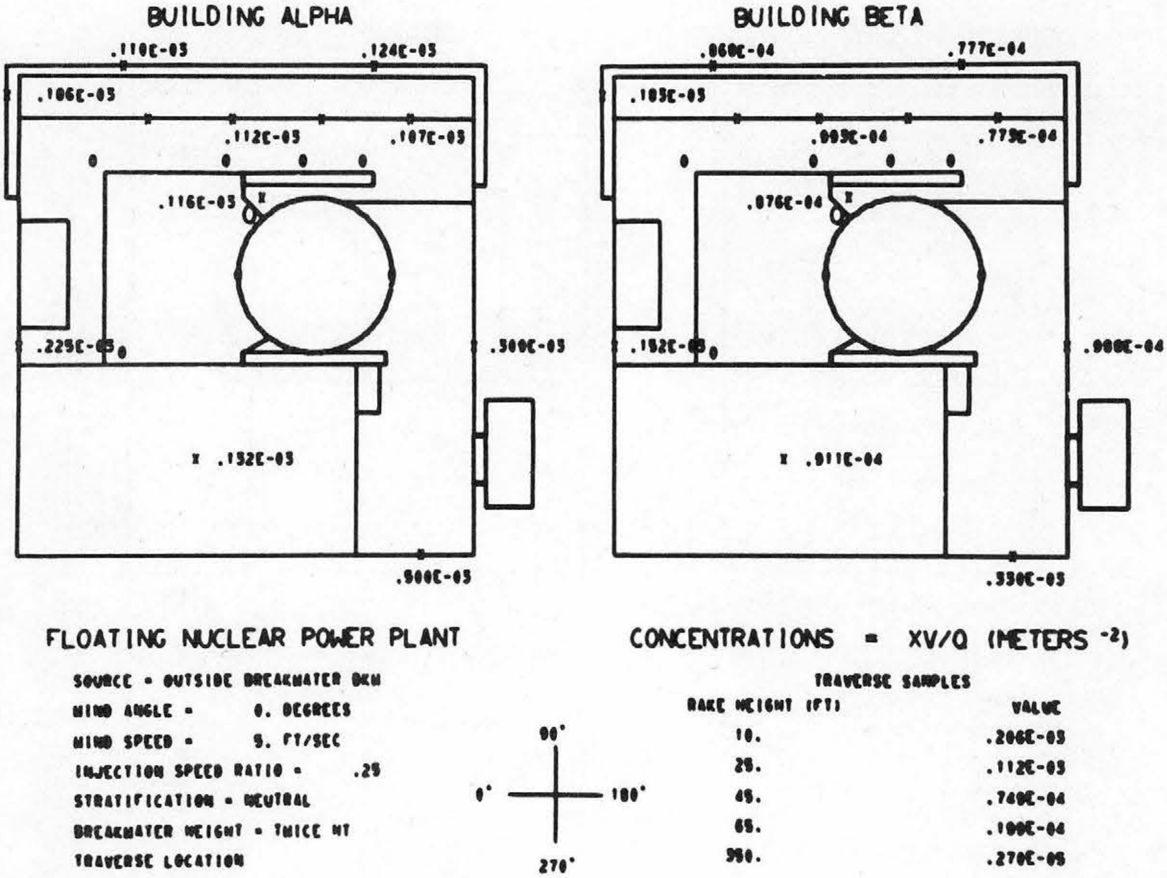


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

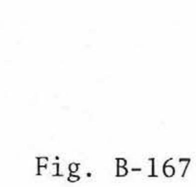
RAKE HEIGHT (FT)	VALUE
10.	.181E-03
25.	.190E-03
45.	.160E-03
65.	.800E-04
350.	.100E-04

Fig. B-166



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER DKW
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = TWICE HT
TRAVERSE LOCATION
X = -025.
Y = -347.

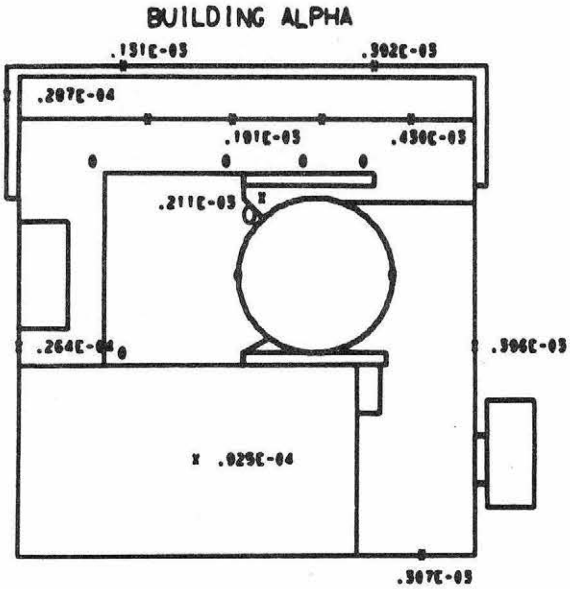


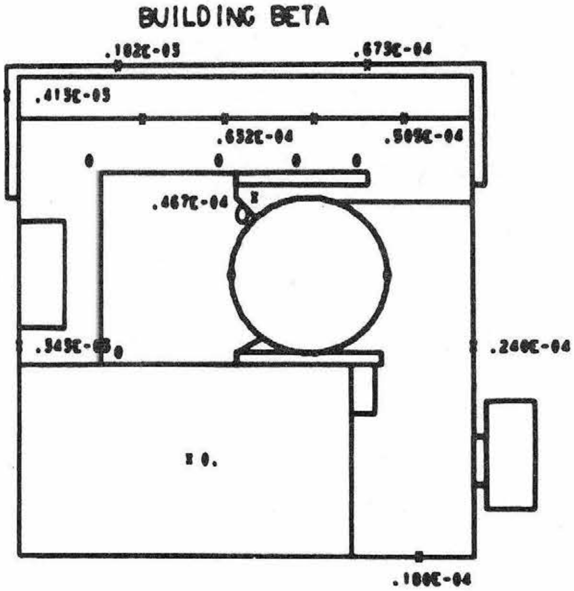
CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
10.	.206E-03
25.	.112E-03
45.	.749E-04
65.	.190E-04
950.	.270E-05

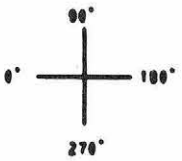
Fig. B-167





FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER BKW
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = TWICE HT
TRAVERSE LOCATION
X = 0.
Y = -150.

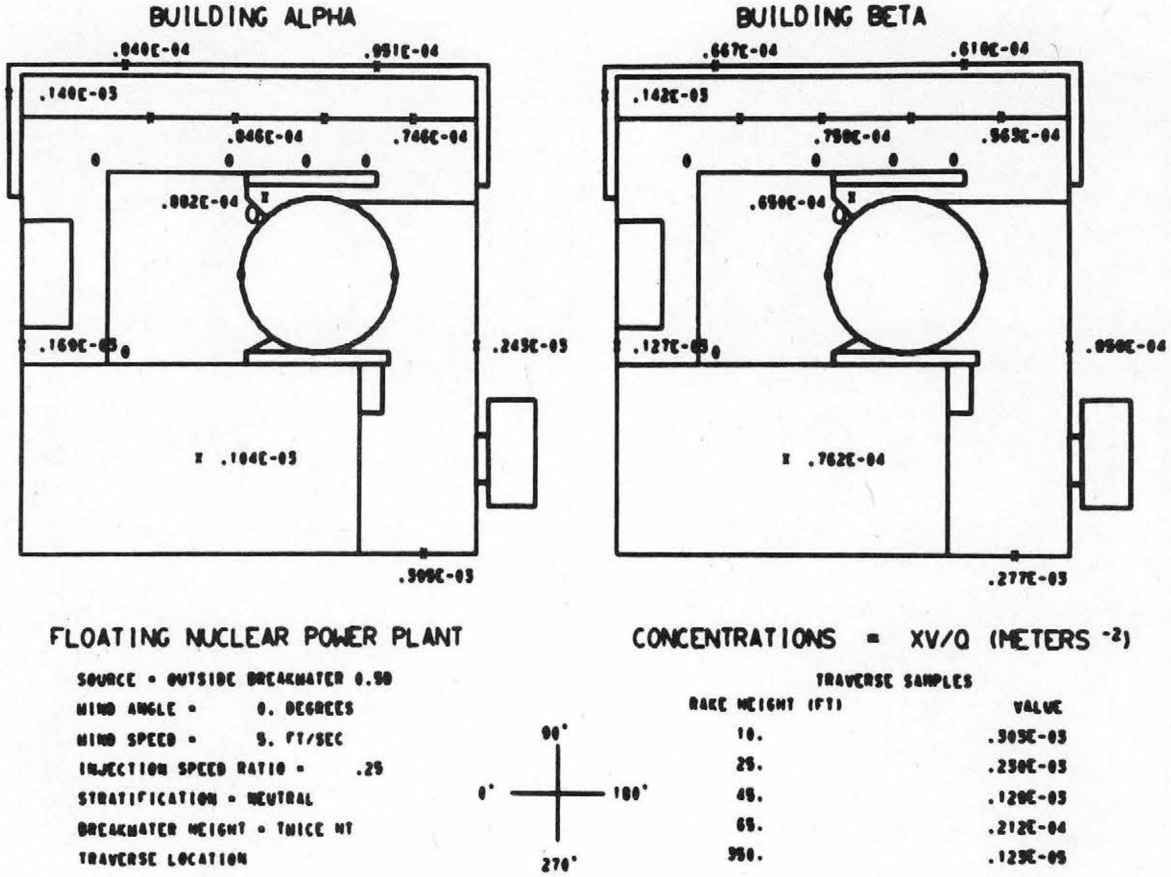


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
10.	.310E-03
25.	.202E-03
45.	.271E-03
65.	.132E-03
350.	.220E-04

Fig. B-168



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER 0.50
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = TWICE HT
TRAVERSE LOCATION
X = -825.
Y = -347.

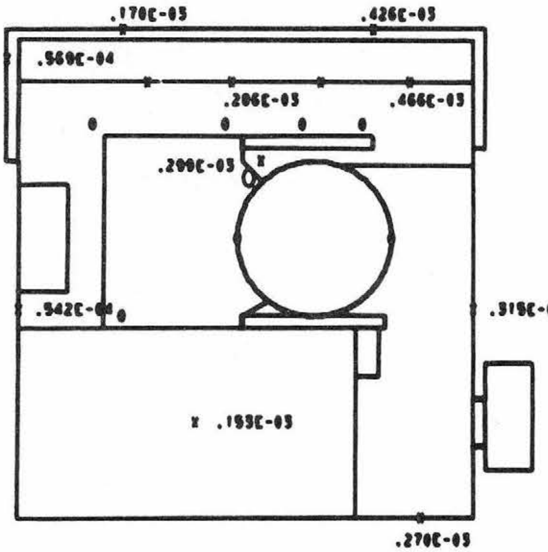
CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

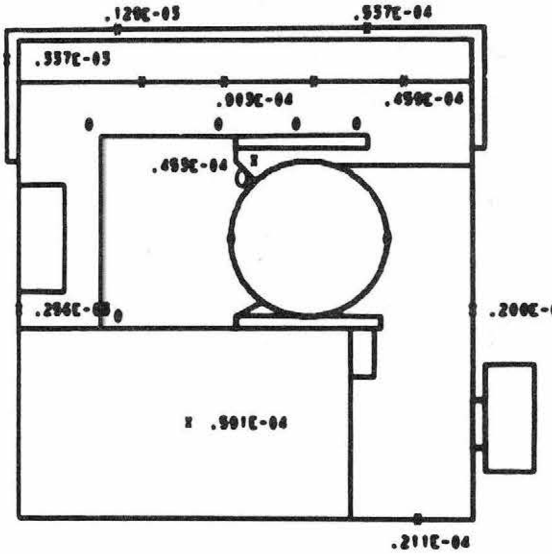
RAKE HEIGHT (FT)	VALUE
10.	.305E-03
25.	.230E-03
45.	.120E-03
65.	.212E-04
350.	.125E-05

Fig. B-169

BUILDING ALPHA

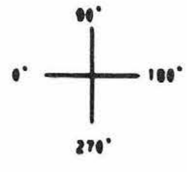


BUILDING BETA



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER 0.50
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = TWICE HT
TRAVERSE LOCATION
X = 0.
Y = -150.

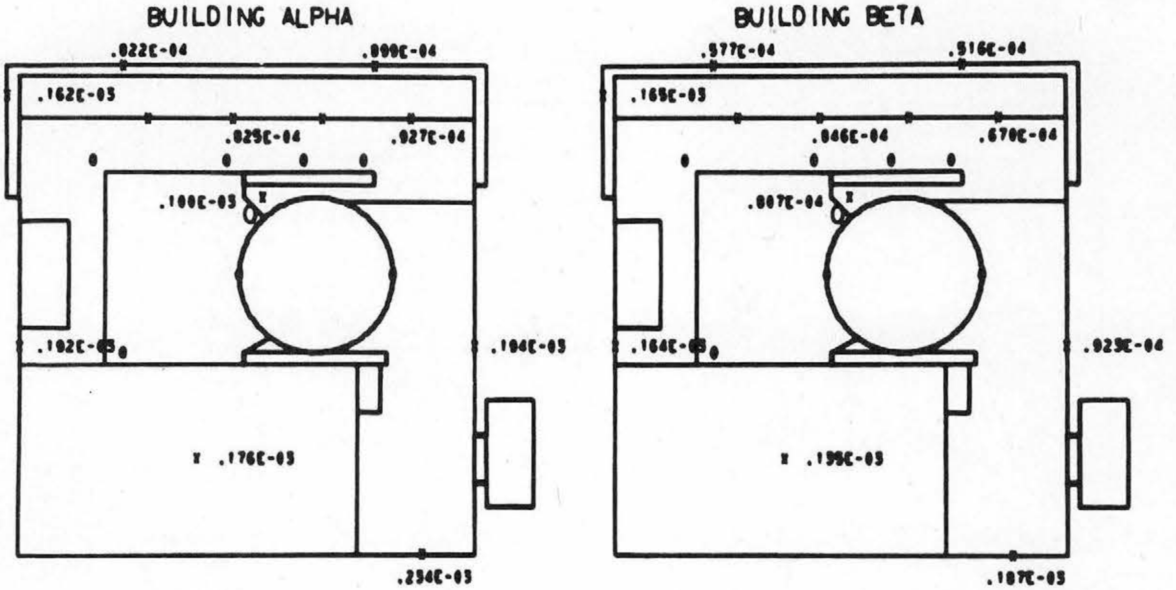


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
10.	.249E-03
25.	.201E-03
45.	.150E-03
65.	.601E-04
350.	.305E-05

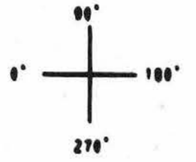
Fig. B-170



FLOATING NUCLEAR POWER PLANT

CONCENTRATIONS = XV/Q (METERS $^{-2}$)

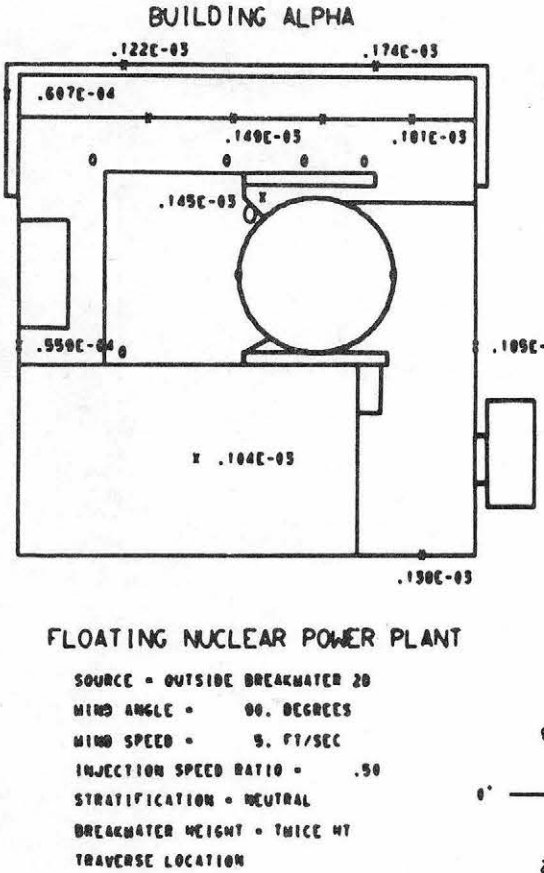
SOURCE = OUTSIDE BREAKWATER 20
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .50
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = TWICE HT
TRAVERSE LOCATION
X = -825.
Y = -547.

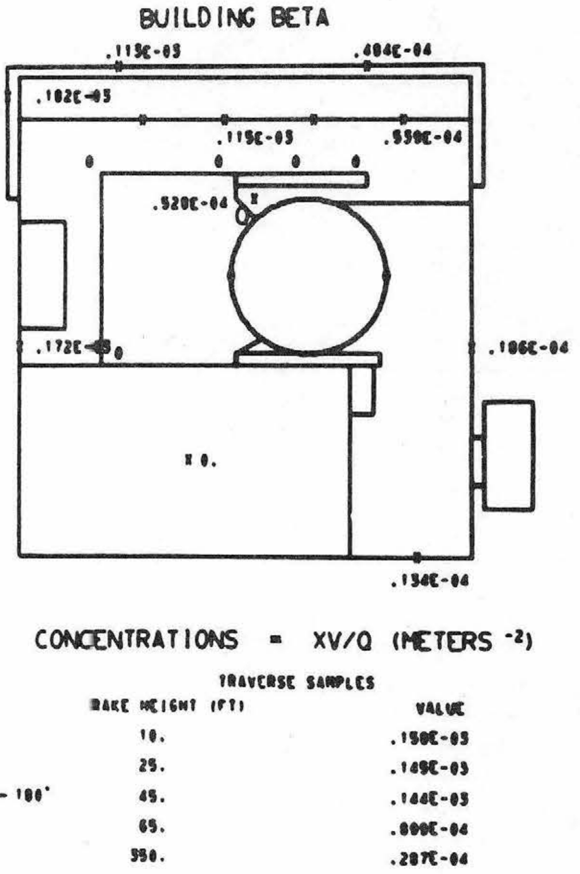


TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
10.	.904E-04
25.	.504E-04
45.	.412E-04
65.	.155E-04
350.	.104E-05

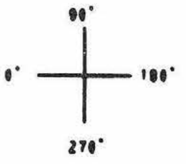
Fig. B-171





FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER 2B
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .50
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = TWICE HT
TRAVERSE LOCATION
X = 0.
Y = -150.

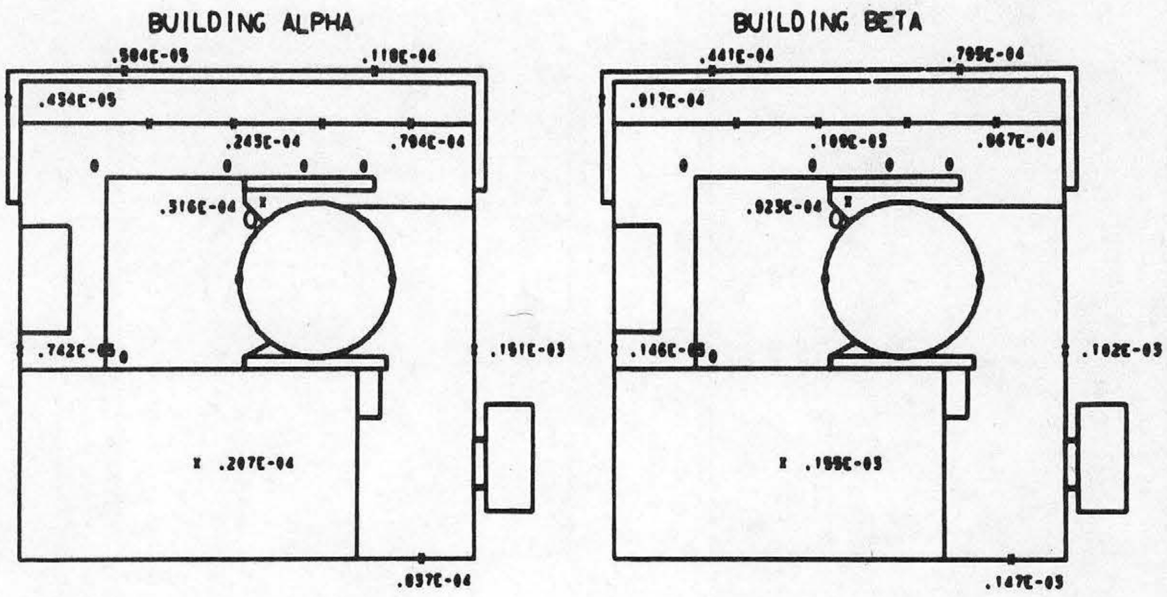


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

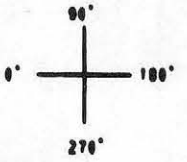
RAKE HEIGHT (FT)	VALUE
10.	.150E-03
25.	.149E-03
45.	.144E-03
65.	.800E-04
550.	.287E-04

Fig. B-172



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER 20
WIND ANGLE = 270. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .50
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = TWICE HT
TRAVERSE LOCATION
X = 0.
Y = 501.

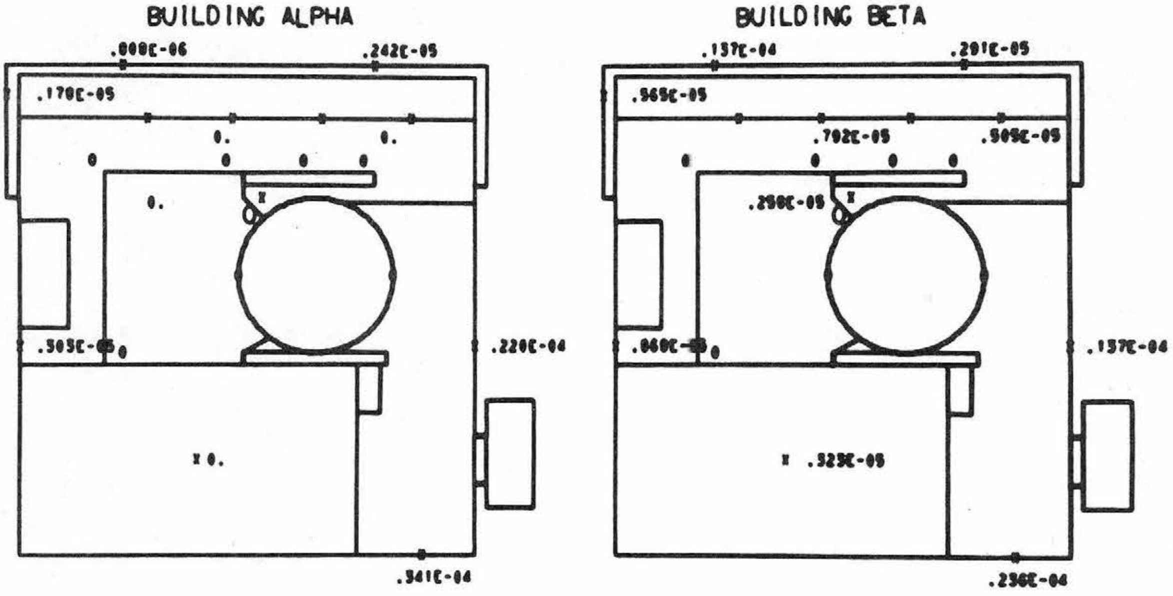


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

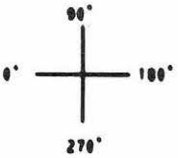
RAKE HEIGHT (FT)	VALUE
10.	.310E-04
25.	.409E-04
45.	.852E-04
65.	.106E-03
350.	.406E-04

Fig. B-173



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER CL BKW
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -565.
Y = -169.

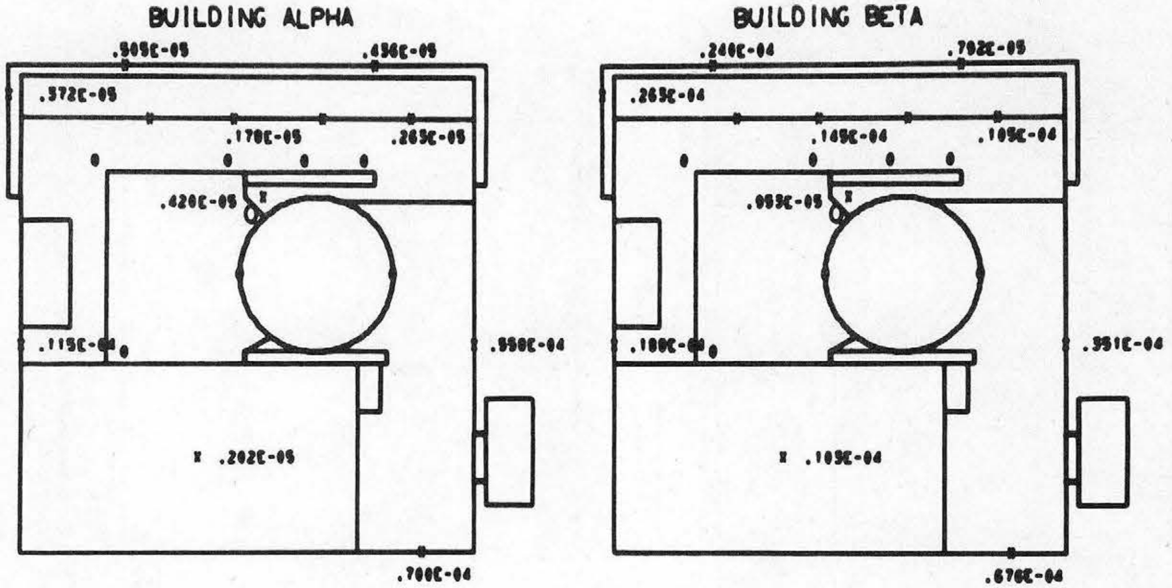


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

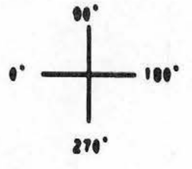
RAKE HEIGHT (FT)	VALUE
10.	.137E-03
25.	.450E-04
45.	.115E-04
65.	0.
380.	0.

Fig. B-174



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER CL 0.50
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -563.
Y = -160.

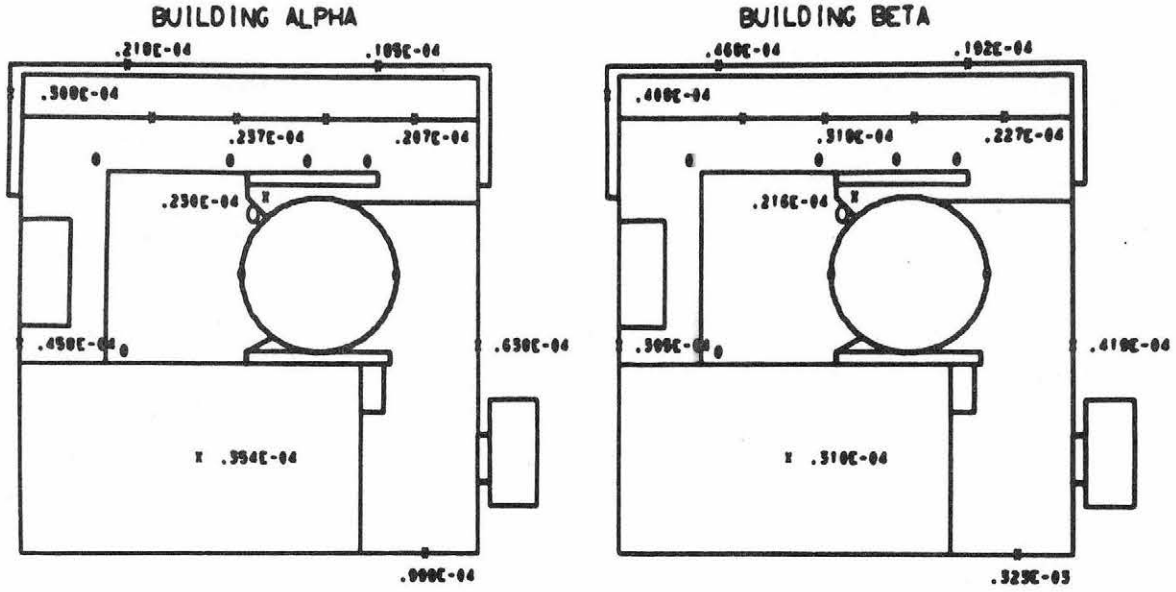


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

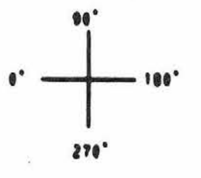
RAKE HEIGHT (FT)	VALUE
10.	.225E-03
25.	.107E-03
45.	.384E-04
65.	.202E-05
350.	.120E-05

Fig. B-175



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER CL 20
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .50
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -963.
Y = -169.

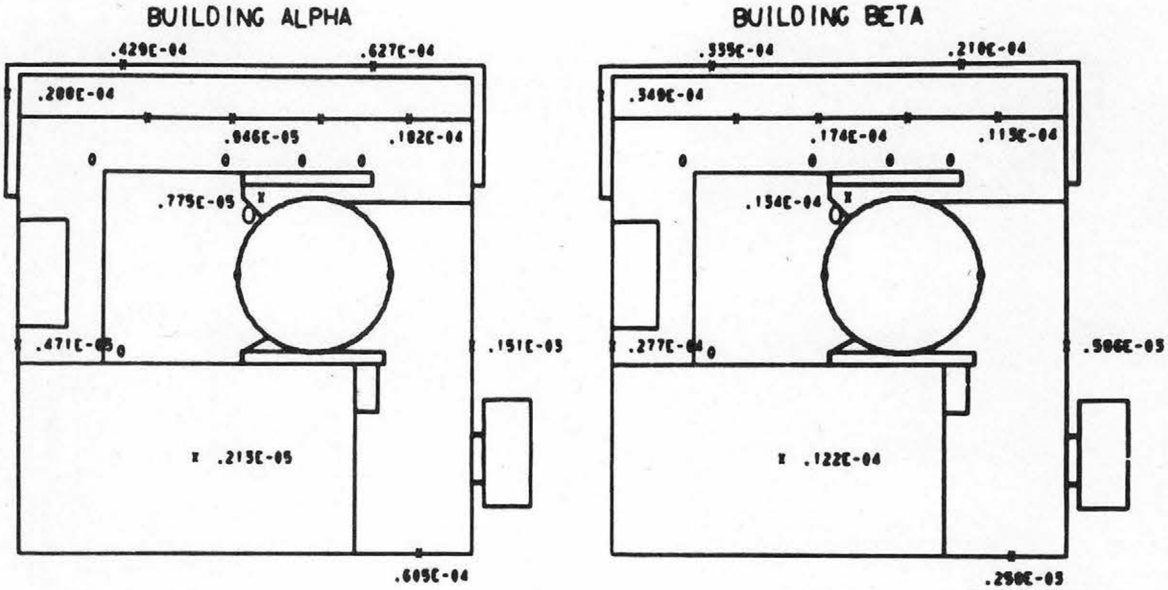


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

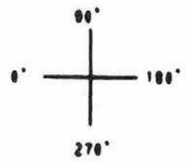
RAKE HEIGHT (FT)	VALUE
10.	.400E-03
25.	.842E-04
45.	.444E-04
65.	.930E-05
350.	.290E-05

Fig. B-176



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER BKW2 CLOR
WIND ANGLE = 0. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -675.
Y = -100.

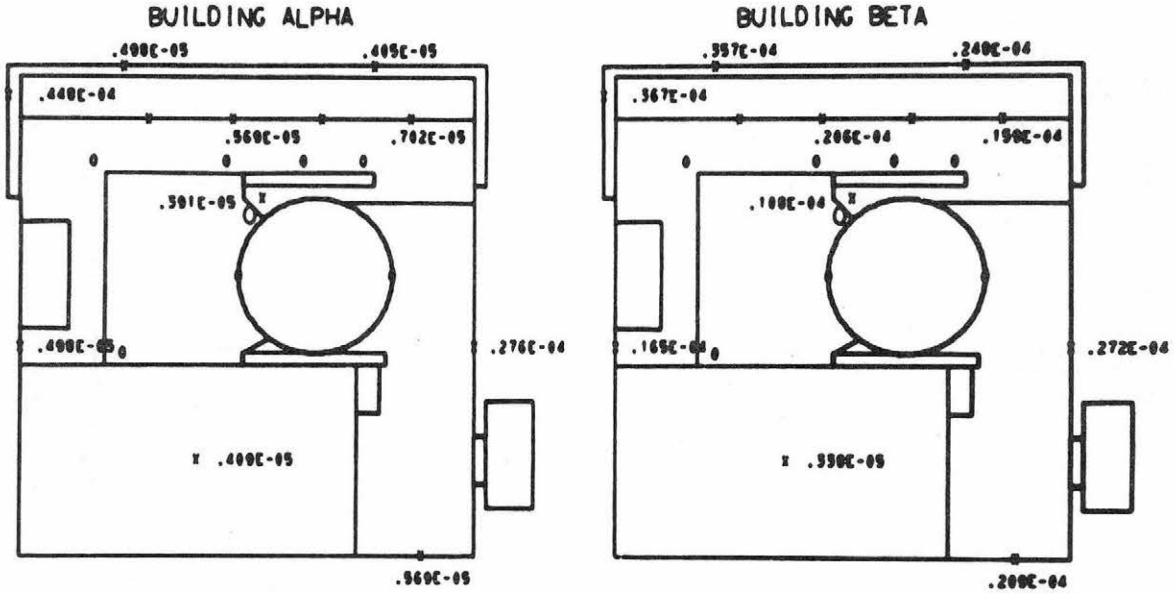


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

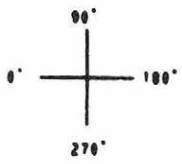
RAKE HEIGHT (FT)	VALUE
10.	.105E-02
25.	.626E-03
45.	.266E-03
65.	.632E-04
350.	.284E-05

Fig. B-177



FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER 0.50 CLOR
WIND ANGLE = 45. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .25
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -105.
Y = -979.

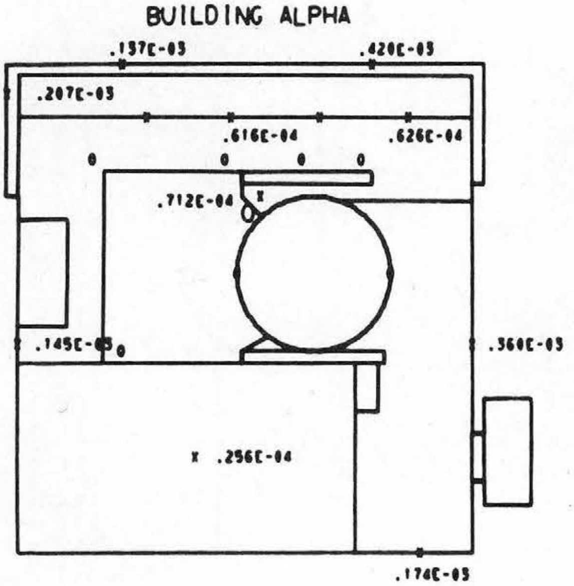


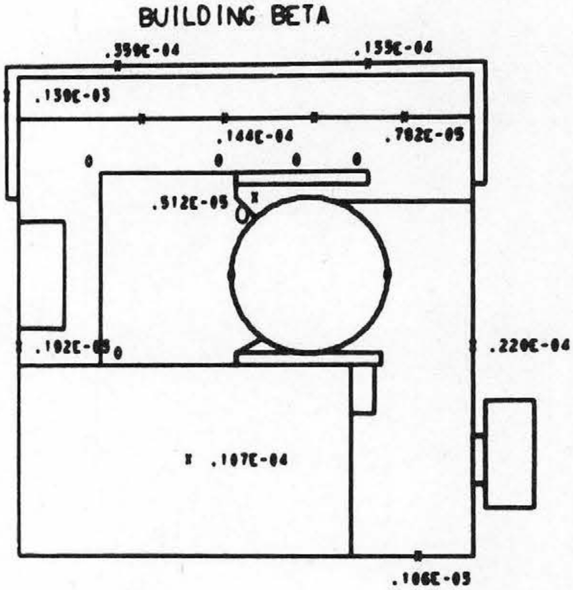
CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
10.	.999E-04
25.	.454E-04
45.	.366E-04
65.	.309E-04
350.	.469E-05

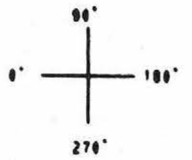
Fig. B-178





FLOATING NUCLEAR POWER PLANT

SOURCE = OUTSIDE BREAKWATER 20 CLOR
WIND ANGLE = 90. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .50
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 0.
Y = -052.

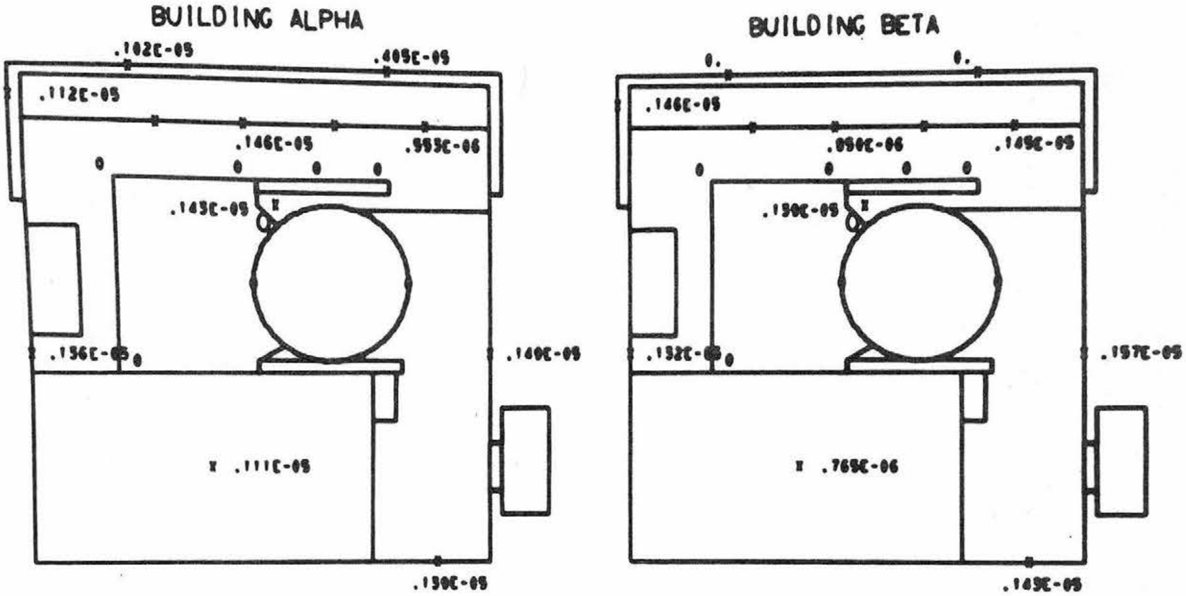


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

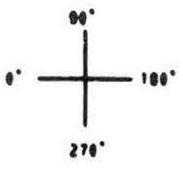
RAKE HEIGHT (FT)	VALUE
10.	.702E-04
25.	.577E-04
45.	.549E-04
65.	.442E-04
350.	.171E-05

Fig. B-179



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA TL
WIND ANGLE = 45. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 3.00
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = -154.
Y = -154.

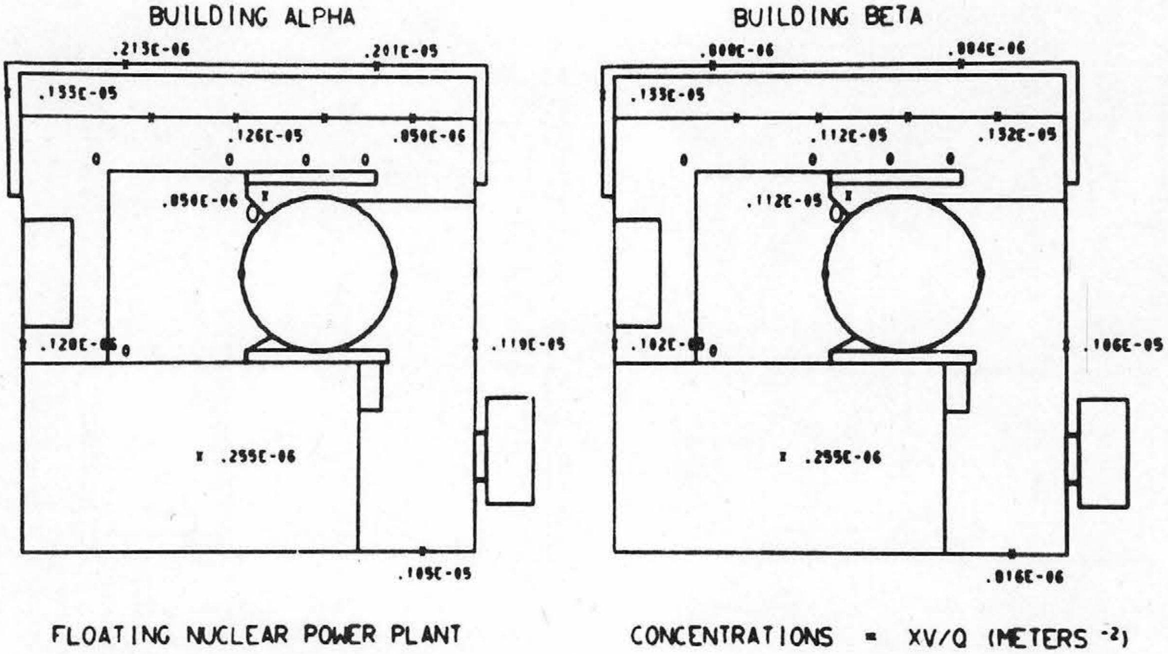


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

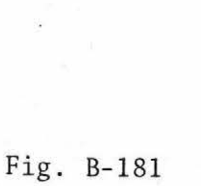
RAKE HEIGHT (FT)	VALUE
25.	.102E-05
85.	.106E-05
140.	.150E-05
250.	.120E-04
350.	.111E-02

Fig. B-180



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG BETA TL
WIND ANGLE = 225. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 3.00
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 127.
Y = 570.

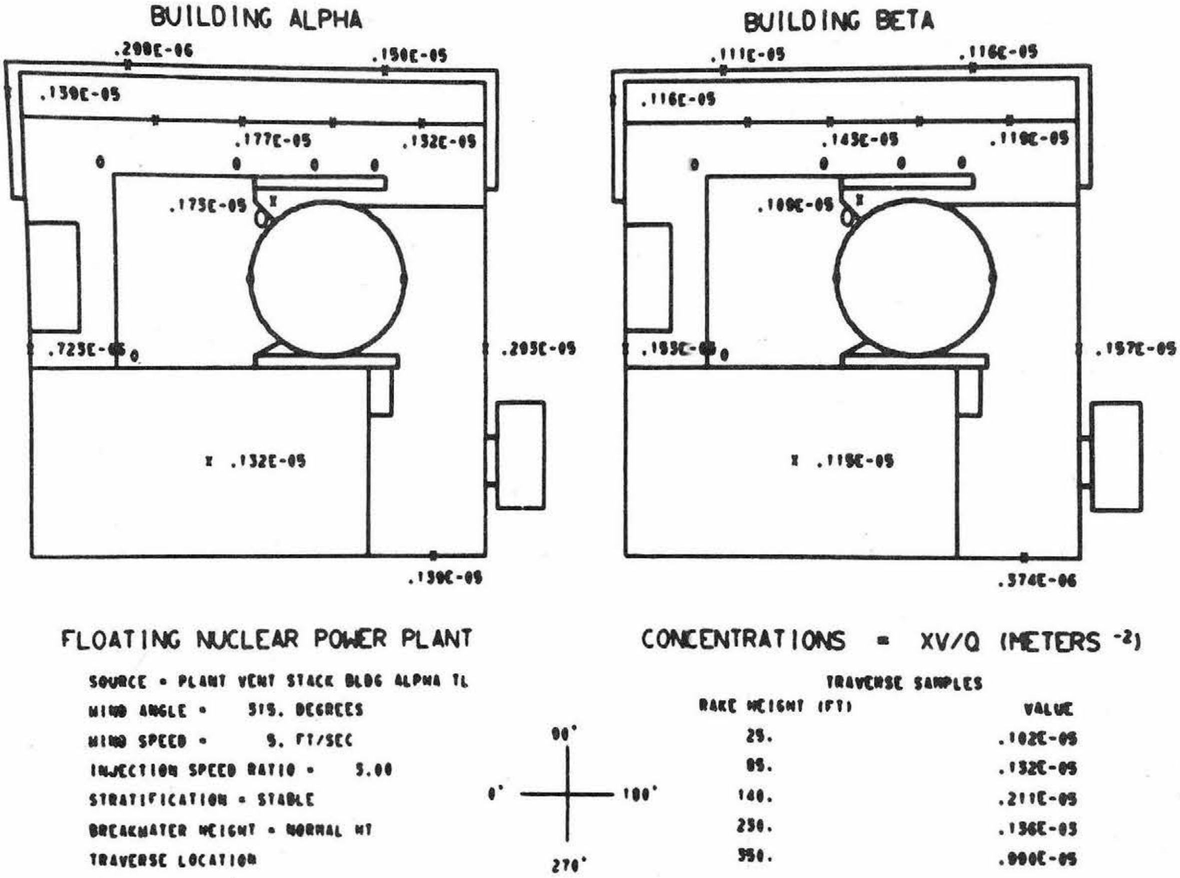


CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

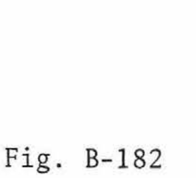
RAKE HEIGHT (FT)	VALUE
25.	.110E-05
85.	.132E-05
140.	.510E-06
230.	.342E-04
350.	.156E-03

Fig. B-181



FLOATING NUCLEAR POWER PLANT

SOURCE = PLANT VENT STACK BLDG ALPHA TL
WIND ANGLE = 315. DEGREES
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 5.00
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
TRAVERSE LOCATION
X = 0.
Y = 506.



CONCENTRATIONS = XV/Q (METERS $^{-2}$)

TRAVERSE SAMPLES

RAKE HEIGHT (FT)	VALUE
25.	.102E-05
85.	.132E-05
140.	.211E-05
250.	.136E-03
350.	.900E-05

Fig. B-182

APPENDIX C

SUMMARY CONCENTRATION MEASUREMENTS

ALL RELEASE SITUATIONS--

FLOATING OFFSHORE NUCLEAR POWER* STATION

* See Table 3 for an instant locator for various situations studied

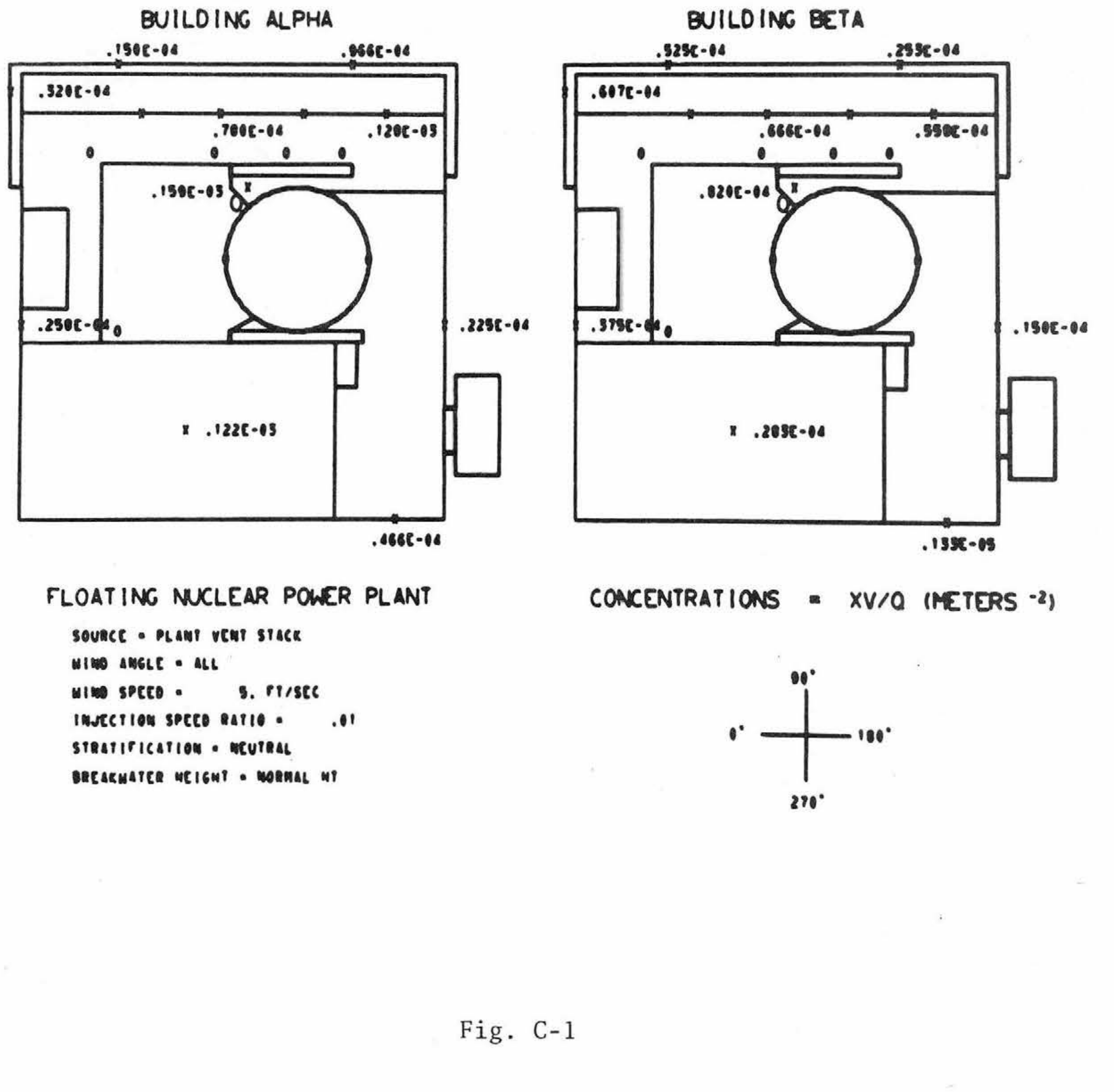

BUILDING ALPHA
.150E-04
.966E-04
.320E-04
.700E-04
.120E-03
.150E-03
.250E-04
.225E-04
.122E-03
.466E-04
FLOATING NUCLEAR POWER PLANT
SOURCE = PLANT VENT STACK
WIND ANGLE = ALL
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
BUILDING BETA
.525E-04
.255E-04
.607E-04
.666E-04
.550E-04
.020E-04
.375E-04
.150E-04
.298E-04
.135E-05
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. C-1

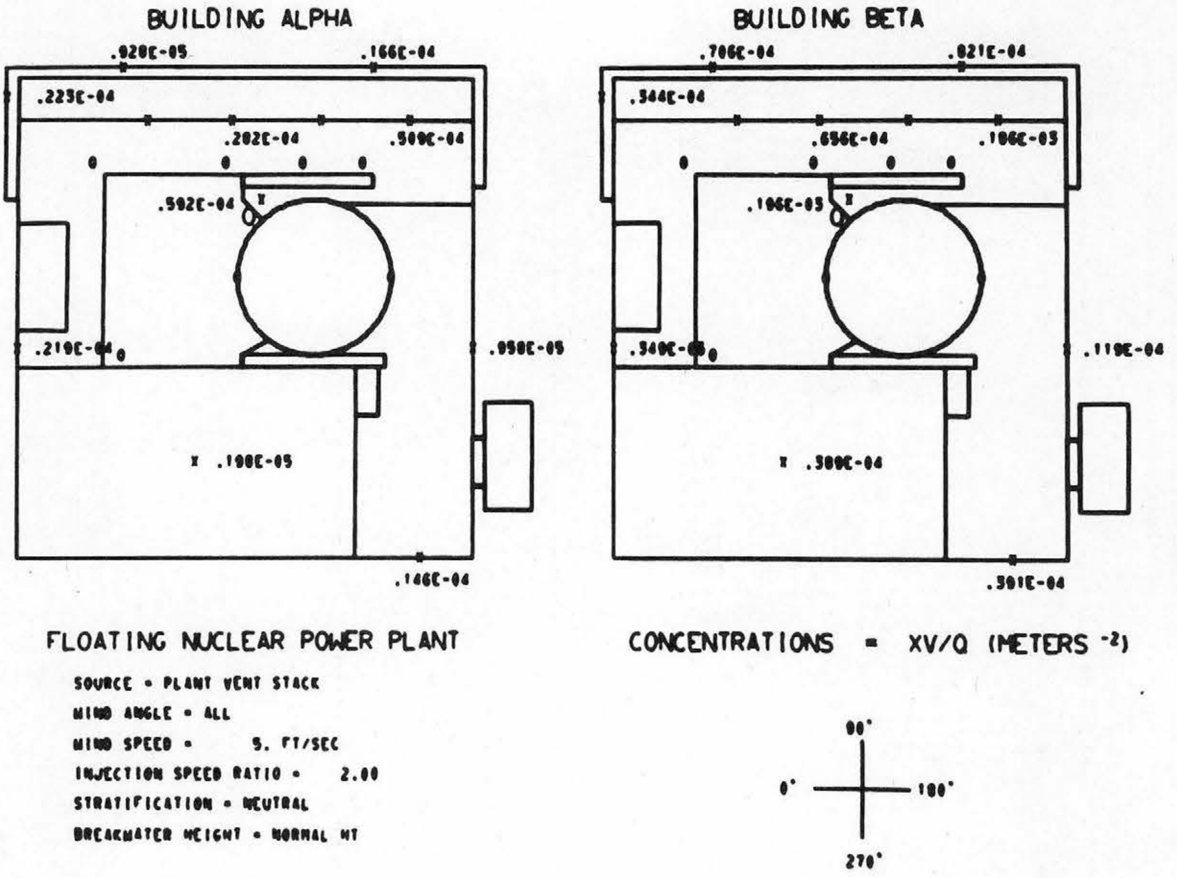

BUILDING ALPHA
.920E-05
.166E-04
.223E-04
.202E-04
.509E-04
.592E-04
.950E-05
.190E-05
.146E-04
BUILDING BETA
.706E-04
.821E-04
.344E-04
.656E-04
.106E-03
.106E-03
.119E-04
.380E-04
.391E-04
FLOATING NUCLEAR POWER PLANT
SOURCE = PLANT VENT STACK
WIND ANGLE = ALL
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 2.00
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. C-2

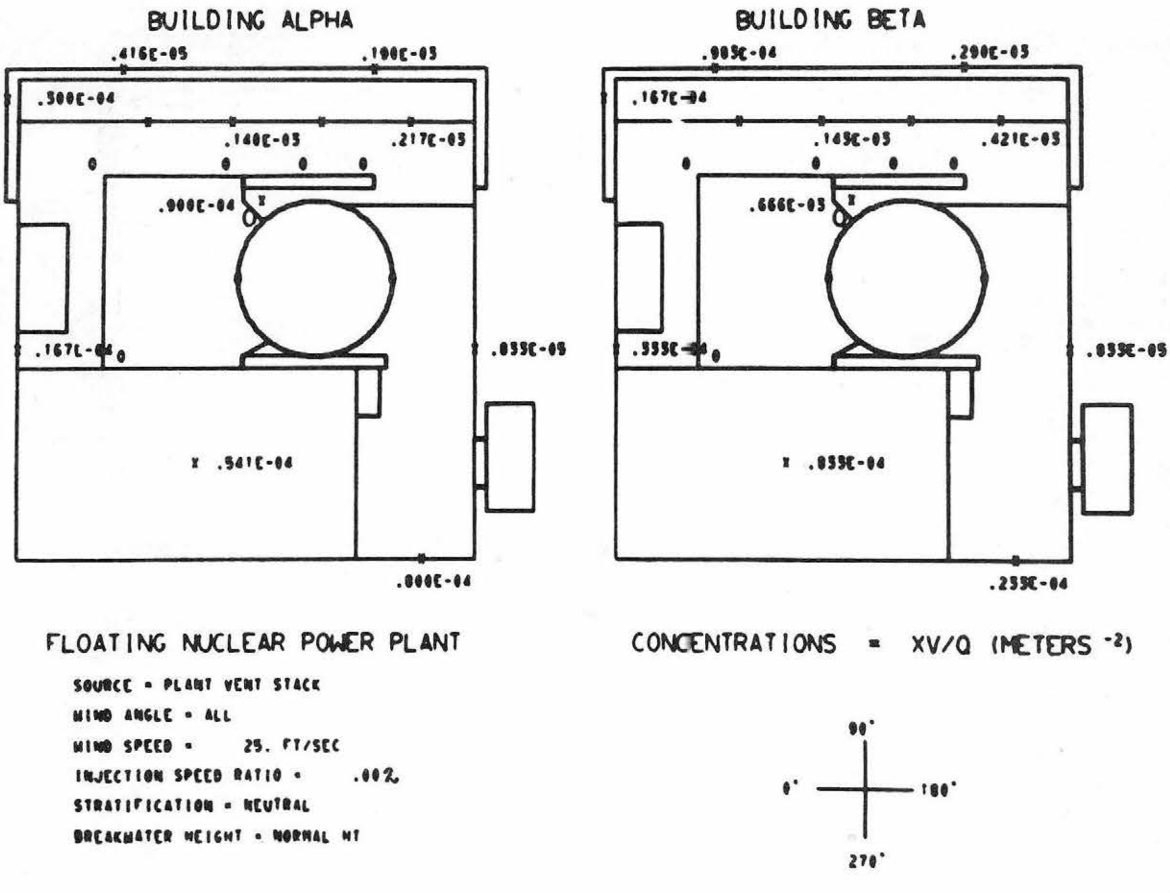

BUILDING ALPHA
.416E-05
.190E-03
.500E-04
.140E-03
.217E-03
.900E-04
.167E-04
.833E-05
.541E-04
.000E-04
BUILDING BETA
.985E-04
.290E-03
.167E-04
.145E-03
.421E-03
.666E-03
.333E-04
.833E-05
.833E-04
.233E-04
FLOATING NUCLEAR POWER PLANT
SOURCE = PLANT VENT STACK
WIND ANGLE = ALL
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .002
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. C-3

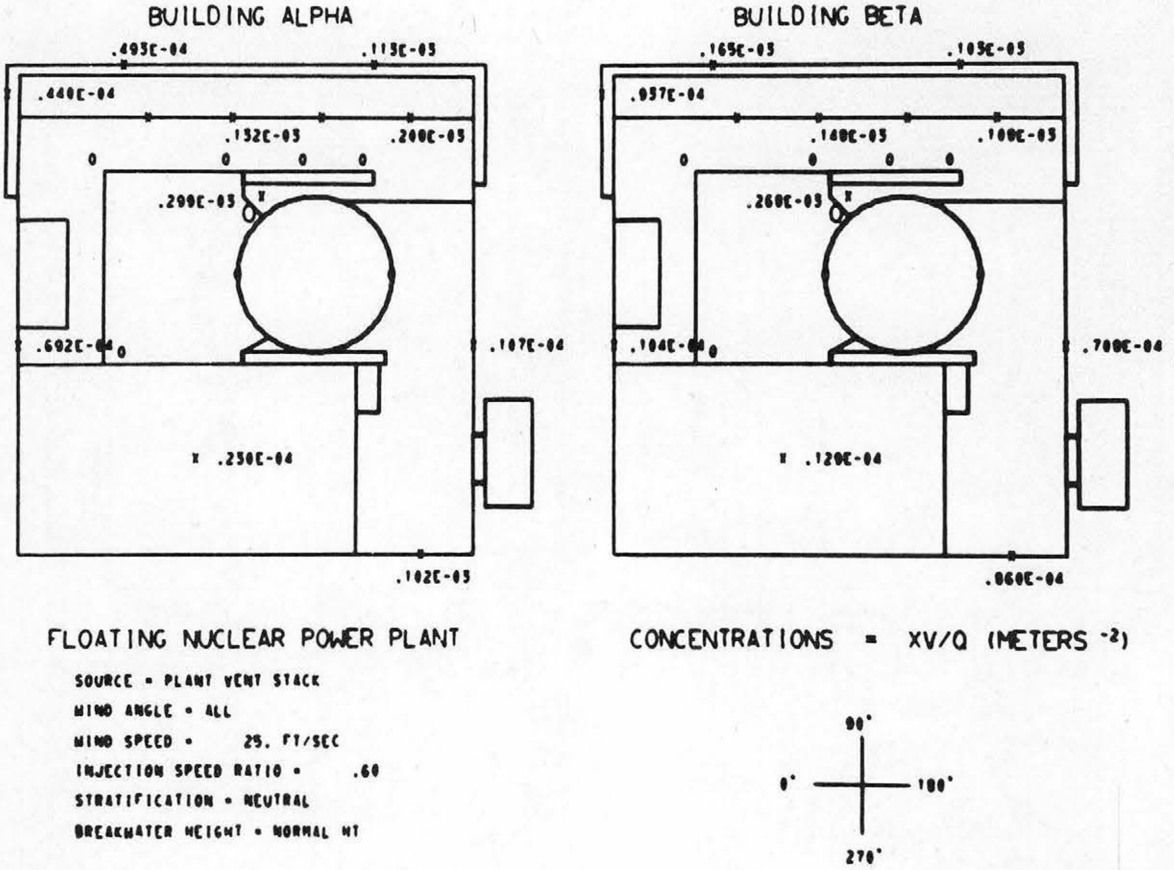

BUILDING ALPHA
.493E-04
.115E-03
.440E-04
.132E-03
.200E-03
0
0
0
0
.299E-03
.692E-04
0
.107E-04
.250E-04
.102E-03
BUILDING BETA
.165E-03
.105E-03
.957E-04
.140E-03
.100E-03
0
0
0
0
.260E-03
.104E-04
0
.700E-04
.120E-04
.060E-04
FLOATING NUCLEAR POWER PLANT
SOURCE = PLANT VENT STACK
WIND ANGLE = ALL
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .60
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. C-4

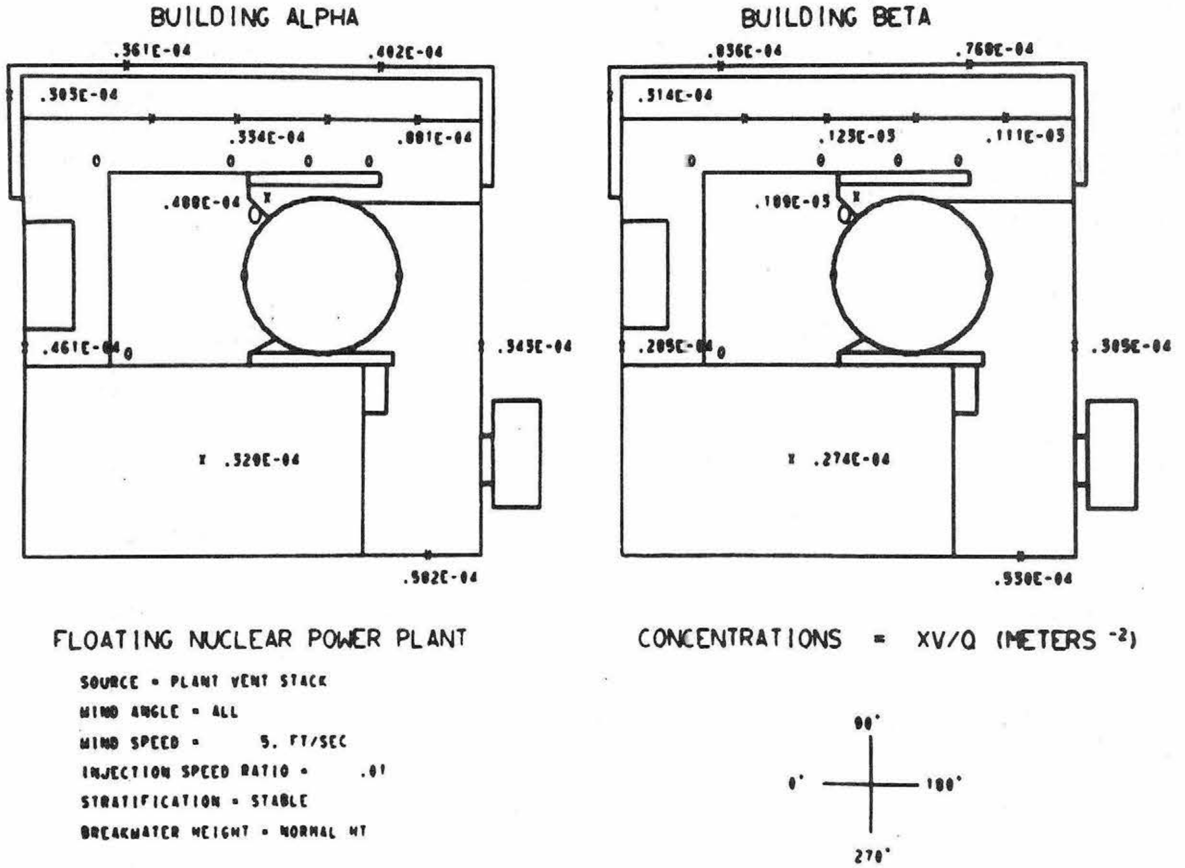

BUILDING ALPHA
.361E-04
.402E-04
.305E-04
.334E-04
.881E-04
0
0
0
0
.408E-04
X
.461E-04
0
.345E-04
X .320E-04
.502E-04
BUILDING BETA
.836E-04
.760E-04
.314E-04
.125E-03
.111E-03
0
0
0
0
.109E-03
X
.205E-04
0
.305E-04
X .274E-04
.550E-04
FLOATING NUCLEAR POWER PLANT
SOURCE = PLANT VENT STACK
WIND ANGLE = ALL
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. C-5

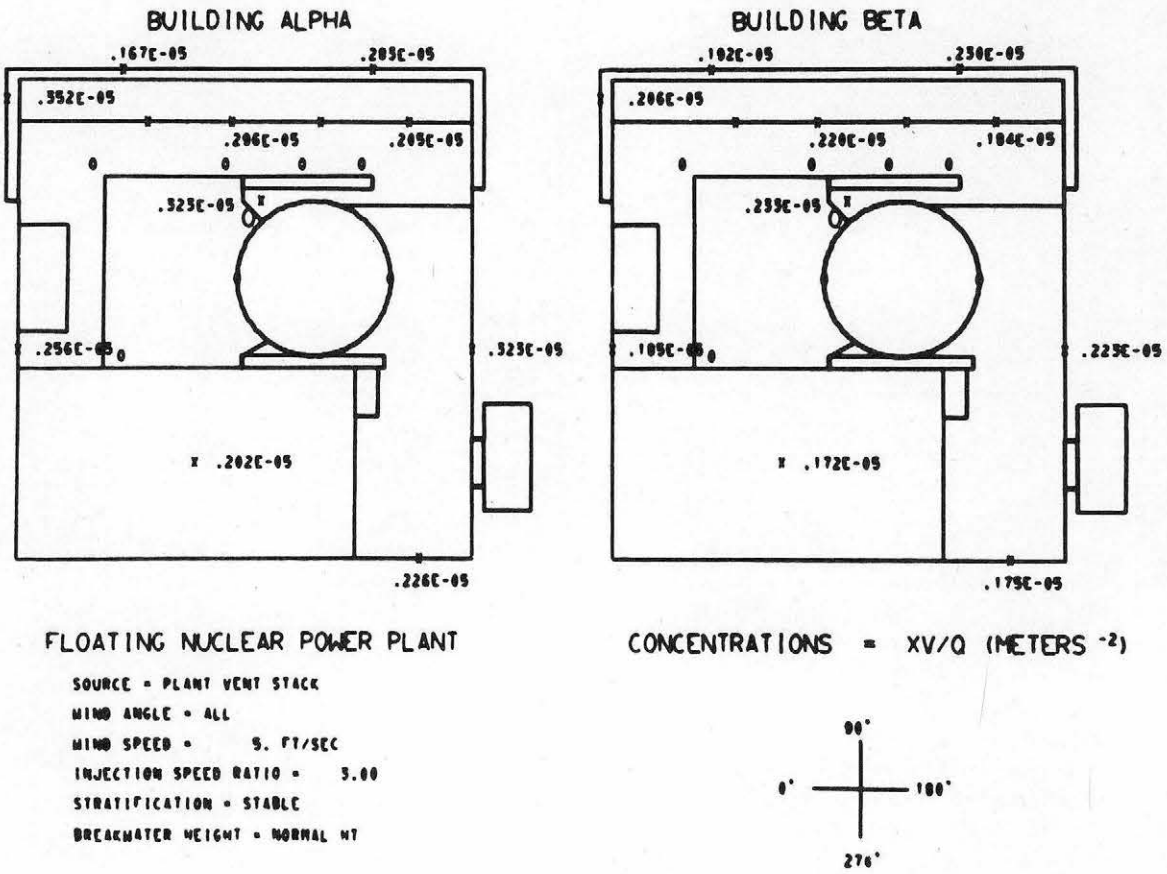

BUILDING ALPHA
.167E-05
.205E-05
.352E-05
.206E-05
.205E-05
.325E-05
.256E-05
.325E-05
.202E-05
.226E-05
BUILDING BETA
.102E-05
.230E-05
.206E-05
.220E-05
.184E-05
.233E-05
.105E-05
.225E-05
.172E-05
.175E-05
FLOATING NUCLEAR POWER PLANT
SOURCE = PLANT VENT STACK
WIND ANGLE = ALL
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = 3.00
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. C-6

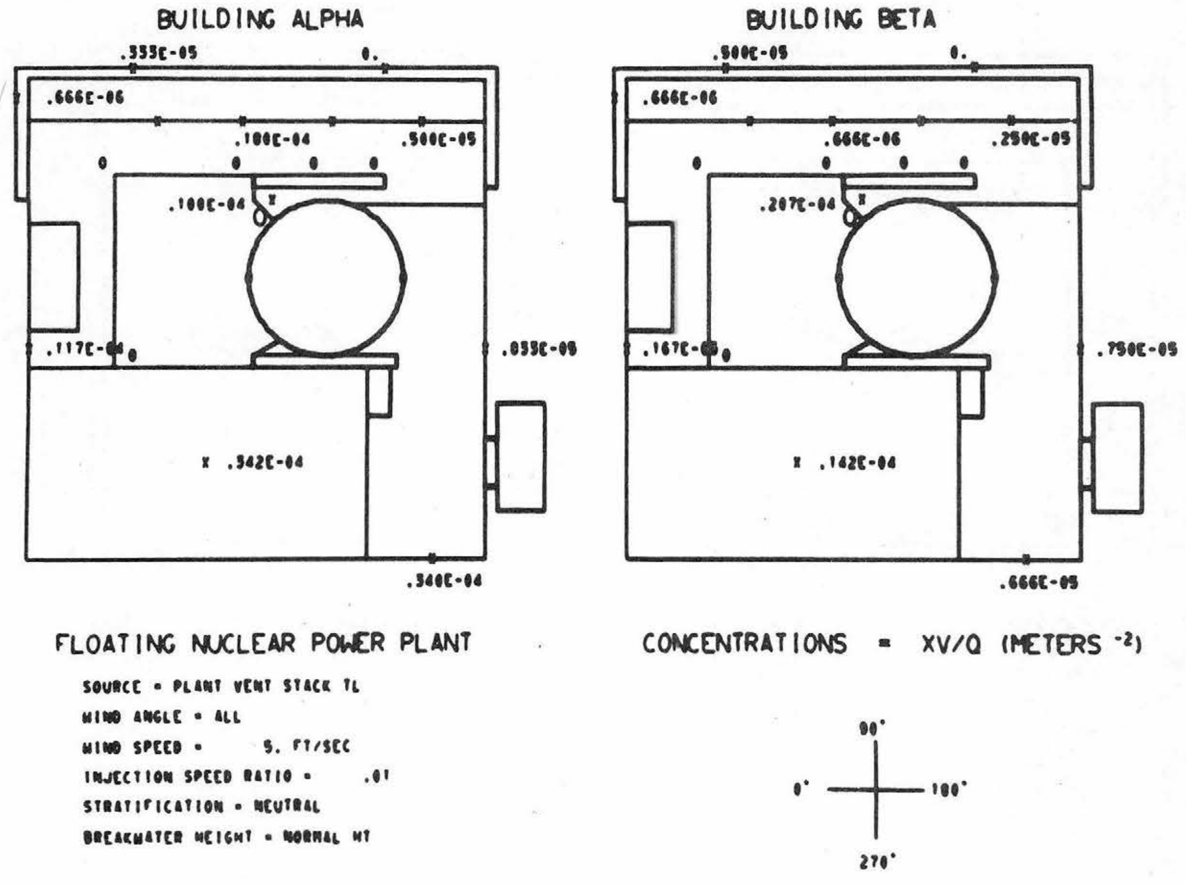

BUILDING ALPHA
.333E-05
0.
.666E-06
.100E-04
.500E-05
0
0
0
0
.100E-04
.117E-04
0
.833E-05
x .342E-04
.340E-04
BUILDING BETA
.500E-05
0.
.666E-06
.666E-06
.250E-05
0
0
0
0
.207E-04
.167E-05
0
.750E-05
x .142E-04
.666E-05
FLOATING NUCLEAR POWER PLANT
CONCENTRATIONS = XV/Q (METERS -2)
SOURCE = PLANT VENT STACK TL
WIND ANGLE = ALL
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
90°
0°
180°
270°

Fig. C-7

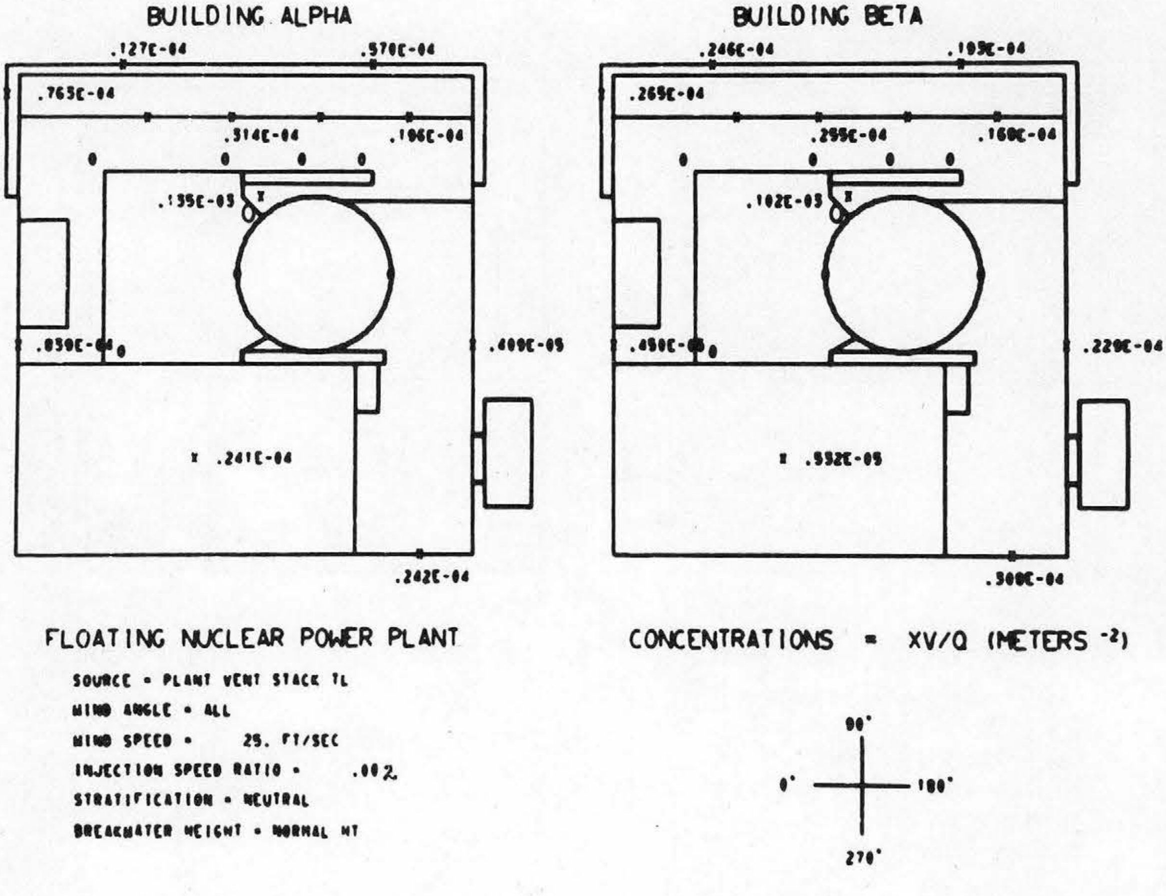

BUILDING ALPHA
.127E-04
.570E-04
.763E-04
.314E-04
.196E-04
.135E-03
.839E-04
.409E-05
.241E-04
.242E-04
BUILDING BETA
.246E-04
.195E-04
.265E-04
.255E-04
.160E-04
.102E-03
.450E-05
.229E-04
.552E-05
.300E-04
FLOATING NUCLEAR POWER PLANT
CONCENTRATIONS = XV/Q (METERS -2)
SOURCE = PLANT VENT STACK TL
WIND ANGLE = ALL
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .002
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
90°
0°
180°
270°

Fig. C-8

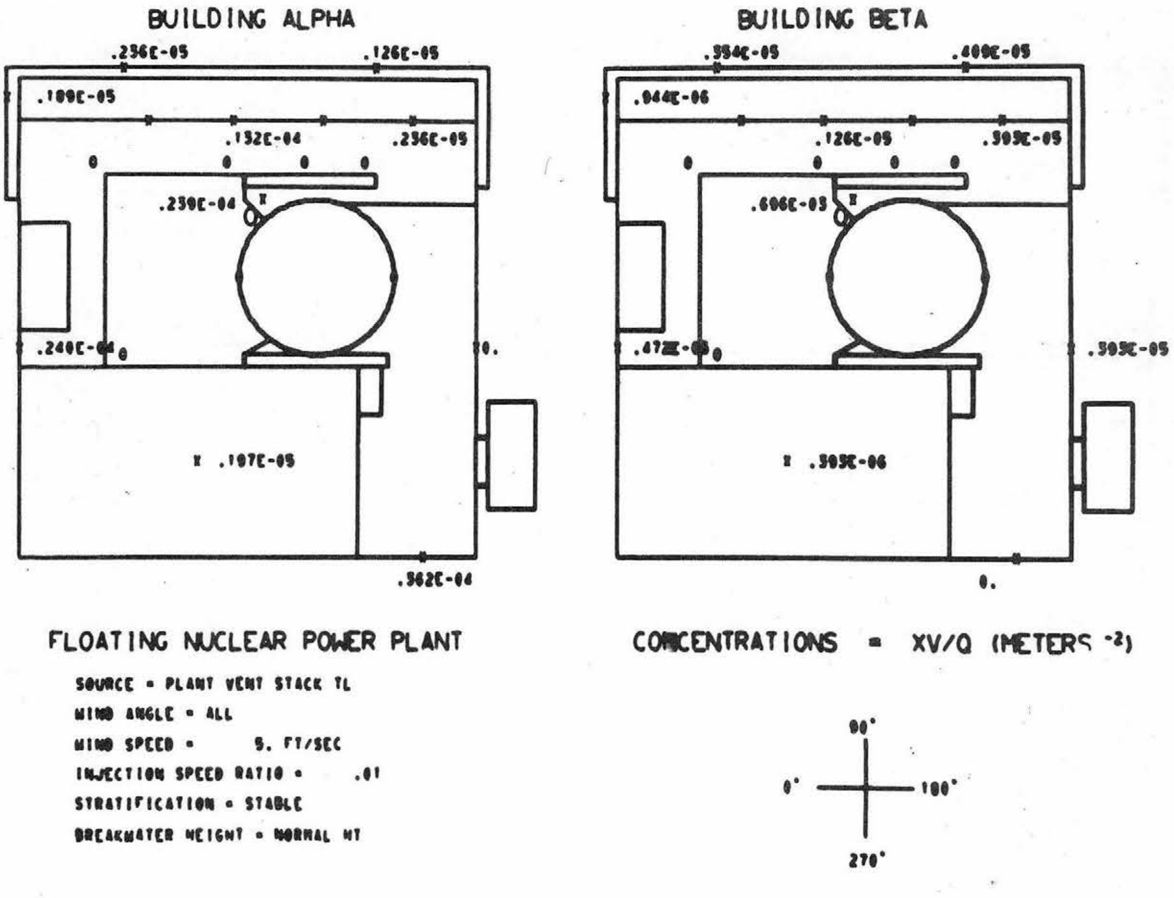

BUILDING ALPHA
.236E-05
.126E-05
.109E-05
.132E-04
.236E-05
0
0
0
0
.239E-04
.240E-04
0
0.
.107E-05
.362E-04
FLOATING NUCLEAR POWER PLANT
SOURCE = PLANT VENT STACK TL
WIND ANGLE = ALL
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
BUILDING BETA
.354E-05
.409E-05
.944E-06
.126E-05
.393E-05
0
0
0
0
.696E-03
.472E-05
0
.393E-05
.393E-06
0.
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. C-9

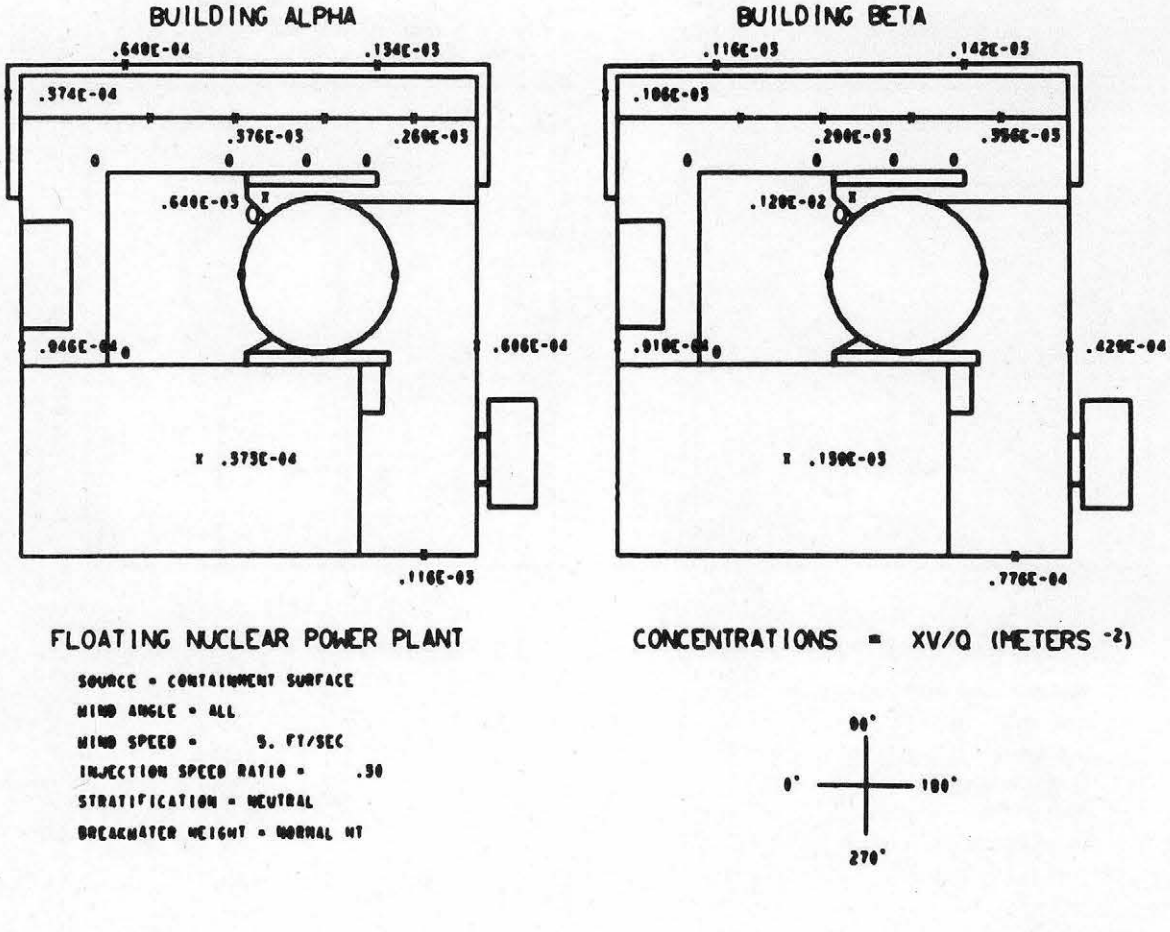

BUILDING ALPHA
.640E-04
.134E-03
.374E-04
.376E-03
.260E-03
.640E-03
.946E-04
.606E-04
x .373E-04
.116E-03
BUILDING BETA
.116E-03
.142E-03
.106E-03
.290E-03
.356E-03
.120E-02
.910E-04
.429E-04
x .130E-03
.776E-04
FLOATING NUCLEAR POWER PLANT
SOURCE = CONTAINMENT SURFACE
WIND ANGLE = ALL
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .30
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. C-10

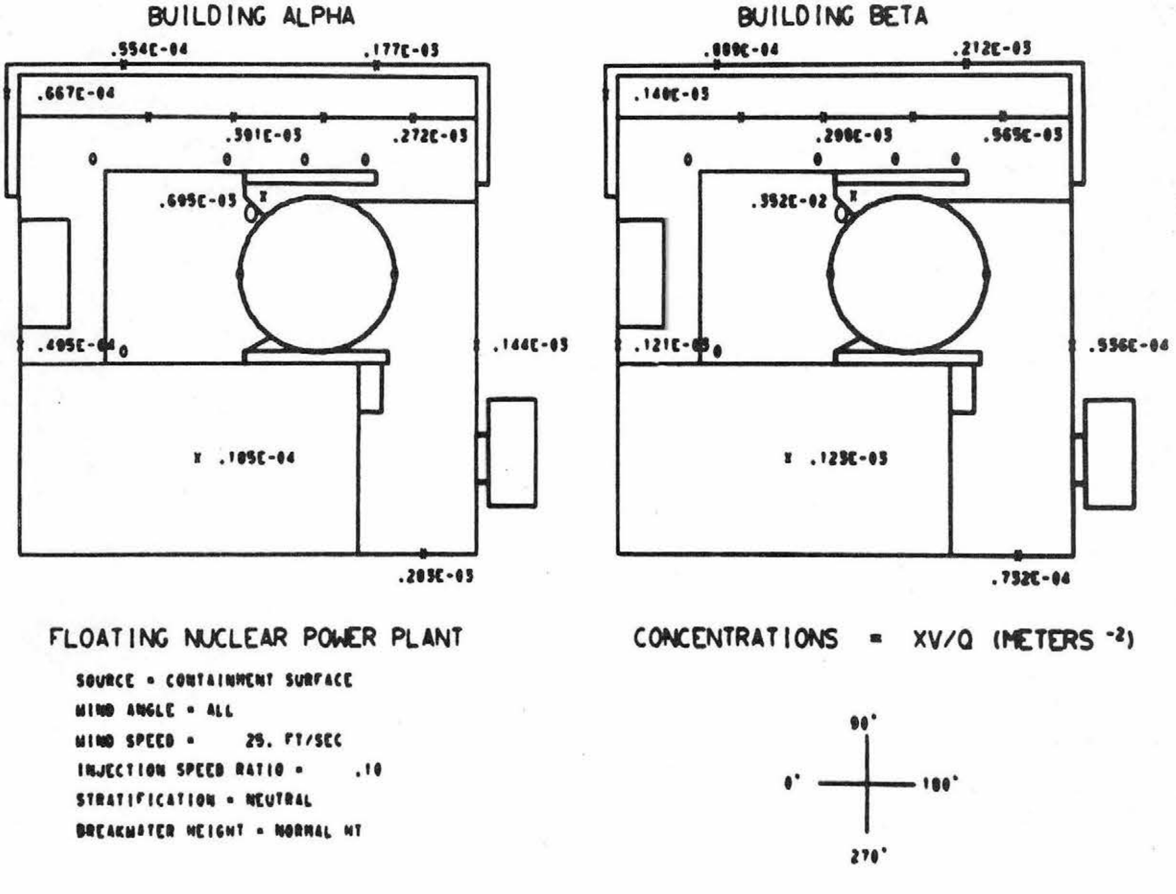

BUILDING ALPHA
.554E-04
.177E-03
.667E-04
.391E-03
.272E-03
.695E-03
.144E-03
.105E-04
.203E-03
BUILDING BETA
.212E-03
.140E-03
.200E-03
.565E-03
.352E-02
.556E-04
.123E-03
.732E-04
FLOATING NUCLEAR POWER PLANT
SOURCE = CONTAINMENT SURFACE
WIND ANGLE = ALL
WIND SPEED = 25. FT/SEC
INJECTION SPEED RATIO = .10
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. C-11

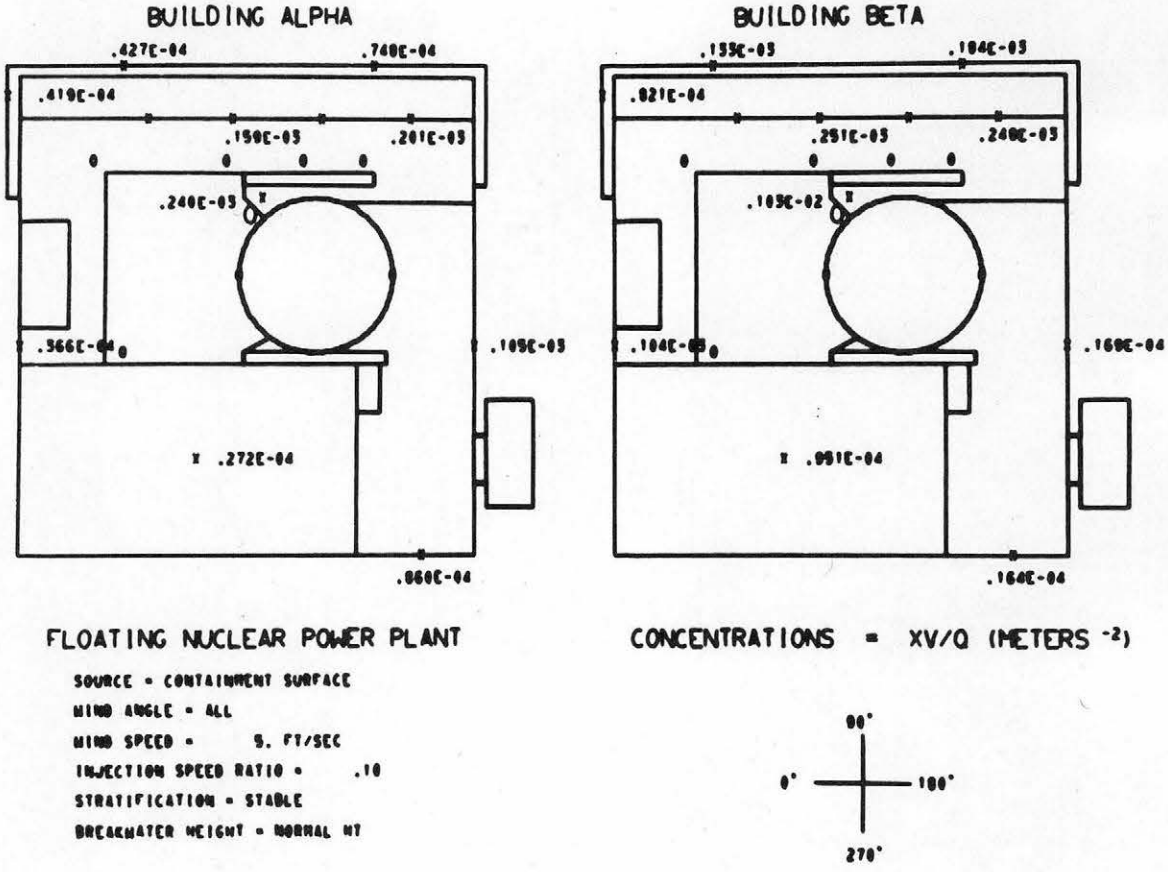

BUILDING ALPHA
.427E-04
.740E-04
.419E-04
.159E-03
.201E-03
.240E-03
.566E-04
.105E-03
.272E-04
.060E-04
BUILDING BETA
.135E-03
.104E-03
.821E-04
.251E-03
.240E-03
.105E-02
.104E-03
.160E-04
.091E-04
.164E-04
FLOATING NUCLEAR POWER PLANT
SOURCE = CONTAINMENT SURFACE
WIND ANGLE = ALL
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .10
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. C-12

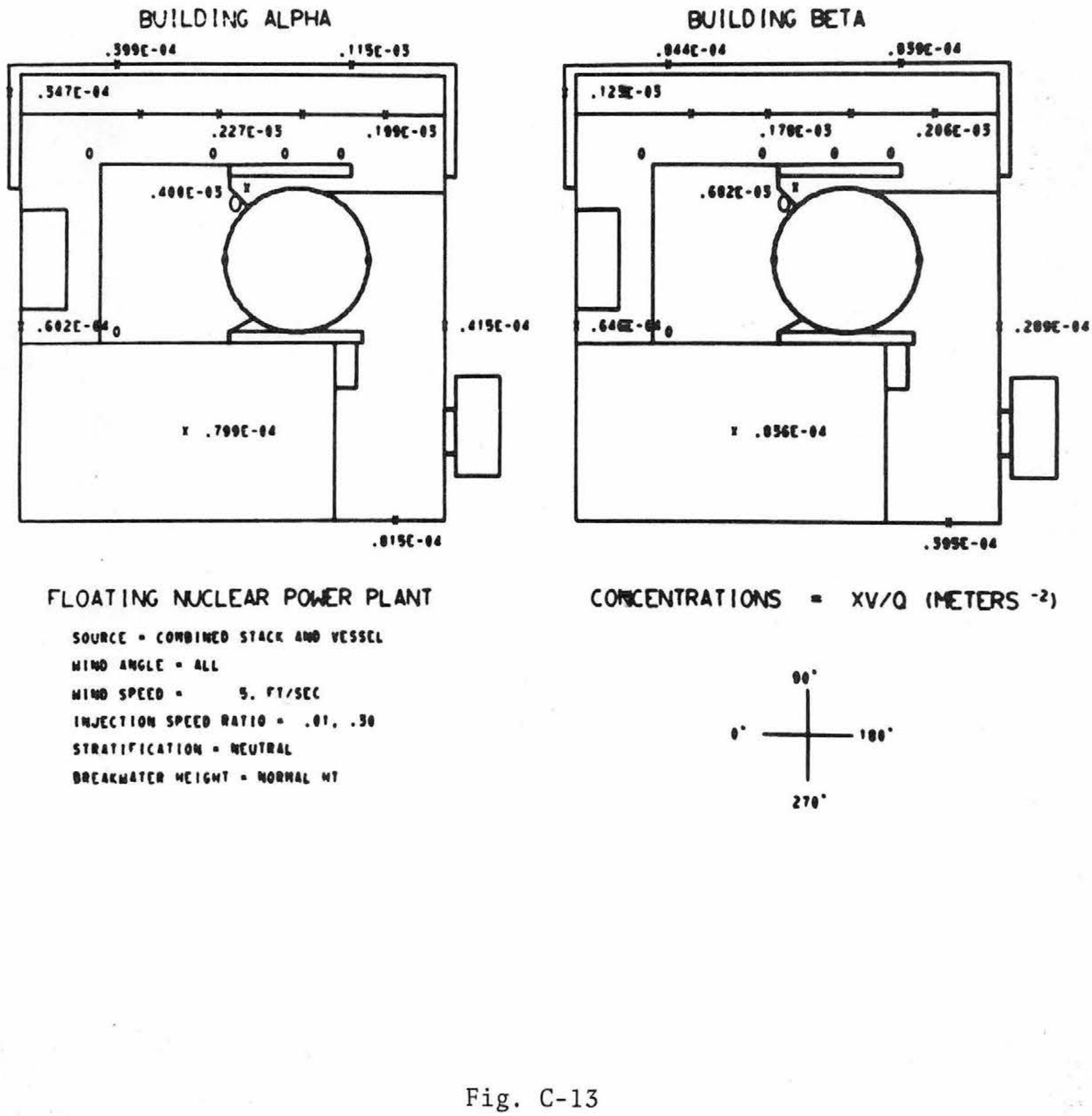

BUILDING ALPHA
.399E-04
.115E-03
.547E-04
.227E-03
.199E-03
.400E-03
.602E-04
.415E-04
.799E-04
.815E-04
BUILDING BETA
.844E-04
.859E-04
.125E-03
.170E-03
.206E-03
.602E-03
.209E-04
.856E-04
.395E-04
FLOATING NUCLEAR POWER PLANT
SOURCE = COMBINED STACK AND VESSEL
WIND ANGLE = ALL
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01, .30
STRATIFICATION = NEUTRAL
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. C-13

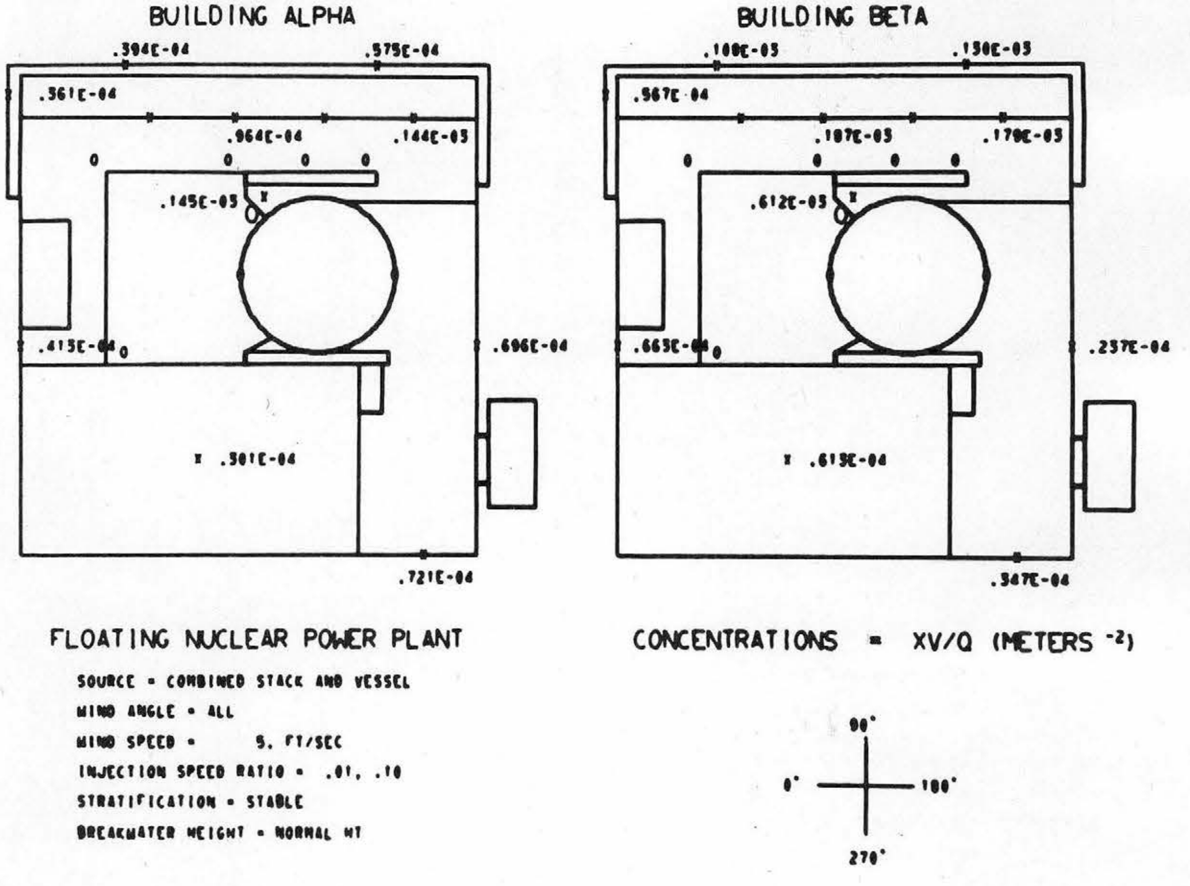

BUILDING ALPHA
.394E-04
.575E-04
.361E-04
.964E-04
.144E-03
0
0
0
0
.145E-03
.415E-04
0
.696E-04
.301E-04
.721E-04
BUILDING BETA
.100E-03
.130E-03
.567E-04
.187E-03
.170E-03
0
0
0
0
.612E-03
.663E-04
0
.237E-04
.613E-04
.347E-04
FLOATING NUCLEAR POWER PLANT
SOURCE = COMBINED STACK AND VESSEL
WIND ANGLE = ALL
WIND SPEED = 5. FT/SEC
INJECTION SPEED RATIO = .01, .10
STRATIFICATION = STABLE
BREAKWATER HEIGHT = NORMAL HT
CONCENTRATIONS = XV/Q (METERS -2)
90°
0°
180°
270°

Fig. C-14