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February 17, 1969

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Columbia River Temperatures

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HANFORD CATEGORY A-65

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1 page, fig. 2
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COLUMBIA RIVER TEMPERATURES, DAILY AVERAGE °C, 1967

SECRET

SECRET

02 PRODUCTION DIVISION

FY 1969 MIDYEAR BUDGET REVIEW

February 17, 18, 19, 1969

Visual Aids

for

COLUMBIA RIVER STUDIES

used by

R. F. Foster

Battelle-Northwest

MISSION 10 - COLUMBIA RIVER STUDIES

• Effluent Activity Reduction DUN

• Effect of Reactor Effluent on the Quality of Columbia River Water BNW

• Mechanisms of Environmental Exposure BNW

EFFECT OF REACTOR EFFLUENT ON QUALITY OF COLUMBIA RIVER WATER

SCOPE:

Heat

- ΔT in River - Present
- ΔT in River - Future
- Compliance with Standards
- ΔT in Zone of Mixing (Plumes)

Chemicals

- Travel Time to Downstream Points of Use
- Degradation with Time and Distance

PRIOR WORK:

- Estimation of Power Levels from River Temperatures
- Mathematical Model on Heat Loss and Travel Times
- Persistence of Hanford Heat in Lower River
Dispersion of Effluent in the River

FY 1969 WORK:

- Mathematical Model Improvement
- Effect of Temperature Standards on Reactor Power Level + Optimization of Monitoring Points
- Interaction of Ben Franklin Dam and Hanford Heat

CURRENT AND FUTURE PROBLEMS:

- Impact of Auditing Temperature at Oregon-Washington Border
- Hazard of K and N Reactor Plumes to Young Salmon
- Effect of Ben Franklin Dam on Plume Configuration
- Cost Optimization -- Peaking Power at Priest Rapids vs Dilution Water for Reactor Heat
- Temperature Data Evaluation -- USGS
FWPCA
BCF
STATES
- State-of-the-art -- Technical Capability
 - Review of "White Papers" for AEC
 - Authoritative Position vs Control Agencies

MECHANISMS OF ENVIRONMENTAL EXPOSURE

SCOPE:

- Identify and Quantitate Contribution of Local Foods to Radiation Dose
- Identify Population Groups that Receive the Greatest Exposure
- Refine Estimate of Dose vs Limits for Local Population

PRIOR WORK:

- Correlation of Fish Consumption vs Body Burden of ^{65}Zn
- Surveys of Local Fish and Game Bird Consumption
- Food Habits of Plant Employees and Elementary School Children vs W.B.C.

FY 1969 WORK:

- Completion of Elementary School Program
- Start of Secondary School Program -- Kind and Amount of Food Eaten vs W.B.C.

CURRENT AND FUTURE PROBLEMS:

- Analysis of Dietary and W.B.C. Data for School Children and Fishermen
- ^{65}Zn Burdens in People at Mouth of Columbia
- ^{65}Zn Burdens in People on Irrigated Farms
- Determine Feasibility of Using Whole-Body Counting to Reduce Scope (cost) of Environmental Monitoring Program

**DATE
FILMED**

9 / 12 / 94

END