2743 HRES HB 99 - HB 118

2743

3. Correlate access by fish to sloughs versus mainstem discharge

D. Data Use Examples

1. Determine the geographical areas of the Susitna River that have significant resources that may be affected by the project.

2. Determine the time window that instream flows will be required to maintain the existing fish populations for the migration and spawning component of their life cycle.

3. Provide correlatory inference as to the levels of discharge, and temperature required to maintain existing populations of anadromous species.

The list above represents only a portion of the data types collected. Over a half a dozen other types of analysis are planned with this data base. These will investigate habitat relationships for adult salmon, examine the assumptions of the population estimates, provide data to assist in the designation of other habitat related studies on incubation and emergence, and yield instream flow information on the spawning requirements of the species.

RESIDENT AND JUVENILE ANADROMOUS PROJECT DATA

I. Incubation, emergence, and outmigration of Juvenile Anadromous species.

A. Species - All five species of Pacific Salmon

B. Locations - Mainstems Susitna, sloughs, side channels, and clear water tributaries.

C. Methods - Inclined Plane smolt traps, egg pumps, observations.

D. Data Analysis Examples

1. Timing of outmigration correlated with mainstem temperature, turbidity, and discharge.

2. Development and growth rates of embryos under variable temperature ranges in the sloughs and selected side channels.

3. Examine effects of ice staging on incubation success and development rates.

E. Data Use Examples

1. Determine timing of outmigration for assignment of a time period of downstream flow release from the dams required to support salmon outmigration.

2. Estimate the response of the juvenile salmon outmigration to natural variations in temperature and flow which can be used to assess the effects of the project on outmigration.

3. Determine the thermal requirements of the incubating eggs and embryos for normal timing of hatching and emergence, thus determine possible impacts of altered flow and altered temperatures. Assess the potential of mainstem or side channel habitats for potential enhancement of spawning areas for possible mitigation of adverse effects of the Project.

II. Juvenile anadromous and resident fish abundance and distribution data

A. Species - All resident fishes, all juvenile anadromous Pacific salmon species.

B. Location - Mainstem Susitna below Devil Canyon, clear water tributaries, side channels, and sloughs.

C. Methods - Electrofishing gear, minnow traps, beach seines.

D. Data Analysis Examples

1. Distribution of fish by general habitat type.

2. Relative abundance by season.

3. Differences in general habitat preference by species.

4. Timing of use of habitat by each species.

E. Data Use Examples

1. Determine the habitat types that are the most important for a fish species and their life cycle.

2. Determine the timing of required downstream flows necessary to maintain rearing fish populations.

III. Impoundment area resident fish population data

A. Species - Grayling, Dolly varden, Burbot, Round and Humpback whitefish, Lake trout.

B. Location - Eight clear water tributaries of the Susitna above Devil Canyon, mainstem Susitna above Devil Canyon, and on unnamed clear water lake above Devil Canyon.

C. Methods - Electrofishing, minnow traps, hook and line.

D. Data Analysis Examples

1. Population estimates of the grayling populations using the habitat that will be inundated by the reservoirs.

2. Analysis of the effects of various levels of fishing pressure of populations and age structure of grayling populations.

E. Data Use Examples

1. Determine the value of the resource that will be lost by conversion of the clear water tributaries into a glacial reservoir.

2. Estimate the effects of increased fishing pressure created by increased access on the grayling populations.

The above data types and data analysis are not a complete list for the resident and juvenile anadromous fisheries data. Over ten different types of analyses are planned on the juvenile anadromous and resident species that will be affected by the instream flow changes anticipated with the development of the project. These include statistical tests of the importance of different habitats of the juvenile species.

AQUATIC HABITAT AND INSTREAM FLOW PROJECT DATA

This component of the Aquatic Studies program includes collection and the analysis of data from all of the previously discussed study components. It integrates the data into an analysis of the influence of mainstem discharge on the availability and utilization of habitat by the resident and anadromous species present in the Susitna River downstream of the proposed hydroelectric project.

I. Fish habitat utilization data

A. Location - Sloughs, side channels, mainstem, and tributary mouths below Devil Canyon

B. Methods - Water quality field measurement probes, turbidity analysis, continuous and instantaneous temperature measurements, substrate measurements, discharge, point velocity and depth measurements, surface area mapping, and others.

C. Species - All fish species that use the habitat types studies.

D. Data Analysis Examples

1. Characterize slough hydraulics

2. Correlate surface area of sloughs, and tributary mouth habitats with mainstem discharge.

3. Describe of importance of habitat types to different species and life stages

4. Compare temperatures of redds (intra gravel and surface temperatures) with use of areas by spawning chum and sockeye salmon.

5. Describe the effects of discharge on the usable habitat of spawning chum salmon.

E. Data Use Example

This component is the most complex of the Su Hydro study components and involves many different types of analysis. The program is designed to determine the essential habitat parameters required or currently used by the important species of anadromous fish and resident species. Data obtained from the resident, juvenile, and adult anadromous studies are used as the basis for these intensive studies and are incorporated in the analysis when appropriate. The data will be used to evaluate alternative project operation schedules with respect to downstream discharge. Many more types of analysis have been outlined for this component and other related data types beyond those listed are also included in our reports.

II. Stage/discharge and water temperature data.

A. Location - Sloughs, mainstem sites and tributary mouths below Devil Canyon

B. Methods - Similar to methods used for fish habitat utilizations.

C. Species - Same as fish habitat utilization

D. Data Analysis Examples

1. Describe effects of discharge on passage of adults into sloughs and tributaries for spawning.

2. Describe effects of discharge on the migration of juveniles in and out of tributary mouths and sloughs.

3. Describe effects of discharge on the incubation and survival of salmon embryos.

E. Data Use Examples

These data when analyzed provides the cornerstone of impact analysis and mitigation planning for the Su Hydro project. If proper flows can be maintained out of the dams, downstream fisheries can possibly be maintained or enhanced.

The above data types are not a complete listing of the information being collected but provide a general outline of the information being analyzed. The complexity of the analysis of the instream flow component would take a separate volume to describe. These data will be subject to additional analysis by the Arctic and Environmental Information and Data Center (AEIDC) in their modelling of the aquatic environments of the Susitna system as it may be affected by of the Susitna Hydro project.

TASKS:

Task One (1)

a. Subtask 1.02 Forecasting Peak Electrical Demand for Alaska Railbelt, Final Report, December - WCC

b. Electric Power Consumption for the Railbelt May 1980

c. Alaska Economic Projections for Estimating Electricity Requirements for the Railbelt October 1981 - ISER

d. Railbelt Electric Power Alternatives Study November 81 - Ebasco

e. Subtask 1.01 Power Studies, Closeout Report - Review of ISER Work December 1980

f. Power Studies Termination Report, September 1980

Task Two (2)

a. Task 2 Analysis of Alternative Transportation Modes for Camp Resupply January 1980

b. Task 2 Analysis of Alternative Transportation Modes for Camp Resupply February 1980

c. Subtask 2.09 Closeout Report March 1981

d. Subtask 2.10 Draft Summary of Environmental Report - Access Roads September 1981

e. Subtask 2.16 Closeout Report Hydrographic Surveys October 1981

f. Subtask 2.10 Access Roads December 1981

g. Subtask 2.12 Field Reconnaissance Reservoir Area - Timber Report Draft December 1981

h. Subtask 2.13 Marketability and Disposal Study for Reservoir Area Draft December 1981

i. Task 2 Survey & Site Facilities, Hydrographic Surveys, October 1981 R&M

j. Subtask 2.15 Slope Stability and Erosion Studies Closeout Report Mar 82

k. Subtask 2.10 Access Roads Closeout Report Final Draft March 82

l. Subtask 2.10 Access Roads Interim Report #1, Alternative Access Corridor Selection December 1980 R&M

m. Subtask 2.10 Access Planning Studies, January 1982

Task Three (3)

a. Subtask 3.01 Closeout Report, Review of Available Material

b. Subtask 3.03 Field Data Collection - Ice Observation August 81

c. Subtask 3.05 - Closeout Report 1st Draft February 81

d. Subtask 3.10 Preliminary Open Water Calculations March 81

c. Seismicity Evaluation February 79 - D'Appolonia
d. Seismic Geology Evaluation Draft Report 2 Volume 1 November 80 WCC
e. " " " " " " " 2 " " "
f. " Refraction Survey Draft Report Spring 81 WCC
g. " " " Summer 1980 WCC
h. " " " December 1981 WCC
i. Seismic Studies for SHP, Subtask 4.09 thru 4.15 WCC
j. Final Report on Seismic Studies February 82 WCC
k. Subtasks 4.01 thru 4.08 Interim Report on Seismic Studies Dec 1980
l. " 4.09 thru 4.15 Final Report on Seismic Studies Feb 82 WCC
m. " 4.09 Design Manual for the Long term Earthquake Monitoring System for the SHP June 82 WCC

Task Five (5)

a. Task 5 Geotechnical Exploration Report on 80 Studies March 1981
b. Slimhole Geophysical Logging - Edcon
c. 1980-81 Geotechnical Report (3 volumes) Text, Appx. A-F & Appx. G-K
d. 1982-84 Geotechnical Program, Subtask 5.07 Report, Draft
e. Engineering Properties of Soils and Their Measurement - Joseph Bowles
f. Glacial and Quaternary Geology - John Wiley & Sons, R. F. Flint
g. FY83 Proposed Geotechnical Exploratory Program May 82

Task Six (6)

a. Subtask 6.01 Closeout Report August 1980
b. Subtask 6.01 Closeout Report Final December 1980
c. " " " " Cost Data Collection May 81
d. " 6.02 " " Final Draft March 1981
e. " " , 6.03, 6.06 Preliminary Design Considerations Feb 81
f. " 6.05 Development Selection Report 1st Draft February 1981
g. " " " " " March 1981
h. " " " " " 2nd Draft June 1981
i. " " " " " Appendices A thru I July 81
j. " 6.09 and 6.10 Design Criteria for Watana and Devil Canyon May 81
k. " 6.36 Generation Planning Parameters January 1981
l. Task 6 - Design Development - El Cajon Project Arch Dam April 15, 1981
m. Feasibility Report, Volume 1 Section 9-19, First Draft February 1982
n. Development Selection Report Task 6 December 1981
o. " " " " " " " , Appx A thru J

x. Subtask 7.10 Phase 1 Final Draft Report, Resident Fish Investigation on the Upper Susitna River ADF&G/Su Hydro

y. Subtask 7.10 Phase 1 Final Draft Report, Resident " " on the Lower Susitna River ADF&G/Su Hydro 1981

z. Phase 1 Final Report Big Game Studies Vol. VII Wolverine, Vol. VIII Dall Sheep March 1982

aa. Subtask 7.10 Phase 1 Final Draft Report Vol. 1 Aquatic Habitat & Instream Flow Project ADF&G/Su Hydro 1981

bb. Subtask 7.10, Phase 1 Final Draft Report, Vol. 2 Pt. 1 Aquatic Habitat & Instream Flow Project ADF&G/Su Hydro 1981

cc. Subtask 7.10 Phase 1 Final Draft Report, Juvenile Anadromous Fish Study on the Lower Susitna River ADF&G/Su Hydro 1981

dd. Subtask 7.10 Phase 1 Final Draft Stock Separation Feasibility Report Adult Anadromous Fisheries Project ADF&G/Su Hydro 1982

ee. Subtask 7.10 Phase 1 Final Draft Report, Adult Anadromous Fisheries Project, ADF&G/Su Hydro 1981

ff. Subtask 7.06, Cultural Resources Investigation Phase 1 Report April 1981

gg. " " " " " Appendix E, 1982

hh. " 7.11 Furbearers Phase 1 Report April 1982 - TES

ii. " 7.12 Plant Ecology, Phase 1 Report, April 1982

jj. " " Birds and Non-Game Mammals Phase 1 Report, April 1982 - TES

kk. Task 7 - Land Use Analysis Navigational Use, April 1982

ll. Fisheries Impact Report, June 1982 - TES

mm. Task 7 Environmental Studies, Subtask 7.10 Fish Ecology Phase 1 Supporting Documentation May 1982

nn. Subtask 7.08 Phase 1 Environmental Studies Report - Recreation Planning May 1982

oo. Access Plan Recommendation Report, August 1982

pp. Statement of Qualifications Fisheries Biology in Alaska May 82 WCC

qq. Fish and Wildlife Mitigation Policy, November 81, Revised Mar 82 & Apr 82

rr. Subtask 7.07 Land Use Analysis Annual Report 1980, July 81

ss. Subtask 7.05 Socioeconomics Analysis Annual Report 80, May 81

tt. 1980 Summary Environmental Report

uu. Environmental Report, Fish Ecology 1980

vv. " " , Plant Ecology 1980

ww. " " , Big Game " "

xx. " " , Birds and Non-Game 1980

yy. " " , Furbearers, 1980

zz. Subtask 7.07, Land Use Analysis, Phase 1 Report, May 1982

aaa. Subtask 7.10, Stock Separation, Phase 1 Report

e. Task 11.03 Closeout Report Susitna Risk Analysis April 1982
f. FERC License Application Exhibit A, First Draft, September 17, 1982
g. " " " " B, " " " 17, 1982
h. " " " " C, " " " 24, 1982
i. " " " " D, " " " 24, 1982
j. Review of Task 11 - A. R. Tussing
k. Draft License Application Exhibit A, November 82
l. " " " " B, " "
m. " " " " C, " "
n. " " " " D, " "
o. " " " " E, " " (6 volumes)
p. " " " " F, " "
q. " " " " G, " "

Task Twelve (12)

a. Subtask 12.03 Agency Consultation, Public and Agency Participation (Volume 1 & 2) March 82

Task Thirteen (13)

a. July Cost Graphical Display - Acres

A. External Meetings

A.1. External Review Board Meeting #3 Information Package October 6-8, 81
A.2. Acres Specialist Consultants Panel Meeting (November 18, 1981)
A.3. External Review Board Meeting #4 Information Package January 12-13, 81
A.4. " " " " #1 " " " 24, 81 Vol 2
A.5. " " " " #5 Report, February 1982
A.6. Reports by Power Authority and Acres External Review Panels 1980-82
A.7. External Review Board Meeting #6, November 18-19, 1982

B. Internal Meetings

B.1. Internal Review Board Meeting #1, Information Package July 1980
B.2. " " " " " , Geotechnical & Seismic Aspects July 80
B.3. " " " " #2, Status of Tasks 4,5,6 October 80
B.4. " " " " #3, February 1981
B.5. " " " " #4, September 1981
B.6. " " " " #5, November 4, 1982

F.6. The Engineering Geology of the Bersimis No. 2 Site D.H. MacDonald and G. Wilson

F.7. Treatment of Alluvial Foundations for Duke D-20-LG-2 Development R. Arbour & J. J. Pare

F.8. Muskrat Falls Development Appendix January 1978

F.9. Kettle Generating Station - A General Description, March 1979

F.10. AK Economic Scenarios Review Document - Comment Draft Working Paper No. 2.1 Battelle

F.11. Existing Generating Facilities & Planned Additions for the Railbelt Area - Comment Draft Working Paper No. 4.1 Battelle

G. Feasibility Report

G.1. Volume 1, Section 1 thru 8, Engineering & Economic Aspects

G.2. " " " 9 " 19, " " " "

G.3. " 2, Section 1 " 4, Environmental Report

G.4. " " " 5 " 11, " "

G.5. " 3, Plates

G.6. " 4, Appendix A, Hydrological Studies

G.7. " 5, " B, Design Development Studies

G.8. " 6, " C, Cost Estimates

G.9. " 7, " D, Coordination of Public Participation

G.10. " 6, " C, Cost Estimates, Revised November 1982

FURTHER ADDITIONS

1981 Upper Limit Capital Cost Estimate July 81

Tunnel Alternative Report, July 81

Control Network Survey Report

Hydrographic Surveys - Task 3

Instream Flow Study Plan

Sociocultural Report

Susitna Risk Analysis

Anchorage
November 29, 1982

SUSITNA HYDROELECTRIC PROJECT

Feasibility Report & Back-Up Documents

Task	Subtask	Document Title on Old List	Correct Document Title
		Executive Summary	Susitna Hydroelectric Project Summary Report March 1982 Draft
		Feasibility Report - Volume 1	Susitna Hydroelectric Project Feasibility Report, Volume 1 Engineering and Economic Aspects Sections 1 - 8 Final Draft Susitna Hydroelectric Project Feasibility Report, Volume 1 Sections 9 - 19 Final Draft
		Feasibility Report - Volume 2	Susitna Hydroelectric Project Feasibility Report, Volume 2 Environmental Report Sections 1 - 4 Final Draft Susitna Hydroelectric Project Feasibility Report, Volume 2 Environmental Report Sections 5 - 11 Final Draft
		Feasibility Report - Volume 3	Susitna Hydroelectric Project Feasibility Report, Volume 3 Plates Final Draft
		Feasibility Report - Volume 4 (Appendix A)	Susitna Hydroelectric Project Feasibility Report, Volume 4 Appendix A, Hydrological Studies Final Draft
		Feasibility Report - Volume 5 (Appendix B)	Susitna Hydroelectric Project Feasibility Report, Volume 5 Appendix B, Design Development Studies Final Draft
		Feasibility Report - Volume 6 (Appendix C)	Susitna Hydroelectric Project Feasibility Report, Volume 6 Appendix C, Cost Estimates Final Draft
		Feasibility Report - Volume 7 (Appendix D)	Susitna Hydroelectric Project Feasibility Report, Volume 7 Appendix D, Coordination and Public Participation Final Draft
		Feasibility Report - Volume 8 (Appendix E)	not published

Task	Subtask	Document Title on Old List	Correct Document Title
3	3.06	Hydraulic and Ice Studies (R&M)	Susitna Hydroelectric Project Hydraulic and Ice Studies March 1982 (R&M)
3	3.07	Reservoir Sedimentation (R&M)	Susitna Hydroelectric Project Reservoir Sedimentation January 1982 (R&M)
3	3.07	River Morphology (R&M)	Susitna Hydroelectric Project River Morphology, January 1982 (R&M)
3	3.01	Review of Available Materials	Susitna Hydroelectric Project Task 3 - Hydrology Subtask 3.01 - Closeout Report, Review of Available Material March 1982 Final Report
3	3.02	Field Data Index (R&M)	Susitna Hydroelectric Project Field Data Index, February 1982 (R&M)
3	3.03	Water Quality - Annual Report, 1980 (R&M)	Susitna Hydroelectric Project Water Quality, Annual Report, 1980 April 1980 (R&M)
3	3.03	Water Quality - Annual Report, 1981 (R&M)	Susitna Hydroelectric Project Water Quality, Annual Report, 1981 December 1981 (R&M)
3	3.03	Water Quality - Interpretation, 1981 (R&M)	Susitna Hydroelectric Project Water Quality Interpretation, 1981 February 1982 (R&M)
3	3.06	Ice Observations - 1980 (R&M)	Susitna Hydroelectric Project Ice Observations, 1980-81 August 1981 (R&M)
3	3.03	Processed Climatic Data for Six Weather Stations (6 Volumes) - R&M	Susitna Hydroelectric Project Processed Climatic Data Vol. 1 - Susitna Glacier Station (R&M) Susitna Hydroelectric Project Processed Climatic Data Vol. 2 - Denali Station (R&M) Susitna Hydroelectric Project Processed Climatic Data Vol. 3 - Tyone River Station (R&M) Susitna Hydroelectric Project Processed Climatic Data Vol. 4 - Kosina Creek Station (R&M)

Task	Subtask	Document Title on Old List	Correct Document Title
6	6.01	Review of Previous Studies and Reports - Closeout Report Feb. '81	Susitna Hydroelectric Project Task 6 - Design Development Subtask 6.01, Closeout Report, Review of Previous Studies and Reports, February 1981
6	6.02	Tunnel Alternative Report - July 1981	Susitna Hydroelectric Project Task 6 - Design Development Subtask 6.02, Closeout Report, Investigate Tunnel Alternative June 1981
6	6.04	Evaluation of Arch Dam at Devil Canyon Site	Susitna Hydroelectric Project Task 6 - Design Development Subtask 6.04, Closeout Report, Evaluation of Arch Dam at Devil Canyon Site, March 1982
6/9	6.0/ 9.3	1981 Upper Limit Capital Cost Estimate, July 1981	Susitna Hydroelectric Project Task 6, 1981 Upper Limit Capital Cost Estimate
6	6.14	Scour Hole Development Downstream of High Head Dams	Susitna Hydroelectric Project Task 6 - Design Development Subtask 6.14 - Scour Hole Development Downstream of High Head Dams March 1982
7	7.0	1980 Summary Environmental Report	Susitna Hydroelectric Project Environmental Studies, Summary Annual Report - 1980 May 1981 (TES)
7	7.10	Environmental Report Fish Ecology - 1980 (TES)	Susitna Hydroelectric Project Environmental Studies Subtask 7.10 - Fish Ecology Annual Report - 1980, June 1981 (TES)
7	7.12	Environmental Report PlantEcology - 1980 (TES)	Susitna Hydroelectric Project Environmental Studies Subtask 7.12 - Plant Ecology Annual Report - 1980, May 1981 (TES)
7	7.11	Environmental Report Big Game - 1980 (TES)	Susitna Hydroelectric Project Environmental Studies Subtask 7.11 - Big Game Annual Report - 1980, July 1981 (TES)
7	7.11	Environmental Report Birds and Non-Game Mammals - 1980 (TES)	Susitna Hydroelectric Project Environmental Studies Subtask 7.11 - Birds and Non-Game Mammals, Annual Report - 1980 April 1981 (TES)

Task	Subtask	Document Title on Old List	Correct Document Title
		Draft Fishery Mitigation Plan (TES)	
		Draft Wildlife Mitigation Plan (TES)	
7	7.10	Phase I Report - Fish Ecology (TES)	Subtask 7.10, Phase I Final Draft Report Vol. 1 - Aquatic Habitat & Instream Flow Project, ADF&G/Su Hydro 1981
			Subtask 7.10, Phase I Final Draft Report Vol. 2, Part 1 - Aquatic Habitat & Instream Flow Project, ADF&G/Su Hydro 1981
			Subtask 7.10, Phase I Final Draft Report Vol. 2, Part 2 - Aquatic Habitat & Instream Flow Project, ADF&G/Su Hydro 1981
			Subtask 7.10, Phase I Final Draft Report Resident Fish Investigation on the Upper Susitna River, ADF&G/1981
			Subtask 7.10, Phase I Final Draft Report Adult Anadromous Fisheries Project ADF&G/Su Hydro 1981
			Subtask 7.10, Phase I Final Draft Report Resident Fish Investigation on the Lower Susitna River, ADF&G/Su Hydro 1981
			Subtask 7.10, Phase I Final Draft Report Juvenile Anadromous Fish Study on the Lower Susitna River, ADF&G/Su Hydro 1981
			Subtask 7.10, Phase I Final Draft Report Stock Separation Feasibility Report Adult Anadromous Fisheries Project ADF&G/Su Hydro 1982
7	7.11	Phase I Report - Big Game Ecology (TES)	Susitna Hydroelectric Project Phase I Final Report Big Game Studies Vol. I - Big Game Summary Report March 1982 (ADF&G)
			Susitna Hydroelectric Project Phase I Final Report Big Game Studies Vol. II - Moose - Downstream March 1982 (ADF&G)
			Susitna Hydroelectric Project Phase I Final Report Big Game Studies Vol. III - Moose - Upstream March 1982 (ADF&G)

Task	Subtask	Document Title on Old List	Correct Document Title
8	8.05	Switching Stations & Substations - Single Line Diagrams	Susitna Hydroelectric Project Switching Stations and Substations Single Line Diagrams, Final Draft March 1982, Figures
12	12.03	Agency Consultation	Susitna Hydroelectric Project Task 12 - Public and Agency Participatio Subtask 12.03 - Agency Consultation March 1982
10	10.02	Initial Version - Preliminary Licensing Documentation, April 1980	Susitna Hydroelectric Project Task 10, Subtask 10.02 - Design Transmittal, Initial Version Preliminary Licensing Documentation April 1980
10	10.02	Preliminary Licensing Documentation - 2nd Version, November 1981	Susitna Hydroelectric Project Licensing Report Task 10 - Preliminary Licensing Documentation, Second Version February 1982
7	7.04	Status of Susitna Basin Water Rights	Susitna Hydroelectric Project Task 7 - Environmental Subtask 7.04 - Water Resources Analysis Review of Existing Water Rights in the Susitna River Basin, December 1981 (Dwig
7	7.04	Navigation Problems (DNR)	Susitna Hydroelectric Project Task 7 - Environmental Subtask 7.04 - Water Resources Analysis A Preliminary Analysis of Potential Navigational Problems Downstream of the Proposed Hydroelectric Dams on the Susitna River, March 1982 (DNR)
11	11.01	Project Overview Report, 2nd Draft	Susitna Hydroelectric Project Task 11, Subtask 11.01 - Project Overvie March 1981
11	11.0	Economic Marketing and Financial Evaluation	Susitna Hydroelectric Project Task 11 - Reference Report Economic Marketing and Financial Evaluat
11	11.03	Susitna Risk Analysis	Susitna Hydroelectric Project Task 11, Subtask 11.03 - Closeout Report Susitna Risk Analysis, April 1982

ALASKA POWER AUTHORITY

LOGISTICS AND SURVEY

Procured, transported and erected a forty-man field camp comprised of bedroom units, bathroom modules, kitchen and dining facilities, fuels storage area, materials storage facilities, potable water treatment facilities, electric power generation, sewage treatment, garbage disposal, helicopter landing pads, warehousing, food refrigeration modules and interconnecting walkways.

Reflecting the fact that the only full time access to the camp is via air, provided logistics support of over 3,000 flight hours per year. Incidental items such as radio telephone communications, etc., also installed for life safety.

Performed detailed topographic surveys for the entire area of the project, including reservoirs, damsites, access and transmission line corridors. Established over 1,800 horizontal and vertical bench marks, with associated topographic mapping.

Flew 1,193 miles of air photos and mapped 174,720 acres of project lands (273 square miles).

Performed reconnaissance level timber inventories and marketability studies for timber resources in the project area (nearly 50,000 acres and over 20,000,000 cubic feet of fiber).

Performed detailed assessments of project access, considering such matters as quantities of construction materials to be moved, transport modes, day to day logistical support, socioeconomic effects, constructability, reliability, environmental impacts and location. Eighteen alternative routes were examined in detail, leading to the final access recommendation.

Slope stability and erosion studies were made of the reservoirs.

Over sixty-five transects were made to provide data supporting sediment transport studies, flow velocities, morphology studies and related information.

HYDROLOGICAL CONDITIONS

The first definitive inventory of available hydrologic and climatic material on the basin was made.

Performed continuous monitoring of river and meteorological conditions at multiple locations within the basin. Observations included stream flow, water quality, sediment discharge, freezing rain and icing, snow survey, snow creep, river ice observations and river evaporation. Analyzed nearly a thousand water samples for over a hundred individual properties.

Performed flood studies.

Calculated peak run-off volumes for a thirty-two year period.

Analyzed the probable effects of a hypothetical dam break.

Studied the advance and retreat of glaciers and calculated their probable water contribution to the project over the historic record.

Recorded and evaluated the mechanisms of river freeze-up and break-ups, as well as the timing.

Analyzed predicted reservoir sedimentation, mechanisms and rates.

Analyzed and predicted probable morphology changes resulting from river impoundment.

SEISMIC CONDITIONS

Established and operated a ten station micro-earthquake network as an aid to analyzing the earthquake potential.

Exhaustively inventoried all faults and linements within a hundred kilometers of the project area.

Analyzed two-hundred sixteen faults and linements for their earthquake potential. Constructed a physical and chronological tectonic model of the basin. Through engineering analysis, determined the reservoir induced seismicity magnitudes, probable maximum credible earthquakes for both location and intensity, and postulated the probable acceleration response spectra and duration.

Tested engineering calculations and evaluations against historical earthquake data and physical observations including quarternary studies, geophysical surveys, potassium, argon and radiocarbon age dating, and excavation of several trenches and test pits across potential earthquake faults.

Evaluated long term earthquake monitoring requirements for the project.

GEOTECHNICAL INVESTIGATIONS

Did 14,100 lineal feet of core drilling in over 60 different locations in the vicinity of the main dam and cofferdams.

Did 3,600 lineal feet of soils borings.

Did 208,425 lineal feet of seismic refraction surveys.

Did 14,000 feet of downhole geophysics.

Excavated 44 test pits.

Did over 7,300 rock and soil tests.

PROJECT FORMULATION

Load forecasts for the Railbelt were derived. Involved were the structuring of demand profiles over time, translation of the ISER electricity consumption forecasts into demand forecasts over time, assessment of the potential for load management and energy conservation, and finally computerized them for use in generation planning studies.

Potential Railbelt system generating options (mix of electrical generation sources) were identified and quantified. These included identification of over 48 hydroelectric options (Chakachamna, Bradley Lake, etc.), thermal options (coal, gas, number and location), procedural constraints such as the impact of the Fuel Use Act, and system transmission requirements.

The theoretical output of the Susitna basin development was derived through analysis and computation of climatological and hydrological information.

Optimum methods of developing that potential were analyzed. This entailed engineering analysis of twelve potential damsites in several dozen potential combinations, as well as tunnel alternatives.

Multiple iterations of engineering layouts and cost studies were made for the most effective configurations to define the type of dam, its cost of acquisition, and its potential for staged construction.

Extensive computer modeling of the basin possibilities (various mixes of generation sources, different load growth profiles, and different dam combinations) were made to determine the optimum total railbelt configuration for the next half century.

Collateral investigations of the effect of high-head dams were made, such as the potential for scour hole development.

ENVIRONMENTAL STUDIES

Aquatic Ecosystems

Each year approximately 60 field biologists from the Alaska Department of Fish and Games's (ADF&G) Susitna Hydro Aquatic Studies program have worked in the area. About one half dozen additional technical specialists have worked on the analysis of data and the development of mitigation plans. Fish wheels and/or sonar arrays were installed and manned at Ventna Station, Sunshine Station, Talkeetna Station, Curry Station, and Gold Creek Station. In addition, the operating season for existing Susitna Station was expanded to more fully cover the return of in-migrants.

Substrate, water temperatures, inter gravel water temperature and hydrologic character of existing and potential spawning areas in the middle river between Devil Canyon and Talkeetna were determined. The 20 dominant sloughs that provide 97 percent of the production in this reach for chum and sockeye were surveyed in detail.

Fish taken by fish wheels were identified to species and sex, weighed and measured, scales taken and samples of fish were marked. Recovery of marked fish at other fish wheels or in the streams and sloughs allowed accurate estimates of escapement (returning population) and of the distribution and timing of returning fish.

The hydrology of the mainstem, tributaries, side channels and sloughs has been examined (sampling, monitoring, gaging) to establish baseline conditions with respect to use of these waters by fishes.

In order to determine possible project impacts on the aquatic ecosystems, a model system is being developed to couple the river flow, reservoir operation models, temperature and ice information models with fish models. This state of the art development will permit the analysis of multiple and complex operating regimes with respect to the trade-offs between impacts on the aquatic ecosystems and project power and economics.

Factors controlling access, spawning, incubation and rearing in the sloughs, have been assessed to support mitigation planning directed at maintaining existing levels of production in these waters with the minimum of, and the most passive of, interventions.

Terrestrial Ecosystems

Vegetation types have been identified based upon field work and the examination of color and false color imagery. Detailed vegetation maps were prepared and ground truthed. Habitat quality has been assessed based upon preliminary sampling. Preliminary wetland maps have been developed.

Wildlife

Caribou: Population distribution and movement of both the caribou herd in general and radio tagged individuals have been made by monitoring from the air. Age, sex, recruitment and condition of the animals have been investigated.

In a comparable way, moose populations in, and adjacent to the project area, and in the lower Susitna have been studied. Population estimates, distribution and movements of the animals were determined.

A bioenergetic model of moore populations is being developed to permit mitigation planning to be based upon carrying capacity of habitats, and to refine the understanding of habitat management for moose production.

Potentially Critical Habitats Have Been Identified

Dall sheep, wolves, wolverines, black bear and brown bear were also investigated by periodic monitoring of radio collared individuals. Population estimates have been developed. Denning areas were identified for bears, wolves, foxes; home ranges as well as seasonal movements were mapped.

Archaeological-Historical

Two field seasons of archaeological investigations have covered the majority of the project areas at a reconnaissance level; 160 sites have been identified and preliminary assessments of 20 sites have been completed.

Socio-Economic Studies

Socio-economic characteristics of the region, and its communities have been determined. Population distribution, employment, income statistics, housing and vacancy rates, existing utilities and services have all been described.

Impacts of the project work force and the economic impacts of the project have been assessed with respect to the ability of the existing communities and infrastructure to absorb project induced growth.

The use of fish, wildlife and game resources by the regional populations was analyzed using Department of Game harvest and catch information. Both commercial and non-commercial activities were determined in order to establish base conditions and to estimate project related impacts that may occur.

Recreation

Recreation resources, both formal and casual, in the region have been inventoried. Existing demand for various types of recreation activities has been determined and projections of future demands have been developed. Recreation planning by Federal, State, and local agencies has been documented. Recreation facilities have been planned which make best use of the project resources, are compatible with existing agency planning, and are responsive to future demand projections.

Land Use

The complex and dynamic patterns of land use and ownership have been elucidated. Federal, state, native corporation and private ownership in the region and movement of land title from one status to another has been documented.

Federal, state, borough, native corporation and local planning documents and intentions have been reviewed and provide a basis to initiate and/or continue dealing with the various owners and planners.

TRANSMISSION LINES

Approximately four hundred miles of transmission line must be built to distribute the power from the Watana campsite to the communities of Fairbanks, Anchorage and intermediate points. Several thousand miles of potential corridors were screened incidental to the final routing. Various combinations of over twenty separate segments were examined in closer detail. Transmission routing was selected on the basis of life cycle cost, constructability, environmental impact and maintainability.

Switching stations and substations were identified, sited and single line diagrams made.

COST ESTIMATES

Multiple cost estimates were made, cumulating in a feasibility level cost estimate of high confidence. Part of the process entailed an independent cost estimate performed by a totally separate consultant engineer. These two cost estimates agreed within five percent, well within the estimating level of accuracy.

PUBLIC PARTICIPATION

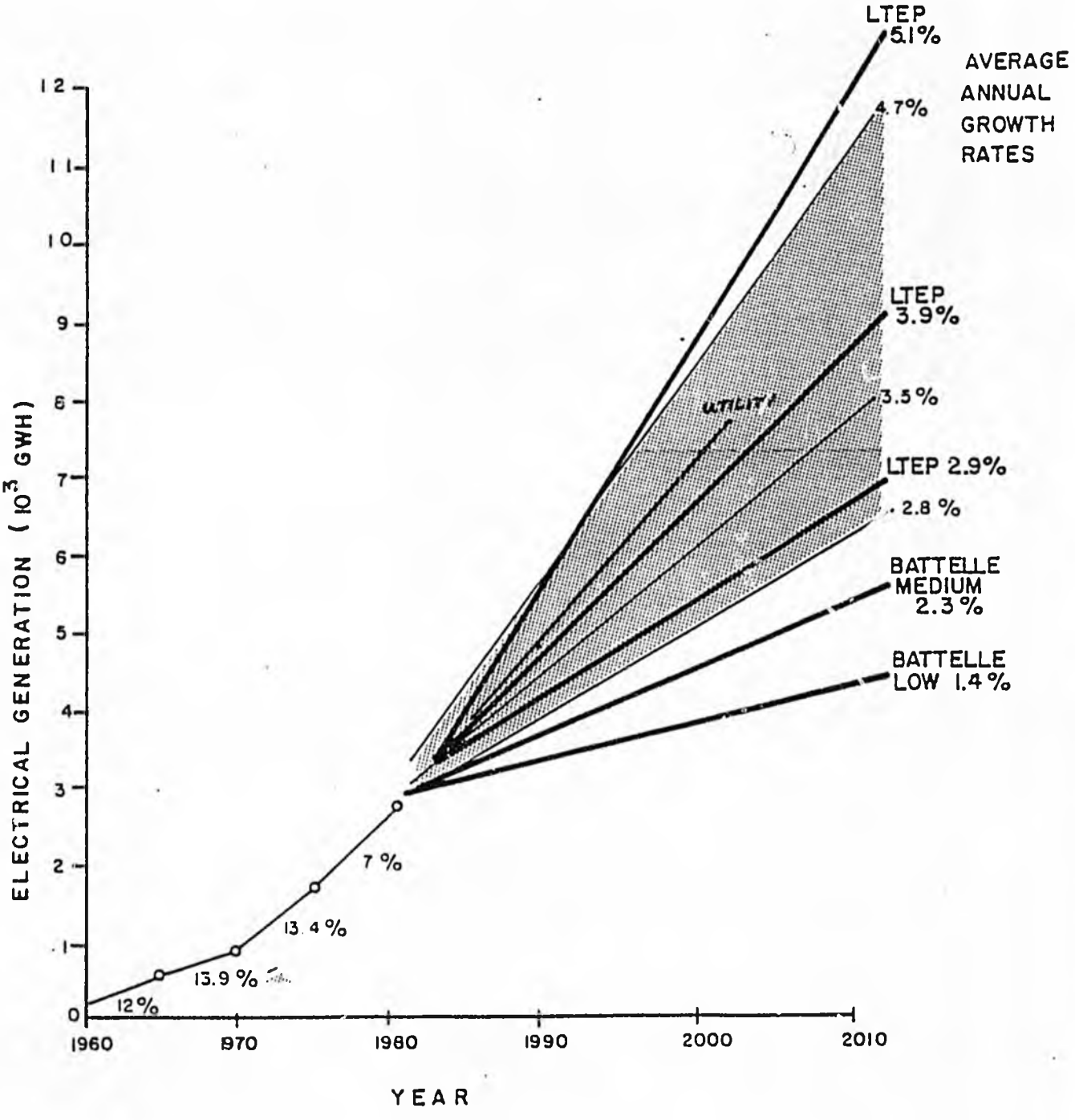
Held over 20 public meetings, workshops and hearings.

Processed nearly 150 citizen inquires.

Published five newsletters, with a total distribution exceeding 150,000 copies.

LOAD FORECAST UPDATE

FEASIBILITY REPORT ASSUMPTIONS:
BETWEEN 2.8% AND 4.7% GROWTH IN ENERGY DEMAND



COMPOSITE REPORT

LEVEL 13

4 SCENARIOS

Susitna Licensing Schedule
synopsis by Early Finish Date 03/11/87

Inode	Jnode	Description	Scenario1	Scenario2	Scenario3	Scenario4
7178	7210	Prelim. Draft of Order Prep.	06/29/83	06/29/83	06/29/83	06/29/83
7200	7210	Linkage Only	----	----	----	----
7210	7300	Draft Order Prepared	07/26/83	07/26/83	07/26/83	07/26/83
7178	7200	Power Memo Issued	12/07/84	04/12/85	----	----
7178	7210	Prelim. Dft. of Order Prepared	12/10/84	04/15/85	----	----
7175	7500	Init. Considered on Agenda	----	----	12/05/86	04/10/87
7200	7210	Linkage Only	----	----	----	----
7210	7300	Draft Order Prepared	01/07/85	05/09/85	----	----
7300	7500	Init. Considered on Agenda	08/15/83	08/15/83	08/15/83	08/15/83
7300	7500	Init. Considered on Agenda	01/25/85	05/30/85	----	----
7500	8000	Commission Order Issued	02/01/85	06/06/85	12/12/86	04/17/87

SCENARIO B2
3/10/83

NO HEARINGS
DEFICIENCIES
830 CALENDAR DAYS
575 WORKING DAYS

ENODE	ENODE	DUR	%CP		START FINISH	STATUS
1	1000	0	100%	RESP.= DUM AUX-1= 0 AUX-2= 0 JOBCD=	Linkage to Start of Project EARLY - 02/28/83 02/28/83 LATE - 02/28/83 02/28/83 ACTUAL- 02/28/83 02/28/83 TOTAL/FREE FLOAT = 0 / 0	COMPLETED
1000	1050	0	100%	RESP.= APA * AUX-1= 0 AUX-2= 500 JOBCD= 62	Application Docketed EARLY - 02/28/83 02/28/83 LATE - 02/28/83 02/28/83 ACTUAL- 02/28/83 02/28/83 TOTAL/FREE FLOAT = 0 / 0	COMPLETED
1000	5692	34	0%	RESP.= AUX-1= 0 AUX-2= 6920 JOBCD= 72	Settlement Filed EARLY - 02/28/83 04/14/83 LATE - 06/17/86 08/04/86 ACTUAL- TOTAL/FREE FLOAT = 833 / 0	CAN START
1050	1060	30	0%	RESP.= FER AUX-1= 500 AUX-2= 600 JOBCD= 63	PAB Adeq. Rev. Completed EARLY - 02/28/83 04/08/83 LATE - 08/30/84 10/12/84 ACTUAL- TOTAL/FREE FLOAT = 382 / 0	CAN START
1050	1065	30	0%	RESP.= FER AUX-1= 500 AUX-2= 650 JOBCD= 63	PSL Adequacy Rev. Completed EARLY - 02/28/83 04/08/83 LATE - 09/30/84 10/12/84 ACTUAL- TOTAL/FREE FLOAT = 382 / 0	CAN START
1050	1070	30	0%	RESP.= FER AUX-1= 500 AUX-2= 700 JOBCD= 63	Envir. Adequacy Rev. Completed EARLY - 02/28/83 04/08/83 LATE - 08/30/84 10/12/84 ACTUAL- TOTAL/FREE FLOAT = 382 / 0	CAN START
1050	1076	30	0%	RESP.= FER AUX-1= 500 AUX-2= 760 JOBCD= 63	DISA Adequacy Rev. Completed EARLY - 02/28/83 04/08/83 LATE - 08/30/84 10/12/84 ACTUAL- TOTAL/FREE FLOAT = 382 / 0	CAN START
1050	1570	30	0%	RESP.= FER AUX-1= 500 AUX-2= 5700 JOBCD= 63	Jurisdiction Rev. Completed EARLY - 02/28/83 04/08/83 LATE - 08/30/84 10/12/84 ACTUAL- TOTAL/FREE FLOAT = 382 / 0	CAN START
1050	2056	30	0%	RESP.= FER AUX-1= 500 AUX-2= 550 JOBCD= 63	Proj. Man. Adequacy Rev. EARLY - 02/28/83 04/08/83 LATE - 09/30/84 10/12/84 ACTUAL- TOTAL/FREE FLOAT = 382 / 0	CAN START

SNODE	ENODE	DUR	%CP		START	FINISH	STATUS
1050	2080	34	0%	RESP.= FER	Adequacy Review Completed		CAN START
				AUX-1= 500	EARLY - 02/28/83	04/14/83	
				AUX-2= 800	LATE - 08/30/84	10/18/84	
				JOBCD= 62	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
1060	2055	0	0%	RESP.= DUM	Linkage Only		
				AUX-1= 600	EARLY - 04/11/83	04/11/83	
				AUX-2= 550	LATE - 10/15/84	10/15/84	
				JOBCD=	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
1065	2055	0	0%	RESP.= DUM	Linkage Only		
				AUX-1= 650	EARLY - 04/11/83	04/11/83	
				AUX-2= 550	LATE - 10/15/84	10/15/84	
				JOBCD=	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
1070	2055	0	0%	RESP.= DUM	Linkage Only		
				AUX-1= 700	EARLY - 04/11/83	04/11/83	
				AUX-2= 550	LATE - 10/15/84	10/15/84	
				JOBCD=	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
1076	2055	0	0%	RESP.= DUM	Linkage Only		
				AUX-1= 760	EARLY - 04/11/83	04/11/83	
				AUX-2= 550	LATE - 10/15/84	10/15/84	
				JOBCD=	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
1570	2055	0	0%	RESP.= DUM	Linkage Only		
				AUX-1= 5700	EARLY - 04/11/83	04/11/83	
				AUX-2= 500	LATE - 10/15/84	10/15/84	
				JOBCD=	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
2055	2080	4	0%	RESP.= FER	Adequacy Rev. Completed by PM		
				AUX-1= 550	EARLY - 04/11/83	04/14/83	
				AUX-2= 800	LATE - 10/15/84	10/18/84	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
2080	2090	11	0%	RESP.= FER	Deficiency Letter Issued		
				AUX-1= 800	EARLY - 04/15/83	04/29/83	
				AUX-2= 900	LATE - 10/19/84	11/02/84	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
2080	3200	0	0%	RESP.= FER	Application Dat. Adequate		
				AUX-1= 800	EARLY - 04/15/83	04/15/83	
				AUX-2= 2000	LATE - 02/26/85	02/26/85	
				JOBCD= 62	ACTUAL-		
					TOTAL/FREE FLOAT = 469 / 87		

SNODE	ENODE	DUR	%CP		START	FINISH	STATUS
2090	2100	62	0%	RESP.= APA * Revisions Submitted			
				AUX-1= 900	EARLY - 05/02/83	07/28/83	
				AUX-2= 1000	LATE - 11/05/84	02/04/85	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
2100	2120	11	0%	RESP.= FER	HA Review of Revisions Com.		
				AUX-1= 1000	EARLY - 07/29/83	08/12/83	
				AUX-2= 1200	LATE - 02/05/85	02/20/85	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
2100	2130	11	0%	RESP.= FER	EA Review of Revisions Com.		
				AUX-1= 1000	EARLY - 07/29/83	08/12/83	
				AUX-2= 1300	LATE - 02/05/85	02/20/85	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
2100	2140	11	0%	RESP.= FER	DISA Review of Revisions Com.		
				AUX-1= 1000	EARLY - 07/29/83	08/12/83	
				AUX-2= 1400	LATE - 02/05/85	02/20/85	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
2100	3110	11	0%	RESP.= FER	Com. Received by Project Man.		
				AUX-1= 1000	EARLY - 07/29/83	08/12/83	
				AUX-2= 1100	LATE - 02/05/85	02/20/85	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
2120	3110	0	0%	RESP.= FER	Linkage Only		
				AUX-1= 1200	EARLY - 08/15/83	08/15/83	
				AUX-2= 1100	LATE - 02/21/85	02/21/85	
				JOBCD=	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
2130	3110	0	0%	RESP.= DUM	Linkage Only		
				AUX-1= 1300	EARLY - 08/15/83	08/15/83	
				AUX-2= 1100	LATE - 02/21/85	02/21/85	
				JOBCD=	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
2140	3110	0	0%	RESP.= DUM	Linkage Only		
				AUX-1= 1400	EARLY - 08/15/83	08/15/83	
				AUX-2= 1100	LATE - 02/21/85	02/21/85	
				JOBCD=	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
3110	3150	3	0%	RESP.= FER	Review of Revisions Com. by PM		
				AUX-1= 1100	EARLY - 08/15/83	08/17/83	
				AUX-2= 1500	LATE - 02/21/85	02/25/85	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		

SNODE	ENODE	DUR	%CP		START FINISH	STATUS
3150	3200	0	0%	RESP.= DUM	Linkage Only	
				AUX-1= 1500	EARLY - 08/18/83 08/18/83	
				AUX-2= 2000	LATE - 02/26/85 02/26/85	
				JOBCD=	ACTUAL-	
					TOTAL/FREE FLOAT = 382 / 0	
3150	3797	0	0%	RESP.= FER	Application Rejected by OEPR	
				AUX-1= 1500	EARLY - 08/18/83 08/18/83	
				AUX-2= 7975	LATE - 12/13/86 12/13/86	
				JOBCD= 63	ACTUAL-	
					TOTAL/FREE FLOAT = 836 / 0	
3200	3205	11	0%	RESP.= FER	Accept. Letter Iss. to Appl.	
				AUX-1= 2000	EARLY - 08/18/83 09/01/83	
				AUX-2= 2050	LATE - 02/26/85 03/12/85	
				JOBCD= 63	ACTUAL-	
					TOTAL/FREE FLOAT = 382 / 0	
3200	3212	14	0%	RESP.= LAB	Envir. Anal. Report Prepared	
				AUX-1= 2000	EARLY - 08/18/83 09/07/83	
				AUX-2= 2125	LATE - 02/26/85 03/15/85	
				JOBCD= 63	ACTUAL-	
					TOTAL/FREE FLOAT = 382 / 0	
3200	3400	30	0%	RESP.= COM	Public Notice Issued	
				AUX-1= 2000	EARLY - 08/18/83 09/29/83	
				AUX-2= 4005	LATE - 04/04/86 05/15/86	
				JOBCD= 63	ACTUAL-	
					TOTAL/FREE FLOAT = 661 / 0	
3200	3505	100	0%	RESP.= LAB	Prelim. Sat&Adeq. Rev. Com.	
				AUX-1= 2000	EARLY - 08/18/83 01/12/84	
				AUX-2= 5050	LATE - 02/26/85 07/17/85	
				JOBCD= 63	ACTUAL-	
					TOTAL/FREE FLOAT = 382 / 0	
3200	3557	104	0%	RESP.= FER	Prelim. Trans. Line Rev. Com	
				AUX-1= 2001	EARLY - 08/18/83 01/18/84	
				AUX-2= 5575	LATE - 03/12/85 08/06/85	
				JOBCD= 63	ACTUAL-	
					TOTAL/FREE FLOAT = 392 / 0	
3205	3410	21	0%	RESP.= APA	Appl. Dis. Appl. to Rev. Agen.	
				AUX-1= 2050	EARLY - 09/02/83 10/03/83	
				AUX-2= 4100	LATE - 03/13/85 04/10/85	
				JOBCD= 63	ACTUAL-	
					TOTAL/FREE FLOAT = 382 / 0	
3212	4240	100	0%	RESP.= LAB	Sec. of DEIS Prepared	
				AUX-1= 2125	EARLY - 09/08/83 02/01/84	
				AUX-2= 2400	LATE - 03/18/85 09/06/85	
				JOBCD= 63	ACTUAL-	
					TOTAL/FREE FLOAT = 382 / 0	

SNODE	ENODE	DUR	%CP			START	FINISH	STATUS
3400	3402	40	0%	RESP.=	FER	Pub. Com.End-Inter M&M Rec.		
				AUX-1=	4005	EARLY -	07/30/83	11/29/83
				AUX-2=	4025	LATE -	05/16/86	07/14/86
				JOBCD=	63	ACTUAL-		
						TOTAL/FREE FLOAT = 661 / 0		
3402	3405	15	0%	RESP.=	FER	Interventions Granted		
				AUX-1=	4025	EARLY -	11/30/83	12/20/83
				AUX-2=	4050	LATE -	07/15/86	08/06/86
				JOBCD=	63	ACTUAL-		
						TOTAL/FREE FLOAT = 661 / 0		
3405	5600	0	0%	RESP.=	DUM	Linkage Only		
				AUX-1=	4050	EARLY -	12/21/83	12/21/83
				AUX-2=	6000	LATE -	08/05/86	08/05/86
				JOBCD=		ACTUAL-		
						TOTAL/FREE FLOAT = 661 / 279		
3410	3450	63	0%	RESP.=	COM	Com. Rec. by FERC and Appl.		
				AUX-1=	4100	EARLY -	10/04/83	01/05/84
				AUX-2=	4500	LATE -	04/11/85	07/10/85
				JOBCD=	62	ACTUAL-		
						TOTAL/FREE FLOAT = 382 / 0		
3450	3500	42	0%	RESP.=	APA	App. Response to Agen. Com.		
				AUX-1=	4500	EARLY -	01/06/84	03/06/84
				AUX-2=	5000	LATE -	07/11/85	09/09/85
				JOBCD=	62	ACTUAL-		
						TOTAL/FREE FLOAT = 382 / 0		
3450	3505	0	0%	RESP.=	DUM	Linkage Only		
				AUX-1=	4500	EARLY -	01/06/84	01/06/84
				AUX-2=	5050	LATE -	07/18/85	07/18/85
				JOBCD=		ACTUAL-		
						TOTAL/FREE FLOAT = 387 / 5		
3500	4244	0	0%	RESP.=	DUM	Linkage Only		
				AUX-1=	5000	EARLY -	03/07/84	03/07/84
				AUX-2=	2440	LATE -	12/16/85	12/16/85
				JOBCD=		ACTUAL-		
						TOTAL/FREE FLOAT = 448 / 66		
3500	5600	227	0%	RESP.=	FER	Staff Analysis Completed		
				AUX-1=	5000	EARLY -	03/07/84	01/29/85
				AUX-2=	6000	LATE -	09/10/85	08/04/86
				JOBCD=	62	ACTUAL-		
						TOTAL/FREE FLOAT = 382 / 0		
3505	3506	14	0%	RESP.=	LAB	Labs Prep. Draft of Impact		
				AUX-1=	5050	EARLY -	01/13/84	02/01/84
				AUX-2=	5060	LATE -	07/18/85	08/06/85
				JOBCD=	63	ACTUAL-		
						TOTAL/FREE FLOAT = 382 / 0		

SNODE	ENODE	DUR	%C		START	FINISH	STATUS
3506	4240	0	0%	RESP.= OUM	Linkage Only		
				AUX-1= 5060	EARLY - 02/02/84	02/02/84	
				AUX-2= 2400	LATE - 08/07/85	08/07/85	
				JOBCD=	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
3557	4240	0	0%	RESP.= OUM	Linkage Only		
				AUX-1= 5575	EARLY - 01/19/84	01/19/84	
				AUX-2= 2400	LATE - 08/07/85	08/07/85	
				JOBCD=	ACTUAL-		
					TOTAL/FREE FLOAT = 392 / 10		
3797	7800	0	0%	RESP.= OUM	Linkage to Project End		
				AUX-1= 7975	EARLY - 08/18/83	08/18/83	
				AUX-2= 8000	LATE - 12/13/86	12/13/86	
				JOBCD=	ACTUAL-		
					TOTAL/FREE FLOAT = 836 / 0		
4240	4244	89	0%	RESP.= FER	DEIS Prepared		
				AUX-1= 2400	EARLY - 02/02/84	06/07/84	
				AUX-2= 2440	LATE - 08/07/85	12/13/85	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
4244	4245	5	0%	RESP.= FER	DEIS Markup Rev.& Pub.		
				AUX-1= 2440	EARLY - 06/08/84	06/14/84	
				AUX-2= 2450	LATE - 12/16/85	12/20/85	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 392 / 0		
4244	4601	6	0%	RESP.= FER	Dft. Hrg. Ord. Need for Powe		
				AUX-1= 2440	EARLY - 06/08/84	06/15/84	
				AUX-2= 6012	LATE - 06/13/86	06/20/86	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 507 / 0		
4245	4260	9	0%	RESP.= FER	DEIS Notice In Fed. Reg.		
				AUX-1= 2450	EARLY - 06/15/84	06/27/84	
				AUX-2= 2600	LATE - 12/23/85	01/06/86	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
4260	4261	28	0%	RESP.= FER	Pub. Com. Ends-Pet.&Mat Rec.		
				AUX-1= 2600	EARLY - 06/28/84	08/07/84	
				AUX-2= 2610	LATE - 01/07/86	02/13/86	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
4260	4265	42	0%	RESP.= FER	Com. Received from Rev. Agen		
				AUX-1= 2600	EARLY - 06/28/84	08/27/84	
				AUX-2= 2650	LATE - 01/07/86	01/06/86	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		

SNODE	ENODE	DUR	%CP		START	FINISH	STATUS
4261	4263	14	0%	RESP.= FER	Intervention Granted		
				AUX-1= 2610	EARLY - 08/08/84	08/27/84	
				AUX-2= 2630	LATE - 02/14/86	03/06/86	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
4263	4265	0	0%	RESP.= DUM	Linkage Only		
				AUX-1= 2630	EARLY - 08/28/84	08/28/84	
				AUX-2= 2650	LATE - 03/07/86	03/07/86	
				JOBCD=	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
4265	4510	49	0%	RESP.= FER	Prep. Res. to Com.& Ref. DEIS		
				AUX-1= 2650	EARLY - 08/28/84	11/06/84	
				AUX-2= 5100	LATE - 04/08/86	06/16/86	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 404 / 0		
4265	4558	49	0%	RESP.= FER	ISIB Final. FEIS Text Rev.		
				AUX-1= 2650	EARLY - 08/28/84	11/06/84	
				AUX-2= 5587	LATE - 04/08/86	06/16/86	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 404 / 0		
4265	5280	71	0%	RESP.= FER	FEIS Prepared		
				AUX-1= 2650	EARLY - 08/28/84	12/10/84	
				AUX-2= 2800	LATE - 03/07/86	06/16/86	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
4510	4515	21	0%	RESP.= FER	HA Memo of Spec. Lic. Con.		
				AUX-1= 5100	EARLY - 11/07/84	12/07/84	
				AUX-2= 5150	LATE - 08/26/86	09/24/86	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 453 / 0		
4510	5280	0	0%	RESP.= DUM	Linkage Only		
				AUX-1= 5100	EARLY - 11/07/84	11/07/84	
				AUX-2= 2800	LATE - 06/17/86	06/17/86	
				JOBCD=	ACTUAL-		
					TOTAL/FREE FLOAT = 404 / 22		
4515	5747	0	0%	RESP.= DUM	Linkage Only		
				AUX-1= 5150	EARLY - 12/10/84	12/10/84	
				AUX-2= 7478	LATE - 09/25/86	09/25/86	
				JOBCD=	ACTUAL-		
					TOTAL/FREE FLOAT = 453 / 71		
4558	4560	30	0%	RESP.= FER	Trans. Line Rept& ISIB Memo		
				AUX-1= 5587	EARLY - 11/07/84	12/20/84	
				AUX-2= 5600	LATE - 08/13/86	09/24/86	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 444 / 0		

SNODE	ENODE	DUR	%CP		START	FINISH	STATUS
4558	5280	0	0%	RESP.= DLM	Linkage Only		
				AUX-1= 5587	EARLY - 11/07/84	11/07/84	
				AUX-2= 2800	LATE - 06/17/86	06/17/86	
				JOBCO=	ACTUAL-		
					TOTAL/FREE FLOAT = 404 / 22		
4560	5747	0	0%	RESP.= DLM	Linkage Only		
				AUX-1= 5600	EARLY - 12/21/84	12/21/84	
				AUX-2= 7478	LATE - 09/25/86	09/25/86	
				JOBCO=	ACTUAL-		
					TOTAL/FREE FLOAT = 444 / 62		
4601	4605	9	0%	RESP.= FER	Hearing Proc. Ordered by Com.		
				AUX-1= 6012	EARLY - 06/18/84	06/28/84	
				AUX-2= 6052	LATE - 06/23/86	07/03/86	
				JOBCO= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 507 / 0		
4605	4620	22	0%	RESP.= COM	Prehearing Conf. Held		
				AUX-1= 6052	EARLY - 06/29/84	07/31/84	
				AUX-2= 6202	LATE - 07/07/86	09/05/86	
				JOBCO= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 507 / 0		
4620	4630	14	0%	RESP.= FER	Discovery Period Completed		
				AUX-1= 6202	EARLY - 08/01/84	08/20/84	
				AUX-2= 6302	LATE - 08/06/86	08/25/86	
				JOBCO= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 507 / 0		
4630	4631	14	0%	RESP.= COM	Admin. Hearing Conducted		
				AUX-1= 6302	EARLY - 08/21/84	09/10/84	
				AUX-2= 6377	LATE - 08/26/86	09/15/86	
				JOBCO= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 507 / 0		
4631	4647	8	0%	RESP.= COM	All Initial Briefs Filed		
				AUX-1= 6377	EARLY - 09/11/84	09/20/84	
				AUX-2= 6477	LATE - 09/16/86	09/25/86	
				JOBCO= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 507 / 0		
4647	4667	7	0%	RESP.= COM	All Reply Briefs Filed		
				AUX-1= 6477	EARLY - 09/21/84	10/01/84	
				AUX-2= 6677	LATE - 09/26/86	10/06/86	
				JOBCO= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 507 / 0		
4667	4670	20	0%	RESP.= FER	ALJ Init. Decision Issued		
				AUX-1= 6677	EARLY - 10/02/84	10/30/84	
				AUX-2= 6702	LATE - 10/07/86	11/04/86	
				JOBCO= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 507 / 0		

SNODE	ENODE	DUR	%CP		START	FINISH	STATUS
4670	4680	13	0%	RESP.= APA	All Exception Briefs Filed		
				AUX-1= 6702	EARLY - 10/31/84	11/19/84	
				AUX-2= 6802	LATE - 11/05/86	11/24/86	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 507 / 0		
4680	4690	8	0%	RESP.= FER	All Reply Except. Briefs Filed		
				AUX-1= 6802	EARLY - 11/20/84	11/30/84	
				AUX-2= 6902	LATE - 11/25/86	12/05/86	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 507 / 0		
4690	5690	0	0%	RESP.= DUM	Linkage Only		
				AUX-1= 6902	EARLY - 12/03/84	12/03/84	
				AUX-2= 6900	LATE - 12/08/86	12/09/86	
				JOBCD=	ACTUAL-		
					TOTAL/FREE FLOAT = 507 / 61		
5280	5290	25	0%	RESP.= FER	FEIS Mark-up Rev.& Pub.		
				AUX-1= 2800	EARLY - 12/11/84	01/16/85	
				AUX-2= 2700	LATE - 06/17/86	07/22/86	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
5290	5300	9	0%	RESP.= FER	FEIS Notice In Fed. Reg.		
				AUX-1= 2700	EARLY - 01/17/85	01/29/85	
				AUX-2= 3000	LATE - 07/23/86	08/04/86	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
5300	5350	15	0%	RESP.= FER	EA Memo of Spec. Lic. Con.		
				AUX-1= 3000	EARLY - 01/30/85	02/20/85	
				AUX-2= 3500	LATE - 09/04/86	09/24/86	
				JOBCD= 63	ACTUAL-		
					TOTAL/FREE FLOAT = 403 / 0		
5300	5600	0	0%	RESP.= DUM	Linkage Only		
				AUX-1= 3000	EARLY - 01/30/85	01/30/85	
				AUX-2= 6000	LATE - 08/05/86	08/05/86	
				JOBCD=	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
5350	5747	0	0%	RESP.= DUM	Linkage Only		
				AUX-1= 3500	EARLY - 02/21/85	02/21/85	
				AUX-2= 7478	LATE - 09/25/86	09/25/86	
				JOBCD=	ACTUAL-		
					TOTAL/FREE FLOAT = 403 / 21		
5300	5601	11	0%	RESP.= FER	Draft Hear.Order Prep.on Env.		
				AUX-1= 6000	EARLY - 01/30/85	02/13/85	
				AUX-2= 6010	LATE - 08/05/86	08/19/86	
				JOBCD= 73	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		

SNODE	ENODE	DUR	%C		START	FINISH	STATUS
5601	5602	10	0%	RESP.= SEP	Commission Meeting		
				AUX-1= 6010	EARLY - 02/14/85	02/28/85	
				AUX-2= 6025	LATE - 08/20/86	09/03/86	
				JOBCD= 73	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
5602	5605	0	0%	RESP.= FER	Hear. Process Ord. by Com.		
				AUX-1= 6025	EARLY - 03/01/85	03/01/85	
				AUX-2= 6050	LATE - 12/08/86	12/08/86	
				JOBCD= 73	ACTUAL-		
					TOTAL/FREE FLOAT = 446 / 0		
5602	5747	15	0%	RESP.= FER	Dft. Power Memo. Prepared		
				AUX-1= 6025	EARLY - 03/01/85	03/21/85	
				AUX-2= 7178	LATE - 09/04/86	09/24/86	
				JOBCD= 71	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
5605	5620	0	0%	RESP.= COM	Prehear. Con. Held		
				AUX-1= 6050	EARLY - 03/01/85	03/01/85	
				AUX-2= 6200	LATE - 12/08/86	12/09/86	
				JOBCD= 73	ACTUAL-		
					TOTAL/FREE FLOAT = 446 / 0		
5620	5630	0	0%	RESP.= FER	Discovery Period Completed		
				AUX-1= 6200	EARLY - 03/01/85	03/01/85	
				AUX-2= 6300	LATE - 12/08/86	12/08/86	
				JOBCD= 73	ACTUAL-		
					TOTAL/FREE FLOAT = 446 / 0		
5630	5637	0	0%	RESP.= COM	Adm. Hearing Conducted		
				AUX-1= 6300	EARLY - 03/01/85	03/01/85	
				AUX-2= 6375	LATE - 12/08/86	12/08/86	
				JOBCD= 73	ACTUAL-		
					TOTAL/FREE FLOAT = 446 / 0		
5637	5647	0	0%	RESP.= COM	All Initial Briefs Filed		
				AUX-1= 6375	EARLY - 03/01/85	03/01/85	
				AUX-2= 6475	LATE - 12/08/86	12/08/86	
				JOBCD= 73	ACTUAL-		
					TOTAL/FREE FLOAT = 446 / 0		
5647	5667	0	0%	RESP.= COM	All Reply Briefs Filed		
				AUX-1= 6475	EARLY - 03/01/85	03/01/85	
				AUX-2= 6675	LATE - 12/08/86	12/08/86	
				JOBCD= 73	ACTUAL-		
					TOTAL/FREE FLOAT = 446 / 0		
5667	5670	0	0%	RESP.= FER	ALJ Initial Dec. Issued		
				AUX-1= 6675	EARLY - 03/01/85	03/01/85	
				AUX-2= 6700	LATE - 12/08/86	12/08/86	
				JOBCD= 73	ACTUAL-		
					TOTAL/FREE FLOAT = 446 / 0		

SNODE	ENODE	DUR	%CP		START	FINISH	STATUS
5670	5680	0	0%	RESP.= APA *	All Exception Briefs Filed		
				AUX-1= 6700	EARLY - 03/01/85	03/01/85	
				AUX-2= 6800	LATE - 12/08/86	12/08/86	
				JOBCD= 73	ACTUAL-		
					TOTAL/FREE FLOAT = 446 / 0		
5680	5690	0	0%	RESP.= FER	All Reply Ex. Briefs Filed		
				AUX-1= 6800	EARLY - 03/01/85	03/01/85	
				AUX-2= 6900	LATE - 12/08/86	12/08/86	
				JOBCD= 73	ACTUAL-		
					TOTAL/FREE FLOAT = 446 / 0		
5690	6717	0	0%	RESP.= FER	Order Drafted by OOR		
				AUX-1= 6900	EARLY - 03/01/85	03/01/85	
				AUX-2= 7175	LATE - 12/08/86	12/08/86	
				JOBCD= 72	ACTUAL-		
					TOTAL/FREE FLOAT = 446 / 0		
5692	5694	22	0%	RESP.=	Reply Comments Due		
				AUX-1= 6920	EARLY - 04/15/83	05/16/83	
				AUX-2= 6940	LATE - 08/05/86	09/04/86	
				JOBCD= 73	ACTUAL-		
					TOTAL/FREE FLOAT = 833 / 0		
5694	5717	14	0%	RESP.= FER	Draft Power Mem. Prepared		
				AUX-1= 6940	EARLY - 05/17/83	06/06/83	
				AUX-2= 7178	LATE - 09/05/86	09/24/86	
				JOBCD= 73	ACTUAL-		
					TOTAL/FREE FLOAT = 833 / 0		
5717	5720	16	0%	RESP.= FER	PUR Memo Issued		
				AUX-1= 7178	EARLY - 06/07/83	06/28/83	
				AUX-2= 7200	LATE - 09/26/86	10/20/86	
				JOBCD= 73	ACTUAL-		
					TOTAL/FREE FLOAT = 834 / 0		
5717	5721	17	0%	RESP.= FER	Prelim. Draft of Order Prep.		
				AUX-1= 7178	EARLY - 06/07/83	06/29/83	
				AUX-2= 7210	LATE - 09/25/86	10/20/86	
				JOBCD= 73	ACTUAL-		
					TOTAL/FREE FLOAT = 833 / 0		
5720	5721	0	0%	RESP.= DUM	Linkage Only		
				AUX-1= 7200	EARLY - 06/29/83	06/29/83	
				AUX-2= 7210	LATE - 10/21/86	10/21/86	
				JOBCD= 73	ACTUAL-		
					TOTAL/FREE FLOAT = 834 / 1		
5721	6730	18	0%	RESP.= FEP	Draft Order Prepared		
				AUX-1= 7210	EARLY - 06/30/83	07/26/83	
				AUX-2= 7300	LATE - 10/21/86	11/14/86	
				JOBCD= 73	ACTUAL-		
					TOTAL/FREE FLOAT = 833 / 0		

SNODE	ENODE	DUP	%CP		START	FINISH	STATUS
5747	6720	16	0%	RESP.= FER	Power Memo Issued		
				AUX-1= 7178	EARLY - 03/22/85	04/12/85	
				AUX-2= 7200	LATE - 09/26/86	10/20/86	
				JOBCD= 71	ACTUAL-		
					TOTAL/FREE FLOAT = 383 / 0		
5747	6721	17	0%	RESP.= FER	Prelim. Dft. of Order Prepared		
				AUX-1= 7178	EARLY - 03/22/85	04/15/85	
				AUX-2= 7210	LATE - 09/25/86	10/20/86	
				JOBCD= 73	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
6717	7750	0	0%	RESP.= FER	Init. Considered on Agenda		
				AUX-1= 7175	EARLY - 03/01/85	03/01/85	
				AUX-2= 7500	LATE - 12/08/86	12/08/86	
				JOBCD= 72	ACTUAL-		
					TOTAL/FREE FLOAT = 646 / 64		
6720	6721	0	0%	RESP.= DUM	Linkage Only		
				AUX-1= 7200	EARLY - 04/15/85	04/15/85	
				AUX-2= 7210	LATE - 10/21/86	10/21/86	
				JOBCD=	ACTUAL-		
					TOTAL/FREE FLOAT = 383 / 1		
6721	7730	18	0%	RESP.= FER	Draft Order Prepared		
				AUX-1= 7210	EARLY - 04/16/85	05/09/85	
				AUX-2= 7300	LATE - 10/21/86	11/14/86	
				JOBCD= 73	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
6730	7750	14	0%	RESP.= FER	Init. Considered on Agenda		
				AUX-1= 7300	EARLY - 07/27/83	08/15/83	
				AUX-2= 7500	LATE - 11/17/86	12/05/86	
				JOBCD= 72	ACTUAL-		
					TOTAL/FREE FLOAT = 833 / 451		
7730	7750	14	0%	RESP.= FER	Init. Considered on Agenda		
				AUX-1= 7300	EARLY - 05/10/85	05/30/85	
				AUX-2= 7500	LATE - 11/17/86	12/05/86	
				JOBCD= 72	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		
7750	7000	5	0%	RESP.= FER	Commission Order Issued		
				AUX-1= 7500	EARLY - 05/31/85	06/06/85	
				AUX-2= 8000	LATE - 12/00/86	12/12/86	
				JOBCD= 72	ACTUAL-		
					TOTAL/FREE FLOAT = 382 / 0		

SUSITNA PROJECT LICENSING (SCENERIO B2)

CALCULATIONS BASED ON USING ACTUAL START/FINISH DATE LOGIC AND DESIRED FINISH DATE CONTROL

TOTAL ACTUAL COST = 0
TOTAL PAYMENTS = 0

OVER / UNDER = 0

START/END DATES : 02/28/83 12/12/86
CUSTOMER : A.P.A.
DAYS PER WEEK : 5
SORT PARAMETERS = / /

PROJECT MGR : Robert A. Mohn
LAST PAYMENT DATE :
BURDEN % : 0

HOLIDAYS OMITTED

STARTS	LENGTH	DESCRIPTION
05/30/83	1	Memorial Day
07/04/83	1	July 4th
09/05/83	1	Labor Day
10/10/83	1	Columbus Day
11/11/83	1	Veteran's Day
11/24/83	1	Thanksgiving
12/26/83	1	Christmas
01/02/84	1	New Years
02/20/84	1	Washington's Birthday
05/28/84	1	Memorial Day
07/04/84	1	July 4th
09/03/84	1	Labor Day
10/08/84	1	Columbus Day
11/12/84	1	Veteran's Day
11/22/84	1	Thanksgiving
12/26/84	1	Christmas
01/01/85	1	New Years
02/18/85	1	Washington's Birthday
05/27/85	1	Memorial Day
07/04/85	1	July 4th
09/02/85	1	Labor Day
10/14/85	1	Columbus Day
11/11/85	1	Veteran's Day
11/28/85	1	Thanksgiving
12/25/85	1	Christmas
01/01/86	1	New Year
02/17/86	1	Washington's Birthday
05/26/86	1	Memorial Day
07/04/86	1	July 4th
09/01/86	1	Labor Day
10/13/86	1	Columbus Day
11/11/86	1	Veteran's Day
11/27/86	1	Thanksgiving

Alaska State Legislature

Room 104
State Capitol
Juneau, Alaska 99811

Pouch V
Juneau, Alaska 99811

House of Representatives
Committee on Community & Regional Affairs

TO: Representative John Ringstad
Co-Chairman of House Resources Committee

FROM: Representative Barbara Lacher
Chair of House Community and Regional Affairs Committee

DATE: April 11th, 1983

RE: House Bill 99, Susitna Hydroelectric

The Alaska Power Authority Board of Directors has recently revised their estimated funding requirements for FY 84 in order to continue work on Federal licensing requirements for the Susitna project.

The revised estimate is $22,000,000, to be used in approximately the following proportions:

CATEGORY ITEM	Amount ($ million)
Harza-Ebasco Contract	13.5
Includes:	
Project Management and Overhead	1.225
Conceptual Design	3.150
Environmental Program	5.600
Licensing and Agency Coordination	1.200
Public Participation	.125
Logistics	2.200
Department of Fish and Game	4.0
Includes:	
Aquatic Studies - Data Collection Program	3.0
Terestrial	1.0
U.S. Department of Geological Survey	.200
Includes:	
Hydrology Data Collection	.200

Legal Costs	.200
Includes:	
Support of FERC Licensing	.200
External Review Panel	.50
Includes:	
Consulting to APA	.50
Need for Power Hearings	1.0
Includes:	
Hearings before FERC	1.0
Power Authority Personnel and Related Costs	1.750
Includes:	
Staff, etc.	1.750
Contingency	1.300
Includes:	
Miscellaneous	1.300

Design work on the project will be delayed for one year at this level of funding. The above information was obtained from Robert Mohn of Eric Yould's office, Executive Director, Alaska Power Authroity, on April 11, 1983.

Alaska State Legislature

REPRESENTATIVE
BARBARA LACHER
P.O. BOX 478
PALMER, ALASKA 99645
(907) 376-4215

WHILE IN JUNEAU
POUCH V
JUNEAU, ALASKA 99811
(907) 465-4894

House of Representatives

TO: Representative John Ringstad
Co-Chairman of House Resources Committee

FROM: Representative Barbara Lacher
Chair of House Community and Regional Affairs

DATE: April 5, 1983

RE: House Bill 99, Susitna Hydroelectric.

The Alaska Power Authority Board of Directors has recently revised their estimated funding requirements for FY 84 in order to continue work on Federal licensing requirements for the Susitna project.

The revised estimate is $22,000,000, to be used in approximately the following proportions:

- Environmental studies and activities	55%
- Engineering	10%
- Economic analysis and fiscal impact	3%
- Licensing support and agency coordination	6%
- Program management and consultants	6%
- Alaska Power authority staff	8%
- Contingency	11%

Design work on the project will be delayed for one year at this level of funding. The above information was obtained from Robert Mohn of Eric Yould's office, Executive Director, Alaska Power Authority, on April 1$, 1983.

Alaska State Legislature

REPRESENTATIVE
BARBARA LACHER
P.O. BOX 478
PALMER, ALASKA 99645
(907) 376-4215

WHILE IN JUNEAU
POUCH V
JUNEAU, ALASKA 99811
(907) 465-4894

House of Representatives

TO: Representative Ringstad
Chairman of House Resources Committee

FROM: Representative Lacher
Chair of House Community and Regional Affairs

DATE: April 1, 1983

RE: HB 99 - Appropriation for Susitna Hydroelectric Project.

Alaska Power Authority has requested $47 million for FY '84 in order to continue design and studies of the Susitna Hydroelectric project. I have attached a letter from Eric Yould, Executive Director of APA, which breaks out how the appropriation will be used.

The Susitna Hydroelectric Project Draft Summary Report, prepared by APA forecasts that railbelt energy demands could double by the year 2000 ...just seventeen years from now. APA also predicts that the costs of electricity will nearly triple between 1994 and 2010, if thermal energy, which is produced by coal or gas fired plants, is selected as an alternative to hydroelectricity. This is illustrated in the attached charts and graphs, taken from APA's draft Susitna Hydroelectric Summary Report.

On the other hand, Susitna could eventually produce cost advantages as high as $5.5 billion.

In order to continue the work necessary to receive licensing from the Federal Energy Regulatory Commission, Alaska Power Authority must complete studies of the environment, of the impact of the dams on fisheries and wildlife, and meet other licensing requirements. APA will also continue with engineering and design work.

In light of the great benefits Susitna Hydropower will bring to so many Alaskans, I strongly urge your support for House Bill 99.

Alaska State Legislature

REPRESENTATIVE
BARBARA LACHER
P.O. BOX 478
PALMER, ALASKA 99645
(907) 376-4215

WHILE IN JUNEAU
POUCH V
JUNEAU, ALASKA 99811
(907) 465-4894

House of Representatives

To: House Labor & Commerce Committee
From: Representative Barbara Lacher
Date: February 21, 1983
Subject: HB 99--Appropriation for Susitna Hydroelectric Project

Alaska Power Authority has requested $47 million for FY 84 in order to continue design and studies of the Susitna Hydroelectric project. I have attached a letter from Eric Yould, executive director of APA, which breaks out how the appropriation will be used.

The Susitna Hydroelectric Project Draft Summary Report, prepared by APA, forecasts that railbelt energy demands could double by the year 2000--just seventeen years from now. APA also predicts that the costs of electricity will nearly triple between 1994 and 2010, if thermal energy, which is produced by coal or gas fired plants, is selected as an alternative to hydroelectricity. This is illustrated in the attached charts and graphs, taken from APA's draft Susitna Hydroelectric Summary Report.

On the other hand, Susitna could eventually produce cost advantages as high as $5.5 billion.

In order to continue the work necessary to receive licensing from the Federal Energy Regulatory Commission, Alaska Power Authority must complete studies of the environment, of the impact of the dams on fisheries and wildlife, and meet other licensing requirements. APA will also continue with engineering and design work.

In light of the great benefits Susitna Hydropower will bring to so many Alaskans, I strongly urge your support for House Bill 99.

AB 77

ALASKA POWER AUTHORITY

334 WEST 5th AVENUE - ANCHORAGE, ALASKA 99501

Phone: (907) 277-7641
(907) 276-0001

January 27, 1983

The Honorable Barbara Lacher
House of Representatives
P.O. Box 30
Wasilla, Alaska 99687

Dear Representative Lacher:

Through your assistant you have asked for information relating to the Alaska Power Authority's $47 million FY84 request for the Susitna project.

The basis of the estimate follows:

Item:	Amount ($ Million)
Harza-Ebasco Contract - consultant	35.5
Site explorations, logistical support, licensing support, environmental analysis, detailed engineering and design.	
Alaska Department of Fish & Game	4.0
Fish and wildlife data collection program.	
Land Analysis and Acquisition	0.3
USGS Sediment Studies	0.2
External Review	0.2
Legal Support of FERC Licensing	0.2
USF&WS Support of Environmental Program	0.1
Design Review	1.0
Construction Manager Support	2.0
Transmission Facilities Design	2.0
Power Authority Personnel and Related Costs	1.5
Total	47.0

Over the next month, the basis of this estimate will be reviewed in light of the design contract presently under negotiation with Harza-Ebasco and the current outlook for project licensing.

Sincerely,

Eric P. Yould

Eric P. Yould
Executive Director

cc: Commissioner Richard Lyon
Pete McDowell
David Wozniak

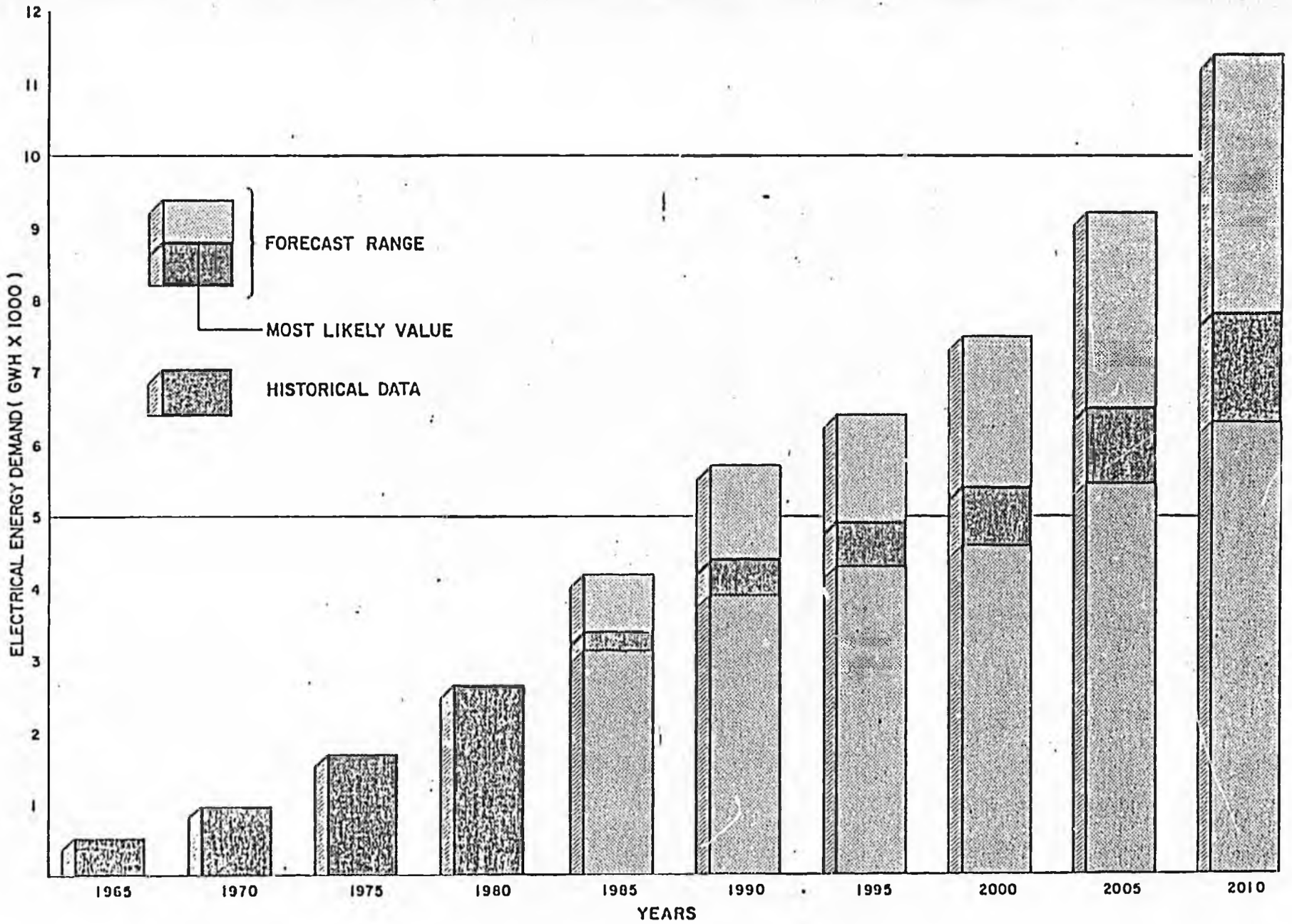
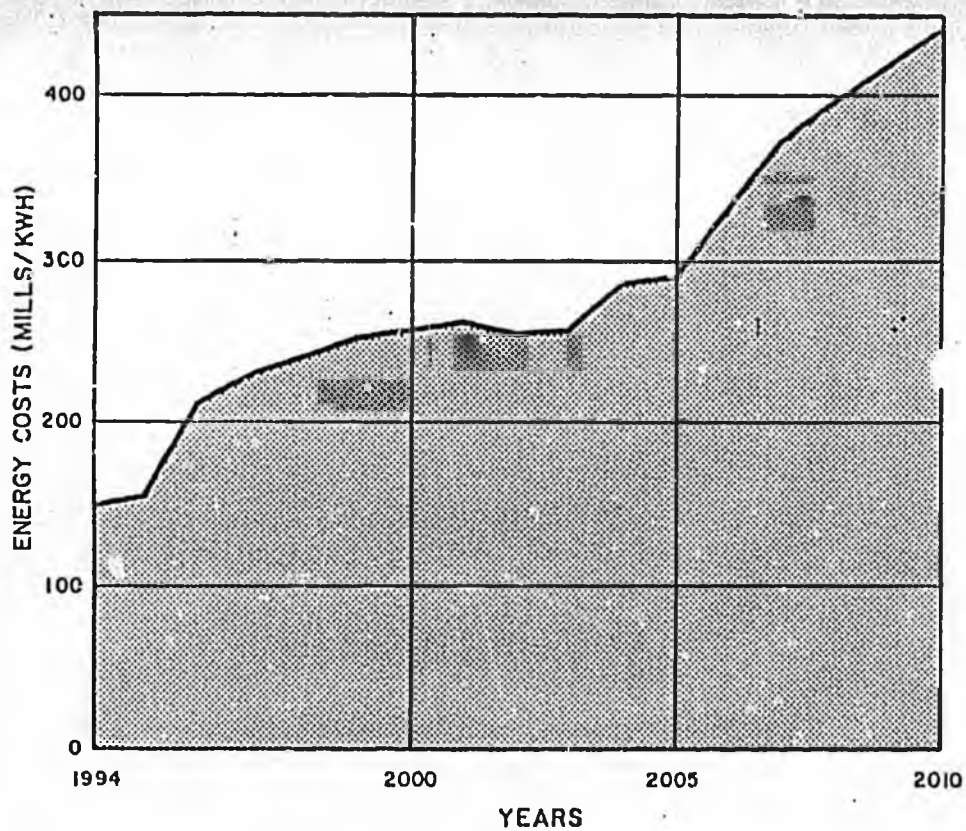
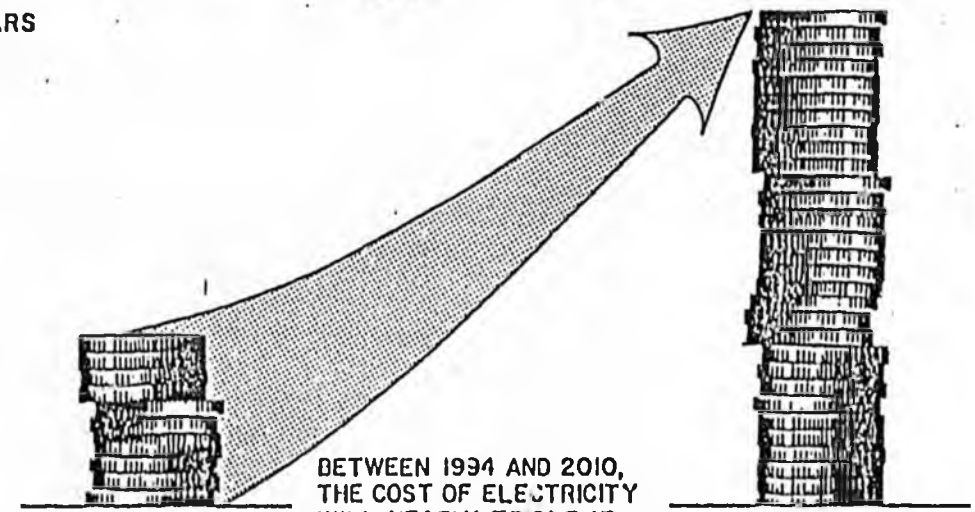


PLATE 3 | RAILBELT ENERGY DEMANDS





BETWEEN 1994 AND 2010, THE COST OF ELECTRICITY WILL NEARLY TRIPLE IF THE THERMAL ALTERNATIVE IS SELECTED

PLATE 5 | **ANNUAL COSTS - BASE CASE**

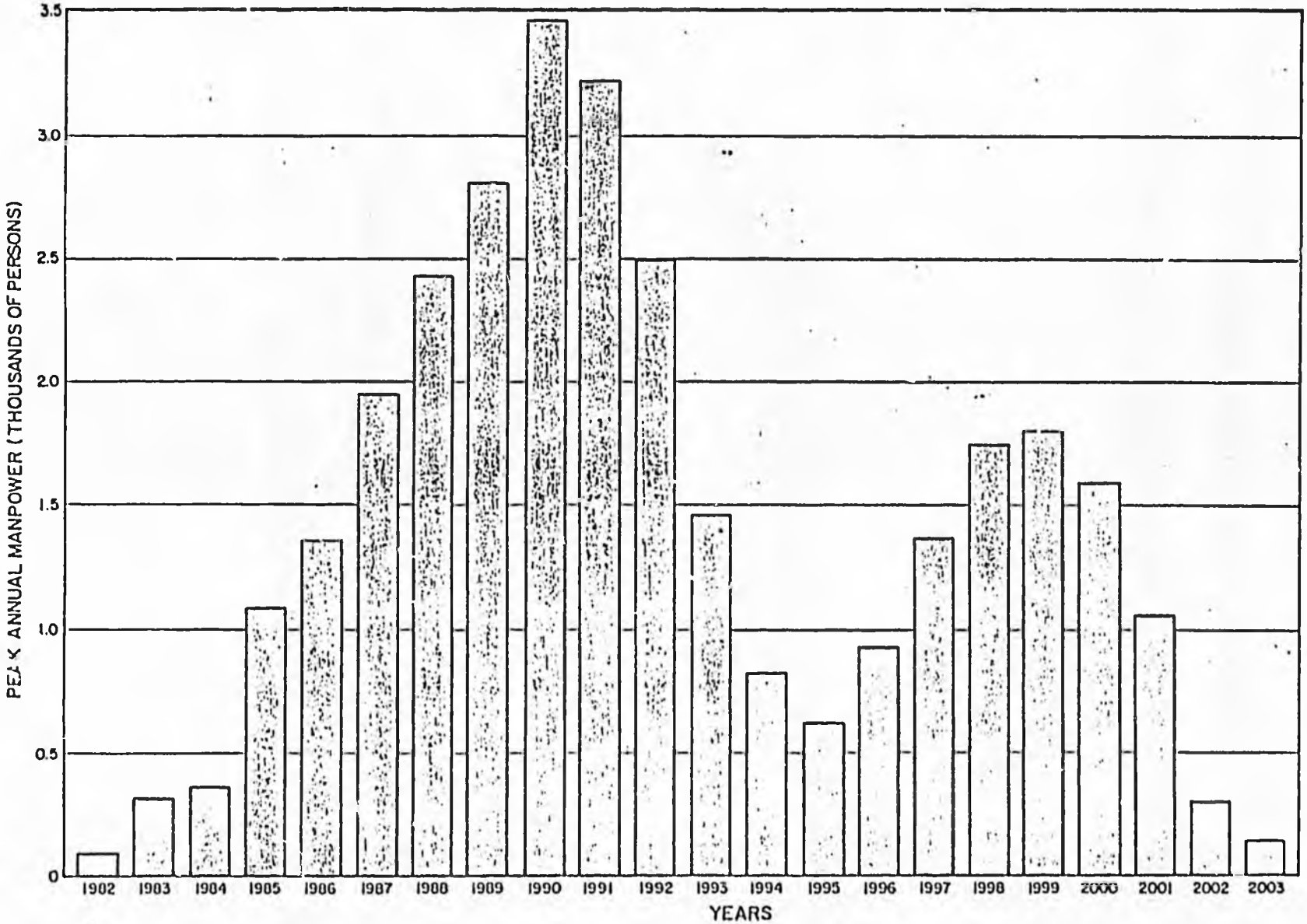
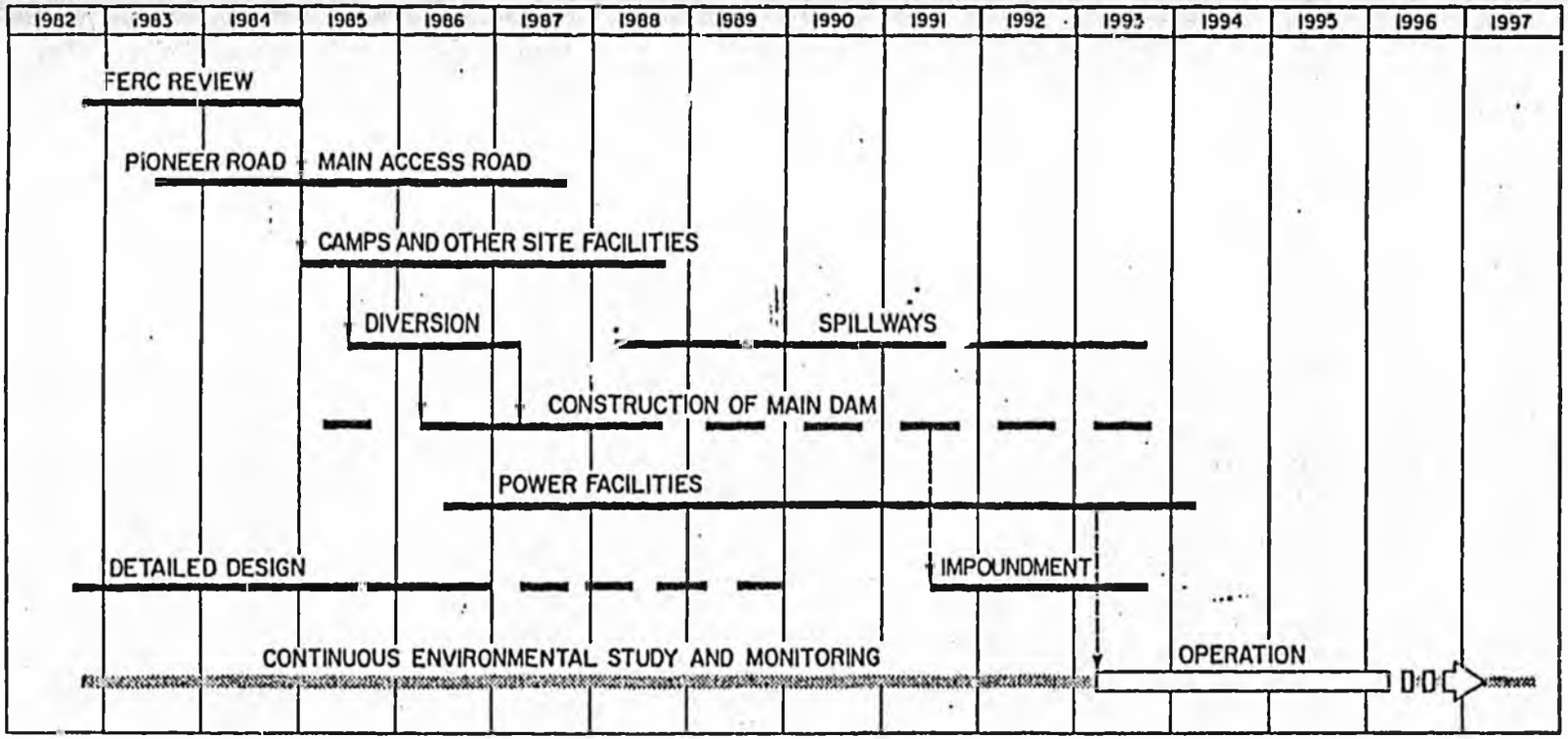


PLATE 17 | WORK FORCE

DEVIL CANYON



WATANA

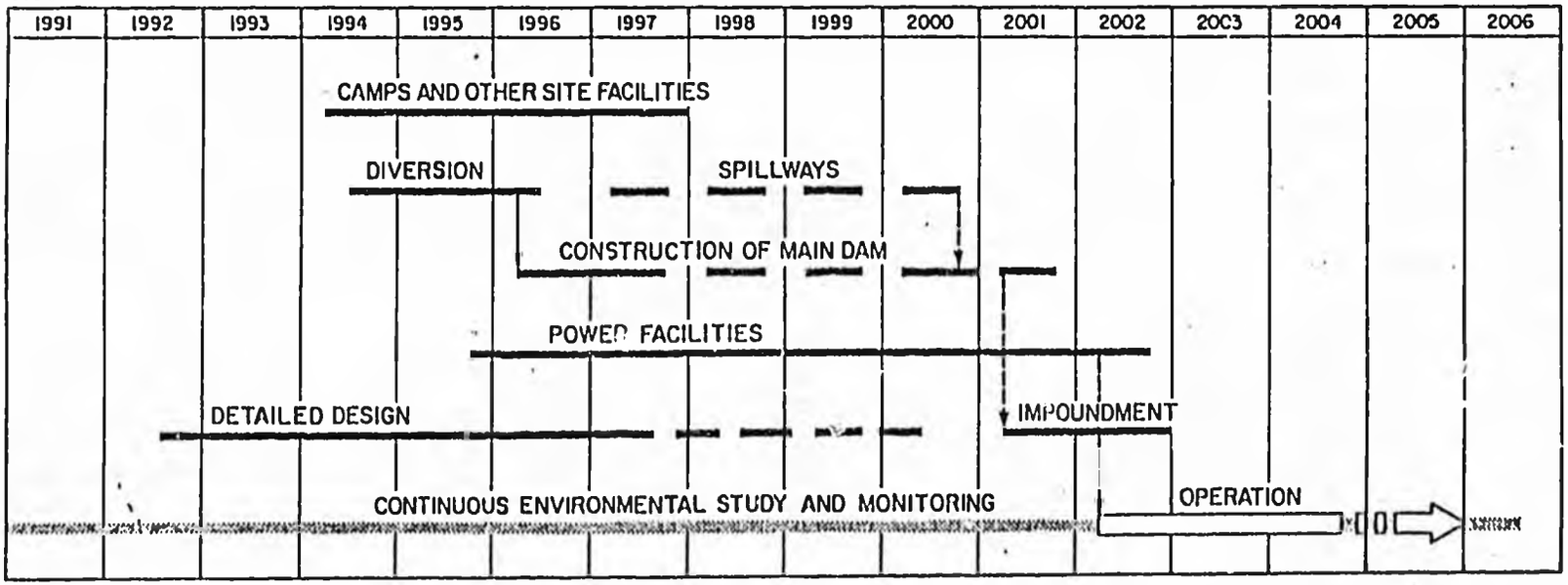
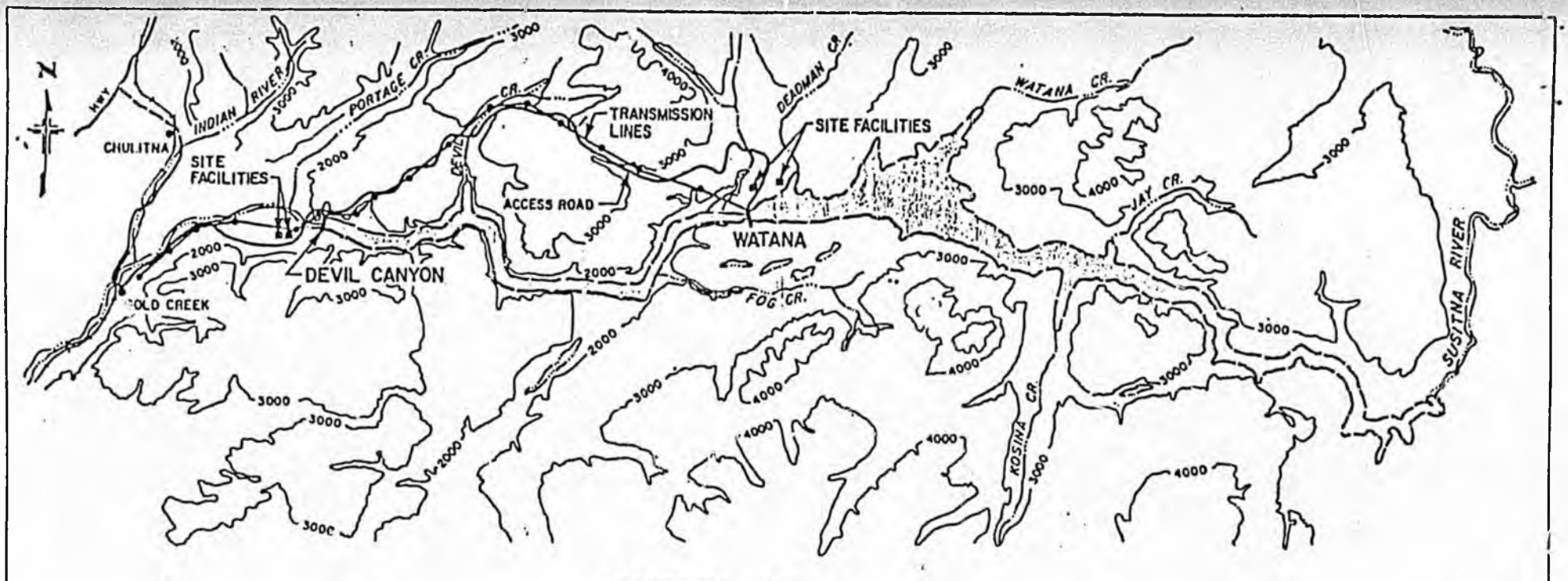
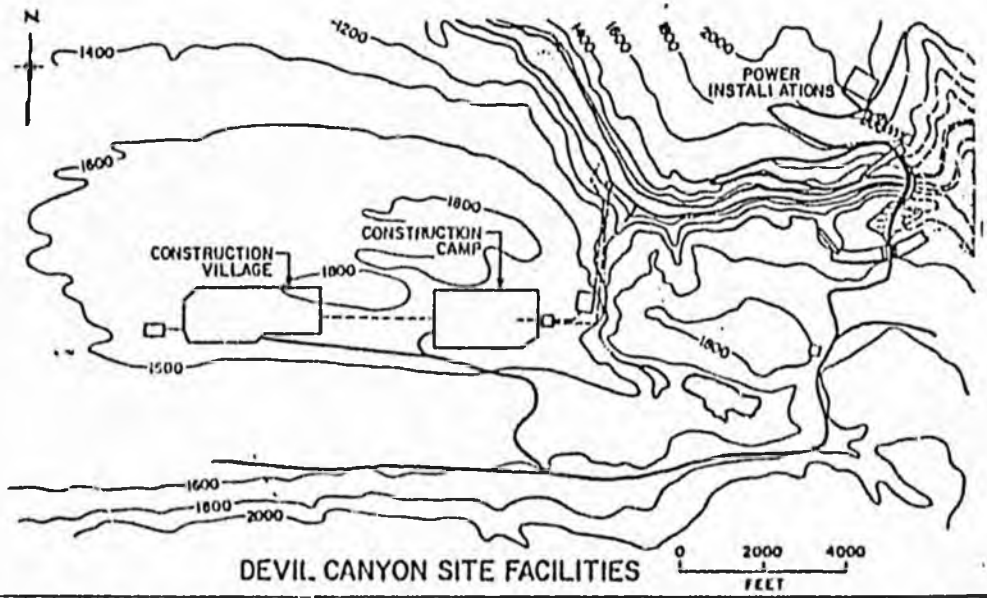


PLATE 16 | PROJECT SCHEDULE





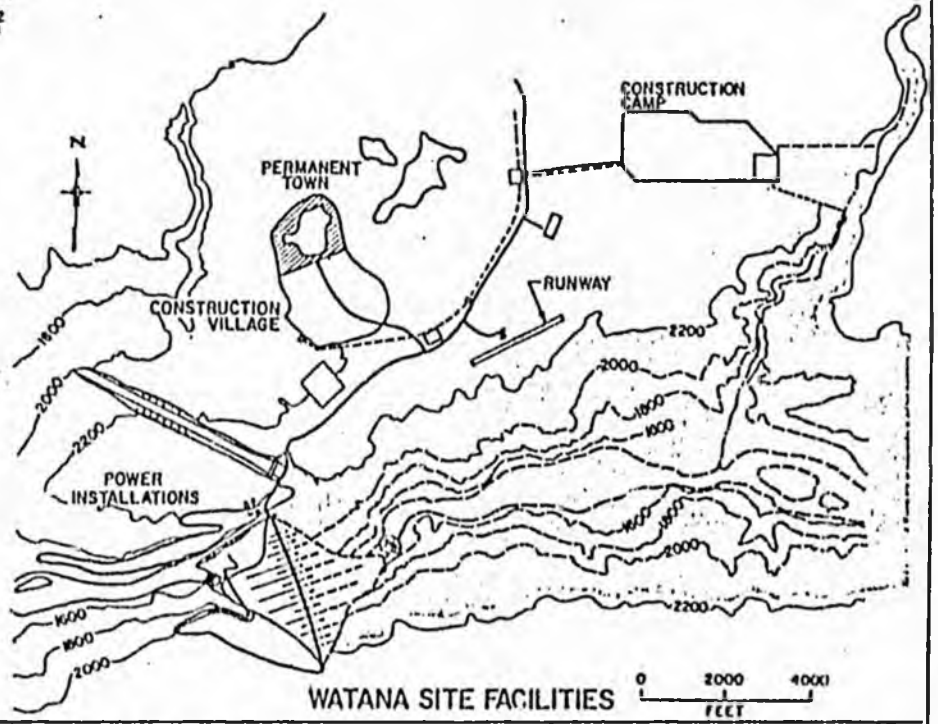


PLATE 9 | PREFERRED DEVELOPMENT PLAN

STATUS/SCOPE OF LEGISLATION

ISSUE: HB99 APPROP/APA/SUSITNA RIVER HYDRO PROJ

SPONSORS: LACHER, HAYES TISCHER, LARSON, UEHLING

CURRENT STATUS: (Resources)

FISCAL IMPACT:

REPRESENTATIVE	A. Comm. Vote	B. Statutory/Tech.	C. Supp.-Memo	D. Opp.-Memo	E. Vote
ABOOD					
ADAMS					
BARNES					
BETTISWORTH					
BUSSEL					
CATO					
CLOCKSIN					
COWDERY	do pass				✓
DAVIS					
DUNCAN					
FLOOD					
FRITZ					
FULLER					
FURNACE	do pass				✓
GOLL					
GRUSSENDORF					
HAYES					✓
HERRMAN					
HURLBERT					
KOPONEN	No Rec.				
LACHER					✓
LARSON					✓
LINDAUER					
LISKA					
MALONE	do pass				✓
MARTN					
MCBRIDE					
MILLER					
MILLER(NP)					
PESTINGER					
PHILLIPS					
RINGSTAD	do pass				✓
SHULTZ					
SZYMANSKI					
TISCHER					✓
UEHLING	do pass				✓
VASKA					
WARD					
WENDTE	do pass				✓
ZHAROFF					

STATE OF ALASKA
FISCAL NOTE

Revision Date , 1983

I. REQUEST

Bill/Resolution No.: HCR 31
Title: River Commission
Sponsor: House Resources
Requestor: House Resources

II. FISCAL DETAIL

Agency Affected: Public Safety
Program Category Affected: Justice/NRMEC
BRU, Program of Subprogram(s) Affected: AST and FWP

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88
100 PERSONAL SERVICES		33.1	35.1	37.2	39.4	41.8
200 TRAVEL						
300 CONTRACTUAL		.6	.6	.7	.7	.8
400 COMMODITIES		1.0	1.1	1.1	1.2	1.3
500 EQUIPMENT						
600 LAND & STRUCTURES						
700 GRANTS, CLAIMS, ETC						
TOTAL OPERATING		34.7	36.8	39.0	41.3	43.9
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND		34.7	36.8	39.0	41.3	43.9
FEDERAL FUNDS						
OTHER (Specify Source)						

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						
STAFF MONTHS		5.6	5.6	5.6	5.6	5.6

III. SOURCE OF FUNDS TO OFFSET FISCAL IMPACT OF BILL:

Not identified.

IV. ANALYSIS: Attach a separate page for any Analysis

Prepared By: Francis C. Allan / Capt. James Nutgrass Phone: 269-5691/269-5589
Division: Alaska State Troopers / Fish & Wildlife Prot. Date: 4-22-83

Approved by Commissioner: R. J. Sundberg Date: 4/27/83
Department: Public Safety

Distribution:
Original to Legislative Finance
Copy to Office of Management and Budget (for Legislature introduced bills)
Copy to Department (for Governor introduced bills)
Copy to Sponsor
Copy to Requestor (if different from Sponsor)

3/8/83

HCR31

ANALYSIS

The Division of Alaska State Troopers and Fish and Wildlife Protection have examined the "Final Statement Of Findings" of the Kenai River Task Force dated March 1983. This report recommends the following for the Department of Public Safety on page 31 of the report:

"Increase public safety patrols. Specifically, three new patrol officer positions should be created and funded; and they should be assigned to the (Kenai) River full time during June and July. Increased enforcement patrols could substantially reduce the conflicts."

While we would like to meet the recommendation of the Task Force, it is impractical to employ two full time officers all year and only work them on the Kenai River for two months. We believe that we can more economically provide a similar amount of coverage by receiving funding for additional overtime for our current staff plus some operating costs for the boats already available. These costs are summarized as follows:

	FWP	AST	DPS TOTAL
Personal Services - 500 hrs. overtime for FWP & 400 for AST @ - 76D	14,500	11,540	26,040
Benefits @ .2721	3,945	3,140	7,085
Subtotal	18,445	14,680	33,125
Contractual - Additional repair on boats/motors due to increased use	600		600
Commodities - Fuel, oil etc to operate current equipment	1,000		1,000
TOTAL	20,045	14,680	34,725

It should be noted that this fiscal note is submitted with the assumption that the River Commission will be issuing a minimum number of orders or regulations that would require direct law enforcement personnel involvement to assure that these requirements are followed. Should this not prove to be a correct assumption a substantially more sizeable fiscal impact would be required.

NOTE: 6% inflation factor has been calculated on all costs after FY'84.

ALASKA POWER AUTHORITY

TO: REPRESENTATIVE WENDTE 4/12/83

FROM: ERIC P. YOULD
Executive Director
Alaska Power Authority

SUBJECT: AS 44.83.398(b) 2

You have requested my views of proposed legislation to repeal AS 44.83.398 (b) 2. Repeal of this section is consistent with the policy of the Power Authority Board of Directors and Governor Sheffield. In fact, Governor Sheffield requested similar repeal by way of SB 168. Repeal of this section will only partially address the Utilities' and State's concerns. In my opinion while your legislative efforts are of value, the more comprehensive changes sought under SB 168 are critical to the interests of your constituents.

The following comments address AS 44.83.398(b) 2. This section will require a 10 percent return on all amounts invested in power projects if the legislature has not appropriated $5,000,000,000 to the Power Development Fund by July 1, 1986.

This legislation adversely effects the Power Authority's ability to enter into long term power sales agreements with utilities participating in the Energy Program for Alaska. Utilities cannot predict future wholesale power rates and may not be able to meet the 10 percent rate of return.

In addition, there is a serious question regarding the ability of the Power Authority to successfully complete the take out of $200 million in interim financing with long term revenue bonds if this section is retained. The investment community takes a dim view of such language due to its probable effect on power rates. Operation of the clause could escalate the wholesale power rate for purchasing utilities sufficiently to jeopardize their ability to pay for the contracted power.

Also, the Trustees for Alaska has contended that the clause is unconstitutional. Its repeal would moot that claim.

In summary, the section serves no useful purpose since the present condition of state revenues will in all likelihood not allow for a $5 billion appropriation. As such, the section is clearly detrimental to the existing projects and to the development of future power projects. It should be repealed this session.

ALASKA STATE LEGISLATURE
HOUSE OF REPRESENTATIVES
RESEARCH AGENCY

Pouch Y, State Capitol
Juneau, Alaska 99811
(907) 465-3991

April 12, 1983

MEMORANDUM

TO: Representative Ron Wendte

FROM: Jack Kreinheder
Research Staff

RE: Susitna "Blackmail Clause" [AS 44.83.398(b)(2)]
Research Request 83-145

Suzanne Mullen of your staff asked that we briefly explain the current effect of [AS 44.83.398(b)(2)], commonly referred to as the Susitna "blackmail clause," on the viability of the Susitna hydroelectric project and on other Alaska Power Authority projects.

As you know, the clause states that if $5 billion is not appropriated to the power development fund by July 1, 1986, the power rate for each project owned by the Power Authority will increase to a level sufficient to return to the State 10 percent of the State investment in the project each year. There has been some controversy over the definition of the term "State investment" as used in the clause, which has resulted in uncertainty over the power rates that would occur if the clause went into effect. In any case, the clause would result in a substantial increase in power rates, up to 100 percent or more for some projects. The higher rates under the clause would apply not only to current projects, but to Susitna and other future projects, as well.

The "blackmail clause" was enacted as part of SB 25 in 1981, and was intended to provide some assurance that Susitna or another large Railbelt power project would receive appropriations comparable to those made in 1980 and 1981 for power projects in other regions of the state. At that time, $5 billion was considered sufficient to pay for almost the full cost of Susitna and the other projects under development.

As a result of the sharp declines in State revenues over the last two years, the blackmail clause is now considered by the Power Authority and other experts to be an obstacle, rather than an aid, to development of Susitna and other projects. As you know, the Power Authority has introduced (through the Governor's Office) legislation to repeal the clause.

The basic problem is that falling State revenues have made it extremely unlikely, barring a complete reversal in oil price trends, that the State can afford to appropriate $5 billion for power projects by FY 86. Approximately $500 million has been appropriated for power projects to date, so that an additional $4.5 billion would have to be appropriated in the next three fiscal years to meet the requirements of the clause. The latest Department of Revenue figures (30th percentile) project about $8.8 billion in total general fund revenues from FY 84 to FY 86. At current levels, the operating budget alone would require about $5.8 billion over these three years, leaving only $3 billion for all loan and capital appropriations. Under more optimistic revenue forecasts, it would be more practical to appropriate the required $4.5 billion for power projects, but very little money would remain for other capital projects or loans.

Because it appears almost certain that the "blackmail clause" would take effect if it remains law,* the electric utilities in the Railbelt and other areas of the state have become concerned about the effect of the clause on them. The clause, as part of the Power Authority's rate statutes, must be included in every power sales contract negotiated by the Authority. Although the Authority has obtained power sales contracts for the Solomon Gulch, Terror Lake, and Swan Lake projects, the utilities involved are very concerned about the prospect that their rates for purchased power could double in three years.

The Power Authority's financial advisors also fear that the clause could affect the issuance of revenue bonds for existing and future power projects, because the bond markets could be concerned about the ability and willingness of utilities to pay the higher rates under the clause. The financial advisors have stressed the importance of having the Power Authority's first bond issues be as straightforward and risk-free as possible in order to establish a sound credit rating.

With respect to Susitna, both the Governor and the Federal Energy Regulatory Commission (FERC) have stated that construction cannot begin, nor will a FERC license be issued, until power sales agreements for Susitna power have been signed by Railbelt utilities. As mentioned earlier, the "blackmail clause" applies to future power projects, not just projects now under construction or in operation. One of the

---

* There have been questions raised about the constitutionality of the clause, and it is possible that the clause would be struck down in court. The clause is currenlty the subject of a lawsuit by the Trustees for Alaska; however, the suit has been stayed pending legislative action on the measures to repeal the clause.

largest obstacles to the successful negotiation of the Susitna power sales agreements is that the power rates for Susitna depend heavily on the level of State funding for the project, which is uncertain at this time. The clause accentuates this problem by creating the prospect that Susitna power rates could be considerably higher than estimated by recent studies.

I hope this information is useful. If you have any questions or would like additional research, please let us know.

Sec. 44.83.398. Sale of power from power project. (a) The authority shall sell power produced from power projects acquired or constructed under the energy program for Alaska. A utility that purchases power produced by a power project of the authority shall agree with the authority

(1) to give preference in the sale of power at retail to all classes of consumers of power except industrial consumers;

(2) to charge industrial consumers of power a rate determined by the authority in accordance with (d) of this section.

(b) The authority shall establish a wholesale power rate structure applicable to sales of power to its customers at the busbar of a power project as follows:

(1) The authority shall establish and maintain a separate wholesale power rate applicable to each power project that it has acquired or constructed under the energy program for Alaska, other than a project described in (f) of this section. The wholesale power rate shall be computed by the authority annually, or more frequently as may be necessary, and shall equal the rate that the authority estimates is necessary to produce revenue that is sufficient to pay

(A) operation, maintenance, and equipment replacement costs of the power project;

(B) the power project's proportionate share of the debt service on state loans and bonds for all power projects in the energy program for Alaska, determined in accordance with (g) of this section;

(C) safety inspections and investigations of the power project by the authority.

(2) If, by July 1, 1986, the legislature has not appropriated at least $5,000,000,000 to the fund, in addition to appropriations to the fund of interest earned on money in the fund, the authority shall, beginning on that date, establish and maintain a separate wholesale power rate applicable to each power project that is acquired or constructed under the energy program for Alaska. The wholesale power rate shall be computed by the authority annually, or more frequently as may be necessary, and shall be the greater of

(A) 10 percent of the amount the authority has invested in the power project, including loans and grants made by the state; or

(B) the rate that the authority estimates is necessary to produce revenue sufficient to pay

(i) operation, maintenance, and equipment replacement costs of the power project;

(ii) the power project's proportionate share of debt service on state loans and bonds for all power projects in the energy program for Alaska, determined in accordance with (g) of this section; and

(iii) safety inspections and investigations of the power project by the authority.

ALASKA STATE LEGISLATURE
HOUSE OF REPRESENTATIVES
RESEARCH AGENCY

Pouch V, State Capitol
Juneau, Alaska 99811
(907) 465-3991

January 19, 1982

MEMORANDUM

TO: Representative Don Clocksin

FROM: Jack Kreinheder
Research Staff

RE: Effect of "Susitna Blackmail Clause" on Power Rates
Research Request 82-199

You requested that we provide an analysis of the effect on electric power rates of the "Susitna Blackmail Clause" [AS 44.83.398(b)(2)], using the Alaska Power Authority's rate model, if possible. Although the Power Authority agreed to provide the analysis, a question on the meaning of the Blackmail Clause has arisen, and I am currently waiting for an Attorney General's opinion on the matter.

I received a copy of the Power Authority rate analysis of the Clause on December 17, 1982. However, it appeared to me that the Power Authority misinterpreted the meaning of the Blackmail Clause and that the resulting power rates were too high. The Power Authority obtained a legal opinion from their bond counsel, Wohlforth and Flint, which reached a different interpretation of the Clause. However, the Wohlforth and Flint opinion did not agree with my own reading of the Clause. On December 30, the Power Authority requested the Attorney General's Office to provide an opinion on the meaning of the Clause. I am still waiting for this opinion.

The controversy basically centers on two questions:

(1) whether the 10 percent return to the State under the Clause includes debt service and operating costs, or if these costs are to be added on in the rate calculation; and

(2) whether the term "State investment" as used in the Clause means only State appropriations and loans to power projects, or means total project cost, including bond proceeds or other non-State borrowings.

The Power Authority's interpretation was that the State was to receive a 10 percent return plus debt service and operating costs, and that "State investment" means State appropriations and loans.

Wohlforth and Flint concluded that the 10 percent return to the State includes debt service and operating costs, and that "State investment" means total project cost.

I agree with the Wohlforth and Flint interpretation of the 10 percent return, but the Power Authority's interpretation of "State investment" appears more accurate to me. In any case, the Attorney General's opinion should provide a final definition which can be used in calculating the power rate impact of the clause.

Attachments

Attached are two tables of power rates under the HB 9 rate structure and under the Blackmail Clause, as provided by the Power Authority. Table 1 reflects the Power Authority's interpretation of the Clause, while Table 2 shows the results of the Wohlforth and Flint interpretation. The Blackmail Clause rates are much higher (up to 50 percent more) under the Power Authority's interpretation than under Wohlforth and Flint's. Although a final analysis cannot be made until the meaning of the Clause is resolved, I thought you might like to see the difference in rates which results from the two interpretations.

Under either interpretation, the Blackmail Clause would dramatically increase power rates in 1986, particularly for the Swan Lake and Lake Tyee projects. For example, the wholesale power rate for Tyee would jump from 18.5 cents per kilowatt hour (KWH) to 42.4 cents/KWH under the Power Authority's interpretation. Under the Wohlforth and Flint definition, the rate would increase to 33.9 cents per KWH.

* * *

I hope this preliminary information is useful. I will provide a final analysis of the rate effects of the Blackmail Clause as soon as the Attorney General's Office issues an opinion defining the Clause.

JK

Attachments as stated

TABLE 1

HOUSE BILL NO. 9/SUSITNA CLAUSE COMPARISON
WHOLESALE POWER RATES AT ¢/KWH

Year End June 30	SWAN LAKE		TYEE LAKE		SOLOMON GULCH		TERROR LAKE	
	H.B.9	S.C.	H.B.9	S.C.	H.B.9	S.C.	H.B.9	S.C.
1985	14.26	37.52	15.38	42.37	12.07	16.02	-	-
1986	17.49	39.65	18.48	43.19	11.18	16.24	14.90	24.58
1987	17.46	38.56	18.31	41.08	11.11	16.47	13.68	23.15
1988	17.40	37.50	18.11	39.03	11.05	16.72	12.87	21.78
1989	17.32	36.46	17.90	37.11	10.99	16.99	11.93	20.47
1990	16.55	34.78	17.66	35.31	11.08	17.27	11.24	19.44
1991	15.99	33.35	17.07	33.83	11.38	17.58	11.09	19.13
1992	15.47	32.00	16.48	32.41	11.71	17.90	10.97	18.85
1993	14.98	30.73	15.93	31.06	12.05	18.25	10.84	18.57
1994	14.52	29.51	15.41	29.78	12.43	18.62	10.73	18.30
1995	14.08	28.36	14.92	28.57	12.83	19.02	10.62	18.04

Assumptions:

1) Debt is issued at 11% and is amortized over 35 years.

2) Bond Coverage is computed at 1.10 times level debt service.

3) H.B.9-Rates are stated "with limit", includes Bond Coverage, Debt Service only, and M&O Costs.

4) Computation of H.B.9 - on John Nuveen & Company Computer Model; see Schedules A - F, for data and analysis.

5) S.C. = SUSITNA CLAUSE; Example Computation follows:

TYEE LAKE - 1986

1) State Appropriation for Project = $82,000,000 x (10%) = $ 8,200,000

2) Amount to be long term financed = $50,000,000
Computed annual operation revenues equals (14.21¢) which includes Debt Service Component and the 1:10 Bond Coverage times the number of project firm sales which is (33,069,000 KWH)

3) ($.1421) (33,069,000 KWH) 4,699,100

4)	Annual M&O Costs which increase at a rate of 7% per annum, See Schedule "D"	1,412,000
5)	Total Computed Project Costs inclusive of M&O Costs	14,311,100
6)	To get Susitna Clause Cost of power estimate ($14,311,100 ÷ 33,069,000 KWH) =	$43.28¢/KWH

It should be noted that this format was utilized for TYEE LAKE, SWAN LAKE, SOLOMON GULCH, AND TERROR LAKE. Worksheets are attached for confirmation.

TABLE 2

HOUSE BILL NO. 9/SUSITNA COMPARISON
WHOLESALE POWER RATES AT c/KWH

Year End June 30	SWAN LAKE		TYEE LAKE		SOLOMON GULCH		TERROR LAKE	
	H.B.9	S.C.	H.B.9	S.C.	H.B.9	S.C.	H.B.9	S.C.
1986	17.49	29.17	18.48	33.87	11.18	12.93	14.90	22.22
1987	17.46	27.78	18.31	31.11	11.11	12.93	13.86	21.32
1988	17.40	26.46	18.11	28.57	11.05	12.93	12.87	20.44
1989	17.32	25.19	17.90	26.24	10.99	12.93	11.92	19.61
1990	16.55	24.00	17.66	24.10	11.08	12.93	11.24	18.81
1991	15.99	22.85	17.07	22.89	11.38	12.93	11.09	18.44
1992	15.47	21.76	16.48	21.75	11.71	12.93	10.97	18.08
1993	14.98	20.73	15.93	20.66	12.05	12.93	10.87	17.72
1994	14.52	19.74	15.41	19.62	12.43	12.93	10.73	17.37
1995	14.08	18.80	14.92	18.64	12.83	12.93	10.62	17.03

(1) PROJECT COSTS:

SWAN LAKE:	$ 98,000,000
TYEE LAKE:	$112,000,000
SOLOMON GULCH	$ 53,000,000
TERROR LAKE	$196,000,000

(2) H.B.9 Computation - John Nuveen & Company Computer Model, inclusive of Debt Service 11%/35 years; 1.10 Bond Coverage and Maintenance & Operations Cost

(3) S.C. Susitna Blackmail Clause Computation Example

Tyee Lake - 1986

Total Project Cost $112,000,000 (10%) = $\frac{\$11,200,000}{33,069,000 \text{ KWH}}$ = 33.87¢/KWH

(4) Analysis assumes no additional major Capital Expenditures

HB

115

THE LEGISLATURE OF THE STATE OF ALASKA
THIRTEENTH LEGISLATURE

H, Res

FISCAL NOTE

☒ Expenditure Type
☐ Revenue Type

I. REQUEST
Bill/Resolution No. HB 115
Title "Act Relating to Brown and Grizzly Bear"
Requested by House Resources Date

II. FISCAL DETAIL
Agency Affected Department of Public Safety
Program Category Affected Fish & Wildlife Protection
BRU, Program, Or Subprogram(s) Affected Fish & Wildlife Protection
(Note: If more than one budget component is affected, separate line-item amounts and funding for each component in the analysis section.)

EXPENDITURES (Thousands of Dollars)

	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88
100 PERSONAL SERVICES						
200 TRAVEL						
300 CONTRACTUAL						
400 COMMODITIES						
500 EQUIPMENT						
600 LAND & STRUCTURES						
700 GRANTS,CLAIMS,ETC.						
TOTAL		-0-	-0-	-0-		

FUNDING (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER (Specify Source)						

POSITIONS

FULL TIME						
PART TIME						
TEMPORARY						

III. ANALYSIS (See Fiscal Note Preparation Instruction, Section III)

No Fiscal Impact

RECEIVED
FEB 7 1983
LEGISLATIVE FINANCE

IV. DATE January 28, 1983 PREPARED BY Paul Conger Phone 465-4338
DIVISION Admin. Services Initials
DEPARTMENT OF PUBLIC SAFETY Initials

Original: Legislative Finance
cc: Budget and Management
Prime Sponsor (First Legislator Named)

ESL

33-001 (Rev. 12/82)

OMB Reviewed by: Eric Lescheyer

HB

118

(9)

COMMITTEE REPORT

HOUSE

FURTHER: FINANCE

1/26/83

Date: 2/4/83

Mr. Speaker:

The Committee on RESOURCES has had HB 118

An Act relating to the brown and grizzly bear tag requirement for Alaska residents; and providing for an effective date.

under consideration and reports it back as follows:

[ ] do pass [ ] do not pass

[ ] do pass with attached amendments(s)

[X] replace with CS for HB 118 [ ] same title [X] new title

and recommends DO PASS

[ ] AND attaches a "Letter of Intent" [ ] New Fiscal Note

[ ] Zero Fiscal Note Attached

[ ] reports it back without recommendation

[ ] referred to the _____ Committee

MEMBERS SIGNING
DO PASS

MEMBERS HAVING
OTHER RECOMMENDATIONS:

CHAIRMAN

H 60

STATE OF ALASKA
PRELIMINARY STATEMENT OF FISCAL IMPACT

Bill No: CS HB 118 (RES) Date on Bill: 2/7/83
Title: An Act relating to a Brown and Grizzly bear tag fee for a resident
Sponsor: Shultz
Requestor: House Resources

1. Estimated fiscal impacts on:

a. Expenditures:

(Thousands of Dollars)

			FY 83	FY 84	FY 85	FY 86		
Capital								
Operating								
Total			-0-	-0-	-0-	-0-		

b. Revenues:

Revenue								

2. Source of funds to offset fiscal impact of bill:

3. Assumptions:

4. Disclaimer:
This statement has not been reviewed by the OMB in the Office of the Governor. It therefore does not represent the final estimate of fiscal impact.

Prepared By: Co. Robert Stickles Phone: 269-5532
Division: Fish & Wildlife Protection Date: 2/18/83

Approved by Commissioner: [signature] Date: 2/23/83
Department: Public Safety

5. Distribution:
Original to Legislative Finance
Copy to OMB
Copy to Sponsor
Copy to Requestor

2/15/83

STATE OF ALASKA

BILL SHEFFIELD, GOVERNOR
ROBERT J. SUNDBERG
COMMISSIONER

DEPARTMENT OF PUBLIC SAFETY
DIVISION OF FISH & WILDLIFE PROTECTION

P. O. BOX 6188, ANNEX
ANCHORAGE, ALASKA 99502

January 31, 1983

Rec'd Feb 4 '83

Represenative John Ringstad
Chairman, House Resources Committee
State Capitol
Pouch V
Juneau, AK 99811

Dear Representative Ringstad:

I would like to present the following position which the Division of Fish and Wildlife Protection, Department of Public Safety holds with regard to House Bill 118 under proposal:

HB 118 - Support

This will increase the incidental take of brown/grizzly bear in selected areas and assist in meeting species management plan.

Sincerely,

Robert J. Sundberg
Commissioner

:-L12LH

January 24, 1983

Representative Dick Schultz
State Capitol Building
Juneau, Alaska 99801

Dear Dick:

On January 5, 1983 the Tok Cutoff-Nabesna Road Advisory Committee met in a general meeting to discuss hunting regulations. There were several things discussed with two of them pertaining to you.

#1 We would like to see legislation written and passed that would control or rather stop harrassment of hunters, trappers, and fishermen. We would be able to carry on our life-style without harrassment from the "greenies".

#2 We would like to see legislation written and passed that would eliminate the $25 trophy tag for resident grizzly/brown bear hunters. We believe the State is rich enough without charging its residents a $25 fee.

Our committee will be meeting within a few weeks and correspondence from you would be appreciated. I would like to able to tell the folks something about these two items.

Good luck and if there is anything I or this committee can do to help, please let me know.

Sincerely,

Bill Ellis, Chairman
Tok Cutoff-Nabesna Rd. Advisory Committee
S. R. Box 380
Gakona, Alaska 99586
907/822-3426

P. O. Box 28
Glennallen, AK 99588
December 30, 1982

The Honorable Richard Shultz
District 17 Representative
Pouch V
Juneau, AK 99801

Dear Representative Shultz:

At the December 7, 1982 Copper Basin Fish and Game Advisory Committee meeting held in Glennallen, an in-depth discussion was held by the committee and a number of local citizens.

At that time, the focal subject of much of this discussion was of brown bear and grizzly bear predation problems and their effects on local game, people and property.

As Unit 11 and 13, in the Copper Basin, are by far the most hunted for caribou and moose, our game numbers are constantly under pressure from hunters. In addition, recent studies have shown that these two units harbor the heaviest concentration of brown bear in the state and per capita possibly the world.

As you may know, we have many adverse confrontations between people and bears each year in our area. Within a half mile of the community of Glennallen, as many as twelve bears wander freely to and from the local garbage dump at all times of the day and night. Some residents have found it necessary to maintain an all-night watch to keep their houses from entry by bears.

In view of the many problems involved with these bears, and their tremendous predation on game animals, this committee and these citizens would like to solicit your aid in the temporary removal of the required $25 brown bear tag fees. As most residents here cannot justify the $25 expenditure, we feel that the removal of these fees would allow the taking of many local bears, which are not removed because of the cost of these tags.

On behalf of the people of this community, please consider our request an urgent one and worthy of your efforts to help us in the removal of this required expenditure, which many cannot afford. Thank you for your help in this matter.

Sincerely,

COPPER BASIN FISH AND GAME ADVISORY BOARD

Michael J. Lanegan
Secretary

ML/ll

STATE OF ALASKA

BILL SHEFFIELD, GOVERNOR

ROBERT J. SUNDBERG
COMMISSIONER

DEPARTMENT OF PUBLIC SAFETY

DIVISION OF FISH & WILDLIFE PROTECTION

P. O. BOX 6188, ANNEX
ANCHORAGE, ALASKA 99502

February 9, 1983

Represenative John Ringstad
Chairman, House Resources Committee
State Capitol
Pouch V
Juneau, AK 99811

Dear Representative Ringstad:

I would like to present the following position which the Division of Fish and Wildlife Protection, Department of Public Safety holds with regard to the Committee Substitute for House Bill 118 under proposal:

CS HB 118 (RES) - Support

This will increase the incidental take of brown/grizzly bear in selected areas and assist in meeting species management plan.

Sincerely,

Robert J. Sundberg
Commissioner

12-L12LH

HOUSE RESOURCES COMMITTEE OBSERVER/WITNESS SIGN-UP SHEET

DATE: Feb. 4, 1983 SPONSOR: Rep. Dick Shultz

SUBJECT(S): HB 118 - brn/grizzly tag requirements

NAME	REPRESENTING	ADDRESS	PHONE	Observer	Witness	For	Against
Bob Hinman	ADF&G	Juneau	465-4190		X	X	
Jeff Bohman	AK ENVIRONMENTAL Lobby	McKinley Park	586-2345		X	X	

THE LEGISLATURE OF THE STATE OF ALASKA
THIRTEENTH LEGISLATURE

FISCAL NOTE

☐ Expenditure Type
☐ Revenue Type

I. REQUEST
Bill/Resolution No. HB 118
Title relating to the brown & grizzly bear tag requirement for AK residents, etc.
Requested by House Resources Committee Date 1/31/83

II. FISCAL DETAIL
Agency Affected N/A
Program Category Affected N/A
BRU, Program, Or Subprogram(s) Affected N/A
(Note: If more than one budget component is affected, separate line-item amounts and funding for each component in the analysis section.)

EXPENDITURES (Thousands of Dollars)

	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88
100 PERSONAL SERVICES						
200 TRAVEL						
300 CONTRACTUAL						
400 COMMODITIES						
500 EQUIPMENT						
600 LAND & STRUCTURES						
700 GRANTS,CLAIMS,ETC.						
TOTAL	0	0	0			

FUNDING (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER (Specify Source)						
	0	0	0			

POSITIONS

FULL TIME						
PART TIME						
TEMPORARY						
	0	0	0			

III. ANALYSIS (See Fiscal Note Preparation Instruction, Section III)

RECEIVED
FEB 9 1983
LEGISLATIVE FINANCE

IV. DATE 1/31/83 PREPARED BY Col. Robert Stickles Phone 269-5532
DIVISION Fish & Wildlife Protection Initials
DEPARTMENT OF PUBLIC SAFETY Initials

Original: Legislative Finance
cc: Budget and Management
Prime Sponsor (First Legislator Named)

33-001 (Rev. 12/82) OMB Reviewed by: Eric Laschever

Alaska Statewide
Hunters Success 1981-82 Season

Species	Resident Harvest			Non-Resident Harvest			Unknown Unsuccessful	Total hunters	Total harvest
	successful hunter	unsuccessful hunter	% of Harvest	successful hunter	unsuccessful hunter	% total harvest			
SHEEP	561	1,032	67%	278	76	33%	33	1980 2,348*	839 1,081*
BROWN BEAR	371	4,007	46%	436	551	54%		5,365	807
CARIBOU	1,886	575	91%	1,398	65	9%	29	3,953	14,813**
MOOSE	4,669	14,492	83%	627	680	12%	434	20,902 23,550*	5,296 6,099*

* Drawing data included, but lacking residency breakdown

underlined = Drawing hunters not included

** 10,919 caribou, estimated, unreported harvest

Reasoning behind the proposed CS for HB 118

The committee substitute is very simply better language, that gives the Board of Game the option of lifting the $25 tag fee, should they decide it is in the best interest of resource management to do so.

The language is also more consistent with that used for the same purpose regarding musk oxen tags, in AS 16.05.340(a)(18)(B).

THE LEGISLATURE OF THE STATE OF ALASKA
THIRTEENTH LEGISLATURE

FISCAL NOTE

I. REQUEST
Bill/Resolution No. Committee Substitute for House Bill 118
Title Brown and Grizzly bear tag fee for residents
Requested by House Resources Date 2/04/83

II. FISCAL DETAIL
Agency Affected Department of Fish and Game
Program Category Affected Game Resource Conservation, NRMEC
BRU, Program, Or Subprogram(s) Affected Division of Game
(Note: If more than one budget component is affected, separate line-item amounts and funding for each component in the analysis section.)

EXPENDITURES (Thousands of Dollars)

	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88
100 PERSONAL SERVICES		0	0	0	0	0
200 TRAVEL		0	0	0	0	0
300 CONTRACTUAL		0	0	0	0	0
400 COMMODITIES		0	0	0	0	0
500 EQUIPMENT		0	0	0	0	0
600 LAND & STRUCTURES		0	0	0	0	0
700 GRANTS,CLAIMS,ETC.		0	0	0	0	0
TOTAL		0	0	0	0	0

FUNDING (Thousands of Dollars)

GENERAL FUND		0	0	0	0	0
FEDERAL FUNDS		0	0	0	0	0
OTHER (Specify Source)		0	0	0	0	0

POSITIONS

FULL TIME		0	0	0	0	0
PART TIME		0	0	0	0	0
TEMPORARY		0	0	0	0	0

III. ANALYSIS (See Fiscal Note Preparation Instruction, Section III)

This proposal would result in a reduction of fish and game tag receipt revenues ranging from zero to $4,000. No other fiscal impact.

At Resources Committee meeting of 2/04/83, ADF&G indicated the impact would be zero.

IV. DATE February 4, 1983 PREPARED BY John Ringstad, Chairman
AGENCY
PHONE

Original: Legislative Finance
cc: Budget and Management
Prime Sponsor (First Legislator Named)

33-001 (Rev. 12/82)

STATE OF ALASKA

BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF PUBLIC SAFETY

DIVISION OF FISH & WILDLIFE PROTECTION

Robert J. Sundberg
Commissioner

P. O. BOX 6188, ANNEX
ANCHORAGE, ALASKA 99502

January 27, 1983

Representative John Ringstad
Chairman, House Resources Committee
State Capitol
Pouch V
Juneau, Alaska 99811

Dear Representative Ringstad:

I would like to present the following positions which the Division of Fish & Wildlife Protection, Department of Public Safety hold with regard to the subsequent House Bills under proposal:

H.B. 5 - Neutral

This bill may prove to be detrimental to some of the smaller fishermen.

H.B. 47 - Neutral (with amendment)

Proposed Amendement:

Require all nonresidents to be guided or in the company of 2nd degree kindred.

As written the bill will invite an increase in residency falsification on hunting licenses. These are not usually identified until after the season is over and consequently the people are already out of state.

Assigning nonresidents to guides will increase control of the nonresidents. We would propose that permits be issued to the guides in the areas where the Board determines a population of animals warrants allowing nonresidents to hunt.

Nonresident aliens are already required to use a guide and since that requirement became effective enforcement problems with nonresident aliens has declined sharply.

12-L12LH

Representative John Ringstad
Chairman, House Resources Committee

January 27, 1983

H.B. 63 - Neutral

No Comment.

H.B. 67 - (support with amendments)

Proposed Amendament:

> Require a subsistence license. The applicant for the license must sign an affidavit attesting to the fact that he meets the income requirements to obtain a subsistence license and falsification of the affidavit is perjury. A very strict penalty for perjury should be established for this offense and sentencing made mandatory.

"UNENFORCEABLE AS WRITTEN"

We cannot get records from IRS to verify income and we have no way of knowing or proving the number of family members in a household.

Sincerely,

Robert J. Sundberg
Commissioner