

2047

**SUSITNA  
HYDROELECTRIC PROJECT**

FEDERAL ENERGY REGULATORY COMMISSION  
PROJECT No. 7114

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**FISCAL YEAR 1986  
BUDGET BOOK**

**HARZA-EBASCO**  
SUSITNA JOINT VENTURE

JUNE 1984  
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**ALASKA POWER AUTHORITY**

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SUSITNA HYDROELECTRIC PROJECT

FISCAL YEAR 1986  
BUDGET BOOK

Prepared by  
Harza-Ebasco Susitna Joint Venture

Prepared for  
Alaska Power Authority

Final Report  
September 1984

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**HARZA-EBASCO SUSITNA JOINT VENTURE**  
**FISCAL YEAR 1986 LICENSING AND PERMITTING BUDGET**  
**EXECUTIVE SUMMARY**

The attached budget presents the estimated requirements for Harza-Ebasco to continue the licensing and permitting work necessary in FY86. The licensing and permitting budget is divided into two parts.

The first part is a Base Budget which presents the minimum requirements to support the licensing activity, the issue settlement process, and the permitting activity necessary to obtain long lead-time permits. The second part provides a Supplemental Budget allowance which would be necessary should the discovery process or the hearing process be extended beyond the current schedule. Additionally, the Supplemental Budget would provide for environmental mitigation demonstration projects.

The major effort which would be funded by the Base Budget is continuation of the environmental programs to provide analyses of data collected to date, preparation of testimony for environmental hearings and preparation of issue papers required in the settlement process. In addition, there will be some continuing data collection in the Aquatic Program, the Terrestrial Program, and the Social Science Program for use in both the settlement and hearings processes. The Need for Power studies will support the Power Authority's power sales agreement negotiations with the utilities and also the economic aspects of the hearings. The licensing support and permitting budget estimate will be utilized primarily in (1) the settlement of issues with state and local agencies, (2) to coordinate the licensing interfaces with FERC, and (3) to continue the permitting processes. Funding of the project management and project support office in Anchorage is included in the Base Budget.

The Supplemental Budget would be utilized only when and if authorized by the Power Authority. Included in the Supplemental Budget are allowances for

extension of the discovery process beyond that which is currently scheduled and for an extension of the time required to offer testimony in the Environmental and Need for Power hearings. The time currently scheduled for testimony as shown in the FERC Susitna Project Status Report is judged to be on the low side for a project of the magnitude and complexity of Sustina. Therefore, there is a high probability that the Supplemental Budget for this effort will be required in FY86.

The Supplemental Budget also includes an Environmental Program which would be used to demonstrate the feasibility of potential mitigation which would be implemented to replace salmon spawning habitat that would be lost when the dam is in operation. The transmission system cost and alignment may be subject to reanalysis as a result of FERC hearings and contacts with the utilities; the Supplemental Budget includes an allowance for such work.

# BASE BUDGET

TASK 1  
PROJECT MANAGEMENT  
FY86  
LICENSING AND PERMITTING BASE

Task 1 consists of level of effort activities associated with the highest level of project team managers. These managers direct the efforts required to complete the FERC licensing process for the Susitna Hydroelectric Project within the established budget and schedule consistent with established technical standards.

Management efforts are divided into categories including overall project management, licensing management, administration and control management, environmental program management, engineering operations management, and contract compliance. All of these project management activities will take place in the Anchorage office.

Services

01-010-01 Overall Project Management

To direct the accomplishment of the environmental, regulatory, and engineering tasks required to obtain the FERC license and the Federal, State, and local permits required for the Susitna Project, three senior level managers will be utilized, namely the Project Director, the Licensing Manager, and the Administration and Control Manager.

The Project Director is responsible for all services performed and will provide the principal contact between the Power Authority and the Contractor.

The Project Director will:

- o Direct all activities of the Joint Venture. This will be done primarily thru his 2 principal subordinates, the Licensing Manager and the Administration and Control Manager

- o Maintain close liaison with the Power Authority
- o Review and sign all communications with the Power Authority
- o Initiate Internal Review Board participation in project work as required to support the FERC license application
- o Generally guide and direct the development of detailed procedures to be used in the execution of project work

The Licensing Manager will be responsible for all of the Contractor's activities related to obtaining the necessary licenses and permits for the initiation of construction of the Susitna Project, including providing support for the FERC license application; obtaining Federal, State, and local permits; and directing any engineering operations necessary for such activities. The Licensing manager will also be the principal point of contact between the Power Authority's legal counsel and the Contractor.

The Licensing Manager will direct the activities of:

- o The Environmental Program Manager (Task 4)
- o The Engineering Operations Manager (Task 3)
- o The Need for Power Manager (Task 40)

In addition, the Licensing Manager will perform the duties of the Licensing Support and Permitting Manager for Task 6.

The Project Administration and Control Manager will be responsible for all of the Contractor's activities related to contract administration, cost and schedule control, accounting, and office management.

The Project Administration and Control Manager will manage Tasks 2 and 39. Principal responsibilities include:

- o Non-technical administration of subcontracts
- o Administration and accounting in the Anchorage offices
- o Project team budget, cost, and schedule control functions
- o Preparation of project status reports
- o Site logistics
- o Maintenance of the document control systems
- o Project procurement
- o Administration of the Anchorage office including management of all project support personnel

In addition, the Project Administration and Control Manager will perform the duties of the Contract Manager under Task 2.

#### 01-010-02 Environmental Program Management

The Environmental Program Manager will implement the work plan described in Task 4 and 42 and direct all environmental programs needed for project licensing.

The Environmental Program Manager will be the principal Contractor contact with Power Authority environmental staff on technical issues and will assist as needed with settlement of environmental issues.

The Environmental Program Manager will also manage:



- o Planning and executing all environmental programs necessary to supply data which supports the FERC licensing process
- o Resolving environmental issues that may impede project licensing and permitting
- o Preparing periodic progress reports on the status of all environmental program activities
- o Preparing all technical environmental documents developed by the Contractor and its subcontractors

#### 01-010-03 Project Engineering Management

The Engineering Operations Manager Report will function on a part time basis to oversee Tasks 3, 5, 7, and 41. Efforts will also consist of obtaining necessary engineering data, primarily from the home offices of specialty individuals, to respond to FERC requests.

The Engineering Operations Manager Report will also function within the above named tasks to perform specific engineering assignments required for FERC. The Engineering Operations Manager will be the principal contact with the Contractor's Internal Review Board.

#### 01-010-06 Home Office Liaison and Support

The home offices of the Joint Venture partners will supply short term technical and managerial support. Most of these support efforts have been included in the individual tasks in which they will be required. Coordination of activities through liaison between the Anchorage office and the home offices, however, will be a management responsibility and is

included in this task. Also included in this task is an allowance for the Project Director to utilize home office personnel to support special efforts.

Directs

01-020-01 Travel and Living Expenses

This budget item includes the cost of airfare and expenses for lodging, meals, etc. while traveling on project business and per diem expenses for temporary assignments.

09/17/84

Alaska Power Authority  
Harza-Ebasco Susitna Joint Venture  
Fiscal Year 1986: Preliminary Cost Estimates

LICENSING & PERMITTING BASE BUDGET

TASK 01			818000
TOTAL SERVICES			768000
01-010-01	MANAGEMENT & CO-ORD. OF TOTAL PROJECT	506000	
01-010-02	MNGMT & CO-ORD. OF ENVIRON & LICENSING	150000	
01-010-03	MANAGEMENT & CO-ORD. OF ENGINEERING	60000	
01-010-06	CONTRACT COMPLIANCE & OTHER HQ SUPPORT	52000	768000
TOTAL DIRECTS			50000
01-020-01	TRAVEL AND LIVING EXPENSES	50000	50000

TASK 2  
PROJECT SUPPORT SERVICES  
FY86  
LICENSING AND PERMITTING BASE

Project support services consist of activities that can be categorized into Administrative Services, Project Control, and Contract Administration. The Task 2 services budget is limited to personnel in these departments and support from home offices. In addition, direct costs which are general in nature and are used by all HE staff are included in Task 2. Support services from subcontractors are limited to drafting for Task 2 needs and an allowance is included as a support for special presentations. The primary duties are categorized into items including general administration and clerical support, accounting, contract administration, purchasing, cost and schedule control, document control, and quality control.

SERVICES

02-011-01 General Administration and Clerical Support

The Administrative Manager is responsible for office administration, document control and communications, quality control, purchasing, and word processing. The General Administration group includes the Office Supervisor, Document Control Supervisor, Word Processing Supervisor, Purchasing Agent, and clerical support staff.

02-011-02 Accounting

The Accounting staff will maintain accounting records and make payments. Their responsibilities include audits of subcontractors' and Contractor's invoices to verify contract compliance and adherence to accounting practices as they may affect project invoicing to the Power Authority. The scope of services is to:

- o Provide timely investment of project and Power Authority funds,
- o Process invoices from subcontractors, consultants, vendors and joint venture partners,
- o Maintain general ledger books of accounts,
- o Prepare Contractor's invoices,
- o Perform bank reconciliations,
- o Assist in reconciliation of billings to cost reports,
- o Perform periodic audits of subcontract invoices,
- o Establish and maintain capital asset inventory in accordance with Power Authority procedures, and
- o Provide project cost data as a part of the accounting statements.

#### 02-011-03 Contract Administration

The Contract Administration function will be located in Anchorage to administer subcontracts. Duties include pre-award and post-award controls. In both phases, staff members are assigned to handle contract administration services in support of the Technical Manager.

During pre-award, the Contract Administrator prepares and issues bid packages, receives and commercially evaluates bids, and provides input

for the letter of recommendation. The Contract Manager performs the technical overview and is responsible for schedule and cost compliance.

The Contract Administrator supports the Contract Manager post-award by responding to correspondence dealing with commercial matters, assessing of invoices and claims, as well as implementing contract closeout procedures and audits. The final approval of invoices and signatory authority rests with the Administration and Control Manager and the Project Director of the Harza-Ebasco Susitna Joint Venture respectively.

The scope of these services is to:

- o Prepare Contract terms and conditions in accordance with the needs of the particular contract, while adhering to the established HESJV procedures and the requirements of the Power Authority,
- o Place advertisements of upcoming subcontract proposals in newspapers,
- o Prepare, assemble, and issue bid packages,
- o Receive and commercially evaluate subcontract proposals,
- o Prepare recommendation letters,
- o Upon receiving comments from the Power Authority; conduct negotiations in the best interests of the Power Authority,
- o Prepare and issue contracts,
- o Prepare and issue change orders,

- o Administer on-going contracts,
- o Assess claims, and
- o Support ADF&G in leases and other services.

#### 02-011-04 Purchasing

The Purchasing Department procures supplies, materials, and equipment for Anchorage office operations and, when required, the camp.

The scope of services is to:

- o Establish and maintain purchase requisition and order logs,
- o Solicit bids, receive bids, and evaluate proposals,
- o Expedite items to meet delivery requirements, and
- o Prepare and maintain material received reports.

#### 02-011-05 Document Control

The Document Control Department provides the project with a computerized information management system. This Department also maintains the following:

- o The tracking of FERC requests for supplemental information for which responses are being prepared,
- o The tracking of past responses to FERC requests for supplemental information and agency comments to provide a basis for preparing timely responses to questions raised by intervenors,

- o The logging/tracking of project related documents and document distribution schedules,
- o The tracking of actions required by Harza-Ebasco in response to external requests or needs,
- o The tracking of actions required from external sources to provide timely information to Harza-Ebasco operations,
- o The tracking of commitments made by Harza-Ebasco in the responses to agency comments, and
- o The logging/tracking of all correspondence related to the project.

#### 02-012-01 Project Control Management

The Project Control Manager (PCM) directs the Cost/Schedule Engineers and reviews all work projects before publication. In addition, the PCM tracks all Project Change Requests, Changed Work Authorizations and the status of Management Reserve funds. Special projects and presentation materials are prepared by the PCM with assistance of the Cost/Schedule staff.

#### 02-012-02 Cost/Schedule Control

The Cost/Schedule Engineer's responsibilities are: to monitor actual cost and the consistency of the remaining project activities with the schedule of the remaining work, develop work schedules in conjunction with the task leaders, monitor progress against the budget and schedule, and analyze both cost and schedule variances.



## Directs

### 02-020-01 Temporary Services

This item covers expenses of temporary help for clerical services (secretaries, word processors, clerks, etc.). In addition, this item covers hiring of short term staff to handle peak loads, especially in word processing, or for intermediate absences of permanent staff (illness, vacation, etc.).

### 02-020-02 Phone/Communications

This item includes operating costs of the Anchorage office telephone system, the charges related to the Watana Camp telephones, charges which are project related from the Home Offices, and the costs of operating the telecopy and telex machines.

### 02-020-03 Office Rent

This item covers the costs for leasing office space at 711 H Street and amortized leasehold improvements.

### 02-020-04 Furniture Rental/Purchase

In order to meet immediate minimum requirements; desks, bookcases, tables, chairs, etc. are rented over short periods from local suppliers. Upon verification of availability of surplus inventory from the Power Authority, decisions to purchase additional furniture (and reduce rental furniture) are made.

### 02-020-05 Consumable Supplies

This item covers all office supplies, including reproduction center paper and supplies, word processing supplies, drafting supplies, computer supplies, and general office supplies.

02-020-06 Postage, Air Express, Freight

This item includes all postage, overnight express packages, parcel post, and other shipment costs for correspondence, documents, and other materials.

02-020-07 Reproduction

This item includes photocopying and printing for Task 2 at commercial print shops.

02-020-08 Vehicle Expense

This item includes the cost of leasing vehicles for Harza-Ebasco Susitna Joint Venture, plus gas, oil, servicing, and repairs.

02-020-09 Insurance

This item includes general liability insurance, errors and omissions insurance, vehicle insurance, and personal property insurance on behalf of Harza-Ebasco in accordance with contract terms with the Power Authority.

02-020-14 Reproduction Equipment Rental & Maintenance

This item includes one Xeros Model 9500, one Xerox Model 1075, one Xerox Model 3450, and another copier to be selected. The 9500 copier is utilized for major copying efforts. One copier is used exclusively for Document Control, and the other copier is used by the Environmental Group. These copiers are on rental agreements, which include maintenance.

#### 02-020-16 Office Equipment Procurement

This item covers office equipment, including telecopier, typewriters, desk calculators, etc.

#### 02-020-17 Personnel Relocation

This item covers the relocation of permanent personnel (longer than one year assignment) to the project. Costs include shipment of household effects and one vehicle, costs associated with disposal/rental of previous residence, etc.

#### 02-020-20 Travel & Living Expenses

This item covers the air fare and per diems of temporary staff assigned to Anchorage, per diems of permanent staff travelling on business outside of Anchorage, and per diems for home visits.

#### 02-020-22 Computer

Includes the cost for miscellaneous upgrades and replacements for the existing microcomputers.

#### 02-020-34 Special Presentations

This item includes an allowance for the cost of materials for presentations which are requested by the Power Authority. At this time, none are scheduled.

#### 02-020-36 Warehouse Lease & Improvements

This item covers the costs for the warehouse being leased to store the core samples from Watana and other Susitna related Power Authority

property. In addition, an estimate of \$20,000 is included to erect storage shelving, fencing and partitions as required in the warehouse.

02-020-41 Harris Computer - Data Line

This item covers the monthly charges for the data line from Anchorage to the Harris computer in Chicago.

02-020-42 Harris Computer - User Charges

This item covers the monthly charges for use of the Harris computer - principally for Document Control and the tracking of commitments to FERC.

02-020-43 Document Equipment & Supplies

This item covers the purchase of equipment and other supplies to support the Project's Document Control functions.

02-020-44 Microfilming Equipment & Supplies

Includes only the cost of supplies for the microfilming operations.

Subcontractors

02-103-02 Drafting - Frank Moolin and Associates

Drafting support services for budget and cost control presentations, forms, flow charts, etc.

02-103-03 Special Presentation Drafting - Frank Moolin and  
Associates

This item is an allowance for drafting services provided to the Power Authority for specific, special request items.

02-113-01 Subcontractor Handling Fee

A handling fee equal to 2 percent of the subcontractor costs.

09/17/84

Alaska Power Authority  
 Harza-Ebasco Susitna Joint Venture  
 Fiscal Year 1986: Preliminary Cost Estimates

LICENSING & PERMITTING BASE BUDGET

TASK 02			3649600
TOTAL SERVICES			2223000
02-011-01	GENERAL ADMINISTRATION AND CLERICAL SUPPORT	560000	
02-011-02	ACCOUNTING	290000	
02-011-03	CONTRACT ADMINISTRATION	310000	
02-011-04	PURCHASING	80000	
02-011-05	DOCUMENT CONTROL	230000	1470000
02-012-01 PROJECT CONTROL MANAGEMENT			181000
02-012-02	COST SCHEDULE CONTROL	572000	753000
TOTAL DIRECTS			1396000
02-020-01	TEMPORARY SERVICES	36000	
02-020-02	PHONE / COMMUNICATIONS	120000	
02-020-03	OFFICE RENT	303000	
02-020-04	FURNITURE RENT / PURCHASE	10000	
02-020-05	SUPPLIES	160000	
02-020-06	POSTAGE, AIREXPRESS, FREIGHT	74000	
02-020-07	PHOTOCOPY / PRINTS	86000	
02-020-08	VEHICLE EXPENSE	96000	
02-020-09	INSURANCE	110000	
02-020-14	REPRODUCTION EQUIPMENT RENTAL & MAINTENANCE	96000	
02-020-16	OFFICE EQUIPMENT PROCUREMENT & MAINTENANCE	15000	
02-020-17	PERSONNEL RELOCATION	48000	
02-020-20	TRAVEL AND LIVING EXPENSES	25000	
02-020-22	COMPUTER CHARGES	35000	
02-020-34	SPECIAL PRESENTATIONS MATERIALS	20000	
02-020-36	WAREHOUSE LEASE AND IMPROVEMENTS	48000	
02-020-41	HARRIS COMPUTER COMMUNICATIONS	48000	
02-020-42	HARRIS COMPUTER CHARGES	48000	
02-020-43	DOCUMENT CONTROL EQUIPMENT AND SUPPLIES	6000	
02-020-44	MICRO FILMING EQUIPMENT & SUPPLIES	12000	1396000
TOTAL SUBCONTRACTORS			30600
02-103-02	CIRI/FMAA - DRAFTING	12000	
02-103-03	CIRI/FMAA - SPECIAL PRESENTATION DRAFTING	18000	30000
02-113-01	SUBCONTRACTOR HANDLING FEE	600	600

TASK 3  
FY86  
ENGINEERING  
LICENSING AND PERMITTING BASE BUDGET

The work program for FY86 includes only activities necessary to support the Federal Energy Regulatory Commission (FERC) licensing process. In some cases, activities are a continuation from FY85.

Services

03-010-07 Support for Input to Testimony

Provide engineering input to counsel, the pre-hearing process, discovery requests and the direct filed testimony prepared for the Dam Safety Hearings.

03-010-09 Support for Need for Power, Dam Safety and  
Environmental Hearings

This activity provides the expected support requirement for the FERC process activities relating to the hearings which will be continued in FY86.

In support of the Dam Safety Hearing Process, Devil Canyon Dam feasibility design review will be continued.

03-010-20 Support for FERC Technical Requests

Engineering responses to technical questions and requests made by FERC will be provided to support the licensing process.

03-010-21 Project Cost Estimates for Hearings

Updates and revisions to the cost estimates will be made in support of the Licensing Administrative Hearing processes.

Directs

03-020-02 Travel and Living Expenses

Travel and living expenses to coordinate and oversee activities in the Chicago and Bellevue offices associated with the above work. The travel estimate consists of the following:

<u>Between</u>	<u>Estimated Number</u>	<u>Estimated Duration Each</u>
Anchorage and Washington DC	1	3
Anchorage and Chicago	2	5
Chicago and Anchorage	2	10
Chicago and Anchorage	2	6
Anchorage and Bellevue	2	20

Subcontractors

03-143-03 Acres American - Administrative Hearing

Attendance at hearing and presentation of testimony.

03-133-03 Subcontractor Handling Fee

A handling fee equal to 2 percent of subcontract costs.



09/17/84

Alaska Power Authority  
Harza-Ebasco Susitna Joint Venture  
Fiscal Year 1986: Preliminary Cost Estimates

LICENSING & PERMITTING BASE BUDGET

TASK 03			245200
TOTAL SERVICES			180000
03-010-07	SUPPORT FOR INPUT TO TESTIMONY	20000	
03-010-09	NEED FOR PWR, DAM SAFETY & ENVIRO HEARING	45000	
03-010-20	SUPPORT FOR FERC TECHNICAL REQUESTS	40000	
03-010-21	PROJECT COST ESTIMATES FOR HEARINGS	75000	180000
TOTAL DIRECTS			30000
03-020-02	TRAVEL & LIVING EXPENSES	30000	30000
TOTAL SUBCONTRACTORS			35200
03-133-03	SUBCONTRACTOR HANDLING FEE	200	200
03-143-02	ACRES-PREP DRCT TESTIMONY, SAFETY HEARING	25000	
03-143-03	ACRES-ADMINISTRATIVE HEARINGS	10000	35000

TASK 4  
ENVIRONMENTAL PROGRAM  
FY86  
LICENSING AND PERMITTING BASE

04-011-04 SSP-General Administration and Contract Management

This effort will consist of general administrative activities such as weekly staff meetings, progress report preparation, budget revisions and reforecasting, and the nontechnical aspects of contract management as well as contract preparation, preparation of amendments and CWA's, reviewing invoices and progress reports, and tracking expenditures relative to budgets. This activity will be conducted by Harza-Ebasco.

04-011-09 SSP-Settlement Process Input

The Social Science Program will provide ongoing input into the settlement process by reviewing agency concerns, consolidating them into concise issues, and participation in internal and agency meetings and preparation of issue papers aimed at resolving issues. This cost account covers only those settlement process efforts requiring less than a person-week each month for preparation. This activity will be conducted by Harza-Ebasco with support from Frank Orth & Associates and EDAW, Inc. as required.

04-110-10 SSP-General Licensing Support

Numerous miscellaneous activities will be required to fully meet the requirements of the Power Authority and FERC for completing the licensing process smoothly. These activities will be supportive of the other main activities of the Social Science Program.

#### 04-011-11 SSP-Workshops

An important aspect of the settlement process is the dissemination of information to familiarize agency personnel with Social Science Program study methodologies, analyses, and results for FY 1986 work. Harza-Ebasco will be responsible for organizing and conducting the workshop. Frank Orth & Associates and EDWA, Inc. will provide input as required.

#### 04-011-13 SSP-Hearing Preparation

Steps in the hearings process that will require participation by members of the Social Science Program include the discovery process, filing of direct testimony, filing of rebuttal testimony, possible filing of surrebuttal testimony and cross examination of witnesses. A major element of the environmental hearings process will focus on the impacts of the Susitna Hydroelectric Project on cultural resources, socioeconomic and recreational resources and the potential effectiveness of planned mitigation measures. The primary activities which will occur during FY86 include the selection of persons who will testify on behalf of the Power Authority, consultation with Power Authority Licensing Counsel, responses to discovery requests from FERC and intervenors, preparation of written direct testimony, preparation of rebuttal testimony and presentation of testimony under cross-examination. Specific deliverables to result from the activities of this task include: (1) designation of expert witnesses to testify on terrestrial resources on behalf of the Power Authority; (2) position papers by expert witnesses defining areas to be discussed and input required from other participants; (3) responses to discovery requests; (4) outlines of direct testimony from each expert witness; and (5) drafts of direct and rebuttal testimony. Representatives from Frank Orth and Associates and EDAW, Inc. will participate in this task at the request of Harza-Ebasco.

#### 04-011-14 SSP-Program Coordination

This cost account covers coordinating the activities of Social Science Program subcontractors and Harza-Ebasco Social Science Program subtask leaders. It also includes the efforts required to ensure cross-discipline coordination with the Aquatic and Terrestrial programs and with Harza-Ebasco hydrologic, engineering, and logistical personnel. Harza-Ebasco will be responsible for organizing and conducting all coordination meetings. Frank Orth & Associates and EDAW, Inc. will participate as necessary.

#### 04-011-19 SSP-Detailed Plan of Study Development and Updating

This effort includes the finalization and updating of the Social Science Program Detailed Plan of Study for FY 1986 and the development of the Detailed Plan of Study for FY 1987. Each document will provide the rationale and objectives for each work activity as well as a description of the study area, methodology, data management, and deliverables. Harza-Ebasco will be responsible for preparing and updating the Social Science Program Detailed Plans of Study. Frank Orth & Associates and EDAW, Inc. will provide input as required.

#### 04-011-22 CR-Report Review

In this task, Harza-Ebasco will provide technical review of all reports prepared by cultural resource contractors. Harza-Ebasco will provide all review comments in writing to the Power Authority.

#### 04-011-24 CR-Impact Assessment and Mitigation Planning

Harza-Ebasco will evaluate how and to what degree all identified cultural resource sites and/or districts within the Project area (which have been determined to be eligible for the National Register of Historic Places) will be affected by the Project. In the absense of formal determinations of National Register eligibility, assessments of impacts will be made for all

sites which are considered significant under the criteria established through significance studies. For all National Register eligible (or significant) sites or districts which will be impacted by the Project, recommendations will be made for means of avoiding or minimizing those impacts identified as adverse. A plan for mitigating the effects to cultural resources will be developed in consultation with the State Historic Preservation Officer and the National Park Service.

#### 04-011-40 SE-Refinement of Impacts on Communities

This task is a continuation of the studies conducted in FY85. The first step in this task was to review the methods used to collect information on the local impact communities. Based on this review, a detailed plan of study was developed for each of the principal components: the household survey, the business survey, the public sector survey, and the refinement of social effects. Household and business surveys have been conducted by personal interviews with a representative sample of households and business owners/managers in each community. The public sector survey was conducted by personal or telephone interviews with public officials. These surveys will be continued in FY86 and the information obtained will be used to refine the description of the existing environment and the analysis of social effects. Methods used in FY85 will be reviewed and revised as necessary to assure consistency in the data collection and to focus on why that information is useful. The information will lead to resolution of a number of issues regarding community boundaries, vacant housing, and the definition and identification of local businesses. Special attention will be given in the analysis of FY86 data to comparison with FY84 and FY85 results. For each community in the study, one report presenting the survey results will be prepared. Included in each report will be a section comparing the characteristics of the community in FY86 to FY85 results and to assumptions used in the ISER and the Susitna socioeconomic models. Harza-Ebasco will have overall responsibility for this task. Frank Orth and Associates will assist in the development of the plan of study and the

revision of the questionnaires, the analysis of the data, and the preparation of the draft and final reports.

#### 04-011-44 SE-Mitigation Plan Update

During FY85, activities were undertaken to improve the ability to delineate specific mitigation measures and to assess their likely effectiveness. The FY85 activities resulted in the development of a detailed work plan describing the flow of the data collection, analysis to be conducted and further formulating the mitigation plan. In FY86 the mitigation alternatives will be further refined through the acquisition of more specific information about the mechanisms, programs, and agencies available for providing the recommended mitigative actions. Specific attention will be paid to the trade-offs that are involved in project design and mitigation alternatives. Once a reasonably satisfactory plan for the socioeconomic component has been developed, the team will be in the position to participate in trade-off evaluations with representatives of the other components. The analysis will result in the preparation of a draft and final Mitigation Plan Update Report. Harza-Ebasco will have primary responsibility for this task and will take the lead for organizing the work and for preparing the reports. Frank Orth and Associates will participate in the analysis of the consequences of various mitigation measures;

#### 04-011-61 RE-Recreation Plan Refinement

Refinement of the Recreation Plan will involve coordinating the results of the Recreation Subtask with the results of the Socioeconomic, Aesthetic, and Land Use subtasks and the Terrestrial and Aquatic programs. Meetings will be held with agency representatives to discuss the results of impact refinement studies and how they may affect the Recreation Plan. Discussions with Native groups will also be held to determine the actual demand and/or need for linkages to Native landholdings and overall compatibility with regional recreation opportunities and goals. Harza-Ebasco will be responsible for directing and managing the work to be completed in this

task. EDAW, Inc. will conduct the necessary work to refine the Recreation Plan and will prepare the draft and final refinement reports.

04-011-73 AE-Aesthetics Mitigation Plan Refinement

A plan to mitigate the project's impact on aesthetics will be developed in draft form.

04-011-98 SE-Report Review

In this task, Harza-Ebasco will provide technical review of all reports and final computer output prepared by all socioeconomic subcontractors.

## TERRESTRIAL TASK DESCRIPTIONS

### 04-013-02 General Plan of Study/Workscope Preparation

The general plan of study for FY87 will describe the specific study objectives and work tasks, detailed study methodology, quality assurance procedures, schedules and deliverables for each study element. Workscopes for continuing and additional studies by subcontractors will be developed. The workscopes will reflect specific issues pertaining to the analyses of effects of the Susitna Project. This is a H-E task with input from subcontractors, primarily LGL.

### 04-013-08 Response to FERC Supplemental Information Requests

This effort involves the preparation of responses to FERC requests for supplemental information. Responses to previous requests as well as a limited amount of new requests is included. This is a H-E activity.

### 04-013-09 Terrestrial Workshops

An important aspect of the settlement process is the dissemination of information to familiarize agency personnel with project study methodologies, analyses, and results. This process will also facilitate feedback from the agencies which will assist the resolution of impact issues and mitigation plans. The primary means of providing for this information transfer will be through a series of workshops during 1985 and early 1986.

Appropriate members of the Terrestrial Study Team will coordinate and participate in these workshops and coordination meetings depending on the particular topics to be covered. Deliverables will consist of prepared workshop materials and presentations and workshop summaries.



#### 04-013-10 Mitigation Plan Refinement

This task represents the refinement of botanical and wildlife resource mitigation plans through the specific identification of objectives, implementation procedures including schedules and probable costs, and supporting technical rationale. Information on wildlife and wildlife habitat necessary for decisions concerning the selection of alternative instream flow regimes will be provided. In addition, mitigation planning for wildlife must be consistent with measures proposed in the fisheries, socioeconomics, and recreational areas and the construction and operating plans for the project. The FY86 Mitigation Plan Refinement Report will address such refinements as necessary.

#### 04-013-11 Impact/Mitigation Planning Tracking System

A "bookkeeping" system is being maintained and applied to the terrestrial biology program, so that the current status of impact assessment, mitigation planning, and resolution of each impact issue can be tracked and easily determined as the program progresses. This process was initiated during FY84 with the preparation of an Impact Assessment and Mitigation Planning Summary for Wildlife and Botanical Resources. This document is a matrix which summarizes impact assessment and mitigation planning as it evolved through the spring of 1984. The matrix is organized so that the development of impact assessment and mitigation planning can be followed horizontally across each page.

Revisions will be made to the Impact Assessment and Mitigation Planning Summary to document refinements accomplished during the FY86 program. Refinements contained in various FY86 project reports, including the impact assessment and mitigation planning refinement reports, will be shown in the successive revisions. In particular, it is expected that the "Proposed Mitigation Measures" column will show refinement during FY86.

#### 04-013-15 Settlement Process

During FY86, the settlement process will continue with the achievement of negotiated resolutions to specific issues raised by regulatory and resource agencies. H-E staff will provide technical support for the settlement process through preparation of technical documents for use by the Power Authority negotiations team and through preparation of appropriate documents detailing the agreements reached in the negotiation process.

#### 04-013-19 General License Support

Numerous miscellaneous activities will be required to fully meet the requirements of the Power Authority and FERC for completing the License Process smoothly. These activities will be supportive of the other main activities of the environmental program.

#### 04-013-20 ADF&G Big Game Studies

The Alaska Department of Fish and Game (ADF&G) may be conducting limited big game field studies including moose browse inventory studies and severe winter studies (should a severe winter occur), as well as conducting various office analyses. H-E will provide technical review, coordination with other activities and logistical and other support.

#### 04-013-30 Moose Browse Inventory

The objective of this task is to provide accurate and precise estimates of standing crop biomass of winter forage for moose in the middle Susitna Basin. Sampling efforts will be prioritized based on available vegetation maps, vegetation types known to contain important winter browse species, aerial extent of important vegetation types, cost-benefit ratio of sampling intensity to statistical accuracy, and logistic feasibility. A biometrician will work closely with the project leader and work crews to assure the statistical validity of the sampling effort.

Sampling efforts will be undertaken during July and August of the summers of 1984 (FY85) and 1985 (FY86). Preliminary vegetation maps of selected areas in the middle Basin will be used to stratify the samples during 1984. At randomly located sites within vegetation types stratified by elevation, slope and/or aspect, approximately twenty 1-m<sup>2</sup> quadrats will be clipped. Current annual woody growth of browse species important in winter moose diets will be clipped and bagged by species. Samples will be oven-dried and weighed to determine the weight of browse available per unit area by vegetation type.

Data collection, analysis, and report writing will be conducted by ADF&G with participation and substantial input from LGL. H-E will provide technical review, coordination with other activities, and logistical and other support.

#### 04-013-32 Impact Assessment Refinement

This task represents any refinement of botanical and wildlife resources impact assessments through incorporation of new information collected and new analyses conducted since FY85. Emphasis will be placed on areas of agency concern and specifically at resolving issues. The FY86 Impact Assessment Refinement Report will address such updates and refinements.

#### 04-013-34 General Administration and Contract Management

This task is designed to provide support to the Environmental Study Program in the form of general administrative activities such as weekly staff meetings, budget review, revisions and reforecasting, technical progress review of H-E staff and subcontractor activities. The task includes preparation of contract documents, necessary amendments to the contracts, and supporting documentation. Monthly progress reports will describe the status of each study program based on the previous month's activities. These reports will include any or all of the following as appropriate: activities completed, problems and solutions, personnel considerations,

program modifications, status of budget and schedule and upcoming activities. Also included in this task are the preparation of change work authorization requests, review of subcontractor invoices and progress reports, and monitoring of subcontractor budget expenditures.

#### 04-013-36 FERC Hearings Preparation

During FY86, preparation of written direct testimony on environmental concerns will be completed and filed with the Administrative Law Judge on behalf of the Power Authority. Following filing of the direct testimony, written rebuttal testimony will be prepared and filed which responds to the direct testimony of opposition witnesses. Power Authority witnesses will also prepare for cross examination which will be conducted in January, 1986.

#### 04-013-42 Candidate Mitiation Lands Assessment

The objective of this task is to provide specific recommendations to the Power Authority concerning tracts of land to be managed for wildlife habitat compensation, with technical documentation supporting the recommendations. The desired locations, acreages, and physical and botanical characteristics of these lands will be more clearly defined as a result of these recommendations. Previous studies included detailed examination of all available information and extended discussions with project wildlife and habitat specialists, and an aerial reconnaissance of candidate lands identified as a result of the office activities. If necessary, FY86 efforts will include an additional aerial surveys of candidate lands to support the selection process.

#### 04-013-43 Habitat Enhancement Studies

The objective of this task is to identify factors determining differential use by moose of areas cleared through burning, logging or other means in the Susitna Basin.

There are two categories of factors that must be considered: 1) Those which affect the vegetation response (qualitative as well as quantitative). These include site characteristics such as existing vegetation, soils, topography, etc.: 2) Those factors which affect the moose population's ability to take advantage of increased forage quantity or quality. These include geographic and climatic factors that affect availability of forage, non-nutritional factors that limit the rate of increase of the existing population, movement patterns of the existing population, and factors that might create secondary problems such as attracting moose to areas of high human/moose conflict.

Examination of disturbed sites should help to identify and assess the factors that influence their usefulness to moose. The initial review of sites will be made based on available information in FY85. This will be followed by preliminary field evaluations of moose use and vegetation characteristics. More detailed quantitative studies of selected sites may be conducted in FY86 as deemed necessary.

#### 04-013-44 Downstream Riparian Studies

The objectives of this task are to: (1) obtain a more complete and accurate understanding of vegetation dynamics and its relationship with flow and ice dynamics in the downstream floodplain, and (2) refine our assessment of downstream impacts. Objective 1 will be at least partially satisfied through the conduct of field sampling at the vegetation sites in the downstream floodplain sampled in 1981. This sampling at the same locations with 3 years in between will significantly enhance our understanding of vegetation dynamics. Additionally, field observations, examination of aerial photographs taken between 1981 and 1984, and data from ice observation and flow studies conducted during that period will provide information on the relationships between vegetation dynamics and ice and flow dynamics.

We can refine our assessment of downstream impacts through a limited office analysis based on the results of field studies, the Wildlife Habitat/-

Instream Flow Relationships Report, and flow and ice analyses. More extensive office analyses or additional field studies recommended by the Wildlife Habitat/Instream Flow Relationships Report or subsequent studies will be undertaken in FY86 when appropriate.

#### 04-013-45 Raptor Studies

Raptor studies related to the Susitna project will be essentially complete by FY86. The cost account allows for additional efforts relative to the specific design of the raptor mitigation plan, particularly for eagles.

#### 04-013-49 Social Sciences Mitigation Planning Input

There is a need for considerable input from the Terrestrial Program to the Social Sciences Mitigation plans as well as the Project Recreation Plan. This task allows for that input on both a technical and policy basis. It is primarily a H-E task but will receive input from subcontractors.

#### 04-013-50 Design Criteria Manuals

During FY86, engineering design will begin for the Susitna Project. Design criteria manuals will be developed which will include criteria to be used in the design of project facilities which will minimize adverse effects to the environmental resources. Specific manuals will be developed for design of the access road, transmission line, dam and powerhouse and the construction camp and permanent villages. Additionally design criteria will be developed for facilities necessary for implementing the mitigation plans.

#### 04-014-01 Administrative Assistant

To assist the Environmental Manager and the three sub-task leaders in handling administrative matters, an Administrative Assistant will be hired.

04-016-02 Participation in Workshops and Other Aspects of the Settlement  
Process

An important aspect of the settlement process is dissemination of information to familiarize resource agency personnel with project study methodologies, analyses and results directed toward resolution of primary impact issues. The primary method for providing this information will be a series of agency workshops in which specific topics will be discussed.

Appropriate members of the Aquatic Study Team will participate in preparation for or actually take part in specific workshops depending on particular topics to be covered.

The Power Authority will meet with resource agencies to attempt to reach settlement on various issues and negotiate a project flow regime. Aquatic Team members will provide various information, analyses, documents and other support as requested by the Power Authority.

Deliverables will consist of prepared materials and/or presentations as requested to support the settlement process.

04-016-03 General Coordination of Aquatic Program Activities

This task requires effort from all members of the Aquatic Study Team. H-E has an over-all coordinating function that includes monitoring all activities in the aquatic studies to insure that team members are able to accomplish their tasks and that sufficient progress is being made toward over-all study goals. Each team member is responsible for maintaining an appropriate level of communication and coordination with other team members who share common, integrated or related tasks.

Program coordination will be achieved by various means including:

1. Joint preparation of study plans.
2. Weekly team meetings.
3. Team-wide dissemination of information reports, correspondence and memos.
4. Frequent meetings and data and information exchange among team members with related tasks.

There are no other specific deliverables for this task. However, memoranda describing the results of or need for coordination will be prepared when appropriate to affect necessary changes in planned activities, schedules, etc.

#### 04-016-04 Instream Flow Relationship Studies

The Instream Flow Relationships Report will describe the relationships between mainstem flow and fish habitat.

It will be derived primarily from information contained in a series of technical reports. These reports are:

1. Fish Resources and Habitat of the Susitna Basin - this report will be a consolidation of the information on the aquatic resources of the Susitna Basin that is currently dispersed throughout numerous reports, memoranda and workshop minutes. It will be based on information and data that is available through June 1984. This report may be updated as additional information becomes available.



2. Watershed Processes Report - this report will describe the physical processes that occur within the Basin. It will be focused primarily on preproject to with-project changes in streamflow, channel stability and groundwater upwelling.
3. Water Quality/Limnology Report - this report will consolidate much of the existing information on water quality in the Basin and focus on preproject versus with-project changes. Some additional modelling and field studies (primarily concerning turbidity and suspended sediments) will be incorporated into this report to refine information from previous studies.
4. Reservoir and Instream Temperature - this report will present instream temperature forecasts for a range of operational and climatological conditions and a preliminary commentary of their effects on fish habitats and ice processes. During the first half of FY85 review comments will be addressed, the discussion of with-project instream temperature effects on fish will be enhanced and interpretive discussions of instream temperature effects on ice processes and ice effects on aquatic habitat will be added to the review draft. An initial report will be available by the end of FY84. An updated version will be made in FY85 that will incorporate additional modelling refinements based on 1984 temperature data.
5. Aquatic Habitat Report - this report will describe the response of aquatic habitat surface areas to mainstem discharges. The river reach to be analyzed first in FY85 will be from Talkeetna to Devil Canyon. Efforts on the lower river are continuing and will be described in the Lower River Study Plan.

Compositing follows compilation of site-specific habitat relationships and proceeds to completion of flow relationships hydrographs (FRH) which incorporate relevant information on

instream flow habitat relationships and species distribution, abundance and timing. Compositing is a highly analytic step requiring familiarity with detailed Susitna field and refined data, assessment design and quantification techniques. A general compositing process has been established, however, the detailed rationale and analytic techniques must be developed as part of this task.

#### 04-016-05 Economic and Environmental Comparisons Process

Several alternative weekly flow regimes will be defined and compared. The flow regime will range from the optimum environmental (aquatic habitat) to the optimum economic regimes and will include natural flows and flows presented in the License Application. Other alternative regimes will be selected based on the needs of navigation, recreation, riparian habitats and water quality.

A project optimization procedure will be used to evaluate alternative flow regimes. This is a computer based, iterative process that will be used to narrow alternatives to a small set of regimes that best provide for the needs of both energy and power generation and the various downstream uses of the river. Emphasis during the Project optimization process will be placed on comparisons of Project economics and fish habitat. At several steps in the procedure the effects of the flow regimes on physical parameters such as water temperature, water quality and ice processes as well as impacts of these physical changes on other instream relationships and uses will be evaluated. These in-process evaluations are necessary to establish boundaries for the next iterations.

Minimum and maximum environmental flows will be established and input to the weekly reservoir operations model to produce a time series of expected flows and energies (based on a 33 year record of historic flows) for four energy demand levels. This will be required to examine the influence of increasing energy demand levels that will occur during the life of the

project. Composited habitat relationships will be used to forecast relative fish habitat for the 33 years of record. The resulting time series will be presented as habitat duration curves.

The resultant flow regimes will be analyzed to determine effects (both positive and negative) on each instream flow use. Mitigation opportunities and associated costs will be examined for those instream flow uses that are adversely affected. The affect of each flow regime on project benefits and costs will be determined for comparison with the corresponding environmental effects.

#### 04-016-06 Recommended Flow Regime Report

Provide support and consultation to the Power Authority to develop and document a recommended flow regime from the regimes presented in the

#### Economic and Environmental Comparisons Report.

Summary of the impacts associated with this regime will also be presented.

The report developed under this task will be used as the primary document for the flow negotiation process. It will be presented in draft form to the various utilities and resource agencies. Depending on the outcome of this review, the report will either be: 1) finalized, if no significant comments are received, or 2) a second draft will be prepared (based on comments received) in anticipation of actual instream flow negotiations.

A working report that will be developed in draft form. The final form will depend on results of the review process.

#### 04-016-07 Aquatic Resources Impact Assessment

The Susitna aquatic investigations program includes the following steps: field data collection and analysis, development of habitat relationships,

development of composite flow relationships hydrographs and flow optimization. After the tradeoffs between habitat/fish populations and power generation have been examined in the comparisons process, a recommended operating regime will be developed and negotiated. It is expected that this regime will have some flow-related effects on fishery resources which must be quantified and described in order to plan specific measures to mitigate these effects. This task will quantify the impacts of the negotiated operating regime. Impact analyses of alternative flow regimes will be presented in the Economic and Environmental Comparisons Report and the Recommended Flow Regimes Report. This impact assessment will be more detailed and comprehensive.

A report detailing expected impacts of a negotiated flow regime on aquatic habitat. The schedule will depend on the progress of negotiations.

#### 04-016-08 Flow Negotiations

The Power Authority will enter negotiations with various resource agencies to finalize a Project flow schedule. Participation and assistance will be needed from various aquatic study team members (and members from other disciplines) during these negotiations in order that technical assistance be provided to the Power Authority. The coordinator for assuring that this assistance is provided will be H-E. All members of the Aquatic Study Team may be needed to assist the Power Authority in preparing for the actual negotiations.

The overall deliverable is a negotiated flow schedule for Project construction and operation. This will be a memorandum of understanding between the Power Authority and the various resource agencies. More immediate deliverables will include memoranda, analyses and other documents as requested by the Power Authority.

#### 04-016-09 Preparation of Materials for FERC Hearings

Steps in the hearing process that will require participation by members of the Aquatic Study Team include the discovery process, filing of direct testimony, filing of rebuttal testimony, possible filing of surrebuttal testimony and cross examination of witnesses.

The primary activities which will occur during FY85 include the selection of persons who will testify on behalf of the Power Authority, consultation with Power Authority Licensing Counsel, responses to discovery requests from FERC and intervenors and preparation of written direct testimony.

Specific deliverables to result from the activities of this task include:

1. Position papers by expert witnesses defining areas to be discussed and input required from other participants.
2. Responses to discovery requests.
3. Drafts of direct testimony from each expert witness.
4. Presentation of rebuttal and testimony under cross-examination.

In addition, the designated expert witnesses will participate in activities leading to deliverables of other aquatic study tasks.

The schedule for accomplishing this task will be coupled with the schedule set by FERC for the environmental hearing process.

#### 04-016-10 Mitigation and Enhancement Planning

A mitigation report is being developed that will identify mitigation opportunities associated with anticipated Project conditions. The report will further develop the mitigation plan identified in the FERC license

application and explore additional mitigation alternatives compatible with Project mitigation policy.

A draft report will be produced by the end of the first quarter of FY86. The report will identify potential areas and methods for habitat modification based on existing information through FY 1984 and FY85 field efforts.

It is anticipated that Project conditions may improve habitat downstream from Devil Canyon. If habitat improves, there may be an opportunity to enhance salmon runs into the Devil Canyon to Talkeetna reach. The anticipated habitat conditions under Project operation, based on existing information, will be evaluated for their potential to support enhancement. Specific locations and methods will be identified where possible. An enhancement evaluation will be included as a section of the mitigation report.

#### 04-016-13 Adult Salmon Spawning Surveys

Routine escapement surveys of streams, sloughs, side channels and the main channel Susitna River will be performed in 1984 to meet the study objective. The surveys will be performed on the ground except for selected tributaries and the main channel which will be surveyed by helicopter. Surveys will be performed by the following schedule:

Sloughs	Weekly, August 15 - October 7, 1985
Tributaries	Weekly, July 21 - October 7, 1985
Mainstem and Side Channel	Weekly, September 1 - October 7, 1985

Slough, side channel, tributary and mainstem habitats associated with the lower Susitna River will be surveyed weekly from the air, from August 15 to October 7. Areas where adult fish are observed will be ground truthed to determine if the area is an actual spawning location and the extent of its use.

ADF&G SuHydro will conduct the study. HE will review the report and provide comments and recommendation at various stages of the study.

04-016-14 Resident and Juvenile Anadromous Fish Studies

To assess the effects of these changes in flow regime on the habitat of resident and juvenile anadromous fish it is necessary to determine distribution of the species over different seasons and to develop the predictive capability to estimate changes in available rearing habitat as a function of mainstem discharge to assess the effects of changes in flow regime on the habitats of resident and juvenile anadromous fish. This study will address only the open water season because ice compounds a quantitative assessment of the rearing habitat.

Studies conducted by ADF&G SuHydro (1981-1984) have provided insight into distribution of the species and responses of habitat in the backwater zones near slough and tributary mouths to mainstem stage changes. The distribution information has provided some insight into the year round distribution of coho and chinook salmon but has provided limited information on pink, chum, and sockeye salmon juveniles.

This information and the continuation of these studies will provide the long term baseline data needed to monitor effects of the operation of the Susitna Hydro Project.

Distributional data over the seasons will be used to estimate the relative seasonal importance of rearing habitat for the different species. This information will be supplemented by the outmigrant trap studies.

ADF&G SuHydro will conduct the study. HE will review the report and provide comments and recommendation at various stages of the study.

#### 04-016-15 Main Channel Salmon Escapement Monitoring

Escapements in the lower reach have been monitored from 1981 through 1983 into the Yentna River at RM 28 and in the Susitna River main channel at RM 80. The results document annual escapement numbers, timing distribution and migrational behavior of sockeye, pink, chum and coho salmon at these locations. Similar information on the chinook salmon escapements to RM 80 are available for 1982 and 1983.

This task will quantify the numbers of sockeye, pink, chum and coho salmon that reach RM 20, enter the Yentna River (RM 28), reach RM 80 and reach RM 120 of the Susitna River. This task will also determine their migrational timing and behavior. The same basic data will be collected for chinook salmon escapement in the Susitna River main channel at RM 80.

This information will be obtained by implementing a tagging operation at RM 20, using sonar counters and fishwheels in the Yentna River and operating tagging sites at RM 80 and RM 120.

ADF&G SuHydro will conduct the study. HE will review the report and provide comments and recommendation at various stages of the study.

#### 04-016-16 Outmigration Studies

Studies by ADF&G SuHydro of outmigrants from the middle river were begun in 1982 and were expanded in 1983. This data set has provided valuable information as to the success of the previous summers' spawning runs, the effects of discharge on redistribution of rearing juveniles and has provided population and survival estimates (when coupled with adult escapement data). Extrapolation of this data set over a longer period of time and at several key sites will provide a comparative index of the production of individual sloughs.

A mark and recapture study of outmigrant juveniles will be conducted to repeat a 1983 study. The juveniles are marked with coded wire tags (CWT) at



selected sites and recaptured at a downstream smolt trap at Talkeetna Station. Emphasis will be placed on increased tagging of chum salmon juveniles.

Other data collected during operation of the outmigrant traps will include catch per unit effort and data on daily river stage, turbidity, temperature and other habitat parameters.

The relative production of sockeye and chum salmon in four side sloughs will be estimated by weir counts and recovery of marked fish. Sites near the mouths of sloughs 8A, 9, 11 & 21 will be weired with small mesh seines for three consecutive days. Fish collected on each day will be marked with a unique dye mark and released. Recaptures on all days will be recorded. This information will be analyzed to estimate emergence and outmigration rates from the sites. These results will be compared with habitat information and results of the egg incubation studies at each site. These comparisons should help determine the applicability of the results of Vibert incubation box studies to explaining overall production limits in sloughs.

Several outmigrant traps will be established near the mouth of Portage Creek during the summer of 1984. Chinook and coho collected at these sites will be fin clipped and released approximately four miles upstream. Recaptured outmigrants will be measured for length and the mark recorded. These unique data will be used to estimate outmigration rates.

The timing and rearing of juvenile salmon species has not been established in the lower river. The importance to assess the potential habitat effects of Project flow regulation of habitats associated with the mainstem lower Susitna need to be established.

Monitoring of outmigrant timing and condition will be conducted at a site below the confluence of the Susitna and Yentna Rivers. This outmigrant trap will provide an estimate of the timing, size and relative numbers of juvenile salmon that are leaving the fresh water system. Chinook movement

into the mainstem environments will be estimated at temporary outmigrant intermittently on the Deshka River. The movement of chum, slough sockeye and chinook into the lower river will be evaluated by use of the data obtained from the Talkeetna station trap and intermittent sampling of the Talkeetna River.

The study will be conducted by ADF&G SuHydro. HE will review reports and provide comments at various stages of the study.

#### 04-016-19 Hydro-Meteorological Physical Data Collection

Physical data collection by R&M will encompass measurement, reduction, and reporting of physical field parameters. Efficient reservoir and powerplant operation will require knowledge of seasonal snowpack, rainfall, temperature, and winds and their relationships to runoff timing and volumes. Forecasts of energy availability will depend on water supply forecasts based on past years' correlations, making collection of simultaneous streamflow and meteorologic data very important.

Recording instrumentation is already in place for measurement of climatic and snow parameters and discharge at the Watana gaging site so no new installations are foreseen for this year. The physical data collection will be of three primary types:

- o Climatic data
- o Snow surveys
- o River discharge at the Watana damsite

Climatic Data: Operation and maintenance of six Susitna Basin recording weather stations (Glacier, Denali, Kosina, Watana, Devil Canyon and Sherman) will continue through the year. The seventh existing station at Eklutna Lake, will be decommissioned in May 1984 and kept as a spare unit which should greatly enhance system reliability.

Snow Surveys: The cooperative snow surveys with SCS will continue January through June 1985. They will include aerial and on-the-ground surveys conducted primarily in the upper basin to provide seasonal snowpack data for water supply studies and to support the special glacier studies.

Watana Discharge: The streamgage at Watana will be maintained through the open-water season and through 1985 freeze-up. Monthly discharge measurements will be made by boat during July through September to verify the stage-discharge rating curve. One winter discharge measurement will be made through the ice.

Climatic Data: Data will be summarized on a water year basis (October - September).

Snow Surveys: Data will be published monthly (February - June) by SCS in Snow Surveys and Water Supply Outlook for Alaska.

Watana Discharge: Report on July average discharge data for the water year through September 1985.

#### 04-016-31 Development of Long-Term Monitoring Plan

Preproject studies have been designed to predict potential impacts due to Project construction and operation and to describe means with which to avoid or minimize these impacts. To assure the mitigation plans incorporated into the license are achieving their intended goals, a long-term monitoring program must be developed and initiated.

Efforts under this task will concentrate on developing a detailed planning document that can be presented to the various resource agencies. This document will describe the potential impacts to be monitored, the methods and parameters to be monitored, the limits of concern, potential measures

to rectify the impact and an alternative schedule for completion of certain elements of the monitoring program if no impacts are detected.

The Power Authority, with the assistance of Harza-Ebasco, organizations in the aquatic study team and individuals from other disciplines, will develop a working document that will be presented to the various resource agencies for review and comment. If needed, a meeting will be held to resolve any areas of disagreement. The document will then be finalized and submitted for incorporation into the license.

Harza-Ebasco will coordinate the planning efforts for the Power Authority.

04-016-37 Preliminary Mitigation Studies for the Devil Canyon to Talkeetna Reach

The objectives are:

1. To identify potential sites for habitat modification in the Devil Canyon to Talkeetna Reach.
2. To evaluate the feasibility of various habitat enhancement techniques.

The task will consist of field surveys and studies to identify potential mainstem, side channel, and slough areas for habitat modification.

Habitat characteristics demonstrated to be important components of presently utilized habitats such as depth, temperature, substrate and presence of upwelling will be used to develop evaluation criteria.

After candidate locations are identified, an analysis will be performed to evaluate the conditions likely to exist under Project operation and identify methods to promote use of these areas by spawning or rearing salmon. Side

and upland slough sites exist within the Devil Canyon to Talkeetna reach that exhibit some characteristics expected under Project operation. These slough sites will be used as models of Project conditions and examined to evaluate modifications that would promote their use as habitat. Efforts in FY85 will be restricted to physical and/or biological monitoring of habitat conditions. Project conditions to be evaluated include wetted areas with improper substrate, areas of suitable substrate with insufficient flow and suitable spawning habitat that is inaccessible because of low mainstem water levels.

Candidate areas in the mainstem and side channels will be surveyed in fall as flows drop to levels that approximate anticipated Project flows. A physical assessment of habitat will be performed to evaluate their potential suitability as habitat under Project conditions. Key parameters include temperature, substrate, depth, velocity and presence or absence of upwelling.

The results of the FY85 field investigations and habitat analysis will be presented in the ADF&G SuHydro 1984 field season report series. This analysis will be used by WCC to evaluate the feasibility of the proposed habitat modifications as effective mitigations and will be included in the Second Interim Mitigation Report.

#### 04-016-39 Mitigation Planning for Construction Activities

Activities anticipated to produce aquatic impacts include construction of the access roads, transmission lines, floodplain gravel pits, camps, permanent village and other project facilities. The mitigation planning effort will identify appropriate mitigation, such as siting, scheduling and designs, that will avoid or minimize impacts for the construction activities and facilities. The mitigation plan will be included in the construction impact assessment report.

A detailed construction mitigation plan will be developed. The plan will be organized by activity or facility.

04-016-40 Impoundment Resident Fish Mitigation Planning

Available information on resident fishes in the impoundment area will be summarized to update the assessment in the FERC license application. Mitigation options will be refined to further assess their applicability as compensatory measures. The options considered will be submitted for agency review and policy decision. Emphasis will be placed on those options that appear to have the highest probability of success.

A report will be prepared describing the impoundment area resident fish populations, the anticipated loss of habitats and expected consequences to fish populations, and the options considered as compensation. A preferred project mitigation alternative will be presented.

04-016-41 Baseline Water Quantity and Quality Monitoring at Tsusena and Deadman Creeks

A water monitoring plan will be developed to produce the information necessary to document water quality and quantity parameters in sufficient detail to assist in facilities designs and to acquire appropriate permits. The plan will be based on a thorough review of permit and design information requirements and produce data sufficient to:

1. determine whether the proposed Tsusena Creek water source is adequate to produce sufficient potable water supply (with treatment).
2. produce design criteria for a potable water supply treatment facility using Tsusena Creek water.

3. provide estimates of the quantity and quality of waste effluents discharged from the potable water treatment facility.
4. estimate the waste assimilative capacity of Deadman Creek and the with-project effects on water quality.
5. produce design criteria for a wastewater treatment facility discharging effluent to Deadman Creek.

A report summarizing necessary monitoring programs for Tsusena and Deadman Creeks which will outline:

1. monitoring schedules.
2. sampling locations.
3. type of samples collected.
4. quantity of samples collected.
5. cost estimates of monitoring program.

04-016-42    Evaluation of an alternative Method to Monitor Main Channel  
Salmon Escapements

The current method (tag/recapture) of enumerating adult salmon in the Susitna River, while effective, is very labor intensive and costly. A more cost effective method for enumerating upstream migrant adult salmon is desired for anticipated needs in a long-term monitoring program. This task will test the Biosonics Model 101 hydroacoustic unit.

In FY84 ADF&G used a Biosonics unit on the Yukon River and, although the report is not yet available, the biologist in charge indicated the unit performed well. ADF&G is proposing to use Biosonics equipment in five

Alaskan river systems in FY85. Included are the Stikine, Kenai and Yukon rivers, all glacial systems. Features that are most promising for application in the Susitna River are a long counting range (250 meters) and no requirement for a counting substrate.

The unit will be installed at the Parks Highway Bridge. Two fishwheels will be operated nearby to apportion the counts. The final adult salmon population estimates from the Biosonics unit will be compared to the population estimates generated by the tag-recapture method.

The final product will be a written final report summarizing the capabilities, limitations and overall effectiveness of the Biosonics unit. Included will be recommendations for future applications in the Susitna River.

#### 04-016-56 General License Support

Numerous miscellaneous activities will be required to fully meet the requirements of the Power Authority and FERC for completing the Licensing Process smoothly. These activities will be supportive of the other main activities of the Aquatic Program.

#### 04-016-57 Issue Papers/Settlement Process

The settlement of agency issues is a prime goal of the FY86 studies. To facilitate the settlement process H-E will prepare several technical documents to support the negotiation and settlement process. The documents will include a brief statement of the status of each issue. Internal planning memoranda for resolving each issue, and a series of technical papers which summarize the available information pertaining to each issue.



#### 04-016-58 Monthly Progress Reports

The monthly progress reports will describe the status of each study program based on the previous month's activities. These reports will include many or all of the following: activities completed, problems and solutions, personnel considerations, program modifications, status of budget and schedule, and upcoming activities.

#### 04-016-60 General Administration and Contract Management

This task is designed to provide support to the Aquatic Program in the form of general administrative activities such as weekly staff meetings, budget review, revisions and unforecasting, technical progress review of HE staff and subcontractor activities. The task includes preparation of contract documents, necessary amendments to the contracts and supporting documentation. Also included in this task are the preparation of change work authorization requests review of subcontractor invoices and progress reports and monitoring of subcontractor budget expenditures. This task will be conducted by HE aquatic program staff.

#### 04-016-61 General Plan of Study/Workscope Preparation

The General Plan of Study for fiscal year 1986 will describe the specific study objectives and work tasks, detailed study methodology including sampling and analysis procedures, data management and report formats, quality assurance procedures, data management and report formats, quality assurance program, and detailed schedules and deliverables for each study element.

Workscopes for continuing and additional studies for the subcontractors will be developed. The workscopes will reflect specific issues pertaining to the analysis of effects of the Susitna Project. The workscopes will be developed in consultation with appropriate resource agencies as part of the general licensing process.

## Directs

### 04-020-01 Travel & Living Expense

Air travel and the associated expenses for staff who will be required to support the task activities.

### 04-020-01 Printing

This item will include production of copies of all Environmental study documents from Harza-Ebasco or the subcontractors. These documents will be for distribution to intervenors, lawyers, agencies, the client, and subcontractors as required.

### 04-020-06 Miscellaneous

This item will include any miscellaneous direct expenses required to support the environmental program which is not budgeted elsewhere.

### 04-020-07 Relocation

Cost to relocate personnel to Anchorage for performance of this task.

## Subcontractors

The following subcontractor activities will be performed. Use the Reference No. to locate the task description for each item.

<u>Cost Account</u>	<u>Title</u>	<u>Reference</u> <u>Number</u>
<u>Frank Orth &amp; Associates</u>		
04-113-03	Supplemental DEIS Review	04-011-08
04-113-04	Workscope and Detailed Plan of Study	04-011-19
04-113-07	Socioeconomic Mitigation Plan Update	04-011-44
04-113-10	SE Projection Revisions	
04-113-20	Hearing Preparation	04-011-13
04-113-31	Model Refinement	
<u>EDAW</u>		
04-123-02	EDAW-Supplemental DEIS Review	04-011-08
04-123-05	RE-Workscope and Detailed Plan of Study	04-011-19
04-123-06	RE-Settlement Process Input	04-011-09
04-123-08	RE-Hearing Preparation	04-011-13
01-123-21	RE-Recreation Plan Refinement	04-011-61
04-123-50	AE-Workscope and Detailed Plan of Study	04-011-19
04-123-51	AE-Settlement Process Input	04-011-09
04-123-53	AE-Hearing Preparation	04-011-13
04-123-59	AE-Aesthetic Mitigation Plan	04-011-73
<u>A. Dekin</u>		
04-133-01	CR-Program Approach	04-011-23
<u>ERTEC</u>		
04-183-01	CR-Program Approach	04-011-23

<u>Cost Account</u>	<u>Title</u>	<u>Reference Number</u>
<u>Cultural Resources Subcontractor</u>		
04-153-01	CR-Field Work	04-011-23
04-153-02	CR-Report Preparation	04-011-22
<u>Milo Bell</u>		
04-253-01	Milo Bell Consultation	04-016-09
<u>R&amp;M</u>		
04-263-01	Agency Workshops	04-016-02
04-263-03	Aquatic Program Coordination	04-016-03
04-263-09	Hearings Preparation	04-016-09
04-263-19	Hydrology Meterology Data Collection	04-016-19
04-263-41	Water Quality (Tsusena/Deadman)	04-016-41
04-263-56	General License Consultation	04-016-56
04-263-60	Contract Management/Administration	04-016-60
<u>AEIDC</u>		
04-273-02	Workshops	04-016-02
04-273-03	Aquatic Program Coordination	04-016-03
04-273-04	Instream Flow Relationships	04-016-04
04-273-05	Env. & Eco. Comparisons	04-016-05
04-273-07	Aquatic Impact Assessment	04-016-07
04-273-56	General License Consultation	04-016-56
04-273-60	Contract Management/Administration	04-016-60

<u>Cost Account</u>	<u>Title</u>	<u>Reference Number</u>
<u>EWT&amp;A</u>		
04-283-02	Workshops	04-016-02
04-283-03	Aquatic Program Coordination	04-016-03
04-283-04	Instream Flow Relationships	04-016-04
04-283-08	Flow Negotiations	04-016-08
04-283-12	Middle River Habitat Analysis	04-016-12
04-283-56	General License Consultation	04-016-56
04-283-60	Contract Management/Administration	04-016-60
<u>Woodward Clyde</u>		
04-293-02	Aquatic Workshop	04-016-02
04-293-03	Aquatic Program Coordination	04-016-03
04-293-04	Instream Flow Relationships	04-016-04
04-293-10	Mitigation/Enhancement Plan	04-016-10
04-293-37	Mitigatin Demonstration	04-016-37
04-293-56	General Licensing Consultation	04-016-56
04-293-60	Contract Managment/Administration	04-016-60
<u>LGL</u>		
04-303-09	Terrestrial Workshop	04-013-09
04-303-10	Mitigation Plan Refinement	04-013-10
04-303-11	Impact/Mitigation Tracking System	04-013-11
04-303-30	Moose Browse Inventory	04-013-30
04-303-32	Impact Assessment Refinement	04-013-32
04-303-36	FERC Hearings Preparation	04-013-36
04-303-42	Candidate Mitigation Lands Cases	04-013-42
04-303-44	Downstream Riparian Studies	04-013-44

<u>Cost Account</u>	<u>Title</u>	<u>Reference Number</u>
<u>LGL (continued)</u>		
04-303-45	Raptor Studies	04-013-45
04-303-46	Swan/Eagle Nest T-Line Survey	04-013-46
04-303-50	Design Criteria Manuals	04-013-50
<u>U of A Palmer</u>		
04-313.07	Terrestrial Workshops	04-013-09
04-313-36	FERC Hearings Preparation	04-013-36
<u>U of A Alaska Cooperative Wildlife Research Unit</u>		
04-323-09	Terrestrial Workshops	04-013-09
04-323-10	Mitigation Plan Refinement	04-013-10
04-323-36	FERC Hearings Preparation	04-013-36
04-323-50	Design Criteria Manuals	04-013-50
<u>R.A. Krieg &amp; Assoc.</u>		
04-333-09	Terrestrial Workshops	04-013-09
04-333-10	Mitigation Plan Refinement	04-013-10
04-333-36	FERC Hearings Preparation	04-013-36
04-333-50	Design Criteria Manuals	04-013-50
<u>U of A Dr. Kessel</u>		
04-343-09	Terrestrial Workshops	04-013-09
04-343-10	Mitigatin Plan Refinement	04-013-10
04-343-36	FERC Hearing Preparation	04-013-36

09/17/84

Alaska Power Authority  
 Harza-Ebasco Susitna Joint Venture  
 Fiscal Year 1986: Preliminary Cost Estimates

LICENSING & PERMITTING BASE BUDGET

TASK 04

4420606

## TOTAL SERVICES

2117000

04-011-04	SSP-GENERAL ADMINISTRATION & CONTRACT MANAGEMENT	19200	
04-011-09	SSP-SETTLEMENT PROCESS INPUT	66000	
04-011-10	SSP-GENERAL LICENSING SUPPORT	9000	
04-011-11	SSP-WORKSHOPS	5400	
04-011-13	SSP-HEARING PREPARATION	196000	
04-011-14	SSP-PROGRAM COORDINATION	66000	
04-011-19	SSP-DTLD PLAN OF STUDY DEVELOPMENT AND UPDATING	14400	
04-011-22	CR-REPORT REVIEW	10800	
04-011-23	CR-PROGRAM APPROACH	20800	
04-011-24	CR-IMPACT ASSESSMENT AND MITIGATION PLANNING	79000	
04-011-40	SE-REFINEMENT OF IMPACTS ON COMMUNITIES	95000	
04-011-44	SE-MITIGATION PLAN UPDATE	25000	
04-011-61	RE-RECREATION PLAN REFINEMENT	30000	
04-011-73	AE-AESTHETICS MITIGATION PLAN REFINEMENT	39600	
04-011-98	SE-REPORT REVIEW	23600	699800
04-013-02	GENERAL PLAN OF STUDY / WORKSCOPE	20000	
04-013-08	RESPONSES TO FERC SUPPL INFO REQUESTS	6000	
04-013-09	TERRESTRIAL WORKSHOPS	12000	
04-013-10	MITIGATION PLAN REFINEMENT	28000	
04-013-11	IMPACT / MITIGATION PLANNING TRACKING SYSTEM	8000	
04-013-15	SETTLEMENT PROCESS INPUT	43000	
04-013-19	GENERAL LICENSE SUPPORT	8000	
04-013-20	ADF&G BIG GAME STUDIES	7000	
04-013-30	MOOSE BROWSE INVENTORY	9000	
04-013-32	IMPACT ASSESSMENT REFINEMENT	10000	
04-013-34	GENERAL ADMINISTRATION AND CONTRACT MANAGEMENT	60000	
04-013-36	FERC HEARINGS PREPARATION	135000	
04-013-42	CANDIDATE MITIGATION LANDS ASSESSMENT	5000	
04-013-43	HABITAT ENHANCEMENT STUDIES	6000	
04-013-44	FURBEARER AND TRAPPER STUDIES	5000	
04-013-45	RAPTOR STUDIES	3000	
04-013-49	INPUT TO SOC SCI MITIG PLANNING	7000	372000
04-014-01	ADMINISTRATIVE ASSISTANCE	120000	120000
04-016-02	AGENCY WORKSHOPS / SETTLEMENT PROCESS	24000	
04-016-03	GENERAL AQUATIC PROGRAM COORDINATION	28800	
04-016-04	AEI-INSTREAM FLOW RELATIONSHIPS	14400	
04-016-05	ENVIRONMENTAL AND ECONOMIC COMPARISONS	30000	
04-016-06	RECOMMENDED FLOW REPORT	14400	

09/17/84

Alaska Power Authority  
 Harza-Ebasco Susitna Joint Venture  
 Fiscal Year 1986: Preliminary Cost Estimates

LICENSING & PERMITTING BASE BUDGET

04-016-07	AQUATIC IMPACT ASSESSMENT	28800	
04-016-08	FLOW NEGOTIATIONS	66000	
04-016-09	FERC HEARINGS PREPARATION	332000	
04-016-10	MITIGATION / ENHANCEMENT PLANNING	132000	
04-016-13	SALMON SPAWNING SURVEYS	5400	
04-016-14	LOWER RIVER RESIDENT AND JUVENILE STUDY	5400	
04-016-15	SALMON ESCAPEMENT	5400	
04-016-16	OUTMIGRANT STUDIES	5400	
04-016-19	HYDROLOGY / METEROLOGY DATA COLLECTION	10800	
04-016-31	LONGTERM MONITORING	21600	
04-016-37	MITIGATION DEMONSTRATION	50800	
04-016-39	CONSTRUCTION IMPACT MITIGATION	5400	
04-016-40	IMPOUNDMENT MITIGATION	10800	
04-016-41	WATER QUALITY - TSUSENA / DEADMAN CREEKS	10800	
04-016-42	ALTERNATIVE ESCAPEMENT	4200	
04-016-56	GENERAL LICENSE SUPPORT	4200	
04-016-57	ISSUE PAPERS / SETTLEMENT PROCESS	66000	
04-016-58	MONTHLY PROGRESS REPORTS	7200	
04-016-60	GENERAL ADMINISTRATION AND CONTRACT MANAGEMENT	14400	
04-016-61	PLAN OF STUDY / WORKSCOPE PREPARATION	27000	925200
TOTAL DIRECTS			350000
04-020-01	TRAVEL AND LIVING EXPENSES	150000	
04-020-04	PRINTING	80000	
04-020-06	MISCELLANEOUS	20000	
04-020-07	RELOCATION	100000	350000
TOTAL SUBCONTRACTORS			1953606
04-113-04	WORKSCOPE AND DETAILED PLAN OF STUDY	5000	
04-113-07	SOCIOECONOMIC MITIGATION PLAN UPDATE	10000	
04-113-20	FOA - HEARING PREPARATION	10000	
04-113-31	MODEL REFINEMENT	20000	45000
04-123-05	RE-WORKSCOPE AND DETAILED PLAN OF STUDY	3000	
04-123-08	RE-HEARINGS PREPARATION	10000	
04-123-21	RE-RECREATION PLAN REFINEMENT	10000	
04-123-50	AE-WORKSCOPE AND DETAILED PLAN OF STUDY	3000	
04-123-53	AE-HEARINGS PREPARATION	10000	
04-123-59	AE-AESTHETIC MITIGATION PLAN	8000	44000
04-133-01	DEKIN-CULTURAL RESOURCES PROGRAM APPROACH	20000	20000



09/17/84

Alaska Power Authority  
 Harza-Ebasco Susitna Joint Venture  
 Fiscal Year 1986: Preliminary Cost Estimates

LICENSING & PERMITTING BASE BUDGET

04-153-01	CR-FIELD WORK	120000	
04-153-02	CR-REPORT PREPARATION	60000	180000
04-183-01	ERTEC-CULTURAL RESOURCES PROGRAM APPROACH	58000	58000
04-253-01	M.BELL - CONSULTATION	20000	20000
04-263-02	RM-AGENCY WORKSHOP	5000	
04-263-03	RM-GENERAL AQUATIC PROGRAM COORDINATION	30000	
04-263-19	RM-HYDROLOGICAL / METEOROLOGICAL DATA	210800	
04-263-41	RM-WATER QUALITY (TSUSENA / DEADMAN)	30000	
04-263-56	RM-GENERAL LICENSING CONSULTATION	25000	
04-263-60	RM-CONTRACT MANAGEMENT / ADMINISTRATION	10000	310800
04-273-02	AEI-AGENCY WORKSHOPS / SETTLEMENT	10000	
04-273-03	AEI-GENERAL AQUATIC PROGRAMS COORDINATION	30000	
04-273-04	AEI-INSTREAM FLOW RELATIONSHIPS	10000	
04-273-05	AEI-ENVIRONMENTAL AND ECONOMIC COMPARISONS	125000	
04-273-07	AEI-AQUATIC IMPACT ASSESSMENT	70000	
04-273-56	AEI-GENERAL LICENSING CONSULTATION	20000	
04-273-60	AEI-CONTRACT MANAGEMENT / ADMINISTRATION	10000	275000
04-283-02	WT-AGENCY WORKSHOPS	10000	
04-283-03	WT-GENERAL AQUATIC PROGRAM COORDINATION	15000	
04-283-04	WT-INSTREAM FLOW RELATIONSHIPS	150000	
04-283-08	WT-FLOW NEGOTIATIONS	15000	
04-283-12	WT-MIDDLE RIVER HABITAT ANALYSIS	25000	
04-283-56	WT-GENERAL LICENSING SUPPORT	10000	
04-283-60	WT-CONTRACT MANAGEMENT / ADMINISTRATION	10000	235000
04-291-37	CONSTRUCTION CONTRACTOR FOR MITIGATION DEMO.	100000	100000
04-293-02	WC-WORKSHOPS	8000	
04-293-03	WC-AQUATIC PROGRESS COORDINATION	12000	
04-293-04	WC-INSTREAM FLOW RELATIONSHIPS	100000	
04-293-08	WC-FLOW NEGOTIATIONS	15000	
04-293-10	WC-MITIGATION / ENHANCEMENT PLANNING	150000	
04-293-37	WC-MITIGATION DEMONSTRATION	65000	
04-293-56	WC-GENERAL LICENSING SUPPORT	10000	
04-293-60	WC-CONTRACT MANAGEMENT / ADMINISTRATION	10000	370000

09/17/84

Alaska Power Authority  
 Harza-Ebasco Susitna Joint Venture  
 Fiscal Year 1986: Preliminary Cost Estimates

LICENSING & PERMITTING BASE BUDGET

04-303-09	TERRESTRIAL WORKSHOPS	10000	
04-303-10	MITIGATION PLAN REFINEMENT	50000	
04-303-11	IMPACT / MITIGATION TRACKING SYSTEM	8000	
04-303-15	SETTLEMENT PROCESS	8000	
04-303-30	MOOSE BROWSE INVENTORY	30000	
04-303-32	IMPACT ASSESSMENT REFINEMENT	25000	
04-303-36	FERC HEARING PREPARATION	40000	
04-303-42	CANDIDATE MITIGATION LANDS ASSESSMENT	10000	
04-303-43	HABITAT ENHANCEMENT STUDIES	10000	
04-303-44	DOWNSTREAM RIPARIAN STUDIES	3000	
04-303-45	RAPTOR STUDIES	6000	
04-303-46	SWAN/EAGLE T-LINE NEST SURVEYS	1500	201500
04-313-09	TERRESTRIAL WORKSHOPS	1000	
04-313-36	FERC HEARING PREPARATION	5000	6000
04-323-09	TERRESTRIAL WORKSHOPS	1000	
04-323-10	MITIGATION PLAN REFINEMENT	6000	
04-323-36	FERC HEARING PREPARATION	8000	15000
04-333-09	TERRESTRIAL WORKSHOPS	1000	
04-333-10	MITIGATION PLAN REFINEMENT	9000	
04-333-36	FERC HEARINGS PREPARATION	5000	
04-333-50	DESIGN CRITERIA MANUALS	10000	25000
04-343-09	TERRESTRIAL WORKSHOPS	1000	
04-343-10	MITIGATION PLAN REFINEMENT	4000	
04-343-36	FERC HEARING PREPARATION	5000	10000
04-400-01	SUBCONTRACTOR HANDLING FEE	38306	38306

TASK 5

FY86

GEOTECHNICAL EXPLORATION  
LICENSING AND PERMITTING BASE BUDGET

There are no plans for any funding in FY86 for a Geotechnical Field Exploration Program.

Services

05-010-11 Watana Observation Device Monitoring

Prepare observation device data graphs.

05-010-12 Observation Device Reading

Read and test groundwater and temperature at the Watana site.

05-010-13 Compilation of Geotechnical Field Data

Implementation of field and laboratory methods to obtain basic data including ongoing the monitoring of the subsurface site conditions. Geologic data on groundwater and temperature summaries which were furnished to the FERC staff will be updated and any questions raised by FERC will be answered.

05-010-20 Geotechnical Support for Dam Safety Hearings

Geotechnical input to the dam safety hearings will be provided.

Directs

None estimated.

12302/5

840907

09/17/84

Alaska Power Authority  
Harza-Ebasco Susitna Joint Venture  
Fiscal Year 1986: Preliminary Cost Estimates

LICENSING & PERMITTING BASE BUDGET

TASK 05			130500
TOTAL SERVICES			130500
05-010-11	WATANA OBSERVATION DEVICE READING	38500	
05-010-12	OBSERVATION DEVICE READING	20000	
05-010-13	COMPILATION OF GEOTECHNICAL FIELD DATA	20000	
05-010-20	GEOTECHNICAL SUPPORT FOR DAM HEARING	52000	130500

TASK 6  
FERC LICENSING, SETTLEMENT, & PERMITTING  
FY86  
LICENSING AND PERMITTING BASE

The prime responsibilities of this task are to coordinate support activities for the FERC licensing process, the settlement process, and the various permits required for the project. Task 6 will maintain a coordinating, a supporting, and a monitoring role. The level of effort activities and the deliverables are described below.

Services

06-010-04 Supplemental Information Request Tracking

Task 6 personnel will provide technical support for a computerized tracking system for FERC and other agency requests for supplemental information. The tracking system will also include information items to be sent to FERC which were referenced in previous responses to information requests.

06-010-05 Permit Support

Close coordination with the permitting subcontractor and with Contractor technical personnel will be maintained to ensure timely acquisition of permits and other authorizations necessary for project activities.

06-010-07 Settlement Support

The Contractor will coordinate its personnel and other support as required for the issue settlement process. Included will be

contributions to agency coordination guidelines, identification and preparation of issues lists, issue analyses, preparation of draft letters to agencies, coordination during preparation of study plans for resolving issues, coordination of issues tracking reports, dissemination of reports and other technical material to agencies, and coordination of responses to agency comments.

06-010-09 Environment/Dam Safety Hearings Support

These hearings will address matters of engineering and safety of project structures and operation, and any environmental matters still in dispute. Coordination of Contractor effort and assistance to expert witnesses and Power Authority Counsel will be provided during all phases of these hearings, including the pre-hearing conference, discovery and supplemental discovery periods, preparation of direct testimony, and preparation of expert witnesses for cross-examination.

Directs

06-020-01 Printing

Printing costs for materials to support settlement.

06-020-02 Travel and Living

Travel to Anchorage and living expenses for home office support, and Anchorage personnel travel and expenses for License/Permit Tracking and Settlement meetings are estimated to be as shown.

06-020-04 Relocation

Costs for relocation of home office personnel.

06-020-05 Miscellaneous

Miscellaneous direct costs.

06-020-06 Workshop Directs

Direct costs for six settlement process workshops.

Subcontracts

06-135-01 Field Permit Application Preparation, Processing and Monitoring

CIRI/Moolin and Association (CIRI/FMAA) will assist the Contractor in identifying data needed for field program permit applications, reviewing work plans needed for these permit applications, processing and submitting the applications to the appropriate agencies, monitoring field work to insure compliance with permit stipulations, and preparing input for the permit tracking system.

06-135-02 Long Lead Time Permit Applications

CIRI/FMAA will prepare applications for long lead time permits as appropriate.

06-134-01 Subcontractor Handling Fee

A handling fee equal to two percent of the contractor cost.

09/17/84

Alaska Power Authority  
Harza-Ebasco Susitna Joint Venture  
Fiscal Year 1986: Preliminary Cost Estimates

## LICENSING &amp; PERMITTING BASE BUDGET

TASK 06			1010844
TOTAL SERVICES			742624
06-010-04	LICENSE / PERMITS TRACKING	58696	
06-010-05	PERMIT SUPPORT	191751	
06-010-07	SETTLEMENT SUPPORT	382421	
06-010-09	ENVIRONMENTAL / SAFETY HEARINGS SUPPORT	109756	742624
TOTAL DIRECTS			104000
06-020-01	PRINTING	18000	
06-020-02	TRAVEL & LIVING EXPENSES	20000	
06-020-04	RELOCATION	50000	
06-020-05	MISCELLANEOUS	10000	
06-020-06	WORKSHOP DIRECTS	6000	104000
TOTAL SUBCONTRACTORS			164220
06-135-01	CIRI/FMAA-FLD FRMT APPL PREP, PROCESS AND MONITOR	80500	
06-135-02	CIRI/FMAA-LONG LEAD TIME PERMIT APPLICATIONS	80500	161000
06-134-01	SUBCONTRACTOR HANDLING FEE	3220	3220



FY86 TASK 39  
LOGISTICS  
FY 86  
LICENSING AND PERMITTING BASE

Task 39 involves logistical support for the Susitna project. The support contributions include all aviation and lodging in support of field activities.

For FY86 base budgeting, it is assumed that the field camp will be closed on October 1st for the winter, and that Talkeetna will be utilized as an operations base until camp reopening April 1st.

Services

39-010-01 Logistical Services

Coordination of Logistics

Direct Costs

39-020-02 Jet Fuel Purchased out of Camp

Jet fuel purchased away from the camp refers to refueling of helicopters at places other than the Watana Camp fuel dump. The limited fuel capacity of the helicopters requires them to take on fuel in Talkeetna, Cantwell, and other locations when their missions have taken them out of range of Watana Camp or when operating from Talkeetna with the camp closed.

39-020-04 Out of Camp Lodging

Talkeetna lodging includes the costs associated with room and board in motels in Talkeetna when Watana Camp is closed.

39-020-10 Extraordinary Aircraft Support

Extraordinary air support is the chartering of aircraft other than those currently subcontracted when an unusual or infrequently used type of aircraft is required.

Subcontracts

39-143-02 - 39-143-27 Helicopter Air Logistics

Furnish rotary wing support for field activities.

39-153-02 - 39-153-27 Alaska Air Guides - Fixed Wing

Provide fixed wing support for commuting to site and aerial observation.

39-193-01 Subcontractor Handling Fee

A handling fee equal to 2 percent of subcontractor costs.

39-203-02 - 39-203-26 CIRI/Moolin Camp Operation

CIRI-Moolin is responsible for housekeeping, food service, and maintenance support.

39-203-37 CIRI/Moolin Special Projects - Generator Synchronization Gear

With a slightly more than minimal load on our largest generator (275K) the camp starts to brown out. With the addition of the heat tape requirement for the all weather water line, and the electric motors for the Air Quality Baseline Program it will be necessary to switch in and synchronite combination of 2 generators for a total of 550 or 380 kilowatts as required. The equipment for this must be purchased and connected. No winter operation will be feasible without this.

39-203-38 to 39-203-40 CIRI/Moolin Management

CIRI/Moolin personnel in Watana Camp and Anchorage who manage and coordinate the logistics efforts.

39-203-41 Camp Close & Reopen

Labor and materials to close the Watana Camp in the winter and reopen it in the summer.

39-203-42 Camp Fuel Airlift

Purchase and transport of fuel to storage bladders at Watana camp.

09/17/84

Alaska Power Authority  
 Harza-Ebasco Susitna Joint Venture  
 Fiscal Year 1986: Preliminary Cost Estimates

LICENSING & PERMITTING BASE BUDGET

TASK 39		1802160
TOTAL SERVICES		135000
39-010-01 HARZA/EBASCO LOGISTICAL SERVICES	135000	135000
TOTAL DIRECTS		78000
39-020-02 JET FUEL PURCHASED OUT OF CAMP	46000	
39-020-04 OUT OF CAMP LODGING	22000	
39-020-10 EXTRAORDINARY AIRCRAFT SUPPORT	10000	78000
TOTAL SUBCONTRACTORS		1589160
39-143-00 HELICOPTER AIR LOGISTICS	708000	708000
39-153-00 ALASKA AIR GUIDES	28000	28000
39-193-01 SUBCONTRACTOR HANDLING FEE	31160	31160
39-203-00 CIRI/FMAA CAMP OPERATION	208000	
39-203-37 GENERATOR SYNCHRONIZATION GEAR	30000	
39-203-38 CIRI/MOOLIN - PROJECT MANAGEMENT	141000	
39-203-39 FIELD EMERGENCY TECHNICIAN	130000	
39-203-40 FIELD CAMP OPERATIONS MANAGEMENT	161000	
39-203-41 CAMP CLOSE & REOPEN	52000	
39-203-42 CAMP FUEL AIRLIFT	100000	822000

TASK 40  
NEED FOR POWER STUDIES  
FY86  
LICENSING AND PERMITTING BASE

This task is concerned with project operation, resource utilization, and, to a lesser degree, financing. The services effort for FY86 involves a continuation of the discovery activities begun in the previous fiscal year, and participation in the administrative hearings on dam safety and environment.

Services

40-010-01 Economic Update

This deliverable is related to the settlement process, utility power sales agreements and the FERC licensing process. The work will consist of reviewing economic assumptions and making adjustments as required by current and future economic trends. A summary status report of current and forecast economic conditions will be completed as part of this task.

40-010-05 Prehearing Studies and Preparation of Testimony

This deliverable is related to the Environmental Hearing Process. The effort consists of finalizing direct testimony and preparing rebuttal testimony. The testimony is anticipated to cover economics, fuel price forecasts, project operation, capacity and energy production, generation expansion and financial requirements.

40-010-06 Discovery Activities, Environmental Hearings

This deliverable is related to the Environmental Hearing Process and concerns Need for Power subjects. The work will consist of collecting,

compiling and disseminating information; expanding discussion of testimony of others; and indexing and filing.

The estimate is preliminary because the extent of the activity cannot be anticipated.

#### 40-010-29 Project Operation and Dispatch

This deliverable is related to the power sales negotiations and settlement process. Reservoir operation studies and operatin planning studies will be required to support flow negotiations with resource agencies and to support power sales negotiations with railbelt utilities.

#### 40-010-33 Utility Expansion Planning

This deleverable is related to the power sales negotiations with railbelt utilities. It will be necessary to assist each of the railbelt utilities to determine the optimum utility expansion plan for each utility before final power sales agreements can be completed.

#### 40-010-34 Presentation of Testimony - Environmental Hearings

This task consists of participation by Need for Power personnel in the Environmental Hearings including presentation of testimony, cross-examination, and conferences with counsel.

#### 40-010-35 Preparation of Initial, Reply & Exception Briefs - Environmental Hearings

This effort is part of the Environmental Hearing Process. The effort consists of assisting counsel in preparing briefs, the review of opponents briefs, and the preparation of recommendations to the Authority and counsel.

The estimate is preliminary because the extent of the activity cannot be anticipated.

Direct Costs

40-020-01 Travel and Living Expenses

Air travel and the associated subsistence expenses for staff who will be required to support the task activities.

40-020-03 Computer

Models runs for economic and project operation studies.

40-020-04 Printing

Printing costs for any pre-hearing studies.

40-020-05 Communication

Communication, reproduction, postage, etc.

40-020-09 Generation Planning Computer Model Operation

The cost to run the generation planning model.

Subcontractor Costs

40-103-05 Acres, Prehearing Studies and Preparation of Testimony

Prepare direct testimony for Environmental Administrative Hearings.

40-103-06 Acres, Discovery Activities Environmental Hearings

Contribute to preparation of responses to requests for information during the Discovery Period.

40-103-34 Acres, Presentation of Testimony, Environmental Hearings

Attendance at Hearing and presentation of testimony.

40-113-05 Battelle, Prehearing Studies and Preparation of Testimony

Prepare direct testimony for Environmental Administrative Hearings.

40-113-06 Battelle, Discovery Activities, Environmental Hearings

Contribute to preparation of responses to requests for information during the Discovery Period.

40-113-34 Battelle, Presentation of Testimony - Hearings

Attendance at Hearing and presentation of testimony.

40-123-05 S.H. Clark, Prehearing Studies and Preparation of  
Testimony

Prepare direct testimony for Environmental Administrative Hearings.

40-123-06 S.H. Clark, Discovery Activities Environmental Hearings

Contribute to preparation of responses to requests for information during the Discovery Period.

40-123-34 S.H. Clark, Presentation of Testimony-Environmental  
Hearings

Attendance at Hearing and presentation of testimony.



40-133-05 ISER, Prehearing Studies and Preparation of Testimony

Prepare direct testimony for Environmental Administrative Hearings.

40-133-06 ISER, Discovery Activities - Environmental Hearings

Contribute to preparation of responses to requests for information during the Discovery Period

40-133-34 ISER, Presentation of Testimony - Environmental Hearings

Attendance at Hearing and presentation of testimony.

40-153-05 Dames & Moore, Prehearing Studies and Preparation of Testimony

Prepare direct testimony for Environmental Administrative Hearing.

40-153-06 Dames & Moore, Discovery Activities - Environmental

Contribute to preparation of responses to requests for information during the Discovery Period.

40-153-34 Dames & Moore, Presentation of Testimony - Environmental Hearings

Attendance at Hearing and presentation of testimony.

40-173-05 P. Weir, Prehearing Studies & Preparation of Testimony

Prepare direct testimony for Environmental Administrative Hearing.

40-173-06 P. Weir, Discovery Activities - Environmental Hearings

Contribute to preparation of responses to requests for information during the Discovery Period.

40-173-34 P. Weir, Presentation of Testimony - Environmental Hearings

Attendance at Hearing and presentation of testimony.

40-233-01 Subcontractor Handling Fee

A handling fee equal to two percent of subcontractor cost.

09/17/84

Alaska Power Authority  
 Harza-Ebasco Susitna Joint Venture  
 Fiscal Year 1986: Preliminary Cost Estimates

LICENSING & PERMITTING BASE BUDGET

TASK 40

520400

## TOTAL SERVICES

240000

40-010-01	ECONOMIC UPDATE	20000	
40-010-05	PRE-HEARING STUDIES AND PREPARATION OF TESTIMONY	50000	
40-010-06	DISCOVERY ACTIVITIES-ENVIRONMENTAL HEARINGS	30000	
40-010-29	PROJECT OPERATION AND DISPATCH	50000	
40-010-33	UTILITY EXPANSION PLANNING	40000	
40-010-34	PREPARATION OF TESTIMONY-ENVIRONMENTAL HEARINGS	30000	
40-010-35	PREP. OF INITIAL REPLY & EXCEPTION BRIEFS-ENVIRO	20000	240000

## TOTAL DIRECTS

107000

40-020-01	TRAVEL AND LIVING EXPENSES	40000	
40-020-03	COMPUTER CHARGES	30000	
40-020-04	PRINTING	2000	
40-020-05	COMMUNICATIONS, ETC.	5000	
40-020-09	GE - OGP COMPUTER MODEL	30000	107000

## TOTAL SUBCONTRACTORS

173400

40-103-05	ACRES-PREHEARING STUDIES AND PREP. OF TESTIMONY	10000	
40-103-06	ACRES-DISCOVERY ACTIVITIES-ENVIRONMENTAL HEARING	10000	
40-103-34	ACRES-PREP. OF TESTIMONY-ENVIRONMENTAL HEARINGS	10000	30000
40-113-05	BATTELLE-PREHEARING STUDIES & PREP. OF TESTIMONY	10000	
40-113-06	BATTELLE-DISCOVERY ACTIVITIES-ENVIRO HEARINGS	5000	
40-113-34	BATTELLE-PREP OF TESTIMONY ENVIRONMENTAL HEARING	10000	25000
40-123-05	SH CLARK-PREHEARING STUDIES & PREP. OF TESTIMONY	10000	
40-123-06	SH CLARK-DISCOVERY ACTIVITIES-ENVIRO HEARINGS	10000	
40-123-34	SH CLARK-PREP OF TESTIMONY ENVIRONMENTAL HEARING	20000	40000
40-133-05	ISER-PREHEARING STUDIES & PREP. OF TESTIMONY	10000	
40-133-06	ISER-DISCOVERY ACTIVITIES-ENVIRONMENTAL HEARINGS	5000	
40-133-34	ISER-PREP OF TESTIMONY ENVIRONMENTAL HEARINGS	10000	25000
40-153-05	DAMES&MOORE-PREHEAR STUDIES & PREP OF TESTIMONY	10000	
40-153-06	DAMES&MOORE-DISCOVERY ACTIVITIES-ENVIRO HEARINGS	5000	
40-153-34	DAMES&MOORE-PREP OF TESTIMONY ENVIRO HEARINGS	10000	25000

09/17/84

Alaska Power Authority  
Harza-Ebasco Susitna Joint Venture  
Fiscal Year 1986: Preliminary Cost Estimates

LICENSING & PERMITTING BASE BUDGET

40-173-05	P.WEIR-PREHEARING STUDIES AND PREP OF TESTIMONY	10000	
40-173-06	P.WEIR-DISCOVERY ACTIVITIES-ENVIRO HEARINGS	5000	
40-173-34	P.WEIR-PREP OF TESTIMONY ENVIRONMENTAL HEARINGS	10000	25000
40-233-01	SUBCONTRACTOR HANDLING FEE	3400	3400

TASK 41  
SUSITNA TRANSMISSION SYSTEM  
FY86  
LICENSING AND PERMITTING BASE

Purpose

The purpose of this task is to support activities required for licensing, permitting, land use rights and access as related to the Project Transmission Line.

41-010-01 Transmission Line Hearing Support

This subtask includes a level of effort for environmental hearings support in matters relating to the transmission line.

Directs

41-020-01 Travel and Living Expense

Direct costs cover air fare and travel expenses related to accomplishing this task.

Subcontracts

41-100-01 Consultant

In support of the environment hearings some subcontracts will be assigned to consultants for expert testimony.

41-300-01 Subcontractor Handling Fee

A handling fee equal to two percent of the subcontract cost.

12302/41

840907

TASK 42  
HYDROLOGIC AND HYDRAULIC STUDIES  
FY86  
LICENSING AND PERMITTING BASE

Task 42 will include the hydrologic and hydraulic analyses required to support assessments of project impacts on the aquatic ecosystem. Assessments of project impacts on the aquatic ecosystem will be required for the negotiated settlement of the licensing process and for support to the FERC Hearing Process.

Services

42-010-01 Supervision & Coordination

Task 42 coordinators will work with personnel of the Aquatic Terrestrial and Socioeconomic Study Teams to ensure that hydrologic and hydraulic studies provide the necessary testimony support for the FERC hearing process and the settlement process. They also will provide technical review for work by Aquatic Study subcontractors and for hydrologic and hydraulic studies by Task 42 personnel. The coordination function also ensures that hydrologic and hydraulic studies will be accomplished in a timely and efficient manner. This item includes budget for the above management and coordination functions. In addition it provides budget for the general level-of-effort for this task including: participation in coordination meetings of the aquatic studies team, participation in meetings and workshops with concerned state and federal agencies, preparation of investigation memoranda and work scopes, preparation of budgets, compilation of progress and status reports, computer support and word processing services in the home

offices for reports and memoranda prepared for all subtasks of Task 42. This sub task will be completed by January 31, 1986. During FY86 the following studies will be emphasized:

1. reservoir temperature study,
2. instream ice study,
3. slough geohydrology study, and
4. sediment deposition study.

#### 42-010-02 Reservoir Operation and Instream Hydraulic Study

To support the FERC hearing process testimony will be prepared on the following studies which were carried out in FY84 and FY85.

1. Reservoir operation study
2. Stream water surface profiles (steady state)
3. Water level fluctuations due to load following operation.

It is anticipated that these studies will not require a large effort during FY86. It is not expected that much testimony or license support will be required of these studies. These studies will be completed by January 31, 1986.

#### 42-010-04 Reservoir Temperature/Ice/Turbidity Study

Testimony will be prepared and given in support of the reservoir temperature modeling made in FY84 and FY85. A limited number of additional reservoir temperature simulations will be undertaken in

support of the Hearing Process to examine alternative flow regimes for impacts.

42-010-09 Instream Ice Studies

Testimony will be prepared and given in support of the instream ice modeling made in FY84 and FY86. A limited number of additional river ice simulations will be undertaken in support of the Hearing Process to examine alternative flow regimes for impacts.

42-010-12 Slough Geohydrology Study

The purpose of this study in FY85 will be to support testimony at the FERC Hearings. It is not anticipated that new slough geohydrology data will be collected or analyzed in FY86.

42-010-23 Lower River Sediment Study

The study of potential deposition and elevated water levels at the confluence of Susitna and Chulitna Rivers will continue in FY86. It is anticipated that this will be completed in early 1986. A mathematical model of sediment processes in the confluence area developed in FY85 will be run and a report will be finalized. The report will include estimates of potential deposition and elevated water levels, recommendations and evaluations of mitigation measures. It is also anticipated that testimony regarding this study will be presented in the FERC Hearings.



## Directs

### 42-020-01 Travel and Temporary Living Expenses

Hydrologic and hydraulic analyses will be carried out in the home offices, primarily in Chicago. FERC Hearings will be held in Washington, D.C. and Environmental Studies will be carried out in Anchorage. A total of 15 trips have been budgeted. Seven of these would be between the home office and Anchorage for coordination of studies, field visits and discussion with counsel during the preparation of briefs; five trips would be between the home offices and Washington, D.C. and three would be between Anchorage and Washington, D.C.

### 42-020-02 Relocation

The cost associated with demobilizing one family from Anchorage to Chicago and the monthly costs of property management and storage.

### 42-020-03 Computer Charges

To support testimony (environmental related) studies will include operation of several mathematical models using electronic computers.

The reservoir temperature model (DYRESM) will also be run as part of the FERC Hearing negotiated settlement processes. A limited number of runs will be made as necessary to provide information required for settlement.

The instream ice model will also be run during the Hearing settlement processes. Productions runs of this model will be for the same conditions as the reservoir temperature model.

Streambed aggradation or degradation in the reach between the Susitna-Chulitna confluence and the Sunshine bridge will be computed using a state-of-the art model such as the U.S. Army Corps of Engineers model HEC-6 or a model developed by Simons and Lei, Inc.

#### 42-020-06 Miscellaneous

This item will cover such things as printing, film, aerial photos (from USGS EROS data center) and other items which are necessary but not covered under specific budgets.

#### Subcontracts

##### 42-103-01 Reservoir Temperature/Ice Study

Dr. Paul Hamblin of the Canadian Center for Inland Waters will be retained to provide consultation on the development of testimony on the model for reservoir thermal behavior.

##### 42-113-01 Instream Ice Process Study

A consultant will be retained to provide consultation on the development of testimony for the model of instream ice processes.

42-143-01 Subcontractor Handling Fee

A fee equal to two percent of subcontractor costs.

42-163-01 Glacier Data Collection

Dr. Will Harrison of the UAF Geophysical Institute will continue his glacier data collection program in conjunction with the development of the streamflow forecasting methods.

42-173-01 Streamflow Forecasting

A consultant will be retained to begin development of long term and short term stream flow forecasting methods for use in project operation. This will be contingent on the results of work accomplished in FY85 regarding the feasibility of such methods.

42-183-01 Sediment Consultant

A consultant will be retained to interpret results of sediment modeling studies for the confluence area of the Susitna and Chulitna Rivers.

Alaska Power Authority  
Harza-Ebasco Susitna Joint Venture  
Fiscal Year 1986: Preliminary Cost Estimates

09/17/84

LICENSING & PERMITTING BASE BUDGET

TASK 42			422000
TOTAL SERVICES			270000
42-010-01	SUPERV. & COORD.	75000	
42-010-02	RESERVIOR OPERATION & STREAM HYDRAULIC STUDIES	22000	
42-010-04	RESERVIOR TEMPERATURE STUDIES	56000	
42-010-09	INSTREAM ICE STUDIES	56000	
42-010-12	SLOUGH - GROUNDWATER STUDY	21000	
42-010-23	AGREDATION - DEGRADATION	40000	270000
TOTAL DIRECTS			101000
42-020-01	TRAVEL AND LIVING EXPENSES	35000	
42-020-02	RELOCATION	23500	
42-020-03	COMPUTER CHARGES	40000	
42-020-06	MISCELLANEOUS	2500	101000
TOTAL SUBCONTRACTORS			51000
42-103-01	RESERVIOR TEMP/ICE CONSULTANT	5000	5000
42-113-01	INSTREAM ICE CONSULTANT	5000	5000
42-143-01	SUBCONTRACTOR HANDLING FEE	1000	1000
42-163-01	GLACIER DATA COLLECTION	20000	20000
42-173-01	STREAMFLOW FORECASTING	10000	10000
42-183-01	SEDIMENT CONSULTANT	10000	10000

**SUPPLEMENTAL  
BUDGET .**

Task 2  
Project Support Services  
FY86  
Licensing & Permitting  
Supplemental Budget

Services

None

Directs

02-020-01 Temporary Services

To support an intensified discovery process and a lengthened testimony duration, additional temporary services help will be required in document control and word processing. The document control effort would require two clerks for a three month duration to assist in the peak reproduction and cataloging load. The added word processing is also estimated to require two word processors for three months who would provide second shift capacity to meet the added word processing peak loading.

02-020-05 Supplies

Additional supplies, principally for the xerox reproductions, will be required. An additional 300,000 copies are estimated to be required over a three month period the cost of these supplies is included here.

02-020-06 Postage Air Express

A fifty percent increase in present expenditures for postage would be estimated for the three month period of intense discovery effort.

02-020-07 Photocopy/Prints

To handle excessively large documents and/or extremely quick completion of discovery related reproduction requests, an allowance of \$15,000 is included for reproduction through outside services.

09/17/84

Alaska Power Authority  
Harza-Ebasco Susitna Joint Venture  
Fiscal Year 1986: Preliminary Cost Estimates

LICENSING & PERMITTING SUPPLEMENTAL BUDGET

TASK 02

150000

TOTAL DIRECTS

150000

02-020-01	TEMPORARY SERVICES	50000	
02-020-05	SUPPLIES	30000	
02-020-06	POSTAGE, AIREXPRESS, FREIGHT	20000	
02-020-07	PHOTOCOPY / PRINTS	50000	150000



Task 4  
Environmental Program  
FY86  
Licensing & Permitting Supplemental Budget

04-011-08 Supplemental DEIS Review

Assumes Draft EIS is rewritten during FY85 and available for comment during FY86. Also allows for responding to other agency comments on the DEIS as requested by FERC.

04-011-09 SSP-Settlement Process Input

Assumed intensive input by aquatic staff in the settlement of issues with resource agencies.

04-011-13 SSP-FERC Hearing Preparation

Assumes increase in Discovery Request, extended hearings period and additional Harza-Ebasco staff persons involved in the hearings process.

04-013-15 Settlement Process Input

Assumes intensive input by aquatic staff in the settlement of issues with resource agencies.

04-013-16 Supplemental DEIS and FEIS Review

Assumes Draft EIS is rewritten during FY85 and available for comment during FY86. Also allows for responding to other agency comments on the DEIS as requested by FERC.

04-013-36 FERC Hearings Preparation

Assumes increase in Discovery Request, extended hearings period and additional Harza-Ebasco staff persons involved in the hearings process.

04-016-01 DEIS Supplemental Review

Assumes Draft EIS is rewritten during FY85 and available for comment during FY86. Also allows for responding to other agency comments on the DEIS as requested by FERC.

04-016-09 FERC Hearings Prep

Assumes increase in Discovery Request, extended hearings period and additional Harza-Ebasco staff persons involved in the hearings process.

04-016-37 Mitigation Demonstration

A demonstration project will be performed in an area selected by the FY85 mitigation study. The purpose will be to certify the effectiveness of the proposed mitigation measures.

04-016-45 Primary Productivity Studies Within the Susitna River, Other  
Glacial Streams and Some Non-Glacial Streams

Appropriate substrates (either natural or artificial) from various habitats of the Susitna and other rivers will be analyzed for indices of autochthonous primary productivity (e.g., chlorophyll "a" per unit of standing crop organic carbon). Additional physical measurements such as water depth, turbidity, suspended sediment, discharge, temperature, Secchi disc or other photic zone indicators will be made in each sampling site. Physical characteristics will be analyzed to investigate the relationship between benthic primary productivity and habitat physical parameters.

Comparative data from various Susitna River habitats and from other south-central Alaskan rivers will be useful in forecasting with-project impacts to the downstream biological food web, including resident and anadromous fishes.

#### 04-016-51 Heavy Metal Leaching Potential From Reservoirs

A literature search and analysis will be performed and related to the present level of limnological knowledge about the Susitna River. A qualitative assessment will be made of the project related changes which may occur in dissolved or particulate heavy metal cations such as:

- |             |             |
|-------------|-------------|
| - Arsenic   | - Lead      |
| - Barium    | - Manganese |
| - Beryllium | - Mercury   |
| - Boron     | - Nickel    |
| - Cadmium   | - Selenium  |
| - Chromium  | - Silver    |
| - Copper    | - Silver    |
| - Iron      |             |

#### 04-016-52 Baseline Study of Mercury Concentrations in Resident Fishes

ADF&G will collect and properly preserve representative samples of adult, piscivorous resident sport fish in the Susitna River:

- a) upper river including Maclaren, Tyone and Oshetna tributaries;
- b) reservoir area reaches, including major tributaries;
- c) middle reach
- d) lower reach including the Chulitna, Talkeetna, Kashwitna, Deshka and Yentna Rivers.

Appropriately preserved samples will be sent to a predetermined laboratory for analyses by approved techniques to determine tissue mercury content.

Discussion and summary of sample locations, sample preservation and analysis techniques, all data and recommendations for future study will be presented in report form by H-E. The draft Report, will be prepared by March 1, 1985 and final completed June 1, 1985.

#### 04-016-57 Issue Papers for Settlement Process

Assumes intensive input by aquatic staff in the settlement of issues with resource agencies.

#### 04-016-61 General Plan of Study/Workscope Preparation

The General Plan of Study for fiscal year 1986 will describe the specific study objectives and work tasks, detailed study methodology including sampling and analysis procedures, data management and report formats, quality assurance procedures and detailed schedules and deliverables for each study element. The various tasks described in the study plan will address specific elements necessary for completion of analyses for several aspects of the FERC Licensing procedure including supplemental input to the DEIS, input to the FEIS, the Settlement process and the Hearings process.

Workscopes for continuing and additional studies for the subcontractors will be developed. The workscopes will reflect specific issues pertaining to the analysis of effects of the Susitna Project. The workscopes will be developed in consultation with appropriate resource agencies as part of the general licensing process.

#### Directs

#### 04-020-01 Travel and Living Expenses

Assumes extended hearing schedule requiring transportation to and expenses in Washington, D.C. for expert witnesses.

Subcontractor

Frank Orth & Associates

04-113-03 FOA - Supplemental DEIS Review

Refer to description of cost account 04-011-08.

04-113-20 FOA - Hearing Preparation

Refer to description of cost account 04-011-13.

EDAW

04-123-02 EDAW - Supplemental DEIS Review

Refer to description of cost account 04-011-08.

04-123-06 RE - Settlement Process Input

Refer to description of cost account 04-011-09 in the base budget.

04-123-08 RE - Hearings Preparation

Refer to description of cost account 04-011-13.

04-123-51 AE - Settlement Process Input

Refer to description of cost account 04-011-09 in the base budget.

04-123-53 AE - Hearings Preparation

Refer to description of cost account 04-011-13 in the base budget.

R & M

04-263-09 Hearings Prep.

Assumes R & M staff person(s) will testify.

AEIDC

04-273-09 Hearings Prep.

Assume two staff persons from AEIDC will testify.

EWTA

04-283-09 Hearings Prep.

Assumes one staff person will testify.

04-291-37 Construction Contractor for Mitigation Demo.

Refer to description of cost account 04-016-37.

WCC

04-293-09 Hearings Prep.

Assumes one staff person will testify.

04-293-37 WC - Mitigation Demonstration

Refer to description of cost account 04-016-37.

M. Bell

04-253-01 Milo Bell Consultants

Assumes M. Bell will testify in hearings.

LGL

04-303-15 Settlement Process

Refer to description of cost account 04-013-15.

04-303-36 FERC Hearings Preparation

Refer to description of cost account 04-013-36.

UA - Palmer

04-323-36 FERC Hearing Preparation

Refer to description of cost account 04-013-36.

R.A. Krieg

04-333-36 FERC Hearings Preparation

Refer to description of cost account 04-013-36.

B. Kessel

04-343-36 FERC Hearing Preparation

Refer to description of cost account 04-013-36.

Sub Handling Fee

04-400-01 Subcontractor Handling Fee

A handling fee equal to 2 percent of the subcontractor costs.



09/17/84

Alaska Power Authority  
 Harza-Ebasco Susitna Joint Venture  
 Fiscal Year 1986: Preliminary Cost Estimates

LICENSING & PERMITTING SUPPLEMENTAL BUDGET

TASK 04			3790320
TOTAL SERVICES			2082000
04-011-08	DEIS COMMENTS	30000	
04-011-09	SSP-SETTLEMENT PROCESS INPUT	132000	
04-011-13	SSP-HEARING PREPARATION	464000	626000
04-013-15	SETTLEMENT PROCESS INPUT	50000	
04-013-16	SUPPLEMENTAL DEIS AND FEIS REVIEW	40000	
04-013-36	FERC HEARINGS PREPARATION	220000	310000
04-016-01	SUPPLEMENTAL DEIS REVIEW	42000	
04-016-09	FERC HEARINGS PREPARATION	530000	
04-016-37	MITIGATION DEMONSTRATION	100000	
04-016-45	PRIMARY PRODUCTIVITY STUDIES WITHIN SUSITNA RVR.	12000	
04-016-51	HEAVY METAL LEACHING POTENTIAL FROM RESERVOIRS	10000	
04-016-52	BASELINE STUDY OF MERCURY CONCENTRATIONS IN FISH	20000	
04-016-57	ISSUE PAPERS / SETTLEMENT PROCESS	132000	
04-016-61	PLAN OF STUDY / WORKSCOPE PREPARATION	300000	1146000
TOTAL DIRECTS			90000
04-020-01	TRAVEL AND LIVING EXPENSES	90000	90000
TOTAL SUBCONTRACTORS			1618320
04-113-03	FOA - SUPPLEMENTAL DEIS REVIEW	5000	
04-113-20	FOA - HEARING PREPARATION	75000	80000
04-123-02	EDAW - SUPPLEMENTAL DEIS REVIEW	10000	
04-123-06	RE-SETTLEMENT PROCESS INPUT	6000	
04-123-08	RE-HEARINGS PREPARATION	66000	
04-123-51	AE-SETTLEMENT PROCESS INPUT	4000	
04-123-53	AE-HEARINGS PREPARATION	10000	96000
04-253-01	M.BELL - CONSULTATION	50000	50000
04-263-09	RM-FERC HEARINGS PREPARATION	165000	165000

09/17/84

Alaska Power Authority  
Harza-Ebasco Susitna Joint Venture  
Fiscal Year 1986: Preliminary Cost Estimates

## LICENSING &amp; PERMITTING SUPPLEMENTAL BUDGET

04-273-09	AEI-FERC HEARINGS PREPARATION	279000	279000
04-283-09	WT-HEARINGS PREPARTION	170000	170000
04-291-37	CONSTRUCTION CONTRACTOR FOR MITIGATION DEMO.	300000	300000
04-293-09	WC-FERC HEARINGS PREPARATION	230000	
04-293-37	WC-MITIGATION DEMONSTRATION	155000	385000
04-303-15	SETTLEMENT PROCESS	8000	
04-303-36	FERC HEARING PREPARATION	40000	48000
04-313-36	FERC HEARING PREPARATION	5000	5000
04-323-36	FERC HEARING PREPARATION	8000	8000
04-333-36	FERC HEARINGS PREPARATION	5000	5000
04-343-36	FERC HEARING PREPARATION	5000	5000
04-400-01	SUBCONTRACTOR HANDLING FEE	22320	22320

Task 6  
Licensing Support & Permitting  
FY86  
Licensing & Permitting Supplemental Budget

Services

06-010-09 Env/Safety Hearing Support

Additional support will be required in the event of increased hearing testimony duration and/or excessive discovery requests.

06-010-11 Settlement Negotiation

The Contractor will assist the Power Authority during formal negotiating sessions with the agencies and other settlement participants.

Directs

06-020-02 Travel and Living

Additional travel and living expenses due to settlement negotiation are estimated to be as shown.

09/17/84

Alaska Power Authority  
Harza-Ebasco Susitna Joint Venture  
Fiscal Year 1986: Preliminary Cost Estimates

LICENSING & PERMITTING SUPPLEMENTAL BUDGET

TASK 06

150864

TOTAL SERVICES

140864

06-010-09 ENVIRONMENTAL / SAFETY HEARINGS SUPPORT  
06-010-11 SETTLEMENT NEGOTIATIONS

58696

82168

140864

TOTAL DIRECTS

10000

06-020-02 TRAVEL & LIVING EXPENSES

10000

10000

Task 7  
Electrical Power System Studies  
FY86  
Licensing & Permitting Supplemental Budget

Services

07-010-50 Transmission System Refinement Studies

Study system impacts resulting from transmission line refinements carried out in Task 41. Will be performed only if required by hearing process.

Directs

07-020-01 Travel and Living Expenses

Cost of travel and subsistence.

07-020-05 Computer

Use of computer time to assist in performing the study.

Subcontracts

07-200-01 Transient Network Analysis Subcontractor

Subcontract to perform an analysis of network transients based on the refined system.

07-300-01 Subcontractor Handling Fee

A handling fee equal to two percent of subcontract cost.

09/17/84

Alaska Power Authority  
Harza-Ebasco Susitna Joint Venture  
Fiscal Year 1986: Preliminary Cost Estimates

LICENSING & PERMITTING SUPPLEMENTAL BUDGET

TASK 07			95600
TOTAL SERVICES			45000
07-010-50 TRANSMISSION SYSTEM REFINEMENT STUDIES	45000		45000
TOTAL DIRECTS			20000
07-020-01 TRAVEL & LIVING EXPENSES	5000		
07-020-05 COMPUTER CHARGES	15000		20000
TOTAL SUBCONTRACTORS			30600
07-200-01 TRANSIENT NETWORK ANALYSIS SUBCONTRACTOR	30000		30000
07-300-01 SUBCONTRACTOR HANDLING FEE	600		600

Task 39

Logistics

FY86

Licensing & Permitting Supplemental Budget

Subcontracts

39-800-00 Watana Camp Airstrip

An airstrip would be constructed near the Watana Camp to facilitate all subsequent activities at the camp site. The airstrip would greatly reduce the dependence on helicopters and would allow larger, heavier loads to be moved into camp without the use of special, high-cost helicopters.

39-193-01 Subcontractor Handling Fee

A handling fee equal to two percent of subcontract costs.

39-203-36 Satelite Disk

Procurement and installation of a satelite disk to enable reception of television signals for the camp. This item would save monthly movie rental cost and increase morale at the camp.

Alaska Power Authority  
Harza-Ebasco Susitna Joint Venture  
Fiscal Year 1986: Preliminary Cost Estimates

09/17/84

LICENSING & PERMITTING SUPPLEMENTAL BUDGET

TASK 39

575280

TOTAL SUBCONTRACTORS

575280

39-193-01 SUBCONTRACTOR HANDLING FEE

11280

11280

39-203-36 SATTELITE DISK

14000

14000

39-800-00 WATANA CAMP AIRSTRIP

550000

550000



Task 40  
Need for Power Studies  
Licensing & Permitting  
Supplemental Budget

Services

40-010-01 Economic Update

This deliverable is related to the settlement process, utility power sales agreements and the FERC licensing process. If key economic parameters have changed since the previous economic update, a supplemental budget will be required to complete this activity.

40-010-04 Discovery Activities - Need for Power Hearings

Requests for information and the preparation of responses for these information requests by the FERC staff, intervenors, and other agencies and individuals has been substantially greater than anticipated. If the requests continue at the same level, a greater level of effort will be required than is estimated. This task provides for a greater level of effort in responding to Discovery requests and will be necessary if there is a delay in the Need for Power Hearings.

40-010-05 Prehearing Studies and Preparation of Testimony

This activity is a continuation of the prehearing studies described in the Base Budget. Supplemented funds would be required if greater participation from Task 40 is needed in the Environmented Hearing.

#### 40-010-06 Discovery Activities - Environmental Hearings

This activity reflects a greater participation in the Discovery Activities related to the Environmental Hearings.

#### 40-010-13 Presentation of Testimony - Need for Power Hearings

The present schedule allocates three weeks for the Need for Power Hearings. There is a likelihood that either this schedule allows insufficient time for the hearing process or that the hearings could be delayed and overlap into FY86. This task provides for either a longer hearing period or a delay in the process. The scope of work consists of the presentation of direct and subsequent rebuttal testimony and conferences with counsel concerning cross-examination of witnesses for APA, FERC, and intervenors.

#### 40-010-27 Comments on Supplemental DEIS & Input to FEIS

Current events indicate that there is a possibility of a second draft of the EIS or that the final EIS may be delayed. The occurrence of either of these possibilities would suggest substantial revision to the existing DEIS and would necessitate further review of the EIS on behalf of the Power Authority.

#### 40-010-29 Project Operation and Dispatch

This activity reflects greater than anticipated project operation and dispatch simulation studies requested by either railbelt utilities or resource agencies in connection with negotiations on power sales agreements or acceptable flow regimes.

#### 40-010-30 Settlement Process, Economic Data Input

The settlement process is currently underway. Workshops are being provided for the benefit of resource agency personnel. However, negotiations have not commenced. Considering current schedules, there is a strong possibility that settlement will not be completed in FY85. This task provides for support from the Need for Power group during negotiations.

#### 40-010-33 Utility Expansion Planning

This activity reflects greater participation in the updating of utility expansion plans.

#### 40-010-34 Presentation of Testimony

This task consist of increased participation by Need For Power Personnel during the Environmental Hearing. This task would be necessary if either the duration of the Hearing or the level of effort is increased.

#### Direct Costs

##### 40-020-01 Travel and Living Expenses

Additional air travel and the associated subsistence expenses for staff who will be required to support the increased level of task activities.

##### 40-020-03 Computer

Additional models runs for economic and project operation studies.

##### 40-020-04 Printing

Printing costs for additional studies and reports.

40-020-05 Communication

Communication, reproduction, postage, etc.

40-020-09 Generation Planning Computer Model Operation

The cost to make additional model runs.

Subcontracts

The subcontractor costs will be increased by:

- (1) extension or delay of either the Discovery or the Testimony portions of the Need For Power Hearings
- (2) a record draft of the EIS or a delay in the FEIS
- (3) additional involvement in the sellement process
- (4) a greater level of activity in the prehearing studies and Testimony associated with the Environmental Hearings
- (5) the extension or delay of either the Discovery or the Testimony portions of the Environmental Hearings.

Acres

40-103-04 Acres, Discovery Activities - Need for Power

Contribute to preparation of responses to requests for information during the discovery period.

40-103-05 Acres, Prehearing Studies and Preparation of Testimony

Prepare direct testimony for Environmental Administrative Hearings.

40-103-13 Acres, Administrative Hearings - Need for Power

Attendance at Hearing and presentation of testimony

40-103-27 Acres, Comment on DEIS and Provide Input to FEIS

Provide input to EIS process

40-103-30 Acres, Settlement Process - Economic Data Input

Provide support in Settlement Process.

40-103-34 Acres, Presentation of Testimony, Environmental Hearings

Attendance at Hearing and presentation of testimony.

Battelle

40-113-04 Battelle, Discovery Activities, Need for Power

Contribute to preparation of responses to requests for information during the discovery period.

40-113-05 Battelle, Prehearing Studies and Preparation of Testimony

Prepare direct testimony for Environmental Administrative Hearings.

40-113-06 Battelle, Discovery Activities, Environmental Hearings

Contribute to preparation of responses to requests for information during the discovery period.

40-113-13 Battelle, Administrative Hearings - Need for Power

Attendance at hearing and presentation of testimony

40-113-27 Battelle, Comment on DEIS and Provide Input to FEIS

Provide input to EIS process

40-113-34 Battelle, Presentation of Testimony - Hearings

Attendance at Hearing and presentation of testimony.

S.H. Clark

40-123-04 S.H. Clark, Discovery Activities, Need for Power

Contribute to preparation of responses to requests for information during the discovery period.

40-123-05 S.H. Clark, Prehearing Studies and Preparation of Testimony

Prepare direct testimony for Environmental Administrative Hearings.

40-123-06 S.H. Clark, Discovery Activities Environmental Hearings

Contribute to preparation of responses to requests for information during the discovery period.

40-123-13 S.H. Clark, Administrative Hearings - Need for Power

Attendance at Hearing and presentation of testimony

40-123-27 S.H. Clark, Comments on DEIS and Provide Input to FEIS

Provide input to EIS process

40-123-34 S.H. Clark, Persentation of Testimony - Environmental Hearings

Attendance at Hearing and presentation of testimony.

ISER

40-133-04 ISER, Discovery Activities - Need for Power

Contribute to preparation of responses to requests for information during the Discovery period.

40-133-05 ISER, Prehearing Studies and Preparation of Testimony

Prepare direct testimony for Environmental Administrative Hearings.

40-133-06 ISER, Discovery Activities - Environmental Hearings

Contribute to preparation of responses to requests for information during the discovery period.

40-133-13 ISER, Administrative Hearings - Need for Power

Attendance at hearing and presentation of testimony

40-133-27 ISER, Comment on DEIS and Provide Input to FEIS

Provide input to EIS process

40-133-34 ISER, Presentation of Testimony - Environmental Hearings

Attendance at Hearing and presentation of testimony.

General Electric

40-143-13 GE, Administrative Hearings - Need for Power

Attendance at hearing and presentation of testimony.

40-143-27 GE, Comment on DEIS and Provide Input to DEIS

Provide input to EIS process

40-143-34 GE, Presentation of Testimony - Environmental Hearings

Attendance at hearing and presentation of testimony.

Dames & Moore

40-153-04 Dames & Moore, Discovery Activities

Contribute to preparation of responses to requests for information during the discovery period.

40-153-05 Dames & Moore, Prehearing Studies and Preparation of Testimony

Prepare direct testimony for Environmental Administrative Hearing.



40-153-13 Dames & Moore, Administrative Hearings - Need for Power

Attendance at Hearing and presentation of testimony

40-153-27 Dames & Moore, Comment on DEIS and Provide Input to FEIS

Provide input to EIS process

40-153-34 Dames & Moore, Presentation of Testimony - Environmental Hearings

Attendance at Hearing and presentation of testimony.

Paul Weir Company

40-173-04 P. Weir, Discovery Activities - Need for Power

Contribute to preparation of responses to requests for information during the discovery period.

40-173-05 P. Weir, Prehearing Studies & Preparation of Testimony

Prepare direct testimony for Environmental Administrative Hearing.

40-173-06 P. Weir, Discovery Activities - Environmental Hearings

Contribute to preparation of responses to requests for information during the discovery period.

40-173-13 P. Weir, Administrative Hearings - Need for Power

Attendance at hearing and presentation of testimony

40-173-27 P. Weir, Comment on DEIS and Provide Input to FEIS

Provide input to EIS process

40-173-34 P. Weir, Presentation of Testimony - Environmental Hearings

Attendance at Hearing and presentation of testimony.

40-233-01 Subcontractor Handling Fee

A handling fee equal to two percent of subcontract cost.

09/17/84

Alaska Power Authority  
 Harza-Ebasco Susitna Joint Venture  
 Fiscal Year 1986: Preliminary Cost Estimates

LICENSING & PERMITTING SUPPLEMENTAL BUDGET

TASK 40

1370120

## TOTAL SERVICES

640000

40-010-01	ECONOMIC UPDATE	30000	
40-010-04	DISCOVERY ACTIVITIES, NEED FOR POWER	80000	
40-010-05	PRE-HEARING STUDIES AND PREPARATION OF TESTIMONY	100000	
40-010-06	DISCOVERY ACTIVITIES-ENVIRONMENTAL HEARINGS	20000	
40-010-13	PRESENTATION OF TESTIMONY-NEED FOR POWER	70000	
40-010-27	COMMENTS ON SUPPLEMENTAL DEIS & INPUT TO FEIS.	140000	
40-010-29	PROJECT OPERATION AND DISPATCH	50000	
40-010-30	SETTLEMENT PROCESS, ECONOMIC DATA INPUT	100000	
40-010-33	UTILITY EXPANSION PLANNING	20000	
40-010-34	PREPARATION OF TESTIMONY-ENVIRONMENTAL HEARINGS	30000	640000

## TOTAL DIRECTS

112000

40-020-01	TRAVEL AND LIVING EXPENSES	55000	
40-020-03	COMPUTER CHARGES	20000	
40-020-04	PRINTING	2000	
40-020-05	COMMUNICATIONS, ETC.	5000	
40-020-09	GE - OGP COMPUTER MODEL	30000	112000

## TOTAL SUBCONTRACTORS

618120

40-103-04	ACRES-DISCOVERY ACTIVITIES, NEED FOR POWER	10000	
40-103-05	ACRES-PREHEARING STUDIES AND PREP. OF TESTIMONY	10000	
40-103-13	ACRES-ADMINISTRATIVE HEARINGS, NEED FOR POWER	20000	
40-103-27	ACRES-COMMENTS ON DEIS & PROVIDE INPUT TO FEIS	15000	
40-103-30	ACRES-SETTLEMENT PROCESS-ECONOMIC DATA INPUT	10000	
40-103-34	ACRES-PREP. OF TESTIMONY-ENVIRONMENTAL HEARINGS	20000	85000
40-113-04	BATTELLE-DISCOVERY ACTIVITIES, NEED FOR POWER	10000	
40-113-05	BATTELLE-PREHEARING STUDIES & PREP. OF TESTIMONY	10000	
40-113-06	BATTELLE-DISCOVERY ACTIVITIES-ENVIRO HEARINGS	15000	
40-113-13	BATTELLE-ADMINISTRATIVE HEARINGS, NEED FOR POWER	40000	
40-113-27	BATTELLE-COMMENT ON DEIS & PROVIDE INPUT TO FEIS	24000	
40-113-34	BATTELLE-PREP OF TESTIMONY ENVIRONMENTAL HEARING	20000	119000
40-123-04	SH CLARK-DISCOVERY ACTIVITIES, NEED FOR POWER	20000	
40-123-05	SH CLARK-PREHEARING STUDIES & PREP. OF TESTIMONY	20000	
40-123-06	SH CLARK-DISCOVERY ACTIVITIES-ENVIRO HEARINGS	10000	
40-123-13	SH CLARK-ADMINISTRATIVE HEARINGS, NEED FOR POWER	50000	
40-123-27	SH CLARK-CMNTS ON DEIS & PROVIDE INPUT TO FEIS	15000	

09/17/84

Alaska Power Authority  
 Harza-Ebasco Susitna Joint Venture  
 Fiscal Year 1986: Preliminary Cost Estimates

LICENSING & PERMITTING SUPPLEMENTAL BUDGET

40-123-34	SH CLARK-PREP OF TESTIMONY ENVIRONMENTAL HEARING	30000	145000
40-133-04	ISER-DISCOVERY ACTIVITIES, NEED FOR POWER	10000	
40-133-05	ISER-PREHEARING STUDIES & PREP. OF TESTIMONY	10000	
40-133-06	ISER-DISCOVERY ACTIVITIES-ENVIRONMENTAL HEARINGS	5000	
40-133-13	ISER-ADMINISTRATIVE HEARINGS, NEED FOR POWER	15000	
40-133-27	ISER-COMMENTS ON DEIS & PROVIDE INPUT TO FEIS	15000	
40-133-34	ISER-PREP OF TESTIMONY ENVIRONMENTAL HEARINGS	20000	75000
40-143-13	GE-ADMINISTRATIVE HEARINGS, NEED FOR POWER	7000	
40-143-27	GE-COMMENTS ON DEIS AND PROVIDE INPUT TO FEIS	5000	
40-143-34	GE-PREP. OF TESTIMONY - ENVIRONMENTAL HEARINGS	10000	22000
40-153-04	DAMES&MOORE-DISCOVERY ACTIVITIES, NEED FOR POWER	10000	
40-153-05	DAMES&MOORE-PREHEAR STUDIES & PREP OF TESTIMONY	10000	
40-153-13	DAMES&MOORE-ADMIN. HEARINGS, NEED FOR POWER	25000	
40-153-27	DAMES&MOORE-CMNT ON DEIS & PROVIDE INPUT TO FEIS	15000	
40-153-34	DAMES&MOORE-PREP OF TESTIMONY ENVIRO HEARINGS	15000	75000
40-173-04	P.WEIR-DISCOVERY ACTIVITIES, NEED FOR POWER	10000	
40-173-05	P.WEIR-PREHEARING STUDIES AND PREP OF TESTIMONY	10000	
40-173-06	P.WEIR-DISCOVERY ACTIVITIES-ENVIRO HEARINGS	5000	
40-173-13	P.WEIR-ADMINISTRATIVE HEARINGS, NEED FOR POWER	30000	
40-173-34	P.WEIR-PREP OF TESTIMONY ENVIRONMENTAL HEARINGS	30000	85000
40-233-01	SUBCONTRACTOR HANDLING FEE	12120	12120

Task 41  
Transmission System Siting & Licensing  
FY86  
Licensing & Permitting Supplemental Budget

Services

41-010-50 Transmission System Refinement Studies

Refine the transmission line routing and staging of voltage changes to optimize total costs for utility connections and environmental impacts if required as a result of FERC hearings.

Directs

41-020-01 Travel and Living

Cost for travel and subsistence.

41-020-04 Printing

Outside printing service to reproduce the study results in sufficient quantity to satisfy FERC, counsel, etc. needs.

09/17/84

Alaska Power Authority  
Harza-Ebasco Susitna Joint Venture  
Fiscal Year 1986: Preliminary Cost Estimates

LICENSING & PERMITTING SUPPLEMENTAL BUDGET

TASK 41			425000
TOTAL SERVICES			375000
41-010-50 TRANSMISSION SYSTEM REFINEMENT STUDIES	375000		375000
TOTAL DIRECTS			50000
41-020-01 TRAVEL & LIVING EXPENSES	40000		
41-020-03 PRINTING	10000		50000

Task 42  
Hydrologic and Hydraulic Studies  
FY86  
Licensing & Permitting Supplemental Budget

Services

The FY86 base budget was compiled assuming the FERC Licensing Process continues on schedule. Delays in the schedule resulting from the need to prepare a second DEIS, lengthened testimony or discovery periods or the need for additional technical support for testimony. The base budget assumes that the discovery period will be completed on July 31, 1985; that the administrative hearing will continue for six months between July 3, 1985 and January 25, 1986; that initial briefs will be filed on March 28, 1986; that reply briefs will be filed on April 28, 1986 and the administrative law judges decision will be issued on July 25, 1986. The primary effort for Task 42 in FY86 based on this schedule will be in the administrative hearing. Some effort will be required during the preparation of initial and reply briefs, but this is expected to be small. Additional budget would be required if the discovery period is delayed beyond July 25 since Task 42 will actively participate in the discovery process. Additionally, if the administrative hearing is extended beyond six months, additional effort will be required. The supplemental budget is based on the following assumptions:

1. The discovery period is lengthened by three months until October 31, 1985, and
2. The testimony period is lengthened by three months to nine months.

The primary studies which would be affected would be the Reservoir Temperature Ice Turbidity Study, the Slough Geohydrology Study and the Lower River Sediment Study. Budget from the two accounts listed below will be reallocated to these studies as required.

42-010-25 Increased Discovery Period

Additional work in preparation of discovery requests and responding to requests for information would be carried out for the assumed three month additional duration.

Services

42-010-26 Increased Testimony Duration

Additional work in preparation of testimony and technical support of testimony will be required if the Administrative Hearing is lengthened by an assumed three months.

Directs

42-020-01 Travel and Living Expenses

An increase will be required to support the longer time required and additional trips to Washington, D.C. and Anchorage.

42-020-03 Computer Charges

Additional runs of computer models to aid in testimony.

42-020-06 Miscellaneous

An allowance for such things as additional air express, meeting rooms in Washington, D.C. or stenographic support in Washington, D.C.



09/17/84

Alaska Power Authority  
Harza-Ebasco Susitna Joint Venture  
Fiscal Year 1986: Preliminary Cost Estimates

LICENSING & PERMITTING SUPPLEMENTAL BUDGET

TASK 42			870000
TOTAL SERVICES			619000
42-010-25	INCREASED DISCOVERY PERIOD	231000	
42-010-26	INCREASED TESTIMONY DURATION	388000	619000
TOTAL DIRECTS			251000
42-020-01	TRAVEL AND LIVING EXPENSES	52000	
42-020-03	COMPUTER CHARGES	192000	
42-020-06	MISCELLANEDUS	7000	251000