ALASKA POWER AUTHORITY

SUSITNA HYDROELECTRIC PROJECT

PROGRESS REPORT

FOR

JUNE 1981

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ALASKA POWER AUTHORITY
SUSITNA HYDROELECTRIC PROJECT
MONTHLY PROGRESS REPORT

Report No. 17

Period: June, 1981

Progress Report No. 17 covers the activities on the Susitna Hydroelectric Project for the month of June, 1981.

Task 1, Power Studies, is complete.

Task 2, Survey and Site Facilities, activities continued with a request for APA approval of using Alyeska Air Service to supply flight services to High Lake Lodge. The continued maintenance of the High Lake Lodge airstrip has put the strip in good condition. Larry's Flying Service has been retained to fly University of Alaska personnel to their field camp.

All permits were obtained for the survey work relating to the transmission line photography.

Work continued on the access road route selection with R&M providing maps of the three routes to be studied in more detail. These were distributed to TES.

CIRI/H&N continued to monitor camp facilities. The camp facilities were re-levelled to compensate for ground settlement during break-up. Improvements were made to the camp surface water supply to make it suitable for potable use. This system is now supplying the camp's potable water requirements.

R&M continued reducing data from the Susitna River cross-sections taken last month just below the turbulent portion of Devil Canyon. Flight panels were placed along the access corridor routes and photographs were taken. The Watana and Devil Canyon reservoir contour mapping has been completed.

Task 3, Hydrology, continued with finalization of a cooperative field program between USGS and R&M for bed load measurements during this summer. The regional flood study report prepared by R&M is being reviewed by Professor R. Carlson of the University of Alaska. Historical storms have been analyzed for revised flood reconstitution studies. Work continued on data input and calibration of the HEC-2 ice simulation model. R&M and USGS, under Acres' direction, are analyzing historical river flows for the environmental assessment.

R&M continued work on gathering stream gage data. Water quality data was gathered at Gold Creek and Vee, simultaneously with suspended sediment data. All climatic stations are operational, and computer programming for data processing is continuing. Susitna Basin glaciers were surveyed to locate their velocity points during the month. Calibration of the HEC-2 Water Surface Profile Model commenced. A field reconnaissance trip of the Susitna River between Talkeetna and Devil Canyon was conducted to identify points controlling the river morphology.

Task 4, Seismic Studies, continued with Acres review and approval of the WCC field program for 1981. The program also was reviewed by the APA Consulting Board at its June meeting.

WCC ordered seismograms for historic earthquakes in the Talkeetna Terrain. Alternative approaches to the proposed future seismic network and its manual were discussed. It is anticipated that work on the manual will commence in July. Quaternary field geology studies commenced on June 1, 1981, and are expected to be completed in July. Adjustments to the 1981 schedule are currently under discussion.

Task 5, Geotechnical Investigations, continued with preparation for and participation in the APA Consulting Board meeting in Anchorage in June. Acres completed review of the draft report on Air Photo Interpretation, which is currently being reviewed by Mr. A. Rivard. Programs for 1981 exploration at Watana and Devil Canyon were finalized and priorities established. Two additional Watana powerhouse borings and seismic refraction work for the buried channel are proposed. The testing program is underway. Geologic mapping at the Watana and Devil Canyon sites is essentially complete within the immediate vicinity of the site. The 1980 Geotechnical Report is being printed and will be distributed in July.

R&M continued work on preparation of terrain unit maps and a summary, which are currently under Acres' review. Diamond core drilling and pressure testing was completed at BH-5A and BH-5B and on BH-3 at Devil Canyon. A draft cross-river seismic refraction survey report was completed and is currently under Acres' review.

Task 6, Design Development, continued with the preparation of a draft design criteria report. The study of the dynamic response of the Devil Canyon arch dam to seismic load has been completed, and the arch dam has been found to be feasible. Design work on the Devil Canyon dam is almost complete. Spillway design continued by definition of the discharge routings, and studies of spillway geometry and probable sizes of scour holes. Work on costs of alternative spillway designs commenced. Environmental concerns of nitrogen suspersaturation are being studied, and possible solutions are being analyzed. A detailed work plan for the construction camp and its preliminary design were initiated during the reporting period for internal review. The height of the Watana Dam was optimized using energies and dam volumes as a basis. A second draft of the Development Selection Report was submitted to APA for review and a presentation made to APA and the Susitna Steering Committee on Acres approach to the decision making process which will be generally applied on Susitna studies.

Task 7, Environmental Studies, continued with the Phase I Environmental Scope of Work Modifications being finalized and incorporated in an overall Plan of Study, Revision 2. Discussions were held in TES relative to the large number of possible archeological sites being discovered and how to study them. The concensus of opinion is that all the sites cannot be studied completely enough to fully determine their cultural significance. Acres forwarded the alternative transmission corridor routings to TES for initiation of environmental impact studies. Acres and TES reviewed the ADF&G 1981 Quarterly Report, and are preparing sample outlines for future ADF&G report formats to more adequately present the information required. Acres is reviewing a report on the access route options submitted by TES in June.

TES continued work by submitting an updated equipment inventory list, 1981 scope modifications, and access routing report during the month. The Fish Ecology Annual Report was submitted to Acres, and the Big Game Report is being finalized. The TES field representative continued to deal with logistical problems, assisted in helicopter support activities, and documented sheep utilization of a suspended mineral lick in the Jay Creek area. Fifteen new archeological sites have been discovered in areas that will be flooded if the project proceeds. TES completed additions and technical revisions to the Land Use Annual Report. A recreation planning basic outline and skeletal report was prepared for internal TES review and will be the basis for incorporating future data. TES initiated access environmental studies during the month. Furbearer studies continued with radio-collaring of fox and marten.

Task 8, Transmission, continued with resumption of preparation of the Subtask 8.01 Close-out Report to include the decision process methodology developed in the Development Selection Report. An evaluation of HVDC transmission of Susitna power versus EHV-AC transmission in technical line and substation cost estimates were completed in June. Transmission Alternative 2 from Susitna to Anchorage and Fairbanks, without series compensation, was selected following comparisons of various alternatives on a life cycle costing basis. Approval was granted by APA to engage the services of Energy and Control Consultants of San Jose, California, to assist Acres in the Dispatch Center and Communications Studies.

Task 9, Construction Cost Estimate and Schedules, continued with a site visit arrangement being made for early August for an on site investigation and discussions with an experienced Alaskan contractor and FMA regarding construction costs and practices in Alaska. A final report on the project upper limit cost estimate was substantially completed.

Task 13, Administration, continued with monitoring and updating the project schedule to July 6, 1981. The March-April Cost Report was issued in June, and revised cost schedules for Amendment No. 1 were sent to APA. Preparation of Amendment No. 2 was initiated.

Task 14, ADF&G Support, continued with purchasing of ADF&G equipment and supplies during the month of June to the end of fiscal year 1981, with a balance of $9,700 remaining as of that date.

TASK 1 - POWER STUDIES

Task complete.

TASK 2 - SURVEY AND SITE FACILITIES

ACRES ACTIVITIES

Subtask 2.02 - Provision of Field Camps and Associated Logistic Support

Approval of the continued use of Alyeska Air Service was sought from APA relative to flight services from Anchorage to High Lake Lodge. Service continued routinely on Mondays, Wednesdays, and Fridays, with additional flights on a required basis.

Continued maintenance on the High Lake Lodge airstrip put the strip into good operating condition.

In addition to Alyeska Air Service, charter arrangements were made with Larry's Flying Service in Fairbanks to fly University of Alaska personnel to their field camp once a week.

Subtask 2.06 - Right of Entry

All permits were obtained for the survey work relating to the transmission line photography.

Subtask 2.10 - Access Roads

Work continued on the access road route selection. Drawings showing the three routes to be studied in more detail over the next two months were obtained from R&M Consultants and distributed to TES and their subcontractors.

CIRI/H&N ACTIVITIES

CIRI/H&N continued its regular operation, maintenance, and related inspection of camp facilities.

In conjunction with these activities, all camp facilities were re-levelled to compensate for ground settlement during break-up. Additional building materials required to complete the warehouse flooring were transported to Watana Camp.

Minor repair and improvements were made to the camp water treatment system in order that the quality of the camp's supplemental surface supply could be suitable for potable use. Continued bacteriological monitoring of this supply indicated positive results after repairs and modifications were made to the treatment system. Use of the surface supply for potable uses was subsequently resumed.

R&M ACTIVITIES

Subtask 2.07 - Site Specific Surveys

Work continued on this subtask by reducing the field data obtained from the five additional river cross-sections surveyed just below the turbulent portion of Devil Canyon last month.

Subtask 2.08 - Aerial Photography and Photogrammetric Mapping

Work continued on this subtask with the alternative access corridors having their flight panels placed and photographs taken at a scale of 1" = 2,000'. Flight lines and panel locations have been planned and sent to Acres for permit processing. Panels have been set in the field for all the alternative access corridors and the transmission corridor from Point MacKenzie to Willow and Healy to Fairbanks. The Watana and Devil Canyon reservoir contour mapping has been completed along with various borrow and saddle dam sites. Contour mapping of a segment just below the Devil Canyon damsite is complete, as is a materials borrow site contour map of an area below the Watana damsite.

TASK 3 - HYDROLOGY

ACRES ACTIVITIES

Subtask 3.03 - Field Data Collection and Processing

Routine monitoring of R&M fieldwork continued. A cooperative field program with USGS and R&M participation for bed load measurements during this summer was finalized.

Subtask 3.05 - Flood Studies

The regional flood studies report prepared by R&M is presently being reviewed by Acres' consultant Professor R. Carlson of University of Alaska. Data collection for reevaluation of PMF is nearly complete. Detailed analyses have been performed to estimate the PMP and associated dew point values. Historical storms have been analyzed for revised flood reconstitution studies.

Subtask 3.06 - Hydraulic and Ice Studies

Preliminary computer runs were performed in the river reach between Chulitna confluence and Portage Creek to calibrate the HEC-2 open water model. Work continued on data input and calibrating of the ice simulation model.

Subtask 3.07 - Sediment Yield and River Morphology

The work plan formulated by R&M for morphological studies is being reviewed. Reservoir sediment modelling and other analyses will be finalized shortly taking into account level and type of information required to address environmental concerns in the river reach below the dams.

Subtask 3.10 - Lower Susitna Studies

Several hydrologic analyses of historical river flows required for environmental assessment of pre-project conditions were identified and are currently being carried out by R&M and USGS under Acres' direction.

R&M ACTIVITIES

Subtask 3.02 - Field Data Index and Distribution System

Historical data for PMF studies were transmitted to Acres. The Field Data Index was updated to include data from the past six months.

Subtask 3.03 - Field Data Collection and Processing

All USGS and Watana stream gages are operating. Crest gages were repaired following damage caused during break-up, and data has been routinely gathered. A staff gage was installed near the Watana damsite, and a new crest gage was installed just upstream of Devil Creek on the right bank.

Water quality data was gathered at the hydrograph peak at Gold Creek and on the falling limb at Gold Creek and Vee. The USGS gathered data at Gold Creek just prior to a sharp rise in the hydrograph.

Sediment arrangements have been made for three bed load sampling measurements during the summer of 1981 in a cooperative effort between the USGS and R&M. Susperded sediment data was gathered at the same time as water quality data.

All the climatic stations are operating reasonably well. Processing of the climatic data is awaiting additional programming effort.

Velocity points on Susitna Basin glaciers were surveyed, and the collection of ice data was discontinued until winter 1981.

Subtask 3.05 - Flood Studies

Dr. Robert Carlson (University of Alaska) completed his review of the flood frequency and flood volume studies. The draft closeout report was completed and sent to Acres.

Subtask 3.06 - Hydraulic and Ice Studies

Calibration of the HEC-2 water surface profile model was initiated. The draft report of all ice studies to date on the Susitna River is nearing completion.

Subtask 3.07 - Sediment Yield & River Morphology Studies

A field reconnaissance trip of the Susitna River between Talkeetna and Devil Canyon was conducted to identify points controlling the river morphology.

A scope of work for river morphology studies was drafted. An 8-foot tall

suspended sediment settling column was designed and is being constructed. It will be used to obtain data on suspended sediment settling rates in the reservoir.

Subtask 3.10 - Lower Susitna

R&M is conducting flow duration and low and high flow analyses of major rivers in the Susitna River system as input to Subtasks 3.04, 3.07, and 3.10.

TASK 4 - SEISMIC STUDIES

ACRES ACTIVITIES

The final scope of work and budget for the 1981 activities has been discussed and agreed with WCC. This scope was presented to the APA and the APA Consulting Board during the second panel meeting in Anchorage, Alaska in the first week of June 1981. The schedule of activities was reviewed with regard to the June 1981 meeting with the APA Board of Consultants, and the comments were transmitted to WCC. Acres is coordinating WCC's field activities for logistic support and trenching requirements. Shoring for the trench support has been ordered on a monthly rental basis.

WCC ACTIVITIES

Subtask 4.09 - Long-Term Seismologic Monitoring Program

WCC has started ordering seismograms for historic earthquakes in the Talkeetna Terrain and the 1904 and 1912 earthquakes. The seismograms are being ordered for those earthquakes of approximate magnitude greater than six. WCC expects to receive those seismograms in July 1981.

A letter has been transmitted to Acres American Incorporated duscussing alternative approaches to the seismic network and the seismic network manual. Acres American Inc. and Woodward-Clyde Consultants will discuss the alternative approaches after the Acres review is completed. It is anticipated that work on the manual will commence in July.

Data is being collected for earthquakes on Benioff zones in Japan and South America. These records will be evaluated in July and August, 1981 as part of the reassessment of the maximum earthquake and ground motion attenuation for the Benioff zone.

Subtask 4.11 - Seismic Geology Field Studies

The Quaternary field geology studies were initiated on June 1, 1981, and are expected to be completed in July 1981. The field work to date has included field mapping of areas previously defined by airphoto interpretation, the excavation of pits in the Clear Valley area east of Fog Lakes, and in the Butte Lake area near the Denali Highway. Samples for carbon 14 age dating have been collected at selected locations.

The Quaternary field work is approximately one to two weeks behind schedule due to difficulty in identifying correlations between Quaternary units and equipment malfunction during the pit excavation program. WCC plans to add one to two weeks to the Quaternary effort to accommodate this situation. This additional work will be conducted in early July as a part of contingency planning.

Dr. Norm Ten Brink, Quaternary geology consultant to WCC, arrived at the Watana camp on June 27, 1981. Dr. Ten Brink will review and work with WCC on the Quaternary geology field studies through July 3, 1981.

The color near-IR low-sun angle photography flown in May 1981 has not been received to date. The revised delivery date is now set for early July 1981.

Results have been received from the K-Ar age dating. One of the samples collected in Fog Creek turned out to be a very fine grained clastic rock (graywacke sandstone). It was decided not to conduct age dating on this sample. The two remaining samples, collected on Watana Creek north of the Susitna River and on the south bank of the Susitna River downstream from Watana Creek, have been age dated as being 130 million years b.p. and 90 million years b.p., respectively. These pre-Tertiary dates, indicating an older rock suggest that the Talkeetna thrust fault may cross the Susitna River downriver from its presently mapped location. These results will be used by WCC to guide the field mapping during the 1981 field season.

A pre-field review meeting was conducted among WCC staff on June 29, 1981, in the Orange, California office of Woodward-Clyde. The purpose of the meeting was to review the approach and schedule for the mapping and trenching field program.

The second field team is expected to arrive at High Lake Lodge on July 1, 1981. Upon arrival they will participate in a Quaternary geology information transfer meeting and then commence field mapping along the Talkeetna thrust fault and in the vicinity of the Devil Canyon site. We expect the third and final field team to arrive at the site the second week in July 1981.

Coordination with other geologists who have mapped in the Talkeetna Mountains has been completed. Arrangements have been made to work in the field with Tom Smith of the Alaska Geological Survey and Bela Csejtey and George Plafker of the U.S. Geological Survey.

WCC has received Acres' comments on the 1981 schedule and is in the process of reviewing and evaluating possible alternatives to meet the requested schedule revisions.

Subtask 4.12 - Report

The outline and preliminary set of figures have been assembled for WCC's internal review.

TASK 5 - GEOTECHNICAL INVESTIGATIONS

ACRES ACTIVITIES

General

Acres participated in the second APA Consulting Board meeting in Anchorage, Alaska during the first week of June 1981. The activities under Task 5 were reviewed with the Board members. Acres' personnel met with Dr. A. Merritt in the field to review the method and the progress of the work and the data being gathered by the geology teams.

Subtask 5.02 - Photo Interpretation

Review of R&M's Draft Report was completed. Mr. A. L. Rivard is currently reviewing this report. His review was delayed, as the report mailed to him was apparently lost in the mail.

Subtask 5.05 - Exploratory Program Design (1981)

A technical memorandum of the field investigations program was prepared and submitted to the APA and the APA Consulting Board. The program for the Watana and the Devil Canyon sites was finalized and priorities established for drilling and geologic mapping. This included planning of two additional borings for the Watana powerhouse and additional seismic refraction work for the buried channel on the right bank. The testing program is underway.

Subtask 5.06 - Exploratory Program (1981)

The drilling and geologic mapping activities under this subtask continued at a brisk pace. Relogging of Acres' cores was completed. The drilling continued at the Devil Canyon site. To date boring BH-7 on the south abutment, boring BH-5A on the north bank under the river, and boring BH-5B on the north bank into the dam abutment have been completed.

The purpose of BH-5A was to investigate the existence of large shear zones or faults under the river at the Devil Canyon site. Although final data reduction and interpretation is not yet complete, the preliminary evaluation did not indicate the existence of any major shear zone or fault. Therefore, borings BH-6A and BH-6B, originally planned on the south bank at river level, were eliminated. Instead boring BH-3 was located at the top by the south abutment to investigate open fractures and joints near the canyon wall. Boring BH-3 had advanced to a length of 135 feet and is scheduled to be completed by mid-July. The diamond drilling will then move to the Watana site.

Geologic mapping at the Watana and the Devil Canyon sites was essentially complete within the immediate site vicinity. Additional areas and/or specific locations to be mapped have been identified.

In addition to the geologic mapping at both sites, auger holes were staked at Watana Borrow Area H and borrow sources were reviewed. Two seismic lines were laid out at Watana, SW-1 extension and one for ascertaining the location of BH-12 on the left bank. Test pit sites south of the proposed Devil Canyon Dam were located for determination of the type of overburden. Geologic mapping

ceased June 24 until July. All field maps were hand carried to Buffalo so maps could be updated there. Summary logs for BH-5A and BH-7 were completed.

5.08 - Data Compilation

Final Geotechnical Report - 1980 Activities was issued for printing and binding and will be available for distribution in July. Data reduction from COE field books and plotting on geology base maps were essentailly complete. Additional data required from USBR has not been received to date. Data reduction from 1981 summer field mapping is underway.

R&M ACTIVITIES

Subtask 5.02 - Photo Interpretation

The draft terrain unit maps and summary report have been completed and are currently under Acres' review.

Subtask 5.05 - Exploratory Program Design (1981)

Planning, scheduling, and preparation for upcoming field programs continued.

Subtask 5.06 - Exploratory Program (1981)

A number of activities were conducted under Subtask 5.06 during June. All activities remain on schedule and no significant problems were encountered. Diamond core drilling and pressure testing was completed at BH-5A and BH-5B, both located on the north abutment near the entrance to Devil Canyon. Drilling was begun on BH-3 on the south abutment at Devil Canyon.

Laboratory testing was performed on 5,000 pounds of soil samples from test pits in Borrow Area E.

A draft cross-river seismic refraction survey report was completed and delivered to Acres for review.

TASK 6 - DESIGN DEVELOPMENT

ACRES ACTIVITIES

Subtask 6.05 - Redevelopment Selection Report

A second draft of the Development Selection Report was submitted to APA for review and a presentation was made to APA and the Susitna Steering Committee on Acres approach to the decision making process which will be generally applied on Susitna studies.

Subtask 6.09 - Design Criteria for the Watana Development

Subtask 6.10 - Design Criteria for the Devil Canyon Development

Production of the design criteria is continuing in conjunction with other subtasks. A revised and updated copy of the preliminary criteria should be completed next month.

Subtask 6.11 - Preliminary Design of Watana Dam

Development of design criteria for the Watana dam is continuing as scheduled.

Subtask 6.12 - Preliminary Design of Devil Canyon Dam

Study on the dynamic response of the arch dam to seismic load has been completed and demonstrates that a thin arch dam is feasible. Design work on the concrete dam itself is almost complete and is subject only to a final review and a single run through all calculations based on any changes in water level or geology that may result from the latest data.

Subtask 6.14 - Spillway Design Criteria

Effort has been concentrated on stabilizing the definitive routed discharges.

Subtask 6.15 - Watana Spillway Alternatives

A review of the hydraulics for the alternative spillway designs has proceeded involving spillway geometry and probable sizes of any scour holes. Comparative cost estimates for the spillway alternatives have continued. Environmental concerns relating to supersaturation of nitrogen in spillway discharges are being studied and alternative schemes are being analysed.

Subtask 6.16 - Devil Canyon Spillway Alternatives

Comparative cost estimates for the spillway alternatives have continued as scheduled.

Subtask 6.20 - Access and Camp Facilities

Work continued on the access and camp facilities during the report period. The work was concentrated on the camps. A detailed work plan and schedule for the camp's study and preliminary design were prepared during the report period.

Subtask 6.23 - Optimize Watana Power Development

Determination of required capacities for firm energy production has commenced.

Subtask 6.25 - Optimize Dam Heights

Available firm energies and corresponding dam volumes have been determined for different maximum reservoir levels as a basis for optimizing the Watana dam height.

TASK 7 - ENVIRONMENTAL STUDIES

ACRES ACTIVITIES

Subtask 7.01 - Administration

Proposed Phase I Environmental Scope of Work modifications were finalized. These modifications are presently being incorporated into the overall Plan of Study, Revision 2.

Annual reports received to date were forwarded to Dr. Starker Leopold and APA. Extensive discussions have been held regarding further distribution of the environmental reports to government agencies, libraries, and the public. Report distribution requirements are expected to be finalized in July.

Acres' Environmental Coordinator participated in the June External Review Panel meeting and in the preparation of the presentation to the Steering Committee on a generic decision process methodology for general use in the study.

The implications of advancing production of the environmental components of the feasibility report by March 15, 1982, were reviewed, documented and forwarded to APA.

Subtask 7.05 - Socioeconomics

Discussions were held with TES and their subcontractor Frank Orth and Associates to seek a further clarification regarding the "with" and "without" Susitna scenarios. Prior to implementation, the definition of the scenarios and the forecast methodology to be used will be reviewed by Acres and forwarded to APA.

Subtask 7.06 - Cultural Resources

Discussions were held with TES relative to the number of new archeological sites being discovered this year and the implications on the Phase I studies. Although additional staff has been assigned, it is probable that most new sites discovered this year will not be sampled intensively enough to fully establish their cultural significance.

Subtask 7.09 - Transmission Corridor Assessment

To allow continuation of transmission corridor assessment in the 1981 field program, Acres forwarded maps to TES identifying corridors that will be recommended in our Subtask 8.01 Close-out Report. APA's comments on TES's corridor screening report are being reviewed.

Subtask 7.10 - Fish Ecology

Acres met with TES and their subconsultant, Milo Bell, to assess various spillway designs in relation to potential nitrogen supersaturation. In addition, discussions were held regarding design and water quality information required by TES.

The ADF&G Procedures Manual and first 1981 Quarterly Report were received and reviewed by Acres and TES. To ensure that future ADF&G reports more adequately present the information required by TES, a detailed quaterly report outline was prepared and forwarded to ADF&G through APA. ADF&G data analysis and report preparation are major concerns at this stage, and considerable efforts are being made to resolve this matter.

Subtask 7.11 - Wildlife Ecology Studies

Acres approved the addition of Dr. A. W. F. Banfield to the TES wildlife study

team. As a recognized world expert on caribou, his input into assessing potential impacts on the Nelchina herd should add greatly to study efforts.

In response to the ADF&G Big Game Progress Report for May 1981, Acres has requested TES to prepare an outline of data analysis requirements and recommended reporting format. Upon completion and review by Acres, this will be forwarded to ADF&G through APA.

Subtask 7.14 - Access Route Analysis

A report received from TES documenting their evaluation of the various access route options considered is presently being reviewed by Acres. Upon finalization, this report will be incorporated into Acres Access Road Design Transmittal. Maps, outlining alternative access routes to be studied in more detail this summer, were forwarded to TES.

TES ACTIVITIES

Subtask 7.01 - Administration

In June, TES prepared and submitted to Acres a number of items including: Phase I Scope of Work Modifications affecting studies for 1981, an updated equipment inventory list, notification of the addition to the project study team of Dr. A. W. F. Banfield, and input for use in the Acres Access Road Design Transmittal. The Annual Report for Fish Ecology was completed and forwarded to Acres, and efforts continued to complete the Land Use and Big Game (TES) Annual Reports.

Subtask 7.02 - Monitoring of Field Activities

From her field location, the Environmental Field Representative continued to work out logistical problems and provided TES subcontractors with assistance concerning helicopter support. She also conducted field inspections of program activities and attempted to document sheep utilization of a suspended mineral lick in the Jay Creek area.

Subtask 7.05 - Socioeconomic Analysis

The TES Group Leader held additional discussions with the Environmental Coordinator for Acres, concerning forecasting methodology for Work Package 4. The Project Leader for Frank Orth and Associates and Acres' Environmental Coordinator met in Alaska and discussed this concern again and reached an understanding concerning the Frank Orth/TES effort.

The methodology options memorandum relative to the Work Package 4 Forecast underwent further internal review. Also, Frank Orth and Associates' staff met with ADF&G's staff to review planning activities and to solicit comments.

Subtask 7.06 - Cultural Resource Investigation

Five three-man crews were at work in the field during June. Two crews are conducting intensive testing, two are continuing reconnaissance level testing, and

one crew is actively working to clear, from a resource impact basis, sites proposed for ground disturbing activities. This crew is also gridding each of the sites discovered last year for studies aimed at establishing their cultural significance.

To date, fifteen new archeological sites have been found in areas that will be flooded if the project proceeds. Based on projected work loads, budget constraints, and time of year, it is not likely that these sites or any other sites located during the 1981 sampling effort will be intensively tested this year.

During the last week in June, Mr. Lewis M. Cutler, Project Cultural Resource Group Leader (TES), conducted an inspection of the University of Alaska Museum Cultural Resources field studies. He accompanied field crews and observed reconnaissance level testing, intensive site testing, and the documentation of historical sites and structures. At the archeology tent camp, he reviewed site reports, maps, and artifacts. In Anchorage, he contacted Mr. Douglas Reger, Alaska State Archeologist, and gave him an oral progress report on the Susitna Cultural Resource effort.

Subtask 7.07 - Land Use Analysis

TES completed additions and technical revisions to the Land Use Annual Report during June. The Group Leader assembled and reviewed additional information on land ownership status and land management efforts in the vicinity of the Susitna basin.

The TES Group Leader met and discussed mutual concerns relative to hydrological investigations with members of the TES fisheries and aquatic team. A listing of information needs was developed and forwarded to Acres.

Subtask 7.08 - Recreation Planning

The Principal Investigator prepared a basic outline and skeletal report for the Exhibit E Recreational Report. This internal working draft will be the basis for incorporation of additional data on access, public preferences, and site selection as the planning process continues.

Subtask 7.09 - Transmission Corridor Assessment

TES received from Acres recommendations of transmission line study corridors. Maps were also provided to TES. Based on Acres' request to proceed with the study effort, TES provided these maps to all study participants and advised them to proceed with their study effort.

Subtask 7.10 - Fish Ecology Studies

Major activities for the month included meetings at the Acres Buffalo office on June 11 and June 19 and the preparation of an outline stating how TES expects ADF&G to prepare its reports.

The Buffalo meeting included discussions on dam spillway design schemes and the modelling information requests TES had made to Acres concerning hydrological and water quality predictions. Other topics of discussion dealt with the presence of dissolved gas supersaturation in the Devil Canyon impoundment and anticipated limnological conditions in the Watana impoundment.

The receipt of the final portion of the ADF&G Procedures Manual and the first 1981 Quarterly Report prompted TES to outline what the contents and structure of future ADF&G documents should be. Emphasis was placed on data analysis and interpretation. An evaluation of the level of information TES expects to receive from the various ADF&G sampling programs were made. In addition, TES is concerned as to whether ADF&G's expectations for meeting their stated objectives for each study are feasible. Both of these documents were submitted to Acres during the June 19 meeting and served as the formal TES review of the ADF&G Procedures Manual and Quarterly Report. Several additional concerns were also submitted to Acres later in the month.

Other activities included a June 9 meeting of the Su Hydro Instream Flow Coordination Committee held in Anchorage. Topics of discussion included the need for pre- and post-project stream flow information, ADF&G's sites for the Selected Aquatic Habitat Study, and the lack of data analyses for studies concerning instream flow.

Scope of Work Modifications for an estuary literature search and dissolved gas measurement study were submitted to Acres. Literature reviews, particularly on arctic and subarctic lakes and impoundments, continued.

A demonstration sampling study for dissolved gas supersaturation was conducted in the vicinity of Devil Canyon by Dana Schmidt. This study indicated that the proposed scope of work for measuring dissolved gas supersaturation is realistic and can be accomplished with a minimum of difficulty.

Subtask 7.11 - Wildlife Ecology Studies

As previously mentioned, Dr. A. W. F. Banfield was added to the big game study team. Both TES Wildlife and Plant Ecology Group Leaders met with Dr. Banfield to discuss numerous issues with him; most significant of which was the potential impact of the project on the Nelchina caribou herd.

With respect to the mitigation policy outline, TES received comments from a number of individuals regarding the preliminary outline, and a revised outline, which included the comments, was sent out for a second review. A meeting involving mitigation team members was held on June 29 to discuss this policy statement and plan the next step in the mitigation process.

Materials and direction were provided to subcontractors with respect to planned field activities and study needs regarding access road investigations. These investigations were initiated during the month.

On June 26, a reconnaissance level survey of bald eagle nests was flown along the Susitna River from Cook Inlet to Portage Creek. The purpose of this survey

was to gain a preliminary impression of the degree of eagle use along the lower river.

The avian study group's intensive census studies continued. In addition, study areas were investigated for species composition. Aerial reconnaissance for raptor nest sites along the access corridors had to be cancelled due to foul weather and was rescheduled, but ground observations of impoundment zone nests, identified earlier this year, were completed.

Furbearer studies centered around radio-collaring and tracking animals within the study area. Several additional foxes have been collared and are currently being monitored. Activity data and scats for both marten and foxes were also collected.

Subtask 7.12 - Plant Ecology Studies

Work continued on the downstream study effort. The TES Plant Ecology Group Leader traveled to Alaska to participate in the Mitigation Task Force meeting and to review the current study activities.

Subtask 7.14 - Access Route Environmental Analysis

TES received new access route maps and distributed them to Principal Investigators and other consultants. And, as previously mentioned, Phase I modification recommendations regarding access road studies were submitted to Acres as was environmental input to the Access Route Design Transmittal.

TASK 8 - TRANSMISSION

ACRES ACTIVITIES

General

As reported last month, notes of meeting in draft were distributed to each of the utilities that Acres met with during the month of April for their comments or approval. Municipal Light & Power of Anchorage reponded with a letter dated June 9, 1981. So far only GVEA and AMLP have replied.

Subtask 8.01 - Transmission Line Corridor Screening

Preparation of the Close-out report was resumed to include application of the decision process methodology described in the Development Selection Report.

Subtask 8.02 - Electric System Studies

An evaluation of high voltage direct current (HVDC) transmission of Susitna power was carried out and compared to EHV-AC transmission in technical and economic terms.

The review and update of transmission line and substation cost estimates were completed. The comparison of various transmission alternatives on the basis of operating characteristics and life-cycle costs was completed. This comparison resulted in the selection of Transmission Alternative 2, which consists of three circuits at 345 KV and 2 x 954 MCM conductors from Susitna to Anchorage and two circuits at 345 KV with 2 x 795 MCM conductors from Susitna to Fairbanks, both without series compensation. The results of this study were submitted to APA.

Subtask 8.06 - Disptach Center and Communications

Approval was received from Alaska Power Authority to engage the services of Energy and Control Consultants, San Jose, California, to act as consultants for this subtask.

TASK 9 - CONSTRUCTION COST ESTIMATES AND SCHEDULES

ACRES ACTIVITIES

Preliminary arrangements were made for a site visit by Acres' Task 9 Coordinator and a Senior Estimator. This visit is scheduled for the early part of August and will include an on site investigation, as well as, discussions with both Frank Moolin & Associates and senior personnel of a major experienced Alaskan contractor.

Preparation of a report documenting the basis for the upper limit cost estimate for the project continued.

TASK 12 - PUBLIC PARTICIPATION

ACRES ACTIVITIES

Responses to Action List comments were prepared with a special emphasis given to those that are still outstanding.

TASK 13 - ADMINISTRATION

ACRES ACTIVITIES

Subtask 13.04 - Develop Schedule Control System

Work continued on monitoring and updating the project schedule to July 6, 1981. Revisions in Task 6, Task 9 and Task 10 logic will be further developed as the work plan is evolved and further target dates are established.

Subtask 13.05 - Cost Control

The March-April Cost Report was issued and revised cost schedules for Amendment No. 1 were sent to APA. A procedure for determining compliance to Article IV of the contract was submitted to APA. Other activities continued as scheduled.

TASK 14 - ADF&G SUPPORT

ACRES ACTIVITIES

Purchasing of ADF&G equipment continued to the end of fiscal year 1981. Funds remaining in the ADF&G equipment budget at the end of fiscal year 1981 amounted to $9,700.

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

JAY S. HAMMOND, GOVERNOR
2207 Spenard Road
Anchorage, Alaska
99503

July 10, 1981

03-81-7.10-0.4

Dr. John Hayden
Technical Study Director
Acres American Incorporated
The Liberty Bank Building
Buffalo, New York 14202

RECEIVED JUL 17 1981

Dear Dr. Hayden:

RE: ADF&G/Su Hydro Aquatic Studies Monthly Report - June, 1981

ADMINISTRATIVE SUPPORT

Tom Trent participated in the presentation and study review of Su Hydro Studies for the APA External Review Panel and in the mitigation policy discussions by the Wildlife Mitigation Task Force. He also spent one week touring the respective field camps and participating in field activities.

He took one week of annual leave and spent the remainder of the month tending to general administrative duties.

Other AS staff activities revolved around filling in for Trent and coordinating the office and maintenance requirements with the respective projects needs.

The ADF&G Procedures Manual was submitted to the Su Hydro Steering Committee for review at a SHSC meeting in early June. Reviewers comments were requested to be in by June 30 but to date, comments have not been received in this office.

Final FY-81 equipment purchases and adjustments were completed in June. Defects and late delivery caused temporary delay in some aspects of project implementation but most were bridged with minor difficulty by sharing equipment until repairs or replacements could be effected. The inboard jet boats were particularly troublesome in this respect.

Preparation for the July 6th arrival of the project biometrician was initiated in June. Considerable difficulty was encountered with one of the data processing equipment suppliers (Tectronix's, Inc.), when they refused to recognize Acres American, Inc. as the State's purchasing agent and would not extend the discount normally extended the State to Acres. Several telephone calls were necessary to rectify the matter, thus allowing the equipment to be purchased at a discount on an Acres purchase order and at 30 day net terms without Acres having to file what amounted to a financial statement with Tektronix, Inc.

This incident is only one of several where major suppliers or shippers refused to extend credit or accept purchase orders from Acres American, Inc.

Personnel matters attended to included the processing of forms to upgrade several Resident and Juvenile, and Aquatic Habitat team members to job classes more commensurate with their actual duties due to project rescoping.

Two members of the Adult Anadromous project (AA) attended a three day jet riverboat training course in Talkeetna.

FIELD ACTIVITIES

Common to all project segments was completion of field camps and installation of equipment.

The AA project placed six side scanning sonar (SSS) units on opposite river banks at three locations (Figure 1). These units are reportedly working well after some initial problems with leaking seals and high water velocities during a peak discharge period.

Twelve fishwheels were installed at four locations on the Susitna drainage; four at Sunshine, four at Talkeetna, two at Curry and two on the Yentna River about five river miles upstream from its confluence with the Susitna (Figure 1). The fishwheels are reportedly performing satisfactorily with some strong chinook salmon catches made. The Sunshine and Curry wheels sampled in excess of 200 chinook salmon each, the Talkeetna wheels sampled approximately 70 chinook and the Yentna wheels an unknown number of chinook. 1/

In accordance with the experimental design, the chinook salmon were sampled for age/length/weight data. The first sockeye salmon were tagged and released at Sunshine on June 29.

The radio telemetry program was also initiated. Eight chinook salmon, six at Sunshine and two at Curry, were radio tagged. The tagged fish distributed themselves between the Susitna-Chulitna confluence and Portage Creek. One fish moved into Portage Creek, another has not been located since it was tagged and another disappeared from the Susitna River after four days of successful tracking.

The RJ project ammended their sampling scheme by selecting 44 habitat locations along the river from Cook Inlet to the Tyone River confluence (Table 1). Six of the locations are new, four along the lower reach were not sampled last winter due to unsafe ice conditions and eight in the impoundment area are intended for summer sampling only. The remainder of the locations correspond with those sampled last winter.

1/ Numbers not reported because of poor radio communication with this camp.

Systematic sampling efforts have yielded catches of rainbow trout, grayling, burbot, round whitefish, humpback whitefish, long nose suckers, Dolly Varden, cottid, juvenile coho salmon, juvenile chinook salmon, juvenile sockeye salmon, juvenile chum salmon, juvenile pink salmon and three spine stickleback. It is too early to determine any pattern of use but of particular note is the wide variety of habitats utilized by juvenile coho and chinook salmon. Juveniles of these species, particularly age 1+ individuals, have been captured in minnow traps set at tributary mouths, sloughs, side channels as well as the mainstem Susitna River. Rainbow trout have been captured from silty mainstem sites more frequently than anticipated, particularly at those sites located upstream of Talkeetna.

The species most consistantly captured in minnow traps was the three-spine stickleback. In the lower reach study area headquatered at the Yentna River camp, 3,338 sticklebacks were taken in comparison to only 36 1+ chinook salmon (Tables 2 and 3).

The section of river immediately upstream and to Sunshine also produced heavy catches of stickleback with 3,124 individuals taken. Juvenile chinook catches increased in this section with 38 0+ and 420 1+ individuals captured (Table 4). Five 0+ and 41 1+ coho salmon were also taken.

The next section of river sampled runs from Sunshine upstream to Curry. In this reach, stickleback also dominated minnow trap catches with 4,037 specimens taken in contrast to seven 0+ and 23 1+ chinook (Table 5). Juvenile coho also showed increases in this reach with 33 0+, 136 1+ and nine 2+ individuals captured.

The incidence of stickleback in minnow trap catches decreased dramatically along the section of river between Curry and Devil Canyon, with only 292 individuals taken (Table 6). Minnow trap catches of 0+ and 1+ chinook were also down with three and 14 respectively.

Low catches of 0+ fry by minnow traps should not be construed to mean that 0+ fry were not present. It is believed that the 1/4" mesh used in the construction of commercially available minnow traps was too large to contain the 20 to 50 mm long fry. (Drew Crawford, FB-1, Trip Report of June 26, 1981). One thousand six hundred of the 0+ fry reported from Slough 11 (Table 6), were taken with a beach seine to confirm the identification of large numbers of 0+ fry visually sighted (Table 7).

Catches of other resident and juvenile anadromous species are as reported in the Tables.

The impoundment segment of the RJ project is stressing tag and recapture studies of those species present as defined in the Procedures Manual. The trip report of Biologist Mike Stratton adequately describes the results of a typical round of sampling in this area and I am including it in its entirety for this purpose.

Members of the AH project accompanied crews assigned to the RJ project as provided for in the Procedures Manual. Those AH personnel measured water quality field parameters (DO, pH, specific conductance, temperature, velocity, etc.), collected water samples, compiled planimetric maps, placed staff gages and installed thermographs when required.

A summarization of water quality data collected by AH personnel was not included with that project's monthly report. It is anticipated that there will be some lag time involved with AH data as it is necessary to incorporate it with RJ data; a project in itself which is now being looked at by the recently hired biometrician.

Sincerely,

Thomas W. Trent
Aquatic Studies Coordinator
Su Hydro Aquatic Studies
Telephone: (907) 274-7583

cc: V. Lucid
J. Gill
D. Schmidt
D. Wozniak
M. Warner

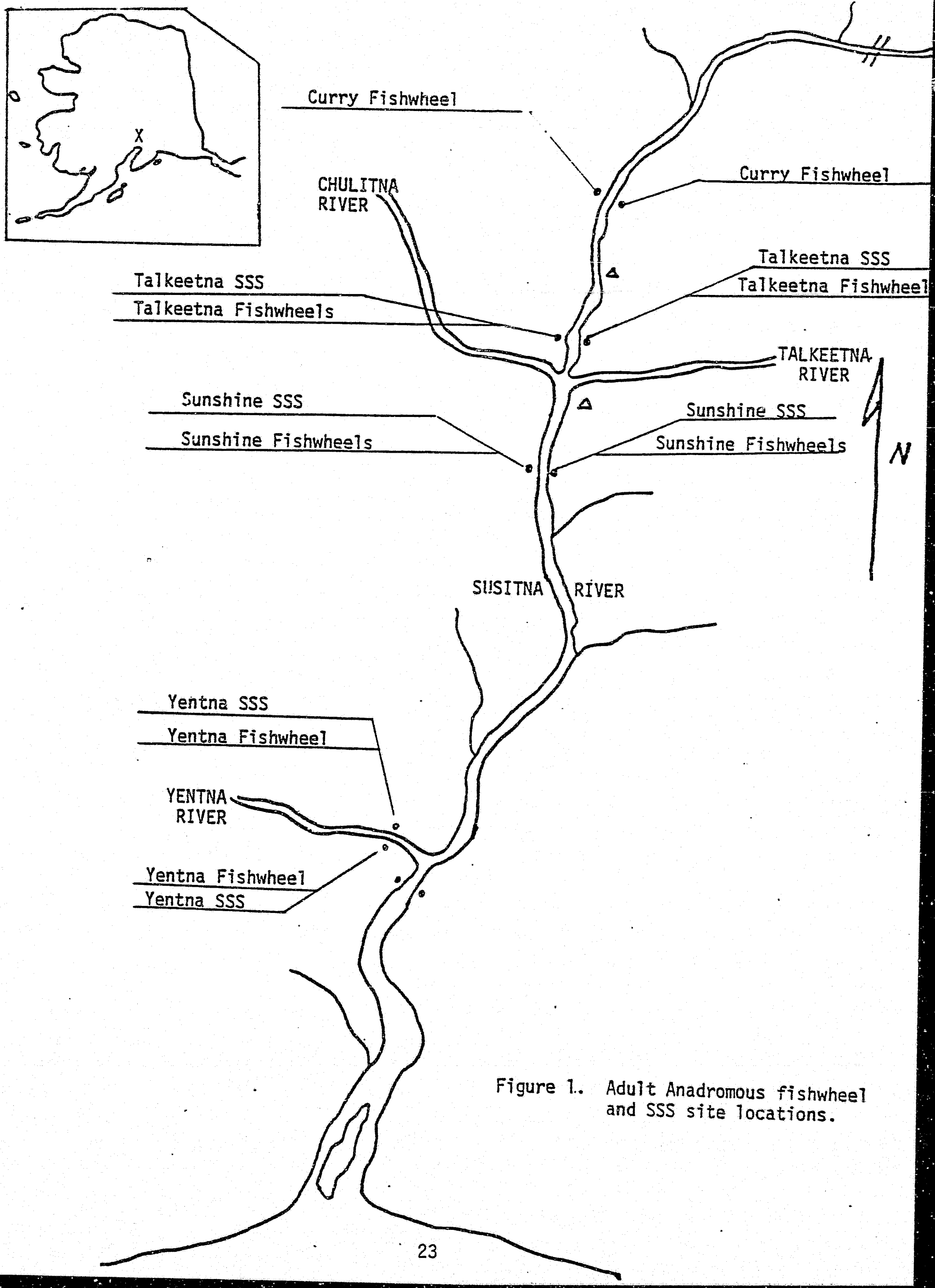

Figure 1. Adult Anadromous fishwheel and SSS site locations.

Table 1. List of habitat locations Susitna Hydro Aquatic Studies Resident and Juvenile Anadromous Project.

HABITAT LOCATIONS	RIVER MILE	GEOGRAPHIC LOCATION			
		T	R	S	G
Alexander Creek Mouth	10.1	15N	7W	06	DC
Susitna Mainstem					
Anderson Creek Mouth	23.8	17N	7W	29	DD
Kroto Slough Mouth	30.1	17N	7W	01	DB
Susitna Side Channel	36.3	18N	6W	16	BB
Deshka River Mouth	40.6	19N	6W	35	BD
Lower Delta Islands-Mid Channel Mouth (New Site)	44.0	19N	5W	19	AC
Little Willow Creek Mouth	50.5	20N	5W	27	AA
Rustic Wilderness	58.8	21N	5W	24	DB
Slough West Bank (New Site)	65.0	22N	5W	27	DA
Kashwitna River	60.5	21N	5W	13	AA
Cashwell Creek	63.0	21N	4W	6	BC
Sheep Creek Slough-Mouth	65.5	22N	4W	30	BA
Goose Creek	71.0	23N	4W	30	BC
Mainstem West Bank	72.0	23N	5W	24	BC
Montana Creek	76.0	23N	4W	7	AB
Mainstem #1	84.0	24N	5W	10	DCC
Sunshine Creek - Mouth	84.2	24N	5W	14	AA
Mouth of Birch Creek Slough	88.4	26N	5W	3	AD
Mouth of Cache Creek Slough	95.2	26N	5W	35	AC
Mouth of Whiskers Creek	101.2	26N	5W	3	ABD
Slough 6A	112.3	28N	5W	13	CAB
Lane Creek	113.6	28N	5W	13	CAB
Mainstem #2 (New site)	114.6	28N	4W	6	CAB

Table 1 - Continued.

HABITAT LOCATIONS	RIVER MILE	GEOGRAPHIC LOCATION			
		T	R	S	G
Mainstem Susitna	120.7	29N	04W	10	BC
Susitna Side Channel (New Site)	121.6	29N	04W	11	BB
Mainstem Susitna (New Site)	123.8	30N	04W	26	DDD
Slough 8A	125.3	30N	03W	30	BC
4th of July Creek - Mouth	131.1	30N	03W	03	DB
Slough 10	133.8	31N	03W	36	AA
Slough 11	135.3	31N	02W	30	AA
Mainstem Susitna	137.0	31N	02W	17	CD
Indian River Mouth	138.6	31N	02W	09	CDD
Slough 20-Waterfall Creek	140.1	31N	02W	11 10	BB AD
Mainstem Susitna (New Site)	146.9	32N	01W	27	DBC
Portage Creek-Mouth	148.9	32N	01W	25	CBD
Fog Creek	173.9	31N	04E	16	DBB
Tsusena	178.9	32N	04E	36	ADB
Deadman Creek	183.4	32N	05E	26	CDB
Watana Creek	190.4	32N	06E	25	CCA
Kosina Creek	202.4	31N	08E	15	BAB
Jay Creek	203.9	31N	08E	13	BCC
Goose Creek	224.9	30N	11E	32	DBC
Oshetna River	226.9	30N	11E	34	CCD

No sampling during winter. 80/81

Table 2 . Resident Fish Tagging by species and river reach April 1 through June 30, 1981. 1/ 2/

LOCATION	DOLLY VARDEN	GRAYLING	RAINBOW TROUT	BURBOT	LONG NOSE SUCKER	ROUND WHITEFISH	HUMPBACK WHITEFISH				TOTAL
Cook Inlet to Delta Islands	-	31	2	6	190	2	12				243
Delta Islands to Parks Highway	17	6	3	-	-	5	-				31
Parks Highway to Curry	-	92	28	2	51	6	6				185
Curry to Devils Canyon	-	-	3	6	14	5	-				28
Devils Canyon to Tyone River	-	1090	-	5	54	1	-				1150
TOTAL	17	1219	36	19	304	19	18				1637

1/ Preliminary data

2/ Data for Devils Canyon to Tyone River through July 2.

MEMORANDUM

State of Alaska

TO: Kevin Delaney
Res. & Juv. Anad. Project Leader

DATE: July 6, 1981

FILE NO: 03-81-7.10-2.6

TELEPHONE NO:

FROM: Mike Stratton
Fisheries Biologist

SUBJECT: Trip Report
Impoundment Area
6/16/81-7/2/81

The second round of sampling in the Susitna Impoundment Area took place June 16 - July 2. The crew consisted of Joe Sautner, AH; and Paul Suchanek, Bob Marshall and Mike Stratton, RJ. Jim Mauney, RJ, was present June 25 - June 29.

Set gear was fished in all 8 sampling streams where sites were available. Intensive rod and reel sampling was conducted in all 8 streams.

Table 1 lists the number of fish captured by species and stream, and includes 951 grayling, 17 burbot, 83 long nose suckers, 6 round whitefish and 6 slimy sculpin. Only 43% of the grayling were taken within the study areas. 97% of the total grayling catch was taken by rod and reel (Table 2). Rod and reel catch of grayling, for the entire trip, was 7.2 per angler hour for the study areas.

All 17 burbot were captured on trot lines, while all 83 suckers and 6 round whitefish were captured in gillnets. The minnow traps accounted for all 6 slimy sculpin.

Table 3 lists all fish species tagged, by creek and date. Of the 698 grayling tagged, 60 were recaptured within 2 days. Of the 395 grayling tagged on trip 1, 50 (12.7%) were recaptured on this trip. (Tables 4 and 5).

Whereas on trip 1, most grayling were captured at the mouths of most creeks, this trip the grayling were found throughout the entire stream in all cases.

Gillnet sampling in Sally Lake produced 5 grayling and 3 lake trout. A small raft was used to set an offshore gillnet, but all fish captured were in shallow water near the outlet.

Small fish, 1/2"-1", were observed in most of the streams. Samples were taken by seine and bucket at random sites and brought back for identification.

Many backwater sloughs and isolated clear pools of the Susitna River itself were seen to contain small fish, 1/2"-1" and 1"-3". Samples were taken here and most of the larger fish 1"-3" were found to be suckers and sculpin. The smaller fish, grayling or whitefish, are awaiting identification.

These clear backwater areas were first observed on Trip 1. Even at this higher water time, they were clear. Some of these areas are 2-4 miles from the nearest stream, so it's very possible that spawning occurs in these areas. It was also interesting to note that on the 1st trip, most of the grayling were congregated at the mouths of the streams and had

already spawned. This trip they were scattered throughout the streams. It could be that the grayling spawn in these backwater sloughs before entering a stream for the summer.

An excellent rearing slough was found 1/3 mile west of the mouth of Watana Creek. 15 grayling, 140-275 mm were captured in 40 minutes of rod and reel sampling. This area, at this time, had no inlet or outlet with either the Susitna or Watana Creek.

Helicopter shuttles were used to sample the upper pools (1-4 miles above the study areas) on Kosina and Tsusena Creeks. 111 grayling were marked in Kosina Creek and about 40 were tagged in Tsusena.

Heavy rainfall the last 8 days of the trip raised the creek levels and their turbidity substantially, accounting for the lower catches in the last 4 creeks on this trip.

Only 1 bear was seen this trip, at Kosina Creek. Numerous moose and 1 caribou were also seen. Helicopter time was approximately 10.5 hours of 206 time and 1.5 hours of 205 time.

On the subject of marking fish, I strongly oppose the removal of a pectoral fin. Most of the fish marked in this way were bleeding heavily and I give them little chance of surviving. These fish have to negotiate miles of creek with sustained flows of over 5 f.p.s., and without both pectoral fins, I'm sure they are severely handicapped. In my opinion, complete removal of just the adipose is adequate.

cc: T. Trent
C. Estes
J. Mauney

Table 1. Fish captured by species and stream, Susitna River Impoundment Studies, June 16-July 2, 1981.

STREAM/DATE	OTHER	BURBOT	G-R-A-Y-L-I-N-G			
			TOTAL ALL AREAS	STUDY AREA	NUMBER TAGGED	SCALE SAMPLES
Oshetna River 6/16-6/18	1 Cottid	-	98	44	82	10
Goose Creek 6/18-6/20	11 Long Nose Sucker	3	164	77	142	26
Jay Creek 6/20-6/22	8 Long Nose Sucker 1 Round Whitefish	5	181	52	153	19
Kosina Creek 6/22-6/24 1/	1 Long Nose Sucker 1 Round Whitefish 1 Cottid	1	263 2/	96	122	23
Watana Creek 6/24-6/26	57 Long Nose Sucker 1 Round Whitefish 1 Cottid	6	67	32	48	4
Deadman Creek 6/26-6/28	1 Cottid	-	86	69	68	13
Tsusena Creek 6/28-6/30 1/	3 Round Whitefish	2	75	21	68	19
Fog Creek 6/30-7/2	1 Cottid	-	17	17	15	6
TOTALS	83 Long Nose Sucker 6 Round Whitefish 5 Cottid	17	951	408	698	120

1/ Includes fish captured in upper pools which we shuttled into by helicopter.

2/ Includes 11 grayling marked with clipped adipose and left pectoral fin.

Table 2. Fish species captured by sampling stream and gear, proposed Susitna Impoundment Area, June 16-July 2, 1981. (Study area only)

STREAM	GEAR	TOTAL GEAR HOURS FISHED	GRAYLING	BURBOT	ROUND WHITEFISH	LONG NOSE SUCKER	COTTID
OSHETNA RIVER:	Minnow Trap	177.5	1	-	-	-	1
	Gillnet	-	-	-	-	-	-
	Rod & Reel	5	43	-	-	-	-
	Trot Line	-	-	-	-	-	-
GOOSE CREEK:	Minnow Trap	221.5	-	-	-	-	1
	Gillnet	44	1	-	-	11	-
	Rod & Reel	12.5	76	-	-	-	-
	Trot Line	88	-	3	-	-	-
JAY CREEK:	Minnow Trap	216.5	-	-	-	-	-
	Gillnet	18.5	3	-	1	8	-
	Rod & Reel	5.5	49	-	-	-	-
	Trot Line	128.5	-	5	-	-	-
KOSINA CREEK:	Minnow Trap	212.5	2	-	-	-	1
	Gillnet	42.5	15	-	1	7	-
	Rod & Reel	7.3	79	-	-	-	-
	Trot Line	86	-	1	-	-	-
WATANA CREEK:	Minnow Trap	210	-	-	-	-	1
	Gillnet	42	3	-	1	57	-
	Rod & Reel	5.5	29	-	-	-	-
	Trot Line	123	-	6	-	-	-
DEADMAN CREEK:	Minnow Trap	207	-	-	-	-	1
	Gillnet	-	-	-	-	-	-
	Rod & Reel	9	69	-	-	-	-
	Trot Line	79	-	-	-	-	-
TSUSENA CREEK:	Minnow Trap	220.5	-	-	-	-	-
	Gillnet	44.5	2	-	3	-	-
	Rod & Reel	4	19	-	-	-	-
	Trot Line	88	-	2	-	-	-
FOG CREEK:	Minnow Trap	202	-	-	-	-	1
	Gillnet	12.5	-	-	-	-	-
	Rod & Reel	4	17	-	-	-	-
	Trot Line	82	-	-	-	-	-
TOTALS:	Minnow Trap	1667	3	-	-	-	6
	Gillnet	204	24	-	6	83	-
	Rod & Reel	52.8	381	-	-	-	-
	Trot Line	674.5	-	17	-	-	-

Table 3. Fish species tagged, Susitna Impoundment Studies, 1981.

STREAM	DATES	GRAYLING	(CUM)	BURBOT	(CUM)	ROUND W.FISH	(CUM)	LONG NOSE SUCKER	(CUM)
Oshetna R.	6/16-18	82	(96)	0	(0)	0	(0)	0	(0)
Goose Creek	6/18-20	142	(239)	0	(1)	0	(0)	9	(9)
Jay Creek	6/20-22	153	(233)	0	(2)	1	(1)	7	(7)
Kosina Cr.	6/22-24	122	(218)	0	(0)	0	(0)	0	(0)
Watana Cr.	6/24-26	48	(50)	0	(2)	0	(0)	25	(38)
Deadman Cr.	6/26-28	68	(121)	0	(0)	0	(0)	0	(0)
Tsusena Cr.	6/28-30	68	(102)	0	(0)	0	(0)	0	(0)
Fog Creek	6/30-7/2	15	(34)	0	(0)	0	(0)	0	(0)
TOTALS	6/16-7/2	698	(1093)	0	(5)	1	(1)	41	(54)

TOTAL ALL SPECIES 6/16-7/2: 740

TOTAL ALL SPECIES TO DATE: 1153

Table 4. Grayling tagging and recovery by stream, Susitna River Impoundment Studies, 1981.

STREAM	DATES	NO. TAGGED	(CUM)	RECOVERY DATA	
				SAME TRIP	LONG TERM RECOVERY/%
Oshetna R.	6/16-18	82	(92)	5	0/0%
Goose Cr.	6/18-20	142	(239)	20	10/7%
Jay Creek	6/20-22	153	(233)	16	10/6.5%
Kosina Cr.	6/22-24	122	(218)	9	17/13.9%
Watana Cr.	6/24-26	48	(50)	4	1/50%
Deadman Cr.	6/26-28	68	(121)	4	4/7.5%
Tsusena Cr.	6/28-30	68	(102)	1	4/11.8%
Fog Creek	6/30-7/2	15	(34)	1	4/21%
TOTALS	6/16-7/2	698	(1093)	60	50/12.7%

Table 5.

RECOVERY DATA FORM

TAG #	DATE	STREAM	AREA
✓ 3019	6/18	Goose Creek	01
3040	6/18	Goose Creek	01
3018	6/18	Goose Creek	01
3062	6/18	Goose Creek	01
3020	6/18	Goose Creek	01
3014	6/18	Goose Creek	01
3038	6/19	Goose Creek	01
3017	6/19	Goose Creek	B/W 1+2
3033	6/19	Goose Creek	03
3042	6/19	Goose Creek	1-2 mi ↑
3191	6/20	Jay Creek	01
3185	6/20	Jay Creek	01
3147	6/20	Jay Creek	01
3190	6/20	Jay Creek	B/W 1+2
3180	6/20	Jay Creek	01
3299	6/20	Jay Creek	B/W 1+2
3158	6/21	Jay Creek	03
3096	6/21	Jay Creek	↑ 5
3141	6/21	Jay Creek	01
3087	6/21	Jay Creek	05
3250	6/22	Kosina	B/W 1+2
3226	6/22	Kosina	B/W 1+2
3301	6/22	Kosina	B/W 1+2
3245	6/22	Kosina	02

Table 5 - Continued.

RECOVERY DATA FORM

TAG #	DATE	STREAM	AREA
3277	6/22	Kosina	02
3270	6/22	Kosina	02
3219	6/23	Kosina	01
3248	6/23	Kosina	01
3266	6/23	Kosina	01
3227	6/23	Kosina	01
3306	6/23	Kosina	01
3260	6/23	Kosina	01
3253	6/23	Kosina	B/W 4+5
3265	6/23	Kosina	.5 m. ↑5
3296	6/23	Kosina	.7 mi ↑5 & 01
3231	6/23	Kosina	01
3741	6/23	Kosina	B/W 4 + 5
3243	6/25	Kosina	2.1 m ↑5
3025	6/24	Watana	01
3742	6/25	Watana	01
3963	6/26	Watana	01
3316 1/	6/25	Watana	01
3329	6/27	Deadman	01
3335	6/27	Deadman	01
3344	6/27	Deadman	02
3346	6/27	Deadman	02

1/ Long Nose Sucker

Table 5 - Continued

RECOVERY DATA FORM

TAG #	DATE	STREAM	AREA
3381	6/28	Tsusena	01
3240	6/29	Tsusena	2 m. ↑ 5
3382	6/30	Tsusena	01
3403	6/30	Tsusena	01
3419	6/30	Fog	01
3433	6/30	Fog	01
3421	6/30	Fog	01
3418	7/1	Fog	02

Table 2. Catch by species and habitat location on the [illegible] River, [illegible], [illegible].

HABITAT LOCATION	SPECIES CAPTURED											
	CHINOOK 1+	CHINOOK Adult	COHO 1+	STICKLE-BACK	COTTID	LONG NOSE SUCKER	ROUND WHITE-FISH	HUMP-BACK WHITE-FISH	BURBOT	RAINBOW TROUT	SOCKEYE 1+	DOLLY VARDEN
Little Willow Creek	27	3	-	75	2	-	-	-	-	-	-	-
Mid Channel Delta Islands	2	-	-	27	-	6	-	-	-	-	-	-
Deshka River Site A	-	-	-	1,139	1	-	-	-	-	-	-	-
Deshka River Site B	3	-	1	719	-	-	-	-	-	-	-	-
Mid Kroto Slough	-	-	-	5	-	5	-	-	-	-	-	-
Kroto Slough Mouth	-	-	-	31	-	-	-	-	-	-	-	-
Anderson Creek	-	-	-	740	-	17	2	10	2	-	-	-
Alexander Creek Site C.	4	-	2	559	-	1	-	-	-	1	-	2
Fish Creek	-	2	-	43	-	1	1	5	1	-	1	-
TOTALS	36	5	3	3,338	3	30	3	15	3	1	1	2

Table 3. Catch by species, gear type, and habitat location on the lower Susitna River, June 16-30, 1981.

HABITAT LOCATION/DATES	GEAR TYPE	TOTAL GEAR HOURS FISHED	SPECIES CAPTURED											
			CHI-NOOK 1+	CHI-NOOK Adult	COHO 1+	STICK-ELBACK	COTTID	L.NOSE SUCKER	RWHITE FISH	H.BACK W.FISH	BUR-BOT	R.BOW TROUT	SOCK-EYE 1+	DOLL VARDI
Little Willow Creek 6/18-19	MINNOW TRAP	230	27	-	-	75	2	-	-	-	-	-	-	-
	TROT LINE	44	-	1	-	-	-	-	-	-	-	-	-	-
	ROD & REEL	1	-	2	-	-	-	-	-	-	-	-	-	-
Mid Channel Delta Is. 6/17-19	MINNOW TRAP	494	2	-	-	26	-	-	-	-	-	-	-	-
	TROT LINE	49	-	-	-	-	-	-	-	-	-	-	-	-
	GILLNET	49	-	-	-	1	-	6	-	-	-	-	-	-
Deshka River Site A 6/17-19	MINNOW TRAP	431	-	-	-	1139	1	-	-	-	-	-	-	-
	TROT LINE	42	-	-	-	-	-	-	-	-	-	-	-	-
Deshka River Site B 6/17-19	MINNOW TRAP	387	3	-	1	719	-	-	-	-	-	-	-	-
	TROT LINE	41	-	-	-	-	-	-	-	-	-	-	-	-
Mid Kroto Slough 6/19-20	MINNOW TRAP	233	-	-	-	5	-	-	-	-	-	-	-	-
	TROT LINE	47	-	-	-	-	-	-	-	-	-	-	-	-
	GILLNET	23	-	-	-	4	-	5	-	-	-	-	-	-
Kroto Slough Mouth 6/20-22	MINNOW TRAP	473	-	-	-	31	-	-	-	-	-	-	-	-
	TROT LINE	93	-	-	-	-	-	-	-	-	-	-	-	-
Anderson Creek 6/21-24	MINNOW TRAP	458	-	-	-	740	-	-	-	-	-	-	-	-
	TROT LINE	91	-	-	-	-	-	-	-	-	-	-	-	-
	GILLNET	20	-	-	-	-	-	17	2	10	2	-	-	-
Alexander Creek 6/22-23	MINNOW TRAP	232	4	-	2	559	-	-	-	-	-	-	-	2
	TROT LINE	47	-	-	-	-	-	-	-	-	-	1	-	-
Fish Creek 6/21-23	MINNOW TRAP	484	-	-	-	43	-	1	-	-	-	-	1	-
	TROT LINE	96	-	-	-	-	-	-	-	-	-	-	-	-
	GILLNET	49	-	2	-	-	-	1	1	5	1	-	-	-

Table 4. Total catch and species composition by gear type.

HABITAT LOCATION AND DATES	RIVER MILE	GEAR TYPE	TOTAL GEAR HOURS FISHED	S-P-E-C-I-E-S C-A-P-T-U-R-E-D															
				CHINOOK 410 0+	CHINOOK 411 1+	C-O-H-O 430 0+	C-O-H-O 431 1+	C-O-H-O 2+	541 RAINBOW TROUT	610 ARCTIC GRAYLING	530 DOLLY VARDEN	LONG NOSE SUCKER	W-H-I-T-E-F-I-S-H ROUND	W-H-I-T-E-F-I-S-H HUMPBACK	BURBOT	910 COTTID	680 STICKLE-BACK	LAMPREY	SITE TOTA
Rabideux Creek 24N-05W-16-AB Site #1		M.T.	365													1	1195		11
		G.N.	17																
		T.L.	73																
Rabideux Creek 24N-05W-16-DD Site #2		M.T.	283														97		
		G.N.	-																
		T.L.	69																
Montana Creek 23N-04W-07-AB Site #1		M.T.	355	27	30	4	36		2	1						1	166	1	2
		G.N.	-																
		T.L.	14.0																
Total Catch by Gear Type		M.T.		27	30	4	36		2	1						2	1458	1	
		G.N.																	
		T.L.																	-

M.T. = Minnow Trap
G.N. = Gill Net
T.L. = Trot Line

Table 4. Continued.

HABITAT LOCATION AND DATES	RIVER MILE	GEAR TYPE	TOTAL GEAR HOURS FISHED	S-P-E-C-I-E-S C-A-P-T-U-R-E-D																
				CHINOOK 410 411		C-O-H-O 430 431			641 RAINBOW TROUT	610 ARCTIC GRAYLING	630 DOLLY VARDEN	LONG NOSE SUCKER	W-H-I-T-E-F-I-S-H		BURBOT	910 COTTID	660 STICKLE-BACK	LAMPREY	SITE TOTALS
				0+	1+	0+	1+	2+					ROUND	HUMPBACK					
Mainstem West Bank 23N-05W-24-BC Site #1		M.T.	455																
		G.N.	-																
		T.L.	91																
Goose Creek 23N-04W-30-BC Site #1		M.T.	465		78	1	1									16	68		164
		G.N.	-																
		T.L.	93						2		1								3
Sheep Creek Slough Mouth 22N-04W-30-BA Site #1		M.T.	495		3											4	701		708
		G.N.	-				1												
		T.L.	99																
Total Catch by Gear Type		M.T.			81	1	1									20	769		
		G.N.																	
		T.L.							2		1								

M.T. = Minnow Trap
G.N. = Gill Net
T.L. = Trot Line

Table 4 . Continued.

HABITAT LOCATION AND DATES	RIVER MILE	GEAR TYPE	TOTAL GEAR HOURS FISHED	S-P-E-C-I-E-S C-A-P-T-U-R-E-D															SITE TOTALS
				CHINOOK 410 0+	CHINOOK 411 1+	C-O-H-O 430 0+	C-O-H-O 431 1+	C-O-H-O 2+	541 RAINBOW TROUT	610 ARCTIC GRAYLING	530 DOLLY VARDEN	LONG NOSE SUCKER	W-H-I-T-E-F-I-S-H ROUND	W-H-I-T-E-F-I-S-H HUMPBACK	BURBOT	910 COTTID	660 STICKLE-BACK	LAMPREY	
Caswell Creek 21N-04W-06-BC Site #1		M.T.	430	6	31		3									3	755		798
		G.N.	-				1												
		T.L.	86																
Kashwitna River 21N-05W-13-AA Site #1		M.T.	455	5	258		1				11					1	85		361
		G.N.	-																
		T.L.	91						2		9								11
Rustic Wilderness 21N-05W-24-DB Site #1		M.T.	353		20											1	57		78
		G.N.	-																
		T.L.	79																
Total Catch by Gear Type		M.T.		11	309		41				11					5	897		
		G.N.																	
		T.L.							2		9								
GRAND TOTAL CATCH				38	420	5	41		6	1	21					27	1024	1	

M.T. = Minnow Trap
G.N. = Gill Net
T.L. = Trot Line

AREA	HOURS FISHED	RAINBOW TROUT	H.WHITEFI	R.WHITEFI	BURBOT	GRAYLING	LN.SUCKER	STICKLEBA	COTTID	KING SALMON		SILVER SALMON			OTHER
										0+	1+	0+	1+	2+	
MAINSTEM #2															
Gillnet	43	2	2	-	-	1	21	-	-	-	-	-	-	-	
Minnow Trap	430	-	-	-	-	-	1	104	1	-	-	-	-	-	
Trot Line	86	-	-	-	-	-	-	-	-	-	-	-	-	-	
LANE CREEK															
Gillnet	45	-	-	-	-	-	3	-	-	-	-	-	-	-	
Minnow Trap	366	-	-	-	-	-	-	32	3	-	-	-	-	-	
Trot Line	90	2	-	-	-	-	-	-	-	-	-	-	-	-	1 Dolly Varden
SLOUGH 6A															
Gillnet	41.5	-	8	11	-	-	13	-	-	-	-	-	-	-	
Minnow Trap	415	-	-	-	-	-	-	129?	1	7	-	-	-	1	
Trot Line	83	1	-	-	-	-	-	-	-	-	-	-	-	-	
MOUTH WHISKERS SLOUGH															
Gillnet	36.5	12	-	-	-	-	-	-	-	-	-	-	-	-	
Minnow Trap	365	-	-	-	-	-	-	165	-	-	-	-	-	-	
Trot Line	73	4	2	6	-	-	11	-	-	-	-	-	-	2	
Drift Gillnet	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1 Jack King
MOUTH OF WHISKERS CREEK															
Gillnet	39.5	2	-	-	-	-	-	-	-	-	-	-	-	-	
Minnow Trap	395	-	-	-	-	-	-	315	-	-	-	-	55	2	
Trot Line	79	-	-	-	-	-	-	-	-	-	-	-	-	-	
Angling	1	7	-	-	-	-	-	-	-	-	-	-	-	-	
MOUTH OF CACHE CREEK SLOUGH															
Gillnet	24.5	-	-	-	-	-	-	-	-	-	-	-	-	-	
Minnow Trap	435	-	-	-	-	-	-	-	1	-	-	-	-	-	
Trot Line	87	-	-	-	1	-	-	-	-	-	-	-	-	-	

Table 5. Catch by species, gear type and habitat location, Susitna River between Sunshine and Curry, June, 1981.

AREA	HOURS FISHED	RAINBOW TROUT	H.WHITEFI	R.WHITEFI	BURBOT	GRAYLING	LN.SUCKER	STICKLEBA	COTTID	KING SALMON		SILVER SALMON			OTHER
										0+	1+	0 +	1+	2 +	
MOUTH OF CACHE CREEK															
Gillnet	44.5	-	-	-	-	-	-	-	-	-	-	-	-	-	
Minnow Trap	44.5	-	-	-	-	-	-	218	4	-	1	32	1	1	
Trot Line	69.5	-	-	-	1	-	-	-	-	-	-	-	-	-	
MOUTH OF BIRCH CREEK SLOUGH															
Gillnet	40	-	-	-	-	-	-	-	-	-	-	-	-	-	Not utilized because of publi
Minnow Trap	410	-	-	-	-	-	-	362	1	-	16	-	-	3	
Trot Line	61	-	-	-	-	-	-	-	-	-	-	-	-	-	
MOUTH OF BIRCH CREEK															
Gillnet	40	-	-	-	-	-	-	-	-	-	-	-	-	-	
Minnow Trap	400	-	-	-	-	1	-	575	5	-	-	-	80	-	
Trot Line	80	-	-	-	-	-	-	-	-	-	-	-	-	-	
SUNSHINE CREEK															
Gillnet	0.	-	-	-	-	-	-	-	-	-	-	-	-	-	Not utilized because of adult K
Minnow Trap	410.5	-	-	-	-	-	-	749	1	-	6	-	-	-	
Trot Line	86	-	-	-	-	-	-	-	-	-	-	-	-	-	
MAINSTEM #1 (PARKS HIGHWAY)															
Gillnet	45	-	-	-	-	-	-	-	-	-	-	-	-	-	
Minnow Trap	450	-	1	-	-	-	3	116	-	-	-	-	-	-	
Trot Line	90	-	-	-	3	-	-	-	-	-	-	-	-	-	

Table 5. Continued

Table 6. Fish captured by species and habitat location on the Susitna River between Curry and Portage Creek, June 1981.

HABITAT LOCATIONS:	CHINOOK (0+)	CHINOOK (1+)	3 SPINED STICKLEBACK	ROUND WHITEFISH	LONG NOSE SUCKER	COTTID	RAINBOW TROUT	BURBOT	PINK SALMON (0+)	ARCTIC GRAYLING	DOLLY VARDEN
MAINSTEM SUSITNA-eddy opposite Curry	-	1	19	1	2	-	1	1	-	2	1
SUSITNA SIDE CHANNEL-cut bank, 1.0 mile above Curry	-	-	-	-	3	-	-	1	-	-	-
MAINSTEM SUSITNA-gravel bar, 1.0 mile below Slough 8A	-	8	-	-	4	-	3	-	-	-	-
SLOUGH 8A	-	-	130	11	18	-	3	-	-	-	1
4TH OF JULY CREEK-mouth	2	1	-	-	-	1	3	-	4	-	-
SLOUGH 10	-	-	79	1	2	4	-	3	3	-	-
SLOUGH 11	1601	-	13	-	-	8	2	-	-	-	-
MAINSTEM SUSITNA-inside bend, 0.5 mile above Gold Creek Rail Road bridge	-	1	-	-	-	1	-	-	-	1	-
INDIAN RIVER-mouth	2	-	-	7	1	-	2	-	-	-	1
SLOUGH 20-Waterfall Creek	-	-	49	-	-	5	-	-	-	-	-
MAINSTEM SUSITNA-island, 2.0 miles below Portage Creek	-	3	2	-	-	2	-	6	-	-	-
PORTAGE CREEK-mouth	-	-	-	24	5	1	-	-	-	3	-
TOTALS	1605	14	292	44	32	22	14	11	7	6	3

Table 7. Visual estimates of salmon fry observed between Curry and Portage Creek on the Susitna River, June 1981.

HABITAT LOCATIONS:	CHINOOK (0+)	PINK (0+)	UNIDENTIFIED SALMON FRY
SLOUGH 8A	-	-	40 1/
4TH OF JULY CREEK (Mouth)	-	10	20 1/
SLOUGH 11	2,000+ 2/	-	-
INDIAN RIVER (Mouth)	-	-	20
SLOUGH 20	50	-	60
PORTAGE CREEK (Mouth)	-	12	20
TOTALS	2,050+	22	160

1/ Estimated lengths of fry 30-40 mm.

2/ Estimated lengths of fry 20-40 mm.

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                                          ICTRIC PROJECT                                                  PAGE   1
REMAINING WORK:  FROM JULY 6, 1981         C P M   SCHEDULE                                         TIME NOW  6JUL81

                                         . SS D6 I  J          82                                                  83
      D E S C R I P T I O N           JUL AUG  SEP OCT NOV  DEC JAN FEB MAR  APR MAY  JUN JUL AUG  SEP OCT NOV  DEC JAN  FEB MAR
                                      0122011230122011200123012201120012001220112011230122011200123012201120012201222112301220122
                                      6307307417418529629630741851851852185295296307417418529629630630741851852963074174174187418
-------------------------------------------------------------------------------------------------------------------------------

FIELD CAMP OPERATIONS            XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
RESUPPLY & EMERGENCY SERVICE     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
EXHIBIT F MATERIAL COMPLETE      .                   L
LAND ACQUISITION ANALYSIS    CT-1XXX L
LAND ACQUISITION ANALYSIS    FIN .  XX L
RIGHT OF ENTRY               FIN XXXXXXXXXXXXXXXXXX                                              L
SITE SPECIFIC SURVEY         FIN XXXL
AIR PHOTOS & MAPPING-1981    FIN XXX    L
ACCESS ROAD                  FIN CCCCCCL
MARKETABLTY & DISPOSAL STDY  FIN X L
CST ESTMTS RSVR CLEARING     ST  XXL
CST ESTMTS RSVR CLEARING     FIN . XXX      L
SLOPE EROSION & STBLTY STUDY FIN XX L
HYDROGRAPHIC SURVEYS         FIN XXXX   L
FIELD DATA INDEX OPERATION       XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
FIELD DATA COLLECTION 81-82  ST  CCCCCCCCCCCCCCCCL
FIELD DATA COLLECTION 81-82  FIN .                CCCCCCCCCCCCCCCCCCCCCL
WATER RSRCS-FLOW EXTENSION   FIN XX                    L . .
WATER RSRCS-FREQ ANALYSIS        XXXX                  L
WATER RSRCS-RESERVOIR STUDY  CT-2CCL
WATER RSRCS-RESERVOIR STUDY  CT-3.  CCCCCCCCCCCCCCCCCCCL
WATER RSRCS-RESERVOIR STUDY  FIN .                      XXXXXXL
WATER RSRCS-PRE&POST PROJECT ST  .                      CCCL
WATER RSRCS-PRE&POST PROJECT FIN .                          CCCL
EVAPORATION STUDIES              CCCL
WATER RSRCS-GLACIAL STUDIES      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX L
EXHIBIT H MATERIAL COMPLETE      .                                      L
EXHIBIT I MATERIAL COMPLETE      .                                      L
FLOODS-RESERVOIR ROUTING     CT-1XXXXXXXXXX                        L
FLOODS-RESERVOIR ROUTING     FIN .                 XXXXX     L
HYDRLICS & ICE WTR LVLS      CT-1CCCCCCCL
HYDRLICS & ICE WTR LVLS      FIN .       XXXXXXXXXXXXXXXXX    L
HYDR&ICE-RESER SLIDE SURGE   FIN XXXXXXXX L
HYDR&ICE-RSVR TEMP REGIME        XXXXXX   L
SEDIMENT YIELD & DEPOSITION  ST  XXX      L
SEDIMENT YIELD & DEPOSITION  FIN .  XXXXXX      L
RIVER MORPHOLOGY             CT-1.      XXXXXXXXXXXXXX        L
RIVER MORPHOLOGY             FIN .                             CCCL
ACCESS ROADS HYDROLOGY           XXXXXXXXXX                    L
LWR SUSITNA STUDIES-FOLLOWUP ST  CCCCCCCL
LWR SUSITNA STUDIES-FOLLOWUP FIN .       CCCCCCCCCCCCCCCCCCCCCL
DAM STABILITY                CT-1CCCL
DAM STABILITY                FIN .   XXXXXX                                           L
LONG TERM MONITORING PROGRAM     XXXXXXXXXXXXXXXXXXXXXXXXXXX                          L
RESERVOIR INDUCED SEISMICITY     XXXXX            L
SEISMIC GEOLOGY-FIELD STUDY      XXXXXXXXXXXXXXXX                                     L
EVALUATION & REPORT DRAFT    ST  CCCCCCCCCCCCCCCL
EVALUATION & REPORT DRAFT    CT-1.              CL
EVALUATION & REPORT DRAFT    FIN .                CCCL
GROUND MOTION STUDIES        ST  CCL
GROUND MOTION STUDIES        FIN .   CCCCCCCCCCCCCC
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[redacted] [redacted] [redacted]ACRE[redacted]ERI[redacted]SUS[redacted] HY[redacted]LED[redacted] PR[redacted]T [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] TIME NOW  6JUL81
                                            C P M   SCHEDULE
                                            ----------------

                                 SORTED BY: S5 D6 I  J             82                                                  83
         D E S C R I P T I O N          JUL AUG  SEF OCT NOV DEC JAN FEB MAR  APR MAY  JUN JUL AUG  SEF OCT NOV  DEC JAN  FEB MAR
                                        0122011230122011200123012201120012001220112011230122011200123012201120012201222[illegible]2301220122
                                        6307307417418529629630741841851852185295296307417418529629630630741851852963073[illegible]4174187418
                                        -----------------------------------------------------------------------------------------
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413    GROUND MOTION STUDIES        FIN .  CCCCCCCCCCCCCCL
414    DAM STABILITY CONSULTING         CCCCCCCCCCCCCCCCCL
415    SOIL SUSCEPTBTY-SEISMIC FAIL CT-1CCCCCCL
415    SOIL SUSCEPTBTY-SEISMIC FAIL FIN .      XXXXXX              L
506    1981 EXPLORATION PROGRAM     CT-1CCCCCCCL
506    1981 EXPLORATION PROGRAM     FIN .       CCCCL                        L
507    1982-4 PROGRAM DESIGN            XXXXXXXXX
5081   DATA ASSEMBLY-1980           FIN XXXXXX L
5082   DATA ASSEMBLY-181 DRAFT      CT-1CCCCCCCCCCCCL
5082   DATA ASSEMBLY-1981 DRAFT     FIN .            XXX                   L
5083   DATA ASSEMBLY FINAL-DRAFT    ST  .            XXX                   L
5083   DATA ASSEMBLY FINAL-DRAFT    FIN .               XXXX                   L
607    PRELIM WATANA DAM ALTERNATES CT-2XXXX L
607    PRELIM WATANA DAM ALTERNATES CT-3.   X L
607    PRELIM WATANA DAM ALTERNATES FIN .     L
608    PRELIM DEVIL CANYON DAM ALT  CT-2XX L
608    PRELIM DEVIL CANYON DAM ALT  FIN .  L
609    ESTAB WATANA DESIGN CRITERIA CT-2.     XXX   L
609    ESTAB WATANA DESIGN CRITERIA FIN .            L
610    ESTAB DEVIL CANYN DESGN CRIT CT-1.     XX L
610    ESTAB DEVIL CANYN DESGN CRIT CT-2.       XXX L
610    ESTAB DEVIL CANYN DESGN CRIT FIN .            L
611    PRELIM DESIGN WATANA DAM     ST · XXXXX      L
611    PRELIM DESIGN WATANA DAM     CT-1.            CCCCCCCCL
611    PRELIM DESIGN WATANA DAM     FIN .                     CCCL
612    PREL DESIGN DEVIL CANYON DAM ST  .   CCCCCCCCCL
612    PREL DESIGN DEVIL CANYON DAM CT-1.             CCCCCCCL
612    PREL DESIGN DEVIL CANYON DAM FIN .                     CCCL
613    DAM SELECTION REPORT-DRAFT   ST  .   XXXXXXXXXXX          L
613    DAM SELECTION REPORT-DRAFT   FIN .                         CCCCL
614    SPILLWAY DESIGN CRITERIA     FIN XL
615    WATANA SPILLWAY ALTERNATIVES FIN .    XXXXXXXXXX L
615    WATANA SPILLWAY ALTERNATIVES ST  .XX   L
616    DEVL CAN SPILLWAY ALTERNATVE ST  .XXXL
616    DEVL CAN SPILLWAY ALTERNATVE FIN .   XXXXXXXXL
617    PRELIM DESGN WATANA SPILLWAY ST  XXXX            L
617    PRELIM DESGN WATANA SPILLWAY CT-1.             XXXX L
617    PRELIM DESGN WATANA SPILLWAY FIN .                  XXXXXXXXXX L
618    PRELIM DES DEVIL CAN SPILWAY ST  .           XXXXXXL
618    PRELIM DES DEVIL CAN SPILWAY FIN .                 XXXXXXXXXXXXL
619    SPILLWAY SELECTN REPRT-DRAFT ST  .             XXXXXX          L
619    SPILLWAY SELECTN REPRT-DRAFT FIN .                              XXXXXL
620    ACCESS & CAMP FACILITIES     ST  XXX   L
620    ACCESS & CAMP FACILITIES     FIN .      CCCCCCCL
621    WATANA DIVERSION SCHEMES     ST  XXXXXX          L
621    WATANA DIVERSION SCHEMES     FIN .              XXXXXXXX L
622    DEVIL CANYON DIVERSN SCHEMES ST ·XXXXXXXXXXX             L
622    DEVIL CANYON DIVERSN SCHEMES FIN .                       L
623    OPT WATANA POWER DEVELOPMENT ST  .    XXXXXX L
623    OPT WATANA POWER DEVELOPMENT CT-1.            CCCCCCCL
623    OPT WATANA POWER DEVELOPMENT FIN .                    CCCCL
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[redacted]  [redacted]  [redacted]ACR[redacted]MER[redacted]SUS[redacted] HY[redacted]ELEC[redacted]C PR[redacted]T [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]
                                             C P M   SCHEDULE                                                    TIME NOW  6JUL81
                                            ------------------
                                  SORTED BY: S5 D6 I  J             82                                                  83
         D E S C R I P T I O N          JUL AUG  SEP OCT NOV  DEC JAN FEB MAR  APR MAY  JUN JUL AUG  SEP OCT NOV  DEC JAN  FEB MAR
                                        0122011230122011200123012201120012001220112011230122011200123012201120012201220112301220122
                                        6307307417418529629630741841851852185295296307417418529629630630741851852963073741874187418
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624    OPT DEVL CANYN POWER DEVELOP ST  .            XXXXXX L
624    OPT DEVL CANYN POWER DEVELOP FIN .                  XXXXX L
625    OPTIMIZE DAM HEIGHTS         ST  XXXXXX                   L
625    OPTIMIZE DAM HEIGHTS         CT-1.                         CCCCL
625    OPTIMIZE DAM HEIGHTS         FIN .                             L
626    PREL DESGN WATAN POWER DEVEL ST  .             CCCCCCCCCCCL
626    PREL DESGN WATAN POWER DEVEL FIN .                         CCCCL
627    PREL DES DEVL CAN POWR DEVEL ST  .             CCCCCCCCCCCL
627    PREL DES DEVL CAN POWR DEVEL FIN .                         CCCCL
628    POWER DEVELOPMNT REPRT-DRAFT ST  .             XXXXX          L
628    POWER DEVELOPMNT REPRT-DRAFT CT-1.                             L
628    POWER DEVELOPMNT REPRT-DRAFT CT-2.                              L
628    POWER DEVELOPMNT REPRT-DRAFT FIN .                               CCCL
629    WATANA GENERAL ARRANGEMENT   ST  .                      XXXXXX L
629    WATANA GENERAL ARRANGEMENT   FIN .                              CCCCL
629XX  EXHIBIT J MATERIAL COMPLETE      .                                       L
630    DEVL CAN GENERAL ARRANGEMENT ST  .           XXXXXXXX            L
630    DEVL CAN GENERAL ARRANGEMENT FIN .                              XXX L
630XX  EXHIBIT K MATERIAL COMPLETE      .                                  L
630XX  EXHIBIT M MATERIAL COMPLETE      .                                       L
631    PROJECT FEASIBL REPORT-DRAFT ST  .              X              L
631    PROJECT FEASIBL REPORT-DRAFT CT-1.                              CCCL
631    PROJECT FEASIBL REPORT-DRAFT CT-2.                                  L
631    PROJECT FEASIBL REPORT-DRAFT CT-3.                                   CCL
631    PROJECT FEASIBL REPORT-DRAFT CT-4.                                      CL
631    PROJECT FEASIBL REPORT-DRAFT FIN .                                       L
631XX  EXHIBIT L MATERIAL COMPLETE      .                                       L
637    UPDATE GENERATION PLAN           XXXXX                                     L
638    LIAISON POWER ALTS CONSULTANT    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
7012   STUDY COORD-PRELIM ALTERNATV ST  CCCL
7012   STUDY COORD-PRELIM ALTERNATV FIN .         L
7013   STUDY COORD-OPTIMIZED DESIGN     .       XXXXXXXXXXXXXXXXXXXX  L
702    MONITOR FIELD ACTIVITIES     CT-1XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX    L
702    MONITOR FIELD ACTIVITIES     FIN .                                                 L
7042   WTR RES-PRE WAT&DEVL CAN ALT     XXXXXXXX  L
7043   WTR RES-OPT WAT&DEVL CAN DES     .       XXXXXXXXXXXXXXXXXXXX  L
705    SOCIOECONOMIC ANALYSIS       CT-1CCCCCCCCCCCL
705    SOCIOECONOMIC ANALYSIS       FIN .                                CCCCCCCCL
705    SOCIOECONOMIC ANALYSIS       CT-2.            CCCCCCCCCCCCCCCCCCCL
7061   CULTURAL ALTERNATIVE SITES   ST  L
7061   CULTURAL ALTERNATIVE SITES   FIN .CCCCCCCCCCCL
7062   CULTURAL PRELIM ALTERNATIVES ST  XXXXXXXX    L
7062   CULTURAL PRELIM ALTERNATIVES CT-1.             CCCCCCCCCL
7062   CULTURAL PRELIM ALTERNATIVES FIN .                      L
7063   CULTURAL-OPTIMIZED DESIGN    ST  XXXXXXXXXXXXXXX        L
7063   CULTURAL-OPTIMIZED DESIGN    CT-1.                       CCCCCCCCCCCCCCCCCL
7063   CULTURAL-OPTIMIZED DESIGN    FIN .                                        L
706XX  EXHIBIT V MATERIAL COMPLETE      .                                        L
7071   LAND USE ALTERNATIVE SITES   FIN .               CCCCCL
7071   LAND USE ALTERNATIVE SITES   CT-1CCCCCCCCCCCCCCCL
7072   LAND USE PRELIM ALTERNATIVES ST  XXXXXXX              L
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[redacted] ACR[redacted]MER[redacted]SUS[redacted] HY[redacted]ELEC[redacted] PR[redacted]T [redacted]

C P M SCHEDULE

TIME N[redacted] 6JUL 81

SORTED BY: S5 D6 I J

	DESCRIPTION		JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
7072	LAND USE PRELIM ALTERNATIVES	CT-1,						CCCCCCCCCL															
7072	LAND USE PRELIM ALTERNATIVES	FIN ,							L														
7073	LAND USE OPTIMIZED DESIGN	ST	XXXXXXXXXXXXXXX						L														
7073	LAND USE OPTIMIZED DESIGN	CT-1,							CCCCCCCCCCCCCCCCCCCCL														
7073	LAND USE OPTIMIZED DESIGN	FIN ,																					L
708	RECREATION PLANNING	FIN ,							XXXXX	L													
708	RECREATION PLANNING	CT-2,			XXXXXXXXXXXXXXXXX				L														
7092	TRANS LINE ASSESS RTE SELCTN	CT-1,		CCCCCCCCCCCL																			
7092	TRANS LINE ASSESS RTE SELCTN	ST	CCCCL																				
7092	TRANS LINE ASSESS RTE SELCTN	FIN ,						CCCCCCCCCCCCCCCCCCCCCCCCL															
7101	FISH ECOLOGY ALTERNATV SITES	CT-2,				XXXXXXXXXXXL																	
7101	FISH ECOLOGY ALTERNATV SITES	FIN ,					L																
7101	FISH ECOLOGY ALTERNATV SITES	CT-1	XXXXXXXXXXXXL																				
7102	FISH ECOLOGY PRELIM ALTERNAT	ST	XXXXXXXX				L																
7102	FISH ECOLOGY PRELIM ALTS	CT-1,					XXXXXXXXXXL																
7102	FISH ECOLOGY PRELIM ALTERNAT	FIN ,						L															
7103	FISH ECOLOGY OPTIMIZED DESGN	ST	XXXXXXXXXXXXXXX					L															
7103	FISH ECOLOGY OPTIMIZED DESGN	CT-1,						XXXXXXXXXXXXXXXXXL															
7103	FISH ECOLOGY OPTIMIZED DESGN	FIN ,																					L
7111	WILDLIFE ECOLOGY ALTER SITES	CT-1,	XXXL																				
7111	WILDLIFE ECOLOGY ALTER SITES	FIN ,						XXXXXXXXXXL															
7111	WILDLIFE ECOLOGY ALTER SITES	CT-2,		XXXXXXXXXXXXXXXL																			
7112	WILDLIFE ECOLOGY PRELM ALTER	ST	XXXXXXXX					L															
7112	WILDLIFE ECOLOGY PRELM ALTER	CT-1,				XXXXXXXXXX			L														
7112	WILDLIFE ECOLOGY PRELM ALTER	FIN ,							L														
7113	WILDLIFE ECOLOGY OPTIM DESGN	ST	XXXXXXXXXXXXXXX						L														
7113	WILDLIFE ECOLOGY OPTIM DESGN	CT-1,							XXXXXXXXXXXXXXXXXXXL														
7113	WILDLIFE ECOLOGY OPTIM DESGN	FIN ,																					L
7121	PLANT ECOLOGY ALTERNTV SITES	FIN ,						CCCL															
7121	PLANT ECOLOGY ALTERNTV SITES	CT-1	CCCCCCCCCCCCCCCCL																				
7122	PLANT ECOLOGY PRELM ALTERNAT	ST	XXXXXXXX					L															
7122	PLANT ECOLOGY PRELM ALTERNAT	CT-1,						CCCCCCCCCL															
7122	PLANT ECOLOGY PRELM ALTERNAT	FIN ,							L														
7123	PLANT ECOLOGY OPTIMIZD DESGN	ST	XXXXXXXXXXXXXXX						L														
7123	PLANT ECOLOGY OPTIMIZD DESGN	CT-1,							CCCCCCCCCCCCCCCCCCCCL														
7123	PLANT ECOLOGY OPTIMIZD DESGN	FIN ,																					L
714	ACCESS RD ENVIRONMENT ANALY	CT-1	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL																				
714	ACCESS RD ENVIRONMENT ANALY	FIN ,												XXXXXXXXXXL									
715	PREP FOR FERC EXHIBIT-DRAFT	ST	XXXXXXXXX												L								
715	PREP FOR FERC EXHIBIT-DRAFT	CT-1,													CCCCCL								
715	PREP FOR FERC EXHIBIT-DRAFT	FIN ,														L							
715XX	EXHIBIT W MATERIAL COMFLETE	,														L							
715XX	EXHIBIT S MATERIAL COMPLETE	,																				L	
801	SELECT INITIAL CORRIDORS	FIN X	L																				
8021	LOAD FLOW ANALYSIS	ST	L																				
8021	LOAD FLOW ANALYSIS	FIN ,	CCCCCL																				
80221	PRELIMINARY ELEC SYSTEM	CT-1	CCCCCCL																				
80221	PRELIMINARY ELEC SYSTEM	FIN ,	L																				
80222	RECOMMEND ELEC SYS	,			CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCL																		
803	FINAL ROUTE SELECTION 1981	ST	CCCCCCL																				
803	FINAL ROUTE SELECTION 1981	CT-1,		CCCCCL																			

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[redacted]  [redacted]  [redacted]ACR[redacted]MER[redacted]SUS[redacted] HY[redacted]ELE[redacted]C PR[redacted]T [redacted]  [redacted]  [redacted]  [redacted]  [redacted]  [redacted]  [redacted]  [redacted]  [redacted]  [redacted]     TIME NOW  6JUL81
                                                      C P M   SCHEDULE
                                                     ------------------
                                  SORTED BY: S5 D6 I  J           82                                                  83
          D E S C R I P T I O N                 JUL AUG  SEP OCT NOV  DEC JAN FEB MAR  APR MAY  JUN JUL AUG  SEP OCT NOV  DEC JAN  FEB MAR
                                                012201123012201120012301220112001200122011201123012201120012301220112001220122[illegible]12301220122
                                                63073074174185296296307418418518521852952963074174185296296306307418518529630[illegible]4174187418
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803    FINAL ROUTE SELECTION 1981    CT-2.            CCCCCL
803    FINAL ROUTE SELECTION 1981    FIN .                 L
804    TOWER HARDWRE&CONDUCTR STUDY  ST  XXXXXXX         L
804    TOWER HARDWRE&CONDUCTR STUDY  CT-1.      XX         L
804    TOWER HARDWRE&CONDUCTR STUDY  FIN .                  CCCCCCCCCL
805    SUBSTATIONS                   ST  XXXXXXXX            L
805    SUBSTATIONS                   FIN .       XXXXXXXX            L
806    DISPATCH CTR & COMMUNICATNS   ST  XXXXXXXX            L
806    DISPATCH CTR & COMMUNICATNS   FIN .       XXXXXXXX            L
807    TRANS LINE COST ESTIMATES     ST  X                           L
807    TRANS LINE COST ESTIMATES     FIN .                            CCCCCL
901    ASSEMBLE COST-SCHEDULE DATA   ST  XX      L
901    ASSEMBLE COST-SCHEDULE DATA   FIN . XXXX        L
902    PREP PRELIM CST ESTIMATES         . XXXXXX      L
903    COST ESTIMATE UPDATES             .       XXXXXXXXXXXXXXXXX       L
903XX  EXHIBIT N MATERIAL COMPLETE       .                                        L
9041   ENGR COST & SCHEDULE PRELIM       . XXXXXX      L
9042   ENGR COST & SCHEDULE FINAL        .       XXXXXXXXXXXXXXXXX       L
904XX  EXHIBIT O MATERIAL COMPLETE       .                                        L
905    CONTINGENCY ANALYSIS              .       XXXXXXXXX::XX         L
1001   IMPACT OF NEW FERC REGULATIONS     XXXXXXXXX                    L
10022  1ST UPDATE-REGULATORY REQ          XXXX                                    L
10023  2ND UPDATE-REGULATORY REQ         .                     XXXX               L
1003   DATA FROM OTHERS                   XXXXX                                       L
1003XX EXHIBIT A B & C MATERIAL COMPLETE.                                             L
1004   COORD EXHIBIT PREPARATION     ST  .                    XXXXXXXXXL
1004   COORD EXHIBIT PREPARATION     CT-1.                             XL
1004   COORD EXHIBIT PREPARATION     CT-2.                              XXL
1004   COORD EXHIBIT PREPARATION     CT-3.                                XXXL
1004   COORD EXHIBIT PREPARATION     CT-4.                                    CL
1004   COORD EXHIBIT PREPARATION     CT-5.                                      CCL
1004   COORD EXHIBIT PREPARATION     FIN .                                        L
10051  PREPARE EXHIBIT E                 .                     XXXXXXXXXX    L
10052  PREPARE EXHIBIT D                 .                     XXXXXXXXXX             L
1006   PREPARE EXHIBIT R             ST  .                      XXXXXXXXXX         L
1007   PREPARE EXHIBIT T             ST  .          XXXXXXL
1007   PREPARE EXHIBIT T             FIN .                 XXXXL
1008   PREP APPLICATN FORM-DRAFT     ST  .                      XXXXXX            L
1008   PREP APPLICATN FORM-DRAFT     FIN .                                         L
1009   REVIEW AND CORRECT                .                                          CL
1010   EXTERNAL REVIEW                   .                                            CL
10XXX  PRINT LICENSE APPLICATION         .                                              CCCCCL
1101   PROJECT OVERVIEW                   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
1102   INTERNAL REPORTS                   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
1102XX EXHIBIT U MATERIAL COMPLETE       .                                         L
1103   SUSITNA BASE PLAN RISK ANALY  ST   CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCL
1103   SUSITNA BASE PLAN RISK ANALY  FIN .                              L
1104   SUSITNA BASE PLAN EXTEN/REVIS     .                               CCCCCCCCCCCCCCCCCCCCL
1105   SUSITNA FINANCE RISK ANALYSIS      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                     L
1106   RESOLUTION TAX ISSUE               XXXXXXXXXXXXXXXXXXXXXXXX                           L
1107   IDENTIFY PARTIES INTEREST          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX                     L
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             ACRES AMERICAN SUSITNA HYDRO-ELECTRIC PROJECT                                                            PAGE     5
                                             C P M   SCHEDULE                                                   TIME NOW  6JUL81
                                             -----------------
                                  SORTED BY: S5 D6 I  J            82                                                   83
         D E S C R I P T I O N         JUL AUG  SEP OCT NOV  DEC JAN FEB MAR  APR MAY  JUN JUL AUG  SEP OCT NOV  DEC JAN  FEB MAR
                                       012201123012201120012301220112001200122011201123012201120012301220112001220122011230122012
                                       630730741741852962963074184185185218529529630741741852962963063074185185296307307417418741

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1108   REVENUE ASSURANCE               XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX          L
1109   LIAISON APA BOND UNDERWRITER    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
1109XX EXHIBIT G MATERIAL COMPLETE     .                                       L
12022  CONDUCT PUBLIC MEETING #2       .  XXXX                 L
12023  CONDUCT PUBLIC MEETING #3       .                  XXXX                 L
12031  CONDUCT WORKSHOPS 1,2,3         XXX                 L
12032  CONDUCT WORKSHOPS 4,5,6         .      XXXXXXXXXXXX                 L
1204   PREP PUBLISH DISTRIB MATERIAL   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
1205   PREP MAINTAIN ACTION LIST       XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
13013  PROJECT PROCED MANUAL-UPDATE    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
13042  SCHEDULE CONTROL SYS UPDATE     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
13052  COST CONTROL SYSTEM-OP          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
13062  MANPOWER LOADNG SCHED-UPDATE    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
1310   SUB CONTRACT ADMINISTRATION     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
XXX    PROJECT COMPLETE   XXX          .                                                 L
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CPM ANALYSIS LISTING

I-NODE	J-NODE	DUR	SELECT CODES	------D E S C R I P T I O N ----------		E.S.	E.F.	L.S.	L.F.	T.F.	F.F.	
20100	20000	50	R OPA C2	2022	FIELD CAMP OPERATIONS		6JUL81	18JUN82	13JUL81	25JUN82	1	
20100	20600	50	R OPA C2	203	RESUPPLY & EMERGENCY SERVICE		6JUL81	18JUN82	13JUL81	25JUN82	1	
215A0	215B0	0	OPA 1 C3	204XX	EXHIBIT F MATERIAL COMPLETE		6JUL81	3JUL81	30NOV81	27NOV81	21	21
21700	220A0	3	OPA C2	205	LAND ACQUISITION ANALYSIS	CT-1	6JUL81	24JUL81	20JUL81	7AUG81	2	
220A0	22000	2	OPA C2	205	LAND ACQUISITION ANALYSIS	FIN	27JUL81	7AUG81	10AUG81	21AUG81	2	
21000	21100	19	R OPA C2	206	RIGHT OF ENTRY	FIN	6JUL81	13NOV81	15FEB82	25JUN82	32	32
25400	25500	3	R OPA C3	207	SITE SPECIFIC SURVEY	FIN	6JUL81	24JUL81	13JUL81	31JUL81	1	
24100	24200	3	R OPA C3	2082	AIR PHOTOS & MAPPING-1981	FIN	6JUL81	24JUL81	10AUG81	28AUG81	5	
22400	22800	7	R OPA C3	210	ACCESS ROAD	FIN	6JUL81	21AUG81	6JUL81	21AUG81	0	CRITICAL
27700	27200	1	R OPA C3	213	MARKETABLTY & DISPOSAL STDY	FIN	6JUL81	10JUL81	20JUL81	24JUL81	2	
27600	27200	2	OPA C3	214	CST ESTMTS RSVR CLEARING	ST	6JUL81	17JUL81	13JUL81	24JUL81	1	
27200	27400	3	OPA C3	214	CST ESTMTS RSVR CLEARING	FIN	20JUL81	7AUG81	7SEP81	25SEP81	7	
26000	26200	2	R OPA C4	215	SLOPE EROSION & STBLTY STUDY	FIN	6JUL81	17JUL81	20JUL81	31JUL81	2	
24600	24800	4	R OPA C3	216	HYDROGRAPHIC SURVEYS	FIN	6JUL81	31JUL81	3AUG81	28AUG81	4	
36600	36800	38	R OPB 1 C4	3022	FIELD DATA INDEX OPERATION		6JUL81	26MAR82	13JUL81	2APR82	1	
37600	37700	17	R OPB 1 C4	3033	FIELD DATA COLLECTION 81-82	ST	6JUL81	30OCT81	6JUL81	30OCT81	0	CRITICAL
37700	37800	22	OPB 1 C4	3033	FIELD DATA COLLECTION 81-82	FIN	2NOV81	2APR82	2NOV81	2APR82	0	CRITICAL
33500	34600	2	OPB 1 C4	3041	WATER RSRCS-FLOW EXTENSION	FIN	6JUL81	17JUL81	30NOV81	11DEC81	21	21
33300	34600	4	OPB 1 C4	3042	WATER RSRCS-FREQ ANALYSIS		6JUL81	31JUL81	16NOV81	11DEC81	19	19
34400	34500	3	R OPB 1 C4	3043	WATER RSRCS-RESERVOIR STUDY	CT-2	6JUL81	24JUL81	6JUL81	24JUL81	0	CRITICAL
34500	34600	20	OPB 1 C4	3043	WATER RSRCS-RESERVOIR STUDY	CT-3	27JUL81	11DEC81	27JUL81	11DEC81	0	CRITICAL
34600	34800	6	OPB 1 C4	3043	WATER RSRCS-RESERVOIR STUDY	FIN	14DEC81	23JAN82	21DEC81	29JAN82	1	
35000	35200	4	OPB 1 C4	3044	WATER RSRCS-PRE&POST PROJECT	ST	14DEC81	8JAN82	14DEC81	8JAN82	0	CRITICAL
35200	35400	4	OPB 1 C4	3044	WATER RSRCS-PRE&POST PROJECT	FIN	11JAN82	5FEB82	11JAN82	5FEB82	0	CRITICAL
33700	33900	4	R OPB 1 C4	3045	EVAPORATION STUDIES		6JUL81	31JUL81	6JUL81	31JUL81	0	CRITICAL
39600	39800	37	R OPB 1 C4	3046	WATER RSRCS-GLACIAL STUDIES		6JUL81	19MAR82	20JUL81	2APR82	2	
35400	354A0	0	OPB 1 C4	304XX	EXHIBIT H MATERIAL COMPLETE		9FEB82	9FEB82	19APR82	16APR82	10	10
35400	354B0	0	OPB 1 C4	304XX	EXHIBIT I MATERIAL COMPLETE		9FEB82	9FEB82	19APR82	16APR82	10	10
31800	32000	10	R OPB 1 C4	3053	FLOODS-RESERVOIR ROUTING	CT-1	6JUL81	11SEP81	19OCT81	25DEC81	15	9
32000	32200	5	OPB 1 C4	3053	FLOODS-RESERVOIR ROUTING	FIN	16NOV81	18DEC81	28DEC81	29JAN82	6	6
30200	30400	8	R OPB 1 C4	3061	HYDRLICS & ICE WTR LVLS	CT-1	6JUL81	28AUG81	6JUL81	28AUG81	0	CRITICAL
30400	30600	17	OPB 1 C4	3061	HYDRLICS & ICE WTR LVLS	FIN	31AUG81	25DEC81	5OCT81	29JAN82	5	
39000	39100	8	OPB 1 C4	3063	HYDR&ICE-RESER SLIDE SURGE	FIN	6JUL81	29AUG81	20JUL81	11SEP81	2	
39200	39300	6	R OPB 1 C4	3064	HYDR&ICE-RSVR TEMP REGIME		6JUL81	14AUG81	3AUG81	11SEP81	4	
35800	35800	3	R OPB 1 C4	3071	SEDIMENT YIELD & DEPOSITION	ST	6JUL81	24JUL81	24AUG81	11SEP81	7	
35800	36000	6	OPB 1 C4	3071	SEDIMENT YIELD & DEPOSITION	FIN	27JUL81	4SEP81	21SEP81	30OCT81	8	
33600	33800	14	OPB 1 C4	3072	RIVER MORPHOLOGY	CT-1	7SEP81	11DEC81	2NOV81	5FEB82	9	9
33800	34000	4	OPB 1 C4	3072	RIVER MORPHOLOGY	FIN	8FEB82	5MAR82	8FEB82	5MAR82	0	CRITICAL
31100	31300	10	R OPB 1 C4	309	ACCESS ROADS HYDROLOGY		6JUL81	11SEP81	7DEC81	12FEB82	22	22
31200	31500	8	R OPB C4	3102	LWR SUSITNA STUDIES-FOLLOWUP	ST	6JUL81	25AUG81	6JUL81	28AUG81	0	CRITICAL
31500	31400	22	OPB C4	3102	LWR SUSITNA STUDIES-FOLLOWUP	FIN	31AUG81	29JAN82	31AUG81	29JAN82	0	CRITICAL
45800	46000	4	R OPB 1 C1	408	DAM STABILITY	CT-1	6JUL81	31JUL81	6JUL81	31JUL81	0	CRITICAL
46000	46200	4	OPB 1 C1	408	DAM STABILITY	FIN	3AUG81	11SEP81	17MAY82	25JUN82	41	41
42800	43000	27	R OPA C4	409	LONG TERM MONITORING PROGRAM		6JUL81	8JAN82	21DEC81	25JUN82	24	24
40700	41800	5	R OPB 1 C1	410	RESERVOIR INDUCED SEISMICITY		6JUL81	7AUG81	5OCT81	6NOV81	13	13
42400	42600	14	R OPA C4	411	SEISMIC GEOLOGY-FIELD STUDY		6JUL81	23OCT81	9MAR82	25JUN82	35	30
41400	41600	16	R OPB 1 C1	412	EVALUATION & REPORT DRAFT	ST	6JUL81	23OCT81	6JUL81	23OCT81	0	CRITICAL
41600	41800	2	OPB 1 C1	412	EVALUATION & REPORT DRAFT	CT-1	26OCT81	6NOV81	26OCT81	6NOV81	0	CRITICAL
41800	42000	4	OPB 1 C1	412	EVALUATION & REPORT DRAFT	FIN	9NOV81	4DEC81	9NOV81	4DEC81	0	CRITICAL
44400	44600	3	R OPB 1 C1	413	GROUND MOTION STUDIES	ST	6JUL81	24JUL81	6JUL81	24JUL81	0	CRITICAL
44600	41800	15	OPB 1 C1	413	GROUND MOTION STUDIES	FIN	27JUL81	6NOV81	27JUL81	6NOV81	0	CRITICAL

CPM ANALYSIS LISTING

I-NODE	J-NODE	DUR		SELECT CODES		DESCRIPTION		E.S.	E.F.	L.S.	L.F.	T.F.	F.F.	DL	
44600	41800	15		OPB 1 C1	413	GROUND MOTION STUDIES	FIN	27JUL81	6NOV81	27JUL81	6NOV81	0	0	1	CRITICAL
45A00	41800	18	R	OPB 1 C1	414	DAM STABILITY CONSULTING		6JUL81	6NOV81	6JUL81	6NOV81	0	0	1	CRITICAL
45300	45400	7	R	OPB 1 C1	415	SOIL SUSCEPTBTY-SEISMIC FAIL	CT-1	6JUL81	21AUG81	6JUL81	21AUG81	0	0	1	CRITICAL
45400	45700	6		OPB 1 C1	415	SOIL SUSCEPTBTY-SEISMIC FAIL	FIN	24AUG81	20CT81	14DEC81	22JAN82	16	16	1	
52600	526A0	8	R	OPB C4	506	1981 EXPLORATION PROGRAM	CT-1	6JUL81	28AUG81	6JUL81	28AUG81	0	0	1	CRITICAL
526A0	52700	5		OPA C4	506	1981 EXPLORATION PROGRAM	FIN	31AUG81	20CT81	31AUG81	20CT81	0	0	1	CRITICAL
53800	54000	9		OPB 1 C1	507	1982-4 PROGRAM DESIGN		6JUL81	4SEP81	1FEB82	2APR82	30	30	1	
51600	51800	6	R	OPB 1 C1	5081	DATA ASSEMBLY-1980	FIN	6JUL81	14AUG81	20JUL81	28AUG81	2	0	1	
53000	53200	13	R	OPB 1 C1	5082	DATA ASSEMBLY-181 DRAFT	CT-1	6JUL81	20CT81	6JUL81	20CT81	0	0	1	CRITICAL
53200	53300	3		OPB 1 C1	5082	DATA ASSEMBLY-1981 DRAFT	FIN	50CT81	230CT81	1MAR82	19MAR82	21	0	1	
53400	53500	3		OPB 1 C1	5083	DATA ASSEMBLY FINAL-DRAFT	ST	50CT81	230CT81	1MAR82	19MAR82	21	0	1	
53500	53600	4		OPB 1 C1	5083	DATA ASSEMBLY FINAL-DRAFT	FIN	260CT81	20NOV81	22MAR82	16APR82	21	21	1	
631A0	63200	4	R	OPB 1 C5	607	PRELIM WATANA DAM ALTERNATES	CT-2	6JUL81	31JUL81	20JUL81	14AUG81	2	0	1	
631C0	63300	1		OPB 1 C5	607	PRELIM WATANA DAM ALTERNATES	CT-3	3AUG81	7AUG81	17AUG81	21AUG81	2	0	1	
63300	633A0	0		OPB 1 C5	607	PRELIM WATANA DAM ALTERNATES	FIN	10AUG81	7AUG81	24AUG81	21AUG81	2	0	1	
64600	64700	2	R	OPB 1 C6	608	PRELIM DEVIL CANYON DAM ALT	CT-2	6JUL81	17JUL81	20JUL81	31JUL81	2	2	1	
64700	64800	0		OPB 1 C6	608	PRELIM DEVIL CANYON DAM ALT	FIN	3AUG81	31JUL81	3AUG81	31JUL81	0	0	1	CRITICAL
69300	69400	3	R	OPB 1 C4	609	ESTAB WATANA DESIGN CRITERIA	CT-2	17AUG81	4SEP81	14SEP81	20CT81	4	4	1	
69400	69500	1		OPB 1 C4	609	ESTAB WATANA DESIGN CRITERIA	FIN	50CT81	90CT81	50CT81	90CT81	0	0	1	CRITICAL
63500	63600	2	R	OPB 1 C4	610	ESTAB DEVIL CANYN DESGN CRIT	CT-1	17AUG81	28AUG81	31AUG81	11SEP81	2	0	1	
63A00	63700	3	R	OPB 1 C4	610	ESTAB DEVIL CANYN DESGN CRIT	CT-2	31AUG81	18SEP81	14SEP81	20CT81	2	2	1	
63700	63800	1		OPB 1 C4	610	ESTAB DEVIL CANYN DESGN CRIT	FIN	50CT81	90CT81	50CT81	90CT81	0	0	1	CRITICAL
66200	66300	5	R	OPB 1 C5	611	PRELIM DESIGN WATANA DAM	ST	6JUL81	7AUG81	31AUG81	20CT81	8	8	1	
66300	66400	9		OPB 1 C5	611	PRELIM DESIGN WATANA DAM	CT-1	50CT81	4DEC81	50CT81	4DEC81	0	0	1	CRITICAL
66400	66500	4		OPB 1 C5	611	PRELIM DESIGN WATANA DAM	FIN	7DEC81	1JAN82	7DEC81	1JAN82	0	0	1	CRITICAL
65200	65300	10		OPB 1 C6	612	PREL DESIGN DEVIL CANYON DAM	ST	3AUG81	90CT81	3AUG81	90CT81	0	0	1	CRITICAL
65300	65400	8		OPB 1 C6	612	PREL DESIGN DEVIL CANYON DAM	CT-1	120CT81	4DEC81	120CT81	4DEC81	0	0	1	CRITICAL
65400	65500	4		OPB 1 C6	612	PREL DESIGN DEVIL CANYON DAM	FIN	7DEC81	1JAN82	7DEC81	1JAN82	0	0	1	CRITICAL
69800	69900	11		OPB 1 C4	613	DAM SELECTION REPORT-DRAFT	ST	3AUG81	160CT81	190CT81	1JAN82	11	11	1	
69900	68500	5		OPB 1 C4	613	DAM SELECTION REPORT-DRAFT	FIN	4JAN82	5FEB82	4JAN82	5FEB82	0	0	1	CRITICAL
61200	61300	1	R	OPB 1 C4	614	SPILLWAY DESIGN CRITERIA	FIN	6JUL81	10JUL81	13JUL81	17JUL81	1	0	1	
60600	60700	10		OPB 1 C5	615	WATANA SPILLWAY ALTERNATIVES	FIN	10AUG81	160CT81	24AUG81	300CT81	2	0	1	
61300	60600	2	R	OPB 1 C5	615	WATANA SPILLWAY ALTERNATIVES	ST	13JUL81	24JUL81	10AUG81	21AUG81	4	2	1	
61300	61400	3		OPB 1 C6	616	DEVL CAN SPILLWAY ALTERNATVE	ST	13JUL81	31JUL81	20JUL81	7AUG81	1	0	1	
61400	61500	8		OPB 1 C6	616	DEVL CAN SPILLWAY ALTERNATVE	FIN	3AUG81	25SEP81	10AUG81	20CT81	1	0	1	
62140	62200	4		OPB 1 C5	617	PRELIM DESGN WATANA SPILLWAY	ST	6JUL81	31JUL81	50CT81	300CT81	13	11	1	
62300	62300	4		OPB 1 C5	617	PRELIM DESGN WATANA SPILLWAY	CT-1	190CT81	13NOV81	2NOV81	27NOV81	2	0	1	
62300	62400	10		OPB 1 C5	617	PRELIM DESGN WATANA SPILLWAY	FIN	16NOV81	22JAN82	30NOV81	5FEB82	2	1	1	
61500	61600	6		OPB 1 C6	618	PRELIM DES DEVIL CAN SPILWAY	ST	28SEP81	6NOV81	50CT81	13NOV81	1	0	1	
61500	61700	12		OPB 1 C6	618	PRELIM DES DEVIL CAN SPILWAY	FIN	9NOV81	29JAN82	16NOV81	5FEB82	1	0	1	
64900	65000	6		OPB 1 C4	619	SPILLWAY SELECTN REPRT-DRAFT	ST	190CT81	27NOV81	28DEC81	5FEB82	10	9	1	
65000	65100	5		OPB 1 C4	619	SPILLWAY SELECTN REPRT-DRAFT	FIN	1FEB82	5MAR82	8FEB82	12MAR82	1	1	1	
6A000	6A100	3		OPB 1 C5	620	ACCESS & CAMP FACILITIES	ST	6JUL81	24JUL81	3AUG81	21AUG81	4	4	1	
6A100	6A200	8		OPB 1 C5	620	ACCESS & CAMP FACILITIES	FIN	24AUG81	160CT81	24AUG81	160CT81	0	0	1	CRITICAL
60000	60100	6		OPB 1 C5	621	WATANA DIVERSION SCHEMES	ST	6JUL81	14AUG81	21SEP81	300CT81	11	9	1	
60100	60200	8		OPB 1 C5	621	WATANA DIVERSION SCHEMES	FIN	190CT81	11DEC81	2NOV81	25DEC81	2	0	1	
67300	67400	11		OPB 1 C6	622	DEVIL CANYON DIVERSN SCHEMES	ST	6JUL81	18SEP81	120CT81	25DEC81	14	1	1	
67400	67500	0		OPB 1 C6	622	DEVIL CANYON DIVERSN SCHEMES	FIN	28SEP81	25SEP81	28DEC81	25DEC81	13	0	1	
61800	61900	6		OPB 1 C4	623	OPT WATANA POWER DEVELOPMENT	ST	10AUG81	18SEP81	24AUG81	20CT81	2	2	1	
61900	62000	8		OPB 1 C4	623	OPT WATANA POWER DEVELOPMENT	CT-1	50CT81	27NOV81	50CT81	27NOV81	0	0	1	CRITICAL
62000	62100	5		OPB 1 C4	623	OPT WATANA POWER DEVELOPMENT	FIN	30NOV81	1JAN82	30NOV81	1JAN82	0	0	1	CRITICAL

CPM ANALYSIS LISTING

I-NODE	J-NODE	DUR	SELECT CODES	------D E S C R I P T I O N ----------	E.S.	E.F.	L.S.	L.F.	T.F.	F.F.	DL	
65600	65700	6	OPB 1 C4	624 OPT DEVL CANYN POWER DEVELOP ST	5OCT81	13NOV81	19OCT81	27NOV81	2	0	1	
65700	65800	5	OPB 1 C4	624 OPT DEVL CANYN POWER DEVELOP FIN	16NOV81	18DEC81	30NOV81	1JAN82	2	2	1	
63900	64000	6	OPB 1 C4	625 OPTIMIZE DAM HEIGHTS ST	6JUL81	14AUG81	23NOV81	1JAN82	20	20	1	
64000	64100	5	OPB 1 C4	625 OPTIMIZE DAM HEIGHTS CT-1	4JAN82	5FEB82	4JAN82	5FEB82	0	0	1	CRITICAL
64100	64200	0	OPB 1 C4	625 OPTIMIZE DAM HEIGHTS FIN	8FEB82	5FEB82	8FEB82	5FEB82	0	0	1	CRITICAL
69500	69600	12	OPB 1 C5	626 PREL DESGN WATAN POWER DEVEL ST	12OCT81	1JAN82	12OCT81	1JAN82	0	0	1	CRITICAL
69600	69700	5	OPB 1 C5	626 PREL DESGN WATAN POWER DEVEL FIN	4JAN82	5FEB82	4JAN82	5FEB82	0	0	1	CRITICAL
66600	66700	12	OPB 1 C6	627 PREL DES DEVL CAN POWR DEVEL ST	12OCT81	1JAN82	12OCT81	1JAN82	0	0	1	CRITICAL
66700	66800	5	OPB 1 C6	627 PREL DES DEVL CAN POWR DEVEL FIN	4JAN82	5FEB82	4JAN82	5FEB82	0	0	1	CRITICAL
67600	67700	5	OPB 1 C4	628 POWER DEVELOPMNT REPRT-DRAFT ST	12OCT81	13NOV81	28DEC81	29JAN82	11	11	1	
67700	67800	1	OPB 1 C4	628 POWER DEVELOPMNT REPRT-DRAFT CT-1	1FEB82	5FEB82	1FEB82	5FEB82	0	0	1	CRITICAL
67800	67900	1	OPB 1 C4	628 POWER DEVELOPMNT REPRT-DRAFT CT-2	8FEB82	12FEB82	8FEB82	12FEB82	0	0	1	CRITICAL
67900	68000	4	OPB 1 C4	628 POWER DEVELOPMNT REPRT-DRAFT FIN	15FEB82	12MAR82	15FEB82	12MAR82	0	0	1	CRITICAL
60300	60400	6	OPB 1 C5	629 WATANA GENERAL ARRANGEMENT ST	14DEC81	22JAN82	28DEC81	5FEB82	2	2	1	
60400	60500	5	OPB 1 C5	629 WATANA GENERAL ARRANGEMENT FIN	8FEB82	12MAR82	8FEB82	12MAR82	0	0	1	CRITICAL
60500	605A0	0	OPB 1 C5	629XX EXHIBIT J MATERIAL COMPLETE	15MAR82	12MAR82	19APR82	16APR82	5	5	1	
60800	60900	8	OPB 1 C6	630 DEVL CAN GENERAL ARRANGEMENT ST	28SEP81	20NOV81	28DEC81	19FEB82	13	11	1	
60900	61000	3	OPB 1 C6	630 DEVL CAN GENERAL ARRANGEMENT FIN	8FEB82	26FEB82	22FEB82	12MAR82	2	0	1	
61000	610A0	0	OPB 1 C5	630XX EXHIBIT K MATERIAL COMPLETE	1MAR82	26FEB82	15MAR82	12MAR82	2	2	1	
68000	680A0	0	OPB 1 C4	630XX EXHIBIT M MATERIAL COMPLETE	15MAR82	12MAR82	19APR82	16APR82	5	5	1	
68400	68500	1	OPB 1 C4	631 PROJECT FEASIBL REPORT-DRAFT ST	19OCT81	23OCT81	1FEB82	5FEB82	15	15	1	
68500	68600	4	OPB 1 C4	631 PROJECT FEASIBL REPORT-DRAFT CT-1	8FEB82	5MAR82	8FEB82	5MAR82	0	0	1	CRITICAL
68600	68700	1	OPB 1 C4	631 PROJECT FEASIBL REPORT-DRAFT CT-2	8MAR82	12MAR82	8MAR82	12MAR82	0	0	1	CRITICAL
68700	68800	3	OPB 1 C4	631 PROJECT FEASIBL REPORT-DRAFT CT-3	15MAR82	2APR82	15MAR82	2APR82	0	0	1	CRITICAL
68800	68900	2	OPB 1 C4	631 PROJECT FEASIBL REPORT-DRAFT CT-4	5APR82	16APR82	5APR82	16APR82	0	0	1	CRITICAL
68900	69000	0	OPB 1 C4	631 PROJECT FEASIBL REPORT-DRAFT FIN	19APR82	16APR82	19APR82	16APR82	0	0	1	CRITICAL
69000	690A0	0	OPB 1 C4	631XX EXHIBIT L MATERIAL COMPLETE	19APR82	16APR82	19APR82	16APR82	0	0	1	CRITICAL
6C100	6C200	5 R	OPB 1 C2	637 UPDATE GENERATION PLAN	6JUL81	7AUG81	29MAR82	30APR82	38	45	1	
6B800	6B900	50 R	OPB 1 C2	638 LIAISON POWER ALTS CONSULTANT	6JUL81	18JUN82	13JUL81	25JUN82	1	1	1	
71100	71600	0	OPB 1 C8	7011 STUDY COORD-ALTERNATIVE SITE FIN	6JUL81	3JUL81	6JUL81	3JUL81	0	0	1	CRITICAL
71600	71800	4 R	OPB 1 C8	7012 STUDY COORD-PRELIM ALTERNATV ST	6JUL81	31JUL81	6JUL81	31JUL81	0	0	1	CRITICAL
71800	72000	0	OPB 1 C8	7012 STUDY COORD-PRELIM ALTERNATV FIN	3AUG81	31JUL81	21SEP81	18SEP81	7	0	1	
72000	72200	20 R	OPB 1 C8	7013 STUDY COORD-OPTIMIZED DESIGN	31AUG81	15JAN82	21SEP81	5FEB82	3	3	1	
79300	79400	46 R	OPB 1 C9	702 MONITOR FIELD ACTIVITIES CT-1	6JUL81	21MAY82	10AUG81	25JUN82	5	5	1	
79400	79500	0	OPB 1 C8	702 MONITOR FIELD ACTIVITIES FIN	24MAY82	21MAY82	28JUN82	25JUN82	5	5	1	
71600	70000	8 R	OPB 1 C8	7042 WTR RES-PRE WAT&DEVL CAN ALT	6JUL81	29AUG81	27JUL81	18SEP81	3	3	1	
72600	70600	20 R	OPB 1 C9	7043 WTR RES-OPT WAT&DEVL CAN DES	31AUG81	15JAN82	21SEP81	5FEB82	3	3	1	
73100	73300	12 R	OPB 1 C8	705 SOCIOECONOMIC ANALYSIS CT-1	6JUL81	25SEP81	6JUL81	25SEP81	0	0	1	CRITICAL
73200	73400	9	OPB 1 C8	705 SOCIOECONOMIC ANALYSIS FIN	15FEB82	16APR82	15FEB82	16APR82	0	0	1	CRITICAL
73300	73200	20	OPB 1 C8	705 SOCIOECONOMIC ANALYSIS CT-2	28SEP81	12FEB82	28SEP81	12FEB82	0	0	1	CRITICAL
78600	78800	1 R	OPB 1 C8	7061 CULTURAL ALTERNATIVE SITES ST	6JUL81	10JUL81	6JUL81	10JUL81	0	0	1	CRITICAL
78700	79000	12 R	OPB 1 C8	7061 CULTURAL ALTERNATIVE SITES FIN	13JUL81	20CT81	13JUL81	20CT81	0	0	1	CRITICAL
78900	79000	8	OPB 1 C9	7062 CULTURAL PRELIM ALTERNATIVES ST	6JUL81	28AUG81	10AUG81	20CT81	5	1	1	
79000	79100	10	OPB 1 C8	7062 CULTURAL PRELIM ALTERNATIVES CT-1	5OCT81	11DEC81	5OCT81	11DEC81	0	0	1	CRITICAL
79100	79700	0	OPB 1 C8	7062 CULTURAL PRELIM ALTERNATIVES FIN	14DEC81	11DEC81	14DEC81	11DEC81	0	0	1	CRITICAL
79600	79700	15	OPB 1 C8	7063 CULTURAL-OPTIMIZED DESIGN ST	6JUL81	16OCT81	31AUG81	11DEC81	8	8	1	
79700	79800	18	OPB 1 C8	7063 CULTURAL-OPTIMIZED DESIGN CT-1	14DEC81	16APR82	14DEC81	16APR82	0	0	1	CRITICAL
79800	79900	0	OPB 1 C8	7063 CULTURAL-OPTIMIZED DESIGN FIN	19APR82	16APR82	19APR82	16APR82	0	0	1	CRITICAL
79900	799A0	0	OPB 1 C8	706XX EXHIBIT V MATERIAL COMPLETE	19APR82	16APR82	19APR82	16APR82	0	0	1	CRITICAL
75300	76000	6	OPB 1 C8	7071 LAND USE ALTERNATIVE SITES FIN	19OCT81	27NOV81	19OCT81	27NOV81	0	0	1	CRITICAL
75400	75300	15 R	OPB 1 C8	7071 LAND USE ALTERNATIVE SITES CT-1	6JUL81	16OCT81	6JUL81	16OCT81	0	0	1	CRITICAL

[redacted] CRES[redacted]RIC[redacted]USI[redacted]HYDR[redacted]ECT[redacted]PRO[redacted] [redacted]GE [redacted]
TIME NOW: 6JUL81

CPM ANALYSIS LISTING

I-NODE	J-NODE	DUR		SELECT CODES		------D E S C R I P T I O N ----------		E.S.	E.F.	L.S.	L.F.	T.F.	F.F.		
75900	76000	9		OPB 1 C8	7072	LAND USE PRELIM ALTERNATIVES	ST	6JUL81	28AUG81	5OCT81	27NOV81	13	13	1	
76000	76100	10		OPB 1 C8	7072	LAND USE PRELIM ALTERNATIVES	CT-1	30NOV81	5FEB82	30NOV81	5FEB82	0	0	1	CRITICAL
76100	76800	0		OPB 1 C8	7072	LAND USE PRELIM ALTERNATIVES	FIN	8FEB82	5FEB82	8FEB82	5FEB82	0	0	1	CRITICAL
76700	76800	15		OPB 1 C8	7073	LAND USE OPTIMIZED DESIGN	ST	6JUL81	26OCT81	26OCT81	5FEB82	16	15	1	
76800	76900	20		OPB 1 C8	7073	LAND USE OPTIMIZED DESIGN	CT-1	8FEB82	25JUN82	8FEB82	25JUN82	0	0	1	CRITICAL
76900	77000	0		OPB 1 C8	7073	LAND USE OPTIMIZED-DESIGN	FIN	28JUN82	25JUN82	28JUN82	25JUN82	0	0	1	CRITICAL
72600	72800	5		OPB 1 C8	708	RECREATION PLANNING	FIN	8FEB82	12MAR82	15MAR82	16APR82	5	5	1	
72700	72600	17	R	OPB 1 C8	708	RECREATION PLANNING	CT-2	31AUG81	25DEC81	19OCT81	12FEB82	7	6	1	
73500	73600	12		OPB 1 C8	7092	TRANS LINE ASSESS RTE SELCTN	CT-1	10AUG81	30OCT81	10AUG81	30OCT81	0	0	1	CRITICAL
73580	73500	5	R	OPB 1 C8	7092	TRANS LINE ASSESS RTE SELCTN	ST	6JUL81	7AUG81	6JUL81	7AUG81	0	0	1	CRITICAL
73600	73680	24		OPB 1 C8	7092	TRANS LINE ASSESS RTE SELCTN	FIN	2NOV81	16APR82	2NOV81	16APR82	0	0	1	CRITICAL
73730	73800	11	R	OPB 1 C8	7101	FISH ECOLOGY ALTERNATV SITES	CT-2	28SEP81	11DEC81	5OCT81	18DEC81	1	0	1	
73800	74200	0		OPB 1 C8	7101	FISH ECOLOGY ALTERNATV SITES	FIN	14DEC81	11DEC81	21DEC81	16DEC81	1	0	1	
73900	73700	12		OPB 1 C8	7101	FISH ECOLOGY ALTERNATV SITES	CT-1	6JUL81	25SEP81	13JUL81	2OCT81	1	0	1	
74100	74200	8		OPB 1 C8	7102	FISH ECOLOGY PRELIM ALTERNAT	ST	6JUL81	28AUG81	26OCT81	18DEC81	16	15	1	
74200	74300	10		OPB 1 C8	7102	FISH ECOLOGY PRELIM ALTS	CT-1	14DEC81	19FEB82	21DEC81	26FEB82	1	0	1	
74300	74600	0		OPB 1 C8	7102	FISH ECOLOGY PRELIM ALTERNAT	FIN	22FEB82	19FEB82	1MAR82	26FEB82	1	0	1	
74500	74600	15		OPB 1 C8	7103	FISH ECOLOGY OPTIMIZED DESGN	ST	6JUL81	16OCT81	16NOV81	26FEB82	19	18	1	
74600	74700	17		OPB 1 C8	7103	FISH ECOLOGY OPTIMIZED DESGN	CT-1	22FEB82	18JUN82	1MAR82	25JUN82	1	0	1	
74700	74800	0		OPB 1 C8	7103	FISH ECOLOGY OPTIMIZED DESGN	FIN	21JUN82	18JUN82	28JUN82	25JUN82	1	1	1	
749A0	750A0	3	R	OPB 1 C8	7111	WILDLIFE ECOLOGY ALTER SITES	CT-1	20JUL81	7AUG81	27JUL81	14AUG81	1	0	1	
75000	75100	10		OPB 1 C8	7111	WILDLIFE ECOLOGY ALTER SITES	FIN	23NOV81	29JAN82	30NOV81	5FEB82	1	0	1	
750A0	75000	15		OPB 1 C8	7111	WILDLIFE ECOLOGY ALTER SITES	CT-2	10AUG81	20NOV81	17AUG81	27NOV81	1	0	1	
75500	75600	8		OPB 1 C8	7112	WILDLIFE ECOLOGY PRELM ALTER	ST	6JUL81	28AUG81	5OCT81	27NOV81	13	5	1	
75600	75700	10		OPB 1 C8	7112	WILDLIFE ECOLOGY PRELM ALTER	CT-1	5OCT81	11DEC81	30NOV81	5FEB82	8	7	1	
75700	76400	0		OPB 1 C8	7112	WILDLIFE ECOLOGY PRELM ALTER	FIN	1FEB82	29JAN82	8FEB82	5FEB82	1	0	1	
76300	76400	15		OPB 1 C8	7113	WILDLIFE ECOLOGY OPTIM DESGN	ST	6JUL81	16OCT81	26OCT81	5FEB82	16	15	1	
76400	76500	20		OPB 1 C8	7113	WILDLIFE ECOLOGY OPTIM DESGN	CT-1	1FEB82	18JUN82	8FEB82	25JUN82	1	0	1	
76500	76600	0		OPB 1 C8	7113	WILDLIFE ECOLOGY OPTIM DESGN	FIN	21JUN82	18JUN82	28JUN82	25JUN82	1	1	1	
77200	77500	4		OPB 1 C8	7121	PLANT ECOLOGY ALTERNTV SITES	FIN	2NOV81	27NOV81	2NOV81	27NOV81	0	0	1	CRITICAL
77300	77200	17	R	OPB 1 C8	7121	PLANT ECOLOGY ALTERNTV SITES	CT-1	6JUL81	30OCT81	6JUL81	30OCT81	0	0	1	CRITICAL
77400	77500	8		OPB 1 C8	7122	PLANT ECOLOGY PRELM ALTERNAT	ST	6JUL81	28AUG81	5OCT81	27NOV81	13	13	1	
77500	77600	10		OPB 1 C8	7122	PLANT ECOLOGY PRELM ALTERNAT	CT-1	30NOV81	5FEB82	30NOV81	5FEB82	0	0	1	CRITICAL
77600	77900	0		OPB 1 C8	7122	PLANT ECOLOGY PRELM ALTERNAT	FIN	8FEB82	5FEB82	8FEB82	5FEB82	0	0	1	CRITICAL
77800	77900	15		OPB 1 C8	7123	PLANT ECOLOGY OPTIMIZD DESGN	ST	6JUL81	16OCT81	26OCT81	5FEB82	16	16	1	
77900	78000	20		OPB 1 C8	7123	PLANT ECOLOGY OPTIMIZD DESGN	CT-1	8FEB82	25JUN82	8FEB82	25JUN82	0	0	1	CRITICAL
78000	78100	0		OPB 1 C8	7123	PLANT ECOLOGY OPTIMIZD DESGN	FIN	28JUN82	25JUN82	28JUN82	25JUN82	0	0	1	CRITICAL
710A0	74400	30	R	OPB 1 C8	714	ACCESS RD ENVIRONMENT ANALY	CT-1	6JUL81	29JAN82	13JUL81	5FEB82	1	0	1	
74400	74000	10		OPB 1 C8	714	ACCESS RD ENVIRONMENT ANALY	FIN	1FEB82	9APR82	8FEB82	16APR82	1	1	1	
78200	78300	9		OPB 1 C8	715	PREP FOR FERC EXHIBIT-DRAFT	ST	6JUL81	4SEP81	4JAN82	5MAR82	26	26	1	
78300	78400	6		OPB 1 C8	715	PREP FOR FERC EXHIBIT-DRAFT	CT-1	8MAR82	16APR82	8MAR82	16APR82	0	0	1	CRITICAL
78400	78500	0		OPB 1 C8	715	PREP FOR FERC EXHIBIT-DRAFT	FIN	19APR82	16APR82	19APR82	16APR82	0	0	1	CRITICAL
785C0	785A0	0		OPB 1 C8	715XX	EXHIBIT W MATERIAL COMPLETE		19APR82	16APR82	19APR82	16APR82	0	0	1	CRITICAL
78700	785B0	0		OPB 1 C8	715XX	EXHIBIT S MATERIAL COMPLETE		19APR82	16APR82	17MAY82	14MAY82	4	4	1	
80400	80500	1	R	OPB 1 C3	801	SELECT INITIAL CORRIDORS	FIN	6JUL81	10JUL81	17AUG81	21AUG81	6	6	1	
81400	81800	1	R	OPB 1 C3	8021	LOAD FLOW ANALYSIS	ST	6JUL81	10JUL81	6JUL81	10JUL81	0	0	1	CRITICAL
81800	82800	6		OPB 1 C3	8021	LOAD FLOW ANALYSIS	FIN	13JUL81	21AUG81	13JUL81	21AUG81	0	0	1	CRITICAL
82600	83800	7	R	OPB 1 C3	80221	PRELIMINARY ELEC SYSTEM	CT-1	6JUL81	21AUG81	6JUL81	21AUG81	0	0	1	CRITICAL
83800	83000	0		OPB 1 C3	80221	PRELIMINARY ELEC SYSTEM	FIN	24AUG81	21AUG81	24AUG81	21AUG81	0	0	1	CRITICAL
85700	85300	32		OPB 1 C3	80222	RECOMMEND ELEC SYS		24AUG81	2APR82	24AUG81	2APR82	0	0	1	CRITICAL
80600	80800	7	R	OPB 1 C3	803	FINAL ROUTE SELECTION 1981	ST	6JUL81	21AUG81	6JUL81	21AUG81	0	0	1	CRITICAL

CPM ANALYSIS LISTING

I-NODE	J-NODE	DUR		SELECT CODES	------D E S C R I P T I O N ----------		E.S.	E.F.	L.S.	L.F.	T.F.	F.F.	CL	
80800	81000	6		OPB 1 C3	803 FINAL ROUTE SELECTION 1981	CT-1	24AUG81	20CT81	24AUG81	20CT81	0	0	1	CRITICAL
81000	81200	6		OPB 1 C3	803 FINAL ROUTE SELECTION 1981	CT-2	5OCT81	13NOV81	5OCT81	13NOV81	0	0	1	CRITICAL
81200	81400	0		OPB 1 C3	803 FINAL ROUTE SELECTION 1981	FIN	16NOV81	13NOV81	16NOV81	13NOV81	0	0	1	CRITICAL
83200	83400	7	R	OPB 1 C3	804 TOWER HARDWRE&CONDUCTR STUDY	ST	6JUL81	21AUG81	14SEP81	30OCT81	10	0	1	
83400	83600	2		OPB 1 C3	804 TOWER HARDWRE&CONDUCTR STUDY	CT-1	24AUG81	4SEP81	2NOV81	13NOV81	10	10	1	
83600	85400	10		OPB 1 C3	804 TOWER HARDWRE&CONDUCTR STUDY	FIN	16NOV81	22JAN82	16NOV81	22JAN82	0	0	1	CRITICAL
84600	84800	8		OPB 1 C3	805 SUBSTATIONS	ST	6JUL81	28AUG81	5OCT81	27NOV81	13	0	1	
84800	85400	8		OPB 1 C3	805 SUBSTATIONS	FIN	31AUG81	23OCT81	30NOV81	22JAN82	13	13	1	
84000	84200	8		OPB 1 C3	806 DISPATCH CTR & COMMUNICATNS	ST	6JUL81	28AUG81	5OCT81	27NOV81	13	0	1	
84200	85400	8		OPB 1 C3	806 DISPATCH CTR & COMMUNICATNS	FIN	31AUG81	23OCT81	30NOV81	22JAN82	13	13	1	
85200	85400	1	R	OPB 1 C3	807 TRANS LINE COST ESTIMATES	ST	6JUL81	10JUL81	18JAN82	22JAN82	28	28	1	
85400	85600	6		OPB 1 C3	807 TRANS LINE COST ESTIMATES	FIN	25JAN82	5MAR82	25JAN82	5MAR82	0	0	1	CRITICAL
90300	90400	2		OPB 1 C7	901 ASSEMBLE COST-SCHEDULE DATA	ST	6JUL81	17JUL81	24AUG81	4SEP81	7	0	1	
90400	90600	4		OPB 1 C7	901 ASSEMBLE COST-SCHEDULE DATA	FIN	20JUL81	14AUG81	21SEP81	16OCT81	9	9	1	
90800	91000	6		OPB 1 C7	902 PREP PRELIM CST ESTIMATES		20JUL81	28AUG81	7SEP81	16OCT81	7	0	1	
91200	91400	17		OPB 1 C7	903 COST ESTIMATE UPDATES		31AUG81	25DEC81	19OCT81	12FEB82	7	0	1	
91400	914A0	0		OPB 1 C7	903XX EXHIBIT N MATERIAL COMPLETE		28DEC81	25DEC81	19APR82	16APR82	16	16	1	
91600	91800	6		OPB 1 C7	9041 ENGR COST & SCHEDULE PRELIM		20JUL81	28AUG81	7SEP81	16OCT81	7	0	1	
92000	92200	17		OPB 1 C7	9042 ENGR COST & SCHEDULE FINAL		31AUG81	25DEC81	19OCT81	12FEB82	7	0	1	
92200	922A0	0		OPB 1 C7	904XX EXHIBIT O MATERIAL COMPLETE		28DEC81	25DEC81	19APR82	16APR82	16	16	1	
92400	92600	12		OPB 1 C7	905 CONTINGENCY ANALYSIS		31AUG81	20NOV81	9NOV81	29JAN82	10	10	1	
A1200	A1600	9		FLC C110	1001 IMPACT OF NEW FERC REGULATIONS		6JUL81	4SEP81	30NOV81	29JAN82	21	20	1	
A3200	A2600	4		FLC C110	10022 1ST UPDATE-REGULATORY REQ		6JUL81	31JUL81	22MAR82	16APR82	37	37	1	
A3300	A2600	4		FLC C110	10023 2ND UPDATE-REGULATORY REQ		30NOV81	25DEC81	22MAR82	16APR82	16	16	1	
A3600	A3800	5		FLC C110	1003 DATA FROM OTHERS		6JUL81	7AUG81	12APR82	14MAY82	40	0	1	
A3800	A4000	0		FLC C110	1003XX EXHIBIT A B & C MATERIAL COMPLETE		10AUG81	7AUG81	17MAY82	14MAY82	40	40	1	
A1400	A1600	9	R	FLC C110	1004 COORD EXHIBIT PREPARATION	ST	23NOV81	22JAN82	30NOV81	29JAN82	1	0	1	
A1600	A16A0	1		FLC C110	1004 COORD EXHIBIT PREPARATION	CT-1	25JAN82	29JAN82	1FEB82	5FEB82	1	0	1	
A16A0	A1700	2		FLC C110	1004 COORD EXHIBIT PREPARATION	CT-2	1FEB82	12FEB82	8FEB82	19FEB82	1	0	1	
A1700	A17A0	3		FLC C110	1004 COORD EXHIBIT PREPARATION	CT-3	15FEB82	5MAR82	22FEB82	12MAR82	1	1	1	
A17A0	A17B0	2		FLC C110	1004 COORD EXHIBIT PREPARATION	CT-4	15MAR82	26MAR82	15MAR82	26MAR82	0	0	1	CRITICAL
A17B0	A1800	3		FLC C110	1004 COORD EXHIBIT PREPARATION	CT-5	29MAR82	16APR82	29MAR82	16APR82	0	0	1	CRITICAL
A1800	A2400	0		FLC C110	1004 COORD EXHIBIT PREPARATION	FIN	19APR82	16APR82	19APR82	16APR82	0	0	1	CRITICAL
A0400	A0600	10		FLC C110	10051 PREPARE EXHIBIT E		30NOV81	5FEB82	4JAN82	12MAR82	5	5	1	
A0700	A0900	10		FLC C110	10052 PREPARE EXHIBIT D		30NOV81	5FEB82	8MAR82	14MAY82	14	14	1	
A0800	A1000	10		FLC C110	1006 PREPARE EXHIBIT R	ST	30NOV81	5FEB82	8FEB82	16APR82	10	10	1	
A0000	A0200	6		FLC C110	1007 PREPARE EXHIBIT T	ST	14SEP81	23OCT81	21SEP81	30OCT81	1	0	1	
A0200	A1100	4		FLC C110	1007 PREPARE EXHIBIT T	FIN	26OCT81	20NOV81	2NOV81	27NOV81	1	0	1	
A0200	A2400	6		FLC C110	1008 PREP APPLICATN FORM-DRAFT	ST	30NOV81	8JAN82	8MAR82	16APR82	14	14	1	
A2400	A2600	0		FLC C110	1008 PREP APPLICATN FORM-DRAFT	FIN	19APR82	16APR82	19APR82	16APR82	0	0	1	CRITICAL
A2600	A2800	2		FLC C110	1009 REVIEW AND CORRECT		19APR82	30APR82	19APR82	30APR82	0	0	1	CRITICAL
A2800	A3000	2		FLC C110	1010 EXTERNAL REVIEW		3MAY82	14MAY82	3MAY82	14MAY82	0	0	1	CRITICAL
A3000	A3400	6		FLC C110	10XXX PRINT LICENSE APPLICATION		17MAY82	25JUN82	17MAY82	25JUN82	0	0	1	CRITICAL
B0000	B0200	50	R	FLC C210	1101 PROJECT OVERVIEW		6JUL81	18JUN82	13JUL81	25JUN82	1	1	1	
B0400	B0600	40	R	FLC C210	1102 INTERNAL REPORTS		6JUL81	9APR82	13JUL81	16APR82	1	0	1	
B0600	B06A0	0		FLC C210	1102XX EXHIBIT U MATERIAL COMPLETE		12APR82	9APR82	19APR82	16APR82	1	1	1	
B1200	B1400	30	R	FLC C210	1103 SUSITNA BASE PLAN RISK ANALY	ST	6JUL81	29JAN82	6JUL81	29JAN82	0	0	1	CRITICAL
B1400	B1600	0		FLC C210	1103 SUSITNA BASE PLAN RISK ANALY	FIN	1FEB82	29JAN82	1FEB82	29JAN82	0	0	1	CRITICAL
B1600	B1B00	21		FLC C210	1104 SUSITNA BASE PLAN EXTEN/REVIS		1FEB82	25JUN82	1FEB82	25JUN82	0	0	1	CRITICAL
B2000	B2200	30		FLC C210	1105 SUSITNA FINANCE RISK ANALYSIS		6JUL81	29JAN82	30NOV81	25JUN82	21	21	1	
B2400	B2600	24		FLC C210	1106 RESOLUTION TAX ISSUE		6JUL81	18DEC81	11JAN82	25JUN82	27	27	1	

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CPM ANALYSIS LISTING

I-NODE	J-NODE	DUR	SELECT CODES	------I E S C R I P T I O N ----------	E.S.	E.F.	L.S.	L.F.	T.F.	F.F.	CL	
B2800	B3000	30	FLC C210	1107 IDENTIFY PARTIES INTEREST	6JUL81	29JAN82	30NOV81	25JUN82	21	21	1	
B3200	B3400	30	FLC C210	1108 REVENUE ASSURANCE	6JUL81	29JAN82	21SEP81	16APR82	11	0	1	
B3600	B3800	40 R	FLC C210	1109 LIAISON APA BOND UNDERWRITER	6JUL81	9APR82	13JUL81	16APR82	1	1	1	
B3400	B34A0	0	FLC C210	1109XX EXHIBIT G MATERIAL COMPLETE	1FEB82	29JAN82	19APR82	16APR82	11	11	1	
C0600	C0800	4	OPB 1 C810	12022 CONDUCT PUBLIC MEETING #2	27JUL81	21AUG81	30NOV81	25DEC81	18	0	1	
C1200	C1400	4	OPB 1 C810	12023 CONDUCT PUBLIC MEETING #3	16NOV81	11DEC81	22MAR82	16APR82	18	18	1	
C0200	C0400	3 R	OPB 1 C810	12031 CONDUCT WORKSHOPS 1,2,3	6JUL81	24JUL81	9NOV81	27NOV81	18	[illegible]	1	
C0800	C1000	12	OPB 1 C810	12032 CONDUCT WORKSHOPS 4,5,6	24AUG81	13NOV81	28DEC81	19MAR82	18	0	1	
C1600	D1200	50 R	OPB 1 C810	1204 PREP PUBLISH DISTRIB MATERIAL	6JUL81	18JUN82	13JUL81	25JUN82	1	[illegible]	1	
C1800	D1200	50 R	OPB 1 C810	1205 PREP MAINTAIN ACTION LIST	6JUL81	18JUN82	13JUL81	25JUN82	1	[illegible]	1	
D1000	D1200	50 R	PSB 2 C310	13013 PROJECT PROCED MANUAL-UPDATE	6JUL81	18JUN82	13JUL81	25JUN82	1	[illegible]	1	
D2200	D2400	50 R	PSB 2 C310	13042 SCHEDULE CONTROL SYS UPDATE	6JUL81	18JUN82	13JUL81	25JUN82	1	[illegible]	1	
D2800	D3000	50 R	PSB 2 C310	13052 COST CONTROL SYSTEM-OP	6JUL81	18JUN82	13JUL81	25JUN82	1	[illegible]	1	
D3400	D3600	50 R	PSB 2 C310	13062 MANPOWER LOADNG SCHED-UPDATE	6JUL81	18JUN82	13JUL81	25JUN82	1	[illegible]	1	
D3800	D4000	50 R	PSB 2 C310	1310 SUB CONTRACT ADMINISTRATION	6JUL81	18JUN82	13JUL81	25JUN82	1	1	1	
D1200	D1300	0	10	XXX PROJECT COMPLETE XXX	28JUN82	25JUN82	28JUN82	25JUN82	0	183	1	CRITICAL

CPM ANALYSIS LISTING

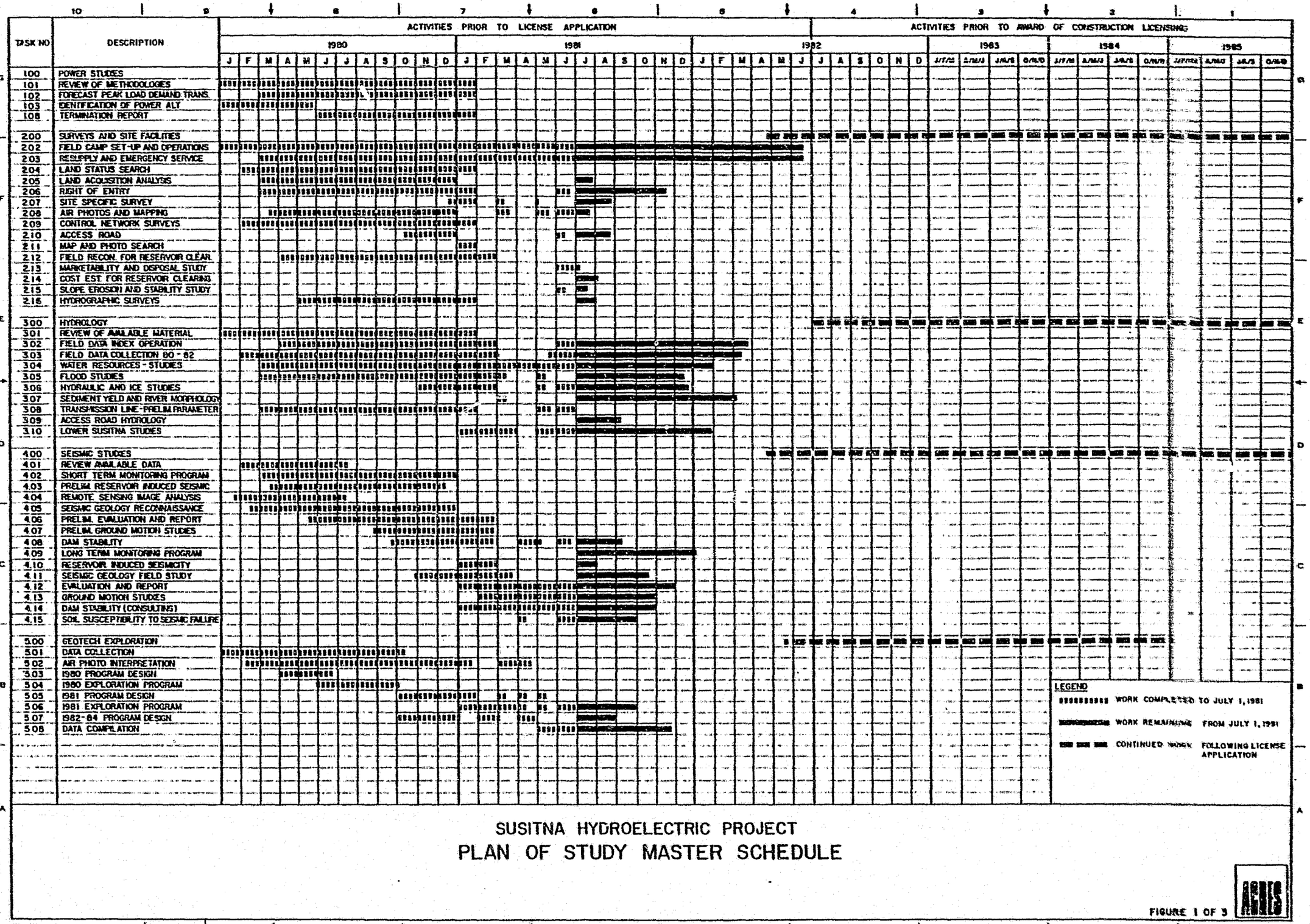
I-NODE	J-NODE	DUR	SELECT CODES	------D E S C R I P T I O N ----------	E.S.	E.F.	L.S.	L.F.	T.F.	F.F.	CL
10000	10600	0	C OPB 1 C2	101 REVIEW OF METHODOLOGIES							COMPLETE
10400	10500	0	C OPB 1 C2	102 FCST PEAK LOAD DEMAND TRANS							COMPLETE
12100	11800	0	C OPB 1 C2	103 INDENT OF POWER ALTERNAT							COMPLETE
11800	11900	0	C OPB 1 C2	108 TERMINATION REPORT							COMPLETE
20200	20300	0	C OPA C2	2021 FIELD CAMP SET-UP	ST						COMPLETE
20300	20400	0	C OPA C2	2021 FIELD CAMP SET-UP	FIN						COMPLETE
21200	21500	0	C OPA C2	204 LAND STATUS RESEARCH							COMPLETE
21600	21700	0	C OPA C2	205 LAND AQUISITION ANALYSIS	ST						COMPLETE
20800	21000	0	C OPA C2	206 RIGHT OF ENTRY	ST						COMPLETE
23000	25200	0	C OPA C3	207 SITE SPECIFIC SURVEYS	ST						COMPLETE
25200	25400	0	C OPA C3	207 SITE SPECIFIC SURVEYS	CT-1						COMPLETE
23000	23200	0	C OPA C3	2081 AIR PHOTOS & MAPPING-1980	ST						COMPLETE
23200	23400	0	C OPA C3	2081 AIR PHOTOS & MAPPING-1980	FIN						COMPLETE
24000	24100	0	C OPA C3	2082 AIR PHOTOS & MAPPING-1981	ST						COMPLETE
24100	24100	0	C OPA C3	2082 AIR PHOTOS & MAPPING-1981	CT-1						COMPLETE
23600	23800	0	C OPA C3	209 CONTROL NETWORK SURVEYS							COMPLETE
22200	22300	0	C OPA C3	210 ACCESS ROAD	ST						COMPLETE
22300	22400	0	C OPA C3	210 ACCESS ROAD	CT-1						COMPLETE
22400	22600	0	C OPA C3	210 ACCESS ROAD	CT-2						COMPLETE
25600	26600	0	C OPA C3	211 MAP & PHOTO SEARCH							COMPLETE
26400	26600	0	C OPA C4	212 FIELD RECON FOR RSRVR CLEAR	ST						COMPLETE
26600	26800	0	C OPA C4	212 FIELD RECON FOR RSRVR CLEAR	FIN						COMPLETE
27600	27700	0	C OPA C3	213 MARKETABLTY & DISPOSAL STDY	ST						COMPLETE
25800	26000	0	C OPA C4	215 SLOPE EROSION & STBLTY STUDY	ST						COMPLETE
24400	24600	0	C OPA C3	216 HYDROGRAPHIC SURVEYS	ST						COMPLETE
32600	32800	0	C OPB 1 C4	301 REVIEW AVAILABLE MATERIAL	ST						COMPLETE
32800	33000	0	C OPB 1 C4	301 REVIEW AVAILABLE MATERIAL	FIN						COMPLETE
36200	36400	0	C OPB 1 C4	3021 FIELD DATA INDEX-SETUP	ST						COMPLETE
36400	36600	0	C OPB 1 C4	3021 FIELD DATA INDEX-SETUP	FIN						COMPLETE
37000	37200	0	C OPB 1 C4	3031 FIELD DATA COLLECTION-SPECS							COMPLETE
37400	37500	0	C OPB 1 C4	3032 FIELD DATA COLLECTION 80-81	ST						COMPLETE
37500	37600	0	C OPB 1 C4	3032 FIELD DATA COLLECTION 80-81	FIN						COMPLETE
32800	33200	0	C OPB 1 C4	3041 WATER RSRCS-FLOW EXTENSION	ST						COMPLETE
33200	33300	0	C OPB 1 C4	3041 WATER RSRCS-FLOW EXTENSION	CT-1						COMPLETE
34200	34400	0	C OPB 1 C4	3043 WATER RSRCS-RESERVOIR STUDY	ST						COMPLETE
34400	34400	0	C OPB 1 C4	3043 WATER RSRCS-RESERVOIR STUDY	CT-1						COMPLETE
32700	32900	0	C OPB 1 C4	3051 FLOODS-FREQUENCY ANALYSIS							COMPLETE
32800	32400	0	C OPB 1 C4	3052 FLOODS PMF REVIEW							COMPLETE
31400	31800	0	C OPB 1 C4	3053 FLOODS-RESERVOIR ROUTING	ST						COMPLETE
30000	30200	0	C OPB 1 C4	3061 HYDRLS&ICE-CHANNEL WTR LVLS	ST						COMPLETE
38800	39000	0	C OPB 1 C4	3063 HYDR&ICE-RESER SLIDE SURGE	ST						COMPLETE
33400	33600	0	C OPB 1 C4	3072 RIVER MORPHOLOGY	ST						COMPLETE
38000	38200	0	C OPB 1 C4	3081 TRANSMSN LINE-PRLM PARAMTR							COMPLETE
38200	38400	0	C OPB 1 C4	3082 TRANSMSN LINE-DET PARAMTR	ST						COMPLETE
38400	38600	0	C OPB 1 C4	3082 TRANSMSN LINE-DET PARAMTR	FIN						COMPLETE
30800	31000	0	C OPB 1 C4	3101 LWR SUSITNA STUDIES-PRELIM	ST						COMPLETE
31000	31200	0	C OPB 1 C4	3101 LWR SUSITNA STUDIES-PRELIM	FIN						COMPLETE
43100	43200	0	C OPB 1 C1	401 REVIEW AVAILABLE DATA	ST						COMPLETE
43200	43400	0	C OPB 1 C1	401 REVIEW AVAILABLE DATA	CT-1						COMPLETE
43400	41200	0	C OPB 1 C1	401 REVIEW AVAILABLE DATA	FIN						COMPLETE
44000	44200	0	C OPA C4	402 SHORT TERM MONITORNG PROGRAM	ST						COMPLETE

CPM ANALYSIS LISTING

I-NODE	J-NODE	DUR	SELECT CODES	------D E S C R I P T I O N ----------	E.S.	E.F.	L.S.	L.F.	T.F.	F.F.	CL
44200	41200	0	C OPA C4	402 SHORT TERM MONITORNG PROGRAM FIN							COMPLETE
40000	40200	0	C OPB 1 C1	403 PRELIM RESERVR INDUCD SEISMC							COMPLETE
40300	40600	0	C OPB 1 C1	404 REMOTE SENSING IMAG ANALYSIS ST							COMPLETE
40600	40800	0	C OPB 1 C1	404 REMOTE SENSING IMAG ANALYSIS CT-1							COMPLETE
40800	42000	0	C OPB 1 C1	404 REMOTE SENSING IMAG ANALYSIS FIN							COMPLETE
42200	42400	0	C OPA C4	405 SEISMIC GEOLOGIC RECONASANCE							COMPLETE
41000	41200	0	C OPB 1 C1	406 PRELIM EVALUATN&REPORT-DRAFT ST							COMPLETE
41200	41400	0	C OPB 1 C1	406 PRELIM EVALUATION & REPORT CT-1							COMPLETE
41300	41600	0	C OPB 1 C1	406 PRELIM EVAL & REPORT DRAFT FIN							COMPLETE
44200	45000	0	C OPB 1 C1	407 PRELIM GROUND MOTION STUDIES							COMPLETE
45400	45800	0	C OPB 1 C1	408 DAM STABILITY ST							COMPLETE
45200	45300	0	C OPB 1 C1	415 SOIL SUSCEPTBTY-SEISMIC FAIL ST							COMPLETE
50000	50200	0	C OPB 1 C1	501 DATA COLLECTION ST							COMPLETE
50200	50400	0	C OPB 1 C1	501 DATA COLLECTION CT-1							COMPLETE
50400	50600	0	C OPB 1 C1	501 DATA COLLECTION FIN							COMPLETE
50200	51200	0	C OPB 1 C1	502 AIR PHOTO INTERPRETATION ST							COMPLETE
51200	51600	0	C OPB 1 C1	502 AIR PHOTO INTERPRETATION FIN							COMPLETE
50800	51600	0	C OPB 1 C1	503 1980 PROGRAM DESIGN							COMPLETE
51000	51600	0	C OPA C4	504 1980 EXPLORATION PROGRAM							COMPLETE
52000	52200	0	C OPB 1 C1	505 1981 PROGRAM DESIGN ST							COMPLETE
52200	52600	0	C OPB 1 C1	505 1981 PROGRAM DESIGN FIN							COMPLETE
52400	52600	0	C OPA C4	506 1981 EXPLORATION PROGRAM ST							COMPLETE
51400	51600	0	C OPB 1 C1	5081 DATA ASSEMBLY-1980-DRAFT ST							COMPLETE
52800	53000	0	C OPB 1 C1	5082 DATA ASSEMBLY-1981-DRAFT ST							COMPLETE
62500	625A0	0	C OPB 1 C4	601 REVIEW PREVIOUS STUDIES ST							COMPLETE
625A0	62600	0	C OPB 1 C4	601 REVIEW PREVIOUS STUDIES FIN							COMPLETE
64300	67100	0	C OPB 1 C4	602 INVESTIGATE TUNNEL ALTERNATIVES							COMPLETE
62600	626A0	0	C OPB 1 C4	603 EVAL ALT SUSITNA DEVELOPMENT ST							COMPLETE
626A0	62700	0	C OPB 1 C4	603 EVAL ALT SUSITNA DEVELOPMENT CT-1							COMPLETE
62700	627A0	0	C OPB 1 C4	603 EVAL ALT SUSITNA DEVELOPMENT CT-2							COMPLETE
627A0	62800	0	C OPB 1 C4	603 EVAL ALT SUSITNA DEVELOPMENT CT-3							COMPLETE
62800	62900	0	C OPB 1 C4	603 EVAL ALT SUSITNA DEVELOPMENT FIN							COMPLETE
68100	68200	0	C OPB 1 C6	604 DEVL CAN ARCH DAM EVALUATION ST							COMPLETE
68200	68300	0	C OPB 1 C6	604 DEVL CAN ARCH DAM EVALUATION FIN							COMPLETE
66900	669A0	0	C OPB 1 C4	6051 SELECT REPORT DRAFT							COMPLETE
669A0	67000	0	C OPB 1 C4	6052 SELECT REPORT FINAL DRAFT ST							COMPLETE
67000	67100	0	C OPB 1 C4	6052 SELECT REPORT FINAL DRAFT CT-1							COMPLETE
67100	67200	0	C OPB 1 C4	6052 SELECT REPORT FINAL DRAFT FIN							COMPLETE
67200	672A0	0	C OPB 1 C4	6053 SELECT REPORT FINAL EDITION							COMPLETE
65900	659A0	0	C OPB 1 C4	606 STAGED DEVELOPMENT ALTS ST							COMPLETE
659A0	659B0	0	C OPB 1 C4	606 STAGED DEVELOPMENT ALTS CT-1							COMPLETE
659B0	66000	0	C OPB 1 C4	606 STAGED DEVELOPMENT ALTS FIN							COMPLETE
63000	63100	0	C OPB 1 C5	607 PRELIM WATANA DAM ALTERNATES ST							COMPLETE
63100	631A0	0	C OPB 1 C5	607 PRELIM WATANA DAM ALTERNATES CT-1							COMPLETE
64400	64500	0	C OPB 1 C6	608 PRELIM DEVIL CANYON DAM ALT ST							COMPLETE
64500	64600	0	C OPB 1 C6	608 PRELIM DEVIL CANYON DAM ALT CT-1							COMPLETE
69100	69200	0	C OPB 1 C4	609 ESTAB WATANA DESIGN CRITERIA ST							COMPLETE
69200	69300	0	C OPB 1 C4	609 ESTAB WATANA DESIGN CRITERIA CT-1							COMPLETE
63400	63500	0	C OPB 1 C4	610 ESTAB DEVIL CANYN DESGN CRIT ST							COMPLETE
61100	61200	0	C OPB 1 C4	614 SPILLWAY DESIGN CRITERIA ST							COMPLETE
6A500	6A600	0	C OPB 1 C2	632 THERMAL GENERATION RESOURCE ST							COMPLETE

CPM ANALYSIS LISTING

I-NODE	J-NODE	DUR	SELECT CODES		DESCRIPTION	E.S.	E.F.	L.S.	L.F.	T.F.	F.F.	ST
												COMPLETE
6A600	6A700	0	C OPB 1 C2	632	THERMAL GENERATION RESOURCE	CT1						COMPLETE
6A700	6A800	0	C OPB 1 C2	632	THERMAL GENERATION RESOURCE	FIN						COMPLETE
6A900	6B100	0	C OPB 1 C2	633	HYDRO GENERATION RESOURCES	ST						COMPLETE
6B100	6B200	0	C OPB 1 C2	633	HYDRO GENERATION RESOURCES	CT-1						COMPLETE
6B200	6B300	0	C OPB 1 C2	633	HYDRO GENERATION RESOURCES	FIN						COMPLETE
6B500	6B600	0	C OPB 1 C8	6341	ENVIRONMENT ASSESSMENT	ST						COMPLETE
6B600	6B700	0	C OPB 1 C8	6341	ENVIRONMENT ASSESSMENT	CT1						COMPLETE
6B700	6C300	0	C OPB 1 C8	6341	ENVIRONMENT ASSESSMENT	FIN						COMPLETE
6C600	6C700	0	C OPB 1 C8	6342	ENVIRONMENT ASSESSMENT-FINAL							COMPLETE
6C800	6C900	0	C OPB 1 C2	635	LOAD MANAGE & CONSERVE							COMPLETE
6D100	6D200	0	C OPB 1 C3	6361	GENERATION PLAN PARAMATERS							COMPLETE
6D300	6D3A0	0	C OPB 1 C2	6362	GENERAT PLAN ANALY & REPORT	ST						COMPLETE
6D3A0	6D400	0	C OPB 1 C2	6362	GENERAT PLAN ANALY & REPORT	CT-1						COMPLETE
6D400	6D500	0	C OPB 1 C2	6362	GENERAT PLAN ANALY & REPORT	CT-2						COMPLETE
6D500	6D600	0	C OPB 1 C2	6362	GENERAT PLAN ANALY & REPORT	FIN						COMPLETE
71200	71400	0	C OPB 1 C8	701	STUDY COORD-ALTERNATIVE SITE	CT-2						COMPLETE
70900	71000	0	C OPB 1 C8	7011	STUDY COORD-ALTERNATIVE SITE	ST						COMPLETE
71000	71200	0	C OPB 1 C8	7011	STUDY COORD-ALTERNATIVE SITE	CT-1						COMPLETE
79200	79300	0	C OPB 1 C8	702	MONITOR FIELD ACTIVITIES	ST						COMPLETE
71000	71100	0	C OPB 1 C8	7041	WATER RESOURCE ALT SITES							COMPLETE
73000	73100	0	C OPB 1 C8	705	SOCIOECONOMIC ANALYSIS	ST						COMPLETE
78800	78700	0	C OPB 1 C8	7061	CULTURAL ALTERNATIVE SITES	CT-1						COMPLETE
75200	75400	0	C OPB 1 C8	7071	LAND USE ALTERNATIVE SITES	ST						COMPLETE
72400	72500	0	C OPB 1 C8	708	RECREATION PLANNING	ST						COMPLETE
72500	72700	0	C OPB 1 C8	708	RECREATION PLANNING	CT-1						COMPLETE
71200	73500	0	C OPB 1 C8	7091	TRANS LINE ASSESS SCREENING							COMPLETE
736A0	73900	0	C OPB 1 C8	7101	FISH ECOLOGY ALTERNATV SITES	ST						COMPLETE
74900	749A0	0	C OPB 1 C8	7111	WILDLIFE ECOLOGY ALTER SITES	ST						COMPLETE
77100	77300	0	C OPB 1 C8	7121	PLANT ECOLOGY ALTERNTV SITES	ST						COMPLETE
71000	710A0	0	C OPB 1 C8	714	ACCESS RD ENVIRONMENT ANALY	ST						COMPLETE
80000	80200	0	C OPB 1 C3	801	SELECT INITIAL CORRIDORS	ST						COMPLETE
80200	80400	0	C OPB 1 C3	801	SELECT INITIAL CORRIDORS	CT-1						COMPLETE
82400	82600	0	C OPB 1 C3	80221	PRELIMINARY ELEC SYSTEM	ST						COMPLETE
A2000	A1600	0	C FLC C110	10021	ESTABLISH REGULATORY REQUIRE							COMPLETE
C0000	C0200	0	C OPB 1 C810	12021	CONDUCT PUBLIC MEETING #1							COMPLETE
D0200	D0400	0	C PSB 2 C310	13011	PROJECT PROCED MANUAL-DRAFT	ST						COMPLETE
D0400	D0600	0	C PSB 2 C310	13011	PROJECT PROCED MANUAL-DRAFT	CT-1						COMPLETE
D0600	D0800	0	C PSB 2 C310	13011	PROJECT PROCED MANUAL-DRAFT	FIN						COMPLETE
D0800	D1000	0	C PSB 2 C310	13012	PROJECT PROCED MANUAL-FINAL							COMPLETE
D0000	D0600	0	C PSB 2 C310	1302	FINANCIAL CONTROL PROCEDURES							COMPLETE
D1400	D1500	0	C PSB 2 C310	1303	PROJECT MASTER SCHEDULE							COMPLETE
D2000	D2200	0	C PSB 2 C310	13041	SCHEDULE CONTROL SYSTEM-DEV							COMPLETE
D2600	D2800	0	C PSB 2 C310	13051	COST CONTROL SYSTEM-DEV							COMPLETE
D3200	D3400	0	C PSB 2 C310	13061	MANPOWER LOADNG SCHEULE-DEV							COMPLETE
D1600	D0600	0	C PSB 2 C410	1307	DEVELOP ACCOUNTING POLICIES							COMPLETE
D1800	D1900	0	C PSB 2 C110	1308	DOCUMENTATION CONTROL							



SUSITNA HYDROELECTRIC PROJECT

PLAN OF STUDY MASTER SCHEDULE

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FIGURE 1 OF 3

TASK NO	DESCRIPTION
600	DESIGN DEVELOPMENT
601	REVIEW PREVIOUS STUDIES
602	INVESTIGATE TUNNEL ALTERNATIVES
603	EVALUATE ALTERNATE SUSITNA DEVEL
604	DEVIL CANYON ARCH DAM EVALUATION
605	SELECT DRAFT TO FINAL REPORT
606	STAGED DEVELOPMENT ALTERNATIVES
607	PRELIM WATANA DAM ALTERNATIVES
608	PRELIM DEVIL CANYON DAM ALTERNATIVES
609	ESTABLISH WATANA DESIGN CRITERIA
610	ESTAB DEVIL CANYON DESIGN CRITERIA
611	PRELIM DESIGN WATANA DAM
612	PRELIM DESIGN DEVIL CANYON DAM
613	DAM SELECTION REPORT
614	SPILLWAY DESIGN CRITERIA
615	WATANA SPILLWAY ALTERNATIVES
616	DEVIL CANYON SPILLWAY ALTERNATIVES
617	PRELIM DESIGN WATANA SPILLWAY
618	PRELIM DESIGN DEVIL CANYON SPILLWAY
619	SPILLWAY SELECTION REPORT-DRAFT
620	ACCESS AND CAMP FACILITIES
621	WATANA DIVERSION SCHEMES
622	DEVIL CANYON DIVERSION SCHEMES
623	OPTIMIZE WATANA POWER DEVELOP
624	OPTIMIZE DEVIL CANYON POWER DEVELOP
625	OPTIMIZE DAM HEIGHTS
626	PRELIM DESIGN WATANA POWER DEVELOP
627	PRELIM DESIGN DEVIL CANYON POWER DEV.
628	POWER DEVELOPMENT REPORT - DRAFT
629	WATANA GENERAL ARRANGEMENT
630	DEVIL CANYON GENERAL ARRANGEMENT
631	PROJECT FEASIBILITY REPORT
632	THERMAL GENERATION PLAN
633	HYDRO GENERATION REPORT
634	ENVIRONMENT ASSESSMENT
635	LOAD MANAGE AND CONSERVE
636	GENERATION PLAN, ANALYSIS AND REPORT
637	UPDATE GENERATION PLAN
638	LIASON POWER ALTERNATIVES CONSULTANT
700	ENVIRONMENTAL STUDIES
701	STUDY COORDINATE ALTERNATIVE SITE
702	MONITOR FIELD ACTIVITIES
704	WATER RESOURCES ANALYSIS
705	SOCIOECONOMIC ANALYSIS
706	CULTURAL RESOURCE INVESTIGATION
707	LAND USE ANALYSIS
708	RECREATION PLANNING
709	TRANS LINE ROUTE SELECTION
710	FISH ECOLOGY
711	WILDLIFE ECOLOGY
712	PLANT ECOLOGY
714	ACCESS ROAD ENVIRONMENT ANALYSIS
715	PREPARATION FOR FERC EXHIBIT
800	TRANSMISSION
801	SELECT INITIAL CORRIDORS
802	LOAD FLOW AND ELEC. SYSTEM ANALYSIS
803	FINAL ROUTE SELECTION 1981
804	TOWER, HARDWARE AND CONDUCTOR STUDY
805	SUBSTATIONS
806	DISPATCH CENTER AND COMMUNICATIONS
807	TRANSMISSION LINE COST ESTIMATE

ACTIVITIES PRIOR TO LICENSE APPLICATION

1980 J F M A M J J A S O N D

1981 J F M A M J J A S O N D

1982 J F M A M J

ACTIVITIES PRIOR TO AWARD OF CONSTRUCTION LICENSING

1982 J A S O N D

1983 J/F/M/A A/M/J/J J/A/S/O O/N/D

1984 J/F/M/A M/A/M/J J/A/S/O O/N/D

1985 J/F/M/A M/A/M/J J/A/S/O O/N/D

LEGEND

WORK COMPLETED TO JULY 1, 1981

WORK REMAINING FROM JULY 1, 1981

CONTINUED WORK FOLLOWING LICENSE APPLICATION

SUSITNA HYDROELECTRIC PROJECT

PLAN OF STUDY MASTER SCHEDULE

TASK NO	DESCRIPTION
900	CONST. COST ESTIMATES AND SCHEDULES
901	ASSEMBLE COST-SCHEDULE DATA
902	PREPARE PRELIM COST ESTIMATE
903	PREPARE COST ESTIMATE UPDATE
904	DEVELOP ENGR/CONST. SCHEDULE
905	PERFORM CONTINGENCY ANALYSIS
1000	LICENSING
1001	IMPACT OF NEW FERC REGULATION
1002	UPDATE REGULATORY REQUIREMENT
1003	DATA FROM OTHERS
1004	COORDINATE EXHIBIT PREP.
1005	PREPARE EXHIBIT E AND D
1006	PREPARE EXHIBIT R
1007	PREPARE EXHIBIT T
1008	PREP. APPLICATION FORM-DRAFT
1009	REVIEW AND CORRECT
1010	EXTERNAL REVIEW
1011	PRINT LICENSE APPLICATION
1100	MARKETING AND FINANCE
1101	PROJECT OVERVIEW
1102	INTERNAL REPORTS
1103	SUSITNA BASE PLAN INITIAL RISK ANALYSIS
1104	SUSITNA BASE PLAN EXTENSION AND REV
1105	SUSITNA FINANCE RISK ANALYSIS
1106	RESOLUTION OF TAX EXEMPT BOND ISSUE
1107	IDENTIFY PARTIES INTEREST
1108	REVENUE ASSURANCE PROCEDURES
1109	LIASON APA BOND UNDERWRITERS
1200	PUBLIC PARTICIPATION
1202	CONDUCT PUBLIC MEET. #1,#2, AND #3
1203	CONDUCT PUBLIC WORKSHOPS #1-#6
1204	PREP. PUBLISH DISTRIB. MATERIALS
1205	PREP. MAINTAIN ACTION LIST
1300	ADMINISTRATION
1301	PROJECT PROCEDURE MANUAL
1302	FINANCIAL CONTROL PROCEDURES
1303	PROJECT MASTER SCHEDULE
1304	SCHED. CONTROL SYSTEM-DEV.& UPDATE
1305	COST. CONTROL SYSTEM - DEV AND UPDATE
1306	MANPOWER LOADING SCHED-DEV.OPER.
1307	DEVELOP ACCOUNTING POLICIES
1308	DOCUMENTATION CONTROL
1310	SUB CONTRACT ADMINISTRATION

ACTIVITIES PRIOR TO LICENSE APPLICATION

ACTIVITIES PRIOR TO AWARD OF CONSTRUCTION LICENSING

1980 | 1981 | 1982 | 1983 | 1984 | 1985

J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J/F/M A/M/J J/A/S O/N/D J/F/M A/M/J J/A/S O/N/D J/F/M A/M/J J/A/S O/N/D

LEGEND

WORK COMPLETED TO JULY 1, 1981

WORK REMAINING FROM JULY 1, 1981

CONTINUED WORK FOLLOWING LICENSE APPLICATION

SUSITNA HYDROELECTRIC PROJECT
PLAN OF STUDY MASTER SCHEDULE

ACRES

FIGURE 3 OF 3

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