ALASKA POWER AUTHORITY

SUSITNA HYDROELECTRIC PROJECT

PROGRESS REPORT

FOR

MAY, 1981

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ALASKA POWER AUTHORITY
SUSITNA HYDROELECTRIC PROJECT
MONTHLY PROGRESS REPORT

REPORT No. 16

Period: May, 1981

Progress Report No. 16 covers the activities on the Susitna Hydroelectric Project for the month of May, 1981.

Task 1, Power Studies, is complete.

Task 2, Surveys and Site Facilities, continued with the fuel resupply being completed. Alyeska Air Services was contacted to begin regular fixed wing flights to High Lake. A Design Transmittal on access roads was started to document its status.

CIRI/H&N started-up the camp's supplemental water supply. R&M continued work on river cross sections just below the turbulent portion of Devil Canyon. The Devil Canyon damsite contour mapping was completed.

Task 3, Hydrology, continued with a coordination meeting held in Anchorage May 7 among various engineering study groups on the Lower Susitna River. Development of computer software is complete, and reduction of R&M's field data is continuing as scheduled. The flood routing analyses were incorporated in the preliminary report for Subtask 3.10.

R&M continued work on retrieving historical data for PMF studies. Snow courses were surveyed in early May. Water quality collection tests were made at Gold Creek during the month. Susitna Basin glaciers were studied by R&M and the University of Alaska Geophysical Institute. Also, velocity points and a thermistor string were installed during the trip.

Task 4, Seismic Studies, continued with a finalization of WCC's 1981 program scope, budget, and schedule. Office Quaternary geology studies were completed on schedule, and a preliminary evaluation of these studies has been completed. Field work at Watana is scheduled during the period of June 1 through July 3, 1981. Volcanic rock samples have been sent to Ohio State University for K-Ar age dating.

Task 5, Geotechnical Investigations, continued with the finalization of the scheduling and prioritizing of field activities to be submitted to the APA at the June meeting. A geologic mapping program was initiated at Devil Canyon and Watana. Test pitting in Tsusena Creek was completed. Data reduction is ongoing as scheduled.

R&M has completed the photo interpretation work, and its results are now being reviewed. Exploratory Program preparation is complete and has initiated test pitting operations at Borrow Area E. A limited quantity of survey ties were established to improve survey locations on COE drill holes.

Task 6, Design Development, continued with finalization of the Development Selection Report, Draft No. 2, for issue in June. Basic layouts for Watana are substantially complete and costing of these layouts has started. The final layout will most likely be a composite of these or variations of a specific layout. A number of spillway alternatives have been examined, and these will serve as the basis for the final arrangement. Work commenced on the access and camp facilities for construction and operation of the Watana and Devil Canyon dams by researching documents of past projects. Some information was found to be useful, and the search and review of these documents is continuing.

Task 7, Environmental Studies, continued with Acres and TES discussing TES's input to the March 15, 1982 feasibility report. Some of the 1980 Annual Summary and subtask reports were received from TES. Following receipt of the remaining reports, Acres will submit sets to the APA and appropriate agencies. Acres discussed with TES our decision to study three access road corridors during the 1981 field season. This resulted in agreement of schedule of work and end products required.

TES continued work during the month by having its representative in the field full time to assist its subcontractors with logistical problems, etc. Archeologists began field work on May 15 at a lake east of Watana Creek. The University of Alaska continued work on the Land Use Annual Report, and is proceeding on the task of recreation planning while incorporating the latest revision to the access road arrangements. TES personnel attended several meetings in Anchorage to discuss the water quality programs and the dispersal of its information among those agencies which require it. Fish and wildlife ecology studies continued as scheduled with meetings being held to refine 1981 field programs slightly to better meet the needs of the project.

Task 8, Transmission, continued with the 8.01 Close-Out Report being rewritten in the Development Selection Report format. The preliminary electric system analyses for the 345 kV transmission alternative were completed. A review of the equipment and line cost estimates for the required transmission facilities commenced. One terminal switchyard in the Anchorage area at the western end of the Knik Arm underwater cable crossing was agreed to at various meetings.

Task 10, Licensing, continued with the incorporation of the Alaska Administrative Code revisions in the Licensing Design Transmittal.

Task 12, Public Participation, continued by responding to outstanding Action List comments.

Task 13, Administration, continued with the project schedule being updated to current project status. Amendment No. 1 of the APA/Acres contract was submitted to APA for comment.

Task 14, ADF&G Support, continued with the purchasing of equipment for ADF&G, which now exceeds $625,000. The search for new office space was commenced to accommodate increased ADF&G staff by moving Acres' personnel to a new office.

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

The fuel supply was completed by May 12, 1981. The staging area for resupply was relocated to Chulitna for the Jet B haul and the fuel was delivered by railway to that point. The total fuel haul was completed at substantially below the original estimate. Actual in place fuel costs were approximately $2.75 per gallon.

Several charter operators were contacted for availability of fixed wing aircraft to fly to the site area. A number of flights were made on skis and floats, in addition to, wheel equipped aircraft to High Lake. On a trial basis, regular flights were initiated with Alyeska Air Services, who have a variety of aircraft. These flights carry personnel and freight to High Lake, substantially reducing overall costs.

Subtask 2.06 - Right-of-Entry

Permitting activity began for panel locations on the transmission line corridor.

Subtask 2.10 - Access Roads

Work continued on access road route selection. Work was started on a Design Transmittal which will document the status of the access road studies as of May 1981. TES's input to this Design Transmittal was requested, and coordination of the work is continuing.

CIRI/H&N ACTIVITIES

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

One aspect of camp operation/maintenance (O/M) involved the start-up of the camp's supplemental surface water supply. Unfortunately, the level of potable water quality began to vary soon after start-up. Consequently, continual monitoring of the surface supply and related water treatment system was undertaken. In addition, use of the groundwater supply was reactivated for cooking and drinking purposes.

During this period, 150,000 gallons of diesel and jet fuel were also delivered to staging areas at Hurricane and Chulitna railroad siding in order to accommodate the transport of fuel to the camp by helicopter.

R&M ACTIVITIES

Subtask 2.07 - Site Specific Surveys

Work continued with five additional river cross-sections being field surveyed just below the turbulent portion of Devil Canyon. Office reduction of field data is currently underway.

Subtask 2.08 - Aerial Photography and Photogrammetric Mapping

Photography has been obtained of the transmission corridor from Point MacKenzie to Willow, from Healy to Fairbanks, and from Gold Creek to Watana to take advantage of leaf free ground cover. However, the Point MacKenzie to Willow and Healy to Fairbanks routes will require rephotographing after flight panels are in place.

The Devil Canyon damsite contour mapping has been completed. The contour mapping of a segment just below the Devil Canyon damsite mapping is complete, as is a materials borrow site contour map of an area below the Watana damsite.

Reservoir volumes have been established and volume-stage curves forwarded to Acres.

TASK 3 - HYDROLOGY

ACRES ACTIVITIES

A coordination meeting on fisheries habitat, vegetation, instream flow, and engineering study groups on the Lower Susitna River was held in Anchorage on May 7. Minutes of this meeting are being separately circulated.

Subtask 3.03 - Field Data Collection and Processing

Routine monitoring of R&M fieldwork continued. Development of computer software for climatological data processing is complete. A user manual for the software program has been prepared. Processing of all data cassettes has continued. G. Krishnan, of Acres, visited the site to participate in the ice breakup observation.

Subtask 3.04 - Low Flow Frequency - Duration Analyses

As part of refining the energy studies, 30 year streamflow records (up to September 1980) at Gold Creek were analyzed for low flow frequency-duration using Acres' in-house computer programs.

Subtask 3.05 - Flood Studies

Data collection for reevaluation of PMF continued. Preliminary analyses have commenced.

Subtask 3.06 - Hydraulic and Ice Studies

Preliminary analysis of freezeup and river cross-section data continued during the month. Preliminary planning of HEC-2 and ice model setup was finalized, and data has been prepared for the computer runs.

Subtask 3.07 - Sediment Yield and River Morphology

Preliminary planning of the hydraulic analyses has continued.

Subtask 3.10 - Lower Susitna Studies

Revisions to the preliminary report were made to include the flood routing analyses.

R&M ACTIVITIES

Subtask 3.02 - Field Data Index and Distribution System

We are retrieving historical data for PMF studies and transmitting it to Acres.

Subtask 3.03 - Field Data Collection and Processing

All USGS stream gages are operating. The gage at Sunshine was activated during May. Hydrographs through breakup should have been recorded at most stations. Watana stream gage was operating through breakup. Two discharge measurements were made to calibrate a stage-discharge curve.

Snow courses were surveyed in early May. This work is being carried out cooperatively with SCS and the data is reported in the SCS monthly bulletin. George Clagget (SCS) has reviewed the adequacy of our courses and recommended some revisions for the 1982 program.

Water quality collection and analysis procedures were reviewed by USGS and TES. A joint collection was conducted by R&M and USGS during late May at the Gold Creek stations to test comparability of data.

A bed load sampling program is being developed jointly between the USGS and R&M for sediment evaluation.

Software for climatic station data reduction has been completed by Acres. Data currently is being processed on the computer.

A reconnaissance of the Susitna Basin glaciers was made during May by the University of Alaska Geophysical Institute and R&M. Baseline descriptions of glacial processes were established. Velocity points were field installed and locations surveyed. A thermistor string was installed.

Subtask 3.06 - Hydraulic and Ice Studies

Hydrographic surveys from Subtask 2.16 and stage and flow measurements from Subtask 3.03 have generated sufficient field data for setting up the HEC-2 and Ice Cover Process Model. Data has been entered on the computer for the HEC-2 Water Surface Profile Model.

Subtask 3.10 - Lower Susitna

An interim report describing pre and post project open-water flood flows has been prepared jointly by R&M and Acres. The report was distributed to interested team members for review. Revisions to the report are underway to reflect the current power flow releases from the proposed project.

TASK 4 - SEISMIC STUDIES

ACRES ACTIVITIES

The final scope of work, budget, and schedule for Woodward-Clyde's 1981 program has been discussed with WCC, and the only revisions remaining are final budget adjustments to conform to the modifications in subtask scopes. Acres' activities on this task from this point on will be limited to monitoring of the program schedule and review of the end products to be produced by WCC.

Discussions were held with WCC to review their trenching requirements and tentative schedule. Acres will provide equipment for excavating and shoring to keep the trenches open. Acres is coordinating with WCC to ensure successful completion of test pitting in borrow areas and the WCC trenches without creating excessive rental equipment idle time.

WCC ACTIVITIES

Subtask 4.11 - Seismic Geology Field Studies

Office Quaternary geology studies were completed on schedule on May 29, 1981. Interpretations made on aerial photographs in April 1981 have been transferred onto 1:63,360 scale and 1:250,000 scale base maps. A preliminary evaluation of Quaternary geologic conditions in the region around the project has been completed. This evaluation includes the types of Quaternary features present, relative ages of these features, and a work plan for field studies.

The results of the Quaternary geologic office studies were reviewed at a project review meeting held in the Orange office of Woodward-Clyde Consultants on May 28, 1981. The review was conducted by Dr. Bert Swan of Woodward-Clyde Consultants, and Dr. Norm Ten Brink of Grand Valley State College (the latter participated by telephone). From Dr. Thorson, we received copies of selected pages pertaining to his Quaternary geology studies. This text, apparently, was included as part of a report which we understand was prepared by TES. In addition to review of the work to date, the plan for the 1981 field work was

reviewed and finalized. The Quaternary geology field team (Bob Goodwin and Dennis Welsch) left for the field on May 31, 1981, and arrived at the Watana camp on the same date. Fieldwork is scheduled to occur from June 1 through July 3, 1981.

Color near IR low-sun-angle photography was flown on May 29, 1981, by Air Photo Tech of Anchorage, Alaska. We anticipate receiving the photographs by the end of June 1981. We also received from Acres, two copies of the Photointerpretation Report and Terrain Unit maps prepared by R&M Associates. These data have been incorporated into the Quaternary geology studies where appropriate.

Three samples of volcanic rock have been sent to Dr. Ken Foland of Ohio State University for thin section analysis and K-Ar age dating. The results of this work, which will assist in locating the Talkeetna Fault, are expected by the end of June 1981.

TASK 5 - GEOTECHNICAL INVESTIGATIONS

ACRES ACTIVITIES

Subtask 5.05 - Exploratory Program Design (1981)

Scheduling and prioritizing of field activities is being completed, and a technical memorandum will be submitted to APA in June 1981 at the External Review Board meeting.

Subtask 5.06 - Exploratory Program (1981)

Relogging of Acres' core is essentially completed. Field geology recommenced in mid-May with R&M geologists mapping the Devil Canyon damsite under the direction of an Acres geologist, and an Acres team beginning the 1981 program by assessing borehole layout locations in the field. Mapping commenced with this team in the immediate damsite area at Watana. The data from the three weeks of winter mapping has been reduced and plotted and will be included in the 1980 Subtask 5.01 - 5..04 report.

Geologic mapping began on the slopes at Devil Canyon while Acres mobilized a second crew to start mapping at Watana. Field work is under the direction of Ken White, Senior Geologist from Acres.

The diamond drill rig was moved to Devil Canyon, and drilling began on a borehole to the south of the small lake on the left abutment.

Test pitting in Tsusena Creek area was completed and the equipment moved to the Watana Camp.

Subtask 5.08 - Data Reduction

Final reviw comments are being incorporated in the Task 5 - Geotechnical Exploration Report on 1980 studies. Reduction and plotting of the COE field data at Watana is well underway, and plotting of the 1980 data will commence with receipt of the R&M survey report.

R&M ACTIVITIES

Subtask 5.02 - Photo Interpretation

The finished product has been provided to Acres so R&M work on the subtask will be complete following review. The report is being reviewed by L. A. Rivard, as well as, internally by Acres. Minor corrections will be required in mid-June.

Subtask 5.05 - Exploratory Program Design (1981)

Planning activities are predominantly complete, but the subtask will be ongoing as requirements and field constraints develop during the summer. The plan would be treated as a moving target for technical requirement considerations with updates and modifications as necessary to meet dynamic data requirements.

Subtask 5.06 - Exploratory Program (1981)

Test pitting operations in Borrow Area E at Watana (mouth of Tsusena Creek) are completed. Interpretation has commenced on the seismic refraction lines to investigate potential river gravel borrow. The interpretation report is expected by late June.

Geologic mapping support to assist Acres geologists recommenced as a team of technical climbing qualified geologists began work on abutment mapping at Devil Canyon. Survey support for the river seismic line work is wrapping up with computations of coordinates and evaluations.

A limited number of survey ties are being established to improve the survey locations on several COE drill holes. The first borehole was begun at Devil Canyon (BH-7) on the left abutment saddle dam area and encountered no severe or unexpected conditions. The next borehole to be drilled will be BH-5 in the river canyon to investigate the possibility of a fault under the river followed by an abutment condition drilled northwest from the same location.

TASK 6 - DESIGN DEVELOPMENT

ACRES ACTIVITIES

Subtask 6.05 - Development Selection Report

The second draft of the report is being finalized and will be completed by next month.

Subtask 6.07 - Preliminary Watana Dam Alternatives

Subtask 6.08 - Preliminary Devil Canyon Dam Alternatives

There have been minor changes to drawings under these subtasks for incorporation in the Close-Out Report.

Subtask 6.09 - Design Criteria for the Watana Development

Subtask 6.10 - Design Criteria for the Devil Canyon Development

Production of the design criteria for Subtasks 6.09 and 6.10 is continuing although much of the incorporated detail is only preliminary at this stage and will require confirmation prior to completion of the study.

Subtask 6.11 - Preliminary Design of Watana Dam

The basic layouts for Watana are substantially complete and costing of these layouts has commenced. The final layout will most likely be a composite of those examined or will contain variations on a specific layout. Preparation of this final layout will take place under subsequent subtasks.

Subtask 6.12 - Preliminary Design of Devil Canyon

Further study has continued on the dynamic response of the arch dam to seismic loads involving an examination of hydrodynamic loads and commencement of a review of the crown cantilever as an unrestrained cantilever under extreme seismic load.

Subtask 6.14 - Spillway Design Criteria

Studies on scour below spillway chutes have continued and have been applied to the specific spillways developed under Subtasks 6.15 and 6.16.

Subtask 6.15 - Watana Spillway Alternatives

Subtask 6.16 - Devil Canyon Spillway Alternatives

A number of alternative spillway arrangements including fuse plugs, flip buckets and stilling basins have been examined, and these will serve as the basis for the final arrangement.

Subtask 6.20 - Access and Camp Facilities

Work commenced on this subtask during the report period. A search for documents pertaining to access and camps of previous projects was carried out to provide a basis for outlining objectives, procedures, and criteria for the development of camps. In the near future, when a more definite size of camp is known, Acres will initiate discussions with CIRI/H&N and ATCO Industries to aid in design of the camps.

TASK 7 - ENVIRONMENTAL STUDIES

ACRES ACTIVITIES

Subtask 7.01 - Administration

Acres met with TES to discuss the preparation of the environmental component of the March 15, 1982, feasibility report. Discussions related to format, schedule, individual responsibilities, and potential ramifications on existing studies were held.

Discussions on information needs continued with direct interaction between TES and Acres Task Supervisors.

The 1980 Annual Summary and subtask reports were received from TES. Following receipt of the remaining subtask reports, expected early in June, Acres will distribute complete sets to APA and appropriate agencies.

Preparations were made for presentations to the External Review Panel and the Steering Committee in June.

TES was requested to prepare scope and budget outlines for proposed Phase I POS modifications. Proposals to conduct the sociocultural program were reviewed and a letter submitted to APA requesting approval to accept the proposal submitted by Stephen Brand and Associates.

Subtask 7.05 - Socioeconomic Analysis

The proposed scope for the acceleration of Phase II socioeconomic studies was reviewed. Discussions were held with TES regarding forecast methodology and a definition of the "without Susitna" scenario.

Subtask 7.06 - Cultural Resource Investigation

A request for permission to publish was received from Dr. J. Dixon and reviewed by Acres. The manuscripts will be forwarded to APA for final approval.

Subtask 7.08 - Recreation Planning

Discussions were held with TES regarding modifications to the development of a recreation plan as affected by the new schedule for access road assessment.

Subtask 7.09 - Transmission Corridor Assessment

TES was requested to modify their input into the Subtask 8.01 Close-Out Report to be compatible with Acres' selection process. This information is presently being incorporated.

Subtask 7.10 - Fish Ecology Studies

The survey of questions and concerns relating to instream flow aspects of the study was completed by Linda Dwight and Woody Trihey. In addition, Mr. Trihey drafted the introduction to the Instream Flow Study Plan which is presently undergoing review by Acres and TES. Interpretation and review of the fisheries, water quality, and hydraulic programs continued. ADF&G procedure manuals have been received and are under review.

Subtask 7.11 - Wildlife Ecology Studies

Approval was given to TES to acquire the services of Dr. A. Banfield to assist in addressing questions relating to caribou. Continued discussion occurred between TES, Dr. Taber and ADF&G regarding animal habitat relationship analysis. TES is evaluating the concerns of ADF&G and will report to Acres by the end of June.

Subtask 7.14 - Access Road Environmental Analysis

Acres discussed with TES our decision to study three access road corridors during the 1981 field season. Agreement was reached regarding schedule modifications and end products expected.

TES ACTIVITIES

Subtask 7.01 - Administration

TES representatives attended a meeting with Acres in Buffalo on May 8, 1981, to discuss information needs, administrative items, scope statements for Phase I modifications, approach to access route and transmission line analysis, and submission of a feasibility report to APA by March 15, 1982.

The Summary Annual Report for 1980 was submitted to Acres along with annual reports for the following disciplines: cultural resources, plant ecology, furbearer studies, and socioeconomic analysis.

Subtask 7.02 - Monitoring of Field Activities

The TES field representative is now in the field full time. Her primary activities during the month involved attempting to work out logistical problems, setting up field camps, and providing TES subcontractors with assistance concerning helicopter support.

Subtask 7.05 - Socioeconomic Analysis

In response to Acres' request, FO&A/TES submitted a proposed scope for incremental socioeconomic analysis (work packages 5-9 during Phase I) to Acres. This work statement accommodated the budget allotment prescribed by Acres.

Work continued on development and refinement of the methodology to be utilized in the Forecast of Socioeconomic Conditions Without Susitna (work package 4, work items c-e). TES and Acres' staff held discussions concerning considerations in methodology development and reached agreements on scope and extent of FO&A/TES analysis with regard to the forecast.

Subtask 7.06 - Cultural Resource Investigation

Archeologists began field work on May 15. The field camp has been set up on a lake east of Watana Creek. Four archeological sites, located last year along the proposed Denali route corridor, were returned to and recorded.

Mr. George Smith sent Heritage Resource Site Forms to Mr. Douglas Reger, State Archeologist, as required by the State of Alaska Archeology Permit.

Subtask 7.07 - Land Use Analysis

The University of Alaska continued to make revisions and additions to the Land Use Annual Report. A tentative field schedule has been established for the 1981 field season.

Subtask 7.08 - Recreation Planning

The University of Alaska restructured its work plans to accommodate the latest schedule on access roads. Staff adjustments have been completed, and a new field schedule planned for the 1981 field season.

Subtask 7.09 - Transmission Corridor Assessment

A meeting was attended in Buffalo on May 14 by several TES personnel to discuss finalization of the 8.01 Close-Out Report (Transmission Line Corridor Screening) with Acres.

Subtask 7.10 - Fish Ecology Studies

Some TES fish ecology study team members attended several formal and informal meetings in Anchorage on May 6 and 7 to discuss the water quality program and to coordinate the collection and distribution of instream flow information among those agencies and organizations concerned with this type of data. Summaries of the work completed to date and future plans of study were presented by representatives of the organizations in attendance.

TES met with G. Krishnan (Acres) on May 6 to discuss what type of hydrological and water quality information, as described in the TES Fish Ecology Procedures Manual and Information Needs List, could be provided by Acres to TES. At the request of Acres, specific information requests were submitted.

A preliminary draft of the Adult Anadromous (AA) section of the ADF&G Procedures Manual was reviewed, and comments were sent to Acres and ADF&G in early May, as requested. The remaining sections of the manual and the May 1981 Quarterly Report were sent out by ADF&G near the end of the month and will be discussed in the next monthly report.

Other monthly activities included the continuation of literature reviews for ecological, life history, and impact and mitigation studies pertinent to the fish of the study area. Draft work scopes for estuary studies and dissolved gas investigations were also prepared.

Alaska-based activities included assisting in the preparation of the ADF&G Procedures Manual, visiting ADF&G field crews, and acquiring a familiarization with the sonar counting equipment during an instructional period conducted on the Kenai for ADF&G personnel.

Subtask 7.11 - Wildlife Ecology Studies

The 7.11 Group Leader traveled to Fairbanks and discussed the plans and problems associated with the 1981 field effort with the principal investigators for the furbearer and bird/non-game mammal disciplines. Based on data collected during 1980, several minor refinements were agreed upon for the remainder of Phase I in order to have the sampling program better meet the needs of the project.

During May, Dr. Taber visited the big game investigators in Anchorage and discussed various approaches to data analysis and animal-habitat relationship comparisons.

Progress was made in securing the services of Dr. A. W. F. Banfield to assist in evaluating the impact of the project on the Nelchina caribou herd. The wildlife ecology Group Leader, in cooperation with the plant ecology Group Leader, initiated the formation of a habitat value comparison to be employed as one of the techniques in comparing the access route alternatives.

Furbearer investigators devoted most of May to analyzing data collected during the first quarter of 1981 and aerial transect data collected during November, 1980. Sixty mustelid skulls were cleaned and teeth extracted in preparation for aging. Winston Hobgood, along with two field assistants, visited the study area and collected radio telemetry data on marten and fox movement patterns. By the end of the month, five marten and three foxes still carried functional radio collars. Observations were also initiated at four fox dens known to be active this year.

Field activities for bird and non-game mammal studies represented a major activity during the month of May. One of the major efforts was the continued monitoring of the spring migration. On May 3, 10, and 26, waterfowl surveys were flown in the upper basin. A waterfowl survey was also flown on May 7 along the lower Susitna to Cook Inlet, with very few birds being recorded except between the Yentna River and Cook Inlet. A raptor survey was flown in the upper basin on May 16. The small mammal traplines were run during the middle of the month with very few animals captured. In addition, two new bird census plots were established, a tundra plot on the side of Mt. Watana and a mixed white spruce-white birch plot below Indian River. Actual breeding bird censusing began on May 20 and will continue through June.

Subtask 7.12 - Plant Ecology Studies

The TES Group Leader met with the principal investigator for plant ecology studies and discussed several items including: access routes, transmission corridors, downstream effort (including Phase I modification concerning additional air photo interpretation), and repercussions of possible schedule change. AES then submitted a final draft of their methods involved in the downstream studies, and TES prepared a draft section of the scope of work for the downstream Phase I modification. The TES Group Leader also discussed the availability of air photos with R&M Consultants, Inc.

The AES began their field sampling in the downstream area on May 25. Also during the month, the TES Group Leader sent comments to Brina Kessel on the habitat information presented in the birds and non-game mammals 1980 annual report.

Subtask 7.14 - Access Route Environmental Analysis

A meeting was held in Buffalo on May 8 at which discussion was held between TES and Acres' personnel concerning revised plans for access route analysis, based on Acres' decision to carry through three corridors for further analysis during the 1981 field season. It was agreed that a Design Transmittal be produced documenting progress to date on access routing and analysis, and that revisions to the POS be written to comply with the new scope of work. A meeting was then held in Buffalo between T. Gwozdek and C. Baumgartner on May 27 to develop on annotated outline for the Design Transmittal on Access Route Analysis. Since that time, progress was made on environmental input into its content with a deadline of June 5 decided upon for TES submission to Acres.

TASK 8 - TRANSMISSION

General

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. So far, only GVEA has replied with their approval.

Subtask 8.01 - Transmission Line Corridor Screening

The close-out report, which was completed in draft and being circulated internally, is now being rewritten along the lines developed for the Development Selection Report. A methodology similar in form to the generic one for Task 6 has been developed for Task 8 and will be used for this subtask.

Subtask 8.02 - Electric System Studies

The preliminary electric system analyses of the 345 KV transmission alternatives were completed. Load flows of the transmission outages and transient stability analyses of system preformance for various disturbances were carried out. The performance of the alternative transmission configurations was evaluated.

The calculations of economic conductor sizes for these configurations were reviewed and updated. A review of the equipment and line cost estimates for the required transmission facilities was started.

Subtask 8.05 - Substations

Some preliminary single line diagrams were developed. After the meetings with the utilities, it is proposed to have one terminal switchyard in the Anchorage area at the western end of the Knik Arm underwater cable crossing.

Subtask 8.06 - Dispatch Center and Communications

Acres contacted Energy and Control Consultants in San Jose, California, with a view to obtaining their services as consultants for this subtask.

Subtask 8.07 - Transmission Line Cost Estimates

Previous cost estimates were being reviewed and updated for two circuits and three circuits from Devil Canyon to Anchorage.

TASK 10 - LICENSING

ACRES ACTIVITIES

Work continued by incorporating recently published Alaska Administrative Code revisions in the licensing Design Transmittal. Preparation of the draft coordination plan for requirements in the license document continued during the month.

TASK 12 - PUBLIC PARTICIPATION

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

TASK 13 - ADMINISTRATION

Subtask 13.04 - Scheduling

Work continued on monitoring and updating the project schedule to June 1, 1981. Task 7 requirements have been fully incorporated into the master schedule network while work has continued on incorporating Task 6, Design Study, revisions. It is expected that further revisions will be made as the Task 6 work develops and the licensing requirements and exhibit formats under Task 10 are clarified.

Subtask 13.05 - Cost Control

Amendment No. 1 of the APA/Acres contract was submitted to APA for comment.

Cost control activities continued as scheduled during the month.

Cost control and detailed inventory activities by Acres, Anchorage continued throughout the month with assistance from FMA. Detailed cost records for air transportation, ADF&G purchasing, and camp operation are being routinely prepared.

TASK 14 - ADF&G SUPPORT

Purchasing of ADF&G equipment continued through May. At the end of the month, total funds committed exceeded $625,000.

Contracts were drafted for Kenai Helicopters for provision of a Bell 205 heavy lift helicopter and for High Lake Lodge to provide accommodations during June through September.

Due to the needs of ADF&G to occupy an additional 1,000 square feet of office space, a search was initiated to locate a suitable office location to accommodate the Acres project staff leaving the 2207 Spenard location for all environmental project groups.

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

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

June 9, 1981

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

Dear Dr. Hayden:

RE: ADF&G/Su Hydro Monthly Report - May, 1981

ADMINISTRATION

Tom Trent being absent this week, I am unable to report in detail regarding his activities during May of 1981. I do however, by inspection of his appointment calendar, note that he attended several meetings with the Steering Committee, TES and APA representatives, and a Refuge Conference at the Anchorage Hilton in addition to a jet-boat training session at a lake near Wasilla.

Other administrative duties involved a general staff meeting with field crews prior to field deployment and an administrative staff meeting with the project leaders. Purchasing, finalization of the draft Procedures Manual, personnel, inventory and office management were other areas of consideration in May.

In personnel related matters, the Aquatic Habitat group filled two of three six-month positions and accepted the resignation of Tim Hansen who accepted a position in Aquatic Entomology with a private consulting firm. A register has been requested so his position can be refilled.

The final member of the Resident and Juvenile Anadromous Fisheries group was hired effective May 16. Steve Hale transferred from the Habitat Protection Division and has been assigned to the river reach between Curry and Devil Canyon.

FIELD RELATED ACTIVITY

Adult Anadromous Project

The project leader, Bruce Barrett, reports that eight fishwheels have been completed and the balance are 90% complete. All fishwheels will be transported to the river sites by June 11.

11-K7LH

Assembly and modification of the sonar counters were conducted at the A Street Warehouse by AA field crews. The counters will be placed in the field by June 15.

Five days were spent selecting fishwheel and sonar sites at the locations indicated in the draft Procedures Manual. Six sonar sites were identified; two on the Yentna River, and two at Sunshine and two near Talkeetna on the Susitna River. Fishwheel sites were identified at each sonar site in addition to two more at Curry.

Six AA field crew members completed a one-month class covering installation, adjustment and operation of sonar counters on the Kenai River near the community of Soldotna. The experience gained will enable the AA crews to operate the units which will be placed on the Yentna and Susitna Rivers.

Resident and Juvenile Anadromous Project

Field activities during May consisted of Habitat Location selection, resident fish tagging, base camp site preparation and the initiation of the plan of study in the upper river. A total of fifty Habitat Locations were tentatively selected along the Susitna River from Cook Inlet to the Tyone River confluence. The exact location of these will be available by June 15 following an onsight evaluation of their suitability by the project leader.

Over 500 resident fish, primarily Arctic grayling, were tagged and released during May. Other species included rainbow trout, whitefish and long nose sucker.

Base camp sites were established at Yentna River, Sunshine, Talkeetna and Gold Creek. These camps were not yet completed on 31 May and will be in the construction phase until the Anadromous Adult Project is operational.

The RJ project assistant, James Mauney with a crew of 2 RJ and 1 AH personnel initiated the upper river field season. This crew is currently in the field and expected to return to Anchorage on 5 June. Radio communications with this crew through Trident Communications, Inc. has proved to be very efficient.

Aquatic Habitat and Instream Flow Project

AH field activity has focused primarily on the procurement and calibration of equipment that will be used starting in June. Hydrolabs, thermographs, staff gage supports, flow meters and modification of a jet boat to support a depth recorder and boom suspension system were areas of concern.

Selection of some AH sites have to be coordinated with the USGS and R&M Consultants. Preparation for selection was initiated in May for actual selection in June.

One AH crew member accompanied the RJ upper impoundment crew as described in the RJ section.

Sincerely,

Larry Bartlett
Assistant Aquatic Studies Coordinator
Su Hydro Aquatic Studies
Telephone: (907) 274-7583

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

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             ACRES AMERICAN SUSITNA HYDRO-ELECTRIC PROJECT          REMAINING WORK FROM JUNE 1, 1981                  PAGE      1
                                             C P M   SCHEDULE                                                    TIME NOW  1JUN81
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                                                                         82                                                  83
         D E S C R I P T I O N          JUN  JUL AUG  SEP OCT NOV  DEC JAN FEB MAR  APR MAY  JUN JUL AUG  SEP OCT NOV  DEC JAN  FEB
                                        0012201220112301220112001230122011200120012201120112301220112001230122011200122012201123012
                                        1852963073074174185296296307418418518521852952963074174185296296306307418518529630730741741
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2022   FIELD CAMP OPERATIONS            XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
203    RESUPPLY & EMERGENCY SERVICE     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
204XX  EXHIBIT F MATERIAL COMPLETE      .                        L
205    LAND ACQUISITION ANALYSIS    CT-1XXX      L
205    LAND ACQUISITION ANALYSIS    FIN .  XX      L
206    RIGHT OF ENTRY               FIN XXXXXXXXXXXXXXXXXXXXX                                  L
207    SITE SPECIFIC SURVEYS        CT-1XL
207    SITE SPECIFIC SURVEY         FIN .XXXXXXXL
2082   AIR PHOTOS & MAPPING-1981    CT-1XXXL
2082   AIR PHOTOS & MAPPING-1981    FIN .  XXXXXXXL
210    ACCESS ROAD                  FIN XXXXXXXXX  L
212    FIELD RECON FOR RSRVR CLEAR  FIN XL
213    MARKETABLTY & DISPOSAL STDY  ST  XX  L
213    MARKETABLTY & DISPOSAL STDY  FIN . XXX  L
214    CST ESTMTS RSVR CLEARING     ST  XX     L
214    CST ESTMTS RSVR CLEARING     FIN .    XXX        L
215    SLOPE EROSION & STBLTY STUDY ST  CL
215    SLOPE EROSION & STBLTY STUDY FIN . XXXX  L
216    HYDROGRAPHIC SURVEYS         FIN XXXX        L
3022   FIELD DATA INDEX OPERATION       XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
3033   FIELD DATA COLLECTION 81-82  ST  XXXXXXXXXXXXXXXXXXXX L
3033   FIELD DATA COLLECTION 81-82  FIN .                   XXXXXXXXXXXXXXXXXXXXXX L
3041   WATER RSRCS-FLOW EXTENSION   FIN XX                         L
3042   WATER RSRCS-FREQ ANALYSIS        XXXX                       L
3043   WATER RSRCS-RESERVOIR STUDY  CT-1CL
3043   WATER RSRCS-RESERVOIR STUDY  CT-2. CCCCCL
3043   WATER RSRCS-RESERVOIR STUDY  CT-3.       CCCCCCCCCCCCCCCCCCCL
3043   WATER RSRCS-RESERVOIR STUDY  FIN .                           XXXXXXL
3044   WATER RSRCS-PRE&POST PROJECT ST  .                           CCCL
3044   WATER RSRCS-PRE&POST PROJECT FIN .                               CCCL
3045   EVAPORATION STUDIES              XXXXXXXXL
3046   WATER RSRCS-GLACIAL STUDIES      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX L
304XX  EXHIBIT H MATERIAL COMPLETE      .                                            L
304XX  EXHIBIT I MATERIAL COMPLETE      .                                            L
3053   FLOODS-RESERVOIR ROUTING     CT-1XXXXXXXXXX                   L
3053   FLOODS-RESERVOIR ROUTING     FIN .                       XXXXX     L
3061   HYDRLICS & ICE WTR LVLS      CT-1CCCCCCCCCCCCL
3061   HYDRLICS & ICE WTR LVLS      FIN .            XXXXXXXXXXXXXXXXX    L
3063   HYDR&ICE-RESER SLIDE SURGE   FIN XXXXXXXX  L
3064   HYDR&ICE-RSVR TEMP REGIME        XXXXXXXX  L
3071   SEDIMENT YIELD & DEPOSITION  ST  XXX       L
3071   SEDIMENT YIELD & DEPOSITION  FIN .         XXXXXX     L
3072   RIVER MORPHOLOGY             CT-1.               XXXXXXXXXXXXXX     L
3072   RIVER MORPHOLOGY             FIN .                                   CCCL
3082   TRANSMSN LINE-DET PARAMTR    ST  L
3082   TRANSMSN LINE-DET PARAMTR    FIN .CCCL
309    ACCESS ROADS HYDROLOGY           XXXXXXXXXX                          L
3102   LWR SUSITNA STUDIES-FOLLOWUP ST  CCCCCCCCCCCCL
3102   LWR SUSITNA STUDIES-FOLLOWUP FIN .            CCCCCCCCCCCCCCCCCCCCCL
408    DAM STABILITY                CT-1XXXXXXX L
408    DAM STABILITY                FIN .      XXXXXX                                          L
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	DESCRIPTION		82 JUN	JUL	AUG	SEP	OCT	NOV	DEC	83 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB
409	LONG TERM MONITORING PROGRAM		XXXXXXXXXXXXXXXXXXXXXXXXX											L									
410	RESERVOIR INDUCED SEISMICITY		XXXXX					L															
411	SEISMIC GEOLOGY-FIELD STUDY		XXXXXXXXXXXXXXXX			L																	
412	EVALUATION & REPORT DRAFT	ST	CCCCCCCCCCCCCCCCCCCCL																				
412	EVALUATION & REPORT DRAFT	CT-1	.					CL															
412	EVALUATION & REPORT DRAFT	FIN	.					CCCL															
413	GROUND MOTION STUDIES	ST	CCCCCCCL																				
413	GROUND MOTION STUDIES	FIN	.	CCCCCCCCCCCCCCCL																			
414	DAM STABILITY CONSULTING		CCCCCCCCCCCCCCCCCCCCCCCL																				
415	SOIL SUSCEPTBTY-SEISMIC FAIL	CT-1	CCCCCCCCCCCL																				
415	SOIL SUSCEPTBTY-SEISMIC FAIL	FIN	.	XXXXXX							L												
506	1981 EXPLORATION PROGRAM	CT-1	CCCCCCCCCCCCL																				
506	1981 EXPLORATION PROGRAM	FIN	.	CCCCL																			
507	1982-4 PROGRAM DESIGN		.	XXXXXXXXX														L					
5082	DATA ASSEMBLY-1981 DRAFT	CT-1	CCCCCCCCCCCCCCCCCL																				
5082	DATA ASSEMBLY-1981 DRAFT	FIN	.	XXX														L					
5083	DATA ASSEMBLY FINAL-DRAFT	ST	.	XXX														L					
5083	DATA ASSEMBLY FINAL-DRAFT	FIN	.	XXXX														L					
6053	SELECT REPORT FINAL EDITION		X L																				
607	PRELIM WATANA DAM ALTERNATES	CT-2	XXXX	L																			
607	PRELIM WATANA DAM ALTERNATES	CT-3	.	X L																			
607	PRELIM WATANA DAM ALTERNATES	FIN	.	L																			
608	PRELIM DEVIL CANYON DAM ALT	CT-2	XX	L																			
608	PRELIM DEVIL CANYON DAM ALT	FIN	.	L																			
609	ESTAB WATANA DESIGN CRITERIA	CT-2	.	XXXXX 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	.	XXXXXXXL																			
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	XXXXXL																				
615	WATANA SPILLWAY ALTERNATIVES	FIN	.	XXXXXXXXXXL																			
615	WATANA SPILLWAY ALTERNATIVES	ST	.	XXXXXXL																			
616	DEVL CAN SPILLWAY ALTERNATVE	ST	.	XXX L																			
616	DEVL CAN SPILLWAY ALTERNATVE	FIN	.	XXXXXXXXL																			
617	PRELIM DESGN WATANA SPILLWAY	ST	XXXX	L																			
617	PRELIM DESGN WATANA SPILLWAY	CT-1	.	XXXXL																			
617	PRELIM DESGN WATANA SPILLWAY	FIN	.	XXXXXXXXXXL																			
618	PRELIM DES DEVIL CAN SPILWAY	ST	.	XXXXXXL																			
618	PRELIM DES DEVIL CAN SPILWAY	FIN	.	XXXXXXXXXXXL																			
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																			

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             ACRES AMERICAN SUSITNA HYDRO-ELECTRIC PROJECT                                                           PAGE      3
                                            C P M   SCHEDULE                                                   TIME NOW  1JUN81
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                                                                        82                                                  83
         D E S C R I P T I O N          JUN  JUL AUG  SEP OCT NOV  DEC JAN FEB MAR  APR MAY  JUN JUL AUG  SEP OCT NOV  DEC JAN  FEB
                                        0012201220112301220112001230122011200120012201120112301220112001230122011200122012201123012
                                        1852963073074174185296296307418418518521852952963074174185296296307418518529630730741741
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621    WATANA DIVERSION SCHEMES     ST  XXXXXX               L
621    WATANA DIVERSION SCHEMES     FIN .                    XXXXXXXXL
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
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  .                            XXXXXXL
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    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
7012   STUDY COORD-PRELIM ALTERNATV ST  CCCCCCCCL
7012   STUDY COORD-PRELIM ALTERNATV FIN .           L
7013   STUDY COORD-OPTIMIZED DESIGN     .          XXXXXXXXXXXXXXXXXXXXXXX L
702    MONITOR FIELD ACTIVITIES     CT-1XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX    L
702    MONITOR FIELD ACTIVITIES     FIN .                                                     L
7042   WTR RES-PRE WAT&DEVL CAN ALT     XXXXXXXXXXX L
7043   WTR RES-OPT WAT&DEVL CAN DES     .          XXXXXXXXXXXXXXXXXXXXXX  L
705    SOCIOECONOMIC ANALYSIS       CT-1XXXXXXXXXXXXXXXXL
705    SOCIOECONOMIC ANALYSIS       FIN .                                   XXXXXXXXXL
705    SOCIOECONOMIC ANALYSIS       CT-2.               XXXXXXXXXXXXXXXXXXXXL
7061   CULTURAL ALTERNATIVE SITES   FIN . CCCCCCCCCCCCCCCL
7061   CULTURAL ALTERNATIVE SITES   CT-1XL
7062   CULTURAL PRELIM ALTERNATIVES ST  XXXXXXXX         L
7062   CULTURAL PRELIM ALTERNATIVES CT-1.                 CCCCCCCCCL
7062   CULTURAL PRELIM ALTERNATIVES FIN .                          L
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ACRES AMERICAN SUSITNA HYDRO-ELECTRIC PROJECT
C P M SCHEDULE

TIME NOW 1JUN81

	DESCRIPTION		82 JUN	JUL	AUG	SEP	OCT	NOV	DEC	83 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB
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-1	CCCCCCCCCCCCCCCCCCCL																				
7072	LAND USE PRELIM ALTERNATIVES	ST	XXXXXXXX					L															
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	.						CCCCCCCCCCCCCCCCCCL														
7073	LAND USE OPTIMIZED DESIGN	FIN	.																				L
708	RECREATION PLANNING	CT-1	.			XX L																	
708	RECREATION PLANNING	FIN	.												XXXXX	L							
708	RECREATION PLANNING	CT-2	.				XXXXXXXXXXXXXXXXXXXX L																
7092	TRANS LINE ASSESS RTE SELCTN	CT-1	.	XXXXXXXXXXXX L																			
7092	TRANS LINE ASSESS RTE SELCTN	ST	XXXXXX L																				
7092	TRANS LINE ASSESS RTE SELCTN	FIN	.				XXXXXXXXXXXXXXXXXXXXXXXX L																
7101	FISH ECOLOGY ALTERNATV SITES	CT-2	.			XXXXXXXXXX L																	
7101	FISH ECOLOGY ALTERNATV SITES	FIN	.						L														
7101	FISH ECOLOGY ALTERNATV SITES	CT-1	. XXXXXXXXXXXX L																				
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	.	XXX L																			
7111	WILDLIFE ECOLOGY ALTER SITES	FIN	.					XXXXXXXXXX L															
7111	WILDLIFE ECOLOGY ALTER SITES	CT-2	.		XXXXXXXXXXXXXXX L																		
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	.						XXXXXXXXXXXXXXXXXXX L														
7113	WILDLIFE ECOLOGY OPTIM DESGN	FIN	.																				L
7121	PLANT ECOLOGY ALTERNTV SITES	ST	CCCCL																				
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	.						CCCCCCCCCCCCCCCCCCL														
7123	PLANT ECOLOGY OPTIMIZD DESGN	FIN	.																				L
714	ACCESS RD ENVIRONMENT ANALY	CT-1	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX							L													
714	ACCESS RD ENVIRONMENT ANALY	FIN	.						XXXXXXXXXX L														
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 COMPLETE		.							L													

ACRES AMERICAN SUSITNA HYDRO-ELECTRIC PROJECT
C P M SCHEDULE

PAGE 5
TIME NOW 1JUN81

	DESCRIPTION		82 JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC	83 JAN FEB
			00122012201123012201120012301220112001200122011201123012201120012301220112001220123011230122	
			18529630730741741852962963074184185185218529529630741741852962963063074185185296363074174	
715XX	EXHIBIT S MATERIAL COMPLETE		. L	
801	SELECT INITIAL CORRIDORS	FIN	X L	
8021	LOAD FLOW ANALYSIS	ST	XX L	
8021	LOAD FLOW ANALYSIS	FIN	. XXXXXX L	
80221	PRELIMINARY ELEC SYSTEM	ST	CCCL	
80221	PRELIMINARY ELEC SYSTEM	CT-1	. CCCCCCCL	
80221	PRELIMINARY ELEC SYSTEM	FIN	. L	
80222	RECOMMEND ELEC SYS		. CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCL	
803	FINAL ROUTE SELECTION 1981	ST	CCCCCCCCCCCL	
803	FINAL ROUTE SELECTION 1981	CT-1	. CCCCCL	
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		. XXXXXXXXXXXX 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	

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             ACRES AMERICAN SUSITNA HYDRO-ELECTRIC PROJECT                                                            PAGE      6
                                             C P M   SCHEDULE                                                    TIME NOW  1JUN81
                                            ------------------
                                  SORTED BY: 55 D6 I  J                  82                                                  83
         D E S C R I P T I O N          JUN  JUL AUG  SEP OCT NOV  DEC JAN FEB MAR  APR MAY  JUN JUL AUG  SEP OCT NOV  DEC JAN  FEB
                                        0012201220112301220112001230122011200120012201120112301220112001230122011200122012201123012
                                        1852963073074174185296296307418418518521852952963074174185296296306307418518529630730741741
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10XXX  PRINT LICENSE APPLICATION        .                                                 CCCCCL
1101   PROJECT OVERVIEW                 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
1102   INTERNAL REPORTS                 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
1102XX EXHIBIT U MATERIAL COMPLETE      .                                            L
1103   SUSITNA BASE PLAN RISK ANALY ST  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXL
1103   SUSITNA BASE PLAN RISK ANALY FIN .                                 L
1104   SUSITNA BASE PLAN EXTEN/REVIS    .                                 XXXXXXXXXXXXXXXXXXXXXL
1105   SUSITNA FINANCE RISK ANALYSIS    .    XXXXXXXXXXXXXXXXXXXXXXXXXXXXX                     L
1106   RESOLUTION TAX ISSUE             XXXXXXXXXXXXXXXXXXXXXXXX                               L
1107   IDENTIFY PARTIES INTEREST        .    XXXXXXXXXXXXXXXXXXXXXXXXXXXXX                     L
1108   REVENUE ASSURANCE                .    XXXXXXXXXXXXXXXXXXXXXXXXXXXXX           L
1109   LIAISON APA BOND UNDERWRITER     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX L
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    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX L
1205   PREP MAINTAIN ACTION LIST        XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX L
13013  PROJECT PROCED MANUAL-UPDATE     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX L
13042  SCHEDULE CONTROL SYS UPDATE      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX L
13052  COST CONTROL SYSTEM-OP           XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX L
13062  MANPOWER LOADNG SCHED-UPDATE     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX L
1310   SUB CONTRACT ADMINISTRATION      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX L
XXX    PROJECT COMPLETE    XXX          .                                                      L
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CPM ANALYSIS LISTING

I-NODE	J-NODE	DUR	SELECT CODES	DESCRIPTION		E.S.	E.F.	L.S.	L.F.	T.F.	F.F.	CL	
20400	20000	55 R	OPA C2	2022	FIELD CAMP OPERATIONS		1JUN81	18JUN82	8JUN81	25JUN82	1	1	1
20400	20600	55 R	OPA C2	203	RESUPPLY & EMERGENCY SERVICE		1JUN81	18JUN82	8JUN81	25JUN82	1	1	1
215A0	215B0	0	OPA 1 C3	204XX	EXHIBIT F MATERIAL COMPLETE		1JUN81	29MAY81	30NOV81	27NOV81	26	25	1
21700	220A0	3	OPA C2	205	LAND ACQUISITION ANALYSIS	CT-1	1JUN81	19JUN81	20JUL81	7AUG81	7	0	1
220A0	22000	2	OPA C2	205	LAND ACQUISITION ANALYSIS	FIN	22JUN81	3JUL81	10AUG81	21AUG81	7	7	1
21000	21100	21 R	OPA C2	206	RIGHT OF ENTRY	FIN	1JUN81	23OCT81	1FEB82	25JUN82	35	35	1
25200	25400	1 R	OPA C3	207	SITE SPECIFIC SURVEYS	CT-1	1JUN81	5JUN81	8JUN81	12JUN81	1	0	1
25400	25500	7	OPA C3	207	SITE SPECIFIC SURVEY	FIN	8JUN81	24JUL81	15JUN81	31JUL81	1	0	1
24100	241A0	3	OPA C3	2082	AIR PHOTOS & MAPPING-1981	CT-1	1JUN81	19JUN81	8JUN81	26JUN81	1	0	1
241A0	24200	7	OPA C3	2082	AIR PHOTOS & MAPPING-1981	FIN	22JUN81	7AUG81	29JUN81	14AUG81	1	0	1
22600	22800	9 R	OPA C3	210	ACCESS ROAD	FIN	1JUN81	31JUL81	22JUN81	21AUG81	3	3	1
26600	26800	1 R	OPA C4	212	FIELD RECON FOR RSRVR CLEAR	FIN	1JUN81	5JUN81	8JUN81	12JUN81	1	1	1
27600	27700	2	OPA C3	213	MARKETABLTY & DISPOSAL STDY	ST	1JUN81	12JUN81	22JUN81	3JUL81	3	0	1
27700	27200	3	OPA C3	213	MARKETABLTY & DISPOSAL STDY	FIN	15JUN81	3JUL81	6JUL81	24JUL81	3	0	1
27000	27200	2	OPA C3	214	CST ESTMTS RSVR CLEARING	ST	1JUN81	12JUN81	13JUL81	24JUL81	6	3	1
27200	27400	3	OPA C3	214	CST ESTMTS RSVR CLEARING	FIN	6JUL81	24JUL81	7SEP81	25SEP81	9	8	1
25800	26000	2 R	OPA C4	215	SLOPE EROSION & STBLTY STUDY	ST	1JUN81	12JUN81	1JUN81	12JUN81	0	0	1	CRITICAL
26000	26200	4	OPA C4	215	SLOPE EROSION & STBLTY STUDY	FIN	15JUN81	10JUL81	6JUL81	31JUL81	3	3	1
24600	24800	4 R	OPA C3	216	HYDROGRAPHIC SURVEYS	FIN	1JUN81	26JUN81	3AUG81	28AUG81	9	9	1
36600	36800	43 R	OPB 1 C4	3022	FIELD DATA INDEX OPERATION		1JUN81	26MAR82	8JUN81	2APR82	1	1	1
37600	37700	20 R	OPB 1 C4	3033	FIELD DATA COLLECTION 81-82	ST	1JUN81	16OCT81	15JUN81	30OCT81	2	0	1
37700	37800	22	OPB 1 C4	3033	FIELD DATA COLLECTION 81-82	FIN	19OCT81	19MAR82	2NOV81	2APR82	2	2	1
33500	34600	2	OPB 1 C4	3041	WATER RSRCS-FLOW EXTENSION	FIN	1JUN81	12JUN81	30NOV81	11DEC81	26	26	1
33300	34600	4	OPB 1 C4	3042	WATER RSRCS-FREQ ANALYSIS		1JUN81	26JUN81	16NOV81	11DEC81	24	24	1
34400	344A0	2 R	OPB 1 C4	3043	WATER RSRCS-RESERVOIR STUDY	CT-1	1JUN81	12JUN81	1JUN81	12JUN81	0	0	1	CRITICAL
344A0	34500	6	OPB 1 C4	3043	WATER RSRCS-RESERVOIR STUDY	CT-2	15JUN81	24JUL81	15JUN81	24JUL81	0	0	1	CRITICAL
34500	34600	20	OPB 1 C4	3043	WATER RSRCS-RESERVOIR STUDY	CT-3	27JUL81	11DEC81	27JUL81	11DEC81	0	0	1	CRITICAL
34600	34800	6	OPB 1 C4	3043	WATER RSRCS-RESERVOIR STUDY	FIN	14DEC81	22JAN82	21DEC81	29JAN82	1	1	1
35000	35200	4	OPB 1 C4	3044	WATER RSRCS-PRE&POST PROJECT	ST	14DEC81	8JAN82	14DEC81	8JAN82	0	0	1	CRITICAL
35200	35400	4	OPB 1 C4	3044	WATER RSRCS-PRE&POST PROJECT	FIN	11JAN82	5FEB82	11JAN82	5FEB82	0	0	1	CRITICAL
33700	33900	8	OPB 1 C4	3045	EVAPORATION STUDIES		1JUN81	24JUL81	8JUN81	31JUL81	1	1	1
39600	39800	42 R	OPB 1 C4	3046	WATER RSRCS-GLACIAL STUDIES		1JUN81	19MAR82	15JUN81	2APR82	2	2	1
35400	354A0	0	OPB 1 C4	304XX	EXHIBIT H MATERIAL COMPLETE		8FEB82	5FEB82	19APR82	16APR82	10	10	1
35400	354B0	0	OPB 1 C4	304XX	EXHIBIT I MATERIAL COMPLETE		8FEB82	5FEB82	19APR82	16APR82	10	10	1
31800	32000	10 R	OPB 1 C4	3053	FLOODS-RESERVOIR ROUTING	CT-1	1JUN81	7AUG81	19OCT81	25DEC81	20	14	1
32000	32200	5	OPB 1 C4	3053	FLOODS-RESERVOIR ROUTING	FIN	16NOV81	18DEC81	28DEC81	29JAN82	6	6	1
30200	30400	13 R	OPB 1 C4	3061	HYDRLICS & ICE WTR LVLS	CT-1	1JUN81	28AUG81	1JUN81	28AUG81	0	0	1	CRITICAL
30400	30600	17	OPB 1 C4	3061	HYDRLICS & ICE WTR LVLS	FIN	31AUG81	25DEC81	5OCT81	29JAN82	5	5	1
39000	39100	8	OPB 1 C4	3063	HYDR&ICE-RESER SLIDE SURGE	FIN	1JUN81	24JUL81	22JUN81	14AUG81	3	2	1
39200	39300	8	OPB 1 C4	3064	HYDR&ICE-RSVR TEMP REGIME		1JUN81	24JUL81	22JUN81	14AUG81	3	2	1
35600	35800	3 R	OPB 1 C4	3071	SEDIMENT YIELD & DEPOSITION	ST	1JUN81	19JUN81	27JUL81	14AUG81	8	7	1
35800	36000	6	OPB 1 C4	3071	SEDIMENT YIELD & DEPOSITION	FIN	10AUG81	18SEP81	21SEP81	30OCT81	6	0	1
33600	33800	14	OPB 1 C4	3072	RIVER MORPHOLOGY	CT-1	21SEP81	25DEC81	2NOV81	5FEB82	6	6	1
33000	34000	4	OPB 1 C4	3072	RIVER MORPHOLOGY	FIN	8FEB82	5MAR82	8FEB82	5MAR82	0	0	1	CRITICAL
38200	38400	1 R	OPB 1 C4	3082	TRANSMSN LINE-DET PARAMTR	ST	1JUN81	5JUN81	1JUN81	5JUN81	0	0	1	CRITICAL
38400	38600	4	OPB 1 C4	3082	TRANSMSN LINE-DET PARAMTR	FIN	8JUN81	3JUL81	8JUN81	3JUL81	0	0	1	CRITICAL
31100	31300	10 R	OPB 1 C4	309	ACCESS ROADS HYDROLOGY		1JUN81	7AUG81	7DEC81	12FEB82	27	27	1
31200	31500	13 R	OPB C4	3102	LWR SUSITNA STUDIES-FOLLOWUP	ST	1JUN81	28AUG81	1JUN81	28AUG81	0	0	1	CRITICAL
31500	31400	22	OPB C4	3102	LWR SUSITNA STUDIES-FOLLOWUP	FIN	31AUG81	29JAN82	31AUG81	29JAN82	0	0	1	CRITICAL
45800	46000	7 R	OPB 1 C1	408	DAM STABILITY	CT-1	1JUN81	17JUL81	15JUN81	31JUL81	2	0	1
46000	46200	6	OPB 1 C1	408	DAM STABILITY	FIN	20JUL81	28AUG81	17MAY82	25JUN82	43	43	1

CPM ANALYSIS LISTING

I-NODE	J-NODE	DUR	SELECT CODES		DESCRIPTION		E.S.	E.F.	L.S.	L.F.	T.F.	F.F.	CL	
42800	43000	27	R OPA	C4	409	LONG TERM MONITORING PROGRAM		1JUN81	4DEC81	21DEC81	25JUN82	29	29	1	
40200	41800	5	R OPB 1	C1	410	RESERVOIR INDUCED SEISMICITY		1JUN81	3JUL81	5OCT81	6NOV81	18	18	1	
42400	42600	16	R OPA	C4	411	SEISMIC GEOLOGY-FIELD STUDY		1JUN81	18SEP81	6JUL81	23OCT81	5	5	1	
41400	41600	21	R OPB 1	C1	412	EVALUATION & REPORT DRAFT	ST	1JUN81	23OCT81	1JUN81	23OCT81	0	0	1	CRITICAL
41600	41800	2	OPB 1	C1	412	EVALUATION & REPORT DRAFT	CT-1	26OCT81	6NOV81	26OCT81	6NOV81	0	0	1	CRITICAL
41800	42000	4	OPB 1	C1	412	EVALUATION & REPORT DRAFT	FIN	9NOV81	4DEC81	9NOV81	4DEC81	0	0	1	CRITICAL
44400	44600	8	R OPB 1	C1	413	GROUND MOTION STUDIES	ST	1JUN81	24JUL81	1JUN81	24JUL81	0	0	1	CRITICAL
44600	41800	15	OPB 1	C1	413	GROUND MOTION STUDIES	FIN	27JUL81	6NOV81	27JUL81	6NOV81	0	0	1	CRITICAL
45600	41800	23	R OPB 1	C1	414	DAM STABILITY CONSULTING		1JUN81	6NOV81	1JUN81	6NOV81	0	0	1	CRITICAL
45300	45400	12	R OPB 1	C1	415	SOIL SUSCEPTBTY-SEISMIC FAIL	CT-1	1JUN81	21AUG81	1JUN81	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	13	R OPA	C4	506	1981 EXPLORATION PROGRAM	CT-1	1JUN81	28AUG81	1JUN81	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	
53000	53200	18	R OPB 1	C1	5082	DATA ASSEMBLY-1981 DRAFT	CT-1	1JUN81	20CT81	1JUN81	20CT81	0	0	1	CRITICAL
53200	53300	3	OPB 1	C1	5082	DATA ASSEMBLY-1981 DRAFT	FIN	5OCT81	23OCT81	1MAR82	19MAR82	21	0	1	
53400	53500	3	OPB 1	C1	5083	DATA ASSEMBLY FINAL-DRAFT	ST	5OCT81	23OCT81	1MAR82	19MAR82	21	0	1	
53500	53600	4	OPB 1	C1	5083	DATA ASSEMBLY FINAL-DRAFT	FIN	26OCT81	20NOV81	22MAR82	16APR82	21	21	1	
67200	672A0	1	R OPB 1	C4	6053	SELECT REPORT FINAL EDITION		1JUN81	5JUN81	15JUN81	19JUN81	2	238	1	
631A0	63200	4	R OPB 1	C5	607	PRELIM WATANA DAM ALTERNATES	CT-2	1JUN81	26JUN81	20JUL81	14AUG81	7	4	1	
63200	63300	1	OPB 1	C5	607	PRELIM WATANA DAM ALTERNATES	CT-3	27JUL81	31JUL81	17AUG81	21AUG81	3	0	1	
63300	633A0	0	OPB 1	C5	607	PRELIM WATANA DAM ALTERNATES	FIN	3AUG81	31JUL81	24AUG81	21AUG81	3	0	1	
64600	64700	2	R OPB 1	C6	608	PRELIM DEVIL CANYON DAM ALT	CT-2	1JUN81	12JUN81	20JUL81	31JUL81	7	7	1	
64700	64800	0	OPB 1	C6	608	PRELIM DEVIL CANYON DAM ALT	FIN	3AUG81	31JUL81	3AUG81	31JUL81	0	0	1	CRITICAL
69300	69400	5	R OPB 1	C4	609	ESTAB WATANA DESIGN CRITERIA	CT-2	10AUG81	11SEP81	31AUG81	20CT81	3	3	1	
69400	69500	1	OPB 1	C4	609	ESTAB WATANA DESIGN CRITERIA	FIN	5OCT81	9OCT81	5OCT81	9OCT81	0	0	1	CRITICAL
63500	63600	2	R OPB 1	C4	610	ESTAB DEVIL CANYN DESGN CRIT	CT-1	1JUN81	12JUN81	3AUG81	14AUG81	9	8	1	
63600	63700	7	OPB 1	C4	610	ESTAB DEVIL CANYN DESGN CRIT	CT-2	10AUG81	25SEP81	17AUG81	20CT81	1	1	1	
63700	63800	1	OPB 1	C4	610	ESTAB DEVIL CANYN DESGN CRIT	FIN	5OCT81	9OCT81	5OCT81	9OCT81	0	0	1	CRITICAL
66200	66300	5	R OPB 1	C5	611	PRELIM DESIGN WATANA DAM	ST	1JUN81	3JUL81	31AUG81	20CT81	13	13	1	
66300	66400	9	OPB 1	C5	611	PRELIM DESIGN WATANA DAM	CT-1	5OCT81	4DEC81	5OCT81	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	9OCT81	3AUG81	9OCT81	0	0	1	CRITICAL
65300	65400	8	OPB 1	C6	612	PREL DESIGN DEVIL CANYON DAM	CT-1	12OCT81	4DEC81	12OCT81	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	16OCT81	19OCT81	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	5	R OPB 1	C4	614	SPILLWAY DESIGN CRITERIA	FIN	1JUN81	3JUL81	8JUN81	10JUL81	1	0	1	
60600	60700	10	OPB 1	C5	615	WATANA SPILLWAY ALTERNATIVES	FIN	17AUG81	23OCT81	24AUG81	30OCT81	1	0	1	
61300	60600	6	OPB 1	C5	615	WATANA SPILLWAY ALTERNATIVES	ST	6JUL81	14AUG81	13JUL81	21AUG81	1	0	1	
61300	61400	3	OPB 1	C6	616	DEVL CAN SPILLWAY ALTERNATVE	ST	6JUL81	24JUL81	20JUL81	7AUG81	2	1	1	
61400	61500	8	OPB 1	C6	616	DEVL CAN SPILLWAY ALTERNATVE	FIN	3AUG81	25SEP81	10AUG81	20CT81	1	0	1	
621A0	62200	4	OPB 1	C5	617	PRELIM DESGN WATANA SPILLWAY	ST	1JUN81	26JUN81	5OCT81	30OCT81	18	17	1	
62200	62300	4	OPB 1	C5	617	PRELIM DESGN WATANA SPILLWAY	CT-1	26OCT81	20NOV81	2NOV81	27NOV81	1	0	1	
62300	62400	10	OPB 1	C5	617	PRELIM DESGN WATANA SPILLWAY	FIN	23NOV81	29JAN82	30NOV81	5FEB82	1	0	1	
61500	61600	6	OPB 1	C6	618	PRELIM DES DEVIL CAN SPILWAY	ST	28SEP81	6NOV81	5OCT81	13NOV81	1	0	1	
61600	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	26OCT81	4DEC81	28DEC81	5FEB82	9	8	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	1JUN81	19JUN81	3AUG81	21AUG81	9	9	1	
6A100	6A200	8	OPB 1	C5	620	ACCESS & CAMP FACILITIES	FIN	24AUG81	16OCT81	24AUG81	16OCT81	0	0	1	CRITICAL

CPM ANALYSIS LISTING

I-NODE	J-NODE	DUR	SELECT CODES		DESCRIPTION		E.S.	E.F.	L.S.	L.F.	T.F.	F.F.	CL	
60000	60100	6	OPB 1 C5	621	WATANA DIVERSION SCHEMES	ST	1JUN81	10JUL81	21SEP81	30OCT81	16	15	1	
60100	60200	8	OPB 1 C5	621	WATANA DIVERSION SCHEMES	FIN	26OCT81	18DEC81	2NOV81	25DEC81	1	0	1	
67300	67400	11	OPB 1 C6	622	DEVIL CANYON DIVERSN SCHEMES	ST	1JUN81	14AUG81	12OCT81	25DEC81	19	6	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	3AUG81	11SEP81	24AUG81	20CT81	3	3	1	
61900	62000	8	OPB 1 C4	623	OPT WATANA POWER DEVELOPMENT	CT-1	5OCT81	27NOV81	5OCT81	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
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	1JUN81	10JUL81	23NOV81	1JAN82	25	25	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	21DEC81	29JAN82	28DEC81	5FEB82	1	1	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		1JUN81	3JUL81	29MAR82	30APR82	43	51	1	
6B800	6B900	55 R	OPB 1 C2	638	LIAISON POWER ALTS CONSULTANT		1JUN81	18JUN82	8JUN81	25JUN82	1	1	1	
71400	71600	0	OPB 1 C8	7011	STUDY COORD-ALTERNATIVE SITE	FIN	1JUN81	29MAY81	1JUN81	29MAY81	0	0	1	CRITICAL
71600	71800	9 R	OPB 1 C8	7012	STUDY COORD-PRELIM ALTERNATV	ST	1JUN81	31JUL81	1JUN81	31JUL81	0	0	1	CRITICAL
71800	72000	0	OPB 1 C8	7012	STUDY COORD-PRELIM ALTERNATV	FIN	3AUG81	31JUL81	31AUG81	28AUG81	4	2	1	
72000	72200	23 R	OPB 1 C8	7013	STUDY COORD-OPTIMIZED DESIGN		17AUG81	22JAN82	31AUG81	5FEB82	2	2	1	
79300	79400	51 R	OPB 1 C8	702	MONITOR FIELD ACTIVITIES	CT-1	1JUN81	21MAY82	6JUL81	25JUN82	5	0	1	
79400	79500	0	OPB 1 C8	702	MONITOR FIELD ACTIVITIES	FIN	24MAY82	21MAY82	26JUN82	25JUN82	5	5	1	
71600	70000	11 R	OPB 1 C8	7042	WTR RES-PRE WAT&DEVL CAN ALT		1JUN81	14AUG81	15JUN81	28AUG81	2	0	1	
72000	70600	22 R	OPB 1 C8	7043	WTR RES-OPT WAT&DEVL CAN DES		17AUG81	15JAN82	7SEP81	5FEB82	3	3	1	
73100	73300	16 R	OPB 1 C8	705	SOCIOECONOMIC ANALYSIS	CT-1	1JUN81	18SEP81	8JUN81	25SEP81	1	0	1	
73200	73400	9	OPB 1 C8	705	SOCIOECONOMIC ANALYSIS	FIN	8FEB82	9APR82	15FEB82	16APR82	1	1	1	
73300	73200	20	OPB 1 C8	705	SOCIOECONOMIC ANALYSIS	CT-2	21SEP81	5FEB82	28SEP81	12FEB82	1	0	1	
78700	79000	16	OPB 1 C8	7061	CULTURAL ALTERNATIVE SITES	FIN	15JUN81	20CT81	15JUN81	20CT81	0	0	1	CRITICAL
78800	78700	1 R	OPB 1 C8	7061	CULTURAL ALTERNATIVE SITES	CT-1	1JUN81	5JUN81	8JUN81	12JUN81	1	1	1	
78900	79000	8	OPB 1 C8	7062	CULTURAL PRELIM ALTERNATIVES	ST	1JUN81	24JUL81	10AUG81	20CT81	10	10	1	
79000	79100	10	OPB 1 C8	7062	CULTURAL PRELIM ALTERNATIVES	CT-1	5OCT81	11DEC81	5OCT81	11DEC81	0	0	1	CRITICAL

CPM ANALYSIS LISTING

I-NODE	J-NODE	DUR		SELECT CODES		DESCRIPTION		E.S.	E.F.	L.S.	L.F.	T.F.	I.F.	C	
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	1JUN81	11SEP81	31AUG81	11DEC81	13	13	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	20	R	OPB 1 C8	7071	LAND USE ALTERNATIVE SITES	CT-1	1JUN81	16OCT81	1JUN81	16OCT81	0	0	1	CRITICAL
75900	76000	8		OPB 1 C8	7072	LAND USE PRELIM ALTERNATIVES	ST	1JUN81	24JUL81	5OCT81	27NOV81	18	18	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	1JUN81	11SEP81	26OCT81	5FEB82	21	21	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
72500	72600	2	R	OPB 1 C8	708	RECREATION PLANNING	CT-1	31AUG81	11SEP81	14SEP81	25SEP81	2	0	1	
72600	72800	5		OPB 1 C8	708	RECREATION PLANNING	FIN	8FEB82	12MAR82	15MAR82	16APR82	5	5	1	
72700	72600	20		OPB 1 C8	708	RECREATION PLANNING	CT-2	14SEP81	29JAN82	28SEP81	12FEB82	2	1	1	
73500	73600	12		OPB 1 C8	7092	TRANS LINE ASSESS RTE SELCTN	CT-1	13JUL81	20CT81	10AUG81	30OCT81	4	0	1	
735A0	73500	6	R	OPB 1 C8	7092	TRANS LINE ASSESS RTE SELCTN	ST	1JUN81	10JUL81	29JUN81	7AUG81	4	0	1	
73600	736B0	24		OPB 1 C8	7092	TRANS LINE ASSESS RTE SELCTN	FIN	5OCT81	19MAR82	2NOV81	16APR82	4	4	1	
73700	73800	10	R	OPB 1 C8	7101	FISH ECOLOGY ALTERNATV SITES	CT-2	7SEP81	13NOV81	12OCT81	18DEC81	5	4	1	
73800	74200	0		OPB 1 C8	7101	FISH ECOLOGY ALTERNATV SITES	FIN	14DEC81	11DEC81	21DEC81	18DEC81	1	0	1	
73900	73700	12		OPB 1 C8	7101	FISH ECOLOGY ALTERNATV SITES	CT-1	15JUN81	4SEP81	20JUL81	9OCT81	5	0	1	
74100	74200	8		OPB 1 C8	7102	FISH ECOLOGY PRELIM ALTERNAT	ST	1JUN81	24JUL81	26OCT81	18DEC81	21	20	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	1JUN81	11SEP81	16NOV81	26FEB82	24	23	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	6JUL81	24JUL81	27JUL81	14AUG81	3	0	1	
75000	75100	10		OPB 1 C8	7111	WILDLIFE ECOLOGY ALTER SITES	FIN	9NOV81	15JAN82	30NOV81	5FEB82	3	0	1	
750A0	75000	15		OPB 1 C8	7111	WILDLIFE ECOLOGY ALTER SITES	CT-2	27JUL81	6NOV81	17AUG81	27NOV81	3	0	1	
75500	75600	8		OPB 1 C8	7112	WILDLIFE ECOLOGY PRELM ALTER	ST	1JUN81	24JUL81	5OCT81	27NOV81	18	10	1	
75600	75700	10		OPB 1 C8	7112	WILDLIFE ECOLOGY PRELM ALTER	CT-1	5OCT81	11DEC81	30NOV81	5FEB82	8	5	1	
75700	76400	0		OPB 1 C8	7112	WILDLIFE ECOLOGY PRELM ALTER	FIN	18JAN82	15JAN82	8FEB82	5FEB82	3	0	1	
76300	76400	15		OPB 1 C8	7113	WILDLIFE ECOLOGY OPTIM DESGN	ST	1JUN81	11SEP81	26OCT81	5FEB82	21	18	1	
76400	76500	20		OPB 1 C8	7113	WILDLIFE ECOLOGY OPTIM DESGN	CT-1	18JAN82	4JUN82	8FEB82	25JUN82	3	0	1	
76500	76600	0		OPB 1 C8	7113	WILDLIFE ECOLOGY OPTIM DESGN	FIN	7JUN82	4JUN82	28JUN82	25JUN82	3	3	1	
77100	77300	5	R	OPB 1 C8	7121	PLANT ECOLOGY ALTERNTV SITES	ST	1JUN81	3JUL81	1JUN81	3JUL81	0	0	1	CRITICAL
77200	77500	4		OPB 1 C8	7121	PLANT ECOLOGY ALTERNTV SITES	FIN	2NOV81	27NOV81	2NOV81	27NOV81	0	0	1	CRITICAL
77300	77200	17		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	1JUN81	24JUL81	5OCT81	27NOV81	18	18	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	1JUN81	11SEP81	26OCT81	5FEB82	21	21	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	1JUN81	25DEC81	13JUL81	5FEB82	6	0	1	
74400	74000	10		OPB 1 C8	714	ACCESS RD ENVIRONMENT ANALY	FIN	28DEC81	5MAR82	8FEB82	16APR82	6	6	1	
78200	78300	9		OPB 1 C8	715	PREP FOR FERC EXHIBIT-DRAFT	ST	1JUN81	31JUL81	4JAN82	5MAR82	31	31	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

ACRES AMERICAN SUSITNA HYDRO-ELECTRIC PROJECT

TIME NOW: 1JUN81

CPM ANALYSIS LISTING

I-NODE	J-NODE	DUR		SELECT CODES		DESCRIPTION		E.S.	E.F.	L.S.	L.F.	T.F.	I.F.		
78500	785A0	0		OPB 1 C8	715XX	EXHIBIT W MATERIAL COMPLETE		19APR82	16APR82	19APR82	16APR82	0	0	1	CRITICAL
78500	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	1JUN81	5JUN81	17AUG81	21AUG81	11	11	1	
81600	81800	2	R	OPB 1 C3	8021	LOAD FLOW ANALYSIS	ST	1JUN81	12JUN81	29JUN81	10JUL81	4	0	1	
81800	82800	6		OPB 1 C3	8021	LOAD FLOW ANALYSIS	FIN	15JUN81	24JUL81	13JUL81	21AUG81	4	4	1	
82400	82600	4	R	OPB 1 C3	80221	PRELIMINARY ELEC SYSTEM	ST	1JUN81	26JUN81	1JUN81	26JUN81	0	0	1	CRITICAL
82600	82800	8		OPB 1 C3	80221	PRELIMINARY ELEC SYSTEM	CT-1	29JUN81	21AUG81	29JUN81	21AUG81	0	0	1	CRITICAL
82800	83000	0		OPB 1 C3	80221	PRELIMINARY ELEC SYSTEM	FIN	24AUG81	21AUG81	24AUG81	21AUG81	0	0	1	CRITICAL
85700	85800	32		OPB 1 C3	80222	RECOMMEND ELEC SYS		24AUG81	2APR82	24AUG81	2APR82	0	0	1	CRITICAL
80600	80800	12	R	OPB 1 C3	803	FINAL ROUTE SELECTION 1981	ST	1JUN81	21AUG81	1JUN81	21AUG81	0	0	1	CRITICAL
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	1JUN81	24JUL81	5OCT81	27NOV81	18	4	1	
84800	85400	8		OPB 1 C3	805	SUBSTATIONS	FIN	24AUG81	16OCT81	30NOV81	22JAN82	14	14	1	
84000	84200	8		OPB 1 C3	806	DISPATCH CTR & COMMUNICATNS	ST	1JUN81	24JUL81	5OCT81	27NOV81	18	4	1	
84200	85400	8		OPB 1 C3	806	DISPATCH CTR & COMMUNICATNS	FIN	24AUG81	16OCT81	30NOV81	22JAN82	14	14	1	
85200	85400	1	R	OPB 1 C3	807	TRANS LINE COST ESTIMATES	ST	1JUN81	5JUN81	18JAN82	22JAN82	33	33	1	
85400	85600	6		OPB 1 C3	807	TRANS LINE COST ESTIMATES	FIN	25JAN82	5MAR82	25JAN82	5MAR82	0	0	1	CRITICAL
90200	90400	2		OPB 1 C7	901	ASSEMBLE COST-SCHEDULE DATA	ST	1JUN81	12JUN81	24AUG81	4SEP81	12	0	1	
90400	90600	4		OPB 1 C7	901	ASSEMBLE COST-SCHEDULE DATA	FIN	15JUN81	10JUL81	21SEP81	16OCT81	14	2	1	
90800	91000	6		OPB 1 C7	902	PREP PRELIM CST ESTIMATES		15JUN81	24JUL81	7SEP81	16OCT81	12	0	1	
91200	91400	17		OPB 1 C7	903	COST ESTIMATE UPDATES		27JUL81	20NOV81	19OCT81	12FEB82	12	0	1	
91400	914A0	0		OPB 1 C7	903XX	EXHIBIT N MATERIAL COMPLETE		23NOV81	20NOV81	19APR82	16APR82	21	21	1	
91600	91800	6		OPB 1 C7	9041	ENGR COST & SCHEDULE PRELIM		15JUN81	24JUL81	7SEP81	16OCT81	12	0	1	
92000	92200	17		OPB 1 C7	9042	ENGR COST & SCHEDULE FINAL		27JUL81	20NOV81	19OCT81	12FEB82	12	0	1	
92200	922A0	0		OPB 1 C7	904XX	EXHIBIT O MATERIAL COMPLETE		23NOV81	20NOV81	19APR82	16APR82	21	21	1	
92400	92600	12		OPB 1 C7	905	CONTINGENCY ANALYSIS		27JUL81	16OCT81	9NOV81	29JAN82	15	14	1	
A1200	A1600	9		FLC C110	1001	IMPACT OF NEW FERC REGULATIONS		1JUN81	31JUL81	30NOV81	29JAN82	26	25	1	
A3200	A2600	4		FLC C110	10022	1ST UPDATE-REGULATORY REQ		1JUN81	26JUN81	22MAR82	16APR82	42	42	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		1JUN81	3JUL81	12APR82	14MAY82	45	0	1	
A3800	A4000	0		FLC C110	1003XX	EXHIBIT A B & C MATERIAL COMPLETE		6JUL81	3JUL81	17MAY82	14MAY82	45	45	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	
A2200	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

CPM ANALYSIS LISTING

I-NODE	J-NODE	DUR	SELECT CODES		DESCRIPTION	E.S.	E.F.	L.S.	L.F.	T.F.	F.F.	CR	
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	55 R	FLC	C210	1101 PROJECT OVERVIEW	1JUN81	18JUN82	8JUN81	25JUN82	1	1	1	
B0400	B0600	45 R	FLC	C210	1102 INTERNAL REPORTS	1JUN81	9APR82	8JUN81	16APR82	1	0	1	
B0600	B06A0	0	FLC	C210	1102XX EXHIBIT U MATERIAL COMPLETE	12APR82	9APR82	19APR82	16APR82	1	1	1	
B1200	B1400	34 R	FLC	C210	1103 SUSITNA BASE PLAN RISK ANALY ST	1JUN81	22JAN82	8JUN81	29JAN82	1	0	1	
B1400	B1600	0	FLC	C210	1103 SUSITNA BASE PLAN RISK ANALY FIN	25JAN82	22JAN82	1FEB82	29JAN82	1	0	1	
B1600	B1800	21	FLC	C210	1104 SUSITNA BASE PLAN EXTEN/REVIS	25JAN82	18JUN82	1FEB82	25JUN82	1	1	1	
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	1JUN81	13NOV81	11JAN82	25JUN82	32	32	1	
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	44 R	FLC	C210	1109 LIAISON AFA BOND UNDERWRITER	1JUN81	2APR82	15JUN[illegible]	.6APR82	2	2	1	
B3400	B34A0	0	FLC	C210	1109XX EXHIBIT G MATERIAL COMPLETE	1FEB82	29JAN82	19APR82	16APR82	11	11	1	
C0600	C0800	4	OFB 1	C810	12022 CONDUCT PUBLIC MEETING #2	22JUN81	17JUL81	30NOV81	25DEC81	23	0	1	
C1200	C1400	4	OFB 1	C810	12023 CONDUCT PUBLIC MEETING #3	12OCT81	6NOV81	22MAR82	16APR82	23	23	1	
C0200	C0400	3 R	OFB 1	C810	12031 CONDUCT WORKSHOPS 1,2,3	1JUN81	19JUN81	9NOV81	27NOV81	23	0	1	
C0800	C1000	12	OFB 1	C810	12032 CONDUCT WORKSHOPS 4,5,6	20JUL81	9OCT81	28DEC81	19MAR82	23	0	1	
C1600	D1200	54 R	OFB 1	C810	1204 PREP PUBLISH DISTRIB MATERIAL	1JUN81	11JUN82	15JUN81	25JUN82	2	2	1	
C1800	D1200	54 R	OFB 1	C810	1205 PREP MAINTAIN ACTION LIST	1JUN81	11JUN82	15JUN81	25JUN82	2	2	1	
D1000	D1200	54 R	PSB 2	C310	13013 PROJECT PROCED MANUAL-UPDATE	1JUN81	11JUN82	15JUN81	25JUN82	2	2	1	
D2200	D2400	54 R	PSB 2	C310	13042 SCHEDULE CONTROL SYS UPDATE	1JUN81	11JUN82	15JUN81	25JUN82	2	2	1	
D2800	D3000	54 R	PSB 2	C310	13052 COST CONTROL SYSTEM-OP	1JUN81	11JUN82	15JUN81	25JUN82	2	2	1	
D3400	D3600	54 R	PSB 2	C310	13062 MANPOWER LOADING SCHED-UPDATE	1JUN81	11JUN82	15JUN81	25JUN82	2	2	1	
D3800	D4000	54 R	PSB 2	C310	1310 SUB CONTRACT ADMINISTRATION	1JUN81	11JUN82	15JUN81	25JUN82	2	2	1	
D1200	D1300	0		10	XXX PROJECT COMPLETE XXX	28JUN82	25JUN82	28JUN82	25JUN82	0	183	1	CRITICAL

WORK COMPLETED: TO JUNE 1, 1981

ACRES AMERICAN SUSITNA HYDRO-ELECTRIC PROJECT

TIME NOW: 1JUN81

CPM ANALYSIS LISTING

I-NODE	J-NODE	DUR	SELECT CODES	------D E S C R I P T I O N ----------		
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
20900	21000	0	C OPA C2	206	RIGHT OF ENTRY	ST	COMPLETE
25000	25200	0	C OPA C3	207	SITE SPECIFIC SURVEYS	ST	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
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
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
32700	32900	0	C OPB 1 C4	3051	FLOODS-FREQUENCY ANALYSIS		COMPLETE
32800	32400	0	C OPB 1 C4	3052	FLOODS PMF REVIEW		COMPLETE
31600	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
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
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

CPM ANALYSIS LISTING

I-NODE	J-NODE	DUR	SELECT CODES		DESCRIPTION		
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
45600	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
51600	51800	0	C OPB 1 C1	5081	DATA ASSEMBLY-1980	FIN	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
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
6A600	6A700	0	C OPB 1 C2	632	THERMAL GENERATION RESOURCE	CT1	COMPLETE
6A700	6A900	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

REP01

CPM ANALYSIS LISTING

I-NODE	J-NODE	DUR	SELECT CODES			------D E S C R I P T I O N ----------		
6C600	6C700	0	C	OPB 1 C8	6342	ENVIRONMENT ASSESSMENT-FINAL		MPLETE
6C800	6C900	0	C	OPB 1 C2	635	LOAD MANAGE & CONSERVE		MPLETE
6D100	6D200	0	C	OPB 1 C2	6361	GENERATION PLAN PARAMATERS		MPLETE
6D300	6D3A0	0	C	OPB 1 C2	6362	GENERAT PLAN ANALY & REPORT	ST	MPLETE
6D3A0	6D400	0	C	OPB 1 C2	6362	GENERAT PLAN ANALY & REPORT	CT-1	MPLETE
6D400	6D500	0	C	OPB 1 C2	6362	GENERAT PLAN ANALY & REPORT	CT-2	MPLETE
6D500	6D600	0	C	OPB 1 C2	6362	GENERAT PLAN ANALY & REPORT	FIN	MPLETE
71200	71400	0	C	OPB 1 C8	701	STUDY COORD-ALTERNATIVE SITE	CT-2	MPLETE
70800	71000	0	C	OPB 1 C8	7011	STUDY COORD-ALTERNATIVE SITE	ST	MPLETE
71000	71200	0	C	OPB 1 C8	7011	STUDY COORD-ALTERNATIVE SITE	CT-1	MPLETE
79200	79300	0	C	OPB 1 C8	702	MONITOR FIELD ACTIVITIES	ST	MPLETE
71000	71100	0	C	OPB 1 C8	7041	WATER RESOURCE ALT SITES		MPLETE
73000	73100	0	C	OPB 1 C8	705	SOCIOECONOMIC ANALYSIS	ST	MPLETE
78600	78800	0	C	OPB 1 C8	7061	CULTURAL ALTERNATIVE SITES	ST	MPLETE
75200	75400	0	C	OPB 1 C8	7071	LAND USE ALTERNATIVE SITES	ST	MPLETE
72400	72500	0	C	OPB 1 C8	708	RECREATION PLANNING	ST	MPLETE
71200	73500	0	C	OPB 1 C8	7091	TRANS LINE ASSESS SCREENING		MPLETE
736A0	73900	0	C	OPB 1 C8	7101	FISH ECOLOGY ALTERNATV SITES	ST	MPLETE
74900	749A0	0	C	OPB 1 C8	7111	WILDLIFE ECOLOGY ALTER SITES	ST	MPLETE
71000	710A0	0	C	OPB 1 C8	714	ACCESS RD ENVIRONMENT ANALY	ST	MPLETE
80000	80200	0	C	OPB 1 C3	801	SELECT INITIAL CORRIDORS	ST	MPLETE
80200	80400	0	C	OPB 1 C3	801	SELECT INITIAL CORRIDORS	CT-1	MPLETE
A2000	A1600	0	C	FLC C110	10021	ESTABLISH REGULATORY REQUIRE		MPLETE
C0000	C0200	0	C	OPB 1 C810	12021	CONDUCT PUBLIC MEETING #1		MPLETE
D0200	D0400	0	C	PSB 2 C310	13011	PROJECT PROCED MANUAL-DRAFT	ST	MPLETE
D0400	D0600	0	C	PSB 2 C310	13011	PROJECT PROCED MANUAL-DRAFT	CT-1	MPLETE
D0600	D0800	0	C	PSB 2 C310	13011	PROJECT PROCED MANUAL-DRAFT	FIN	MPLETE
D0800	D1000	0	C	PSB 2 C310	13012	PROJECT PROCED MANUAL-FINAL		MPLETE
D0000	D0600	0	C	PSB 2 C310	1302	FINANCIAL CONTROL PROCEDURES		MPLETE
D1400	D1500	0	C	PSB 2 C310	1303	PROJECT MASTER SCHEDULE		MPLETE
D2000	D2200	0	C	PSB 2 C310	13041	SCHEDULE CONTROL SYSTEM-DEV		MPLETE
D2600	D2800	0	C	PSB 2 C310	13051	COST CONTROL SYSTEM-DEV		MPLETE
D3200	D3400	0	C	PSB 2 C310	13061	MANPOWER LOADNG SCHEULE-DEV		MPLETE
D1600	D0600	0	C	PSB 2 C410	1307	DEVELOP ACCOUNTING POLICIES		MPLETE
D1800	D1900	0	C	PSB 2 C310	1308	DOCUMENTATION CONTROL		MPLETE

TASK NO.	DESCRIPTION
1.00	POWER STUDIES
1.01	REVIEW OF METHODOLOGIES
1.02	FORECAST PEAK LOAD DEMAND TRANS.
1.03	IDENTIFICATION OF POWER ALT.
1.04	TERMINATION REPORT
2.00	SURVEYS AND SITE FACILITIES
2.02	FIELD CAMP SET-UP AND OPERATIONS
2.03	RESUPPLY AND EMERGENCY SERVICE
2.04	LAND STATUS SEARCH
2.05	LAND ACQUISITION ANALYSIS
2.06	RIGHT OF ENTRY
2.07	SITE SPECIFIC SURVEY
2.09	AIR PHOTOS AND MAPPING
2.09	CONTROL NETWORK SURVEYS
2.10	ACCESS ROAD
2.11	MAP AND PHOTO SEARCH
2.12	FIELD RECON. FOR RESERVOIR CLEAR.
2.13	MARKETABILITY AND DISPOSAL STUDY
2.14	COST EST. FOR RESERVOIR CLEARING
2.15	SLOPE EROSION AND STABILITY STUDY
2.16	HYDROGRAPHIC SURVEYS
3.00	HYDROLOGY
3.01	REVIEW OF AVAILABLE MATERIAL
3.02	FIELD DATA INDEX OPERATION
3.03	FIELD DATA COLLECTION 80 - 82
3.04	WATER RESOURCES - STUDIES
3.05	FLOOD STUDIES
3.06	HYDRAULIC AND ICE STUDIES
3.07	SEDIDENT YIELD AND RIVER MORPHOLOGY
3.08	TRANSMISSION LINE - PRELIM PARAMETER
3.09	ACCESS ROAD HYDROLOGY
3.10	LOWER SUSITNA STUDIES
4.00	SEISMIC STUDIES
4.01	REVIEW AVAILABLE DATA
4.02	SHORT TERM MONITORING PROGRAM
4.03	PRELIM RESERVOIR INDUCED SEISMIC
4.04	REMOTE SENSING IMAGE ANALYSIS
4.05	SEISMIC GEOLOGY RECONNAISSANCE
4.06	PRELIM EVALUATION AND REPORT
4.07	PRELIM GROUND MOTION STUDIES
4.08	DAM STABILITY
4.09	LONG TERM MONITORING PROGRAM
4.10	RESERVOIR INDUCED SEISMICITY
4.11	SEISMIC GEOLOGY FIELD STUDY
4.12	EVALUATION AND REPORT
4.13	GROUND MOTION STUDIES
4.14	DAM STABILITY (CONSULTING)
4.15	SOIL SUSCEPTIBILITY TO SEISMIC FAILURE
5.00	GEOTECH EXPLORATION
5.01	DATA COLLECTION
5.02	AIR PHOTO INTERPRETATION
5.03	1980 PROGRAM DESIGN
5.04	1980 EXPLORATION PROGRAM
5.05	1981 PROGRAM DESIGN
5.06	1981 EXPLORATION PROGRAM
5.07	1982-84 PROGRAM DESIGN
5.08	DATA COMPILATION

ACTIVITIES PRIOR TO LICENSE APPLICATION

1980 | 1981 | 1982

ACTIVITIES PRIOR TO ISSUANCE OF CONSTRUCTION LICENSING

1983 | 1984 | 1985

LEGEND:

WORK COMPLETED TO JUNE 1, 1981

WORK REMAINING : FROM JUNE 1, 1981

CONTINUED WORK : FOLLOWING LICENSE APPLICATION

SUSITNA HYDROELECTRIC PROJECT
PLAN OF STUDY MASTER SCHEDULE

FIGURE 1 OF 3

TASK NO.	DESCRIPTION
6.00	DESIGN DEVELOPMENT
6.01	REVIEW PREVIOUS STUDIES
6.02	INVESTIGATE TUNNEL ALTERNATIVES
6.03	EVALUATE ALTERNATE SUSITNA DEVEL.
6.04	DEVIL CANYON ARCH DAM EVALUATION
6.05	SELECT DRAFT TO FINAL REPORT
6.06	STAGED DEVELOPMENT ALTERNATIVES
6.07	PRELIM. WATANA DAM ALTERNATIVES
6.08	PRELIM DEVIL CANYON DAM ALTERNATIVES
6.09	ESTABLISH WATANA DESIGN CRITERIA
6.10	ESTAB. DEVIL CANYON DESIGN CRITERIA
6.11	PRELIM. DESIGN WATANA DAM
6.12	PRELIM. DESIGN DEVIL CANYON DAM
6.13	DAM SELECTION REPORT
6.14	SPILLWAY DESIGN CRITERIA
6.15	WATANA SPILLWAY ALTERNATIVES
6.16	DEVIL CANYON SPILLWAY ALTERNATIVES
6.17	PRELIM. DESIGN WATANA SPILLWAY
6.18	PRELIM. DESIGN DEVIL CANYON SPILLWAY
6.19	SPILLWAY SELECTION REPORT-DRAFT
6.20	ACCESS AND CAMP FACILITIES
6.21	WATANA DIVERSION SCHEMES
6.22	DEVIL CANYON DIVERSION SCHEMES
6.23	OPTIMIZE WATANA POWER DEVELOP.
6.24	OPTIMIZE DEVIL CANYON POWER DEVELOP.
6.25	OPTIMIZE DAM HEIGHTS
6.26	PRELIM. DESIGN WATANA POWER DEVELOP.
6.27	PRELIM. DESIGN DEVIL CANYON POWER DEV.
6.28	POWER DEVELOPMENT REPORT - DRAFT
6.29	WATANA GENERAL - ARRANGEMENT
6.30	DEVIL CANYON GENERAL ARRANGEMENT
6.31	PROJECT FEASIBILITY REPORT
6.32	THERMAL GENERATION PLAN
6.33	HYDRO GENERATION REPORT
6.34	ENVIRONMENT ASSESSMENT
6.35	LOAD MANAGE AND CONSERVE
6.36	GENERATION PLAN, ANALYSIS AND REPORT
6.37	UPDATE GENERATION PLAN
6.38	LIAISON POWER ALTERNATIVES CONSULTANT
7.00	ENVIRONMENTAL STUDIES
7.01	STUDY COORDINATE-ALTERNATIVE SITE
7.02	MONITOR FIELD ACTIVITIES
7.04	WATER RESOURCES ANALYSIS
7.05	SOCIOECONOMIC ANALYSIS
7.06	CULTURAL RESOURCE INVESTIGATION
7.07	LAND USE ANALYSIS
7.08	RECREATION PLANNING
7.09	TRANS LINE ROUTE SELECTION
7.10	FISH ECOLOGY
7.11	WILDLIFE ECOLOGY
7.12	PLANT ECOLOGY
7.14	ACCESS ROAD ENVIRONMENT ANALYSIS
7.15	PREPARATION FOR FERC EXHIBIT
8.00	TRANSMISSION
8.01	SELECT INITIAL CORRIDORS
8.02	LOAD FLOW AND ELEC. SYSTEM ANALYSIS
8.03	FINAL ROUTE SELECTION 1981
8.04	TOWER, HARDWARE AND CONDUCTOR STUDY
8.05	SUBSTATIONS
8.06	DISPATCH CENTER AND COMMUNICATIONS
8.07	TRANSMISSION LINE COST ESTIMATE

ACTIVITIES PRIOR TO LICENSE APPLICATION

1980 | 1981 | 1982

ACTIVITIES PRIOR TO AWARD OF CONSTRUCTION LICENSING

1983 | 1984 | 1985

LEGEND

WORK COMPLETED TO JUNE 1, 1981

WORK REMAINING : FROM JUNE 1, 1981

CONTINUED WORK : FOLLOWING LICENSE APPLICATION

SUSITNA HYDROELECTRIC PROJECT

PLAN OF STUDY MASTER SCHEDULE

FIGURE 2 OF 8

TASK NO.	DESCRIPTION
9.00	CONST. COST ESTIMATES AND SCHEDULES
9.01	ASSEMBLE COST-SCHEDULE DATA
9.02	PREPARE PRELIM. COST ESTIMATE
9.03	PREPARE COST ESTIMATE UPDATE
9.04	DEVELOP ENGR/CONST. SCHEDULE
9.05	PERFORM CONTINGENCY ANALYSIS
10.00	LICENSING
10.01	IMPACT OF NEW FERC REGULATION
10.02	UPDATE REGULATORY REQUIREMENT
10.03	DATA FROM OTHERS
10.04	COORDINATE EXHIBIT PREP.
10.05	PREPARE EXHIBIT E AND D
10.06	PREPARE EXHIBIT R
10.07	PREPARE EXHIBIT Y
10.08	PREP. APPLICATION FORM-DRAFT
10.09	REVIEW AND CORRECT
10.10	EXTERNAL REVIEW
10.11	PRINT LICENSE APPLICATION
11.00	MARKETING AND FINANCE
11.01	PROJECT OVERVIEW
11.02	INTERNAL REPORTS
11.03	SUSITNA BASE PLAN INITIAL RISK ANALYSIS
11.04	SUSITNA BASE PLAN EXTENSION AND REV.
11.05	SUSITNA FINANCE RISK ANALYSIS
11.06	RESOLUTION OF TAX EXEMPT BOND ISSUE
11.07	IDENTIFY PARTIES INTEREST
11.08	REVENUE ASSURANCE PROCEDURES
11.09	LIASON APA BOND UNDERWRITERS
12.00	PUBLIC PARTICIPATION
12.02	CONDUCT PUBLIC MEET. #1,2, AND #3
12.03	CONDUCT PUBLIC WORKSHOPS #1 - #5
12.04	PREP. PUBLISH DISTRIB. MATERIALS
12.05	PREP. MAINTAIN ACTION LIST
13.00	ADMINISTRATION
13.01	PROJECT PROCEDURE MANUAL
13.02	FINANCIAL CONTROL PROCEDURES
13.03	PROJECT MASTER SCHEDULE
13.04	SCHED. CONTROL SYSTEM-DEV. & UPDATE
13.05	COST CONTROL SYSTEM - DEV AND UPDATE
13.06	MANPOWER LOADING SCHED-DEVELOPER
13.07	DEVELOP ACCOUNTING POLICIES
13.08	DOCUMENTATION CONTROL
13.10	SUB CONTRACT ADMINISTRATION

ACTIVITIES PRIOR TO LICENSE APPLICATION

ACTIVITIES PRIOR TO AWARD OF CONSTRUCTION LICENSING

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 J A S O N D

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

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

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

LEGEND

WORK COMPLETED TO JUNE 1, 1981

WORK REMAINING : FROM JUNE 1, 1981

CONTINUED WORK : FOLLOWING LICENSE APPLICATION

SUSITNA HYDROELECTRIC PROJECT
PLAN OF STUDY MASTER SCHEDULE

FIGURE 8 OF 8