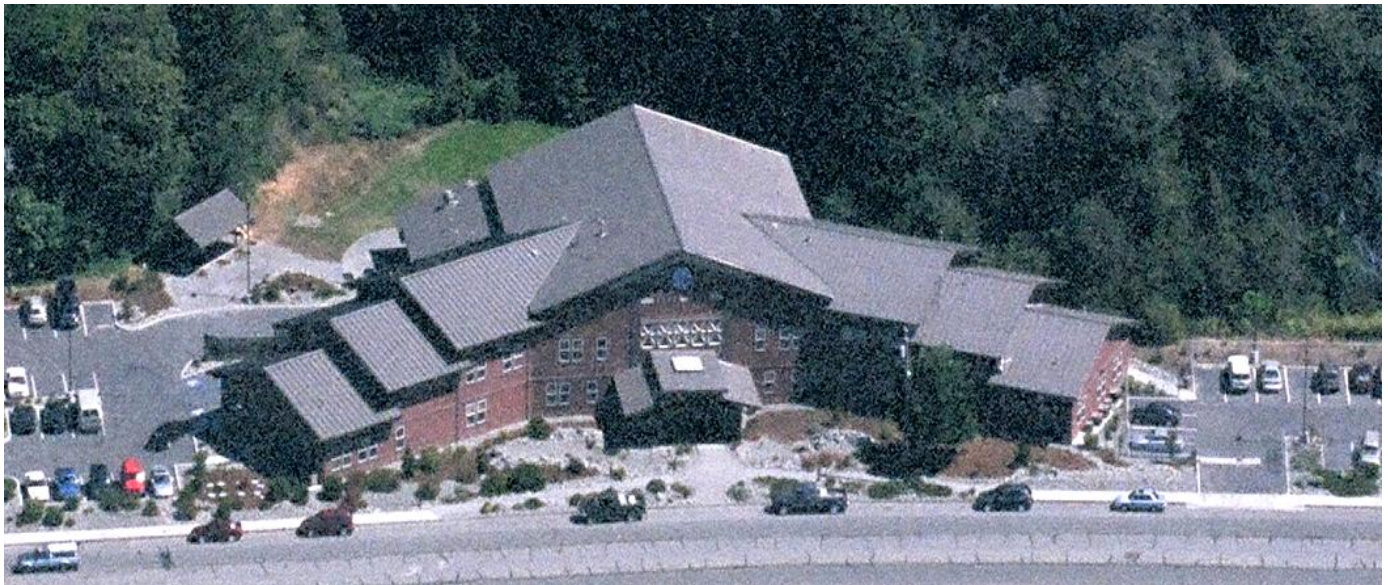


YUROK TRIBE

Request for Proposals

Yurok Tribal Office



Retro~Commissioning

Planning & Community Development
190 Klamath Blvd, Klamath, CA 95548
Sophia Lay - Point of Contact
(707) 482-1366 ext. 363
Sophia@yuroktribe.nsn.us

Project Bid Date: October 1, 2010

Request for Proposals: Retro-Commissioning of Building Energy Systems at Yurok Tribe Main Office, Klamath, CA

Issued 9/13/10

The Yurok Tribe solicits proposals for retro-commissioning services for the building energy systems at the Tribe's main office building, located at 190 Klamath Blvd., Klamath, CA 95548. Proposals are due **October 1, 2010.**

Background

The Yurok Tribe's main office building is a two-story commercial structure of approximately 30,312 square feet, built in 2002. It is built on a concrete slab and is laid out as a central structure with attached north and south wings. The wings house departmental offices. The central structure consists principally of the main entrance; a large entry foyer; a large, high-ceilinged room with a moveable partition that serves as Tribal Council chambers and a multipurpose community meeting space; and a commercial kitchen. The building's heating and cooling system consists of 23 split system air conditioning units, all but one of which is paired with a propane-fired furnace to serve an individual zone with heating and cooling. In each of these zones, heating and cooling are controlled by a single thermostat. In addition, there are several exhaust ventilation fans in the building, mainly serving the kitchen and restrooms. The building's hot water is provided by a single propane-fired tank water heater.

The climate in Klamath is cool year-round, with very rainy winters and dry but frequently foggy summer weather. Klamath receives an average of 80.09 inches a year of precipitation and experiences 4,488 heating degree days and 9 cooling degree days per year (based on 65°F base temperature).¹

A 2006 study by Schatz Energy Research Center (see Documentation Available below) found that energy use for the building on a per-square-foot basis is 46% higher than average office building energy use in its climate zone, per EIA statistics. Analysis of recent electric and propane bills and square footage of the Tribal office using CALARCH online tool from Lawrence Berkeley National Laboratory (<http://poet.lbl.gov/cal-arch/>) shows that the building uses more total energy per square foot than 84% of California office/professional buildings in their comparison database. However, the building only uses more electricity than 35% of the same sample of buildings, suggesting that energy inefficiency in this building is mainly related to propane use (i.e. space and water heating).

Objectives

In descending order of priority, the Tribe's objectives in undertaking a retro-commissioning of their main office building are to:

1. Reduce energy consumption and cost
2. Improve comfort of building occupants including indoor air quality
3. Address building maintenance problems, as discussed in the 2006 SERC study

¹ Source: www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca4577, based on data for 1948-2006

4. Update building energy systems documentation and labeling where needed
5. Identify current building system performance issues, and possible solutions

Required Scope of Retro-Commissioning Services

The retro-commissioning process is intended to be the next step in a process that began with the 2006 walk-through building energy audit performed by SERC. The purpose of this process is to achieve the objectives listed above.

The retro-commissioning process should identify in detail problems related to energy efficiency, occupant comfort, and energy-related building maintenance. Where these problems can be resolved by the contractor without capital expenditure (e.g. adjusting HVAC dampers, changing setpoints, reprogramming equipment, correctly labeling electrical distribution equipment, mapping HVAC zones), the contractor should take the appropriate actions in consultation with Tribal Planning Department and building maintenance staff. Where capital expenditure is required to address problems, the contractor should specify in detail the appropriate solutions (e.g. repair or replace equipment), along with expected savings and implementation cost, to assist the Tribe in contracting the needed services at a later date. All work performed by the contractor should be carefully documented and the documentation provided to the Tribe.

Systems to be Included

The following building systems are to be considered in this retro-commissioning project:

- Heating, ventilating and air conditioning systems, including all furnaces, air conditioners, ventilation equipment, and associated controls
- Building envelope, including exterior walls, roof, floor, insulation, doors, windows, and other envelope penetrations
- Lighting, both interior and exterior

Documentation Available

Bidders have access to

- pre-construction design drawings for the building (as-builts not available).
- two years of whole-building electric and propane billing history
- a copy of SERC's 2006 study of the building

See www.yuroktribe.org/departments/planning/RequestforProposal.htm to download these materials.

Bidder Qualifications and Experience

The successful bidder for this project will have at a minimum:

- Extensive company experience with building commissioning (minimum of three commissioning, recommissioning, or retro-commissioning projects on commercial buildings of at least 20,000 square feet each completed in the past three years)
- Expertise in building energy systems, particularly HVAC and HVAC controls

- Designated project leader must be one of the following: Leed Certified Practitioner, Certified Building Commissioning Professional, or a Licensed Professional Engineer in California (or in another state that has a licensing reciprocity agreement with California)
- Company or designated project leader is member of at least one professional commissioning organization

Activities and Deliverables

The consultant, Tribe staff and SERC staff will work as a team. The retro-commissioning process will include planning, investigation, implementation (of non-capital improvements), and handoff phases. Building-specific details of activities to be carried out in each of these phases will be determined by the project team in an initial meeting. Capital improvements recommended in the course of the retro-commissioning process will be evaluated by Tribal staff and, subject to approval and funding availability, will be implemented under a separate contract.

General activities and associated deliverables for each phase of the project are shown in Table 1.²

Roles and Responsibilities

The project team will include at a minimum:

- Yurok Tribe Planning Department staff member, officially representing the Tribe
- Contractor's project leader and project engineers/technicians
- Lead maintenance person for the Tribal office building
- SERC Staff Engineer

Roles and responsibilities of these team members will be as follows³:

Yurok Tribe Planning Department staff

- Determine the project's budget, schedule, and operating requirements.
- Manage the Tribe's contracts with the commissioning provider and with SERC.
- Assign appropriate in-house staff to the project.
- Define work protocols such as contractor access to the building and specific spaces within the building, confidentiality requirements, etc.
- Define lines of communication between the team members and facilitate communications.
- Work with the contractor to determine the commissioning plan and how to best leverage existing resources to streamline the project and reduce costs.

² Based on *Guideline to the Commissioning Process for Existing Buildings, or "Retro-Commissioning"* The New York State Energy Research and Development Authority, <http://www.nyserda.org/Programs/pdfs/retrocxhandbookfinal040704.pdf>, accessed online July 30, 2010.

³ Based on recommendations from *A Practical Guide for Commissioning Existing Buildings* by Portland Energy Conservation, Inc. and Oak Ridge National Laboratory, April 1999, <http://eber.ed.ornl.gov/CommercialProducts/RetroCx.htm>, accessed online July 30, 2010

- Inform the building occupants of the intended retro-commissioning work as needed;
- Require and review progress reports and meeting notes.
- Attend commissioning meetings when appropriate.

Table 1. Phases, activities and deliverables for Yurok Tribal office retro-commissioning project

Phase	Activities	Deliverables
Planning	Develop team Develop work plan and hold kickoff meeting	Final retro-commissioning work plan (including building and systems description, project objectives, scope, list of team members, schedule)
Investigation	Gather and review facility documentation Perform site assessment Develop and implement diagnostic monitoring and test plans Identify capital and non-capital energy efficiency opportunities Select the non-capital opportunities for implementation	Scoping meeting minutes, short-term diagnostic monitoring and functional test plans Master list of findings Completed site assessment forms and functional test results List of repairs, adjustments, and other improvements made during investigation List of non-capital improvements for immediate implementation
Implementation of non-capital improvements	Implement non-capital improvements Retest and re-monitor Update building documentation Train operators	Completed repairs and improvements Revised or upgraded building documentation Cost and savings estimates for capital improvements Training materials
Hand-off	Final report	Final report, including recommended capital improvements for future investigation

		Plan or schedule for periodic recommissioning
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Note: All phases should include progress reports and minutes from meetings

Contractor

- Identify what documentation, drawings, data, and other information will be required.
- Develop a building-specific commissioning plan.
- Develop agendas and facilitate all commissioning meetings, including taking notes for distribution among team members.
- Submit required progress reports and commissioning meeting notes to the project and facility manager according to the schedule.
- Perform a detailed on-site assessment of the present maintenance practices and operating strategies, noting all possible deficiencies and improvements.
- Understand any equipment warranties and service contracts that are in place and how they can be leveraged on behalf of the project.
- Develop monitoring and testing plans.
- Perform short-term diagnostic monitoring.
- Develop, oversee, and document functional test procedures as needed.
- Develop master lists of deficiencies and needed improvements.
- Recommend and prioritize energy efficiency capital improvements for further investigation.
- Calculate the estimated energy savings and implementation costs for recommended capital improvements.
- Recommend an O&M plan for the facility, focusing on preventive maintenance.
- Provide training for building maintenance staff on preventive and corrective maintenance related to retro-commissioning outcomes.
- Develop methods for the Tribe and building maintenance staff to track the performance of energy efficiency improvements.
- Submit a final report and all specified deliverables.

Building maintenance person

- Gather and update building documentation.
- Provide detailed input into the initial assessment and investigation process.
- Perform appropriate preventive maintenance and commissioning-generated checklist tasks prior to any diagnostic or functional testing.
- Install and remove short-term diagnostic monitoring equipment.
- Assist with the performance of manual functional testing as needed.
- Attend project meetings and training as required.

SERC

- Participate in the project as needed, providing the retro-commissioning contractor with data and background information already collected by SERC in the course of preparing their earlier study.
- Assist the contractor to ensure that outcomes from the retro-commissioning process support the larger aim of increasing Yurok Tribe energy efficiency under the federal Energy Efficiency Community Block Grant (EECBG) that is funding this retro-commissioning effort.
- Be available to participate in meetings between Tribal staff and the contractor as requested by the Tribe.

Note: SERC staff should be copied on e-mail and written communications between the contractor and the Tribe in order to facilitate SERC's role as overall coordinator of EECBG implementation for the Tribe.

Required Proposal Materials

Proposals must include:

- A detailed narrative of the services to be provided and the approach the bidder intends to take to complete the project.
 - Include a detailed description of your organizations experience related to the proposed project. Include the length of time the organization has offered commissioning services, average number of commissioning projects performed each year, total number of commissioning projects performed.
 - Describe the experience and qualifications of organization staff that will be assigned to the project.
 - Provide a clear description of your proposed approach to managing the project. Include a project timeline.
 - Describe the number of tests planned and testing techniques that will be used. Describe the associated work products that will be developed.
 - Provide your DUNS number (information attached).
- A total cost for services to be provided, including labor, fringe benefits, consumable supplies, overhead/profit, travel, and any required taxes or fees. Please format your budget as follows
 - Project Start-up & Commissioning Plan
 - Investigation
 - Implementation of non capital Improvements
 - Retro-commissioning Report
- At least one final report submitted as a deliverable for a past building retro-commissioning project (information identifying the client may be deleted from the document)
- Three references (past clients who have engaged the bidder's services for a commissioning, re-commissioning, or retro-commissioning project on a commercial building of at least 20,000 square feet during the past three years)

Submittal of Proposals

Proposals can be sent by U.S. mail or overnight delivery service or hand-delivered to:

Sophia Lay
Yurok Tribe Planning Department

190 Klamath Blvd.
Klamath, CA 95548

Proposals must be received by **4:00 p.m.** local (Pacific) time on **October 1, 2010** Late proposals will not be considered. Proposals cannot be submitted by email or fax.

Proposal Evaluation and Award

Proposals will be read and evaluated by a team of Tribal Staff and/or consultants engaged by the Tribe for this purpose. An award will be made within ten (10) working days of the proposal submittal deadline.

Proposals will be evaluated using the following criteria:

1. **Proposal Narrative (30 Points):** The consultant's narrative description of services to be provided will be reviewed and evaluated under this item.
2. **Capacity (30 Points):** The consultant's qualifications will be reviewed to determine their ability to provide the services as required for this project. The Consultants past experience and letters of reference will be used to score this item.
3. **Previous Retro Commissioning (10 Points)** The consultant's final report submitted from a previous retro- commissioning will be reviewed and evaluated.
4. **Indian Preference (15 points)** if claiming Indian preference, consultants must complete the Yurok Tribe Tribal Employment Rights Ordinance (TERO) Indian Preference Certification Form (attached).
5. **Cost (15 points)** The consultant's cost proposal will be evaluated under this item.

Project Timeline

Contractor shall complete the scope of work and provide all deliverables within 90 days of award of contract.

Attachments:

TERO Ordinance
TERO Indian Preference Certification Form
DUNS Number Information
Yurok Tribe Utility Usage Information
Klamath Office Energy Audit

Terms and Conditions:

1. This RFP does not commit the Yurok Tribe to award a contract, issue a purchase order, or to pay any costs incurred in the preparation of a qualification in response to the RFP.
2. Organizations responding to this proposal shall not offer any gratuities, favors, or anything of monetary value to any officer, agent, contractor or employee of the Yurok Tribe for the purpose of influencing consideration of a qualification.

3. Organizations responding to this proposal shall not collude in any manner, or engage in any practices that may restrict or eliminate competition or otherwise restrain trade. This does not preclude subcontracts and joining ventures for the purpose of responding to this RFP and/or establishing a project team with the required experience and capability to provide the services specified herein.
4. Organization responding to this RFP, their authorized representatives, and their agents are responsible for obtaining, and will be deemed to have, full knowledge of the conditions, requirements, and specifications of this RFP.
5. The Yurok Tribe reserves the right to cancel this RFP or to reject any or all proposals received prior to contract award.
6. The Yurok Tribe reserves the right to request clarification of any proposal after all proposals have been received. The request can be in the form of oral presentation, written documentation or meetings.
7. The Yurok Tribe reserves the right to discontinue its evaluation of submittals from any respondents who submit false, misleading or incorrect information.

Tribal Employment Rights Ordinance

**YUROK TRIBE
TRIBAL EMPLOYMENT RIGHTS ORDINANCE**



DATE APPROVED: October 22, 2003

DATE AMENDED: June 9, 2005

SUBJECT: Establishment of the Yurok Tribal Employment Rights Office (TERO) and adoption of standards and procedural guidelines for application of Yurok and Indian Preference in Employment.

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SECTION 1.0 SHORT TITLE

The short title of this ordinance shall be the "Yurok Tribal Employment Rights Office Ordinance," or Yurok TERO Ordinance.

1.1 AUTHORITY

This Ordinance is established by the Yurok Tribal Council pursuant to the authority delegated to the Tribal Council by Article IV, Section 5(a) of the Constitution of the Yurok Tribe.

1.2 JURISDICTION

The jurisdiction of the Yurok Tribe to enforce the TERO ordinance shall extend to all Yurok tribal "territory" and the area within the exterior boundaries of the "reservation" as defined in Article I, sections 1 through 3 of the Constitution of the Yurok Tribe. Additionally, the Tribe retains jurisdiction to enforce provisions of the TERO ordinance for all projects initiated or taken over by the Yurok Indian Housing Authority, whether on, or off, the Yurok reservation.

1.3 STATEMENT OF PURPOSE

The Yurok Tribal Council operates under a constitutional mandate to protect the sovereignty of the Yurok Tribe and to provide for the cultural, social, and economic well being of current and future Yurok tribal members. In fulfillment of its duty to guarantee the unique employment rights of all Yurok tribal members and other Indians within its jurisdiction, the Yurok Tribal Council hereby creates a Tribal Employment Rights Office, (TERO) and establishes standards and procedural guidelines to assure 1) equal and effective application of this Ordinance; and 2) due process for all individuals affected by the application of its requirements.

1.4 CONSISTENCY WITH FEDERAL LAWS

Indians have unique and special employment rights, and are entitled to the protection of laws established by the federal government to combat employment discrimination on or near Indian reservations, including the following:

- 1.4.1 Title VII of the Civil Rights Act, including Section 703(i), which makes Indian preference in employment permissible.
- 1.4.2 Executive Order 11246 of the Federal Office of Contract Compliance, which exempts from the general requirements policies extending preference in employment for Indians living on or near an Indian Reservation, and which further prohibits discrimination among Indians as a group on the basis of religion, sex, or tribal affiliation. E.O. 11246 applies only to employers working under federal contracts.
- 1.4.3 The Indian Self-Determination Act, Section 7(b) of Public Law 93-638 which provides for Indian Preference in employment and training, and contracting or subcontracting on all contracts negotiated or let on behalf of an Indian Tribe.
- 1.4.4 The Indian Civil Rights Act of 1968 (ICRA) which prohibits Indian tribal governments from enacting or enforcing laws that violate certain individual rights similar to those individual rights guaranteed under the Bill of Rights of the United States Constitution.

SECTION 2. DEFINITIONS

- 2.1 "CHAIRPERSON" means the Chairperson of the Yurok Tribal Council.
- 2.2 "COMMERCE" means the exchange or provision of goods, services and/or property, or the offer of same, without reference to the locality where transaction is conducted or consummated.
- 2.3 "COMMUTE" means the distance in miles, one way, customary for the occupation and region.

- 2.4 **"CORE EMPLOYEE"** means an employee who performs an essential job function and has been identified as an employee who is vital to the success of the endeavor. (Core Employees should be identified in coordination with the TERO Office and employer possesses records of past employment as a supervisor or foreman).
- 2.5 **"TRIBAL COUNCIL" or "COUNCIL"** means the Yurok Tribal Council.
- 2.6 **"COVERED EMPLOYER"** means any person, company, contractor, subcontractor or entity located or engaging in commercial or employment activity on the Yurok Indian Reservation, and which employs two or more persons, including the Yurok Tribe, regardless of where the activity occurs.
- 2.7 **"EMPLOYEE"** means any non-supervisory employee in a non-managerial position working on the Yurok Indian Reservation or its contiguous lands.
- 2.8 **"EXECUTIVE DIRECTOR"** means the administrative officer designated by the Tribal Council as such.
- 2.9 **"Grandfathering"** means providing an exception to a restriction that allows all those already doing something to continue, even though it may be otherwise prevented by the restriction.
- 2.10 **"INDIAN"** means an enrolled member of any federally recognized Indian tribe.
- 2.11 **"INDIAN FIRM"** means a firm or business certified by the TERO Office as eligible for Indian preference in contracting and subcontracting. Indian(s) must hold at least 51% of such a firm or business and exercise majority management control. Verification of proof of ownership shall be provided to the TERO.

- 2.12 **"INDIAN PREFERENCE"** means the policy of extending preference in employment or training opportunities to Yurok Tribal Members and other Indians, regardless of tribal affiliation, over non-Indians; as well as the policy of extending preference in contracting opportunities to Yurok Tribal businesses or firms and Indian owned businesses or firms, regardless of tribal affiliation, over non-Indian firms.
- 2.13 **"LOCATED ON OR NEAR THE YUROK RESERVATION"** means located within what a reasonable, prudent person would construe as the normal commuting distance from a location off the reservation to the exterior boundaries of the Yurok Indian Reservation as defined in Article I, Sections 1 through 3 of the Constitution of the Yurok Tribe.
- 2.14 **"NOTICE"** means that notification required to be given by the Yurok TERO Officer, the appointed tribal judge, the Tribal Council sitting as the interim final appeal body, or the Tribal Court acting as the body of final appeal regarding TERO related activities.
- 2.15 **"PERSON"** means both natural persons and artificial persons including, but not limited to, corporations, trusts, partnerships, unions, agents, societies, and sole proprietorships.
- 2.16 **"QUALIFIED INDIAN"** means an Indian who meets the requirements for a position as determined by the job requirements, the minimum qualifications statements for the position, and, for internal tribal hiring only, the final interview process. No employer may utilize any employment criteria not legitimately-related to the performance of the position.

- 2.17 **"QUALIFIED TRIBAL MEMBER"** means a Yurok tribal member who meets the requirements for a position as determined by the job requirements, the minimum qualifications statement for the position, and, for internal tribal hiring only, the final interview process. No employer may utilize any employment criteria not legitimately-related to performance of the position.
- 2.18 **"SECRETARY"** means the Secretary of the United States Department of the Interior, or his/her duly-authorized and designated representative.
- 2.19 **"TERO OFFICER"** means the administrative officer employed by the Tribe to oversee and ensure compliance with the TERO Ordinance. The TERO Officer shall have the authority, for good cause shown, to impose sanctions and to issue stop work orders for reasons of non-compliance.
- 2.20 **"TRIBE"** means the federally recognized Yurok Tribe of the Yurok Reservation, operating under the authority of the Yurok Constitution.
- 2.21 **"UNION"** or **"LABOR UNION"** means any organization, of any kind, or any agency of employee representation committee or plan, associated or organized for the purposes of collective bargaining for the benefit of employees and that exists for the purpose, in whole or part, of dealing with employers concerning grievances, working conditions, or terms of employment.
- 2.22 **"YUROK RESERVATION"** means all lands within the exterior boundaries of the Yurok Reservation; and any lands outside the exterior boundaries of the Yurok Reservation subsequently acquired, or put into trust, for the Tribe.

2.23 "YUROK TRIBAL BUSINESS OR FIRM" means a firm or business certified by the TERO Office as eligible for Indian Preference in contracting and subcontracting; provided that a Yurok tribal member holds at least 51% ownership interest in such a firm or business and exercise majority management control. Verification of proof of ownership shall be provided to the TERO prior to the issuance of any TERO Permit.

SECTION 3.0 ROLE OF YUROK TRIBAL COUNCIL

3.1 Authority. Through the sovereign powers vested in the Yurok Tribal Council through the Constitution of the Yurok Tribe, the Council shall be responsible for designating such officers, agents, and employees as it deems necessary to assist in fulfilling Yurok Tribal TERO obligations, duties, and responsibilities. The Tribal Council will oversee TERO implementation; and shall either sit as the TERO Hearing body, or identify the composition of a hearing body

3.2 Council Expenses. The Yurok Tribal Council shall not receive compensation of any kind for fulfilling its TERO related duties, obligations, and responsibilities.

3.3 Duties of the Council. Within the scope of overseeing the Yurok TERO, the Council is authorized to prevent any person, whether an individual or an entity, from engaging in any unlawful Indian preference in employment practices as set forth in the Yurok Tribe's TERO Ordinance.

3.4 Powers of the Council. As the oversight body for TERO, the Council has jurisdiction and authority to:

3.4.1 Formulate, adopt, amend and rescind rules, regulations and guidelines reasonably necessary to implement the provisions of this ordinance.

3.4.2 To conduct hearings or appoint alternate hearing bodies and to subpoena witnesses and documents in accordance with this ordinance.

3.4.3 Prohibit covered employers from using qualification criteria or other personnel requirements that serve as barriers to Indian employment, unless the employer can demonstrate that such criteria or requirements are an essential business necessity, and receives written approval from the TERO Officer that such qualifications are essential.

3.4.4 Engage in discussion, and enter into agreements, with unions to ensure compliance with this ordinance. Such agreements shall in no way constitute recognition or endorsement of any union or union-related activity, including formation thereof.

3.4.5 Require employers to submit reports and take all actions deemed necessary for the fair and vigorous implementation of this Ordinance.

3.5 Delegation of Authority. The Tribal Council shall delegate such authority to the TERO administrative officer (hereinafter "TERO Officer") as is convenient or necessary for the efficient administration of this ordinance, except that the Council will not delegate its powers or duties to:

- 3.5.1 Adopt, amend or rescind rules, regulations or guidelines; or
- 3.5.2 Conduct hearings or impose sanctions outside the scope of Section 12 of this Ordinance; or
- 3.5.3 Appropriate funds and/or approve budgets; or
- 3.5.4 Waive the collection of TERO taxes.

SECTION 4. THE YUOK TRIBAL EMPLOYMENT RIGHTS OFFICE

4.1 Establishment of Office and Hiring of TERO Officer(s)

The Yurok Tribal Council hereby establishes the Yurok Tribal Employment Rights Office (hereinafter TERO OFFICE). The TERO Office is vested with the authority to implement the provision of this Ordinance. The Yurok Tribe Executive Director shall both hire the TERO Officer(s), and serve as his/her/their direct supervisor.

4.2 Coverage. All employers are required to give preference to Indians in hiring, promotion, training, temporary reductions in work force and all other aspects of employment, contracting, and subcontracting, and must comply with this Ordinance and the rules, regulations and orders of the Tribal Council.

4.3 Duties of the TERO Administrative Officer

The TERO Officer shall be charged with the overseeing the implementation and enforcement of this Ordinance, as well as day-to-day operations of the TERO office. The TERO Officer's duties include, but are not limited to, ensuring that Indian preference in employment is fully implemented by covered employers; and preventing any person from engaging in any unlawful practice that would interfere with application and/or enforcement of the provisions of this Ordinance.

4.4 TERO Officer Authority

The TERO Officer shall administer the policies and rules promulgated and adopted by the Tribal Council, and hold the powers and authorities prescribed by Council, including, but not limited to:

- 4.4.1 The authority to expend funds appropriated or obtained from various sources to carry out requirements of this Ordinance.
- 4.4.2 The authority to impose numerical hiring goals and timetables on an employer specifying the minimum numbers of qualified Tribal members and qualified Indians to be hired by occupation, craft, or skill level.
- 4.4.3 The authority to require employers to participate in such training programs as the Council, or its designee, deems necessary to further the goals of this Ordinance.
- 4.4.4 The duty to create and maintain a Tribal skills bank for all eligible Tribal members and other Indians residing in the administrative area covered by this Ordinance.

- 4.4.5 The ability to restrict or prevent the hiring of non-Tribal members or non-Indians until the TERO Officer certifies that qualified Tribal members or qualified Indians, as appropriate, are not available to fill the position in question.
- 4.4.6 The authority to enforce the Indian preference requirements of this Ordinance for Indian-owned businesses or firms, and Yurok Tribal businesses or firms in the awarding of contracts and subcontracts.
- 4.4.7 The ability to facilitate support programs to assist eligible Yurok Tribal members, the Yurok Tribal community and other Indians in obtaining and keeping employment.
- 4.4.8 The duty to recommend amendments or changes to the rules and regulations adopted by Council, or other actions necessary to achieve the purpose and objectives of the Yurok TERO established by this Ordinance.
- 4.4.9 The duty to locate training opportunities and programs designed to teach Yurok Tribal Members and other Indians skills and qualifications needed to obtain employment.
- 4.4.10 The TERO Officer shall have the authority to issue stop work orders and mandatory compliance orders when necessary either to achieve the goals of this Ordinance, or to compel compliance therewith. When necessary, the TERO Officer is also authorized to request assistance from the Yurok Tribe Office of Public Safety in enforcing any stop work order where circumstances in existence at the time of inspection reasonably warrant such intervention. The standard for whether assistance by Public Safety Officers is warranted is that of the reasonable person under the same or similar circumstances.

SECTION 5. APPLICABILITY AND COVERAGE

5.1 Applicability

Unless specifically prohibited by federal or Yurok Tribal law, this Ordinance shall apply to all employers, including but not limited to: the Tribal Council, (its programs, departments, entities, or enterprises); private employers; and independent contractors and subcontractors, including those performing work for the Council, the State of California, or the United States.

All employers shall extend an employment preference to qualified Indians, as provided in Section 5.4, in all aspects of employment, including but not limited to recruitment, hiring, promotion, lateral transfers, retentions, training, contracting, and subcontracting. No employer may recruit, hire, or otherwise employ any non-Indian for any employment position covered by this Ordinance, unless and until the TERO Officer has furnished written notice to such employer that no qualified Indians are available for such position.

5.2 Covered Positions

The Yurok Tribe Indian Employment Preference Policy, Section 5.4, shall apply to every job classification, skill area, or craft recognized or utilized by an employer, including administrative, supervisory, and professional classifications.

5.3 Qualified Indians and Employment Criteria

An Indian shall be deemed qualified for employment in a position if he/she meets the minimum requirements for such position. Any qualified Indian shall be afforded the preference to which he/she is entitled under Section 5.4 of this Ordinance. No employer may utilize any employment criteria that is not legitimately related to the performance of the position; and that has not been approved by the Yurok TERO Officer.

5.4 Eligible Indians

To the extent allowed by law, the Yurok Tribe and its entities shall extend a preference in hiring according to the following priorities:

- (1) Members of the Yurok Tribe;
- (2) Indian Spouses of members of the Yurok Tribe;
- (3) Other Indians;
- (4) Non-Tribal Spouse of members of the Yurok Tribe;
- (5) Other

The priorities listed above, however, shall not apply to any project subject to certain procurement processes or funding. With regard to these types of projects, all enrolled members of federally-recognized Indian tribes, whether Yurok Tribal members or not, are eligible for employment equally.

SECTION 6. IMPLEMENTATION OF SPECIFIC INDIAN PREFERENCE REQUIREMENTS

6.1 Employers, Contractors, and Subcontractors

The requirements set forth in this Ordinance are binding on all employers, contractors, and subcontractors and will be considered a part of all resulting subcontract specifications. The employer bears the primary responsibility for compliance with the requirements of this Ordinance, and for ensuring that all contractors and subcontractors similarly comply.

All employers, contractors, and subcontractors shall be subject to the penalties provided herein for non-compliance with the terms and requirements of this Ordinance. All employers, contractors and subcontractors shall include in their contracts clauses acknowledging the equal opportunity and Indian preference requirements contained in this Ordinance.

6.2 Goals and Timetables for Indian Employment

The TERO Officer will consult with individual employers engaged in commerce on, or near, the Yurok Reservation to establish the minimum number of qualified Tribal members and qualified Indians to be employed by each employer. Goals will be established for all job classifications and skill areas, and will include administrative, supervisory, and professional categories. The goals set will be expressed as:

- 6.2.1** Project hours of Tribal Members and Indian employment as a percentage of the total project hours worked by the regular work force for each specific job classification, skill level, or category.
- 6.2.2** Numerical goals based on surveys of the available Tribal member and Indian labor forces and projections of employment opportunities for each specific job classification, skill level, or category.

6.3 Training

Employers may be required under this Ordinance to participate, or assign interested Yurok Tribal members and other Indians to participate, in training programs designed to assist Tribal members and Indians in becoming qualified in those occupations or job categories specific to the respective employer.

Indian preference requirements under this Ordinance include a mandate for hiring tribal members and Indian trainees or apprentices according to the usual practice of the occupation or trade. The ratio of trainees or apprentices to fully-qualified workers or journeyman in any particular trade may be set by the TERO Officer following consultation with the employer.

Employers having a collective bargaining agreement with a union will be required to obtain an agreement from the union that supports the objectives and goals of the trainee/apprentice hiring plan.

In the event the requirements of this Ordinance create a conflict with any union's seniority rights, the TERO Officer shall have the authority to negotiate such ratios with a prospective employer/contractor.

6.4 Tribal Skills Bank and Referral Process

The TERO Officer shall, in cooperation with other tribal departments, establish and administer a data bank of Yurok Tribal members and other Indians seeking employment. This data bank shall be called the Tribal skills bank, and shall list all available workers, their respective skills and qualifications, and include documentation of training or other special qualifications and/or needs.

No employer may hire non-tribal members until a reasonable time for referral, as defined in this subsection, has elapsed or the TERO Office has certified, in writing, that no qualified Tribal members or other qualified Indians are available to fill particular job openings.

"Reasonable time for referral" for purposes of this Ordinance means:

- (a) For construction jobs: the TERO Officer will locate and refer qualified Tribal members within 72 hours of the date and time of receiving the initial notice of available opening from the employer.
- (b) All other jobs: the TERO has five (5) working days from the date of receipt of the initial notice of available opening to locate and refer qualified Tribal members.

The TERO Officer may agree to waive or modify these requirements if there is a clear indication that the time limits would impose an undue burden on the project.

Employers with collective bargaining agreements are exempt from the requirements of this subsection if the union agrees to accept direct referrals from the TERO Officer. If the union does not fulfill its obligation to accept referrals, the TERO Officer may require the employer to accept referrals of qualified Tribal members or qualified Indians from other sources.

Employers found to be in violation of this Subsection will be subject to the penalties defined in Section 12 of this Ordinance and may further be required to remove any employees so hired.

6.5 Preference in Employment Contracting and Subcontracting

Contingent on funding source requirements, all employers shall give preference first to Yurok-owned businesses or firms, and second to Indian-owned businesses or firms in the award of any contract or subcontract. The TERO Officer will register and maintain a list of both Yurok and Indian owned businesses or firms. The TERO Officer shall promulgate regulations for documenting such Yurok and Indian-owned businesses or firms. Employers are not required under this Ordinance to take any extraordinary measure to identify such businesses.

For purposes of establishing eligibility for Indian Preference in contracting and subcontracting, the TERO Officer is authorized to actively recruit and certify Indian firms, whether located within or outside the Yurok Reservation. Any Contractor wishing to claim Indian preference with the Yurok Tribe TERO must complete the TERO Contractors Qualification Questionnaire for Indian Preference Contracting. Once certified by the TERO Officer as either a Yurok Tribal or Indian firm, applicants will be placed on a bidders' eligibility list. The TERO Officer will also register off-reservation and non-Indian firms that complete the Contractors Qualification Questionnaire.

Contingent on funding requirements, preference in contracting or subcontracting shall be accorded first to Yurok Tribal members. For example, if a non-Indian or non-Yurok Indian submits the lowest bid, and a Yurok Tribal member or Yurok-owned business submits a bid that is within five percent (5%) of the non-tribal member bidder, the Yurok Tribal member or Tribal member firm shall be provided the opportunity to match any bids within 5%. The contract shall then be awarded to the Yurok Tribal member or business.

6.6 Indian Preference/Pre-Award Labor Force Projection

Each Contractor shall include in its bid an Indian Preference Plan for the master contract and any subcontracts. The plan shall indicate the name of the proposed subcontractor; whether it is an Indian-owned firm; and, if not, information on the good faith steps taken to identify Indian firms for the subcontract. A contractor may not refuse to employ an Indian subcontractor on the basis of price, so long as the Indian firm's price is within five percent (5%) of the lowest bid, calculated by multiplying the lowest bid by 105%. A contractor may not refuse to employ an Indian subcontractor on the basis that a non-Indian firm is more qualified, so long as the Indian firm satisfies the threshold requirements for technical qualifications.

6.7 Failure to Submit Indian Preference/Pre-Award Labor Force Projection

A successful bidder who fails to submit an Indian Preference/Pre-Award Labor Force Projection Form prior to award of the contract shall be considered a non-responsive bidder for the purpose of awarding the contract and will be disqualified.

6.8 Amendments to Plan

If awarded the bid, the prime contractor can neither amend nor deviate from the Indian Preference Plan, nor add or delete any subcontracts or subcontractors without:

- (a) Written consent of the prime contractor or his/her designee; and

- (b) Written notice to Yurok TERO at least ten (10) business days prior to the date of the anticipated change; and

- (c) Written authorization to proceed with the proposed amendments(s) from the TERO Officer prior to the date of implementation.

6.9 Bid Shopping Prohibited

A contractor is prohibited from engaging in "bid shopping" as a means of avoiding its Indian preference obligations with regard to subcontracts. "Bid shopping" is the use of a low bid already received by a general contractor to pressure other subcontractors into submitting even lower bids.

6.10 Layoffs or Reductions in Workforce

6.10.1 Termination of Yurok Tribal Members

Contingent on funding requirements, no worker who is a Yurok tribal member will be terminated due to a reduction in workforce if a worker who is also Indian is still employed in the same job classification. If an Employer lays off workers by crews, all qualified tribal members must be transferred to other crews to be retained as long as other Indians in the same job classification are employed elsewhere on the job site.

6.10.2 Termination of Indians

No worker who is an Indian will be terminated due to a reduction in workforce if a non-Indian worker in the same job classification is still employed. If an employer lays off workers by crews, all qualified Indians must be transferred to other crews to be retained as long as non-Indians in the same job classification are employed elsewhere on the job site.

6.11 Consideration for Promotion

Every employer shall give Indians preferential consideration for all promotion opportunities, and shall encourage Indians to seek such opportunities. For every supervisory position filled by a non-Indian, the employer shall file a report with the TERO Office expressly indicating:

- (a) What efforts were made to inform Indian workers about the position; and
- (b) How many Indians applied for the position; and
- (c) The reason(s) why each Indian was not hired for the position.

6.12 Summer Employment for Students

Employers will make every effort to promote after-school, summer, and vacation employment for Indian students. Contingent on funding source requirements, qualified Yurok tribal members will be given preferential treatment for existing summer student employment programs.

SECTION 7. TERO PERMIT PROCESS

The TERO Officer will only issue permits to employers conducting work either within the exterior boundaries of the Yurok Reservation, or on tribally-funded projects, whether on- or off-Reservation, that comply with the following terms and conditions:

- (a) Timely completion of a TERO Indian Preference Plan and Pre-Award Labor Force Projection Form; and
- (b) Filing the form with the Yurok TERO before commencing work; and
- (c) Inclusion of an Indian Preference Plan for the prime general contract and any subcontract(s) in each and every bid packet(s) submitted. The plan shall indicate:
 - i. The name of the proposed subcontractor(s); and
 - ii. Whether it is an Indian-owned firm and, if not, information on the good faith steps taken to identify Indian firms for the subcontract.

The employer agrees to comply with the requirements and procedures for the selection of contractors, subcontractor(s) and recruitment of viable Indian applicants pursuant to this Ordinance and through the TERO office. The employer understands that they are required to comply with the Yurok Tribe's TERO Ordinance and all of the requirements regarding "Indian Preference."

The TERO Pre-Award Labor Projection Form constitutes an agreement between the Yurok TERO and any employer engaging in commerce and employment activity pursuant to this Ordinance.

SECTION 8. THE YUROK TRIBAL EMPLOYMENT RIGHTS FEE

8.1 Establishment of Tribal Employment Rights Fee

There is hereby established a TERO fee to be paid to the Yurok Tribe TERO Office by each covered employer. The purpose of the fee is both to raise revenue for operation of the Yurok TERO, and provide educational job training services to Yurok Tribal Members.

8.2 Fee Schedule

- 8.2.1** Covered employers with a construction contract must pay a one-time fee of three-percent (3%) of the total gross amount of the contract, where the total contract amount is at least two-thousand dollars U.S. (\$2,000.00 U.S.).
- 8.2.2** All other covered employers shall be assessed a fee at the rate of one-half of one-percent (1/2 of 1%) of that covered employer's total gross annual revenue earned directly from engaging in commerce and/or business on the Reservation.

8.3 Duties of TERO Officer/Method of Payment

The TERO Officer shall be responsible for collecting all TERO fees from covered employers.

- 8.3.1** The TERO fee shall be paid to the Yurok Tribe; and shall be credited to the account of the Yurok Tribe TERO for use in implementing this Ordinance; and shall be governed by guidelines approved by the Yurok Tribal Council.
- 8.3.2** The TERO fee may be paid in incremental payments, subject to prior approval of the Yurok by the Tribe's Finance Department and execution of a written agreement in a form acceptable to same. The agreement to make incremental payments shall be affixed to the contract to which the TERO fee applies.
- 8.3.3** The Yurok Tribe Fiscal Department shall be exempt from any TERO Fees.

- 8.3.4 A contractor or employer that fails to pay the TERO fee pursuant to terms set forth in this Ordinance, shall be subject to sanctions set forth in section 12 herein.
- 8.3.5 All TERO fees shall be made payable to the Yurok Tribe and forwarded to the following address:

Yurok Tribe
Fiscal Department
P.O. Box 1027
Klamath, CA 95548

SECTION 9. COMPLIANCE BY UNIONS

Every union entering into a collective bargaining agreement with a covered employer must file a written agreement confirming the union's intent to comply with this Ordinance, and the rules, regulations, and orders of the Yurok TERO. Until such agreement(s) is/are on file with the TERO, the employer may not proceed with work on the Yurok Reservation or its defined contiguous lands.

9.1 Mandatory Elements of Union Agreements

Every union agreement filed with the Yurok TERO must include:

- 9.1.1 Contingent on funding requirements, a statement of Yurok Tribal Member Preference, under which the union will give a preference first to qualified Yurok tribal members, and second, to qualified Indians, in job referral, regardless of which union dispatch list they occupy.
- 9.1.2 A statement that the union will cooperate with the Council and the TERO Officer with regard to TERO compliance under this Ordinance.
- 9.1.3 Contingent on funding requirements, the union will establish a mechanism allowing first, qualified Yurok tribal members, and second, qualified Indians, to register for job referral lists by telephone or mail.

9.1.4 Contingent on funding requirements, the Union will first "grandfather" all qualified Yurok tribal members and secondly, all qualified Indians, who qualify for journeyman status and wish to join the Union.

9.1.5 Contingent on funding requirements, the union will grant temporary work permits first, to qualified Yurok tribal members; and second, to qualified Indians, who do not wish to join the Union.

9.1.6 The Union will expressly agree to subject itself to the jurisdiction of the Yurok Tribe and the Yurok Tribal Court for purposes of this Ordinance.

9.2 Recognition of Unions

Nothing provided in this Ordinance, nor any activity authorized by the Council or Yurok TERO, constitutes official tribal recognition of any particular union. The utilization of any such union shall not be construed as an endorsement of any particular union activities on the Yurok Reservation or its contiguous lands.

SECTION 10. DUE PROCESS AND HEARINGS

10.1 Right to Hearings

An individual, employer, union, or the TERO Officer may request a hearing pursuant to either allegation(s) of a violation of this Ordinance; or that any rule, regulation, or order of the TERO Officer is believed to be erroneous or illegal.

10.2 Notice of Hearing

Whenever a hearing is requested by the TERO Officer, an individual, an employer, or a union, written notice thereof must be provided to all involved parties.

10.2.1 Said notice shall include:

- (a) The names of all parties to an action; and
- (b) Names of those not yet party to an action, whenever known; or whose identity as a potential party or parties would be discovered through the exercise of due diligence; and
- (c) The nature of the hearing; and
- (d) An express statement that the party or parties named have the right to be present at the hearing; and
- (e) An express statement that anyone named in the notice has the right to present testimony of witnesses or other evidence; and
- (f) An express statement that anyone named in the notice has the right to representation by counsel at their own expense; and
- (g) An express statement that the TERO Officer may be represented by General Counsel for the Yurok Tribe.

10.2.2 Notice shall be published in at least two newspapers of appropriate circulation. If the whereabouts of any party or parties is unknown, then:

- (a) Notice shall be posted in a public place within the Yurok Reservation for not less than ten (10) working days; and
- (b) Notice shall be kept on file in the tribal offices located in Eureka, Weitchpec, and Klamath, available upon request; and
- (c) Notice shall also be posted in the Eureka, Weitchpec, and Klamath tribal offices and therefore, available for public inspection.

10.3 TERO Office Complaint Procedure

The TERO Officer may file a complaint on the basis of noncompliance with the requirements of this Ordinance by an employer, contractor, subcontractor, or union.

The TERO Officer may first attempt to resolve the matter informally, but if that is not possible or futile, the TERO Officer may request a hearing pursuant to subsection 10.1 of this Ordinance.

10.4 Individual Complaint Procedure

- 10.4.1 An individual may file a complaint with the TERO Office regarding any alleged violation on the part of an employer, contractor, subcontractor, or union. To substantiate a verbally-delivered complaint, the TERO Officer must request that the complainant submit the complaint in writing.
- 10.4.2 Upon receipt of a written complaint, the TERO Officer has an affirmative duty to investigate the allegations. Both the party or parties named as violators and the complainant will receive written notice stating that an investigation will be conducted and setting forth with specificity the factual basis for the complaint.
- 10.4.3 Once the investigation is complete, the TERO Officer will issue a written finding either sustaining or not sustaining the alleged violation(s). If the allegations are not sustained, the complaint shall be dismissed and written notice provided to all involved parties within ten (10) business days of the date of the finding. If the allegations are sustained, the TERO Officer shall issue written notice within ten (10) business days of the date of the finding to all involved parties.
- 10.4.4 If an allegation of a TERO violation is sustained, the TERO Officer will then request to meet informally with both the complainant and TERO violator in an attempt to resolve the issue. The request for a meeting can be made either in writing or telephonically. If telephonic, a log shall be kept at the Yurok TERO containing the date, time, and content of the conversation.
- 10.4.5 If the matter cannot be resolved informally, either the parties or TERO Officer may request a hearing pursuant to Subsection 10.1.

10.4.6 Any employer, contractor, subcontractor, or union that takes retaliatory action against a Yurok tribal member or other Indian employee who has utilized this complaint procedure, or who asserts any rights under this Ordinance, will be subject to the penalties provided in section 12 of this Ordinance.

10.5 Complaint by an Employer or Union

10.5.1 Any employer or union may file a complaint with the Yurok Tribal Council alleging that a provision of this Ordinance, or any rule, regulation, or order of the TERO Office is illegal, erroneous, and/or erroneously applied.

10.5.2 Any such complaint must be in writing, and addressed to both the Tribal Council and TERO Officer. The complaint must specify, in detail, the basis for the complaint.

10.5.3 Upon receipt of the complaint, the Tribal Council, or its designee, shall schedule a hearing on the merits. To prevail at the hearing, the employer or union must establish prove their allegations by a preponderance of the evidence. Following the hearing, the Council must rule whether the allegation(s) is/are sustained or not sustained. The finding shall be forwarded within ten (10) business days of the date of the decision to all involved parties, along with notice of the right to appeal the decision of the Council to the Yurok Tribal Court.

10.6 Investigations

The TERO Officer and/or any field compliance officer designated by the Council may conduct such private or public investigations within the jurisdiction of this Ordinance, to determine the facts or the instances of alleged violations of this Ordinance. The TERO Officer and/or field compliance officer may enter the place of business or employment of any employer to conduct such investigations during regular business hours.

Investigations can include, but are not limited to: taking statements of workers on site or at the Yurok Tribal headquarters, whether by hand or recording device; taking photographs or video recordings of work areas and workers on any given site; requesting certified payroll records, proof of liability and workmen's compensation insurance, and any other regularly-kept business records relating to employee attendance and activity; making more than one site visit per day; taking statements, whether by hand or via a recording device, of community members having information about an employer's practices that formed the basis of a written complaint; and interviewing record-keeping staff of any respective employer.

10.7 Hearing Procedures

The following procedures will apply all hearings:

- 10.7.1** All parties may present testimony of witnesses and other evidence; and may be represented by counsel at their own expense.
- 10.7.2** The Tribal Council or TERO Officer, may receive advice and assistance from the Yurok Tribe's in-house legal counsel. Outside counsel, when deemed necessary by the Council, may also be consulted.
- 10.7.3** The hearing shall be governed by the rules of practice and procedure adopted by the Council. The Council shall not be bound by technical rules of evidence while conducting hearings, and no informality in any proceeding, including the manner of taking testimony, shall invalidate any order, decision, rule or regulation made, approved, or confirmed by the Council.
- 10.7.4** Depending on the type of hearing, the following person(s) may preside: The Chair or Vice Chair of the Tribal Council or a hearing officer appointed by the Tribal Council.
- 10.7.5** Any finding sustaining an allegation of violation by any party defendant must be supported by a preponderance of the evidence.

10.7.6 At the close of the hearing, the Council may take immediate action or take the matter under advisement and render a decision on a later date. If rendering of a decision is postponed, all parties shall be so notified, on the record, prior to adjourning the hearing session. If possible, a date by which a final decision will be rendered shall also be provided to all parties.

10.7.7 Any decision by a hearing officer, or hearing body, must be issued in writing, and submitted no more than thirty (30) days after the date of the conclusion of the hearing. It shall be served on all parties via certified mail, return-receipt requested, or in person. If service is accomplished in person, proof of receipt shall be achieved by having the recipient place their signature in a logbook bearing a brief description of the document(s) received. The logbook shall be kept at the Tribal headquarters in Klamath, California.

10.7.8 Official transcripts shall be made of every hearing conducted. Said transcript(s) shall be made available to any party wishing to appeal the decision of the Tribal Council or its designee for a fee of two-hundred-fifty-five dollars U.S. (\$250.00 U.S.). From time-to-time, this fee shall be adjusted without prior notice to account for increased market costs and inflation. Should the Yurok Tribal Council contract transcription services outside the Tribal facility, the rate shall be the market rate for that particular service provider. In the event the appellant is the TERO Officer and/or his/her designee, the fee for the transcript shall be waived unless the transcript is provided by a contract transcription services provider.

10.8 Appeals

10.8.1 Accurate records of all testimony, evidence, and other matters material to the issue on appeal presented at evidentiary hearings conducted by the Council or its designee.

10.8.2 Any final order of the Tribal Council may be appealed to the Yurok Tribal Court. On appeal, the case will be tried de novo.

10.8.3 The Notice of Appeal must:

- (a) Be filed, in writing, at the TERO Office within fifteen (15) days after the date of entry of the final order.
- (b) Identify the order and set forth the grounds upon which the request for a reversal or modification is sought.

10.8.4 Compliance with any order, which is the subject of a timely appeal, will be held in abeyance pending a decision on the matter by the Tribal Court. If an order under appeal is modified or set aside by the Tribal Court, the decision of the Tribal Court will be sent via certified mail, return-receipt requested, to all parties. Any amendments to this Ordinance ordered as a result of an appeal to the Tribal Court will be sent via certified mail, return-receipt requested, to employers, federal and state agencies, and other interested parties; and will be posted in public places on the Yurok Reservation.

10.9 Confidentiality

10.9.1 All information collected pursuant to an investigation authorized under this Ordinance shall be kept confidential. Portions of hearings that involve the use or disclosure of confidential documents such as employee records shall be closed to the public, and files containing such confidential information shall be sealed. Such confidential information may only be obtained pursuant to a Tribal Court order following a hearing on an affidavit proving the necessity of disclosure.

10.9.2 Any person whose confidential information is sought shall be given sufficient notice in advance of disclosing such confidential information, so that the person may object to the disclosure.

SECTION 11. TERO COMPLIANCE

As of the effective date of this Ordinance, no new covered employer may commence work on the Yurok Indian Reservation without consulting with the Tribe through its TERO Office, and filing an acceptable Indian Preference Plan and a TERO Pre-Award Labor Force Projection Form.

SECTION 12. REPORTING AND ON-SITE INSPECTIONS

Each employer, as part of their compliance activity, shall submit monthly reports to the TERO Office, on a form provided by the TERO Officer, indicating the number of employees - including a separate tally of Indians - on its workforce; monthly hires and terminations and/or lay-offs; and other information as may be identified on the form.

An employer who fails to submit monthly reports shall be subject to sanctions.

The TERO Officer will have the authority to make on-site inspections during regular working hours in order to monitor compliance with this Ordinance, and any other rules, regulations, and/or order of the TERO Officer or Council. The TERO Officer or designated field compliance investigator has the right to inspect and copy all relevant records of any employer, signatory union, contractor, or subcontractor, to interview or speak to workers and otherwise conduct investigations on the job site. All information collected will be kept confidential unless or until disclosure is required during a hearing or appeal as provided in section 10.7.

SECTION 13. PENALTIES FOR VIOLATIONS

Any employer, contractor, subcontractor, or union who violates this Ordinance or the rules, regulations, or orders promulgated by the TERO Officer or Council will be subject to the following penalties for such violation:

- (a) Denial of the right to begin or continue business or commerce, suspension of all operations; and/or prohibition from engaging in future operations (debarment) on, or within, the Yurok Reservation and its contiguous lands.
- (b) Payment of any back pay and damages to compensate any injured party.
- (c) Removal of any employees hired in violation of this Ordinance or the rules, regulations, and orders pertaining thereto.
- (d) An order requiring the employment, promotion, or training of qualified Tribal members, and other Indians who suffered economic injury as a direct result of the violation.
- (e) Imposition of monetary civil penalties and fines.
- (f) An order mandating changes in procedure or policies necessary to eliminate or correct the violation.
- (g) An order mandating any other provision deemed necessary by the TERO Officer, the Council, or the Tribal Court to alleviate, eliminate, or compensate for any violation.

The maximum penalty that may be imposed is \$500.00 for each occurrence. Every day during which a violation exists shall be deemed a separate occurrence.

SECTION 14. ORDERS OF THE YUROK TRIBAL POLICE

The Yurok Tribe Office of Public Safety is expressly authorized and directed to enforce any cease and desist or related order issued by the TERO Officer, in-house legal department, or Council only when such order is supported by either a judicial decree, or order, from the Yurok Tribal Court. The Tribal police will not be civilly liable for enforcing such Tribal Court orders or judicial decrees, provided that the order or decree bears the signature of a judge of the Tribal Court.

SECTION 15. PUBLICATION OF ORDINANCE

The Council will notify all Covered Employers regarding the adoption of this Ordinance and their obligation to comply. All bid announcements issued by any tribal, federal, state, or other public or private entity shall contain a statement that the successful bidder will be required to comply with this Ordinance and all rules, regulations, and orders of the TERO Office and Tribal Council within it's jurisdiction. Council will send copies of this Ordinance to every employer operating on, or near, the Yurok Reservation or its contiguous lands, as defined in this Ordinance; and to every covered employer within thirty (30) days of the effective date of this Ordinance.

SECTION 16. SEVERABILITY

If any provision of this Ordinance, or its application to any person or circumstances, is held invalid by a court of appropriate jurisdiction, the remainder of the Ordinance or application of the provision to other persons or circumstances, shall not be affected thereby.

SECTION 17. EFFECTIVE DATE

This Ordinance shall be effective and enforceable from the date of its approval and adoption by the Yurok Tribal Council.

SECTION 18. SOVEREIGN IMMUNITY

Nothing in the enactment, contents, administration, or enforcement of this Ordinance is intended to, nor shall, waive the sovereign immunity from unconsented suit of the Yurok Tribe, its officers, officials, employees, or agents acting within the course and scope of their official duties or authority, including, but not limited, to the following:

- (a) Taking legal action against any person to enforce or otherwise further the purposes of this Ordinance;
- (b) Defending legal action taken by another person to invalidate all or a portion of this Ordinance, or any actions taken under the authority of this Ordinance, for any failure to act under this Ordinance; or
- (c) Acting to enforce any penalties or sanctions under this Ordinance.

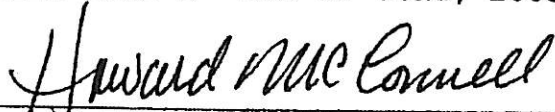
SECTION 19. EXCLUSIVITY OF REMEDY

The procedures, remedies, and forums set forth in this Ordinance are the sole and exclusive procedures, remedies, and forums for addressing any grievances, claims, or causes of action brought by any person pursuant to this Ordinance. The Tribe specifically does not consent to any grievances, claims, or causes of action other than those set forth in this Ordinance. By enacting this Ordinance, the Tribe is not creating any private causes of action.

C*E*R*T*I*F*I*C*A*T*I*O*N

This Yurok Tribal Employment Rights Office Ordinance amendment was passed at a regularly scheduled meeting of the Yurok Tribal Council on **June 9, 2005**, at which a quorum was present and this Ordinance was approved by a vote of 7 FOR 0 OPPOSED 0 ABSTENTIONS in accordance with Article 4, Section 5 (j) of the Constitution of the Yurok Tribe.

DATED THIS 9th DAY OF JUNE, 2005



Howard McConnell, Chairman
Yurok Tribal Council

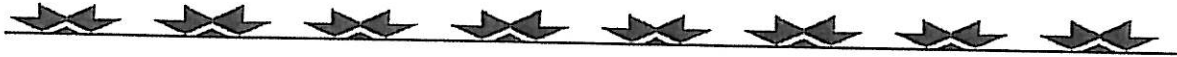
Attest:



Cynthia Carlson
Executive Assistant

Yurok Tribe Contractor's/Business Indian Preference Certification

**YUROK TRIBE
CONTRACTOR'S/BUSINESSES – INDIAN PREFERENCE CERTIFICATION**



**YUROK TRIBE
TRIBAL EMPLOYMENT RIGHTS OFFICE
190 Klamath Blvd., P.O. Box 1027
Klamath, California 95548
(707) 482-1350
(707) 482-1361 FAX**

A Contractor/Business must pre-register with the Yurok Tribe TERO to be placed on a "bidders" list certified as Indian Preference. A Contractor's/Business certification must be submitted by each contractor/business interested in bidding on a job within the jurisdiction of the Yurok Tribe. If a Contractor/Business intends to subcontract any portion of the work on which it is bidding, it may only utilize subcontractors that are also registered. Thus, each prospective contractor/business, and all subcontractors it will employ, must complete a separate certification.

This certification is not a public record and is not open to public inspection. All information provided will be kept confidential to the extent permitted by law. The Yurok Tribe reserves the right to reject any and all "certification forms" and to waive any irregularities in the information contained therein. Each certifying contractor/business shall be required to re-submit a new certification annually, although the Yurok Tribe reserves the right to require a contractor to submit a new certification at any time. An individual who has the legal authority to bind the contractor or subcontractor on whose behalf that person is signing must sign each certification under penalty of perjury. If any information provided by a contractor/business or subcontractor becomes inaccurate, the party that provided the information must immediately notify the TERO and provide updated accurate information in writing and under penalty of perjury.

INDIAN PREFERENCE CERTIFICATION

This certification is also intended for certification of a majority or wholly-owned Native American business interested in providing their services and/or products via contracting opportunities under the purview of the TERO program as provided for by the Indian Self-Determination and Education Assistance Act, (P.L. 93-638), specifically 7(b), and other applicable federal and tribal laws.

Certification of Native American-owned businesses is designed to : 1.) Verify that the applicant is Native American;; 2.) That the applicant is majority owner, if not 100% of the business, and; 3.) That the applicant is the primary beneficiary of the business being certified. Documentation and information required is essential to fulfill the criteria. Any deliberate or intentional effort to misrepresent the ownership of the business applying for certification will result in exclusion of contract opportunities by the Yurok Tribe.

YUROK TRIBE
CONTRACTOR'S/BUSINESSES -- INDIAN PREFERENCE CERTIFICATION

GENERAL INFORMATION:

1. Firm Name and Address: _____

Telephone Number: _____

Fax Number: _____

E-mail or Web Site: _____

Contractors/Business License # _____

California State Licensing Board (CSLB) (attach a copy)
Include all licenses e.g., Electrical, Plumbing, Roofing, etc.

Has License been revoked at any time in the last five years? Yes ☐ No ☐
If yes, please use a separate sheet to explain.

Has Contractor filed bankruptcy within the last 10 years? Yes ☐ No ☐

Federal Identification No: _____

Certification with any state Minority Business Enterprise (MBE), Women Business Enterprises (WBE), Disadvantaged Business Enterprises (DVBE), or Emerging Small Business (ESB) program. If so, please provide copy of your certification approval.

State(s) Certified: _____

Small Business Administration 8(a) Certification No.: _____ Exp: _____

Yurok Tribe Incorporation I.D. No.: _____

2. Type of Business: _____

3. Organizational Structure:

_____ SOLE PROPRIETOR

_____ PARTNERSHIP

_____ CORPORATION

_____ JOINT VENTURE

_____ OTHER

YUROK TRIBE
CONTRACTOR'S/BUSINESSES -- INDIAN PREFERENCE CERTIFICATION

3. Name of Owner/Owners: _____

4. Tribe of Owner Claiming Indian Preference: _____
(If applicable)

(Must be supported by documentation from the Bureau of Indian Affairs and/or Tribal Chief or Chairman). Please attach a copy of Indian Preference Verification for each officer, partner, or individual designated as an Indian if filing as a Partnership or Corporation.

If your company is either a Partnership or Corporation, explain in narrative form, the stock ownership, structure, management, control, financing, and salary or profit sharing arrangements of the enterprise. Attach copies of all shareholder agreements, including voting trust, employment contracts, agreements between owners and enterprise. Include information on salaries, fees, profit sharing, material purchases, and equipment lease or purchase agreements. Evidence relating to structure, management, control, and financing should be specifically included. Also, list the specific management responsibilities of each principal, sole proprietor, partner, or party to a joint venture.

5. Ownership Interest: _____ PARTIAL (List percentages of Ownership)
_____ 100% OWNERSHIP

6. Provide a listing of individuals and organizational structure of your firm's management staff. Also, provide resumes for Key Personnel. Indicate the core crew employees in your work force, their job titles, and whether they are Indian or Non-Indian. Core crew is defined as an individual who is either a current bonafide employee or who is not a current employee but who is regularly employed in a supervisory or other key skilled position when work is available. ***Attach a separate list to this questionnaire.

7. Specify, what type of construction/contracting your firm engages in:

8. Geographical Area of Interest: _____

9. Magnitude of Project on which you desire to bid (If Applicable):

YUROK TRIBE
CONTRACTOR'S/BUSINESSES -- INDIAN PREFERENCE CERTIFICATION

Under \$25,000	_____
Up to \$200,000	_____
Up to \$500,000	_____
Up to \$1,000,000	_____
Over \$1,000,000	_____

10. Experience:

Please list at least five (5) of your most recent projects. Give name of an Individual for your Reference:

PROJECT	AMOUNT	REFERENCE	PRIME/SUB
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

11. SUBCONTRACTORS:

Give the following information on at least six subcontractors with whom your company currently does the most business (or list fewer if you use less than six subcontractors).

COMPANY	CONTACT PERSON	PHONE #
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

12. SUPPLIERS:

List four or more major suppliers from whom you purchase construction materials. Include names and phone numbers.

SUPPLIER NAME	PHONE NUMBER
_____	_____
_____	_____
_____	_____
_____	_____

YUROK TRIBE
CONTRACTOR'S/BUSINESSES -- INDIAN PREFERENCE CERTIFICATION

CERTIFICATION

I CERTIFY THAT ALL STATEMENTS MADE BY ME ON THIS CONTRACTOR'S CERTIFICATION ARE TRUE, COMPLETE AND CORRECT TO THE BEST OF MY KNOWLEDGE. I HEREBY GRANT PERMISSION TO THE YUROK TRIBE AND ITS TERO TO CONFIRM BY PERSONAL INQUIRY OR OTHERWISE, THE INFORMATION I HAVE GIVEN. I UNDERSTAND THAT ANY WILLFUL MISREPRESENTATION OF FACTS GIVEN TO THIS PROCESS IS GROUNDS FOR REJECTION OF THIS QUALIFICATION FOR INDIAN PREFERENCE CONTRACTOR'S CERTIFICATION OR DISMISSAL IF EMPLOYED. I RELEASE ALL PERSONS CONNECTED WITH ANY REQUESTS FOR INFORMATION FROM ALL CLAIMS, LIABILITY, AND DAMAGES FOR WHATEVER REASON ARISING OUT OF FURNISHING THE INFORMATION.

I hereby acknowledge that I have read and understand the above statement.

OWNER/CONTRACTOR'S SIGNATURE
If applicant is Sole Proprietor

DATE

PARTNER'S SIGNATURE (IF APPLICABLE)
If applicant(s) is/are in a Partnership or Joint Venture

DATE

IF APPLICANT IS A CORPORATION
AFFIX CORPORATE SEAL:

CORPORATE SEAL

BY: _____
PRESIDENT'S SIGNATURE

DATE

ATTESTED BY: _____
CORPORATE SECRETARY

DATE

APPROVED FOR INDIAN PREFERENCE BY:

TERO OFFICER
TRIBAL EMPLOYMENT RIGHTS OFFICE

DATE

Office Use Only:

☐ Indian Preference

Expiration Date: _____

DUNS Number Information



About the D-U-N-S Number

Created in 1962, the Data Universal Numbering System or D-U-N-S® Number is D&B's copyrighted, proprietary means of identifying business entities on a location-specific basis.

Assigned and maintained solely by D&B, this unique nine-digit identification number has been assigned to over 100 million businesses worldwide.

A D-U-N-S® Number remains with the company location to which it has been assigned even if it closes or goes out-of-business.

The D-U-N-S® Number also "unlocks" a wealth of value-added data associated with that entity, including the business name, physical and mailing addresses, tradestyles ("doing business as"), principal names, financial, payment experiences, industry classifications (SICs and NAICS), socio-economic status, government data and more. The D-U-N-S® Number also links members of corporate family trees worldwide.

The D-U-N-S® Number is widely used by both commercial and federal entities and was adopted as the standard business identifier for federal electronic commerce in October 1994.

The D-U-N-S Number® was also incorporated into the Federal Acquisition Regulation (FAR) in April 1998 as the Federal Government's contractor identification code for all procurement-related activities.

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Frequently Asked Questions for D-U-N-S Number and CCR Registration

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

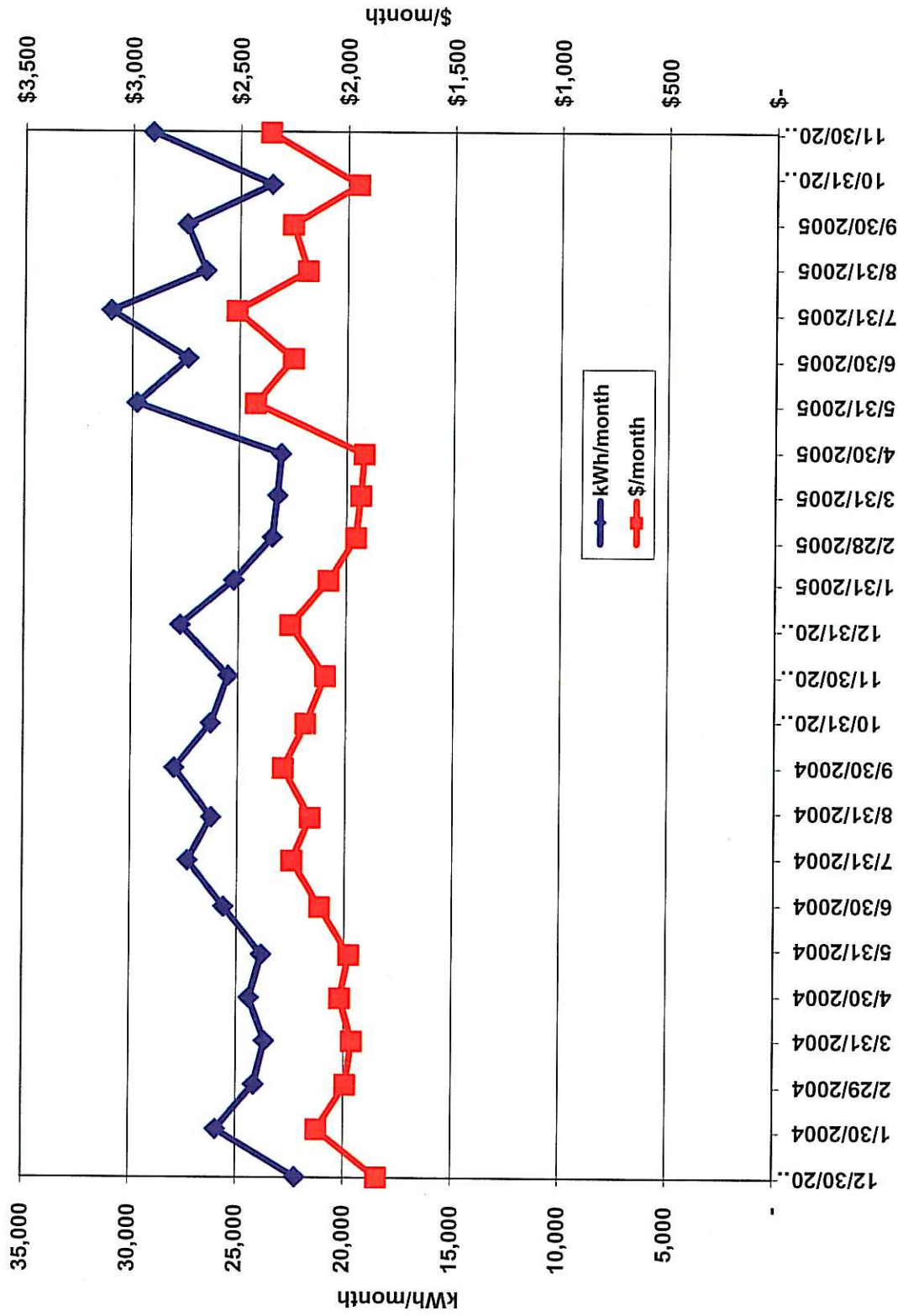
What is a DUNS number and how are they assigned?	A DUNS number is a unique, non-indicative 9-digit identifier issued and maintained by D&B that verifies the existence of a business entity globally. D&B assigns DUNS numbers for each physical location of a business.
Who is eligible for a D&B D-U-N-S® Number?	• Commercial, non-profit or government entities • Self-employed individuals (only individuals such as; physicians, lawyers, contractors, etc. who are engaged in a specific commercial business activity). • All secondary locations including Branches and Divisions .
Is there a charge for U.S. Government contractors?	All U.S. Government contractors globally can receive a DUNS number at no charge and, under normal circumstances, within 1-2 business days when using the D&B web form process. If requested by phone, a DUNS can usually be provided immediately.
Are D&B D-U-N-S® Number re-used?	Once assigned, a D&B D-U-N-S® Number is not reused or reissued to another business entity.
How do I know if D&B has assigned my entity a new D-U-N-S Number?	• You cannot renew your CCR registration and are receiving error codes 40205 or 60205 in the D&B Monitoring Information screen • You receive an e-mail from the BPN indicating there may have been a change in the status of your D-U-N-S Number • A D&B Representative has confirmed that your entity has a new D-U-N-S Number It is always best to confirm the correct D-U-N-S Number for your entity with D&B by calling 1-866-705-5711 (US Only). International registrants can confirm by sending an e-mail to ccrhelp@dnb.com , including Company Name, D-U-N-S Number, and Physical Address, and Country.
Can I have more than one D-U-N-S Number at the same physical location?	Yes, more than one D-U-N-S Number can be issued at the same physical location if they are (1) separate legal entities (ie; LLC, Inc., Corp) or (2) companies that have the same legal business name but different DBA's and/or a different line of business that is specific to the nature of operations. An example of (2) is when a HQ and brand or division (see definitions below) are co-located, like a warehouse on the premises of the HQ. Definition: • Headquarters is a business that has branches or divisions reporting to it and is financially responsible for them. • Branch is a secondary location of the HQ. It is not a separate corporation and has no legal responsibilities for its debt. It can be located at the same address as the HQ, if a unique trade style is used. • Division, like a branch, is a secondary location of a business. However, a division carries out specific business operations related to the headquarters under a divisional name.
How do I Register at CCR?	To register with CCR, go to www.ccr.gov , create a User ID and Password to begin, or enter your existing User ID and Password.
My Corporate Linkage information listed in CCR is incorrect?	Please send an email to govt@dnb.com including your DUNS number and contact information. In the email confirm what should be listed for the HQ/Parent, Domestic Ultimate and Global Ultimate. You will then be contacted by a D&B associate.
What is DUNS+4?	The +4 extension to a DUNS number is created by registrants in CCR when there is a need for more than one bank/Electronic Funds Transfer (EFT) account for a location. D&B does not create or maintain the +4 number.

How do I check my CCR Registration Status?	Go to www.ccr.gov and click "CCR Search" located at the top of the page. Search by using your DUNS number or name/address information and click "search". The top of the page will show your "Current Registration Status".
What is TIN Matching?	The TIN matching process is conducted between CCR and the IRS. Be sure to enter your Taxpayer Name on the CCR IRS Consent Page as this may be different from your Legal Business Name which will be populated in the field. If your IRS Consent validation fails, please contact the IRS.
What if my DUNS Number is not recognized at grants.gov?	A DUNS number is accepted at grants.gov after you are registered at CCR. To get to the CCR site, use the link at grants.gov or go directly to www.ccr.gov .

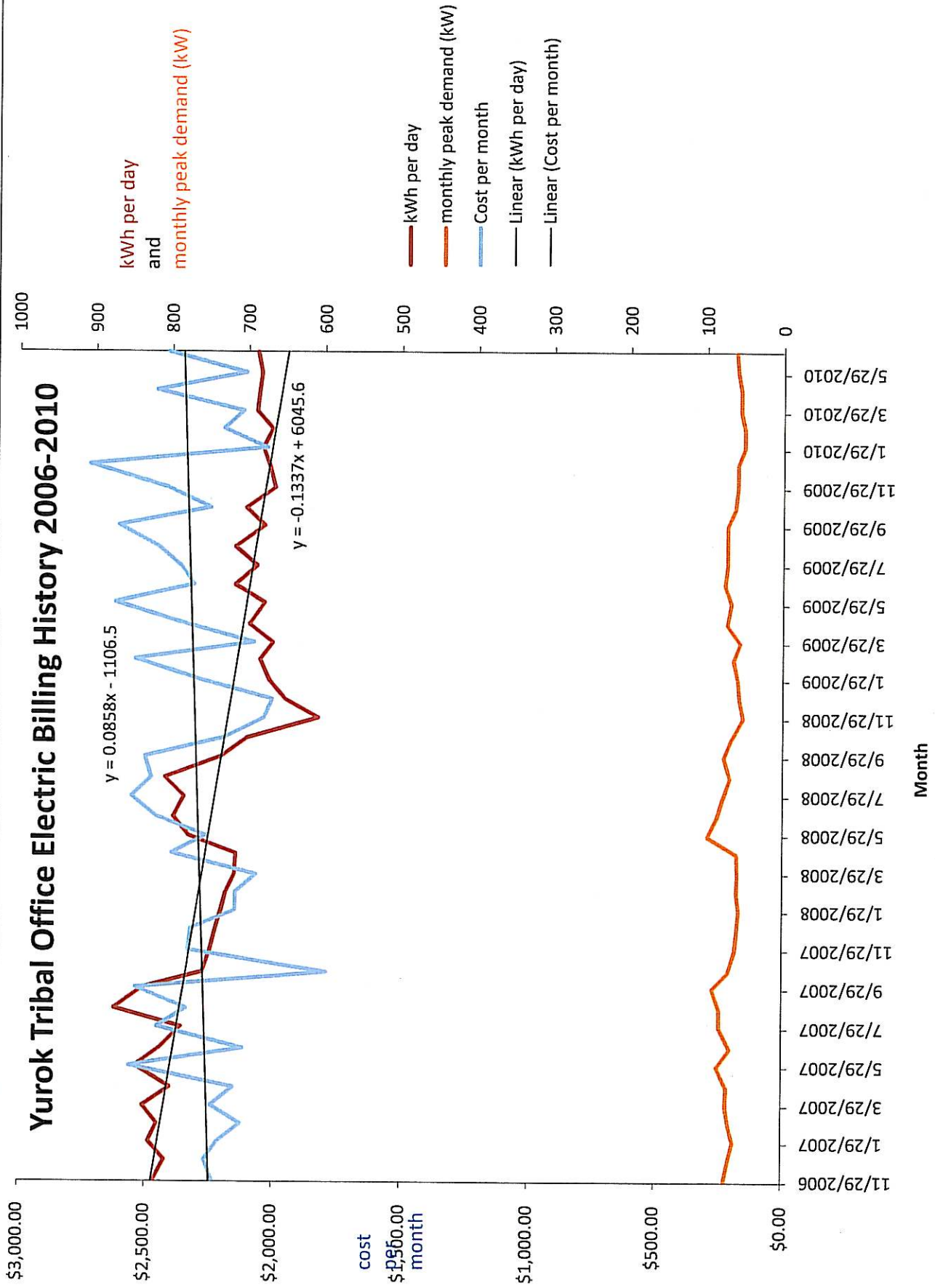
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Yurok Tribe Energy Usage Information

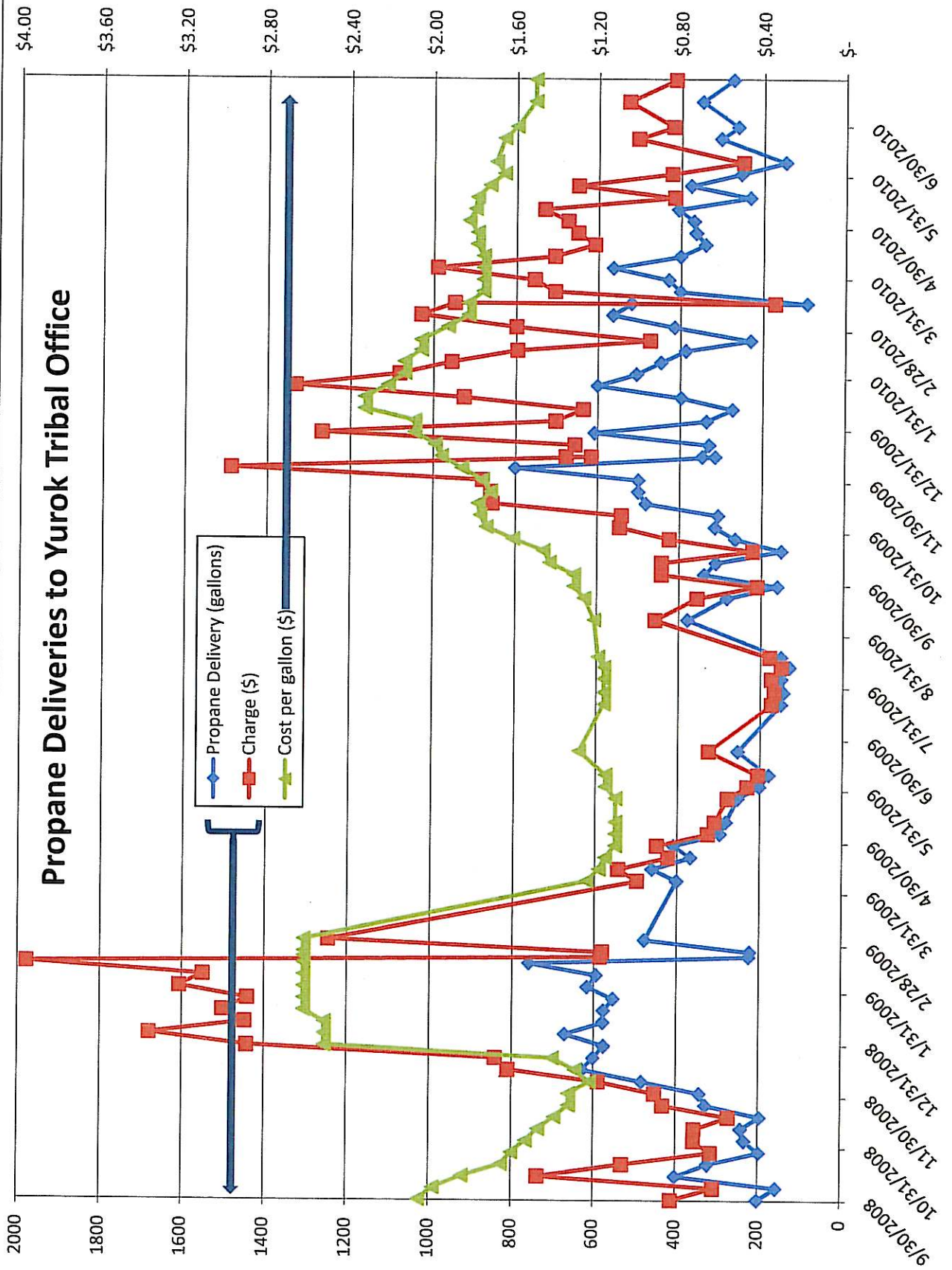
Klamath Tribal Office Electric Usage and Cost



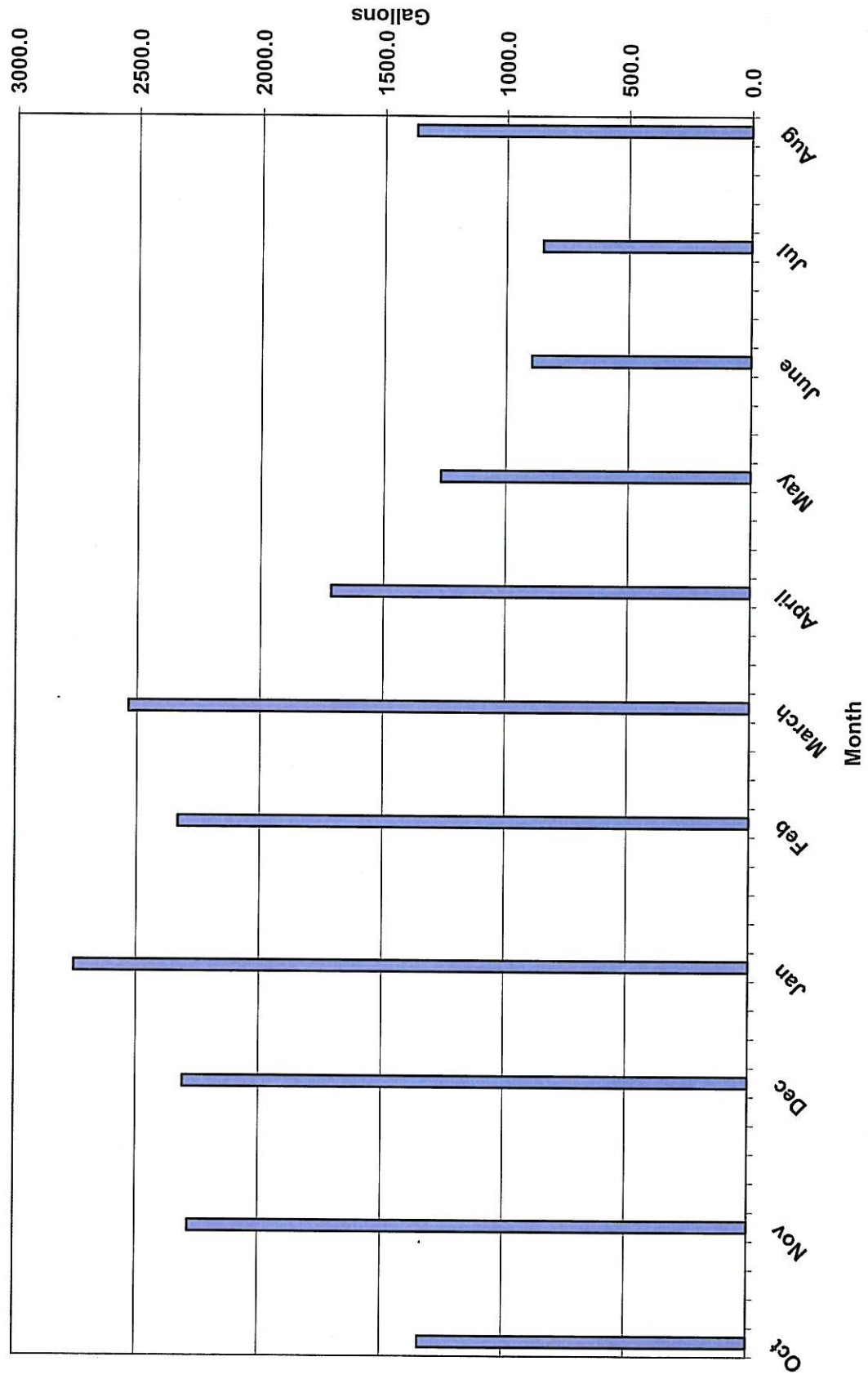
Yurok Tribal Office Electric Billing History 2006-2010



Propane Deliveries to Yurok Tribal Office



Propane Deliveries by Month



Energy Audit

Energy Audit of Yurok Tribal Office At Klamath, CA
Report prepared by Richard Engel, Schatz Energy Research Center
October 2006



SCHATZ
ENERGY
RESEARCH
CENTER



Energy Audit of Yurok Tribal Office At Klamath, CA

Report prepared by Richard Engel, Schatz Energy Research Center

Disclaimer: Mention of specific products or manufacturers in this report does not constitute an endorsement by the Schatz Energy Research Center. Specific products or manufacturers are cited as examples only. The Schatz Energy Research Center encourages the Yurok Tribe to identify and select products that meet its own needs and budget.

On September 20, 2006 Dustin Jolley of the Yurok Tribe Planning Department and Richard Engel of the Schatz Energy Research Center visited the Yurok Tribal Office at Klamath, CA and performed a walk-through energy audit of the facility with on-site assistance from facility maintenance staff member Dewey Myers. This report presents our findings and recommendations for reducing energy use and energy costs and making use of solar electricity at the Klamath office. The purpose of this audit was to identify qualitatively areas where the Tribe may be able to realize energy cost savings. Further analysis is necessary to quantify potential costs and savings.

Our key finding is that energy use and costs are higher than expected for a building of this size, type, and recent vintage. The following is a summary list of recommendations that we expect to help address this condition, while improving user comfort and performance of the building's equipment:

- Investigate the cost and savings potential for performing a professional, comprehensive retro-commissioning¹ of the entire building, with special attention to heating, ventilating and air conditioning (HVAC), electrical system, and building shell diagnostics.
- Consider additional training for building maintenance staff. A 56-hour course in Building Operator Certification is tentatively planned to take place in Eureka beginning spring 2007.
- Evaluate and pursue *one* of the following two strategies:
 - Investigate the feasibility and cost-effectiveness of replacing the building's decentralized heating and cooling system with an efficient, centralized HVAC system incorporating a boiler and chiller.
 - Maintain the existing HVAC system configuration, but develop a strategy for replacing existing inefficient heating and cooling equipment with high-efficiency substitutes as funding permits.
- Analyze building circuits and correctly label breakers in the electrical service panels.
- Inspect exterior doors and rehang or re-weatherstrip the doors as needed to reduce air infiltration between and beneath the doors.
- Investigate opportunities to reduce heat loss through the attic above the kitchen by installing operable louvers on passive ventilation openings in attic.

¹ See page 12 for an explanation of this term

- Inspect windows throughout the building. Identify failed double-pane windows and consult with building contractor and/or manufacturer to pursue replacement under warranty where needed.
- Inspect trim around exterior doors and windows and caulk where needed.
- Where glare is a problem, use window film with low u-value, moderate solar heat gain coefficient, and the highest visible transmittance that sufficiently cuts glare.
- Consider reconfiguring thermostat control in some areas to avoid adjacent HVAC systems "fighting" each other, i.e. simultaneously heating and cooling the same space, or trying to simultaneously satisfy contrasting climate control needs in adjacent spaces.
- Service the malfunctioning condensing unit identified in this report, which periodically ices up.
- Inspect and, if needed, repair the HVAC duct serving the Council support offices.
- Adjust the walk-in cooler temperature to a lower setting to avoid food spoilage.
- Implement a strategy to avoid backfeeding hot water into the building's cold water lines.
- Modify the plumbing associated with the dishwasher circulation pump to avoid crossfeeding scalding water into the tempered hot water line.
- Insulate all hot water pipes where accessible.
- Perform a lighting satisfaction survey and measure light levels to determine where delamping or use of additional task lighting is appropriate.
- Repair timer control circuits on outdoor lighting.
- Inspect and repair rain-damaged outdoor light fixtures.
- Consider unplugging the building's drinking water cooler/heaters and implementing alternative strategies for heating and chilling water.
- Consolidate refrigerator loads and unplug unneeded units. Make sure refrigerators with rear coils are pulled away from the wall to permit air circulation.
- Specify Energy Star office equipment and make sure automatic power saving features are enabled. Encourage use of laptop computers and LCD monitors.
- Discourage unnecessary use of electric space heaters. Help staff to acquire and use energy-saving alternatives.
- Purchase energy-saving occupancy sensor switch to power down vending machine that sells non-perishable products.
- Consider installing a rooftop solar electric and/or solar hot water system.

The Klamath office is located at 190 Klamath Blvd. in Klamath, CA in southwestern Del Norte County. It is a two-story commercial building built on a slab foundation (see Figure 1 at end of report). The conditioned space is approximately 29,000 ft². The facility was constructed in 2002 and serves as the main administrative office for the Tribe, with satellite offices located in Weitchpec and Cutten, both in Humboldt County. We have conducted a separate energy audit of the Weitchpec office.

The Klamath building consists of a central structure with attached north and south wings. The wings house departmental offices. The central structure consists mainly of the main entrance, a large foyer, a large, high-ceilinged room with a movable partition that serves

as Council chambers and a multipurpose community meeting space, and a commercial kitchen.

The Tribal engineer is in possession of a complete set of design drawings for the facility. To the best of his knowledge, no as-built drawings were ever prepared after construction was completed.

Energy Consumption and Rates

Energy consumed at the facility includes electricity and propane. The facility's electricity is provided by Pacific Power and Light (PP&L). The facility is on the A-32 (General Service 20 kW and Over) electric rate schedule.

Over the 24-month period from December 2003 to November 2005, monthly electricity usage averaged 25,838 kWh, with a maximum value of 30,960 kWh and a minimum of 22,240 kWh. Year-round electric usage is fairly uniform, with a slight summer peak, as expected in this mild coastal climate. Average yearly cost is \$25,500 at \$0.082/kWh.

The facility is demand-metered. During our visit on a cool weekday in late summer, the demand meter read 86 kW at mid-morning. This suggests that demand is trending upward over time, since the average value for monthly peak demand over the 24-month period cited above was only 75 kW. See the attached table and graph for more details on electric consumption and cost.

Propane is delivered weekly by local suppliers Amerigas. Based on data from the period October 2005 to August 2006, yearly propane consumption is estimated to be 21,800 gallons at a cost of \$33,200. Average cost per gallon of propane over this period was \$1.52. A table of the facility's propane billing history is also provided with this report. Propane use is highly seasonal; for example, total deliveries in July 2006 were 852 gallons, compared with 2,755 gallons during January of the same year. This is to be expected, since propane is the primary winter heating fuel for the building.

The U.S. EPA estimates that average annual energy use for office buildings in the northwestern California climate zone is 80 kBtu/ft²/yr, at a cost of \$1.59/ft²/yr. For comparison purposes, the energy use and cost intensity figures for the Klamath office are 105 kBtu/ft²/yr and \$2.02/ft²/yr. These figures are somewhat higher than regional averages, and appear even more out of line given the mild local climate and recent construction of the building. Possible reasons for this discrepancy and strategies for reducing energy use and costs are discussed below.

Building Shell

As a recently constructed building, the office includes many standard energy efficiency features. All exterior glazing is double-paned, and the entire shell appears to be insulated.

The doors and windows are weatherstripped. However, several of the exterior doors leave large gaps when closed (see Figure 2). Building users note drafts in the vicinity of these doors. Rehangng the doors and/or additional weatherstrip are recommended to correct

this problem. The main front door also does not close correctly, leading to draftiness and loss of heated air in the entry foyer.

During our audit we were able to access one attic area, above the kitchen. This area is located under a pitched roof and above a suspended ceiling (see Figure 3). The attic is directly vented to outdoors and air circulates freely between the attic and the kitchen, the suspended ceiling being fairly loosely constructed. This results in what appears to be a very leaky building envelope, at least in this section of the building. Insulation of at least R-30 thickness is attached to the underside of the roof but probably contributes little to stopping heat transfer in and out of the building, due to the free movement of air between the attic and outdoors. An ideal insulation strategy would be to insulate directly above the kitchen ceiling, thus greatly reducing the volume that must be heated or cooled. However, this is generally not feasible in the case of a suspended ceiling. A local energy consultant we spoke with who has extensive experience with commercial buildings suggested that a strategy for reducing heat loss in this part of the building might be to install operable louvers on the attic ventilation and partially or completely close them during the winter heating season. It may be necessary to maintain some level of passive attic ventilation year-round to avoid moisture problems.

At least one double-pane window in the building appears to have failed prematurely. We noted condensation between the glass panes and rust in the sash edge (see Figure 4). The window is likely to still be under manufacturer's warranty. This problem should be referred to the building contractor or the window manufacturer as appropriate. In addition, there are places where window framing has partially separated from the siding, creating an opportunity for air infiltration and water damage to the building (see Figure 5). This problem can be corrected by re-caulking. Given the width of the gap shown, we recommend using foam backer rod to fill the gap before caulking.

During our visit, one staff member was in the process of selecting window film to reduce the problem of solar glare in her office. Window films can be helpful, both in reducing glare and in conserving energy. In general, we recommend use of window films that offer low u-value (less than 0.40), moderate solar heat gain coefficient (between 0.40 and 0.55), and the highest visible transmittance level that adequately cuts glare (as high as 0.80). In cases where solar glare is extreme, a lower visible transmittance may be recommended.

Heating, Ventilating, and Cooling (HVAC) Systems

The building's heating and cooling system consists of 23 split system air conditioning units, all but one of which is paired with a propane-fired furnace to serve an individual zone with heating and cooling. In addition, there are several exhaust ventilation fans in the building, mainly serving the kitchen and restrooms. A more conventional (and generally more energy-efficient) design for a single-tenant building of this type and size is to heat and cool the entire building with a single central boiler and chiller. One local energy consultant specializing in commercial buildings speculates that such a centralized HVAC system would cost about one-fourth as much to operate as the existing decentralized system. Capital cost for such a centralized system would almost certainly

be lower than the capital cost that was expended on the existing decentralized HVAC equipment. The consultant, based on our brief discussion, estimates that converting to an efficient central HVAC system at this facility could pay for itself in three to four years.

If the Tribe does not wish to pursue a comprehensive HVAC system redesign, an alternative strategy would be to maintain the existing configuration but replace equipment piecemeal with more efficient units. We noted during our audit that, according to their EnergyGuide labels, several pieces of HVAC equipment at the facility are near the low end of the efficiency range, as compared with other comparable products on the market (See Figures 6 and 7). If this is typical of all the building's HVAC equipment, it helps to explain the exceptionally high energy bills. It would most likely be prohibitively expensive for the Tribe to replace all of this equipment immediately while it is still in good working order. However, we recommend that the Tribe adopt a schedule to replace each furnace and air conditioner with high-efficiency equipment over time. It is not recommended that the Tribe wait until equipment failure to select replacements. Under such circumstances, facility managers are often forced to buy the cheapest or most readily available equipment, thereby losing an opportunity to improve efficiency.

The Energy Star program (www.energystar.gov) provides a means of identifying efficient equipment. It has been widely documented that the energy savings achieved by specifying high efficiency equipment quickly offset the usually small incremental cost of choosing this equipment over low-efficiency replacement alternatives.

Building occupants we spoke with complained of sometimes large temperature differences between zones or rooms. We again observed a phenomenon that we noted in our earlier energy audit of the Tribe's Weitchpec office, namely that a single large room, in this case the Council chambers, is served by two HVAC systems controlled by separate thermostats. As at Weitchpec, we observed that the two thermostats were set in opposite modes, one enabled to heat and the other to cool. It may be possible to better control temperature in this room and save energy by reconfiguring the systems so a single thermostat controls both HVAC units.

Building maintenance staff and building occupants expressed some confusion about the building's thermostats and the zonal configuration of the building's HVAC systems. In at least one case in the planning department offices, staff believe there may be an unintentional crossover between two thermostats controlling each other's zones. A building re-commissioning effort (discussed below) should emphasize troubleshooting thermostat control throughout the building.

One HVAC-related concern at the facility is critical temperature/humidity management in room 139, used for storage of regalia, baskets, and other important tribal artifacts. The building HVAC is presently configured so this room is in the same zone with adjacent room 138, which serves as a storage room and receiving dock, with a rollup door to outside that is often kept open for extended periods. The thermostat that controls heating and cooling for these two rooms is located in the receiving room. It is not practical to try to condition these two rooms as a single zone, since their usages and requirements are so

different. A possible solution would be to install a small dedicated heat/cool/humidity management system for the regalia room. Because of the cultural importance of preserving the regalia, there may be grants available to pay for this measure. If funds are not available, a less expensive solution would be to relocate the existing thermostat to room 139, so that operation of the HVAC system will be dictated by the more critical conditions in that room.

One piece of equipment in particular appears to be in need of maintenance. At the inlet to one of the condensing units (serial number 1602F18079, located outside the Council chamber on the south side of the building), the pipe carrying refrigerant from indoors frequently ices up (see Figure 8). This problem could have a number of causes, including:

- inadequate refrigerant charge in the line
- obstruction in the refrigerant line
- inadequate air flow at the indoor evaporator coils, which may be due to a dirty air filter or a crushed or obstructed duct
- failed condenser fan
- leaking valve in compressor

This problem needs to be investigated and corrected.

Users of rooms 116, 117 and 118 (Council support) say their rooms are frequently too hot. These rooms are located at the end of one of the building's longest duct runs. The duct should be inspected to make sure it is properly insulated and is not leaking or obstructed.

The kitchen's walk-in refrigerator appears to be set at a higher than recommended temperature. We checked the temperature using both the built-in thermometer and a portable refrigerator/freezer thermometer and found it to be approximately 48°F. Perishable foods spoil rapidly when stored at temperatures above 40°F. Setting the refrigerator to a lower temperature (34 to 36°F) will slightly increase energy use, but for health reasons it is recommended.

Domestic Hot Water

The building's hot water is provided by a single 119-gallon propane-fired water heater located in Room 128 on the ground floor. Hot water service in the building generally operates well, but maintenance staff indicated two problems:

- A custodian's basin, also located in Room 128, is served by a combination hot/cold water faucet (see Figure 9). Maintenance staff sometimes leave both taps open with a hose connected to a detergent dispenser as shown. This is convenient for custodians, but allows hot water to backflow into the cold water line. This reportedly results in hot water flowing into toilets and other fixtures throughout the building, which undoubtedly wastes propane and may eventually damage plumbing components (such as toilet floor seals) not designed for hot water. The Tribe should ask building staff to leave these taps closed when they are not using the faucet to dispense water and detergent. Alternatively, a backflow prevention device (check valve) could be installed in the pipe serving the cold water tap.

- Hot water service to the kitchen consists of two separate lines, a high-temperature line designed to deliver 140°F water to the dishwasher and a cooler tempered hot water line for the sinks. A circulation pump was recently added to the hot water plumbing in the attic space above the kitchen to improve delivery of hot water to the dishwasher. The way that the pump was plumbed in results in the higher temperature water being injected into the hot tempered water line when the pump is running, thus sending scalding hot water to the faucets and creating a potential hazard for kitchen users. This appears to be a simple problem to correct by capping the line that crosses over between the two hot water service lines. Making this correction should also result in minor energy savings by reducing standby heat losses in the pipes.

In addition, we noted the presence of long runs of uninsulated hot water pipes in various locations in the building (see Figure 10). These pipes are losing significant heat to their surroundings and should be insulated for energy savings. This will result in higher water temperatures at the taps, so it may become desirable to lower the thermostat setting.

Electrical Service

The lack of as-built drawings for the facility presents a problem, because the building's electric service panels were never labeled. The design drawings provide detailed load schedules for the service panels, but maintenance staff and the tribal engineer have discovered that these schedules do not correspond to the panels as actually wired. It is important that accurate load schedules be prepared for the building and posted at the service panels. This is a safety concern, as it is important for maintenance personnel to know which circuits are enabled or disabled when working on any electrical equipment.

Lighting

The building's lighting equipment is efficient, consisting mainly of fluorescent lights indoors and high intensity discharge fixtures outdoors. Exit signs are state-of-the-art LED technology.

Light levels are generally appropriate. Light levels for general office work should usually be in the range of 30 to 50 footcandles (fc) on the desk surface, depending on the level of detail of tasks being performed, age of office users, and other factors. Our light measurements in a number of different offices throughout the building showed most spaces to be in this range. We did find a few areas that appear to be overlit, as well as a few spots that can be considered underlit. We recommend a more thorough assessment of lighting levels in each room, using a light meter and input from building users to identify overlit and underlit locations. Areas that are overlit can be delamped (i.e. one or more tubes can be removed from each fixture). Underlit spaces may require task lighting or substitution of higher output tubes in the existing fixtures.

Lighting for most offices, restrooms, and corridors is controlled by motion sensor switches with manually selectable two-level lighting (see Figure 11). An important exception is the council chambers/community room. The lighting for this large, partitionable room is controlled by manual switches. Facility staff reports that these lights are sometimes left on when the building is unoccupied.

Some of the outdoor lights are controlled by photocells and come on automatically at night. Others are controlled by a circuit that appears to have been set up for automatic timer control. However, any timer capability on this circuit is no longer working, and building staff have to switch these lights manually at the control panel (see Figure 12).

Several of the outdoor wall-mounted light fixtures are having problems with rainwater intrusion. At least one fixture has been completely disabled by this problem. These fixtures should be inspected to determine whether the problem can be corrected or if they need to be replaced.

Plug Loads

Plug loads are electrical devices that are not hard-wired into the building's electrical system, such as computers and copiers, refrigerators, desk lamps, and portable heaters. We observed several opportunities to reduce plug load energy costs with minimal impact on building users.

Water Coolers/Heaters. There are an estimated 12 hot/cold drinking water dispensers located throughout the building (see Figure 13). These dispensers are equipped with a small refrigeration unit and a heating coil, both of which cycle on and off periodically throughout the day to provide instant hot or cold water on demand. These units draw approximately 450 Watts when the chiller is running and 550 Watts when both the chiller and the heater are operating. The five-gallon water bottles are changed about every other day. Noting that most departments and offices that have a water dispenser also have microwave ovens and refrigerators, we would like to recommend an energy-saving alternative to the present configuration. The existing dispensers should be left in place, but with their electrical plugs removed. People who don't mind drinking room-temperature water can continue to use the dispensers as always. Those who prefer chilled water can keep containers of bottled water in the nearest refrigerator. For hot beverages, heating a mug of water in the microwave is nearly as fast and consumes less energy.

Refrigerators. Apart from the kitchen's large walk-in cooler, there are at least seven plug-in refrigerators located in various departments throughout the building. We realize that these refrigerators may be filled to capacity at special times like office holiday parties, but during our visit we found several of the refrigerators nearly empty. We recommend the Tribe look for opportunities to consolidate these refrigerators and eliminate units that are not needed. Alternatively, if refrigerators are not filled to capacity with food, they should be loaded with containers of drinking water, since a full refrigerator is more temperature-stable and thus will use less energy over time than a nearly empty one.

Refrigerators dump heat to their surroundings via external coils. These coils may be located either on the rear or the underside of the refrigerator. For refrigerators to operate efficiently, air circulation around the coils must be unobstructed. We found one refrigerator with rear coils that was pushed all the way up against the wall, greatly reducing air circulation. We pulled this unit out from the wall a couple of inches (see Figure 14). Maintenance staff should check the refrigerators periodically for clearance.

Computers, Copiers, and Other Office Equipment. Some computers consume more energy than others, but not enough to justify replacing less efficient computers solely for energy savings. However, when purchasing new computers, look for Energy Star labeled models to ensure energy efficiency. All modern computers that use Windows or Macintosh operating systems are equipped with power-saving features that activate automatically when the computer is left idle, but these features are not always enabled. We observed that some of the computers at the facility are making use of this "power down" feature while others are not. We recommend setting all computers and monitors to activate their power saving settings after no more than 30 minutes of idle time, provided this does not interfere with essential functions such as computer network management.² This measure is virtually free and, according to the EnergyStar program, can save \$25 to \$75 per computer per year.

Several employees use laptop computers at their work stations. These generally consume less electricity than desktop models, and their use should be encouraged where appropriate. We were also pleased to see that most of the computer monitors being used in the facility are of the energy-saving flat-panel LCD type. Copiers, printers and other office machines may also be equipped with automatic low-power modes. Facility staff should make sure these modes are enabled where appropriate.

Portable Space Heaters. During our late-summer audit we observed only a few portable space heaters in the facility (see Figure 15). However, building staff told us that use of portable heaters is widespread during the winter. These heaters typically draw 1.2 kW to 1.5 kW each when operating on their high setting. It is easy to see that operating several of these heaters at once can greatly increase a facility's utility bills, particularly if the facility is billed for peak demand, as is the case at the Klamath office. The most effective strategy for reducing use of these heaters while maintaining comfort levels is to ensure that the building's central heating systems are working as designed. If thermostats are improperly programmed, ducts are not properly connected, or furnaces are not properly tuned up, Tribal staff may resort to space heaters to keep warm. Building envelope problems like drafty doors and windows may also encourage people to find their own ways of keeping warm.

Another strategy is to encourage the use of less energy-intensive personal heaters. Electric seat warmers rated at just 50 Watts (gogoods.zoovy.com/product/450?META=nextag-450) and electric foot warmer mats that consume 135 Watts (www.tesco-shopping.com/Cozy_heaters.htm) can provide comfort for a small fraction of the energy use of a space heater.

Vending Machines. The vending machines in the lobby consume energy around the clock lighting their displays and keeping products chilled. Several local schools have successfully implemented the use of a product called VendingMiser (www.usatech.com/energy_management/energy_vm.php) that uses an occupancy sensing

² Free EZ-GPO software is available from the EnergyStar program for controlling power saving features over computer networks. See www.energystar.gov/index.cfm?c=power_mgt.pr_pm_ez_gpo

switch to put the vending machine in "sleep" mode when there are no potential customers in the area. This product would not be suitable for use with machines that vend perishable or frozen products such as ice cream.

Solar Potential

The roof of the north wing of the building has the best solar exposure and orientation. There are approximately 2700 square feet of available space for solar modules on the three tiered sections of metal roof. Roof pitch is 4:12 and orientation is about 20 degrees west of due south. Due south is generally considered the optimal compass orientation for solar installations in the northern hemisphere, but a deviation of 20 degrees generally should result in less than 5% loss in generation potential. Furthermore, the orientation west of south may actually increase energy production in this particular setting, given the shading southeast of the building and the tendency for coastal morning fog.

We used the Solar Pathfinder instrument to estimate solar availability at the site. We were unable to access the roof on the day of our audit, but we visually estimated that a location on the ground was shaded in approximately the same manner as the roof area of interest (see Figure 16). It appears that the roof will be shaded year-round until approximately 9 to 10 am, then remain unshaded for the remainder of the day.

At a typical 10 watts/ft², this roof area would be adequate to install about 27 kW DC of photovoltaic modules, yielding an AC rated output of about 22 kW. In an unshaded site in this climate, this amount of solar modules would produce approximately 35,000 kWh/year³. Shading is expected to reduce year-round solar output by approximately 18% to 29,000 kWh, or roughly 9% of the facility's current estimated yearly 310,055 kWh electric use. Naturally, if the Tribe is able to reduce the facility's electricity use, the proposed solar power system could meet a larger percentage of electric use.

If the Tribe is able to implement a net-metering agreement with PP&L, where the Tribe is credited for generated electricity at the same rate they are charged for utility electricity, these solar-generated kWh could offset approximately \$2,400 worth of purchased utility electricity per year at the facility's average electric cost of \$0.082/kWh. Based on \$9,000 per installed kW AC, a 22 kW system will cost approximately \$198,000 before any rebates, grants, or tax credits are considered. With a California Energy Commission rebate of \$57,200 (at current rebate levels of \$2.60 per watt), payback time would be 59 years.

Solar hot water equipment in this climate can displace about 125,000 BTU (or 1.37 gallons of propane) per square foot per year, again assuming minimal shading. A solar hot water system could thus replace some substantial portion of the facility's propane use for water heating. Insufficient data are available at this time to estimate existing propane end use for water heating at the Tribal office.

³ Based on a yearly average of 4.4 peak sun hours per day and assumed system energy conversion losses of 30%.

The Tribe may wish to install a combination of solar electric and solar hot water equipment. Our project team can assist the Tribe with a more detailed solar analysis for the facility. Rebates, grants, and tax credits (if applicable to the Tribe) are available that can greatly reduce the cost of installing solar energy systems.

Building Retro-Commissioning: Taking A Comprehensive Approach

The Yurok Tribe's Klamath office building is of recent vintage and incorporates many energy saving features such as efficient lighting, insulation, and double-paned glass. However, based on energy bills and observations we made on site, it appears that the building is not operating as efficiently as it was designed to. Experts in building energy efficiency have devised a process to address existing buildings with this problem. Known as "retro-commissioning," this process includes an in-depth analysis of the building's systems and troubleshooting to correct identified problems. It is our judgment that retro-commissioning would be appropriate for this facility, as the problems we observed with the HVAC, building shell, and electrical systems may be too complex and pervasive to correct with routine maintenance and one-problem-at-a-time troubleshooting procedures.

Retro-commissioning typically offers an excellent payback of two years or less. For more information on retro-commissioning, see the report "A Practical Guide for Commissioning Existing Buildings," included electronically with this audit report, or available online at eber.ed.ornl.gov/commercialproducts/retrocx.htm.

Building commissioning will not be a cure-all for this building's energy costs. As noted above, we observed that much of the heating and cooling equipment in use in the building is of low efficiency. A long-term strategy for cutting energy costs should include plans for replacing inefficient equipment, either piecemeal or, preferably, through a comprehensive HVAC system redesign and replacement.

While technical solutions such as automated controls and high-efficiency equipment can help to save energy, it is also important for building users to be energy-aware and develop good energy conserving habits. The facility administrator may wish to work with Tribal Energy Program staff to educate building users about the importance of their actions, such as keeping doors and windows closed when heating or air conditioning are in use and limiting use of personal appliances such as space heaters.

More in-depth training for the facility's maintenance staff would also be of great value in improving the building's energy performance. A 56-hour course in Building Operator Certification is tentatively planned to take place in Eureka beginning May 2007. We have spoken with local facility maintenance personnel who have taken the BOC training previously, and they strongly endorse it. For more information on this training opportunity, please contact Morgan King of Strategic Energy Innovations, Inc. at morgan@seiinc.org.

We wish to thank Dewey Myers of Yurok Tribe facility maintenance staff for his valuable assistance in conducting our energy audit of the Klamath Office.

Feel free to contact Richard Engel of the Schatz Energy Research Center at (707) 826-4345 if you have any questions regarding this report. Thank you.

Attachments

- Klamath PP&L Electric Bills (Table)
- Klamath Tribal Office Electric Usage and Cost (Graph)
- Klamath Amerigas Propane Bills (Table)
- Klamath Propane Deliveries By Month (Graph)
- Klamath Energy Use Summary (Table)
- "A Practical Guide for Commissioning Existing Buildings" (electronic format)



Figure 1. Klamath Tribal Office



Figure 2. Gap in closed exterior doorway



Figure 3. Insulated attic above kitchen



Figure 4. Failed double-pane window



Figure 5. Window separating from siding

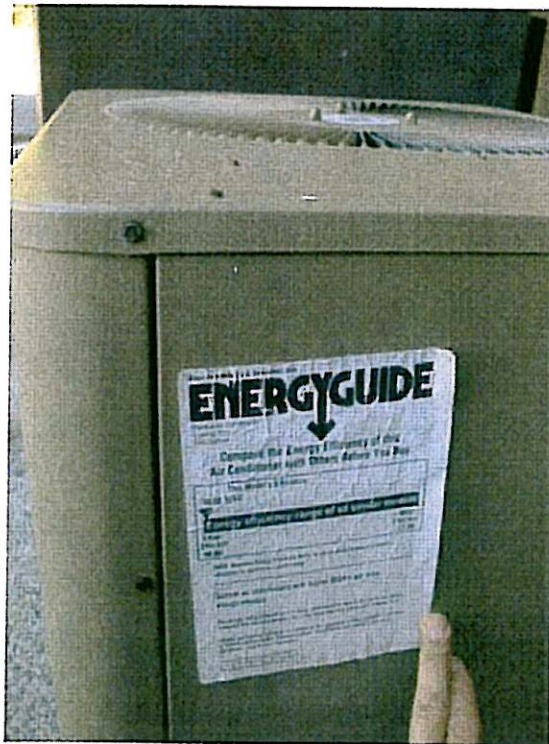


Figure 6. Low-efficiency air conditioner

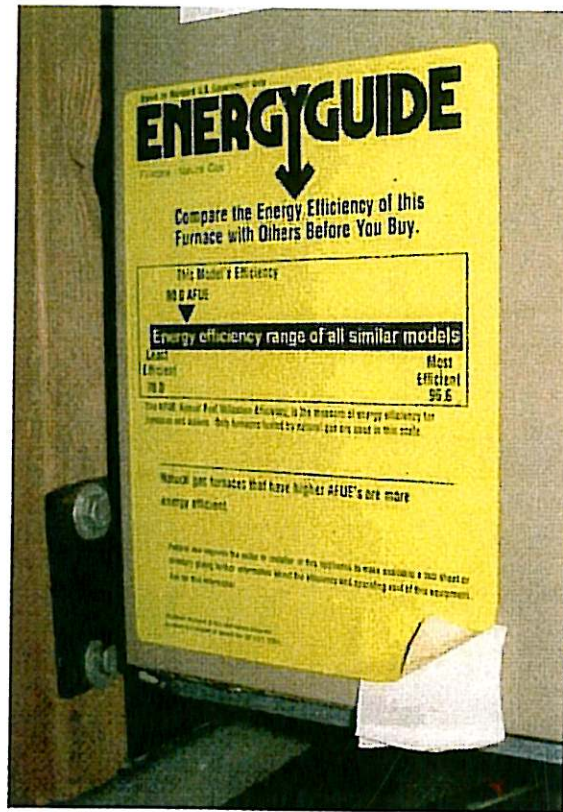


Figure 7. Low-efficiency furnace



Figure 8. Iced-up refrigerant line on air conditioner



Figure 9. Custodian's hot/cold water faucet

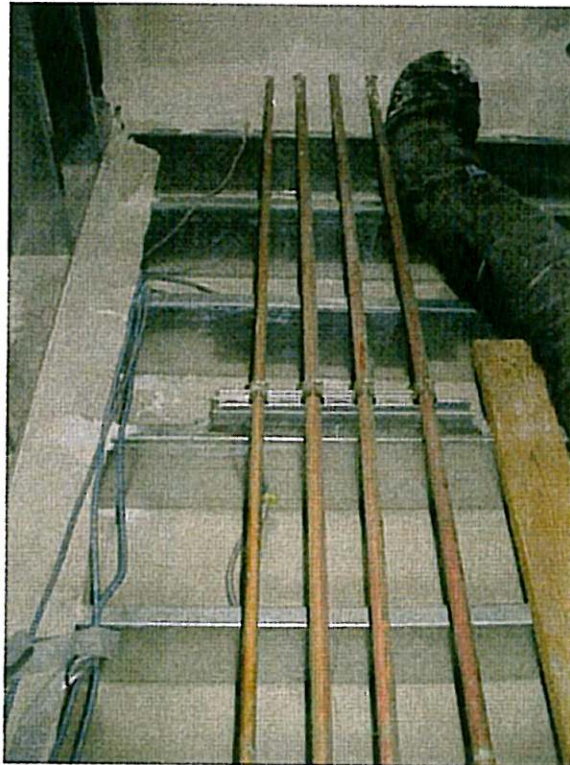


Figure 10. Uninsulated hot water pipes



Figure 11. Occupancy sensing two-level light switches

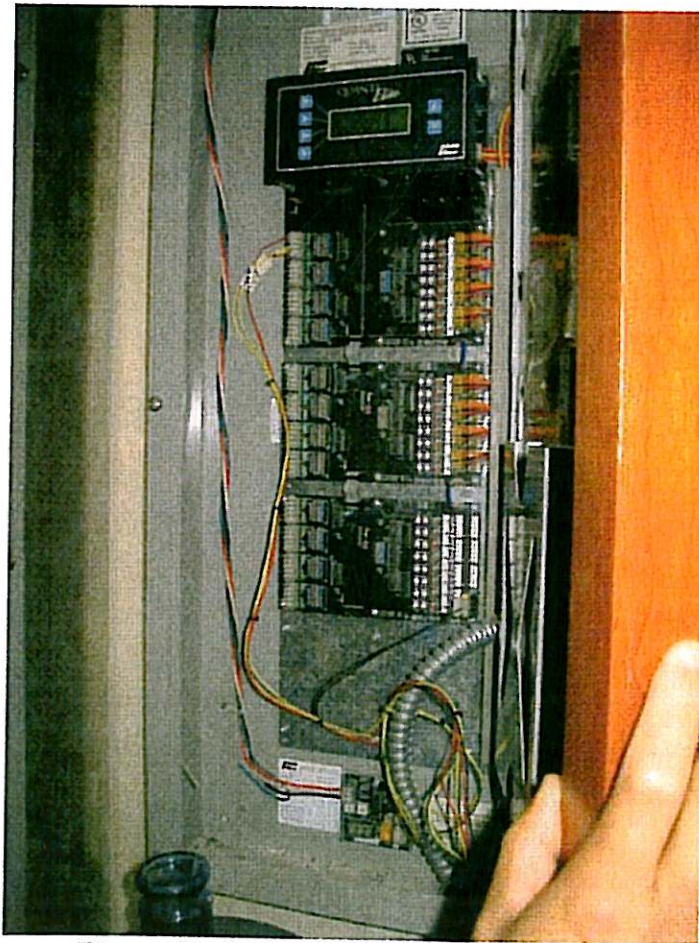


Figure 12. Control panel for outside lights



Figure 13. Hot/cold drinking water dispenser (power meter reads 520 Watts)



Figure 14. Refrigerator properly spaced from wall

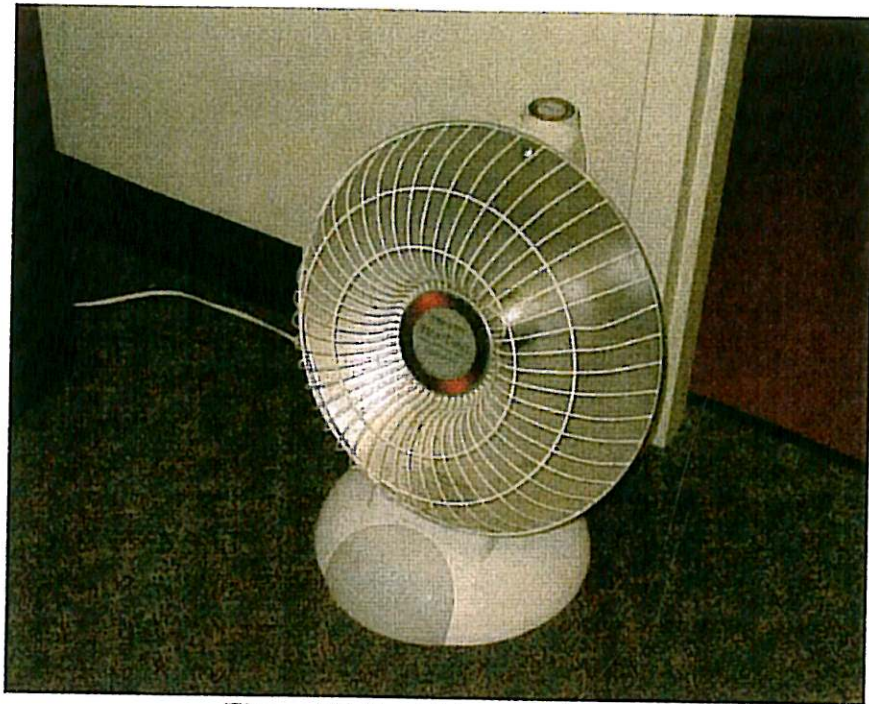


Figure 15. Portable space heater

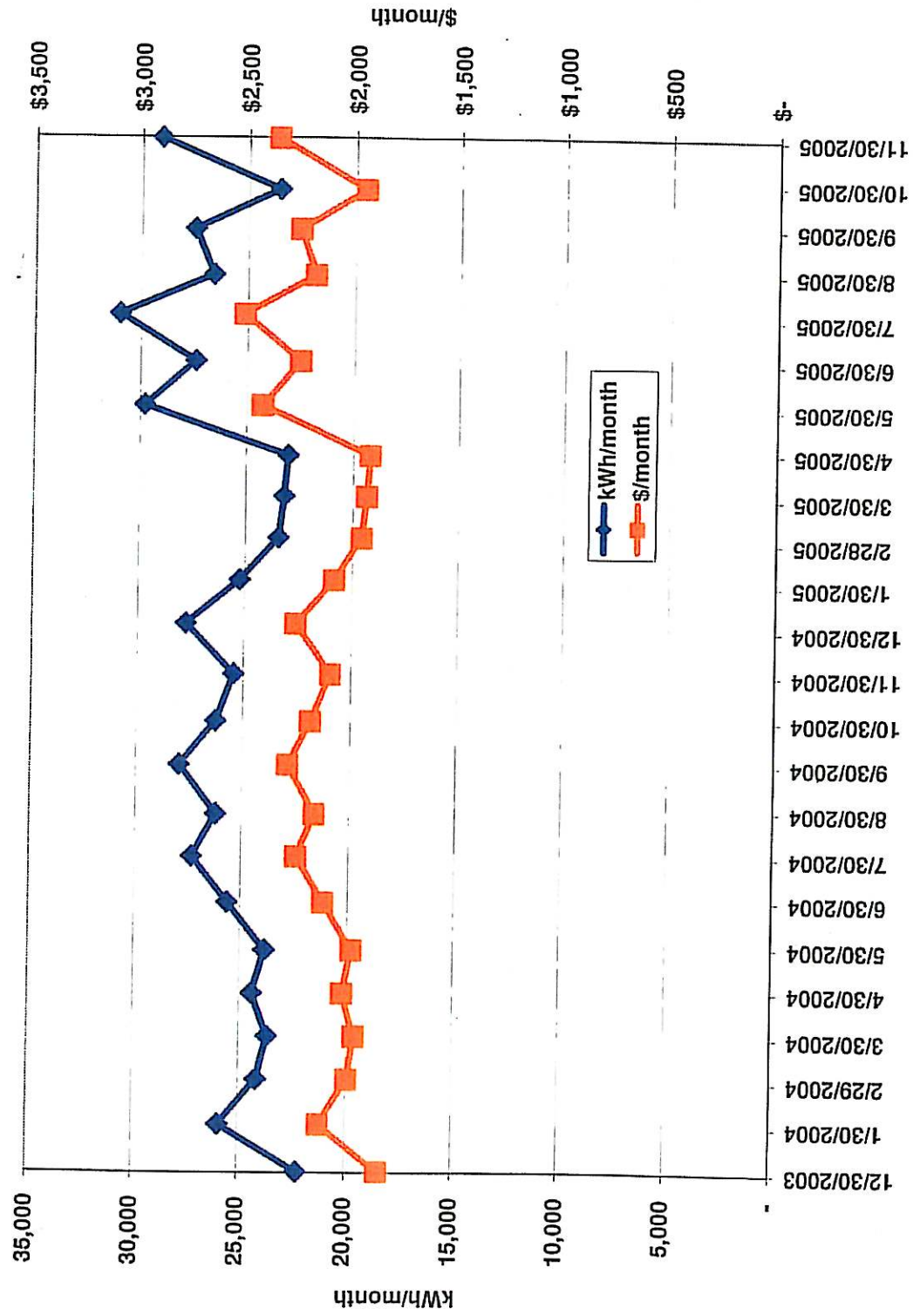


Figure 16. Solar Pathfinder image as seen in front of North Wing

Klamath PP&L Electric Bills

Read date	usage (kwh)	Demand (kW)	Elec charges (\$)	Rate (\$/kWh)
11/30/2005	29,040	79	\$ 2,359.47	\$0.081
10/26/2005	23,520	73	\$ 1,949.36	\$0.083
9/29/2005	27,440	84	\$ 2,256.02	\$0.082
8/29/2005	26,560	77	\$ 2,183.98	\$0.082
8/2/2005	30,960	83	\$ 2,512.23	\$0.081
7/1/2005	27,360	85	\$ 2,251.27	\$0.082
6/1/2005	29,760	84	\$ 2,425.61	\$0.082
4/28/2005	23,040	69	\$ 1,917.87	\$0.083
3/31/2005	23,200	72	\$ 1,932.86	\$0.083
3/3/2005	23,440	74	\$ 1,955.43	\$0.083
2/2/2005	25,200	72	\$ 2,082.08	\$0.083
1/3/2005	27,680	66	\$ 2,259.10	\$0.082
11/30/2004	25,440	66	\$ 2,095.10	\$0.082
10/29/2004	26,240	95	\$ 2,185.64	\$0.083
9/29/2004	27,920	84	\$ 2,288.69	\$0.082
8/27/2004	26,190	83	\$ 2,161.78	\$0.083
7/29/2004	27,280	85	\$ 2,246.07	\$0.082
6/28/2004	25,600	78	\$ 2,115.23	\$0.083
5/27/2004	23,840	71	\$ 1,978.52	\$0.083
4/28/2004	24,400	71	\$ 2,019.57	\$0.083
3/30/2004	23,680	67	\$ 1,962.39	\$0.083
3/1/2004	24,160	63	\$ 1,993.18	\$0.082
1/31/2004	25,920	66	\$ 2,125.40	\$0.082
12/30/2003	22,240	60	\$ 1,846.92	\$0.083
average	25,838	75	\$ 2,129.32	total
max	30,960		\$ 2,512.23	per year
min	22,240		\$ 1,846.92	2% cool svgs
2nd min	23,040		\$ 687.55	3% cool svgs
3rd min	23,200		\$ 730.29	
avg 3 mins	22,827		\$ 1,088.25	
per year	310,055		\$ 25,551.89	
avg cost/kWh			\$0.082	

Klamath Tribal Office Electric Usage and Cost

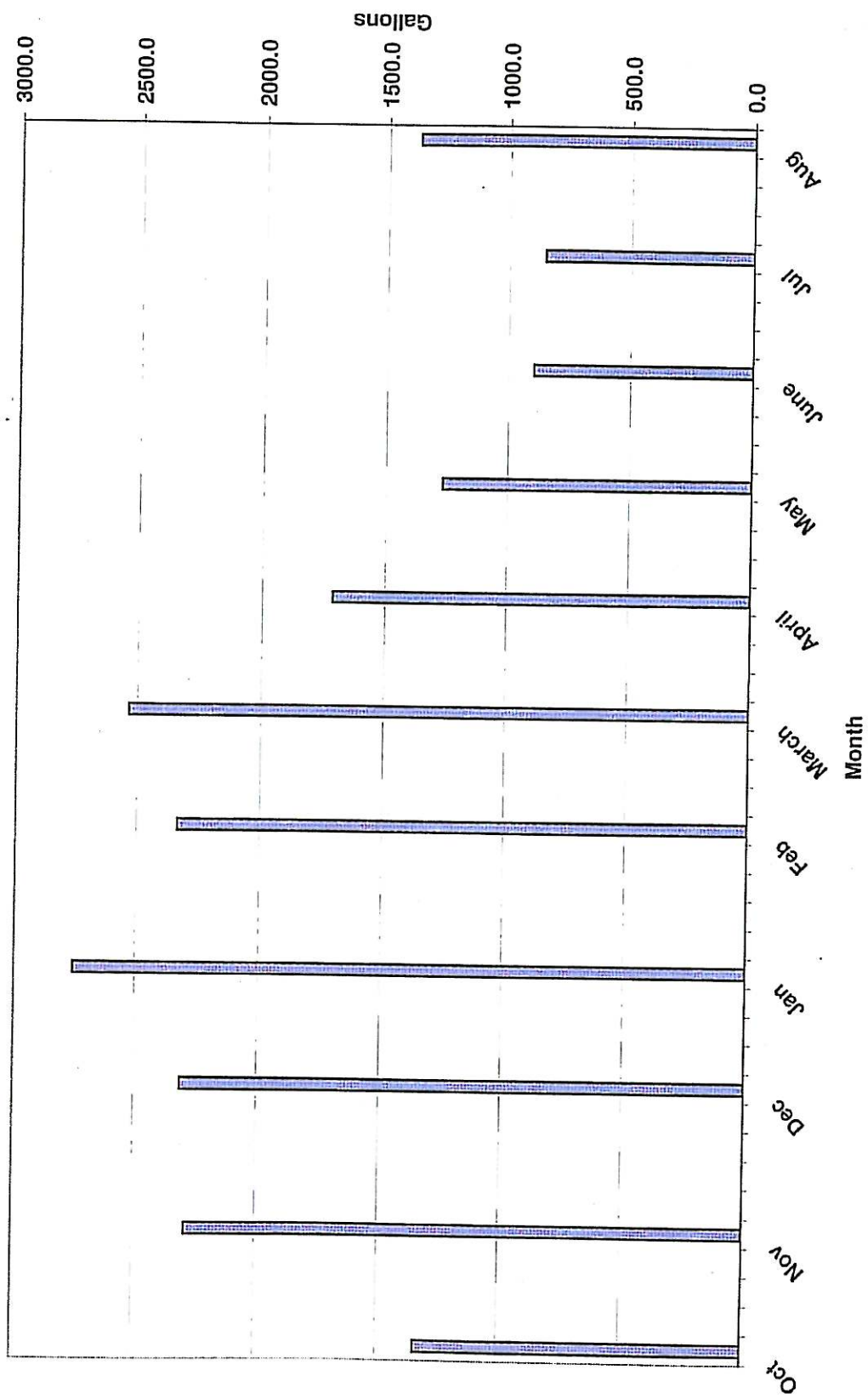


Klamath Amerigas Propane Bills

Delivery Date	Propane delivered (gals)	Propane charges (\$)	Price (\$/gal)	space heating energy	space heating cost
8/29/2006	176.0	\$ 262.24	\$ 1.49	11	\$ 19.31
8/22/2006	346.8	\$ 516.73	\$ 1.49	182	\$ 273.80
8/15/2006	277.6	\$ 421.95	\$ 1.52	113	\$ 179.02
8/8/2006	285.2	\$ 433.50	\$ 1.52	120	\$ 190.57
8/1/2006	285.4	\$ 433.81	\$ 1.52	121	\$ 190.88
7/25/2006	205.3	\$ 312.06	\$ 1.52	41	\$ 69.13
7/18/2006	147.0	\$ 223.44	\$ 1.52	(18)	\$ (19.49)
7/11/2006	204.1	\$ 291.86	\$ 1.43	39	\$ 48.93
7/5/2006	295.3	\$ 422.28	\$ 1.43	131	\$ 179.35
6/27/2006	243.8	\$ 341.32	\$ 1.40	79	\$ 98.39
6/20/2006	228.3	\$ 319.62	\$ 1.40	64	\$ 76.69
6/13/2006	252.6	\$ 353.64	\$ 1.40	88	\$ 110.71
6/6/2006	171.2	\$ 243.10	\$ 1.42	6	\$ 0.17
5/31/2006	337.8	\$ 496.57	\$ 1.47	173	\$ 253.64
5/23/2006	232.0	\$ 348.00	\$ 1.50	67	\$ 105.07
5/9/2006	386.2	\$ 598.61	\$ 1.55	221	\$ 355.68
5/1/2006	310.2	\$ 493.22	\$ 1.59	145	\$ 250.29
4/24/2006	300.1	\$ 469.16	\$ 1.63	135	\$ 246.23
4/18/2006	477.3	\$ 778.00	\$ 1.63	313	\$ 535.07
4/11/2006	430.7	\$ 689.12	\$ 1.60	266	\$ 446.19
4/4/2006	503.8	\$ 806.08	\$ 1.60	339	\$ 563.15
3/28/2006	466.5	\$ 727.74	\$ 1.56	302	\$ 484.81
3/21/2006	601.0	\$ 895.49	\$ 1.49	436	\$ 652.56
3/14/2006	766.3	\$ 1,118.80	\$ 1.46	602	\$ 875.87
3/7/2006	701.1	\$ 1,023.61	\$ 1.46	536	\$ 780.68
2/28/2006	521.8	\$ 767.05	\$ 1.47	357	\$ 524.12
2/21/2006	834.6	\$ 1,218.52	\$ 1.46	670	\$ 975.59
2/14/2006	480.0	\$ 715.20	\$ 1.49	315	\$ 472.27
2/7/2006	494.4	\$ 761.38	\$ 1.54	330	\$ 518.45
1/31/2006	487.4	\$ 774.97	\$ 1.59	323	\$ 532.04
1/24/2006	567.2	\$ 901.85	\$ 1.59	402	\$ 658.92
1/17/2006	581.6	\$ 907.30	\$ 1.56	417	\$ 664.37
1/10/2006	461.5	\$ 743.02	\$ 1.61	297	\$ 500.09
1/4/2006	656.9	\$ 1,057.61	\$ 1.61	492	\$ 814.68
12/28/2005	410.6	\$ 685.70	\$ 1.67	246	\$ 442.77
12/20/2005	578.2	\$ 965.59	\$ 1.67	413	\$ 722.66
12/13/2005	586.3	\$ 879.45	\$ 1.50	422	\$ 636.52
12/6/2005	733.1	\$ 1,041.00	\$ 1.42	568	\$ 798.07
11/29/2005	542.2	\$ 769.92	\$ 1.42	377	\$ 526.99
11/22/2005	489.6	\$ 695.23	\$ 1.42	325	\$ 452.30
11/15/2005	402.8	\$ 584.06	\$ 1.45	238	\$ 341.13
11/8/2005	446.0	\$ 660.08	\$ 1.48	281	\$ 417.15
11/1/2005	403.2	\$ 624.96	\$ 1.55	238	\$ 382.03
10/25/2005	344.8	\$ 544.78	\$ 1.58	180	\$ 301.85
10/18/2005	327.9	\$ 518.08	\$ 1.58	163	\$ 275.15
10/11/2005	310.5	\$ 481.28	\$ 1.55	146	\$ 238.35
10/4/2005	361.5	\$ 560.33	\$ 1.55	197	\$ 317.40
average	418.2	\$ 636.11	total	11,911	\$ 18,479.76
max	834.6	\$ 1,218.52	per year	13,215	\$ 20,501.86
min	147.0	\$ 223.44	2% heat svgs	264	\$ 410.04
2nd min	171.2	\$ 243.10	3% heat svgs	396	\$ 615.06
3rd min	176.0	\$ 262.24			
avg 3 mins	164.7	\$ 242.93			
per year	21,804.3	\$ 33,168.75			
avg cost/gal		\$1.521			

lo-hi sort Propane delivered (gals)	Propane charges (\$)	purchases by month (gal)
147.0	\$ 223.44	
171.2	\$ 243.10	
176.0	\$ 262.24	
204.1	\$ 291.86	
205.3	\$ 312.06	1371.0 Aug
228.3	\$ 319.62	
232.0	\$ 341.32	
243.8	\$ 348.00	
252.6	\$ 353.64	851.7 Jul
277.6	\$ 421.95	
285.2	\$ 422.28	
285.4	\$ 433.50	
295.3	\$ 433.81	895.9 June
300.1	\$ 481.28	
310.2	\$ 489.16	
310.5	\$ 493.22	
327.9	\$ 496.57	1266.2 May
337.8	\$ 516.73	
344.8	\$ 518.08	
346.8	\$ 544.78	
361.5	\$ 560.33	1711.9 April
386.2	\$ 584.06	
402.8	\$ 598.61	
403.2	\$ 624.96	
410.6	\$ 660.08	2534.9 March
430.7	\$ 685.70	
446.0	\$ 689.12	
461.5	\$ 695.23	
466.5	\$ 715.20	2330.8 Feb
477.3	\$ 727.74	
480.0	\$ 743.02	
487.4	\$ 761.38	
489.6	\$ 767.05	
494.4	\$ 769.92	2754.6 Jan
503.8	\$ 774.97	
521.8	\$ 778.00	
542.2	\$ 806.08	
567.2	\$ 879.45	2308.2 Dec
578.2	\$ 895.49	
581.6	\$ 901.85	
586.3	\$ 907.30	
601.0	\$ 965.59	
656.9	\$ 1,023.61	2283.8 Nov
701.1	\$ 1,041.00	
733.1	\$ 1,057.61	
766.3	\$ 1,118.80	
834.6	\$ 1,218.52	1344.7 Oct

Propane Deliveries by Month



Klamath Energy Use Summary

ft2 29000

HDD 4514 Source: NOAA. HDD = heating degree days

Electric

kWh/yr	BTU/yr	\$/yr	\$/kBTU	kWh/ft2/yr	kBTU/ft2/yr	\$/ft2/yr
310,055	1,057,907,660	\$ 25,551.89	\$0.0242	10.69	36.48	\$ 0.88

Propane

gal/yr	BTU/yr	\$/yr	\$/kBTU	gal/ft2/yr	kBTU/ft2/yr	\$/ft2/yr
21804.26	1,991,382,777	\$ 33,168.75	\$0.0167	0.75	68.67	\$ 1.14

Total

BTU/yr	\$/yr	kBTU/ft2/yr	BTU/ft2/yr/HDD	\$/ft2/yr
3,049,290,437	\$ 58,720.63	105	23.29	\$ 2.02

For comparison, EIA data for commercial buildings in Western US, 2003

	kBTU/ft2/yr
office	72
food service	244
public assembly	91
service	80
warehouse and storage	39