

**ALASKA ENERGY AUTHORITY  
VILLAGE POWER SYSTEM ASSESSMENT**

Community: Chistochina  
Evaluation Date: 9/10/12 Time Started 07:00a Completed 10:30a  
Evaluator(s): Ben Hopkins

**\* Indicates that only one from the group shall be chosen. Otherwise choose all that apply**

**Powerhouse Building**

**Site Location**

- ☒ Site suitable for powerhouse
- ☐ < 100 feet from a public well
- ☐ < 25 feet from an eroding bank or beach, or in a flood plain

**\* Foundation**

- ☐ Powerhouse on acceptable foundation (pad & post, piling, concrete, etc.)
- ☒ Powerhouse directly on gravel pad or light timbers (raised timbers, on permeable gravel)
- ☐ Powerhouse directly on tundra or natural soils (no foundation)
- ☐ Powerhouse leaning considerably or unstable foundations (seismic hazard)

**\* Flooring**

- ☐ Welded steel deck plate or concrete (sealed)
- ☐ Steel deck plate or concrete (unsealed)
- ☐ Wood (sealed or painted)
- ☒ Wood (non-sealed or bare)

**\* Interior Walls**

- ☐ Concrete or metal skin
- ☒ Fiberglass reinforced paneling (FRP)
- ☐ Gypsum board
- ☐ Wood (painted or sealed)
- ☐ Wood (non-painted or bare)

**\* Exterior Walls**

- ☒ Concrete or metal siding
- ☐ Wood (painted or sealed)
- ☐ Wood (non-painted or bare)

\* Roof Penetration

- ☐ None
- ☐ Properly installed (rain tight)
- ☒ Minor leaks (repairable)
- ☐ Major leaks (not repairable)

\* Ventilation

- ☐ Proper ventilation (air intake & exhaust fans, louvers & hoods)
- ☒ Adequate ventilation (air intake & exhaust fans)
- ☐ Minimum ventilation (air intake)
- ☐ No ventilation (doors or windows have to be left open)

\* Lighting

- ☐ Excellent lighting
- ☒ Adequate lighting
- ☐ Poor lighting
- ☐ No lighting

Security

- ☐ Powerhouse fenced in & door locks
- ☒ Door locks
- ☒ No fence
- ☐ No door locks

**Generator Equipment and Installation**

Diesel Engines

	Unit #1	Unit #2	Unit #3	Unit #4	Unit # 5
kW	100kW	100kW	_____	_____	_____
Hours of Operation	9849	1225	_____	_____	_____

\* Generator Condition

	Unit #1	Unit #2	Unit #3	Unit #4	Unit #5
Good, like new	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fair	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Poor, guards/covers missing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Load Sizing

- ☒ Properly sized generation to meet the community loads
- ☐ Undersized generation to meet the community loads
- ☐ Oversized generation to meet the community loads

\* Load Balance

- ☒ <10% Imbalance
- ☐ 10% to 25% Imbalance
- ☐ >25% Imbalance

\* Control Switchgear

- ☐ Fully automatic synchronizing switchgear
- ☐ Semi-automatic synchronizing switchgear
- ☐ Manually synchronizing switchgear
- ☐ Manual transfer switches
- ☒ Manual mounted breakers

\* Electrical

- ☒ Wiring appears appropriate
- ☐ Exposed wiring, improper grounding, missing covers etc.

\* Fuel System Inside Powerhouse

- ☐ Welded piping
- ☐ Welded & threaded piping
- ☒ Threaded piping
- ☐ Rubber hose

Fuel System Appurtenances

- ☐ No day-tank
- ☐ Additional for active leaks

Totalizing & Station Service Meter

- ☒ Properly installed and working totalizing & station service meter
- ☐ No totalizing meter
- ☐ No station service meter

**\* Fuel Meter**

- ☒ Properly installed & working fuel meter
- ☐ No fuel meter

**Environmental**

**Interior of Powerhouse**

- ☐ Clean, well-kept
- ☒ Old generator part stored inside facility
- ☐ Waste oil stored inside facility
- ☐ Apparent oil spills

**Under Facility**

- ☐ Clean, well-kept
- ☐ Old generator part stored under facility
- ☐ Waste oil stored under facility
- ☒ Apparent oil spills

**Surrounding of Powerhouse**

- ☐ Clean, well-kept
- ☒ Old generator part stored on site
- ☐ Waste oil stored on site
- ☐ Apparent oil spills

**\* Waste Oil Disposal**

- ☐ Waste oil blending system
- ☐ Waste oil incinerator
- ☒ Drum or tank storage for waste oils

**\* Life, Health, & Safety**

- ☐ Code Compliant
- ☐ Low risk
- ☒ Medium risk
- ☐ High risk
- ☐ Potential for loss of life

## Electrical Distribution Line Evaluation

### Overhead Distribution System

#### \* Pole type

- ☒ Fully treated poles
- ☐ Butt treated poles
- ☐ Native pole (trees)

#### \* Pole installation

- ☒ Proper depth (can be determined by the manufacture's mark or button on pole)
- ☐ Within 12 inches of recommended depth
- ☐ Within 24 inches of recommended depth
- ☐ Greater than 24 inches of recommended depth

#### \* Pole alignment

- ☒ Poles straight
- ☐ Poles leaning less than 10°
- ☐ Poles leaning greater than 10°

#### \* Distribution voltage

- ☒ =>7200 volts
- ☐ 2400 volts
- ☐ 480/277 volts
- ☐ 208/120 volts

#### \* Anchors

- ☒ Properly installed (<12 inches of the anchor rod exposed)
- ☐ 12 - 24 inches of the anchor rod exposed
- ☐ >24 inches of the anchor rod exposed

#### \* Primary conductor

- ☒ Appears properly installed (sag, conductor size, etc)
- ☐ Improperly installed (conductor needs resagging, etc)

#### \* Service conductor

- ☒ Appears properly installed (sag, conductor size, etc)
- ☐ Improperly installed (conductor needs resagging, etc)

**\* Meter installation**

- ☒ Appears to be properly installed (height, grounding, etc)
- ☐ Improperly installed (height, no ground, etc)

**\* Meter Condition Residential & Commercial**

- ☐ Good (appears in good condition)
- ☒ Fair (minor corrosion)
- ☐ Poor (major corrosion, needs replacing)

**\* Over all condition of the system**

- ☒ Excellent (no repairs needed)
- ☐ Good (minor repairs, re-sag guys, re-sag service drops, etc.)
- ☐ Poor (major repairs needed, pole, guy, conductor, meter replacement, etc)

**Underground Distribution System**

**\* Primary conductor**

- ☐ Appears to be properly installed
- ☐ Exposed conductor

**\* Transformers**

- ☐ Appears to be properly installed
- ☐ Improperly installed (no pad, leaning, etc)

**\* Service conductor**

- ☐ Appears to be properly installed
- ☐ Exposed conductor

## **Operator Proficiency**

### **\* Meter Reading**

- ☒ Excellent
- ☐ Good
- ☐ Acceptable
- ☐ Unacceptable

### **\* Daily Logs**

- ☐ Excellent
- ☒ Good
- ☐ Acceptable
- ☐ Unacceptable

### **\* Routine Maintenance**

- ☐ Excellent
- ☒ Good
- ☐ Acceptable
- ☐ Unacceptable

### **\* Scheduled Maintenance**

- ☐ Excellent
- ☒ Good
- ☐ Acceptable
- ☐ Unacceptable

### **\* Maintenance Planning**

- ☐ Excellent
- ☒ Good
- ☐ Acceptable
- ☐ Unacceptable

## **Waste Heat Recovery**

**\* Waste Heat Recovery Operational**

☐ Yes

☐ No

List current users

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**\* BTU/Hr Meter**

☐ Yes

☐ No

**\* Additional Waste Heat Available**

☐ No

☐ Yes

List Potential New Users

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**System Information**

Supply / Return Delta T

**N/A**

Estimate of current annual heating fuel gallons displaced

**N/A**

Estimate of potential annual heating fuel gallons displaced

**N/A**

Existing Heat Sales Agreement(s)

**General Questions**

*Use separate sheet(s) to answer these questions.*

1. If records are available, indicate the number, duration, and causes of all forced outages during the last 12 months. If records are not available, provide whatever reasonable estimates available from utility personnel regarding outages number, duration, and causes. **Not Available**



# ALASKA ENERGY AUTHORITY

## VILLAGE POWER SYSTEM INVENTORY

DATE	Sept 10, 2012	TIME START	7:00a	TIME END	10:30a
COMMUNITY	Chistochina	UTILITY	AP&T		
OWNERSHIP	AP&T	CONTACT	John Harvey		
OPERATOR	N/A	PHONE	907-883-5101		

	G-1	G-2	G-3	G-4	G-5
ENGINE MAKE	John Deere	John Deere			
ENGINE MODEL	6068TF250	6068TF250			
ENGINE RPM	1800	1800			
SERIAL NUMBER	PE6068T609833	PE6068T468474			
GOVERNOR TYPE	Woodward EPG	Woodward EPG			
MODEL ACTUATOR	8256-016	8256-016			
MODEL SPEED CONTROL	8290-184	8290-184			
DC VOLTAGE	24	24			
UNIT CIRCUIT BREAKER	GE Molded Case	GE Molded Case			
TYPE/AMP/VOLT	150A/600V	150A/600V			
CURRENT HOURS	9849	1225			
GENERATOR MAKE	Marathon	Marathon			
GENERATOR MODEL #	363CSL1607	362PSL1606			
GENERATOR SERIAL #	672031 8-06	LM-325507-1098			
GENERATOR CAPACITY (kW)	100kW	100kW			
GENERATOR VOLTAGE	416/240	416/240			
VOLTAGE REGULATOR, MAKE & MODEL	Marathon SE350	Basler APR 63-5			
PARALLEL SWITCH GEAR (Y or N)	No	No			
kWh METER(Yes or No)	Yes				
POWERHOUSE kWh METER TYPE	Landis CL 20 FM 9S/8S TA 2.5 120-480V				
CATALOG # or TYPE	AXS4e				
DEMAND ?	No kWh or demand shown... I think the meter has been replaced. This plant hasn't been used in three years.				
CT RATIO					
STATION SERVICE METER (Yes or No)	Yes				
STATION SERVICE METER TYPE	Itron CL200 FM 2S TA 30 240V				
CATALOG # or TYPE	C1S				
BATT. CHARGER/TYPE/MODEL	SENS FC				
FUEL DAY TANK TYPE	Single wall, unknown mfg. – all piping is hard lines – no flex lines between tanks or the module.				
PUMP #	Fill-Rite, unknown				
MOTOR #	Fill-Rite, unkown				
FUEL DAY TANK METER	Fill-Rite 800A				
FIRE PROTECTION	1ea extinguisher, no inspection tags.				
TYPE/OPERATIONAL?					
ORIGINAL CONTRACTOR					
	Generators are not run very often. They can be synchronized to each other but not to an energized bus. The most common cause of outages are lines down between main plant in Slana. Hi-line discon @ Indian River is manual op only.				