

**ALASKA ENERGY AUTHORITY  
VILLAGE POWER SYSTEM ASSESSMENT**

Community: Teller  
Evaluation Date: Sept 4, 2012 Time Started 10:00am Completed 1:00pm  
Evaluator(s): John Lyons

**\* 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	Unit #6
kW	124kw	156kw	297kw	150kW	87kW	236kW
Hours of Operation	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

**AVEC Keeps these records. Request for unit runtime has been submitted to AVEC**

\* Generator Condition

	Unit #1	Unit #2	Unit #3	Unit #4	Unit #5	Unit #6
Good, like new	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fair	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Poor, guards/covers missing	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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

**No System**

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\* BTU/Hr Meter

☐ Yes

☐ No

\* Additional Waste Heat Available

☐ No

☒ Yes

List Potential New Users

**School / Clinic / Tribal Office**

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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)

**N/A**

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. Records have been requested from AVEC**



# ALASKA ENERGY AUTHORITY

## VILLAGE POWER SYSTEM INVENTORY

DATE	Sept 4, 2012	TIME START	10:00am	TIME END	1:00pm
COMMUNITY	Teller	UTILITY	AVEC		
OWNERSHIP	AVEC	CONTACT	Mark Bryan		
OPERATOR		PHONE	907.561.1818		

	G-1	G-2	G-3	G-4	G-5
ENGINE MAKE	Caterpillar	Caterpillar	Caterpillar	Caterpillar	Caterpillar
ENGINE MODEL	3304	3208	3406 DITA	3306 PC	3304
ENGINE RPM	1800	1800	1800	1800	1800
SERIAL NUMBER	83Z04932	30A06976	2WB07808	66D18613	4B11932
GOVERNOR TYPE	Woodward	Woodward	Woodward	Woodward	Woodward
MODEL ACTUATOR	EG3p	EG3p	EG3p	EG3p	EG3p
MODEL SPEED CONTROL	2301A	2301A	2301A	2301A	2301A
DC VOLTAGE	24VDC	24VDC	24VDC	24VDC	24VDC
UNIT CIRCUIT BREAKER	Molded Case	Molded Case	Molded Case	Molded Case	Molded Case
TYPE/AMP/VOLT	Unknown	Unknown	Unknown	Unknown	Unknown
CURRENT HOURS	Unknown	Unknown	Unknown	Unknown	Unknown
GENERATOR MAKE	Caterpillar	Caterpillar	Caterpillar	Caterpillar	Caterpillar
GENERATOR MODEL #	SR4	SR4B	SR4	SR4DA	SR4
GENERATOR SERIAL #	9AB02203	9EF02203	65A03503	484	5CA00821
GENERATOR CAPACITY (kW)	124kW	156kW	297kW	150kW	87kW
GENERATOR VOLTAGE	480	480	480	480	480
VOLTAGE REGULATOR, MAKE & MODEL	Basler SR4	Basler SR4	Basler SR4	Basler SR4	Basler SR4
PARALLEL SWITCH GEAR (Y or N)	Y- Manual	Y- Manual	Y- Manual	Y- Manual	Y- Manual
kWh METER(Yes or No)	Y				
POWERHOUSE kWh METER TYPE	Elster				
CATALOG # or TYPE	203200K D080-08 Type AST				
DEMAND ?	--				
CT RATIO	No Access				
STATION SERVICE METER (Yes or No)	Y				
STATION SERVICE METER TYPE	Digital				
CATALOG # or TYPE	No Data				
BATT. CHARGER/TYPE/MODEL	Unknown				
FUEL DAY TANK TYPE	Custom				
PUMP #	No Data				
MOTOR #	No Data				
FUEL DAY TANK METER	No Data				
FIRE PROTECTION					
TYPE/OPERATIONAL?	ABC Fire Extinguishers				
ORIGINAL CONTRACTOR					

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COMMUNITY	Teller	UTILITY	AVEC		
OWNERSHIP	AVEC	CONTACT	Mark Bryan		
OPERATOR		PHONE	907.561.1818		

G-6

ENGINE MAKE	Detroit Diesel				
ENGINE MODEL	Series 60				
ENGINE RPM	1200				
SERIAL NUMBER	06R0724661				
GOVERNOR TYPE	DDC Electronic				
MODEL ACTUATOR	--				
MODEL SPEED CONTROL	--				
DC VOLTAGE	24VDC				
UNIT CIRCUIT BREAKER	Molded Case				
TYPE/AMP/VOLT	Unknown				
CURRENT HOURS	Unknown				
GENERATOR MAKE	Stamford				
GENERATOR MODEL #	350REOZD				
GENERATOR SERIAL #	756269				
GENERATOR CAPACITY (kW)	236kW				
GENERATOR VOLTAGE	480				
VOLTAGE REGULATOR, MAKE & MODEL	Basler APR 63-5				
PARALLEL SWITCH GEAR (Y or N)	Y- Manual				
kWh METER(Yes or No)	Y				
POWERHOUSE kWh METER TYPE	Elster				
CATALOG # or TYPE	203200K D080-08 Type AST				
DEMAND ?	--				
CT RATIO	No Access				
STATION SERVICE METER (Yes or No)	Y				
STATION SERVICE METER TYPE	Digital				
CATALOG # or TYPE	No Data				
BATT. CHARGER/TYPE/MODEL	Unknown				
FUEL DAY TANK TYPE	Custom				
PUMP #	No Data				
MOTOR #	No Data				
FUEL DAY TANK METER	No Data				
FIRE PROTECTION	ABC Fire Extinguishers				
TYPE/OPERATIONAL?					
ORIGINAL CONTRACTOR					