

**ALASKA ENERGY AUTHORITY
VILLAGE POWER SYSTEM ASSESSMENT**

Community: Kotlik
Evaluation Date: Sept 11-12, 2012 Time Started 1:00pm Completed 10:00am
Evaluator(s): John Haase

*** 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	350kW	350kW	500kW	500kW	_____
Hours of Operation	4920	5575	25645	25387	_____

* Generator Condition

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

unknown

* Daily Logs

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

. No operators available

* Routine Maintenance

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

Unit #4 past due for oil change. No operators available

* Scheduled Maintenance

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

No Records available. No response from AVEC

* Maintenance Planning

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

Waste Heat Recovery

* Waste Heat Recovery Operational

☒ Yes

☐ No

List current users

School Plant facility

* BTU/Hr Meter

☐ Yes

☒ No

* Additional Waste Heat Available

☒ No

☐ Yes

List Potential New Users

System Information

Supply / Return Delta T

Unknown

Estimate of current annual heating fuel gallons displaced

Unknown

Estimate of potential annual heating fuel gallons displaced

Unknown

Existing Heat Sales Agreement(s)

Unknown

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.

Could Not get information from AVEC.

ALASKA ENERGY AUTHORITY

VILLAGE POWER SYSTEM INVENTORY

DATE	Tuesday, September 11, 2012	TIME START	13:00	TIME END	20:00
COMMUNITY	Kotlik	UTILITY	AVEC		
OWNERSHIP	AVEC	CONTACT	Wanda Rasmussen		
OPERATOR		PHONE	907-565-5323		

	G-1	G-2	G-3	G-4	
ENGINE MAKE	Cummins	Cummins	Cummins	Cummins	
ENGINE MODEL	KTA19-G2	KTA19-G2	KTA19G3	KTA19G3	
ENGINE RPM	1800	1800	1800	1800	
SERIAL NUMBER	37193708	37193707	37193654	37193655	
GOVERNOR TYPE	Woodward	Woodward	Woodward	Woodward	
MODEL ACTUATOR	WW 8250-826	\WW 8250-501	WW 8250-454	\WW 8250-501	
MODEL SPEED CONTROL	2301A 9907-014	2301A 9907-014	2301A 9905-020 P	2301A 9905-020 E	
DC VOLTAGE	24	24	24	24	
UNIT CIRCUIT BREAKER	GE Spectra RMS	GE Spectra RMS	GE PowerBreak II	GE PowerBreak II	
TYPE/AMP/VOLT	SGHA36AT0600/450/600	SGHA36AT0600/450/600	SSF16B216/800/600	SSF16B216/800/600	
CURRENT HOURS	4920	5575	25645	25387	
GENERATOR MAKE	Stamford Newage	Stamford Newage	Stamford Newage	Stamford Newage	
GENERATOR MODEL #	HC66H	HC66H	HCI 534 E1	HCI 534 E1	
GENERATOR SERIAL #	0124185/02	0124185/01	D0000097557	D00097556	
GENERATOR CAPACITY (kW)	350	350	475	475	
GENERATOR VOLTAGE	480	480	480	480	
VOLTAGE REGULATOR, MAKE & MODEL	Newage MX321	Newage MX321	Newage MX321	Newage MX321	
PARALLEL SWITCH GEAR (Y or N)	Y	Y	Y	Y	
kWh METER(Yes or No)	Y				
POWERHOUSE kWh	Type A3TL				
METER TYPE					
CATALOG # or TYPE	Class 20 form 9S ZD3200KD082-08				
DEMAND ?	Y				
CT RATIO	1600:5				
STATION SERVICE METER (Yes or No)	Yes				
STATION SERVICE METER TYPE	Type A3TL				
CATALOG # or TYPE	Class 200 Form 16S ZD3300P0082-09				
BATT. CHARGER/TYPE/MODEL	Sens DCT24-35-A643				
FUEL DAY TANK TYPE	AEA Autofill Daytank				
PUMP #	Blackmer XRLF 1.25A				
MOTOR #	M6K17FC1H				
FUEL DAY TANK METER	ABb 40 USG/ P/N 921571				
FIRE PROTECTION	Notifier AFP200 Panel				
TYPE/OPERATIONAL?	All Tanks Disconnected. Not operational.				
ORIGINAL CONTRACTOR	Western States Fire Proteciton				