

**ALASKA ENERGY AUTHORITY
VILLAGE POWER SYSTEM ASSESSMENT**

Community: Golovin
Evaluation Date: Sept 27, 2012 Time Started 12:30pm Completed 2:00pm
Evaluator(s): Kris Tolson

*** 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	115kW	115kW	150kW	200kW	_____
Hours of Operation	9356	9885	38856	14910	_____

* 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 checked="" type="checkbox"/>	<input checked="" 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) **Some mounted too high**

*** 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

Water plant / Safety Bldg

* BTU/Hr Meter

☐ Yes

☒ No

* Additional Waste Heat Available

☒ No

☐ Yes

List Potential New Users

System Information

Supply / Return Delta T **4deg F**

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. **A few outages due to sync problems with Ges #1 and #2. Problem has been resolved**

ALASKA ENERGY AUTHORITY

VILLAGE POWER SYSTEM INVENTORY

DATE	Sept 27, 2012	TIME START	12:30pm	TIME END	2:00pm
COMMUNITY	Golovin	UTILITY	City of Golovin		
OWNERSHIP	City of Golovin	CONTACT	Larry Fagerstrom		
OPERATOR	Larry Fagerstrom	PHONE	907.779.3681		

	G-1	G-2	G-3	G-4	G-5
ENGINE MAKE	John Deere	John Deere	John Deere	John Deere	
ENGINE MODEL	6068TF250	6068TF250	6081AFM75	6081T	
ENGINE RPM	1800	1800	1800	1800	
SERIAL NUMBER	PE6068T317873	PE6068T330453	RG6081A304259	RG6081A009862	
GOVERNOR TYPE	Woodward	Woodward	JD Electronic	Woodward	
MODEL ACTUATOR	8256-017	8256-017	--	8256-017	
MODEL SPEED CONTROL	8290-186	8290-186	--	8290-186	
DC VOLTAGE	12VDC	12VDC	12VDC	12VDC	
UNIT CIRCUIT BREAKER	GE Spectra RMS	GE Spectra RMS	GE Spectra RMS	GE Spectra RMS	
TYPE/AMP/VOLT	175A/ 600V	175A/ 600V	250A/ 600V	350A / 600V	
CURRENT HOURS	9356	9865	38856	14910	
GENERATOR MAKE	Marathon	Marathon	Marathon	Stamford	
GENERATOR MODEL #	431PSL6204	431PSL6204	432RSL4013	HCI434C1	
GENERATOR SERIAL #	WA-538056-0204	WA-537945-0XXX	MX-142836-0410	C990879932	
GENERATOR CAPACITY (kW)	115kW	115kW	150kW	200kW	
GENERATOR VOLTAGE	277/480	277/480	277/480	277/480	
VOLTAGE REGULATOR, MAKE & MODEL	Basler DVR 2000E	Basler DVR 2000E	Basler DVR 2000E	Basler DVR 2000E	
PARALLEL SWITCH GEAR (Y or N)	Y	Y	Y	Y	
kWh METER(Yes or No)	Y				
POWERHOUSE kWh METER TYPE	Crompton				
CATALOG # or TYPE	No Data				
DEMAND ?	--				
CT RATIO	No Access				
STATION SERVICE METER (Yes or No)	Y				
STATION SERVICE METER TYPE	Power Corp				
CATALOG # or TYPE	FMS Feeder Monitor System				
BATT. CHARGER/TYPE/MODEL	Charles C-Charger				
FUEL DAY TANK TYPE	Custom 100gal				
PUMP #	Oberdorfer N991-32				
MOTOR #	Leeson A4C17DB2G				
FUEL DAY TANK METER	Digital- No Data				
FIRE PROTECTION	ABC Extinguishers / Fike Clean Agent				
TYPE/OPERATIONAL?	Appears operational				
ORIGINAL CONTRACTOR					