

ALASKA ENERGY AUTHORITY
VILLAGE POWER SYSTEM ASSESSMENT

Community: Ivanof Bay
Evaluation Date: Sept 24, 2012 Time Started 1:00pm Completed 4:00pm
Evaluator(s): Mike Dunn

*** 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	40kW	92kW	92kW	_____	_____
Hours of Operation	24222	31029	34663	_____	_____

* 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Poor, guards/covers missing	<input checked="" type="checkbox"/>	<input checked="" 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 **Unknown**

* Load Balance

- ☐ <10% Imbalance
- ☐ 10% to 25% Imbalance
- ☐ >25% Imbalance **Unknown**

* 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 **Unknown if operational**

*** Fuel Meter**

- ☒ Properly installed & working fuel meter
- ☐ No fuel meter **Unknown if operational**

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

Plant not in operation

* 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

Plant not in operation

* BTU/Hr Meter

- ☐ Yes
☐ No

* Additional Waste Heat Available

- ☐ No
☐ Yes

List Potential New Users

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**

ALASKA ENERGY AUTHORITY

VILLAGE POWER SYSTEM INVENTORY

DATE	Sept 24, 2012	TIME START	1:00pm	TIME END	4:00pm
COMMUNITY	Ivanof Bay	UTILITY	Ivanof Bay Tribal Council		
OWNERSHIP	Ivanof Bay Tribal Council	CONTACT	Ivanof Bay Tribal Council		
OPERATOR	None	PHONE	907.522.2263		

	G-1	G-2	G-3	G-4	G-5
ENGINE MAKE	John Deere	John Deere	John Deere		
ENGINE MODEL	4039DF001	6068TF001	6068TF001		
ENGINE RPM	1800	1800	1800		
SERIAL NUMBER	TO4039D365120	TO6068T365775	TO6068T368017		
GOVERNOR TYPE	Woodward	Woodward	Woodward		
MODEL ACTUATOR	8256-022	8256-022	8256-022		
MODEL SPEED CONTROL	8290-040 J	8290-040	8290-040		
DC VOLTAGE	12VDC	12VDC	12VDC		
UNIT CIRCUIT BREAKER	GE	GE	GE		
TYPE/AMP/VOLT	50A/ 600V	175A/ 600V	175A/ 600V		
CURRENT HOURS	24222	31029	34663		
GENERATOR MAKE	Stamford	Stamford	Stamford		
GENERATOR MODEL #	UCI224D14	UCI274E14	UCI274E14		
GENERATOR SERIAL #	472616	444450	444452		
GENERATOR CAPACITY (kW)	40kW	92kW	92kW		
GENERATOR VOLTAGE	277/480	277/480	277/480		
VOLTAGE REGULATOR, MAKE & MODEL	Newage SX460	Newage SX440	Newage SX440		
PARALLEL SWITCH GEAR (Y or N)	N	N	N		
kWh METER(Yes or No)	Y				
POWERHOUSE kWh METER TYPE	Landis Gyr				
CATALOG # or TYPE	MT-14S				
DEMAND ?	--				
CT RATIO	Unknown				
STATION SERVICE METER (Yes or No)	Y				
STATION SERVICE METER TYPE	Westinghouse				
CATALOG # or TYPE	D5S				
BATT. CHARGER/TYPE/MODEL	SENS FCA12-6-2211U				
FUEL DAY TANK TYPE	Pryco 75 gal				
PUMP #	Oberdorfer				
MOTOR #	Marathon YVE48S17D2090				
FUEL DAY TANK METER	Kent				
FIRE PROTECTION TYPE/OPERATIONAL?	None				
ORIGINAL CONTRACTOR					