

**ALASKA ENERGY AUTHORITY**  
**VILLAGE POWER SYSTEM ASSESSMENT**

Community: Sand Point  
Evaluation Date: Sept 21, 2012 Time Started 8:00am 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	900kW	875kW	455kW	_____	650kW
Hours of Operation	41053	65437	1948	_____	26593

\* 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 type="checkbox"/>	<input checked="" 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

**TDX Building**

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### \* BTU/Hr Meter

☐ Yes

☒ No

### \* Additional Waste Heat Available

☐ No

☒ Yes

List Potential New Users

**Clinic / School / City Bldg**

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## System Information

Supply / Return Delta T **10 deg F**

Estimate of current annual heating fuel gallons displaced

**3650gal**

Estimate of potential annual heating fuel gallons displaced

**18250gal**

Existing Heat Sales Agreement(s)

**None**

## 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 21, 2012	TIME START	8:00am	TIME END	4:00pm
COMMUNITY	Sand Point	UTILITY	TDX Sand Point Generating		
OWNERSHIP	TDX Power	CONTACT	Art Torres		
OPERATOR	Art Torres	PHONE	907.383.4020		

	G-1	G-2	G-3	G-4	G-5
ENGINE MAKE	Caterpillar	Caterpillar	Caterpillar		Caterpillar
ENGINE MODEL	3516	3512 DI	3456		3512 DI
ENGINE RPM	1200	1200	1800		1200
SERIAL NUMBER	07Z0043	67Z00599	7WG04088		67Z00533
GOVERNOR TYPE	Woodward	Woodward	Cat Electronic		Woodward
MODEL ACTUATOR	8250-565	OR-7968	--		8250-565
MODEL SPEED CONTROL	9907-018	8272-288A	--		9905-020 P
DC VOLTAGE	24VDC	24VDC	24VDC		24VDC
UNIT CIRCUIT BREAKER <span style="background-color: yellow;">ABB</span>	DETL1600K140	DETL1205K3	OETLNF800A		OETL1250K3
TYPE/AMP/VOLT	1600A/ 600V	1250A/ 600V	800A/ 600V		1250A/ 600V
CURRENT HOURS	41053	65437	1948		26593
GENERATOR MAKE	Caterpillar	Caterpillar	Caterpillar		Caterpillar
GENERATOR MODEL #	SR4	3512 SR4	LC6		3512 SR4
GENERATOR SERIAL #	5YA00791	W7X6716GP	96B01767		5VA00556
GENERATOR CAPACITY (kW)	900kW	875kW	455kW		650kW
GENERATOR VOLTAGE	277/480	277/480	277/480		277/ 480
VOLTAGE REGULATOR, MAKE & MODEL	Basler SSR-32-12	Basler SSR-32-12	Caterpillar CDVR		Basler SSR-32-12
PARALLEL SWITCH GEAR (Y or N)	Y	Y	Y		Y
kWh METER(Yes or No)	Y				
POWERHOUSE kWh METER TYPE	Woodward				
CATALOG # or TYPE	EGCP				
DEMAND ?	--				
CT RATIO	200:5				
STATION SERVICE METER (Yes or No)	Y				
STATION SERVICE METER TYPE	Elster				
CATALOG # or TYPE	A1D				
BATT. CHARGER/TYPE/MODEL	LaMarche ESCR-40/20-12/24V-AV1				
FUEL DAY TANK TYPE	Custom 800gal				
PUMP #	Roper 2AM06				
MOTOR #	Baldor M3542				
FUEL DAY TANK METER	Veeder- Root 788700002				
FIRE PROTECTION	ABC Fire Extinguisher				
TYPE/OPERATIONAL?					
ORIGINAL CONTRACTOR					