

ALASKA ENERGY AUTHORITY
VILLAGE POWER SYSTEM ASSESSMENT

Community: Platinum
Evaluation Date: 10/12/12 Time Started 12:00pm Completed 2:30pm
Evaluator(s): Jesse Walty

*** 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	75kw	54kw			
Hours of Operation	<u>35016</u>	<u>11732</u>			

* 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 type="checkbox"/>	<input 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

- ☒ Copper Tubing
- ☐ 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

City of Platinum buildings. _____

* 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

Estimate of potential annual heating fuel gallons displaced

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.

No records. Main cause of outages is due to running out of fuel in the day tank.

ALASKA ENERGY AUTHORITY

VILLAGE POWER SYSTEM INVENTORY

DATE	10/11/12	TIME START	12:00pm	TIME END	2:30pm
COMMUNITY	Platinum	UTILITY	Platinum Power		
OWNERSHIP	City of Platinum	CONTACT			
OPERATOR	Steven Tugatuk	PHONE	907-979-2251		

	G-1	G-2	G-3	G-4	G-5
ENGINE MAKE	CATERPILLAR	CATERPILLAR			
ENGINE MODEL	3304DI	3054C			
ENGINE RPM	1800	1800			
SERIAL NUMBER	83Z03279	E4M01294			
GOVERNOR TYPE	CAT ELEC.	CAT ELEC.			
MODEL ACTUATOR	5484-803				
MODEL SPEED CONTROL	7W-2743	EMCP 3.2			
DC VOLTAGE	24V	12V			
UNIT CIRCUIT BREAKER	CAT	ABB			
TYPE/AMP/VOLT	500A/600V	150A/600V			
CURRENT HOURS	35016	11732			
GENERATOR MAKE	CAT	CAT			
GENERATOR MODEL #	SR4	C4.4			
GENERATOR SERIAL #	5AA04229	CAT00C44CNCD00642			
GENERATOR CAPACITY (kW)	75KW	54KW			
GENERATOR VOLTAGE	208	208			
VOLTAGE REGULATOR, MAKE & MODEL		LEROY SOMER R-230			
PARALLEL SWITCH GEAR (Y or N)	N	N			
kWh METER(Yes or No)	Y				
POWERHOUSE kWh METER TYPE	VECTRON				
CATALOG # or TYPE	SV4SD				
DEMAND ?					
CT RATIO					
STATION SERVICE METER (Yes or No)	Y				
STATION SERVICE METER TYPE	GE				
CATALOG # or TYPE	1-70-S				
BATT. CHARGER/TYPE/MODEL	LA MARCHE A20R				
FUEL DAY TANK TYPE	500 GAL.				
PUMP #	N/A				
MOTOR #	N/A				
FUEL DAY TANK METER	N/A				
FIRE PROTECTION					
TYPE/OPERATIONAL?	N/A				
ORIGINAL CONTRACTOR					