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NEVADA GEOTHERMAL UPDATE

March 2003

CURRENT POWER OPERATIONS

<u>Plant/Operator (year on-line)</u>	<u>Nameplate Capacity *</u>	<u>Location</u>
Beowawe Power Plant (1985) Beowawe Power LLC/Caithness Operating	16.6 MW	S13, T31N R47E
Bradys Power Plant (1992) Brady Power Partners/ORMAT	21.1 MW	S12, T22N R26E
Desert Peak Power Plant (1985) Brady Power Partners/ORMAT	12.5 MW	S21, T22N R27E
◆ Power purchase contracts were recently awarded by Sierra Pacific for flash -steam and binary geothermal plant expansions, Desert Peak 2 for 25 MW and Desert Peak 3 for 13 MW. PUC approval 3/6/2003: http://www.puc.state.nv.us/news/2003/REPS%20303.pdf		
◆ ORMAT Nevada Inc.; Permit #517, API # 27-001-90295 for Thermal Gradient Well "ST 11c" issued January 29, 2003; NE/4 SW/4, Section 15, T22N R27E; Churchill Co.; PTD 2000'.		
◆ ORMAT Nevada Inc.; Permit #518, API #27-001-90296 for Thermal Gradient Well "ST 12a" issued January 29, 2003; SE/4 NW/4, Section 21, T22N R27E; Churchill Co.; PTD 2000'.		
Dixie Valley Power Plant (1988) Caithness Dixie Valley/Caithness Operating	62.0 MW	S7, T24N R37E S33, T25N R37E
Empire Power Plant (1987) Empire Energy LLC	4.8 MW	S21, T29N R23E
◆ Empire Energy LLC; Permit 507, API #27-031-90211 for Production Well "EEP-02" issued August 5, 2002; NW/4 NE/4 Section 16, T29N R23E, Washoe Co.; PTD 2500'.		
Soda Lake No. 1 (1987) Soda Lake No. 2 (1991) Constellation Operating Services	26.1 MW	S33, T20N R28E
Steamboat I, IA (1986) Steamboat II, III (1992) S B Geo, Inc./Far West Capital	10.8 MW 47.8 MW	S29, T18N R20E
◆ Advanced Thermal Systems was recently awarded a power purchase contract from Sierra Pacific for a Kalina Cycle 44-MW binary plant, Steamboat IV. PUC approval 3/6/2003: http://www.puc.state.nv.us/news/2003/REPS%20303.pdf		

Steamboat Geothermal Power Plant/Caithness Power Plant (1988) Yankee-Caithness JVLP	14.41 MW	S5,6, T17N R20E
Stillwater (1989) Stillwater Holdings, LLC	21.0 MW	S1, T19N R30E
Wabuska (1984) Homestretch Geothermal LLC	2.2 MW	S15, 16, T15N R25E

* Nameplate Capacity as reported to the Division of Minerals for 2002.

DIRECT USE OPERATIONS

Empire Group LLC; Empire, Washoe County, Nevada
<http://www.empirellc.com>

Gilroy Foods; Onion Dehydration Plant; Fernley, Nevada
<http://www.gilroyfoods.com/aboutus.html>

- ◆ Currently idle, production anticipated to resume in May, 2003.

OTHER ACTIVE AREAS

Hot Sulphur Springs (Tuscarora), Elko County

- ◆ Earth Power Resources was recently awarded a power purchase contract from Sierra Pacific for a 25 MW binary plant. PUC approval 3/6/2003: <http://www.puc.state.nv.us/news/2003/REPS%20303.pdf>

Rye Patch/Humboldt House KGRA, Pershing County (Rye Patch Power Plant, 12 MW, 90% complete)

- ◆ Presco Energy/DOE funded Thermal Gradient Wells; "Renewable Energy Advancement in Nevada"; contact Gina Tempel gina@mines.unr.edu
 - Presco Energy LLC.; Permit 511, API #27-027-90061 for Thermal Gradient Well "P 3-1" issued January 22, 2003; NE/4 NW/4 S3, T31N R33E; PTD 1000'
 - Presco Energy LLC.; Permit 512, API #27-027-90062 for Thermal Gradient Well "P 5-1" issued January 22, 2003; SW/4 NE/4 S5, T31N R33E; PTD 1000'
 - Presco Energy LLC.; Permit 513, API #27-027-90063 for Thermal Gradient Well "P 10-1" issued January 22, 2003; SW/4 NE/4 S10, T31N R33E; PTD 1500'
 - Presco Energy LLC.; Permit 514, API #27-027-90064 for Thermal Gradient Well "P 32-1" issued January 22, 2003; SW/4 NE/4 S32, T32N R33E; PTD 1000'
 - Presco Energy LLC.; Permit 515, API #27-027-90065 for Thermal Gradient Well "P 32-2" issued January 22, 2003; NE/4 SW/4 S32, T32N R33E; PTD 500'

Fly Ranch Geothermal Prospect Area; West Black Rock Desert, Washoe County

- ◆ SB Geo, Inc.; Permit #516, API #27-031-90214 for Thermal Gradient Well "72-02-TG" issued January 27, 2003; NE/4 NE/4 Section 2, T34N R23E, Washoe Co.; Re-Entry, PTD 1456'.

Blue Mountain Geothermal Prospect Area, Humboldt County

- ◆ NORAMEX Corporation; Permit #500, API #27-013-90014 for Observation Well "Deep Blue #1" issued March 20, 2002; SE/4 SW/4, S14 T36N R34E, Humboldt Co.; PTD 2000'; Drilled in May, 2002. <http://www.continentalridge.com/geothermal-energy.htm>

- ◆ Nov 7, 2002 Press Release by Continental Ridge Resources (<http://www.continentalridge.com>) quoted an article in Nov/Dec 2002 **Resource World Magazine** "The Deep Blue No.1 well was drilled to a total depth of 672 meters where unequilibrated temperatures of up to 146° C were encountered, still rising at the bottom. Since cool drilling fluids lower the temperature, it is expected the true temperature at depth will probably be more than 150° C (300°F)."

Joy Lake Geothermal Prospect Area, Washoe County, Nevada

- ◆ Evergreen Energy LLC; Permit #496, API #27-031-90208 for Observation Well "Joy Lake 45-22" issued January 29, 2002; SE/4 NW/4 Section 22, T17N R19E, Washoe Co.; PTD 3000'.
- ◆ Evergreen Energy LLC; Permit #497, API #27-031-90209 for Observation Well "Joy Lake 78-22" issued January 29, 2002; SE/4 NE/4, Section 22, T17N R19E, Washoe Co.; PTD 3000'.

OTHER NEWS

Public Utilities Commission Approves Renewable Energy Contracts

- ◆ March 6, 2003 The Public Utilities Commission (<http://www.puc.state.nv.us/news/2003/REPS%20303.pdf>) approved six contracts between Nevada Power/Sierra Pacific and renewable energy power plants under development. These plants will provide enough electricity in 2005 and 2006 for Nevada Power to comply with the non-solar portion of Nevada's Renewable Energy Portfolio Standard <http://www.leg.state.nv.us/NRS/NRS-704.html#NRS704Sec7801> SB 372 (2001)

Redfield Campus, Reno, NV

- ◆ February 24, 2003 Nevada will soon have the only college campus in the world completely powered by renewable energy. A new 30-year agreement between Advanced Thermal Systems, Inc. of Reno and the University of Nevada, Reno will bring advanced geothermal technology to provide heat and power for the collaborative new Redfield Campus and provide a new source of clean, affordable power for Northern Nevada. Under the agreement, ATS will build and operate an 11 MW Kalina Cycle geothermal power plant adjacent to the new campus. The plant will provide electricity, hot and chilled water. It will also supply hot water to support university research in areas such as hydroponics and aquaculture. ATS hopes to sell excess electricity generated to Sierra Pacific to help the local utility meet growing regional energy needs.
<http://www.advancedthermalsystems.com/>
<http://www.solaraccess.com/news/story?storyid=3727>

Carson City Looks to Renewable Energy Opportunities

- ◆ "Our goal is to make Carson City known as a manufacturing and research center for renewable energy," said Charlie Long, a consultant to the city and coordinator of the work group. "Nevada itself has huge potential for renewable energy." The city began soliciting nationally Jan. 30 to find companies interested in producing energy from solar, wind, geothermal, hydro, bioenergy and landfill gas as potential renewable energy sources in the city.
<http://www.nevadaappeal.com/apps/pbcs.dll/article?Date=20030211&Category=NEWS&ArtNo=302110102&SectionCat>

BLM Geothermal Leases Issued in 2002

- ◆ During the calendar year of 2002, the Nevada Bureau of Land Management issued 184,234 acres of new geothermal leases to 20 different companies or individuals. Earth Power Resources, Inc. acquired the most, with slightly over 38,000 acres. Earth Power was recently awarded a power purchase agreement for 25 megawatts of geothermal energy from their plant in Elko County. For more information on BLM leases in Nevada, see the website: <http://www.blm.gov/lr2000>

Lessee	Acres
Earth Power	38,318
Wright	29,714
Sierra Nevada Geothermal	25,725
Geo Energy Partners	16,800
Ormat	14,098
Evans Barton	13,421
Empire	10,578
Win Eldrich Gold Inc.	7,262
Caithness	5,704
Stewart	5,414
Bright and Holland	5,075
Vulcan	2,141
Western Geoscience	1,920
Berry	1,889
Cortez	1,432
Presco	1,360
Pacific Energy	1,188
Henkle	944
NGP	636
McGee	635
Total	184,254

LINKS: Useful Databases and Geothermal Information

Nevada Commission on Mineral Resources, Division of Minerals

<http://minerals.state.nv.us/programs/ogg.htm>

Nevada Bureau of Mines and Geology “The Nevada Mineral Industry 2001” MI-2001

<http://www.nbmng.unr.edu/hits.php?p=dox/mi/01.pdf>

Nevada Bureau of Mines and Geology web sites for Geothermal Information

<ftp://ftp.nbmng.unr.edu/pub/geotherm/readme.htm>

- ◆ Geothermal Prospect Questionnaire <ftp://ftp.nbmng.unr.edu/pub/web/nvgeowel.txt>
- ◆ Respond to Request for Nevada Prospects http://www.resource-solutions.org/PIER/emphasis1project3/PRP%20Geothermal%20Questionnaire_Intro.pdf

Geothermal Resources Council

<http://www.geothermal.org>

Renewable Energy Policy Project & CREST (Center for Renewable Energy & Sustainable Technology)

<http://www.repp.org/>

Sandia National Laboratories Geothermal Research Dept.
<http://www.sandia.gov/geothermal>

Southern Methodist University Geothermal Laboratory
<http://www.smu.edu/geothermal/>

USGS Geothermal Database
<http://wrgis.wr.usgs.gov/open-file/of99-425/webmaps/>

- ◆ USGS Open-file Report 99-425 online version 1.0
- ◆ Geothermal Industry Temperature Profiles from the Great Basin

Stanford Geothermal Program
<http://ekofisk.stanford.edu/geotherm.html>

GeoPowering the West
<http://www.eere.energy.gov/geothermal/>

Geothermal Biz. com
<http://www.geothermal-biz.com/>

- ◆ *Geothermal biz.com* was created to help the geothermal entrepreneur—companies, small businesses, Native American tribes, homeowners, and individuals—develop geothermal direct use and small power generation projects.

Great Basin Center for Geothermal Energy at the University of Nevada, Reno
<http://www.unr.edu/geothermal/>

Idaho National Engineering and Environmental Laboratory (INEEL)
<http://geothermal.inel.gov/>

Oregon Institute of Technology, Klamath Falls, Oregon, Geo-Heat Center
<http://geoheat.oit.edu>

Nevada Public Utilities Commission
<http://www.puc.state.nv.us/>

Sierra Pacific Power website for renewable resources
<http://www.sierrapacific.com/company/renewables/>

Bureau of Land Management – Nevada Geothermal Program
<http://www.nv.blm.gov/minerals/geothermal/index.htm>

Information compiled by the Nevada Division of Minerals with assistance from:

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